

VOL. XXXVIII. No. 12

DECEMBER 1953

MECCANO

MAGAZINE



FUN AMONG THE CHRISTMAS TREES

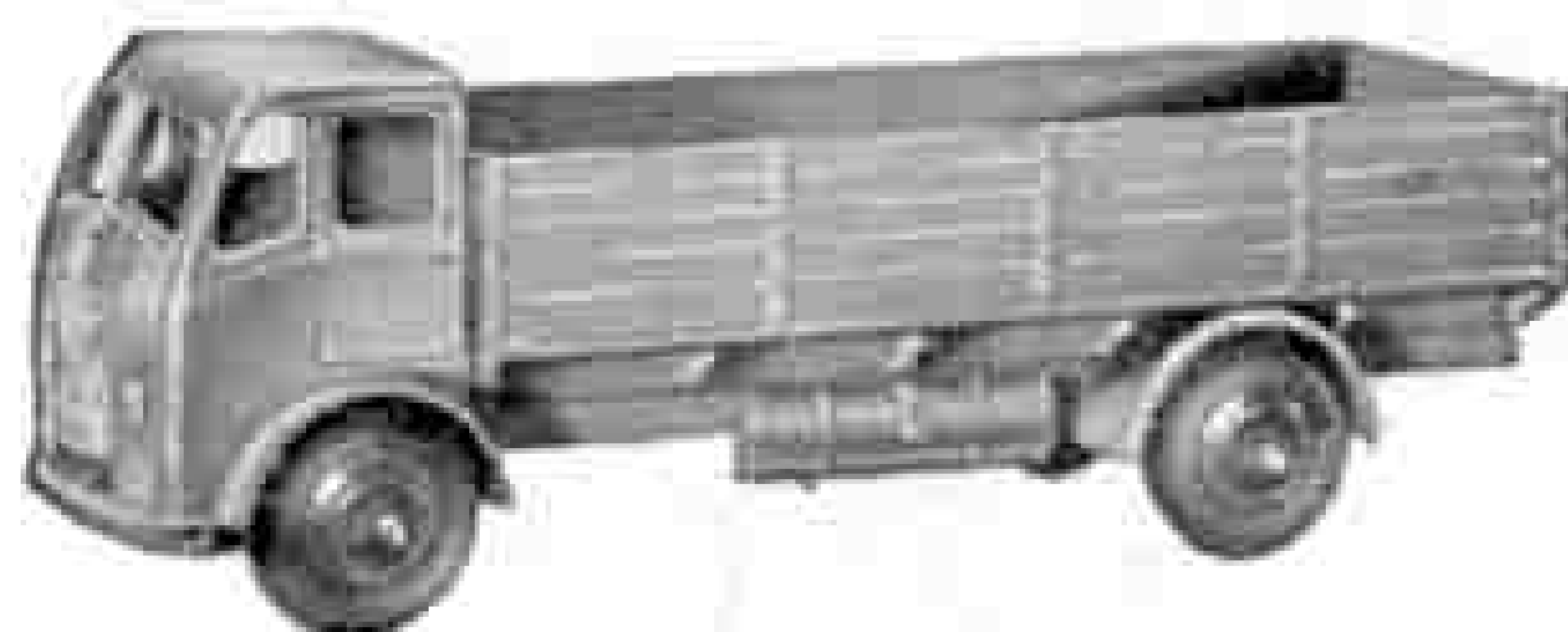
1/-

DINKY TOYS

TRADE MARK REGD.



No. 31c
Trojan Van, 15 cwt.
Length 3½ in. 2/2



No. 25r
Forward Control Lorry
Length 4 in. 2/4



No. 673
Scout Car
Length 2½ in. 2/11



No. 23n
Maserati Racing Car
Length 3½ in. 2/6



No. 23j
H.W.M. Racing Car
Length 3½ in. 2/6



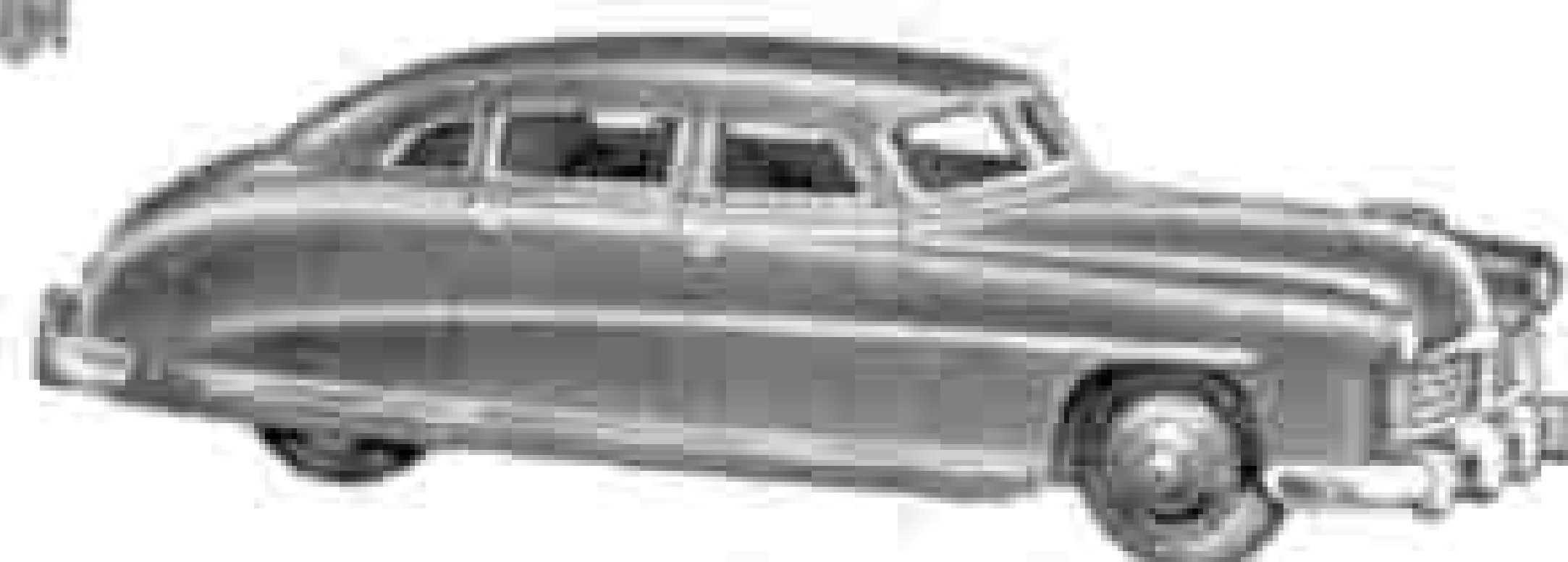
No. 23g
Cooper-Bristol Racing Car
Length 3½ in. 2/6



No. 40j
Rover 75 Saloon
Length 3½ in. 2/2



No. 30w
Electric Articulated Lorry
Length 5½ in. 3/11



No. 139b
Hudson "Commodore" Sedan
Length 4½ in. 2/8



No. 30h
Daimler Ambulance
Length 3½ in. 2/8



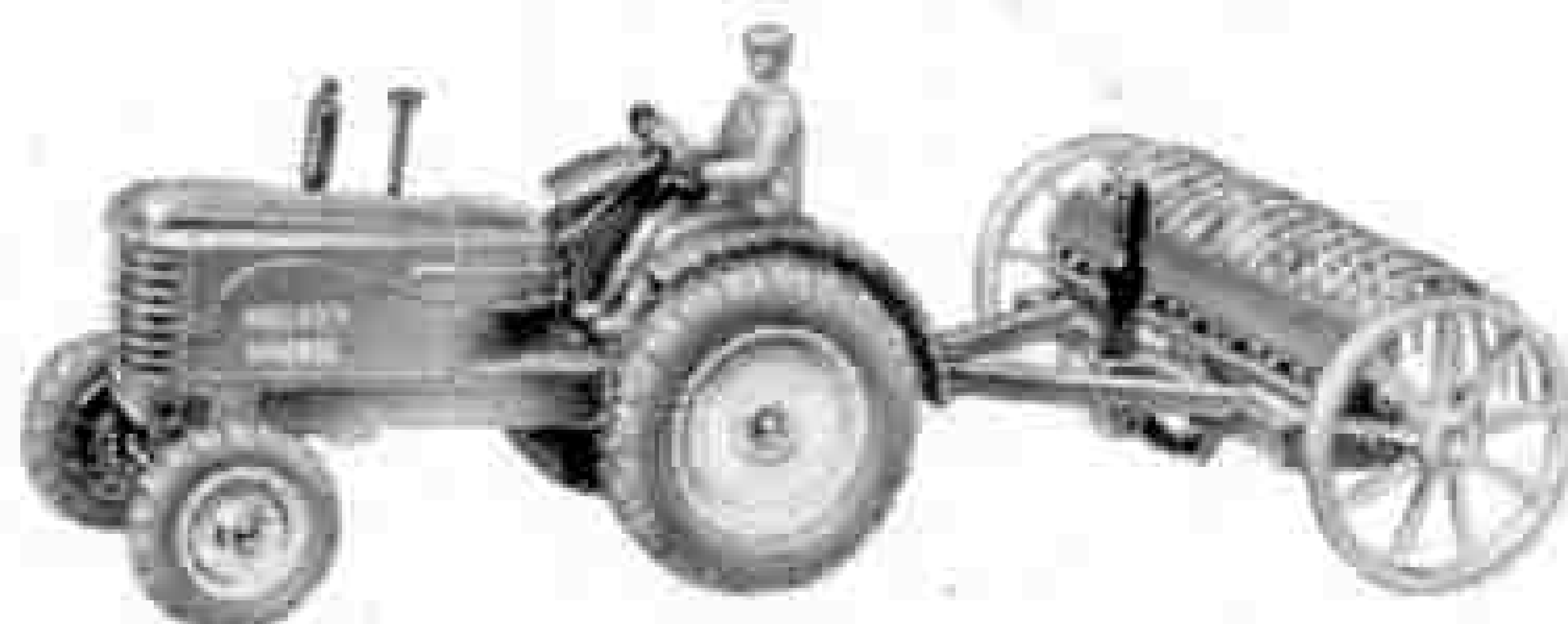
No. 27n
Field-Marshal Tractor
Length 3 in. 4/4



No. 30j
Austin Wagon
Length 4½ in. 2/6



No. 14c
Coventry Climax
Fork Lift Truck
Length 4½ in. 6/6



No. 27ak
Farm Tractor and Hay Rake
Length 6 in. 7/6



No. 40h
Austin Taxi
Length 3½ in. 2/11

Prices include Purchase Tax

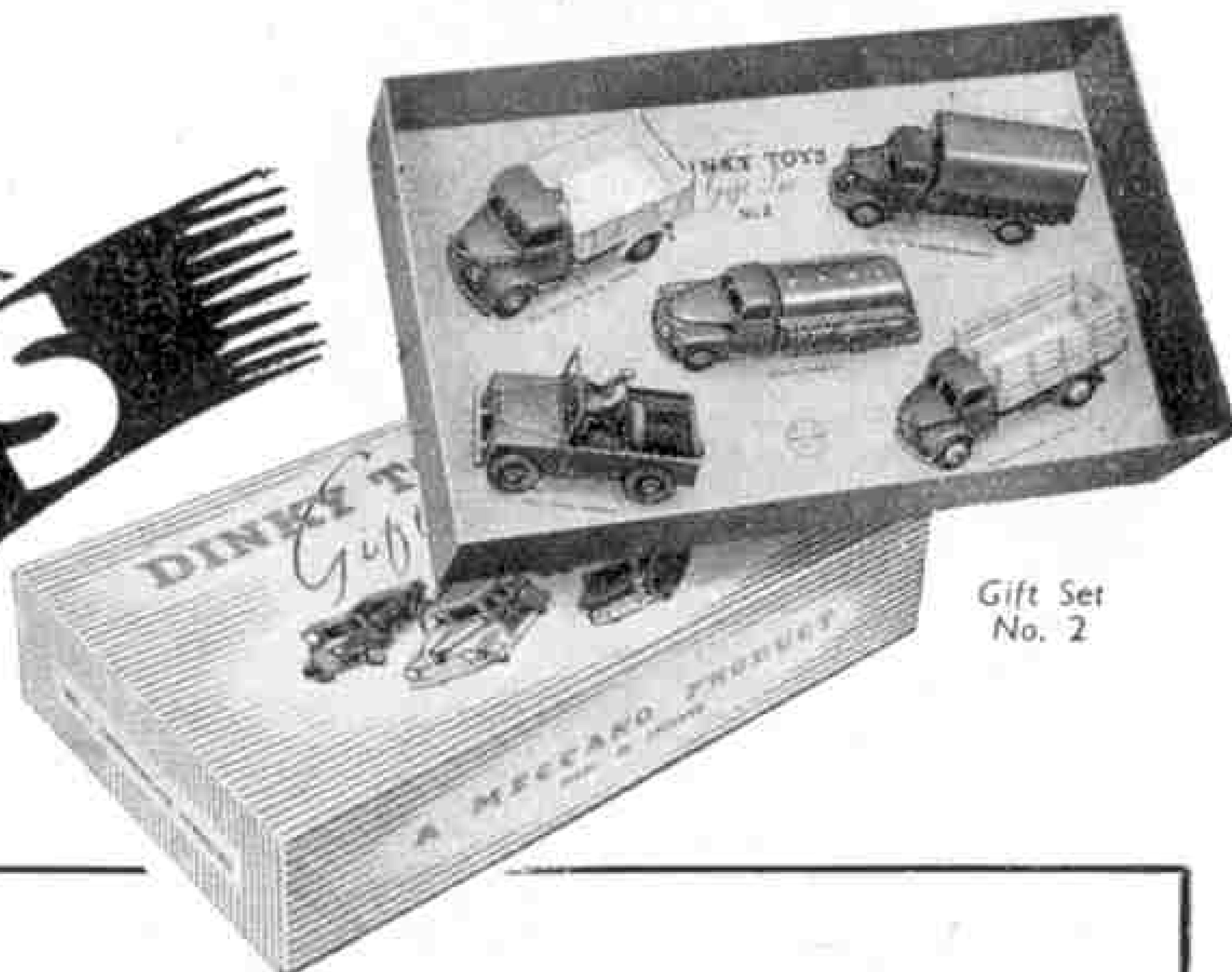
* Get your copy of the new Dinky Toys Coloured Booklet from your local dealer, or direct from

MECCANO LIMITED

BINNS ROAD

LIVERPOOL

DINKY TOYS

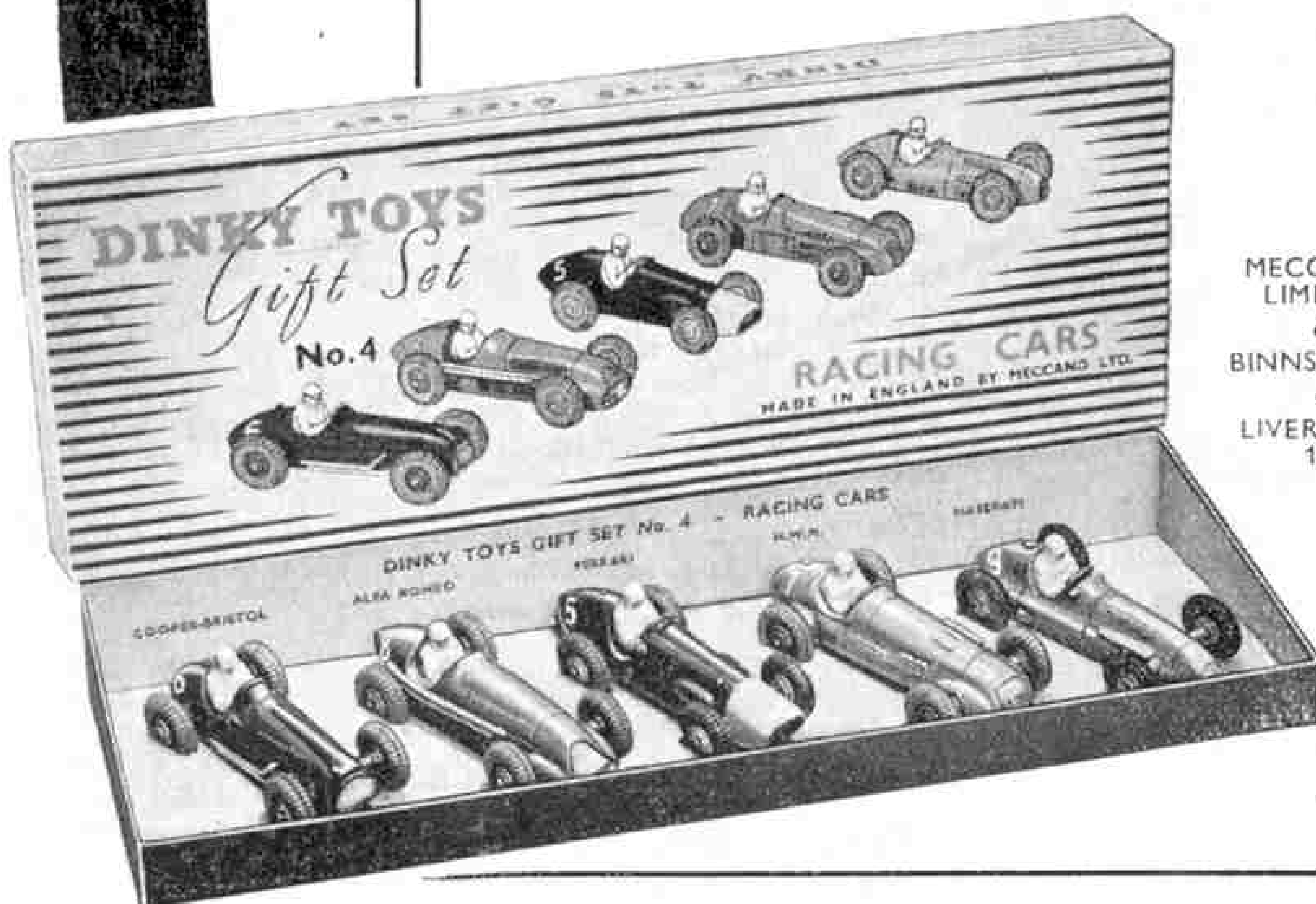


Gift Set
No. 2

Dinky Toys are so universally popular that every boy will be expecting some for Christmas. This is the time of the year when Mothers, Fathers, Aunts and Uncles should be reminded that selected groups of Dinky Toys are available as Sets in colourful presentation boxes.

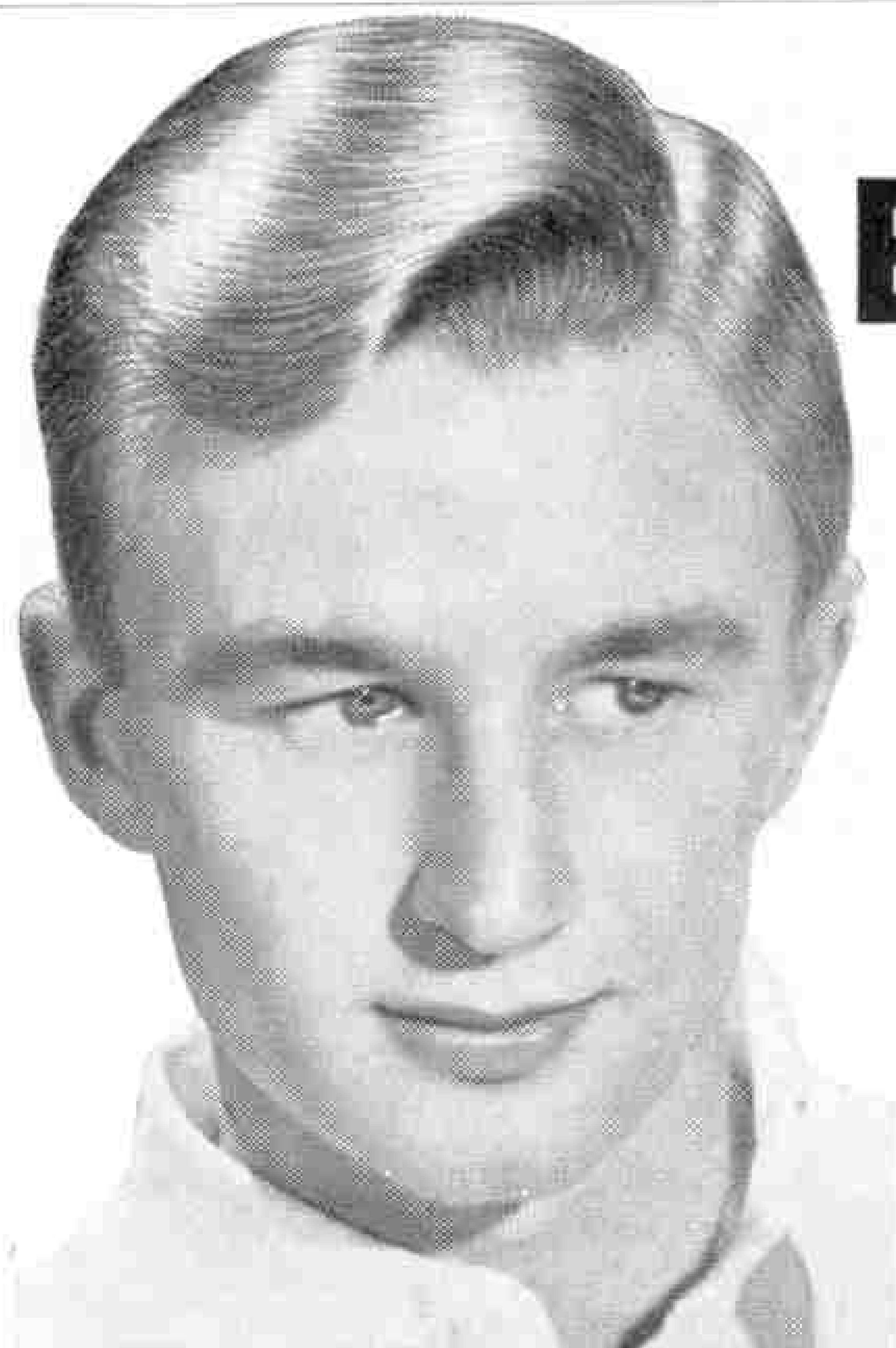
Gift Set No. 1—Farm Gear (5 models)	..	Price 17/3
Gift Set No. 2—Commercial Vehicles (5 models)		Price 17/9
Gift Set No. 3—Passenger Cars (6 models)	..	Price 15/-
Gift Set No. 4—Racing Cars (5 models)	..	Price 12/6

Prices include Purchase Tax.



MECCANO
LIMITED
•
BINNS ROAD
•
LIVERPOOL
13

Gift Set
No. 4



Men of tomorrow use **BRYLCREEM** today

Brylcreem is the first step to smartness, the step that makes all the difference on the road to success. It gives you that well groomed, confident look that famous men all over the world have found so valuable. Brylcreem takes care of your hair, makes you look smart, and just as important, makes you *feel* smart too. Yes, Brylcreem is the *perfect* hairdressing. Ask for Brylcreem, in tubs 1/6, 2/3 and 4/1, or handy tubes 2/3.



SMARTNESS COUNTS . . BRYLCREEM YOUR HAIR

royds 162/38



*A boxful of
real excitement!*

'MERIT' CHEMISTRY OUTFITS

No. 3. (Illustrated). A full selection of chemicals and accessories presented in a new and attractive manner. Enables a wide variety of interesting and instructive experiments to be performed. Complete with Illustrated Booklet by S. R. Stubbs, M.Sc. Price 47/6, inc. tax. Also No. 2, 31/-, inc. tax, and No. 1, 18/2, inc. tax. All chemicals conform to Home Office safety regulations.

(Dept. 3), Merit House, Potters Bar, Middlesex

Worth asking for!

S.E.L. for Christmas Gifts!

S.E.L. MICROSCOPES

No. 3. (Illustrated). Height 7½ in. Magnification 100. In fitted and polished mahogany case with accessories and instruction book. Price 95/-, no tax.

No. 3a. As No. 3, but supplied in an ingenious cardboard carton. Price 75/-, no tax.

No. 2. Magnification 70. Height 6 in. In cardboard carton. Price 42/6, no tax.

No. 1. Magnification 44. Height 5 in. In cardboard carton. Price 32/6, no tax.

**Of all good Dealers and Stores
Send p.c. for illustrated list**

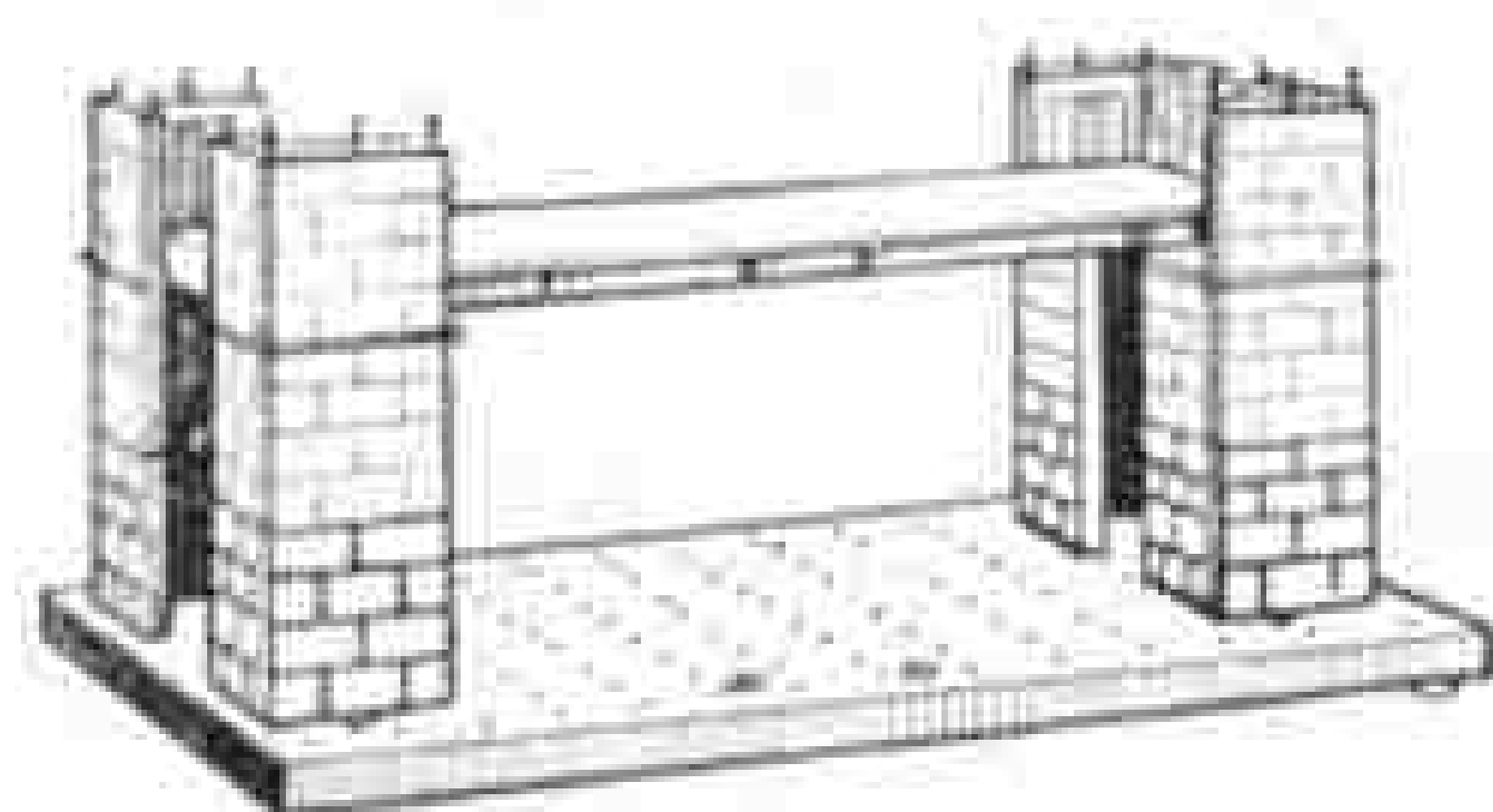
S.E.L.

(Signalling Equipment Ltd)





Build all these with BAYKO



Footbridge



**Station
Halt**

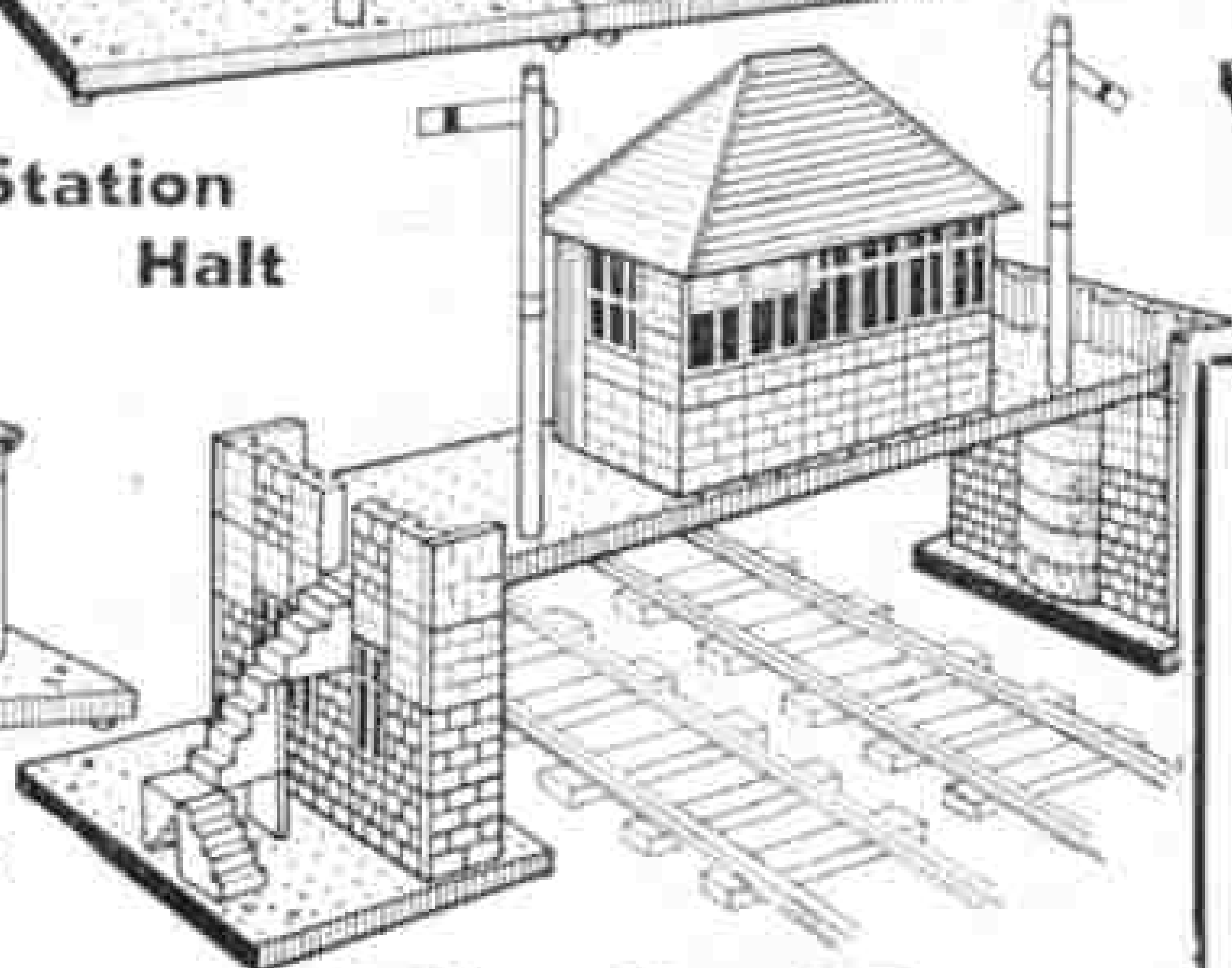


Signal Box



Railway Booking Halt

—and lots of other
buildings



Bridge Signal Box

PRICES

(including Purchase Tax)

No. 0	Standard Set	14/-
No. 1	Standard Set	21/-
No. 2	Standard Set	33/-
No. 3	Standard Set	54/-
No. 4	Standard Set	104/6
No. 0X	Converting Set	7/-
No. 1X	Converting Set	12/3
No. 2X	Converting Set	21/-
No. 3X	Converting Set	50/6

Oh Boy BAYKO!

OBTAINABLE FROM LEADING STORES AND TOY SPECIALISTS
 Manufactured by PLIMPTON ENGINEERING CO. LTD., LIVERPOOL 3

Interested in Research?



Then you'll want a
LOTT'S CHEMISTRY
Regd. Trade Mark
SET
this Xmas

With a Lott's Chemistry Set you can carry out your own research experiments at home. You get a full range of chemicals and laboratory apparatus, with detailed instructions, and you can obtain spare chemicals and apparatus to build up your own laboratory. Both as a help to your school science studies and as a wonderfully interesting hobby, a Lott's Chemistry Set is the best Xmas present you could wish for.

Build real-life models with
LOTT'S Toy Stone Building BRICKS

Each box complete with coloured plans and instructions.

Ask to see them at your dealer, or write to the manufacturers for current price list, enclosing stamped addressed envelope 1½d.

LOTT'S BRICKS LTD.
 (DEPT. 11), WATFORD, HERTS.

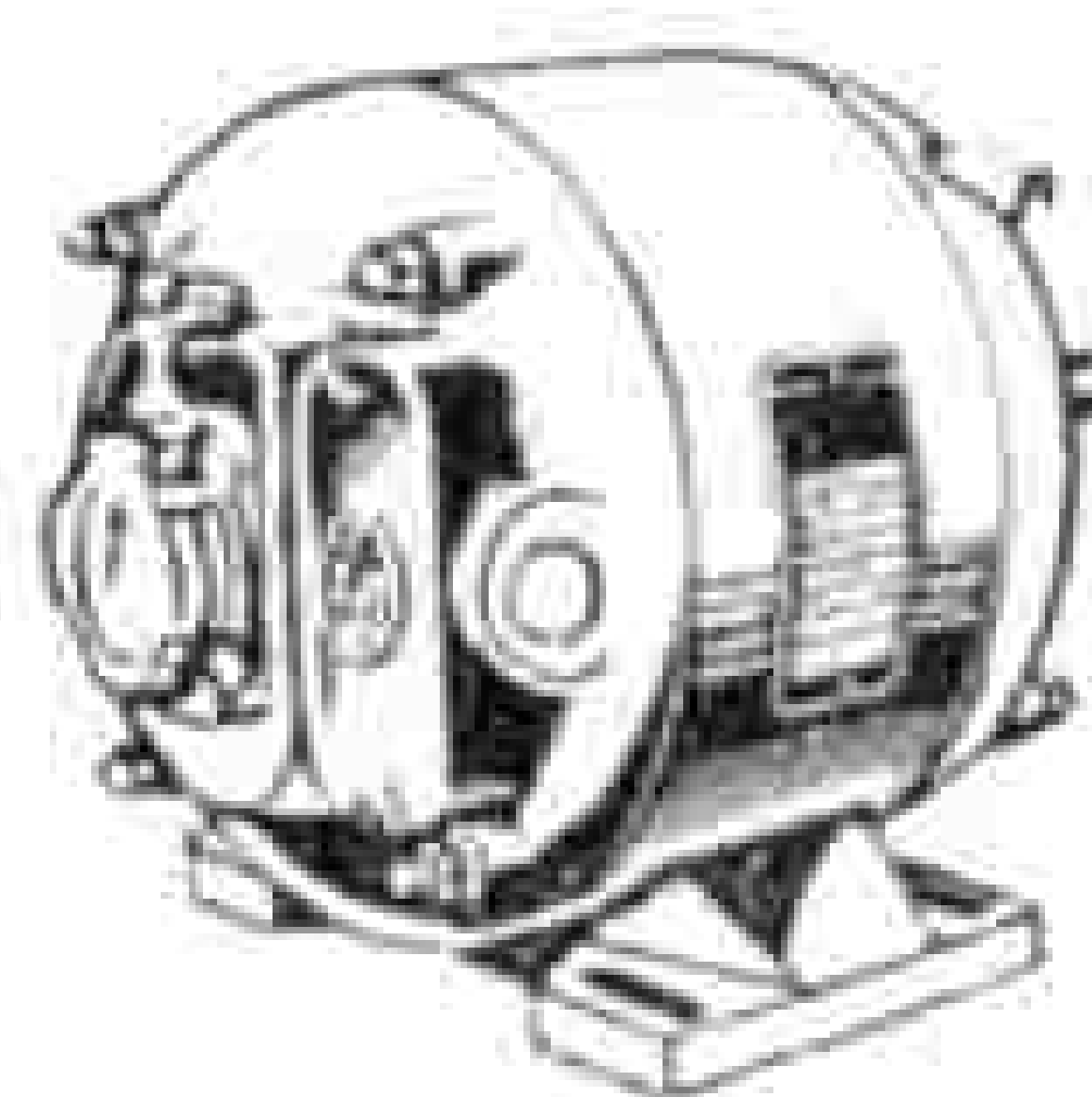
**FOR GARAGE OR
WORKSHOP**



**FRACTIONAL HORSEPOWER
MOTORS**

A.C. OR D.C.

BTH motors and associated control gear are second to none in quality and proved performance. Types and sizes are available to suit any application.



THE
BRITISH THOMSON-HOUSTON
 COMPANY LIMITED, RUGBY, ENGLAND

Member of the AEI group of companies

A 4568

For
Christmas
give the
Children

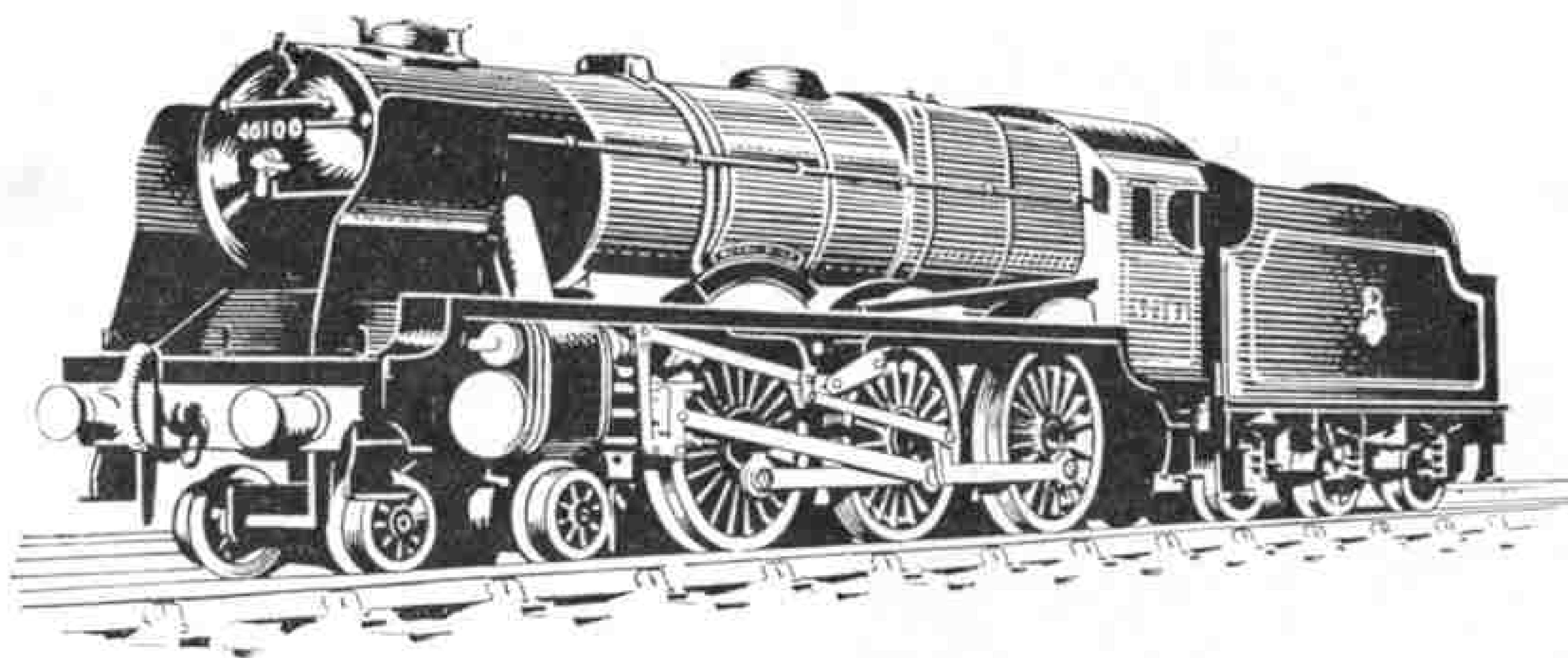


'Plasticine' REG'D.

You can't go wrong if you slip a packet or two of 'Plasticine' in the children's stockings. They'll be delighted with a gift that will bring them endless fun. Boys and girls of all ages can make any number of interesting models in this popular modelling material. It's clean, hygienic and long-lasting. Put 'Plasticine' on your Christmas shopping list.

From stores, stationers and toy shops everywhere. Be sure to specify 'Plasticine' and refuse substitutes.

HARBUTT'S PLASTICINE LTD.
 BATHAMPTON • BATH • SOMERSET



A powerful **GAUGE 'O'** *working model*
of the famous **L.M.S. ROYAL SCOT No. 46100**

CLOCKWORK OR ELECTRIC

The "Royal Scot" is still the world's most famous locomotive. Our NEW model of this handsome and powerful engine is rebuilt with tapered boiler and double chimney. It is finished in the standard British Green Livery, which enhances the appearance of this outstanding locomotive.

Note also the special type of nameplate. A unique feature of this new model is the Unit construction of mechanism and cylinders which facilitates the removal of the motor unit for owner-servicing.

★ For prices write for our Gauge 'O' Catalogue G.O./17, which also gives details of the whole range of locomotives and components. Price 1/6.

SCENIC BACKGROUNDS

for Gauge 0 and Gauge 00
MODEL RAILWAYS

BEAUTIFULLY PRINTED
 IN FULL COLOURS

* Four interchangeable sheets, each different in type but all matching so that they may be set up in any order.

* Size of each sheet 2 ft. 11 in. x 9 in. Making approximately 12 feet of realistic scenery.

Price the set of 4 sheets, 12/6, including Purchase Tax.
 Postage 6d. extra.

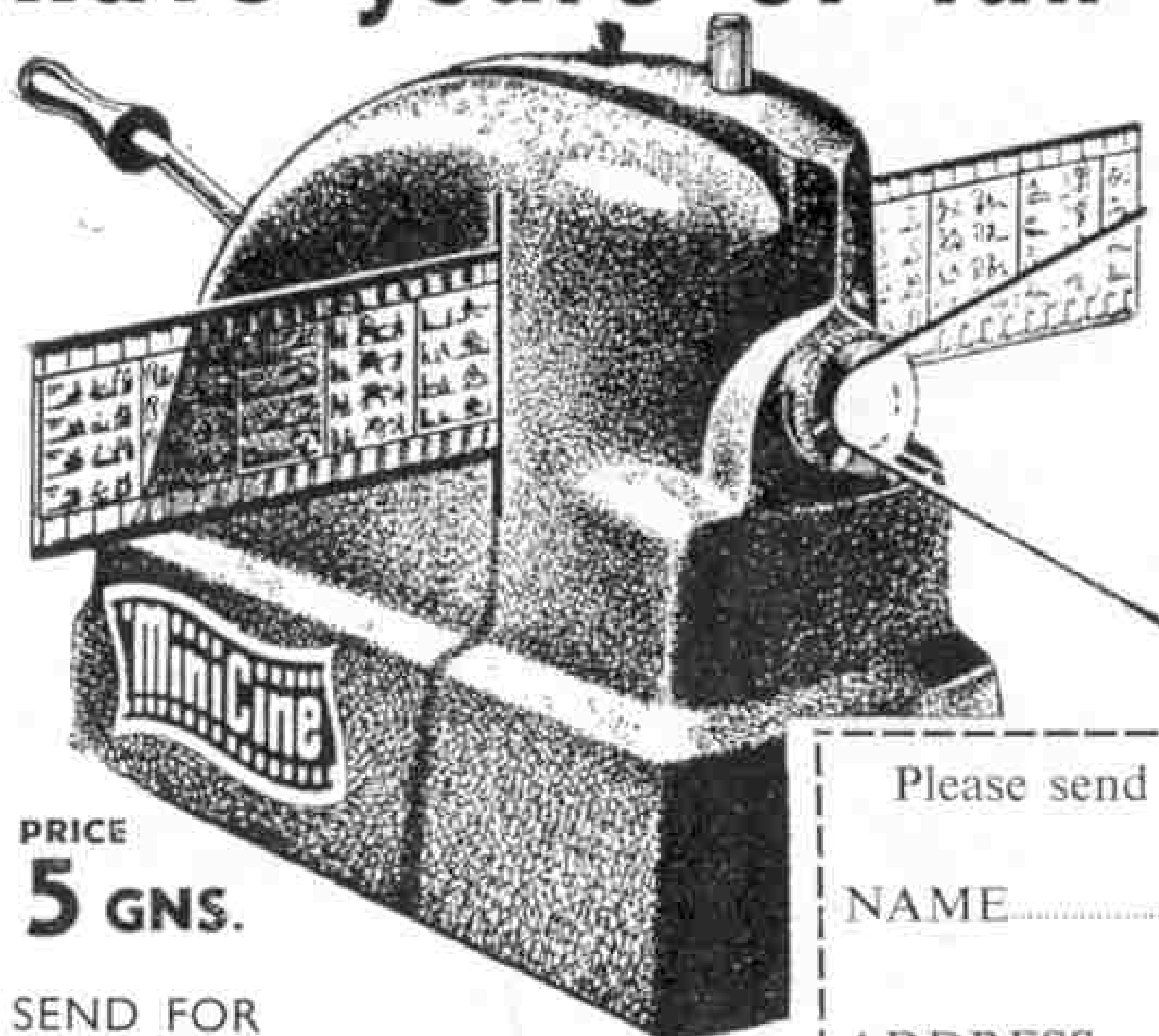
By post from: Dept. S.B.17.

BASSETT-LOWKE LTD.

Head Office & Works: NORTHAMPTON

LONDON: High Holborn, W.C.1. MANCHESTER: 28 Corporation Street

Have years of fun with MiniCine!



PRICE
5 GNS.

SEND FOR
**FREE ILLUSTRATED
BROCHURE GIVING
FULL DETAILS**

Write your name and address clearly in the coupon, put in unsealed envelope (flap tucked in) fix 1½d. stamp and post today.

A Super Xmas Present!

Entertain your family and friends with exciting movie shows!

Enid Blyton and Walt Disney Movie Films, Natural History, Science, Sport, Bible Stories, etc.

200 Colour Films to choose from.

Please send me illustrated MiniCine brochure.

NAME.....

ADDRESS.....

M
MARTIN LUCAS LTD., HOLLINWOOD, Lancs.



RADIO, TELEVISION AND ELECTRONICS

LEARN THE PRACTICAL WAY

Instructions and Equipment

Here at last is the only *real* way of making home study really successful. Specially prepared equipment, which remains your property, is supplied, combining theory and practice in the correct educational sequence. Whether your need be for career, hobby or general interest, here is the most efficient method for acquiring knowledge.



POST THIS COUPON TODAY

Please send me your FREE book of Practical Courses

To: E.M.I. INSTITUTES, Dept. 197X,
43 Grove Park Road, Chiswick, W.4.

NAME

ADDRESS

**Practical
Courses in
many other
subjects
including:**

Draughtsmanship,
Carpentry,
Chemistry,
Photography,
Commercial Art.

EMI INSTITUTES

the only Postal College
which is part of a world-wide
Industrial Organisation.



STAMPEDE - A COWBOY'S BIGGEST FEAR! FRIGHTENED CATTLE RUN WILD - A DANGER TO THEMSELVES AND ANYONE WHO GETS IN THE WAY!



EVERY HERD HAS A BOSS. IF PUNCHO CAN TURN THIS ANGRY STEER, THE REST WILL FOLLOW.



56/- EACH



Shaft drive. Universal coupling. Ackermann-type steering. Floating rear bogie. Rubber tyres. Powerful Spring Drive. Comes ready assembled.

SCALE

MODEL LORRY

You can Dismantle it—Just like the real thing!

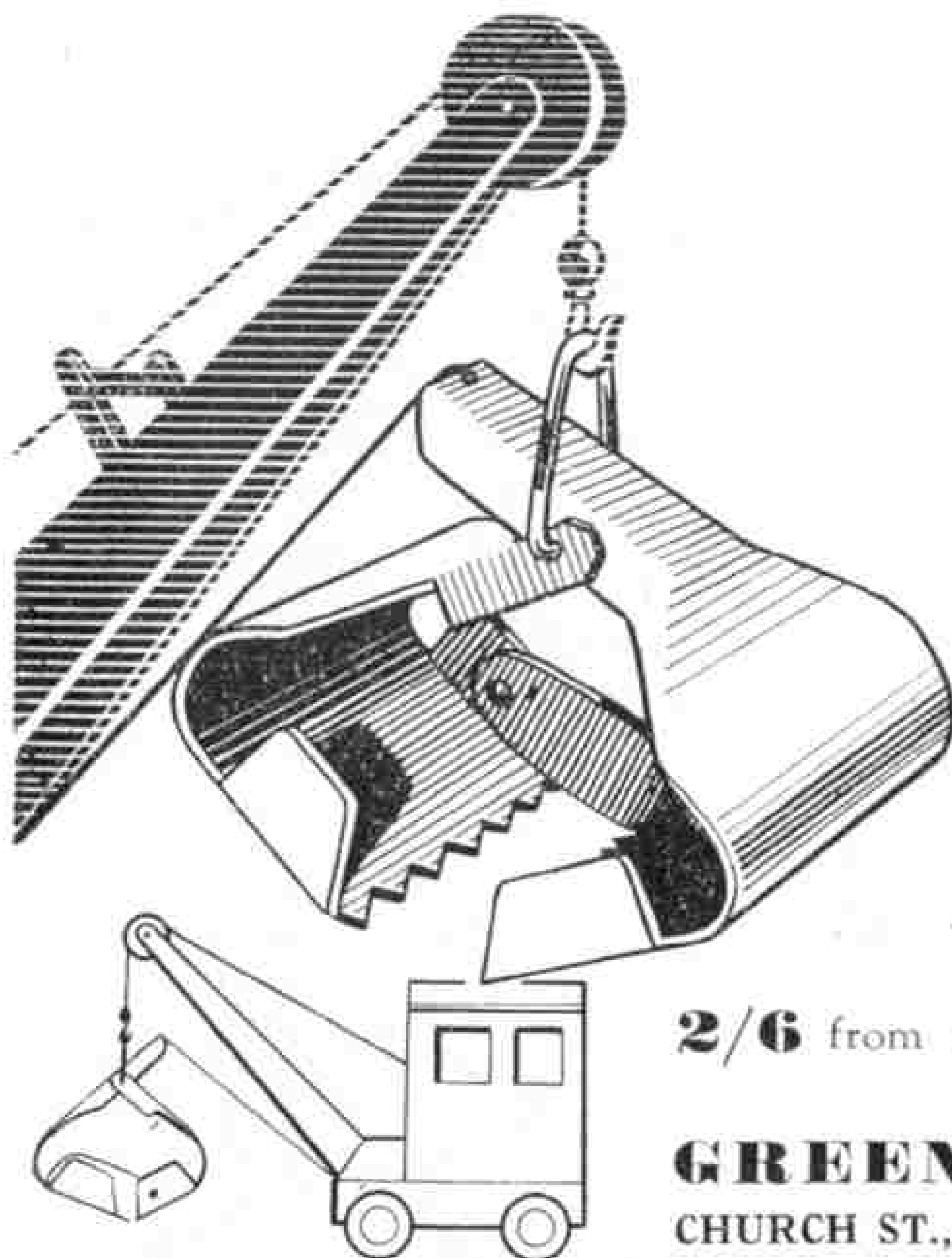
Made up from 65 standardised parts—all replaceable.

DYSON 8-TON TRAILER

Attaches to rear of the FODEN LORRY. And dismantles in the same manner.

17'6
EACH

★ ASK YOUR DEALER TO SHOW YOU THESE WONDERFUL MODELS!
ABBAY-CORINTHIAN GAMES COMPANY • LONDON S.W.1



Green Monk GRAB

Will fix on to any type of crane, and has a Patented Opening and Closing device which is controlled by a very simple movement.

Will pick up almost anything including marbles, and gives endless pleasure and entertainment.

Finished in Gold Paint, and made from strong sheet steel, it will last a lifetime. Patent applied for.

2/6 from all good toy shops, or **3/-** including postage and packing from:

GREEN MONK PRODUCTS
CHURCH ST., MONK BRETTON, BARNSELY, YORKS.

ALL YOU WANT TO KNOW about THE WORLD'S AIRWAYS AND HOW THEY WORK

320
FASCINATING
PAGES
OVER
200
PHOTOS
& DIAGRAMS

This BIG fully illustrated book tells, in clear words and thrilling pictures, the most exciting story of our time—man's mastery of the air, the epic of world aviation! Written by today's ace pilots and aviation experts. Takes you to far-off lands in luxury airliners, vividly describing everything of interest—the actual flights, the work of plane crews, principal airports and how they function, marvels that make flying easier and safer, how an airline is operated. Describes how and why a plane flies, every step in designing and making aircraft, latest types of planes, etc. 320 fact-filled pages. Over 200 photos, diagrams and aircraft recognition charts. **MAKE SURE OF YOURS NOW!** One Edition, leathercloth, 8/6. Post free.



THE COMPLETE HOW AND WHY of WORLD AIR TRAVEL PLANES and FLYING

How flights are planned and controlled. The birth of an airliner. Round the World non-stop! Airfields in the snow. Armchair comfort six miles up. Secrets of night navigation. Mystery of the sound barrier. Rocket propulsion. Super jets. "Flying Wings." New helicopters. Cockpit controls explained. "Almost human" radar aids. Aircraft of the future, etc.

SEND NO MONEY NOW!

Reserve in my name "The World's Airways and How They Work" and send Privilege Invoice with 100% Guarantee—Full Satisfaction or No Charge.

USE BLOCK LETTERS

NAME

Full Postal
ADDRESS

Firmly affix
1d. stamp
in margin

X.V.H./Dec./53

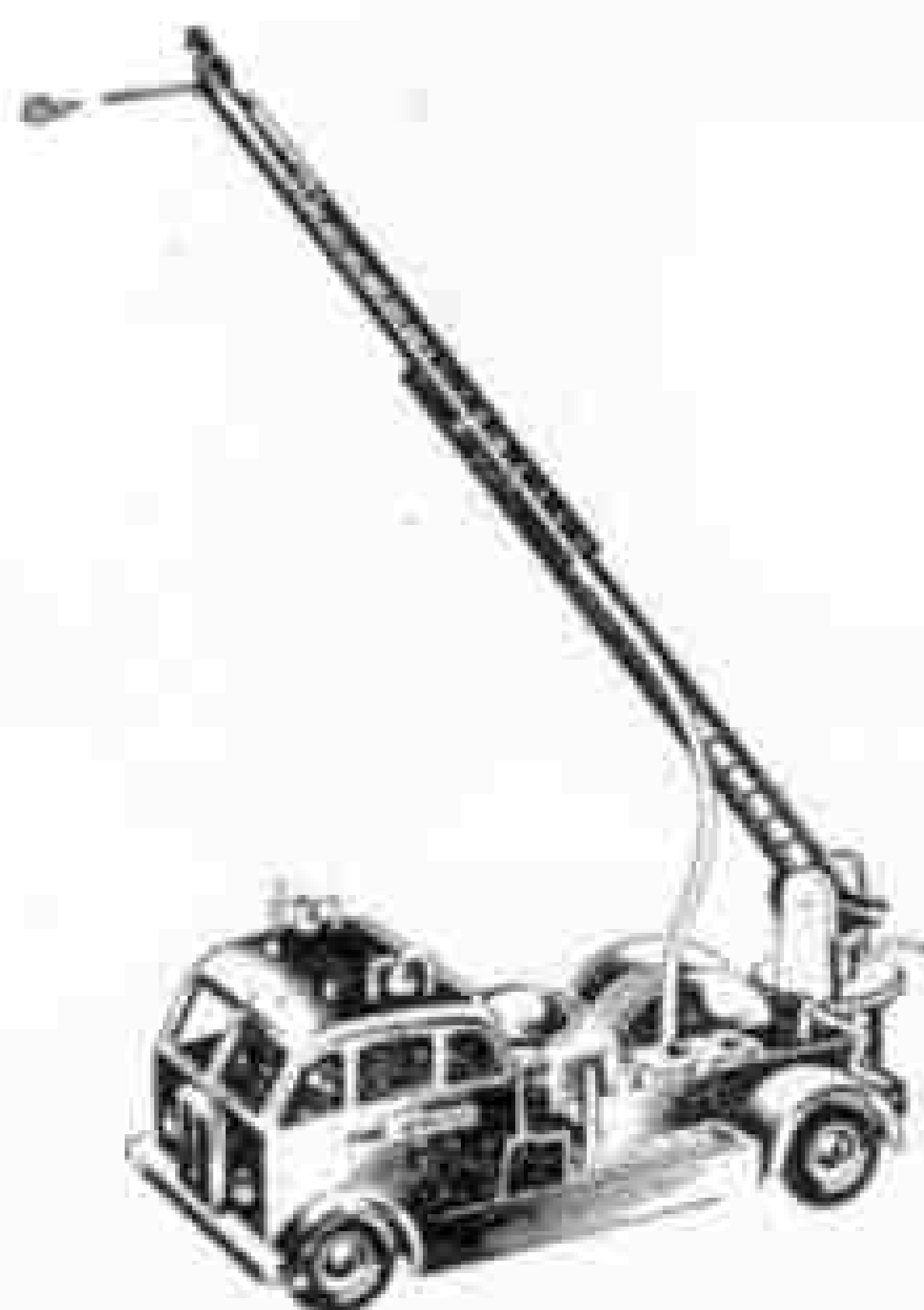
DO THIS NOW!

Post form in 1d. stamped, unsealed envelope to Dept. X.V.H., People's Home Library, 5, Dryden Street, London, W.C.2. Offer applies U.K., Eire only, closes December 31.

BY POST ONLY

Tri-ang toys for us!

Regd Trade Mark



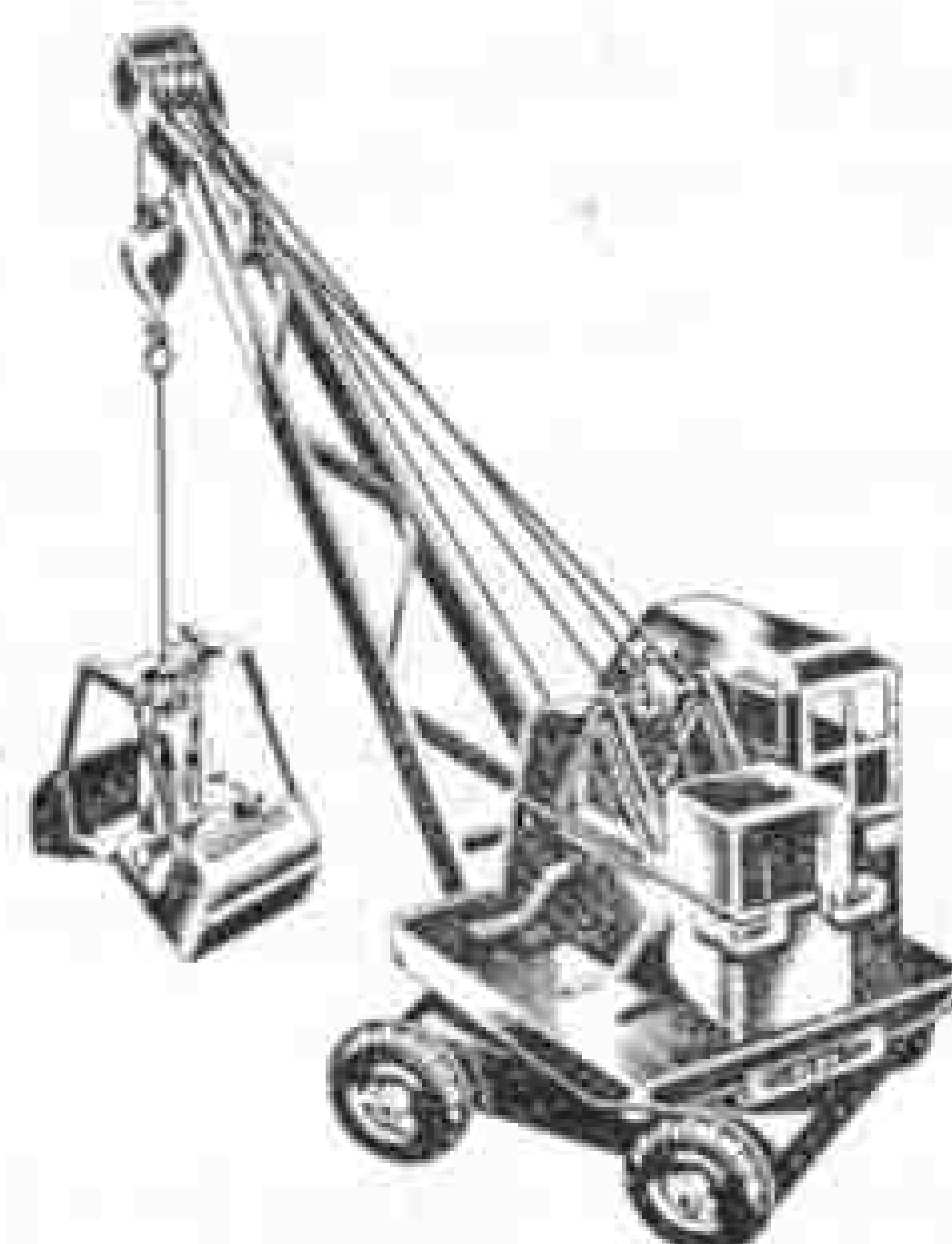
**Minic "Push and Go"
No. 2 Firefighter**

Actually squirts water.
Length 8½ in. Price 28/3d.



Fairycycle "O" with stabiliser

The ideal "first" cycle for 4-5
year olds. £6 2s. 11d. 5 other
models from £5 9s. 10d. to
£8 7s. 5d.



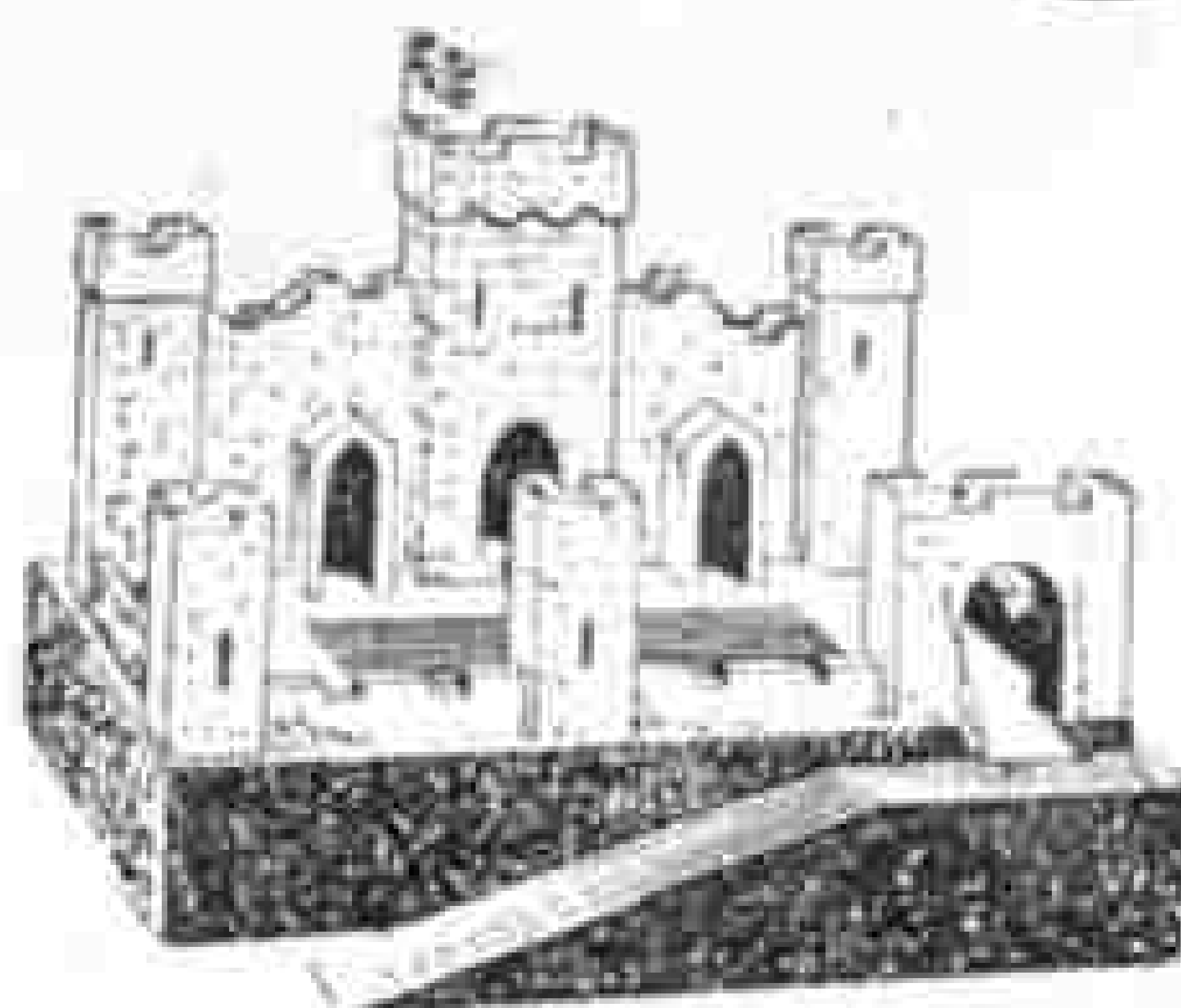
**Jones KL44 Crane with
Grab**

Height of cabin 7½ in. 31/-.
6 other cranes from 9/- to
37/6d.



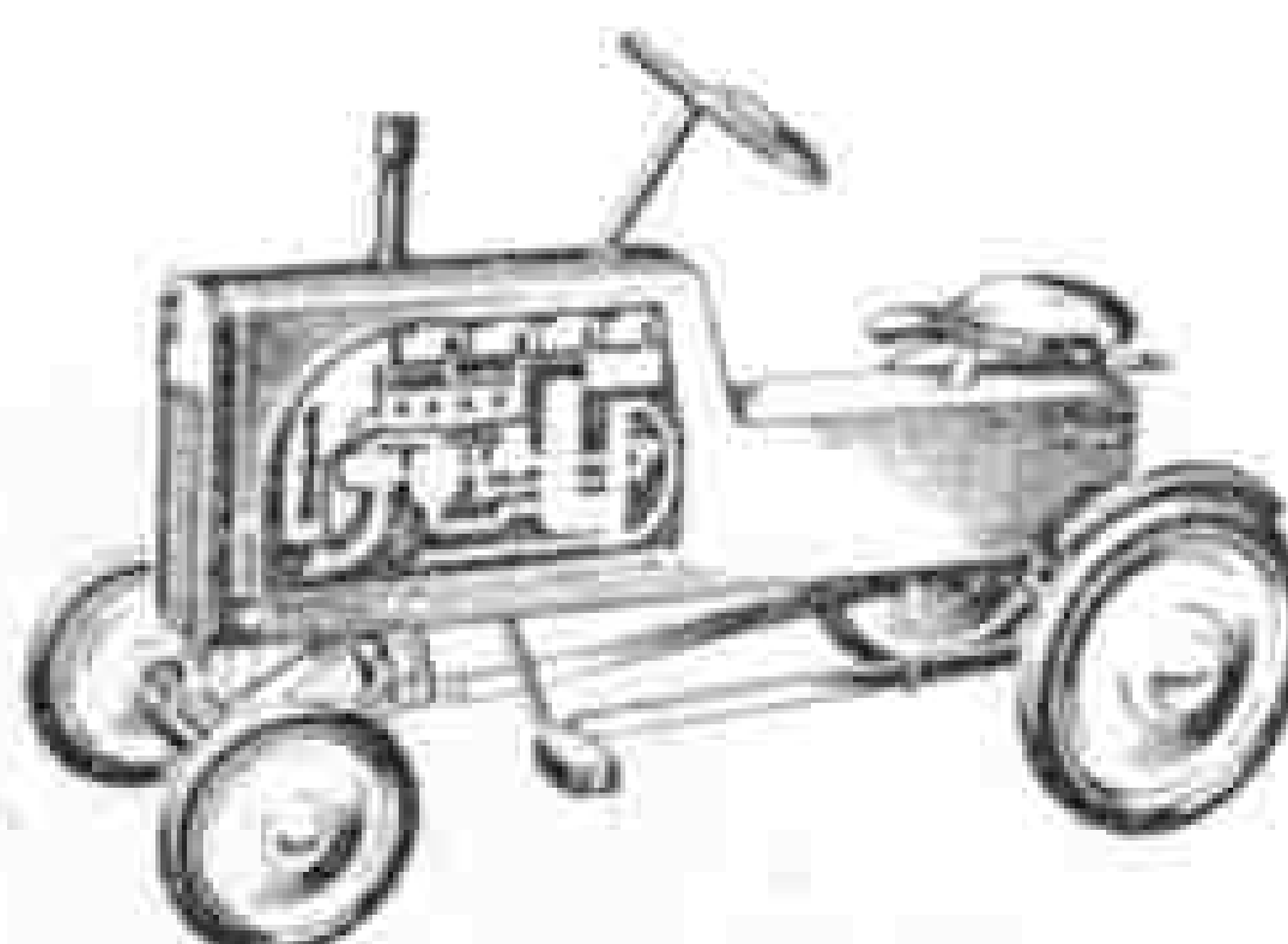
Tricycle (Model 3/16B)

Latest twin-tube frame with
boot. £8 9s. 5d. 36 other
models at popular prices.



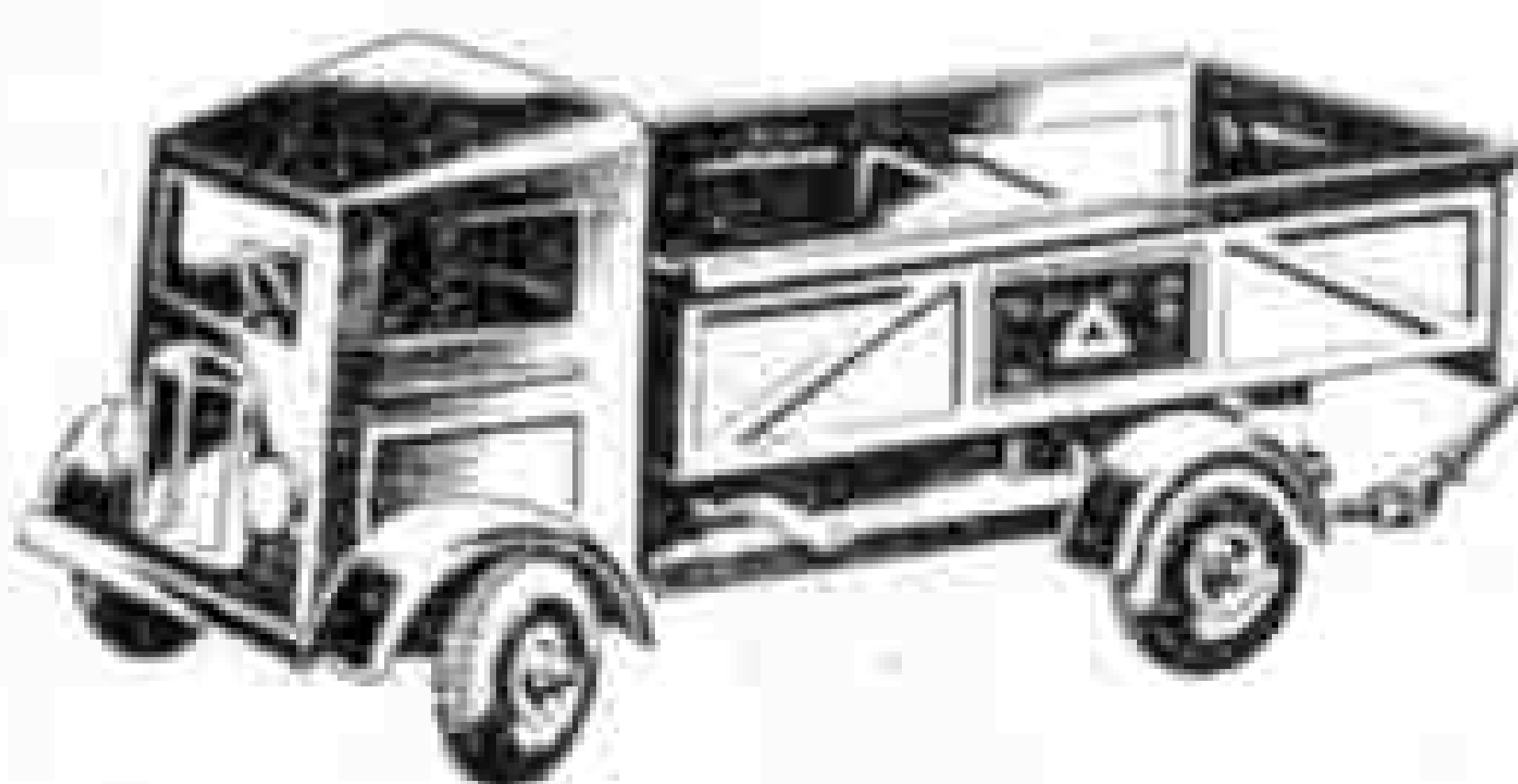
Fort "Y"

Length 14½ in. 18/9d. 9
other models from 11/3d.
to 89/3d.



"Minor" Pedal Tractor

for ages 2½ to 5. Length 34 in.
78/9d. "Major" model
£5 19s. 6d.



**"Remote Control"
Builder's Lorry**

(No. 201s). Open tip body.
28/3d. Other similar models.



**"Jupiter"
Ball-bearing Pedal MotorCar**

Price £7 14s. 26 other
models from 39/6d. upwards.



The world's largest range of toys

THE **GRAIN** MODEL SEWING MACHINE

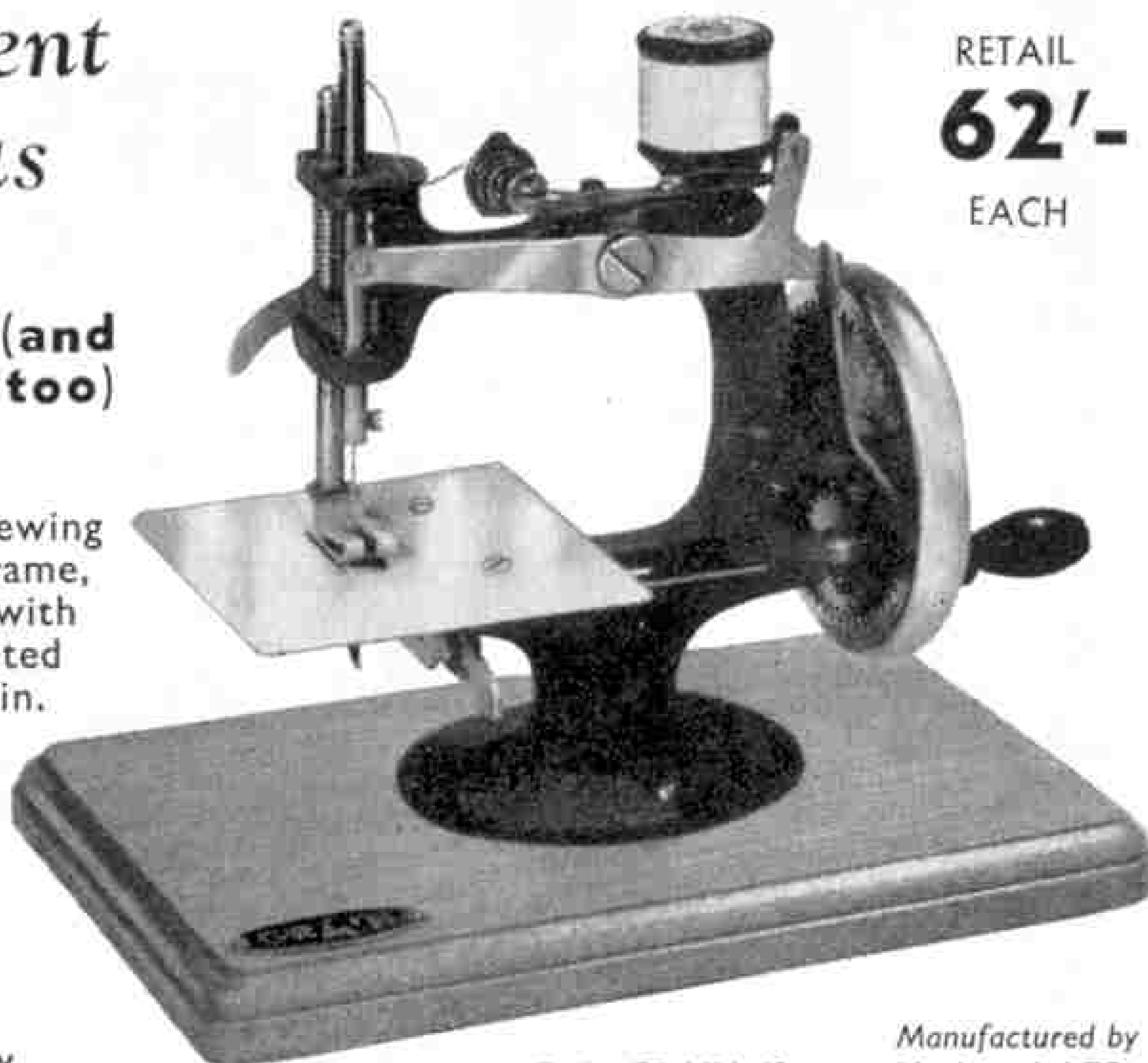
*Just the Present
for Christmas*

**It really does work (and
mother can use it too)**

Specially designed and built by sewing machine specialists. Solid iron frame, stove enamelled in green. Fitted with standard domestic needle. Mounted on polished wood base $9\frac{3}{4} \times 6\frac{3}{4}$ in. and packed in attractive carton.

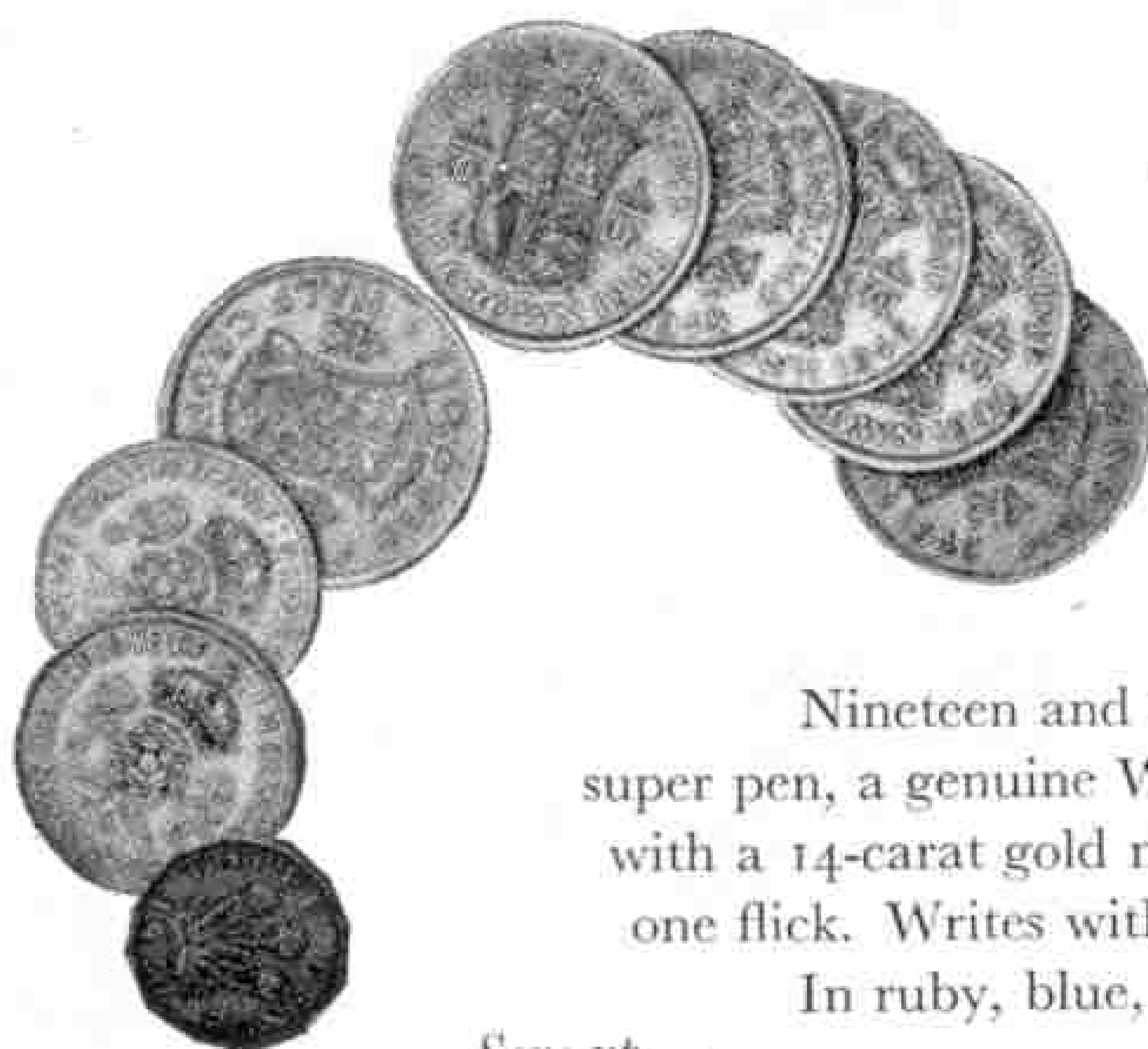
**12 MONTHS' GUARANTEE
WITH EVERY MACHINE**

See it working at your local toy dealer.



RETAIL
62/-
EACH

Manufactured by
E. L. GRAIN (Sewing Machines) LTD.
NOTTINGHAM



Nineteen and threepence for a
super pen, a genuine Waterman's 501
with a 14-carat gold nib. Fills with
one flick. Writes with *instant flow*.
In ruby, blue, grey or jet.

*Save up—
or would they give you it for Christmas?*

Waterman's 501



19/3





BUILD YOUR OWN MODEL FARM WITH THE NEW BRICKPLAYER FARM KIT

The Brickplayer Farm Kit contains all the ground plans, windows, doors, roofs, etc., required for the seven buildings illustrated, a green cloth base, 5 ft. x 3 ft., and sufficient bricks to complete the largest model. All 13 doors open and close. Price .. 56/6

The "2,000 bricks pack" contains 2,000 bricks of various shapes and sizes. Price .. 53/6

Used with the Brickplayer Farm Kit it enables you to complete the farm without dismantling any model.

OTHER BRICKPLAYER KITS

KIT '3' Will build six architect designed scale models in succession.

Price .. 25/6

KIT '4' Will build twelve models.

Price .. 47/6

Accessory Outfit '3A' converts Kit '3' into Kit '4'.

Price .. 25/6



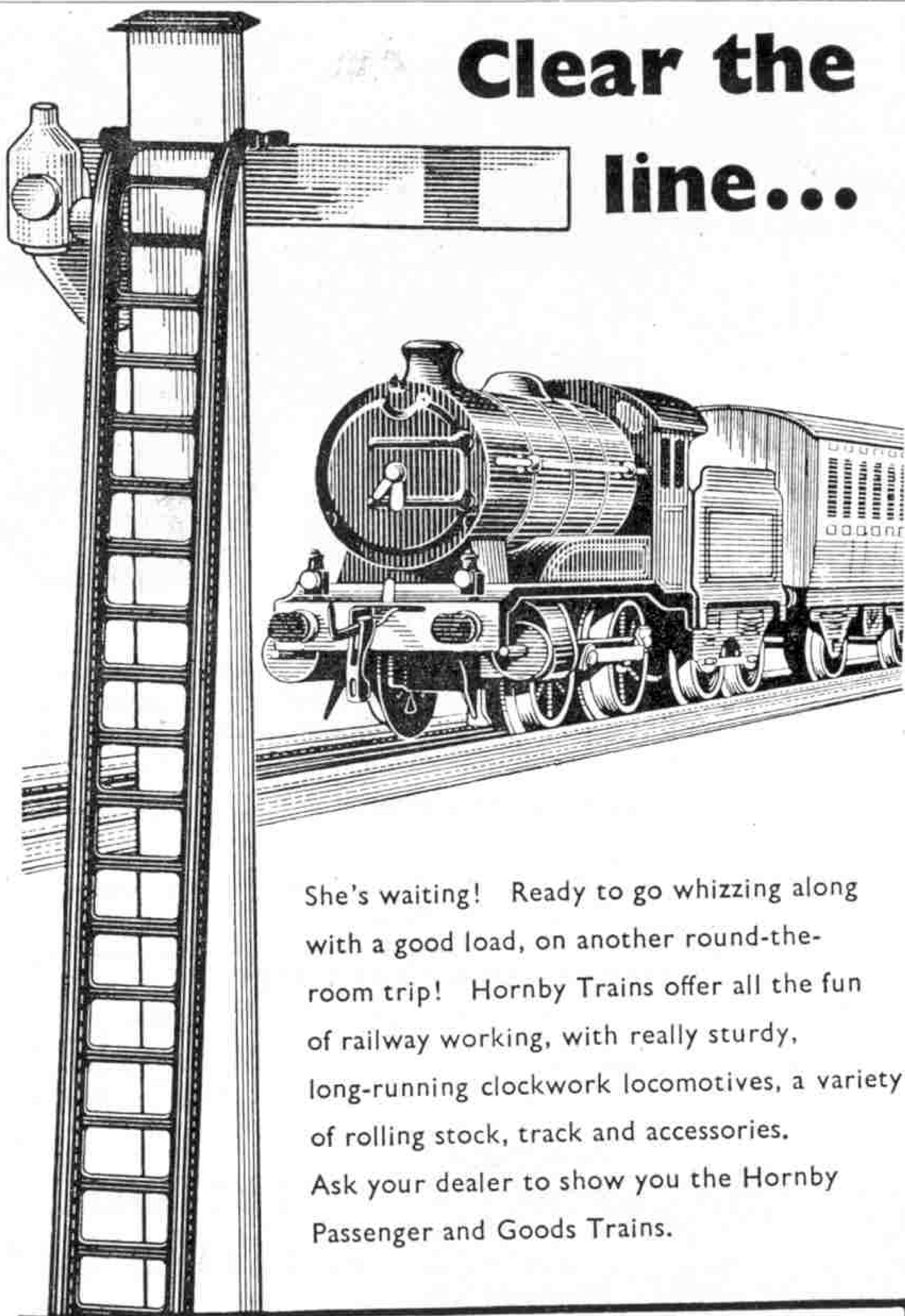
YOUR IDEAL CHRISTMAS GIFT

If your dealer cannot supply
write for address of nearest
stockist to

J. W. SPEAR & SONS LTD.

Dept. "M" • Enfield • Middlesex

Clear the line...



She's waiting! Ready to go whizzing along with a good load, on another round-the-room trip! Hornby Trains offer all the fun of railway working, with really sturdy, long-running clockwork locomotives, a variety of rolling stock, track and accessories. Ask your dealer to show you the Hornby Passenger and Goods Trains.

HORNBY TRAINS

Made and Guaranteed by MECCANO LTD.

MECCANO

MAGAZINE

Editorial Office:
Binns Road
Liverpool 13
England

Vol. XXXVIII
No. 12
December 1953

Mrs. Frank Hornby

Many of you must have seen with regret the announcement in the press of the death of Mrs. Frank Hornby. This

sad event breaks another link with the earliest days of the romance of Meccano and Hornby trains. When the late Mr. Frank Hornby was working out his plans for standard parts with which to build a variety of models, he received the greatest encouragement and support from Mrs. Hornby, who indeed was as interested in the scheme as Mr. Hornby himself and his two sons, Mr. Roland G. Hornby, now Chairman of Meccano Ltd., and the late Mr. Douglas Hornby. These four in fact were the earliest Meccano enthusiasts, the first of the great community that grew in numbers

with such amazing rapidity when Meccano was perfected and made available to all.

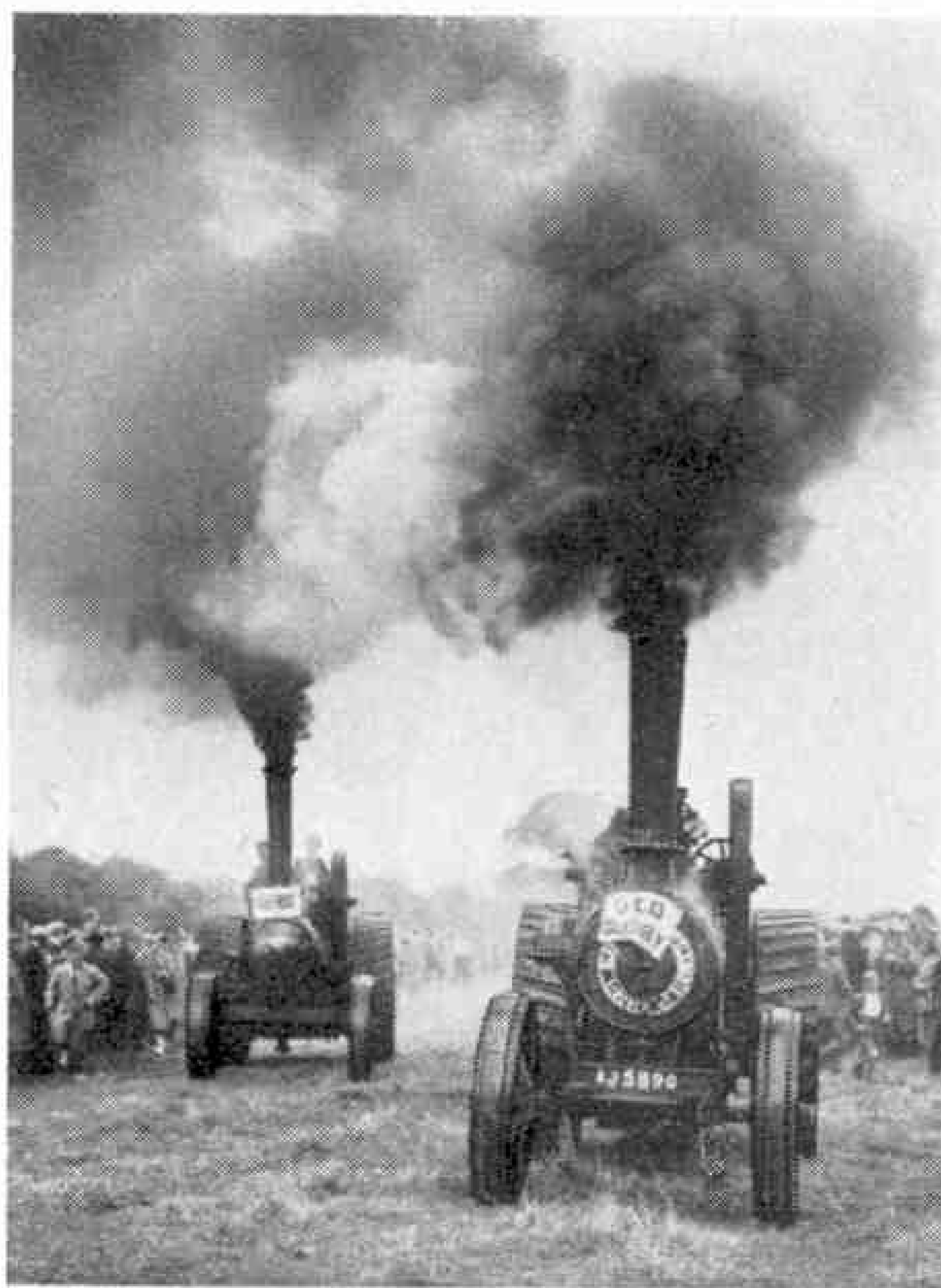
I need not tell you how the firm that Mr. Frank Hornby founded became ever larger and more important until it achieved world wide fame, or how first Hornby Trains, then Dinky Toys and eventually the Hornby-Dublo system were added to its range of products. Mrs. Hornby played

her part in all these developments, always showing the greatest interest in all that was planned and giving encouragement

in every effort to make the products of the firm better in design and in quality.

She also took an active personal interest in the actual work of Meccano Ltd., and often commented on the remarkable changes she had seen, changes that had brought the firm from a single room in which the first Meccano Outfits were packed to the immense present day works in Binns Road and at Speke. At the time of her death Mrs. Hornby was in her 93rd year, but she retained her deep interest in everything associated with Meccano Ltd. almost to the end.

Mrs. Hornby was well-known in Liverpool through her many activities. She was closely connected with the development of art, music and drama in the city, and for ten years was a member of the Court of Liverpool University.



Old Glory winning the first Traction Engine Derby to be held in the North of England. It took place at Kirbymoorside, Yorkshire, last Summer.

The Editor

My Christmas in Peking

By Bernard Llewellyn

SPENDING Christmas in Peking was for me the fulfilment of an ambition I had been nursing for years. I had heard so much about the city from my Chinese friends, who spoke of it as the most beautiful place in all the world, and when I had the chance to go there during my stay in China, about which I have told readers of the *M.M.* in previous articles, there was no stopping me.

It was a long journey up from Canton in South China, where I was living and working at the time.

But when, after a long, cold trip in the plane, I entered one of Peking's massive city gates in the back of a lorry, I knew I should have no regrets. The high, thick walls stretched away on either side—walls that in former centuries had preserved the secrets of the Chinese court from prying eyes and which still stood, as proudly as any English castle, to remind men of the past.

I got to Peking four days before Christmas, and while I was getting my bearings I took a room in the huge Wagons-Lits tourist hotel, where the centrally-heated rooms contrasted with the keen air of the streets and the promise of snow that hung about the sky.

When I got up the next morning, I had no doubt what I should do before anything else. The Temple of Heaven was at the top of my list of *musts*. It was not surprising really that I felt this way. Since boyhood I had collected postage stamps, and one of the first I ever got was a commemorative of 1909 showing the temple rising from its marble terraces.

Outside the hotel was a row of waiting ricksha boys with their little carts. But I knew it would be warmer to walk, and

besides I wanted to take some photographs on the way.

So I walked south through the broad streets, leaving the inner walls and gates of the Forbidden City behind me. In Front Gate Street there were crowds of shoppers in their thick, padded winter gowns and fur-lined hats. They bargained with the traders over meat and vegetables and fruit, over lengths of cloth, over knick-knacks of every conceivable kind.

I turned off the street when I first saw

a roof of sky-blue tiles above the trees to my left, and at the end of a long path I came to the temple. It was even lovelier than I had imagined, and for a while I sat looking at its three tiled roofs and golden cap. Then I moved through the doorway to see the great lacquered columns of Oregon pine supporting the structure. These were imported from America after the original temple had been destroyed by lightning in 1889.

Due south of the temple, at the end of a white stone path, was the still more celebrated

Altar of Heaven, where, for centuries, the emperors of China used to offer sacrifices to Heaven. These ceremonies stopped with the creation of the Chinese Republic in 1911, and for the first time tourists were then free to climb on to the white marble circle where the old emperors had stood. It used to be thought that this altar was the centre of the universe. To the Chinese it was inconceivable that this was not the most important spot in the whole world.

In the old days even geographers had mistaken notions about Peking, though some of their ideas were understandable, since for centuries it was virtually unknown, like Lhasa, the capital of Tibet. Its walls were high and its gates barred. Because



The Temple of Heaven in Peking. Our illustrations are from photographs by the author.



One of the corner towers of the Forbidden City, seen across the frozen waters of the moat.

it was built to such majestic proportions, some suspected it to be the largest city in the world.

I have been speaking of Peking as a city, but really it is a combination of four main cities that have been built through the centuries. There is the Northern or Tatar City, with its nine gates, which Kublai Khan had built in the thirteenth century. In the middle of this is the Imperial City, where court officials formerly resided. And within the Imperial City, saturated in mystery and intrigue, is the walled heart of Peking—the Forbidden City itself. Then to the south of all these is the rectangular Chinese City—a sixteenth century addition to the city Kublai Khan had made his capital.

But that's enough of history. It helps to explain, however, the walls within walls that captured my attention on that first day.

I was not long in finding some old friends in Peking, and moved from my hotel to join them in a Chinese house off one of those dusty alleys for which Peking is renowned. It was not so warm as the hotel, but infinitely more homely.

I continued my explorations, sometimes alone, sometimes with my friends. Peking was like nothing so much as a huge curiosity shop, full of temples and other buildings that you can only begin to appreciate when you have soaked yourself in Chinese history. Nor are the sights limited to the city itself; there are lovely spots around the city, like the Summer Palace on the edge of the Western Hills.

I visited the Summer Palace on Christmas Day during a gentle fall of snow, when the camels we had met on the road seemed glad of their shaggy coats. The palace had been

built by the autocratic Tzu Hsi out of funds intended to strengthen the Chinese fleet. One of its curiosities was the Marble Boat on the brink of the lake. This was a two-storied boat-like structure used as a restaurant in summer, and now deserted and looking rather sorry for itself. There was too the Hunchback Bridge—a single arch 30 ft. high—below which the imperial barges once sailed without lowering their masts. It still looked exquisite.

In Peking itself, one of my favourite views was that from Coal Hill over the Forbidden City, surrounded by its frozen moat. The roofs spread out like a great army as far as the eye could see. Inside the Forbidden City, pottering about the halls and courtyards where emperors and empresses had once lived, shut away from



This lioness in yellow bronze squats in the Forbidden City, holding her cub under her paw.

the people they ruled, I had felt a little gloomy myself, even though it was a real treasurehouse of beautiful things—from jade and porcelain bowls to scroll paintings and ivory carvings second to none in the world.

But since it was Christmas, I spent a good deal of time on the frozen North Lake which was gay with skaters. In summertime



Handsome memorial arches decorating a roadway in Peking.

the court used to go boating here, and in winter carnivals were held on the ice.

When I tired of the lake, I went shopping with my friends in fascinating streets where craftsmanship flourished as it had done for a thousand years. There were Bronze Street and Jade Street, Embroidery Street and the Street of Lanterns, where you could buy shades and Chinese paper lanterns of all shapes and sizes—the originals of those that some English people still hang up at Christmastide.

Mine was a Christmas without turkey, but there was something equally good—the famed Peking duck, browned and crisp, and served with wafer-like pancakes. And yet I can recall a more delightful meal still, because it was so different from what I expected.

A friend who knew Peking well took me one night to a little alley near the North Lake, and stopped outside a small, dirty Mongolian restaurant, the doorway of which was thick with smoke, through which I could see people moving in the room beyond. It looked the last place on earth where you could get a good meal.

Barbecued mutton was the speciality of this place. It didn't sound very exciting—even in Chinese; but it was a favourite with the Mohammedans.

In the middle of the room was a big charcoal stove with a kind of "hotplate" of baked clay above it. We each bought the meat and vegetables we wanted from the kitchen just inside the door, and cooked them ourselves on the sizzling top of the stove. When the food was done to our satisfaction, we picked up morsels with our chopsticks and inserted them into flat,

thin layers of pancake that had been prepared in readiness. I don't think I ever enjoyed a meal more than I did in that smoky little room tucked away among the back alleys of Peking!

Many of my most pleasant moments in Peking were spent away from the sights—in places like the bazaar, where you could buy anything from phoney antiques to rare silver dollars that had long since been replaced by a paper currency.

I left Peking reluctantly by plane on the last day of the year. As we took off through the keen, cold air, the pattern of the city was clear and sharp. I could see the cities, one within the other, each protected by miles of unbreached walls faced with a brickwork that time had made as durable as stone. I saw again the shining roofs of the Temple of Heaven that I had visited on that first morning, and the lovely memorial arches that soared above the broad expanse of the streets. I saw the moving dots of the skaters on the ice of the North Lake. Viewed from the plane the city presented a fascinating panorama.

I remembered someone once said the history of Peking is the history of China. Two thousand years B.C. wild animals had ravaged this countryside; and a town stood here as long ago as the siege of Troy. That town had been destroyed like others after it; but the builders had been busy in the ruins and, during the reign of Kublai Khan, had finally produced the city pattern I saw spread out beneath me, glinting and sparkling in the sunshine.

Looking back, as I do today, on many Christmases spent in different places, I think the one I spent in Peking was perhaps the most memorable of them all.

The True Story of Kitty Hawk

By John W. R. Taylor

FIFTY years ago this month, on 17th December, 1903, Orville Wright lifted a frail stick-and-string biplane clear of its launching rail at Kitty Hawk, North Carolina, at the start of the first sustained and controlled flight by a powered aeroplane.

It was not much of a flight by modern standards. The *Wright Flyer* remained airborne only 12 seconds and covered a distance less than the wing span of a modern air liner. Yet it ranks as the greatest flight in aviation history.

Nor was the Wright biplane a very good design. By 1908, Orville and his brother Wilbur were able to make flights of more

designs of Glenn Curtiss and Louis Bleriot. And the fact that it had to be launched from a rail meant that it could not land away from its home airfield and take off again, as could other designs, with wheeled undercarriages.

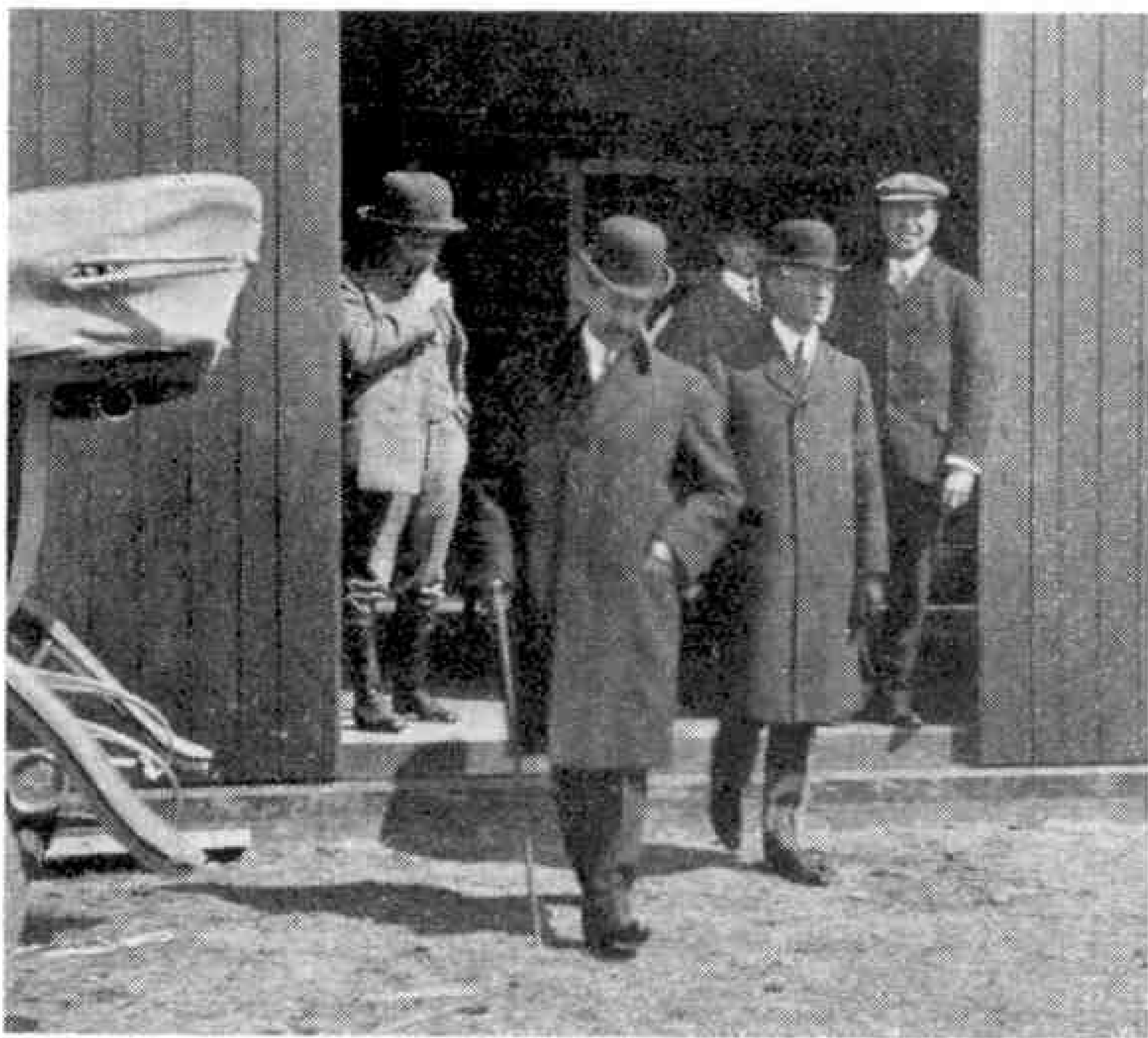
Despite which, the Wrights deserve the tribute that is being paid to them all over the world this month. Their achievement was not in producing a useful aeroplane so much as proving that powered flight was possible and so acting as an inspiration to other men, who, in the next half century, developed aeroplanes from frail contraptions of wood and canvas to sleek masterpieces in metal able to hurtle through the sky faster even than the speed of sound.

To find out how and why the Wrights were able to exert such an influence on the story of flight, we must go back to the 19th century. In France in the 1890s, Clement Ader was making brief hops in his batlike monoplane *Eole*. In Britain, Sir Hiram Maxim "flew" many feet in a gigantic steam-powered biplane with a wing span greater than a Lancaster bomber and three times its wing area, before crashing. But they did not fly in the true sense of the word, because their hops were uncontrolled.

The Wrights knew all about these experiments in Europe; and the more successful gliding flights of the great Austrian pioneer, Lilienthal, and his British and American disciples—Percy Pilcher and Octave Chanute. Lilienthal had been killed, after making hundreds

of flights in his beautiful, bird-like gliders, and they knew why. He controlled the aircraft in flight by swaying his body from side-to-side, and the Wrights knew this was not good enough.

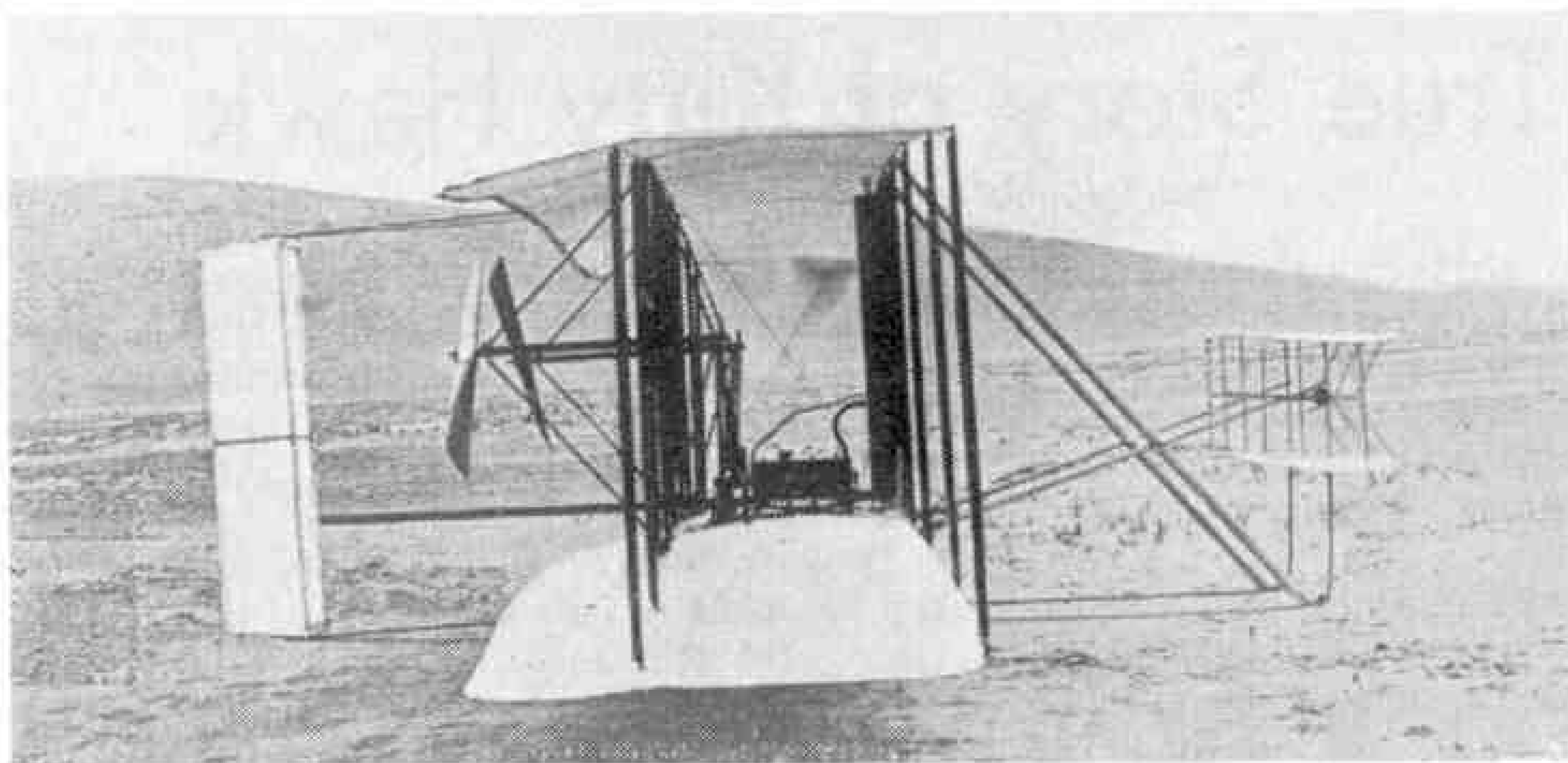
So, although their business as bicycle-makers left them little spare time, they resolved to try and build a practical aeroplane. From the first they had immense confidence in their ability to do this, and when they eventually made history at Kitty Hawk, they were neither



Orville and Wilbur Wright, accompanied by Horace Short, leaving Short Brothers' works, then at Leysdown, Isle of Sheppey, during a visit in 1909.

than an hour in planes similar to the 1903 *Flyer*, at a time when few other pilots, anywhere in the world could stagger perilously through the air for more than a few seconds or minutes. But almost every pilot who flew in Wright machines eventually killed himself, except Wilbur and Orville, and the type was extinct before the outbreak of the 1914-18 War.

Its unusual layout, with an elevator at the front and rudder at the rear, was not nearly so efficient as the tail-at-the-rear



wings were preferable to flapping or rotating wings, and worked out a method of control by warping the ends of the wings. Experiments with a kite showed that this method might work, and that an elevator would

surprised nor unduly excited, regarding it merely as a logical stage in their experiments—a stepping stone to greater things. Their biographer has called their success “The Miracle of Kitty Hawk.” Yet it would be difficult to imagine anything less miraculous. It was, in fact, the logical result of years of painstaking research and experiment, for, as one historian has summed it up, “The Wrights did not set out to build a contraption in the hope that it would fly. They found out what made flight possible and built a machine to fulfil those specifications.” Therein lies the key to their greatness.

Instead of rushing blindly into the race to get into the air, they started by reading every available report on earlier experiments and by writing to other pioneers, notably Chanute. They quickly decided that fixed

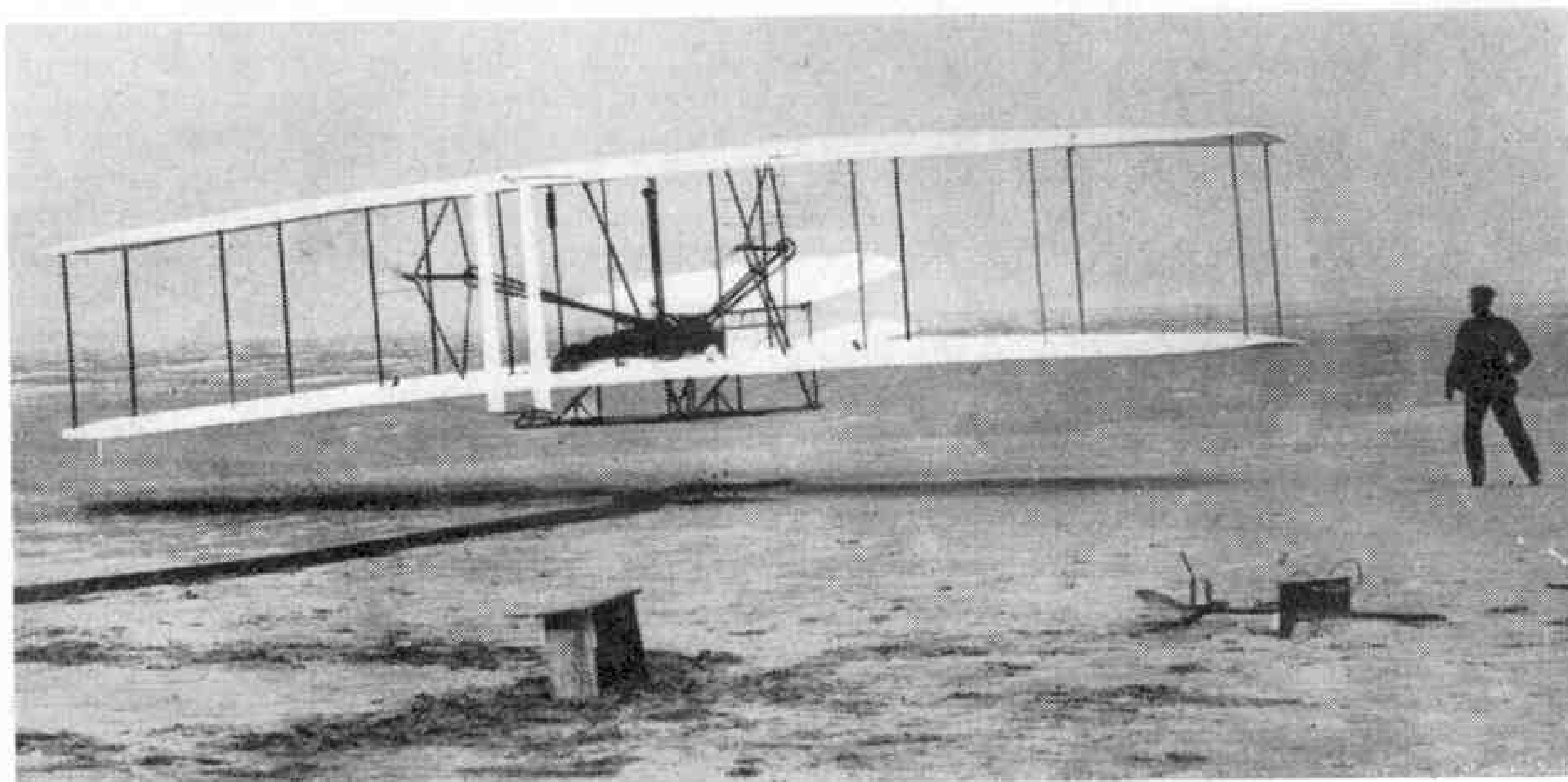
be needed for longitudinal control.

Next stage was to build a glider; and they did this in the Autumn of the year 1900. With characteristic caution, they made no attempt to fly it until they had found a place where conditions were exactly right—flat, open country, with

sandhills free from trees and shrubs, and the right sort of winds for gliding. Their choice was Kitty Hawk, a remote sandy beach, almost deserted except for a life-saving Station and weather bureau.

At first they flew the glider like a kite at the end of ropes, and were horrified to discover that its wings developed far less lift than they had expected. This severely restricted their later gliding flights, and in more than a dozen downhill glides they never rose more than two or three feet above the sand and

Above: The Wright biplane with which the first sustained and controlled flight of a powered aeroplane was made by Orville Wright at Kitty Hawk, U.S.A., on 17th December, 1903. **Below:** The historic flight in progress. Wilbur Wright is running beside the machine.



amassed a total flying time of only two minutes. But that was sufficient to prove the effectiveness of their control system.

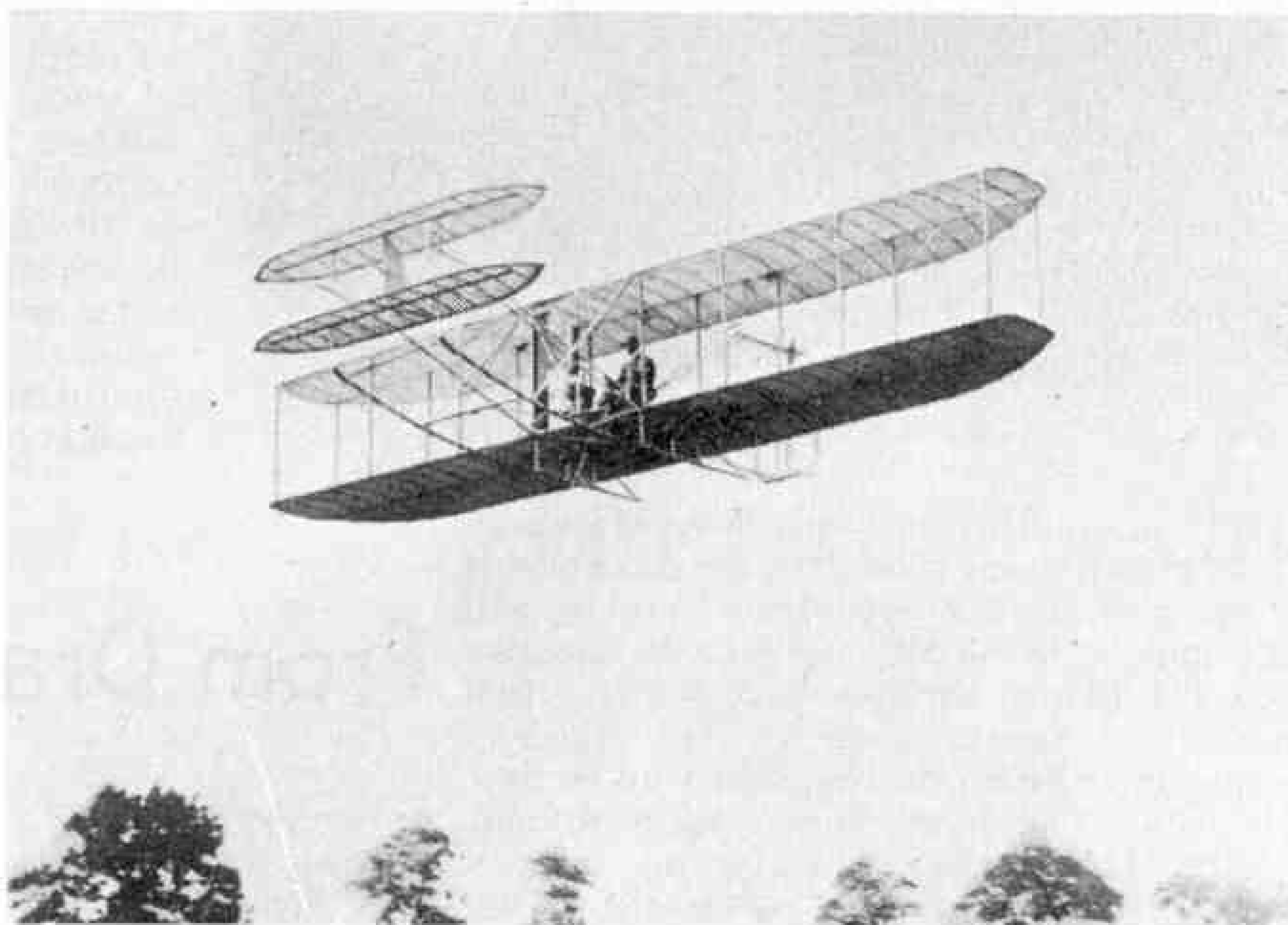
Another summer, another glider. This time a bigger one, which proved even more conclusively the uselessness of all available data on the amount of lift that could be obtained from a square foot of wing under specified conditions. So, they not only had to design an aeroplane, but start from scratch on the theory of aerofoils.

Abandoning the air, they fixed tiny wings to a rig on the front of a bicycle, to try and measure the lift produced as the wings moved through the air. It was unreliable, so they built a primitive wind tunnel from an old starch box, with an engine-driven fan at one end, and in the early winter of 1901 tested in it more than 200 types of wing surfaces, including monoplanes, biplanes, triplanes and tandem wings, set at angles to the airflow of from one degree to 45 degrees. In two months they produced results which, although nobody realised it, made aviation history. They knew with accuracy how to design a wing, how to increase lift on their gliders, the advantages and disadvantages of biplane wings and the fact that, at a certain undetermined point, a wing lost all its lift and stalled.

From these makeshift experiments came a glider which completed thousands of successful flights in the autumn of 1902, and formed the basis of the powered aeroplane of 1903. But the conversion to power was not easy. There was no suitable engine available; so the Wrights had to build their own. Its four liquid-cooled cylinders gave 12 h.p. at 1,025 r.p.m.; but it weighed 15 lb. per horse power and when the weight of the airframe and pilot was added to this, it was obvious that existing types of propeller would not be efficient enough to thrust the aircraft forward. So they designed their own propellers too, giving them an aerofoil section, because they realised that a propeller is really only

a wing which "lifts" itself forward instead of upwards, with the result that the aircraft to which it is attached moves forward!

The rest of the story is history. Taking it in turns, Orville and Wilbur made four flights on 17th December, 1903, the longest lasting 59 seconds; after which they packed up and went home. They did not consider themselves pilots. They were aircraft engineers, and when they flew they dressed immaculately in black suit, starched collar and bowler hat. They had never doubted that they would fly eventually; but it was not until 1906 that the people who mattered believed their claims, and it was not until 1909 that they received their first contract for an aeroplane for the U.S. Army. Never has there been a better example of the claim that "Flying's greatest hazard is the risk of starving



A Wright aeroplane in flight, 1908, with Wilbur Wright at the controls. By this time a seat was provided for the pilot.

to death."

Today the Wrights are dead. Their aeroplane is a museum piece. They have a memorial in stone at Kitty Hawk; but their real monument is in the giant wind tunnels and structure test rigs that have grown from their starch box tunnel of 1901, for it is only by ceaseless research and calculation on the ground that, like the Wrights, we have learned to conquer the air.

"In the words of Col. Charles Lindbergh: 'The Wright brothers balanced success with modesty, science with simplicity. They represented man in balance. And from that balance came wings to lift a world.' "



This gateway at the Bishop's Palace at Wells, Somerset, provides a notable example of a drawbridge of the later Middle Ages.

Possibly the first properly constructed movable bridge was the "turning bridge," a form reproduced in quite modern times. In this, the permanent bridge across the castle ditch stopped at the gatehouse towers, and a deep pit was formed between them. Across this pit, the bridge was pivoted see-saw fashion, so that it could be turned aside in time of danger.

The drawbridge proper, which arrived by the thirteenth century at least, was usually a single leaf bridge raised and lowered by chains and windlass, or by counterpoise weights within an adjoining fortification; the first of these is obviously the earlier method and was the most common during the Middle Ages. In the first instance, the chains or ropes were attached to the outer corners of the bridge and connected with a windlass in the chamber over the entrance passage; later the chains were

JUST as a "drawing-room" was originally a "withdrawing room," so the drawbridge was first of all a "withdraw" bridge, and not merely in name. Its remote ancestor was the plank, such as that shown tilted against a castle keep in the Bayeux Tapestry, which could be taken up in time of siege. The next stage was a wooden bridge that could quickly be broken. When Horatius and his companions kept the bridge that in their day constituted the main entry into Rome, it had to be hewn away while the defenders gained time for the purpose. This had the disadvantage, experienced in our own times with modern bridges, that a sudden rush might capture the bridge intact before the defenders had time to destroy it. So the mediaeval engineers devised a bridge that could be drawn up quickly, even if the pursuers were close on the heels of the pursued.

An early suggestion of a special provision occurs in an old Persian legend of a lover carrying off his bride and removing the last span of the bridge, of loose planks, when he had passed over. Herodotus too speaks of a Babylonian bridge of which the wooden platform was removed at night.

By F. W. Robins, F.S.A.

From Drawbridge—

connected to the ends of two arms which projected from above the arch of the gate.

Although principally used at the entrance to a castle or fortress, the drawbridge also figured in town defences, usually in connection with a barbican or outer fortification. Later in the Middle Ages, a drawbridge section was often inserted in an otherwise permanent structure. There was one in old London bridge. During the Civil War of the seventeenth century, a number of bridges, like the one at Wallingford, were deliberately broken and a drawbridge inserted, so that the passage of a mobile force could be speedily held up. In view of the cavalry raids of the Royal forces this was a device particularly helpful to the Parliamentarians, who made considerable use of it.

Even when the age of castle building had passed, the drawbridge figured with the moated manor houses of the later

Middle Ages; that still standing at the Bishop's Palace at Wells, in Somerset, is a good example.

Occasionally, the double drawbridge, with two leaves meeting in the centre, was used, as at Caerphilly, where a pier in the middle of a moat took the ends of two drawbridges meeting there. In Italy and the south of France, another type, the retractile bridge, was used; this slid forward on rollers until the far end reached the other side of the moat.

When gunfire was introduced more generally into warfare, towards the end of the fifteenth century, the danger of the chains being shot away led to the introduction of bascule type bridges of two kinds; one had a leaf that was raised, closing up the gateway, while in the other the leaf was lowered into the moat. The latter kind was used mostly in the east of France and along the Rhine. The old kind of drawbridge survived into modern times, especially over canals and in the Low Countries. The author remembers the considerable use that was made of them in his early days to provide additional crossings over the Basingstoke Canal for troops coming back from the great reviews on Laffan's Plain.

With the decline of internecine warfare, the drawbridge and its modern descendants have been devoted to quite a different purpose, and now figure as aids to commerce. Occasionally one meets them as road bridges, but far more commonly they are used in dock areas. This peaceful use

occurred early in Venice, where the old wooden Rialto bridge, which preceded the seventeenth bridge now there, had a "draw" section to enable ships with tall masts to pass up the Grand Canal. In 1785 an Act of Parliament was passed to authorise the building of a drawbridge at Newhaven, Sussex, and in 1811 Rennie designed the three hundred feet long Fosdyke bridge, near Boston, Lincs., the centre of which opened. This had two leaves, each having a counterpoise and being raised by means of a rack wheel and pinion worked by an ordinary winch. The roadway was of oak planks.

At this date, the term drawbridge was frequently used to denote a swing bridge. Selby Bridge, when built in 1832, had a swing section working on balls "resembling cannon balls"—an early instance of the use of ball bearings. It would be strange if Leonardo da Vinci, the acme of versatility, did not enter into bridge history. He did, for he invented a swing bridge at the end of the fifteenth century; like others of his inventions, it was before its time.

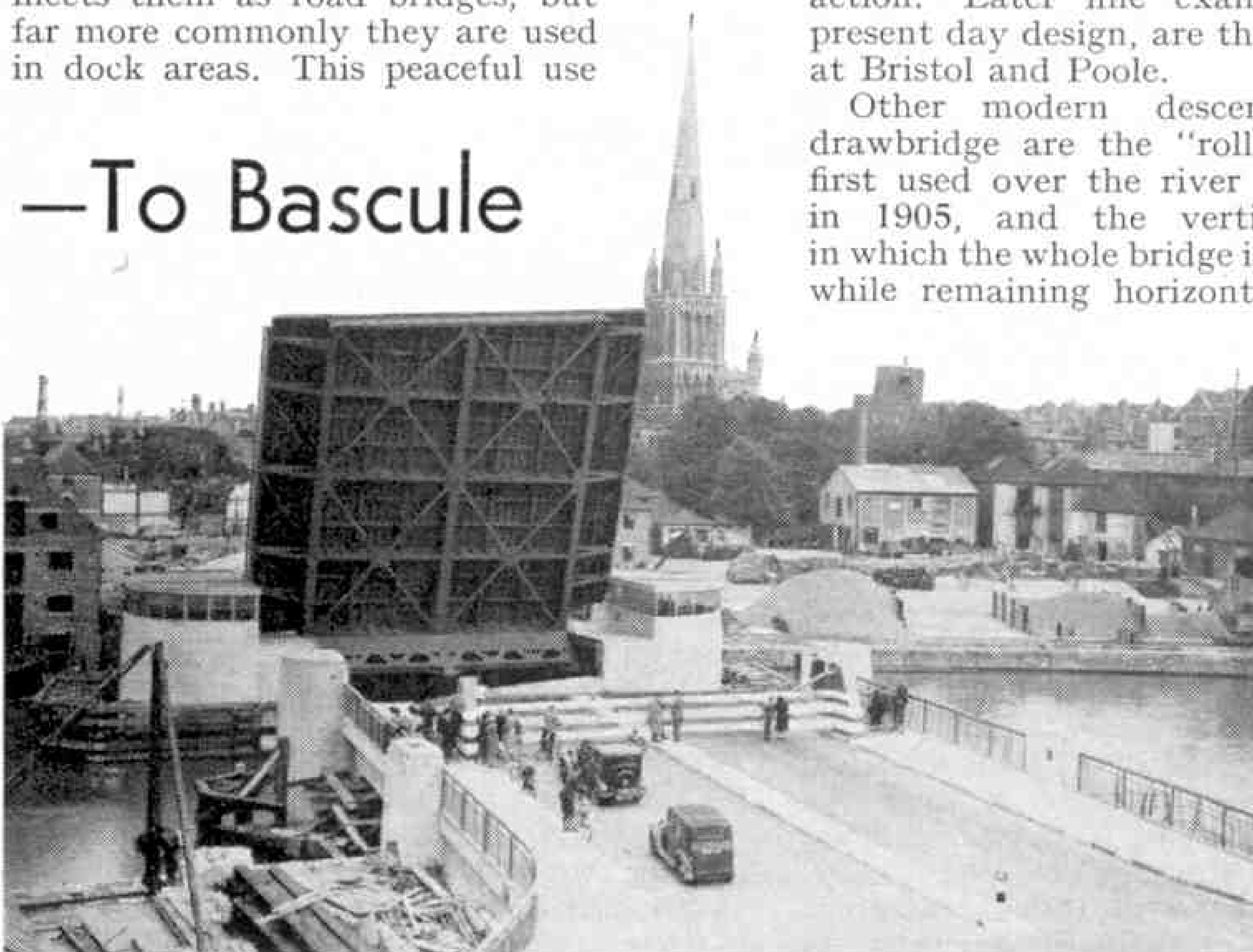
The first modern bascule bridge in England, in which the bridge span and counterweights turned on a horizontal shaft, was one 32 feet long built at Kingsbridge, Devon, in 1831. Tower Bridge, was built in 1894, and in its first 55 years the bascules were lowered and raised nearly 300,000 times without ever failing to function or being out of action. Later fine examples, of simple present day design, are the bascule bridges at Bristol and Poole.

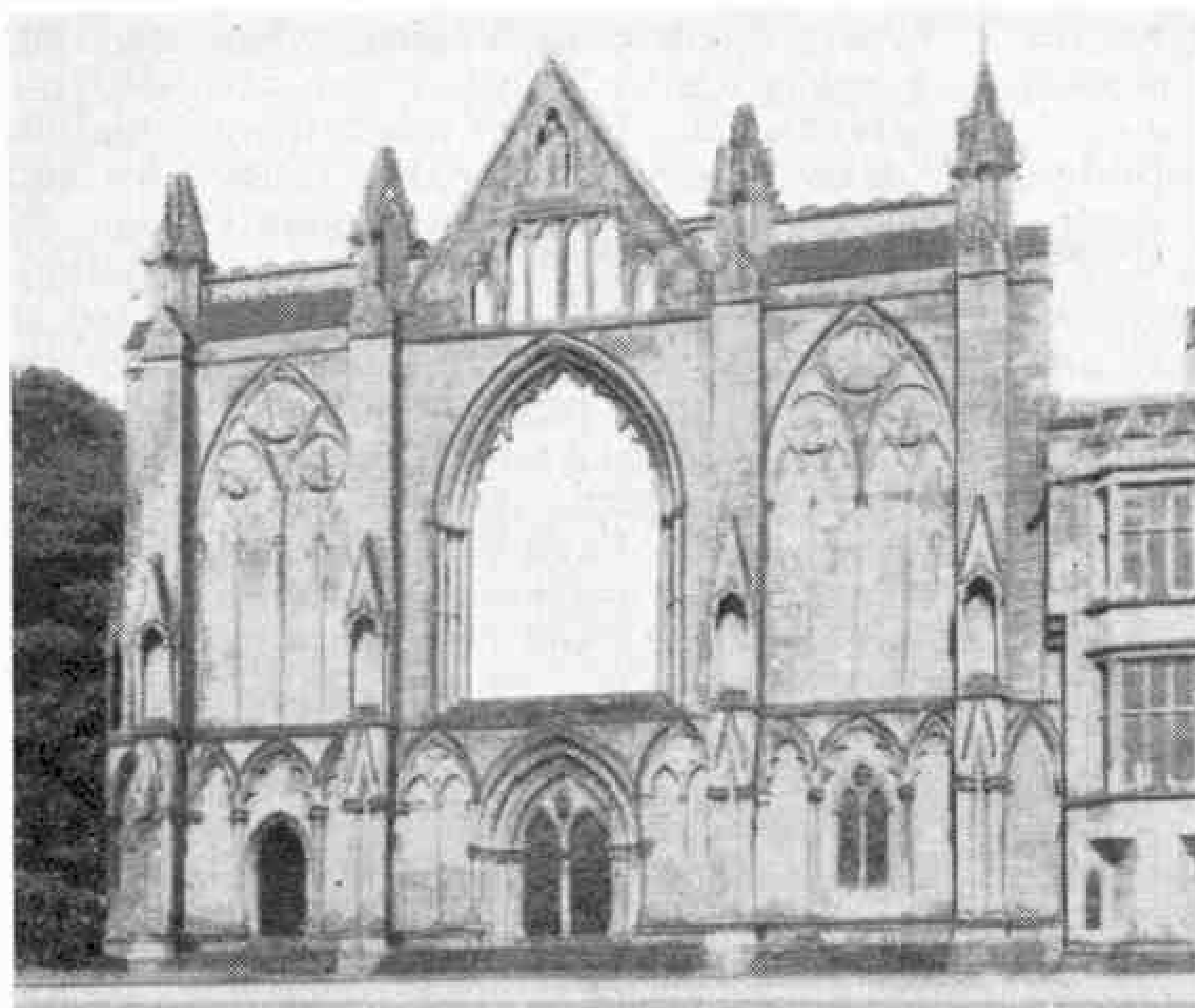
Other modern descendants of the drawbridge are the "rolling lift" bridge, first used over the river Swale, in Kent, in 1905, and the vertical lift bridge, in which the whole bridge is lifted vertically, while remaining horizontal; there is one

of the latter over the Tees at Middlesbrough, but it is not a popular type in this country.

Here is a modern opening bridge, of the bascule type, at Bristol. Our photograph is reproduced by courtesy of the City Engineer, Bristol.

—To Bascule





Newstead Abbey, in Nottinghamshire, has a phantom monk, who was seen by the poet Lord Byron.

DO you believe in ghosts? Whether you do or not, stories of phantoms make entertaining and spine-chilling reading at Christmas—the season for hauntings. Scores of places up and down Britain have traditions of this sort, and our spooky spots range from castles and abbeys to churches, bridges, and inns.

When Henry VIII closed the monasteries and confiscated their properties, he started many ghost tales. Many of the monks' possessions were given to royal favourites, who converted the buildings into great houses, but curses were placed on these residences by the monks, and wraiths are reputed still to haunt some of them.

Newstead Abbey, near Nottingham, is one place with such a tradition. Here lived the poet Byron, and he is said to have conjured up the phantom of a monk by unearthing a skull in the ruined part of the abbey. Byron had the gruesome relic made into a loving-cup, but no sooner did he raise this to his lips than the wraithly form of a former tenant of the abbey appeared and repeated a curse originally made when the abbey was sacked nearly 300 years earlier!

Nor is the "Black Monk," as it is called, the only apparition reported to roam the rooms of the present Newstead Abbey. Two other ghost stories have been handed down. They persist even though the great mansion is now owned by the city of

Nottingham and is open to the public.

There is the mysterious "White Lady," who is said to pass from room to room through the solid walls, and the ghostly "Sir John Byron with the Great Beard." Sir John's portrait hangs in one of the apartments, and he is said to step down from the frame now and then to stretch his legs by taking a walk through the house!

But for a really unique spectre, you might wait in the neighbourhood of Cartmel Priory, Lancashire. Just what connection this wraith has with

the Priory is uncertain, but the ghost takes the form of a man dressed like John Bull. He frequents the lanes in the locality, and though this phantom is an unusual one, it has the distinction of being far less frightening than many others.

Melbourne Hall, Derbyshire, another ancestral seat which can be visited, has another likeable spook. It is the spectre of lovely Betsy Coke, which haunts one of the bedrooms. Betsy returns, so the story

goes, to complete some tapestry which she left unfinished when she died, for she always carries needle and thread.

Indeed, a considerable

number of ghosts seem intent upon creating a good impression rather than causing fear. Beside the Haworth-Colne road stands the old Silent Inn described in the novel *Ricroft of Withens*, by Halliwell Sutcliffe. It has its wraith, though the phantom does not come into the book, and it is the ethereal form of a kindly old lady whose appearance calms the beholder and does not arouse fright. But who the old lady is, and why she haunts the inn, nobody knows.

The premises no longer serve as an inn, but in bygone days they were often the scene of much merrymaking. A souvenir of those days is a hearthstone—it has been worn hollow by clog dancers! Perhaps the kindly wraith returns to capture again something of the happiness of that period.

Grim and massive as our ancient castles

Haunted Buildings and Bridges

By Arthur Nettleton

are, it is hardly astonishing that most of them have ghost tales. The stronghold with more phantoms than any other is Windsor Castle, its ghosts being so numerous that nowadays little surprise is caused when a sentry reports some strange happening.

A whole suite of rooms in this medieval fortress have the reputation of being occupied by the apparition of George III. He was kept there under restraint when old and insane, and according to some accounts his spectre can still be heard moving about and giving orders behind the locked doors.

Anne Boleyn's wraith is also stated to haunt the castle, though in this event she must be a much-travelled spook, for she is said to appear also at Hampton Court Palace and a number of other places.

As to haunted bridges, there is the one spanning the little River Soar, at Barrow, Leicestershire. Tradition declares that here sometimes can be seen the ghost of a clergyman who was drowned nearby many years ago. Not many miles away, near the Leicestershire-Derby border, is Swarkestone Bridge, one of the oldest bridges over the Trent, built centuries ago by two sisters whose husbands perished while attempting to cross by ferryboat. The sad figures of the two ladies guard the bridge today—or so folk say whenever a traveller reports that a ghost has been seen near the spot.

The lovely village church at Brede, near Hastings, is one among several about which ghost tales are related. The Brede story

goes back to the 16th century, when Sir Goddard Oxenbridge committed many atrocities in the neighbourhood. He and his family were closely associated with Brede Church, which contains many of their tombs, and Sir Goddard's wraith is reputed to appear in the vicinity.



The ghost of the old Silent Inn, near Haworth, in Yorkshire, is an old lady of kindly disposition.

The story is that he considered himself immune from injury by any metal weapon, but the villagers found a way of making him pay the penalty for his crimes. They waylaid him one dark night and after binding him they cut him into pieces *with a wooden saw!* His bloodcurdling screams are stated to echo round the countryside as the grim scene is re-enacted when each anniversary of his death comes round.

On the other hand, one of our churches has a weekly haunting. Canterbury Cathedral has a story that a ghostly monk moves about a corridor known as Lanfranc's passage. It is explained by a belief that a monk was once walled up here for an offence of which he was really innocent, and that one day each week he re-appears in an effort to establish his innocence.

More unusual is the phantom of St. Donat's Castle, a mansion overlooking the Bristol Channel.



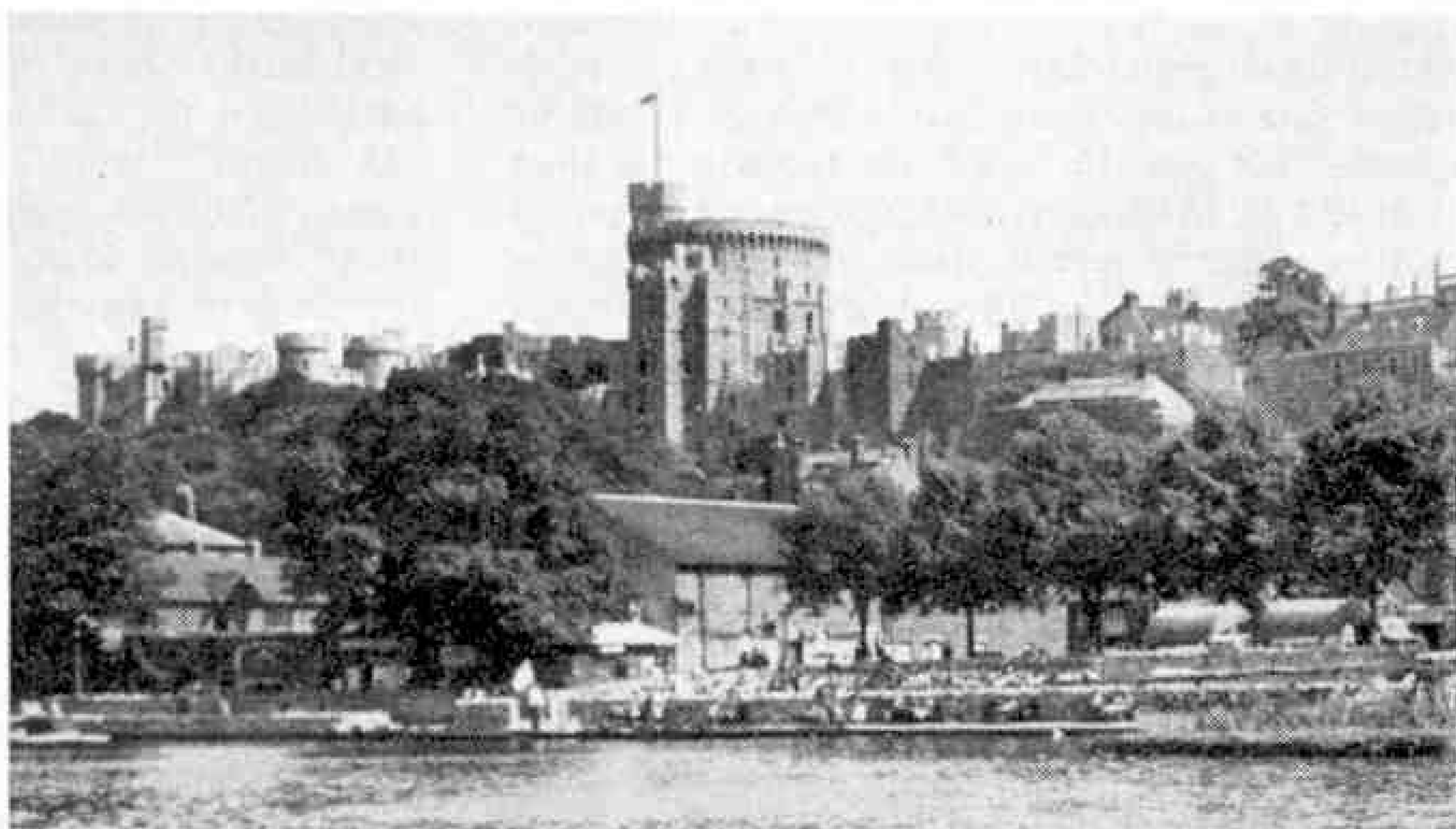
Melbourne Hall, in Derbyshire, is haunted by a lady who constantly returns to try to complete an unfinished piece of tapestry.

This spectre has never been seen, but has often been heard. It plays the piano in the music room, and the mysterious happening has never been explained. Attempts to stop the ghostly musician from performing by locking the piano have failed.

Inverary Castle has a similar spook, though there the music comes from a harp. It is heard in a round turret adjoining an apartment known as the Blue Room.

One of the most terrifying wraiths in Britain haunts Berkeley Castle, the great feudal fortress in Gloucestershire. Screams which make the blood run cold have sometimes been reported to echo through the corridors. Are they the cries of Edward II, who was imprisoned here for eight months, and who was subject to terrible tortures? Part of the treatment consisted of impaling him on red-hot irons—so you can hardly blame him for screaming.

At Rye, Sussex, they tell about Old Thomas, a postmaster who died at a



Britain's most haunted fortress is Windsor Castle. Its ghosts are nowadays accepted as a matter of course by the sentries!

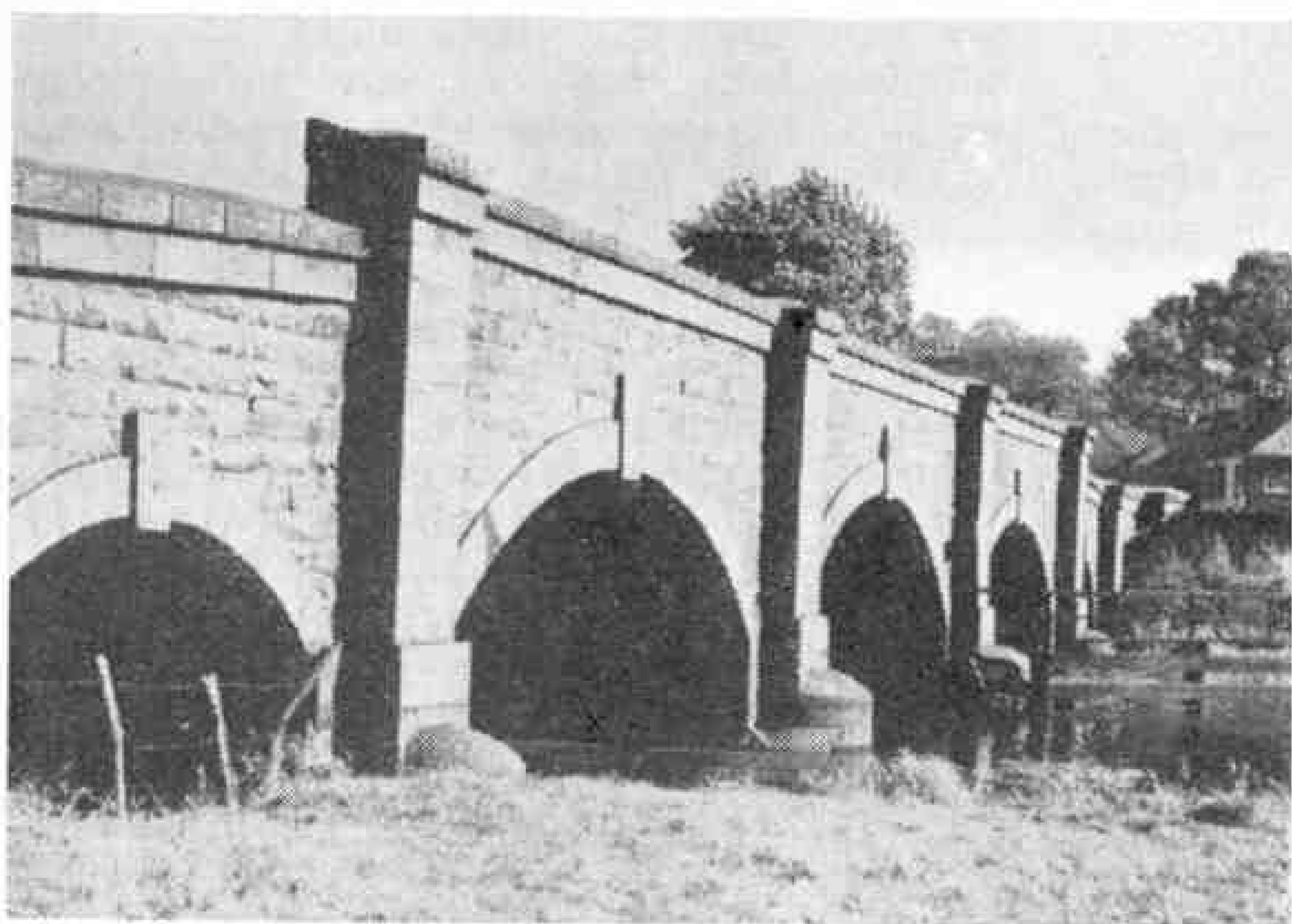
hand over the mail he just vanishes.

Even schools and colleges have their phantoms. At Skipton, Yorkshire, stands an old grammar school, now used as offices by the Yorkshire Electricity Board. Whether this conversion has ousted the wraith of the building is undetermined, but the ghost is said to have been seen on one occasion by two boys hiding in an adjoining orchard.

As they watched, they saw the door of the school swing open. To their great fright a headless figure in a master's gown appeared in the doorway. Then a head floated through the room in the rear and settled itself on the shoulders of the phantom, which quickly melted away.

The incident was reported to the schoolmaster, and an odd story connected with the early days of the school emerged. It seems that in the 17th century an assistant master attacked the headmaster and endangered his life. The events are, in fact, set out in great detail in a document written at the time. Has the headless ghost some connection with that affair?

A Wharfedale school with a phantom is at Threshfield, near Grassington. Known as Pam the Fiddler, this wraith is a pixy which plays catchy tunes in the schoolroom at dead of night. The school is under threat of closure, and the merry sprite who fiddles there may feel lonely when the pupils leave.



A bridge that has its ghost—the spectre of a rector drowned in the stream below it. The bridge is at Barrow-on-Soar, Leicestershire.

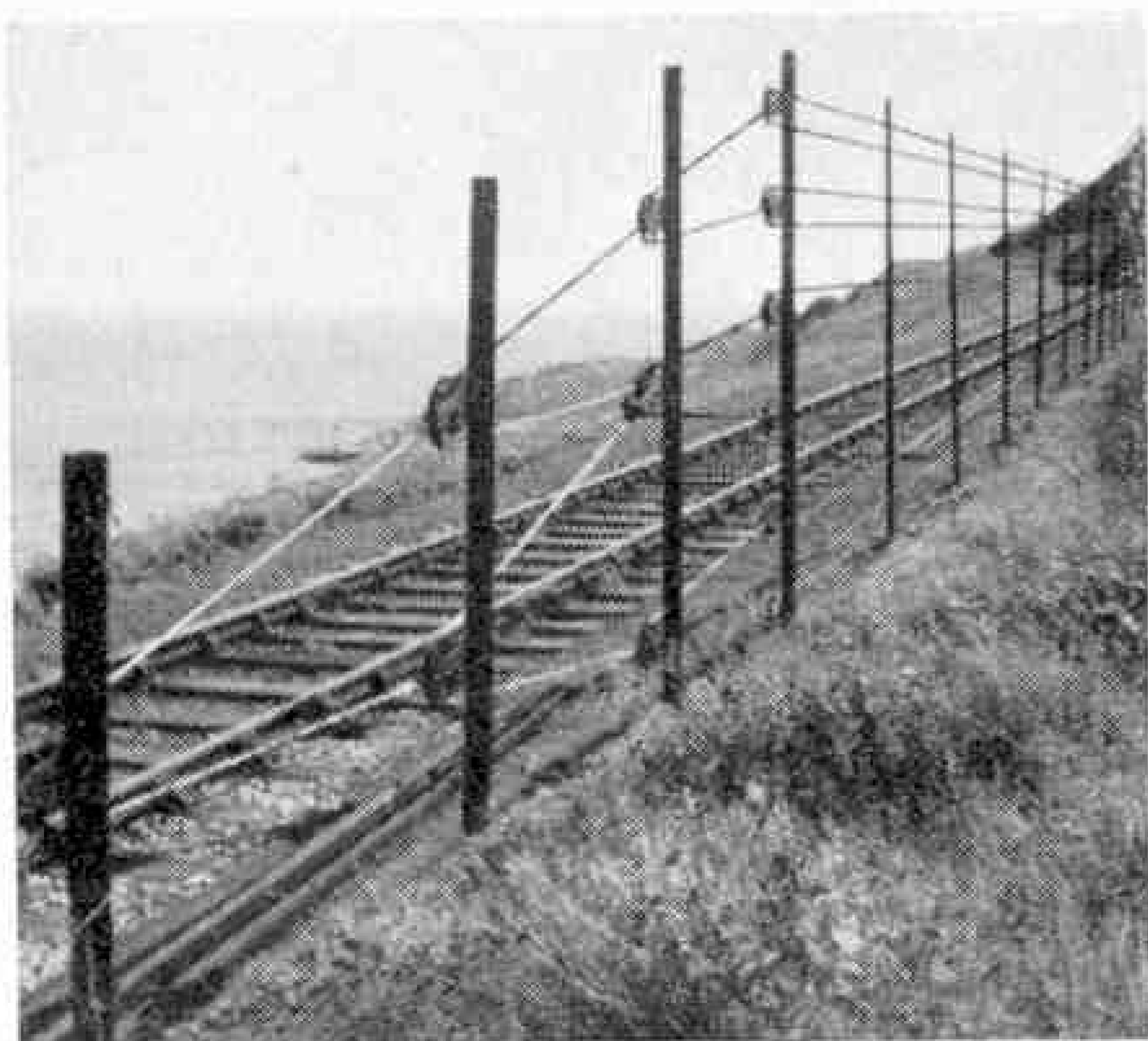
great age, but who returns and knocks at doors as he used to do when delivering letters. He wears a cloak of the kind worn by postmen, but before he can

From Our Readers

This page is reserved for articles from our readers. Contributions not exceeding 500 words in length are invited on any subject of which the writer has special knowledge or experience. These should be written neatly on one side of the paper only, and should be accompanied if possible by original photographs for use as illustrations. Articles published will be paid for. Statements in articles submitted are accepted as being sent in good faith, but the Editor takes no responsibility for their accuracy.

UNUSUAL RAILWAY SIGNALS

St. Paul's Cathedral and many other show places of London are built of the splendid white stone that for hundreds of years has been quarried on the isle of Portland, off the coast of Dorset. The island is connected with the mainland by a long gravel bank on which road and rail run side-by-side. On reaching



The protective fence on the cliff side of the railway on the isle of Portland. Photograph by A. B. Partridge, Northampton.

the island the road ascends 400 feet in a series of hairpin bends; but the railway climbs on a shelf dug in the slopes beneath the cliffs until it is able to turn inland in a cutting. Passenger trains are no longer run, but some stone is still brought away by rail.

Following the railway on foot is a means of getting to some wild country that is very difficult to reach in any other way. Leaving the distant signal of the station at danger behind us, my companion and I set off down the line one day last summer. Soon the line dipped steeply, and a gradient post showed a change from level to 1 in 44 down. Emerging from the cutting to the slopes beneath the cliffs, imagine our surprise as we saw a home signal at clear! Continuing round a curve we found the signal wire ran, not to a box at all, but to a 12-strand wire fence. If any strand in this wire is broken, the signal returns to danger.

The connection makes use of a series of pulleys shown in the accompanying photograph. The far end of the fence we found similarly connected to a signal facing downhill. The purpose of this was now evident. The section concerned lies close under the tallest part of the cliffs, and if a fall of rock were to block the line, it would also break the fence and return the signals to danger.

A silent comment on the steepness of the line is provided by the fact that the lower signal is only 100 yards from the end of the fence, but descending trains are given 300 yards warning!

It is interesting to recall that similar precautions are taken in Glen Ogle, on the Oban line of the former Caledonian Railway.

A. B. PARTRIDGE (Northampton).

DAY MARK IN THE SCILLIES

We are all familiar with lighthouses and it is difficult to imagine what it would be like to travel the seas without their warning lights. But lighthouses generally have only been in use for approximately 300 years. Before that the mariners had to rely upon their look-out men in the crow's nest.

The Isles of Scilly have always been notoriously dangerous to shipping, and in 1683 there was built on the north-east corner of St. Martin's, one of the islands of that group, a structure named a Day Mark. It is still there and is always kept in condition with regard to its structure and painting. It is painted with alternate bands of white and red paint, and is approximately 60 feet in height.

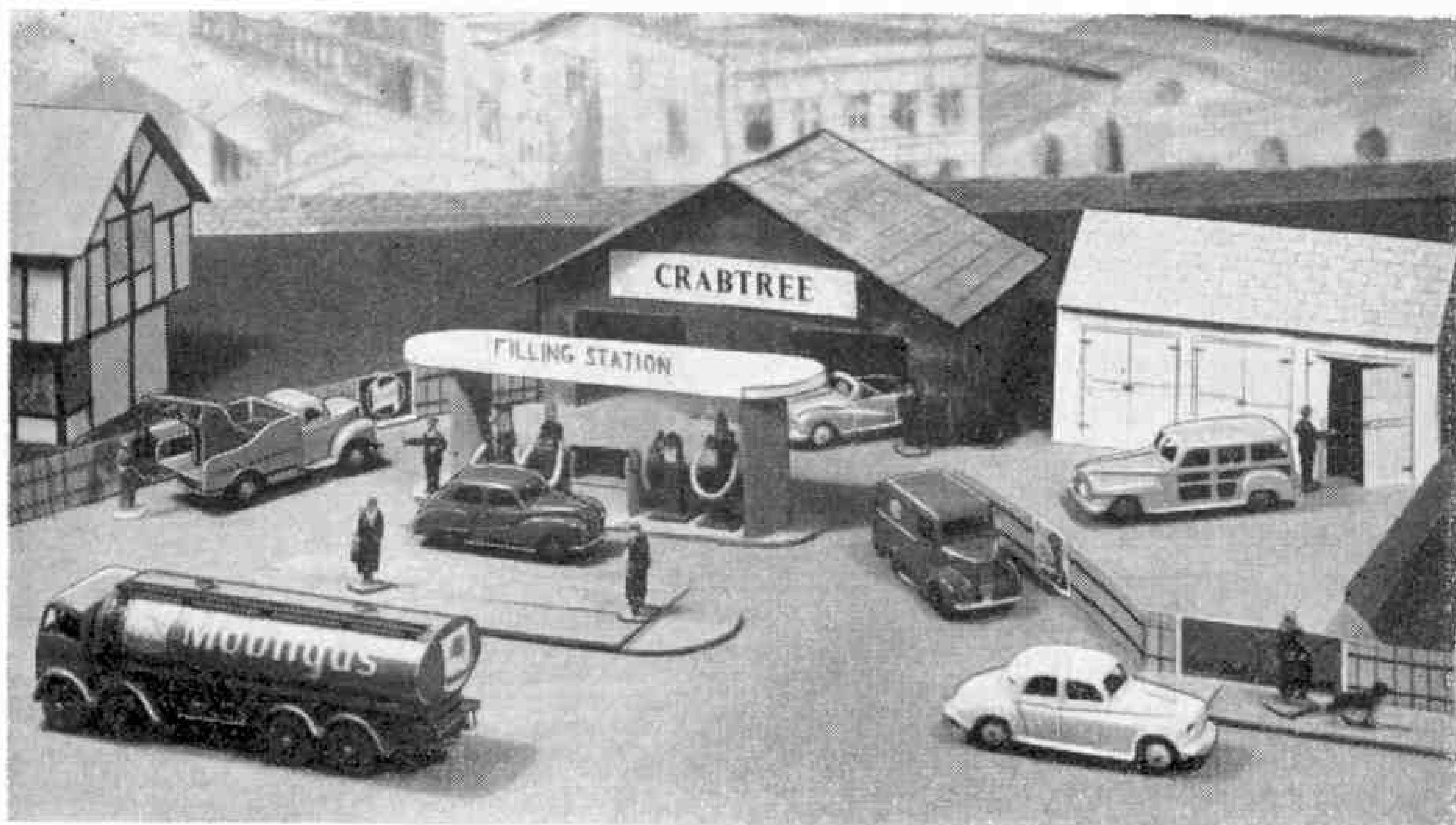
It is obvious from its position, size and colouring, that the mark was intended to be a guide to mariners. It has no means of illumination, and consequently would be useful only for daylight observation. Hence its name.

The second oldest lighthouse in the British Isles was erected on St. Agnes, another island in the Scillies. This lighthouse was built in 1680 and illumination was provided by a coal fire. There have been many historic wrecks in the Scillies, including the one in which the famous Admiral Sir Cloudesley Shovell lost his life, but the seas surrounding them are now well provided with lighthouses, on St. Mary's, Round Island and the Bishop Rock.

A. HOLT (Manchester 9).



This tall post, with its red and white bands, is the Day Mark on St. Martin's, one of the Scilly Isles. Photograph by A. Holt, Manchester.



DINKY NEWS

By **THE TOYMAN**

How to Build Your Own Garage

THE series of Dinky Toys layouts illustrated in the last few issues of the *M.M.* have covered a very wide field, ranging from a motor race track to a canal construction scene. Many collectors have written to say how helpful these scenes have been in planning their own layouts, but one or two readers seem rather discouraged by the space required to arrange them and say they cannot hope to put down a convincing layout in the space they have available.

The complete scenes I have depicted so far certainly need a reasonable amount of room to arrange them to the best advantage, but readers with only limited space for their indoor games need not be disheartened. It is not necessary, for example, to depict a complete town or village in a layout. A scene representing a small corner of a town can be made full of interest and offers real scope for ingenuity in arranging the models and accessories.

As an example of the type of scene I have in mind I have based my layout this month on a small garage and filling station situated on the outskirts of a town. The actual garage is arranged in a very small space indeed, and the "town" is merely

This picture of Mr. Crabtree's Dinky Toys Garage and Filling Station is a good representation of the splendid effect that can be obtained from a few Dinky Toys and simple cardboard structures. With this example before them Dinky Toys enthusiasts will find it easy to build and run their own garages.

represented by buildings roughly drawn on a backcloth set up behind the garage. I think you will agree that the scene does not suffer in any way from the small space it occupies. I can tell you from experience that Mr. Crabtree's Dinky Toys garage is a very busy one, providing heaps of realistic fun for the enthusiast who built it! I hope its appearance will encourage readers who are troubled by space difficulties, and perhaps by lack of time for constructional

work, to experiment with similar schemes. After all, the play is the thing, and it is not a bad idea to keep building work to a minimum, so long as it is realistic.

The garage scene again makes use of a dark-coloured base cloth, and the buildings and other accessories are laid on the cloth. The fields in the scene are represented by dyed sawdust in the way described in previous articles. The filling point in front of the main garage building is a simple structure made from cardboard. You will notice that a collection of tyres is shown at one side of the garage, and in one of the pictures the Dinky Toys Mobilgas Petrol Tanker is starting to fill one of the underground tanks that feed the petrol pumps. A piece of narrow gauge

rubber tubing is used to represent the hose pipe through which the petrol flows into the tank.

There is almost infinite scope for this type of detail work in a garage scene. The Dinky Toys Breakdown Lorry is of course a "must" for any model garage, and it looks very effective whether it is shown actually in use or standing in a corner waiting for its next call. Then there are the private cars and vans of the garage customers, calling for petrol or oil, or to have tyres pumped up or changed. In fact almost any Dinky Toys road vehicle will be perfectly at home on this simple layout.

One of the attractive features of making Dinky Toys layouts is that the same materials can be used again and again in different types of scenes. A close inspection of the garage will reveal that it is the building used as the contractor's shed in the canal construction scene illustrated last month. The walls and railing surrounding the garage have appeared in practically all my layouts. Readers who follow my



The picture above shows a breakdown lorry bringing in a vehicle that has met with trouble, with the cluster of interested onlookers usually seen on occasions of this kind. In the lower picture the petrol pump tanks are being filled from the Dinky Toys Mobilgas Tanker.

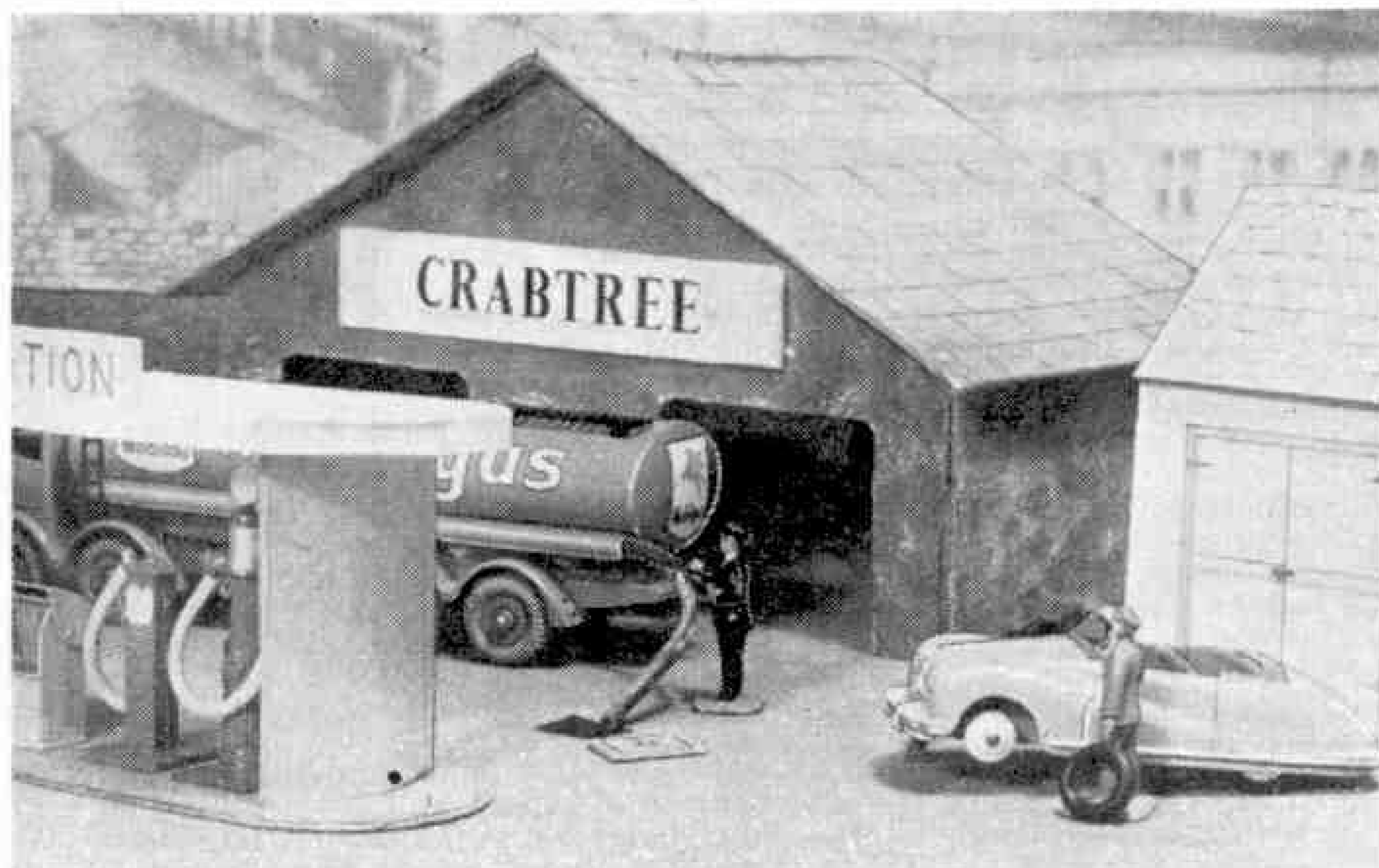
example in these matters can change their layouts quickly and easily whenever they wish, and so enjoy endless variety in their Dinky Toys schemes.

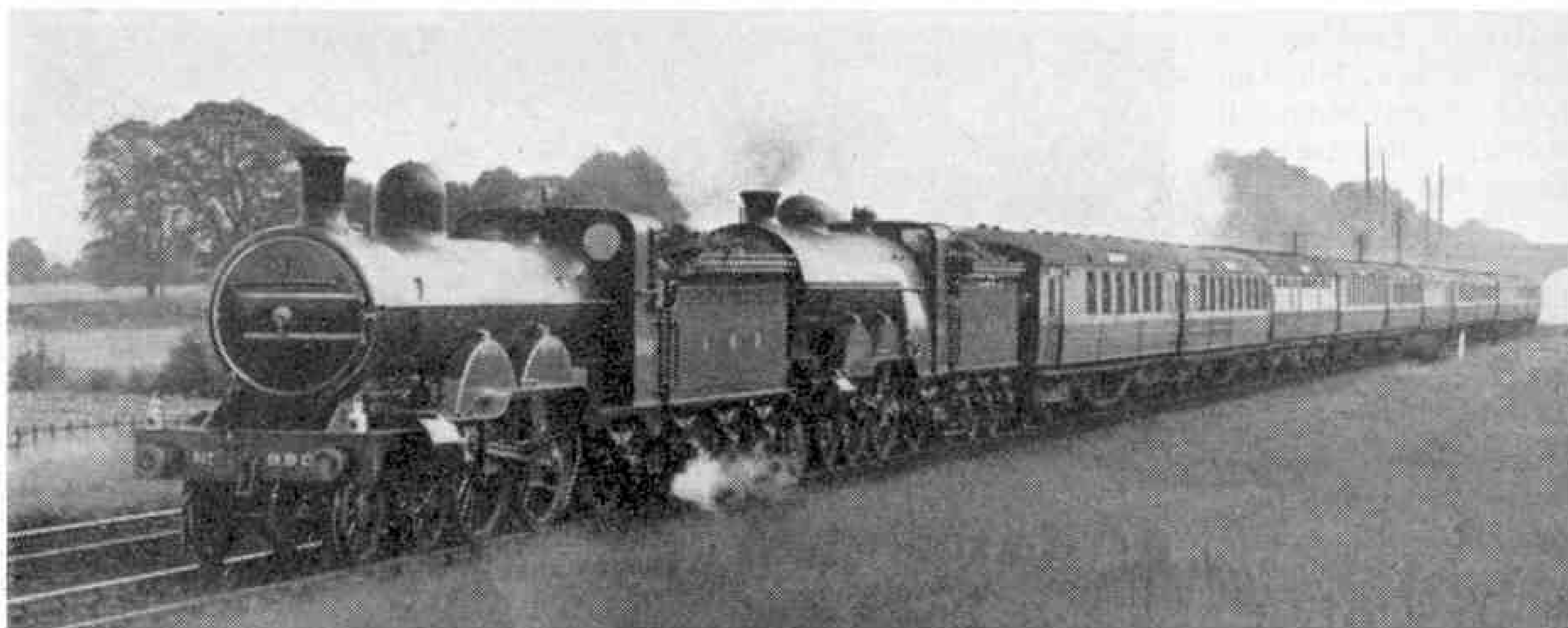
So much for my Dinky Toys garage, and now to an item of interest to all collectors, the first model in a new series of army vehicles to be added to the range. This is the Scout Car, Dinky Toys No. 673, first announced last month. The real scout cars

have an important job in mechanised army units. They are used mainly for reconnaissance and patrol duties, and their high speed and manoeuvrability over rough

ground make them invaluable for this type of work.

The new Dinky Toy is a faithful reproduction of the real vehicle, finished in correct service green, with the Royal Armoured Corps sign on the front and rear. It is in itself a beautiful little model, which runs very freely, and I am sure that all Dinky Toys enthusiasts will welcome it.





The Plant Centenarian special near Bawtry on the down run, hauled by two G.N. Atlantics No. 990 "Henry Oakley," piloting No. 251. Photograph by C. Ord, York.

Railway Notes

By R. A. H. Weight

Doncaster Works Centenary

The famous Locomotive and Carriage Works at Doncaster, Yorkshire, adjacent to the main East Coast and cross-country lines, are known familiarly as "The Plant" and cover an area of 84 acres. The locomotive section employs some 3,000 men and has over 600 machines installed, including many of remarkable power and ability. The works have been, and are, responsible for the construction, repair and maintenance of Pacific and many other types of passenger and freight engines, as well as rolling stock from the latest types of luxurious main line coaches downwards.

It was just 100 years ago, in 1853, that the Great Northern Railway built the first sections of these premises, which were destined to be developed gradually into one of the largest and most notable installations of their kind. There are extensive wagon construction and repair works separately further south.

In celebration of the centenary a fine exhibition was staged last September, and this was open to the public during certain hours. In the yards locomotives on view included Pacifics *Mallard*, *Archibald Sturrock* (both built there) and *Britannia*, with the Stirling G.N.R. 8-foot single, No. 1, from York Museum, constructed at Doncaster in 1870, V2 2-6-2 No. 60862 and B1 4-6-0 No. 61163, just overhauled and appearing in shining lined black livery. There were also a J50 0-6-0T, one of the new electric locomotives intended for the Sheffield-Manchester line and diesel-electric shunter No. 13063, along with an impressive selection demonstrating the carriage and wagon builders' art from G.N. days onward. The latter included Royal saloons, electrically equipped kitchen car, Post Office sorting van, steam breakdown crane, freight and refrigerator vehicles and staff instruction vans.

We also saw some of the main steam locomotive components ready for fitting. There was a fine indoor model exhibition, together with sideshows and a photographic display, though lack of time prevented a full inspection of all that had been so cleverly laid out. The great workshops and erecting shops were open to view.

The Plant Centenarian

Over 400 of us, enthusiasts of all ages, went down to Doncaster from King's Cross in the *Plant Centenarian*, a special train of 11 coaches weighing, full, 425 tons

and including in its formation two modern steel kitchen cars, from which excellent meals were served to all passengers, as well as a buffet lounge car from the *Elizabethan*. It was hauled on the outward journey by two Atlantics, Nos. 990 *Henry Oakley* and 251, the pioneers respectively of the G.N.R. small and large boilered varieties. The former came from York Museum, the latter from her resting place at Doncaster Works, both having been withdrawn from service for some time but preserved in original colours and finish.

We all contributed in our inclusive fares towards the cost of getting these famous locomotives back to running condition and right well they performed, gaining on the suitable timing on both stages, before and after the Peterborough stop, with a maximum speed of 74 m.p.h. It was a nice day and there was enormous interest along the 156-mile route.

For the return journey to London streamlined 4-6-2 No. 60014 *Silver Link* was provided on request, and was driven by Ted. Hailstone, of King's Cross Shed. A very fast timing of 150 minutes non-stop had been arranged, but the thrilling run was completed in 147½ min. including about 6 min. lost by extra slowings on account of engineering work. In spite of some of these, 129 miles were covered in 115½ min., 131 miles from the start in 120 min., 12 miles down the famous Stoke bank north of Peterborough at an average of 90.1 m.p.h., with a maximum of 96½-97!

On the following Sunday a similar return special from Leeds to Doncaster and London was run for northern folk. On that occasion the route from Doncaster to Grantham was by way of Lincoln. The shining old Atlantics got up to 80 m.p.h. down the Stoke descent, and then *Silver Link*, with a rather lighter load and again driven by Ted. Hailstone, attained the even higher speed of 98 m.p.h., which again was by no means the engine's possible maximum, in the course of a brilliant trip to Grantham and beyond. The organisers of these unique enterprises were Messrs. Bailey, Pegler and Smith, with whom all officers and staff concerned on the Eastern Region co-operated magnificently.

More Eastern and North Eastern News

Some of the larger Co : Co electric locomotives are being completed, carrying 27000 numbers. Class 4 2-6-0s are under construction at Doncaster, and of these Nos. 76025-9 are allocated to Eastleigh Shed, S.R. as ready. Standard 4-6-0s of classes 4 and 5 have been seen at York, as has a Clan 4-6-2. J39 0-6-0 and B16 4-6-0s have been rather unusually noted on parcels or fast freight trains to and from King's Cross.

A4 60011 *Empire of India*, was continuously on the *Elizabethan* express from the Edinburgh end for more than three weeks up to the end of the season.

A new 70-ft. turntable at Melton Constable will

enable larger engines to work over the former Midland and Great Northern Joint line in summer particularly. A batch of 18 K3 large 2-6-0s has been drafted to March shed, mainly from Peterborough and Annesley; a number of W.D. type 2-8-0s have left March, chiefly for Immingham.

While watching the traffic working and recording the locomotives seen during about 7 hours along the main line out of King's Cross as far as Welwyn Garden City on a busy summer Saturday, I saw 14 different A4 Pacifics, all stationed at King's Cross; eleven A1s, six A3s and one A2; 14 V2s, 13 B1s and three B17 4-6-0s; and a K1 on a passenger train to Cambridge, as well as some L1 and N2 tanks on fast outer suburban services. Another Sandringham condemned is No. 61604 *Elveden*.

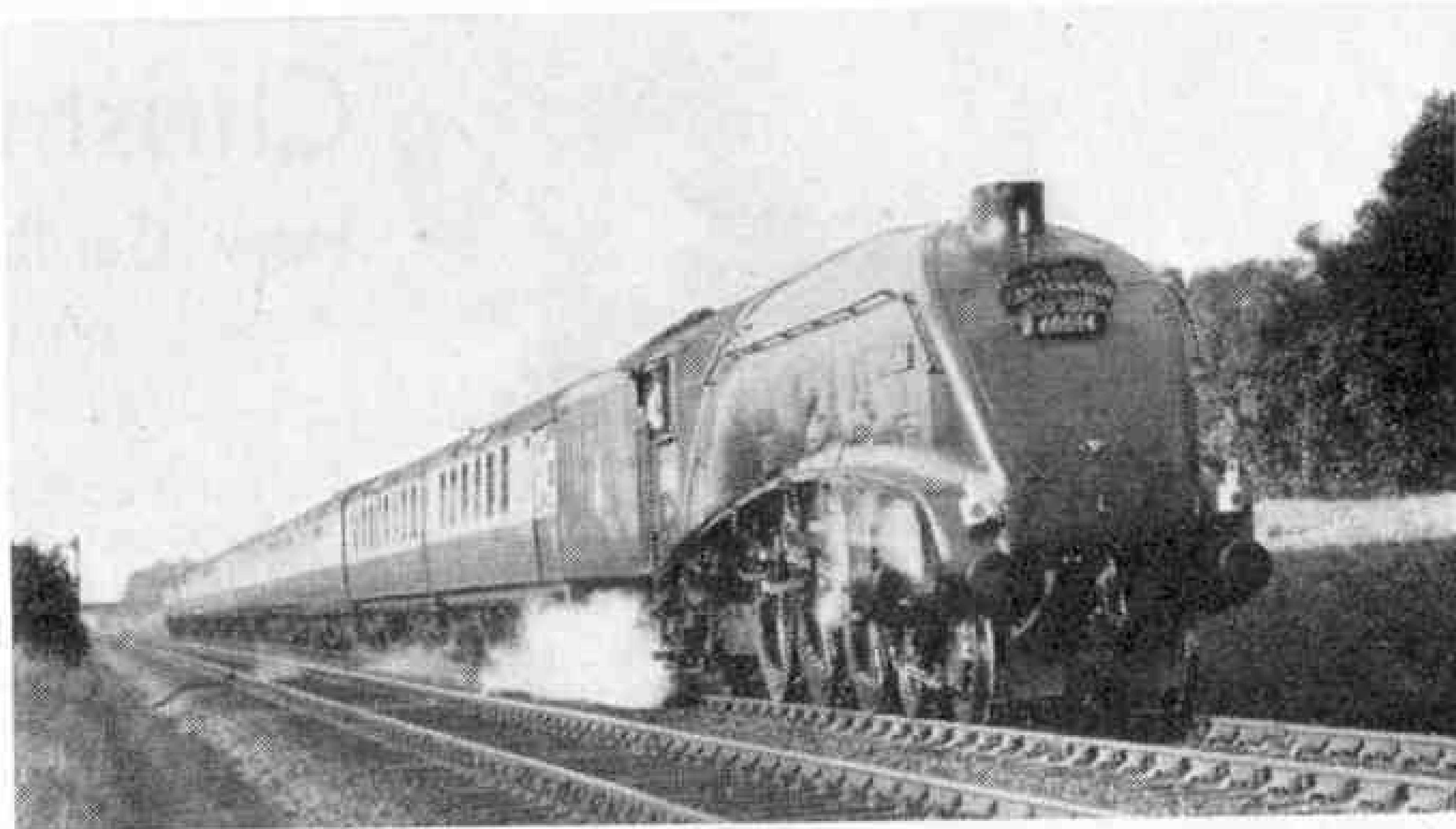
A scheme has been authorised to provide a vast all-electric signal box at Newcastle Central, with control room and train describing apparatus similar to that at York, operating 641 route switches, 94 colour light signals and much else in a considerable and busy area now covered by four boxes.

Regular long non-stop runs this winter are made over 268 miles between King's Cross and Newcastle, 232 Darlington-King's Cross, 188 King's Cross-York; 186 each way Leeds-London; 163 each way Newcastle-Grantham; and 156 on several runs over the King's Cross-Doncaster course, with one from Darlington to Peterborough.

It has been decided to extend the overhead electric installation and train running from Shenfield to Chelmsford 9½ miles further from London on the Chelmsford main line from Liverpool Street, as well as to Southend-on-Sea (Victoria) 21 miles from Shenfield, Essex.

Names Returning on Metropolitan Locomotives

I was very pleased to hear that the electric



The Plant Centenarian near Bawtry hauled by No. 60014 "Silver Link" on the return journey. Photograph by C. Ord, York.

locomotives hauling Metropolitan, London Transport, outer suburban trains south of Rickmansworth, are again to carry the names that were removed during the recent war. These engines are likely to remain in service for some time and are being refitted. I saw one of the freshly adorned ones when travelling up from Chesham on 10th October having been hauled along the pretty single-line branch by a C13 G.C. 4-4-2T and then from Chalfont to Rickmansworth by a very modern L1 2-6-4T of the type now much in evidence in those parts.

The nameplates *Sherlock Holmes* were presented by the Society bearing that name. Others, including *John Milton*, *Oliver Goldsmith* and *Dick Whittington*, are being affixed at the works. Many enthusiasts think that it would be nice to see a return of the old Metropolitan red-brown painting instead of the present rather dull grey finish.

London Midland Region

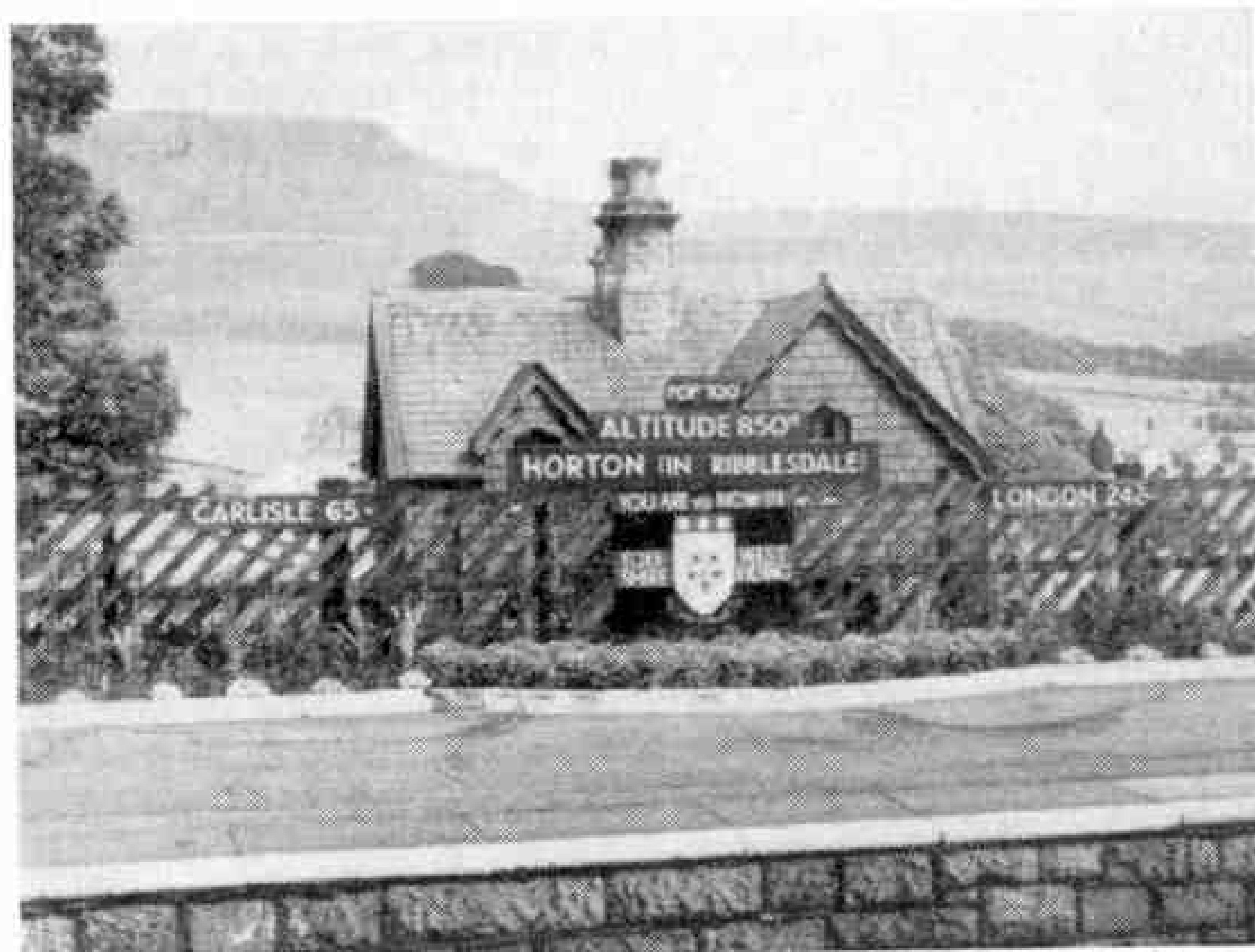
New Class 5 4-6-0s completed at Derby and numbered 73034-9 were allocated to the Scottish Region, though with No. 73032-3 they went on loan to the Western. Received from Swindon the following similar but smaller 4-6-0s have been stationed as shown: Class 4 No. 75035-9, 1E, Bletchley; Nos. 75040-4, 15D, Bedford and No. 75045, 24A, Accrington.

Additional class 2 2-6-2Ts constructed at Crewe included Nos. 84003-4, 10D, Plodder Lane, 84005, 15D, Bedford; 84006-8, 17B, Burton-on-Trent; 84009, 20C, Royston, Yorks.; and 84010-5, 25F, Low Moor. Others in the two last named classes are following.

New 0-4-0Ts under construction at Horwich were lately reported to be numbered 47005-6 as part of an order for five. Two more L.M.S. 0-8-0s No. 49600 and 49612, have been withdrawn, together with some pre-grouping engines.

The Royal train from Scotland on 14th October arrived at Euston headed by 4-6-2 No. 46238 *City of Carlisle*, in charge of a Carlisle crew with one of their appropriately named locomotives.

For just over a month commencing at the end of September last the long tunnel south of Rugby named Kilsby was closed for extensive repair. The majority of express and main line trains were diverted via Northampton, rejoining the main line towards Euston at Roade. Extra time was allowed and I found most of them running well during a period of observation, mainly at Watford,



An interesting view of Horton in Ribblesdale Station, on the Leeds-Carlisle line of the L.M.R., with Pen-y-ghent in the background. Photograph by R. Russell.



Christmas Bells

How Carillons are Made and Work

By W. H. Owens

from a hand clavier—a keyboard of levers and pedals—or automatically.

When bells are operated by means of ropes, as in this country, they are swung up and down in almost a complete circle, and the clappers strike at each upward or downward movement. The bells of a carillon, on the other hand, remain stationary, their clappers being connected by finely-adjusted wires to the clavier or the automatic tune-playing mechanism.

The word "carillon" is nowadays applied to a set of not less than 25 tuned bells. Any fewer number is termed a "chime," and although the operating technique is similar for both, it is only on a carillon that two-part tunes can be played and the grand volume of musical sound produced by massed bells properly heard and enjoyed.

Modern carillons may contain any number of bells of different weights and ringing tone from 25, two chromatic octaves, up to about 72, six chromatic octaves. In the United States of America and Canada there are many large-scale carillons in use that bear the names of famous English bell-founding firms. A carillon of 72 bells, made at Croydon in Surrey, hangs in the great 392 ft. tower of the Riverside Drive Church in New York. The bourdon, or heaviest bell, is a monster of 18 tons, which is the largest bell ever cast in England. Another

72-bell carillon, also from Croydon, was installed at the University of Chicago. In this case the bourdon weighs 17 tons.

Nowhere has the carillon become so popular in modern times as in the U.S.A. Since the first was sent from Loughborough, England, to the Portuguese Church at Gloucester, Massachusetts, in 1922, 68 of these "singing towers," as the Americans term them, have been set up all over the United States. They belong not only to churches and cathedrals, schools, universities and public buildings, but are also to be found in the private homes and grounds of well-to-do families. Canada has eight modern carillons, all of them from

FROM the earliest times bells have been rung to mark joyous occasions, and so their music always has an important place in the Christmas-time festivities. Nowadays Christmas Day is heralded in most countries by chimes or peals of bells. The most famous of them all are the bells of Bethlehem, belonging to the ancient Church of the Nativity above the Holy City, the notes of which have become familiar to wireless listeners everywhere.

In England, the ringing of bells in melodious peals, as distinct from tolling them, is an art that is centuries old. Every town and village has its skilled teams of ringers, who handle the bell ropes with wonderful dexterity. Other lands have never adopted this method of playing the bells, which is generally known as "change-ringing." But millions of people in the Dominions, the United States, Northern Europe and elsewhere are able to enjoy the full and quite remarkable range of bell music played on a carillon. This is a set of tuned bells, hung in a strong metal framework, on which tunes with harmonic accompaniments can be played, either

The illustration at the head of the page shows an interesting carillon, in a private park in Surrey, built and erected by Gillett and Johnston Ltd., Croydon, to whom we are indebted for our illustration.



Building up the mould in which a bell is to be cast. The two parts are moulded separately and here the outer mould is seen being lowered over the inner one.

the three famous English bell foundries of Croydon, Loughborough and Whitechapel.

Although these English firms have led the way with carillon installations all over the world in recent years, the true home of this instrument is the Low Countries. There it has been known ever since the fifteenth century, and in fact it was developed about the same time as the art of change-ringing in England.

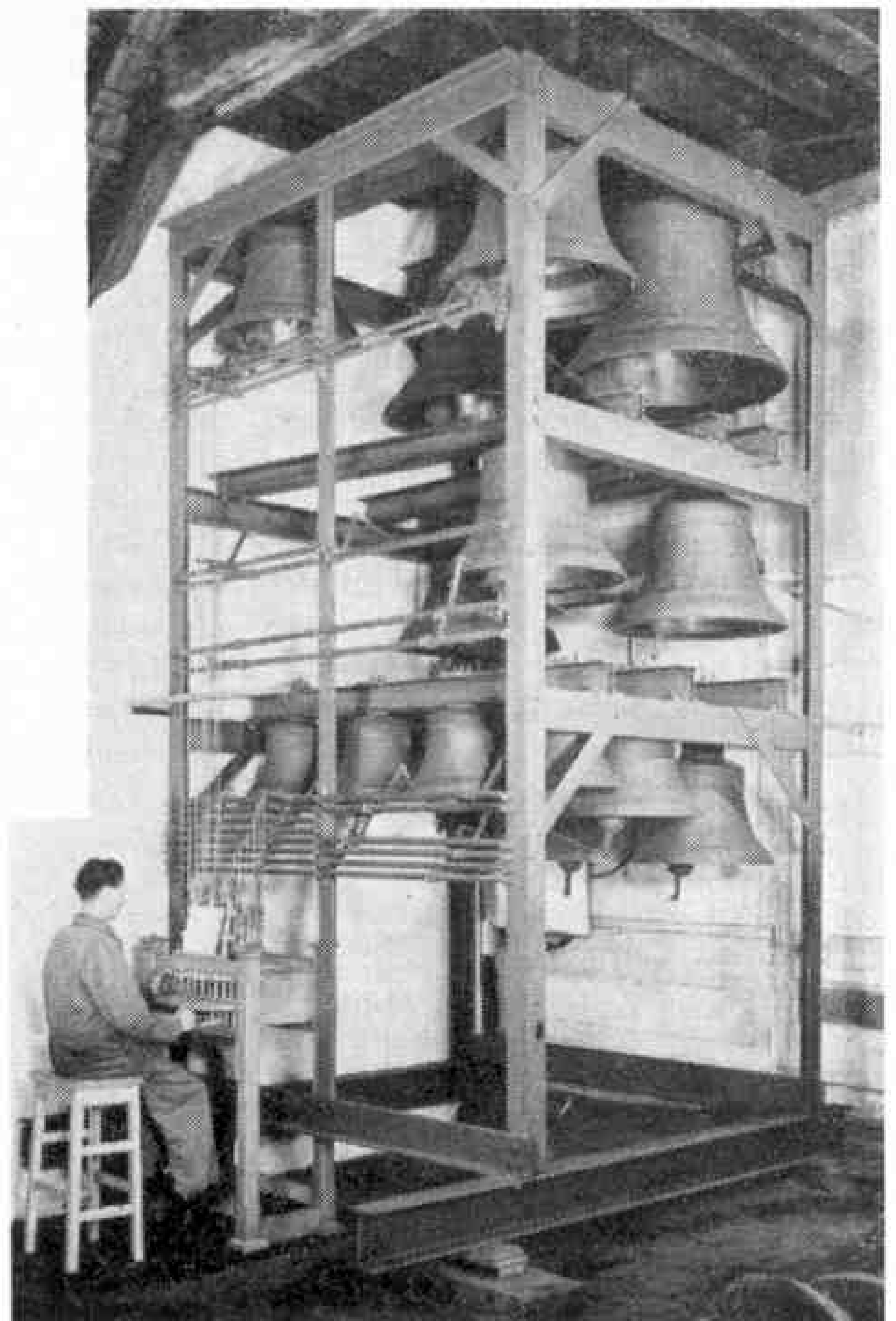
Throughout Holland and Belgium the lofty bell towers, or campaniles, are striking features of the landscapes, and bell music is characteristic of every town and village. Everywhere the people take the greatest pride in their carillons, which in so many places seem to be ringing all day long and, softly, through the night too. The bells of Bruges are as unforgettable as this old city's canals and bridges, and frequent musical programmes are given by skilled carillonneurs there, as well as at Louvain, Amsterdam and a score of other places in the Low Countries.

Most famous of these Continental carillons is that of Malines Cathedral, housed in a great belfry reached by over 400 steps. It has 45 bells, the oldest

dating from the fifteenth century, and each has a name and a history of its own. This carillon became widely known through one of the greatest of all carillonneurs, Jef Denyn, who served for 50 years as bell-master to the cathedral. He also founded the Malines Carillon School, the only one of its kind in the world, which over the past 31 years has trained pupils of many different nationalities.

Apart from the recitals played by carillonneurs, the belfries are also fitted with special mechanism by means of which different tunes are played automatically at the divisions of the hours. At half-hours quite a long tune is played, with a shorter one at the quarters, and just a bar or two of melody at the half-quarters, a division unknown to our chiming town clocks in Britain.

The automatic tune-player consists of a large cast iron cylinder, or chime barrel, covered with holes into which metal pins are screwed according to the tunes required. As this revolves the pins operate levers connected by wires to the bell clappers. The chime barrels of



This chime of 16 bells shows the layout of the carillon and keyboard. The illustrations on this page are reproduced by courtesy of Mears and Stainbank, London.

Continental carillons are often large, very heavy and complicated to set. The world's largest is at Bruges; it has more than 30,000 holes, and the task of re-arranging the pins to change the tunes takes a few days to complete.

In the modern carillon the tune-player is operated by electro-pneumatic action, and such apparatus is also used to bring out the full tones of the heaviest bells in a large carillon when this is played from a keyboard. Nowadays carillons are equipped with both the hand clavier, for recitals, and the automatic player, which is started by a clock and plays single note tunes, repeated two or three times as required, at pre-determined intervals of the day. An up-to-date chime barrel, pegged for a single tune, can be changed for another barrel in 30 seconds, or re-set for a new tune in about half an hour by anyone with ordinary musical ability.

The beginning of a carillon is the casting of the bells. In the first place a mould for shaping the inside of the bell is made with bricks and loam. The outer shape is formed with loam or clay inside an iron hood. When both moulds are set, the hood is clamped down over the inner mould, and then the molten metal is poured into the runner at the top from a huge ladle. After the metal has solidified and cooled, the bell is taken from the mould, which is then broken up, as it can be used once only.

After casting there comes the very important tuning process. In olden days craftsmen tuned their bells in very crude fashion, chipping away lumps of metal with a chiselling implement. Nowadays this is done with much greater care because

it is known that a bell does not ring with a single note, but has several overtones, which must be tuned in complete harmony one with the other. So the inverted bell is clamped on a revolving lathe, and particles of metal are pared away with a fine cutter from various parts of the surface until,



Pouring the molten metal into the finished mould to make a bell at the works of Mears and Stainbank.

after making repeated tests with the aid of a tuning-fork, the tuner is quite satisfied that the bell rings true.

One reason for the supremacy of British bells throughout the world today is their fine tuning. The old Continental bell-founders knew the secret of harmonic tuning, but this was lost for generations until rediscovered by a Sussex clergyman in the nineteenth century. It was immediately taken up by the English bell founders, who have since brought it to great perfection.

Among the Model-Builders—(Continued from page 631)

connected by $2\frac{1}{2}'' \times \frac{1}{2}''$ Double Angle Strips. A Wheel Disc is fixed to each Hub Disc and the assembly is held on the Rod 1 by Collars. One of the Wheel Discs is attached by eight $\frac{3}{8}''$ Bolts, one of which is indicated at 2.

The only parts of the mechanism fixed to the Rod 1 are the Gear 3, which takes the drive from the engine, and a Face Plate 4. The Face Plate is fitted with two Threaded Pins 5, and a $3''$ Pulley 6 is arranged so that it slides over them. A Compression Spring is placed between the Pulley 6 and the winding drum. Two Threaded Pins are attached to the boss of Pulley 6, but each is spaced from the boss by Washers, so that it does not grip the Rod 1.

The drive to the drum is engaged by sliding the Pulley 6 so that the Threaded Pins in its boss engage the $\frac{3}{8}''$ Bolts 2.

A New Meccano Loom—(Continued from page 636)

picking stick is held by a Collar on a $1\frac{1}{2}''$ Rod fixed in the Crank at the end of the Strips 41.

The picking sticks are operated by Bell Cranks 44, which are free to turn on $1''$ Rods fixed in Rod Sockets bolted to the lower ends of the $7\frac{1}{2}''$ Angle Girders that support the shuttle race. The Bell Cranks are held on the $1''$ Rods by Collars, and one arm of each is extended by a $3''$ Strip 47, and a Double Arm Crank 45 is bolted to the other arm. A $1\frac{1}{2}''$ Rod 46 is fixed in the Double Arm Crank and engages the cam 34. The upper ends of Strips 47 are connected to the picking sticks 42 by $3\frac{1}{2}''$ Strips 48, pivoted on lock-nutted bolts. The force with which the picking sticks operate is controlled by Springs 49. Each is bolted to Strips 41 and connected by a small Loaded Hook to the picking stick. The slay is linked by Strips locknutted to Gears on Rod 22 and fitted with Cranks 50 fixed on Rod 51.

Photographing Ghosts

By E. E. Steele

CHRISTMAS is the traditional time for tales of ghosts and witches, and most of us enjoy the eerie thrill they bring, provided we are in the bright light before the warmth of a glowing fire! Do not be alarmed at the title of this article, however, as the ghosts I am suggesting that you photograph are very substantial indeed, being any friends you can persuade to pose for you in what can be a very amusing pastime; there is scope for some very ghastly effects indeed, especially if your powers of imagination are good.

The photographic part is quite simple, the ghosts being made by the method of "double exposure." But lots of skill and ingenuity can be exercised in dressing up the figures, and placing them in suitable settings. No special camera, gadget or lighting is required; only a firm tripod or support for your camera. This part is essential.

In order to make the ghost, place your figure, suitably draped in a white sheet, or whatever dress you fancy, against a chosen background. Now estimate what exposure this background will need. One or two trial shots will decide this. The idea is then to focus the figure, and if it is draped in light clothing give about one quarter of the total exposure needed for the background. Then, without winding on the film, hold a piece of black card in



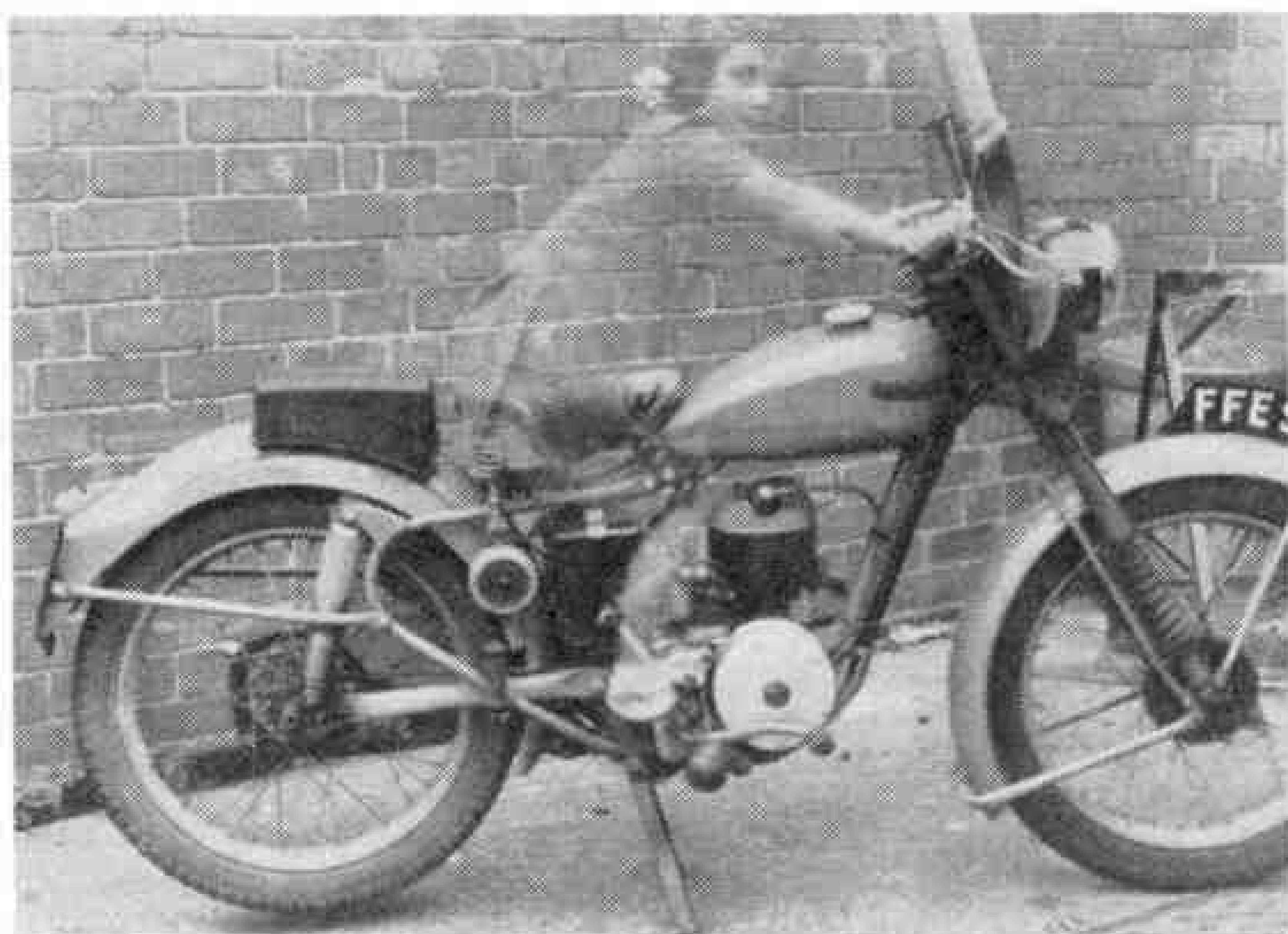
Here comes a ghostly visitor! The illustrations to this article are from photographs by the author.

front of the lens and ask your ghost to move out of the way. When the ghost has obligingly done so, withdraw the card and give the other three quarters of the exposure.

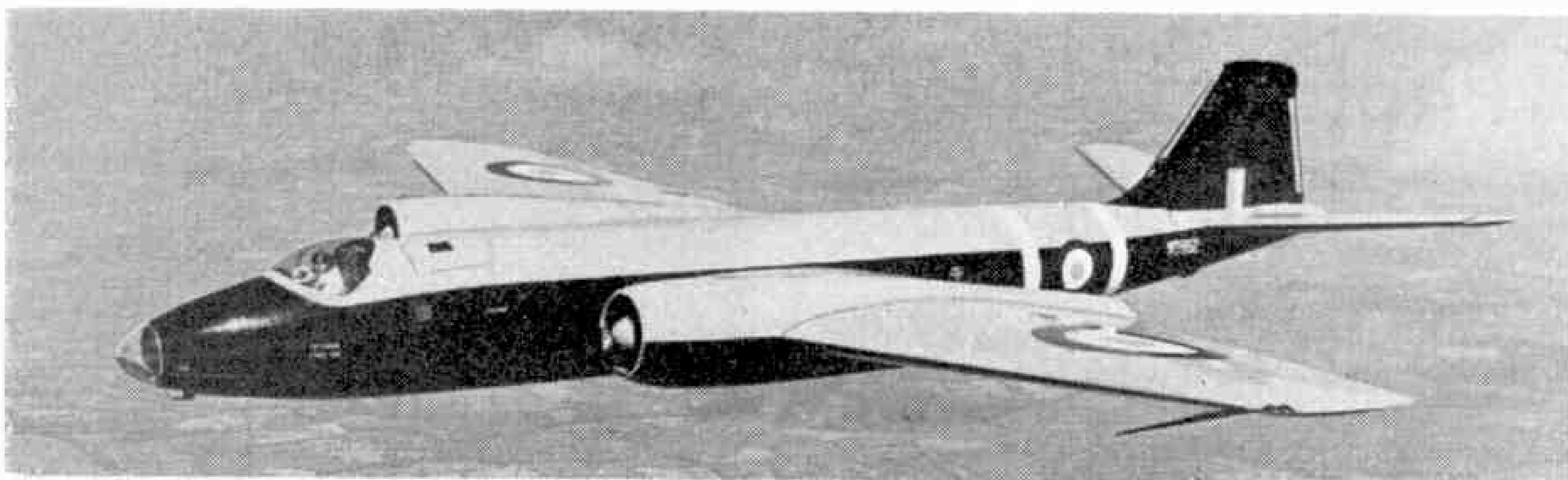
During this double exposure the camera must not be moved in any way. The transparent or "ghost" effect depends upon the ratio of exposure, and if the resulting photograph shows that your ghost was not "thin" enough you have given too much exposure for the figure.

On the other hand, if dark clothing is worn by the ghost you must alter the ratio of exposure, and you may find that the figure needs half to three quarters of the total exposure. This is soon determined by trial and error.

The upper photograph on this page was made on the spur of the moment with ordinary room lighting. The figure was draped in a white sheet, the camera placed on a tripod, and the exposures made by "bulb" setting. If your camera is set to "time" it will serve just as well, but remember that both exposures *must be made on the same film*; in fact you are deliberately doing what normally you do your best to avoid!



The phantom motor cyclist.



WHAT a glorious year this has been for aviation, and British aviation in particular. The S.B.A.C. Display at Farnborough was not, perhaps, as exciting as last year. There were fewer last-minute surprises or aircraft straight off the secret list, and no sensational new aerobatics like Zurakowski's 1951 "Cartwheel" or Randal Porteous's 1952 "Avalanche."

Yet who could fail to be impressed by the sight of six deltas flying in formation with set-square precision, four of them flown not by test pilots but by serving officers of the Royal Air Force and Royal Navy. No other country in the world could put up a formation like that. And, even if we have seen it before, is it not still enough to make one's heart skip a beat when Neville Duke, Mike Lithgow and Dave Morgan flash past in their Hunter and Swift fighters at more than 700 m.p.h.?

The Fiftieth Year

By John W. R. Taylor

What other aircraft, anywhere in the world, could match the fantastic vertical climb of the Canberra fitted experimentally with Rolls-Royce's tremendously powerful new R.A. 14 Avon turbojets? Where could one see better flying than Porteous's delightful aerobatics in the tiny Aiglet Trainer? And has there ever been a

lovelier, more moving sight in aviation's 50 years than the Princess flying boat, cruising majestically above the runway, her great size belying the fact that her cruising speed is 20 m.p.h. faster than the top speed of the Spitfires which fought

in the Battle of Britain.

The mere fact that we take all these wonders for granted is proof enough of the leadership we have come to expect from our aircraft industry.

That leadership has shown itself in a score of ways during 1953. If records are a measure of leadership, we have first the splendid world height record for aeroplanes of 63,668 ft. (over 12 miles), set up on 4th May by Bristol's assistant chief test pilot, Wing Cdr. W. F. Gibb, in a Canberra bomber, fitted with two Olympus turbojets.

At this stage, some of you will probably say "Yes, but what about the American Douglas Skyrocket, which has climbed to 83,235 ft. and flown at 1,238 m.p.h.?"

These do indeed represent incredible achievements, for which the Americans deserve the greatest

The upper illustration shows the Canberra bomber in which Wing Cdr. W. F. Gibb, D.S.O., A.F.C., on 4th May last established a new world altitude record (Class C-Aeroplanes) of 63,668 ft. The lower picture shows Wing Cdr. Gibb in the cockpit of the record-breaking aircraft. He is assistant chief test pilot of The Bristol Aeroplane Company Limited, by whose courtesy these two photographs are reproduced.



credit. But they are freak performance figures, achieved by a freak aircraft that has to be carried up to 35,000 ft. under



Squadron Leader Neville Duke, who began the recent spate of record-breaking by attaining a speed of 727.6 m.p.h. in a Hunter fighter. Photograph by courtesy of Hawker-Siddeley Group Limited.

another aeroplane, that burns fuel so quickly that it can fly for only a few minutes, and that was designed solely to snatch in those few minutes as much data as possible about the

perils and characteristics of high-speed flight.

Wing Cdr. Gibb's Canberra, on the other hand, was basically similar to the R.A.F.'s standard Canberra bomber, at least 11 squadrons of which are in service with Bomber Command. Its mighty Olympus turbojets are in full production for the new, high-flying Vulcan delta-wing atom-bombers. It had to remain airborne for over an hour to climb up to 63,668 ft. and come down again.

In the same way, the world speed records of first 727.6 m.p.h. and then 737.3 m.p.h. set up by Sq. Ldr. Neville Duke of Hawkers and Lt. Cdr. Mike Lithgow of Supermarine respectively are not overshadowed in the slightest by the Skyrocket's achievement. Their Hunter and Swift fighters are perfectly standard machines of types that will soon be coming into service in great numbers with Fighter Command. The Avon engines that powered them on the record flights were also standard; and the reheat installations, which boosted speed along the measured 3 km. courses, will again be standard on the R.A.F.'s new day fighters.

These speed records, therefore, are something of which we can be very proud, and although the record has now been regained by an American fighter, it is not

the end of the story by any means. The succession of world-beating British fighters which began with the Sopwith Tabloid, Pup, Camel and Snipe, and led to the Hurricane, Spitfire, Typhoon, Tempest, Mosquito and Meteor, will not end with the Hunter and Swift.

Nor should we forget the 100 km. closed circuit speed record of 709.2 m.p.h., which Sqd. Ldr. Duke set up on 19th September in his all-red Hunter. This record, which involves making turns instead of just flying straight and level down a measured course, is a much more searching test of an aircraft's true performance capabilities.

But records are only half the story. The real triumph of this year's S.B.A.C. Display was that it was *not* a display of secret new prototypes but almost entirely a demonstration of aircraft already in series production. The Comet and Viscount, for example, could claim the most important of all virtues for commercial aircraft—that after a period of regular service on ordinary airline routes they had both shown a handsome operating profit. Indeed, the Viscount's profit of £212,000 from a total revenue of £963,000 in its first 4½ months of service with British European Airways is something that will make every airline



Swift Mk.4 in which Mike Lithgow, Supermarine's chief test pilot, set up his world air speed record in North Africa.

operator in the world sit up and take notice. In 50 years' time, the Hunter, Swift, Comet and Viscount will be museum pieces, just like Orville Wright's 1903 biplane. But, with the Wright, they will be remembered among the great aeroplanes of history.

Of General Interest

Hornby-Dublo Exhibition at Rochdale

Three *M.M.* readers in Rochdale who are Hornby-Dublo enthusiasts recently staged a Hornby-Dublo exhibition with the idea of helping along their Church funds at the annual show of the Men's Club. From the picture here we can see how much work must have been put into the effort by Bobbie Fletcher, owner of most of the equipment on view, who planned the track layout, Roger Shackleton, designer of the realistic scenery, and Peter Stott, who assisted generally. The layout was a constant attraction throughout the display.

The railway, with two stations, signals and signal boxes consisted of twenty yards of track divided into four main sections, allowing four trains to be run at once. Three express engines, two *Duchess* 4-6-2s and one *Silver King*, shared in the express work, and the many varied trains included coal trains, empties, trains of vans, tank wagons and so on, as well as local trains and semi-fast expresses. The sidings were kept busy throughout as different trains came in.



In the centre of the Hornby-Dublo layout that they arranged for a show in Rochdale, Lancashire, are Bobbie Fletcher, Roger Shackleton and Peter Scott. Photograph by D. Worrall.

Everest Stamps

By the kindness of my friend Erach R.

Kooka, Bombay, a constant reader of the *M.M.*, I am able to reproduce on this page one of the special photogravure stamps issued by the Indian Posts and Telegraphs Department to commemorate the conquest of Mount Everest. Actually there are two stamps in the set, one of value 2a. that is violet in colour, and one dark brown of 14a. value, both of the same design.

The picture of Everest, which appears on both values, is from a photograph taken by the Indian Air Force.



The picture on the left shows Wrenton Rogers, a Dinky Toys enthusiast, stepping out proudly in a carnival procession in Rhayader, conscious that he has been awarded first prize for his remarkably attractive fancy dress, made almost entirely of Dinky Toys posters and cut-outs.

Puzzles for Beginners

Easy Entertainment for the Christmas Party

By H. Hutchinson

HE PUT THEM IN A MAZE

Mr. Smith was tired of hawkers calling at his house, as they appeared to be always knocking at his door. As he was a landscape gardener he set about designing a garden with a number of paths surrounded by high hedges which, he hoped, would baffle them and keep them away. In Fig. 1 you can see the layout of his garden. Can you first find

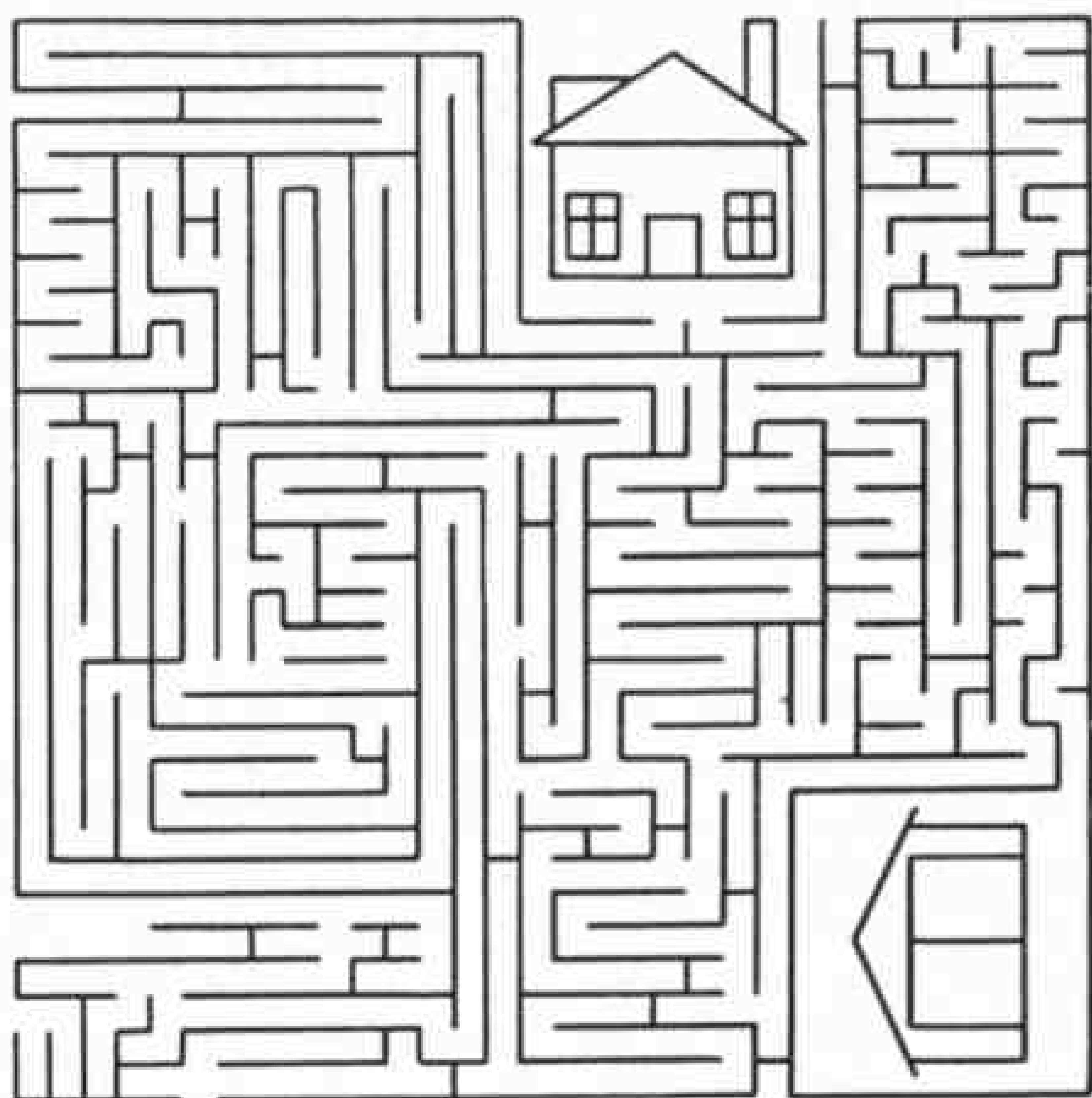


Fig. 1.

the gate, and then trace a way to Mr. Smith's house and discover how he goes to his garage from his house?

HOW MUCH DO YOU KNOW ABOUT YOUR OWN COUNTRY?

Fig. 2 introduces a novel kind of Cross-Country Puzzle that Sam really enjoys doing, and no doubt you will find it both fascinating and educational. Fill in the "Clues Across" and so solve the riddle of the "Shaded Diagonal," which names a place where quite a few potatoes are grown.

Clues Across

1. Here Mr. Butlin has one of his famous holiday camps.
2. The Coronation Naval Review was held here.
3. A stopping place for the Kings Cross to Edinburgh express.

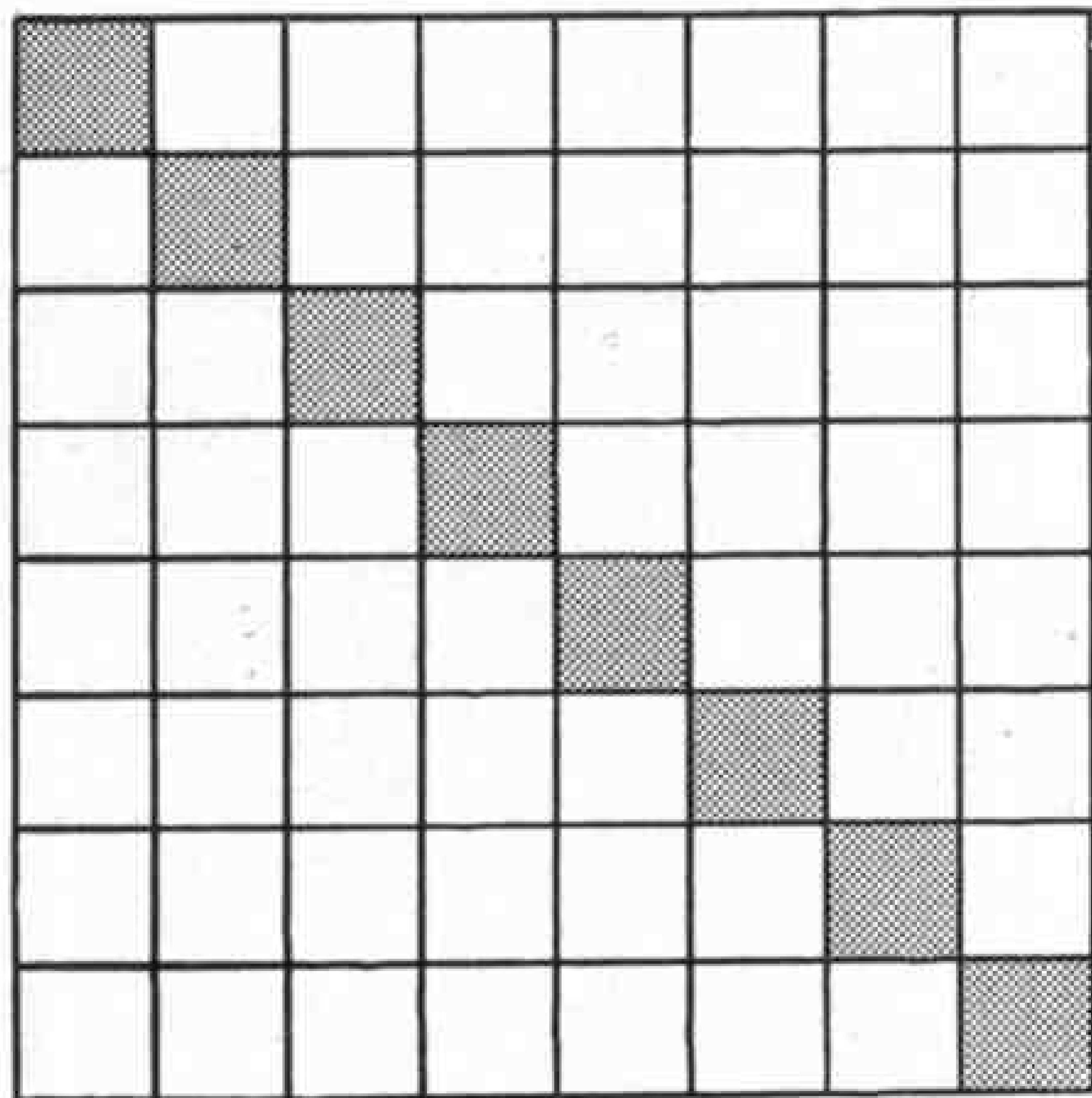


Fig. 2.

4. What is it?—ACEILLRS
5. The home town of a well-known film and stage actress.
6. Cheese is named after this county.
7. On Hill there lived a lass.
8. A South coast sea-side resort.

YOU ALL READ IT

All the children I know love listening to their favourite programmes on the radio or watching them on television. I enjoy both. Being either television or radio fans should

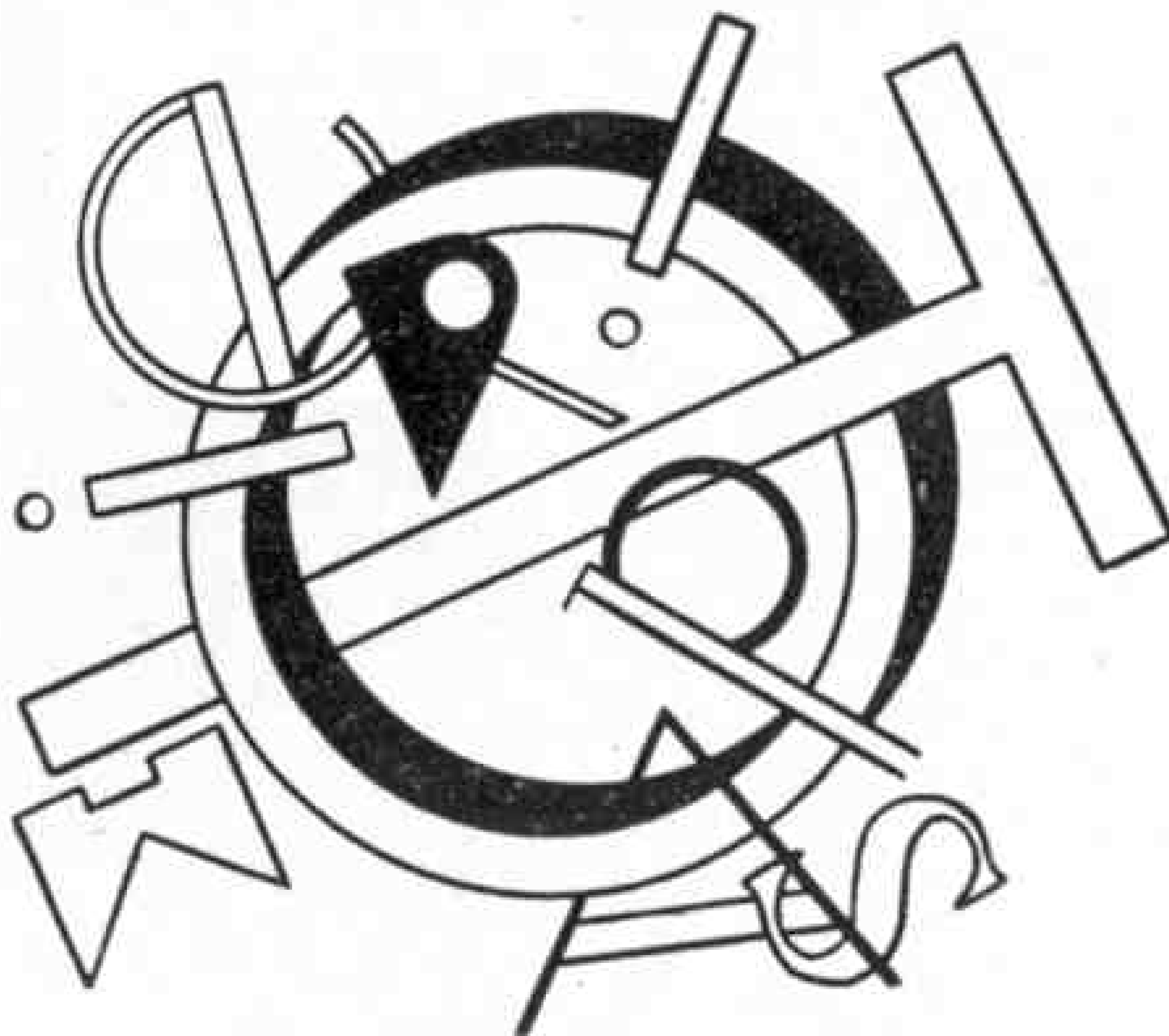


Fig. 3.

go a long way towards helping to solve the simple but interesting problem set in Fig. 3. Now have a go and see what you can do with a few letters.

RING THE CHANGES

Old Sooty keeps one of those old curiosity shops and Sam Salty pays him a weekly visit, although Old Sooty calls him a clumsy so and so because he always makes a nuisance of himself. On one visit when he walked in he immediately upset a tray of

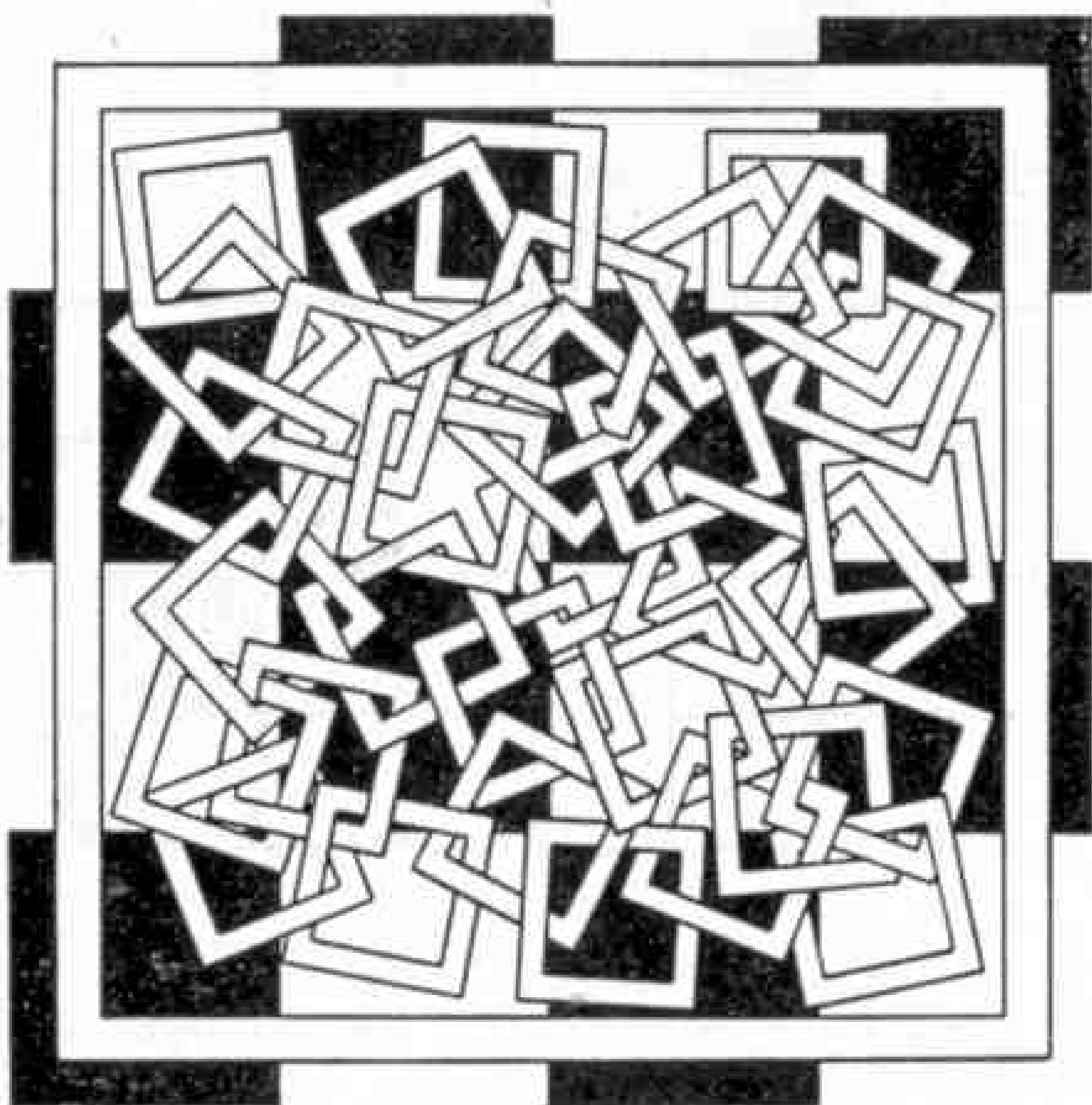


Fig. 4.

square rings. What a mess he made of things! Both got into a temper and for the life of them couldn't count the number of rings.

The jumble of rings is shown in Fig. 4. Can you sort these out and say how many there are?

A RAMBLING TOUR

Where did you go for your holiday? Our friend Sam Salty did a tour and visited quite a number of interesting places. In Fig. 5, by moving up, down or from right to left, but not diagonally you can spell out the names of the places he visited. There is one clue; after you have made a start the last

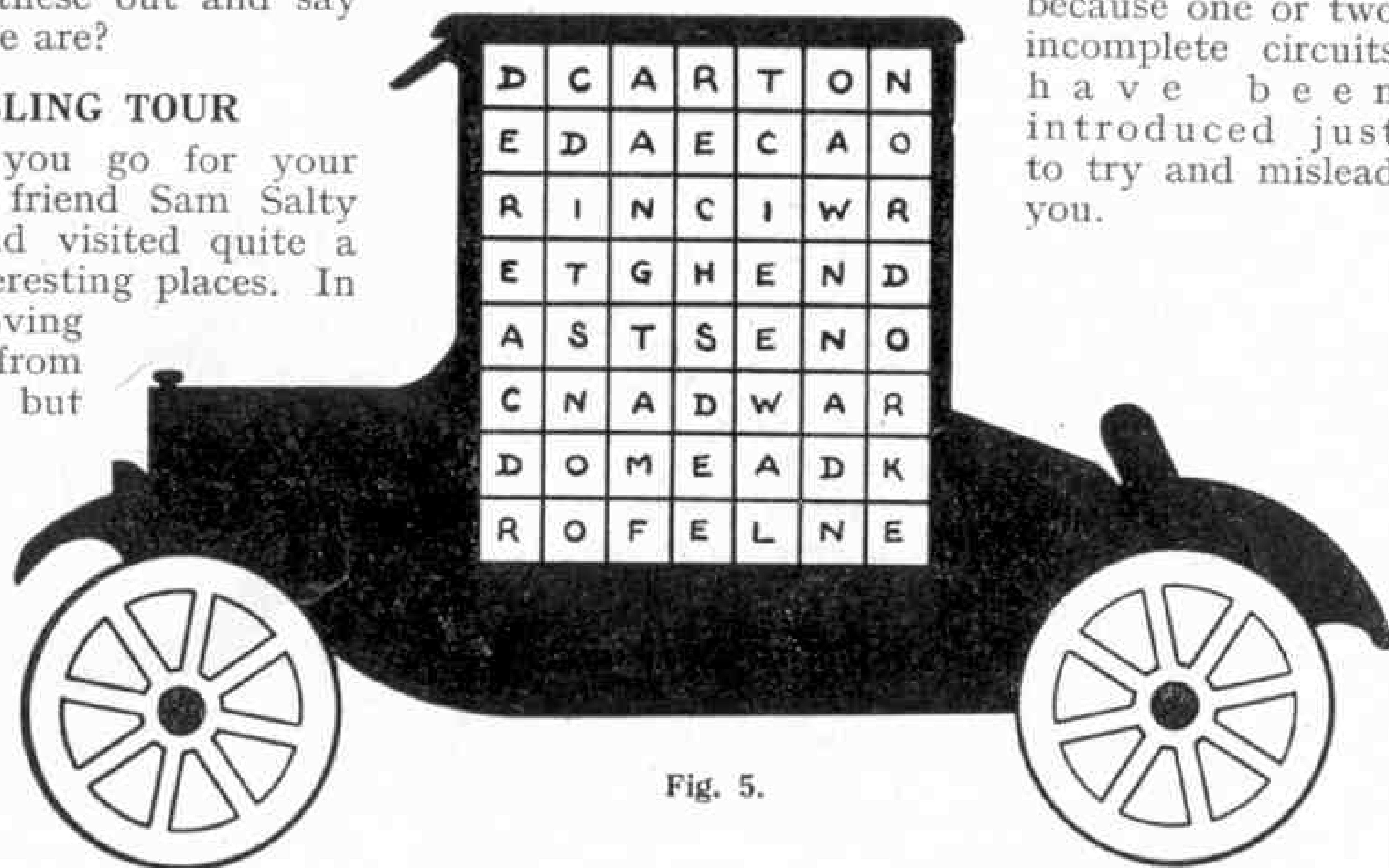


Fig. 5.

letter of each place name is the first letter of the next.

ROUND YOU GO

Have you ever paid a visit to motor racing meetings held at Silverstone,

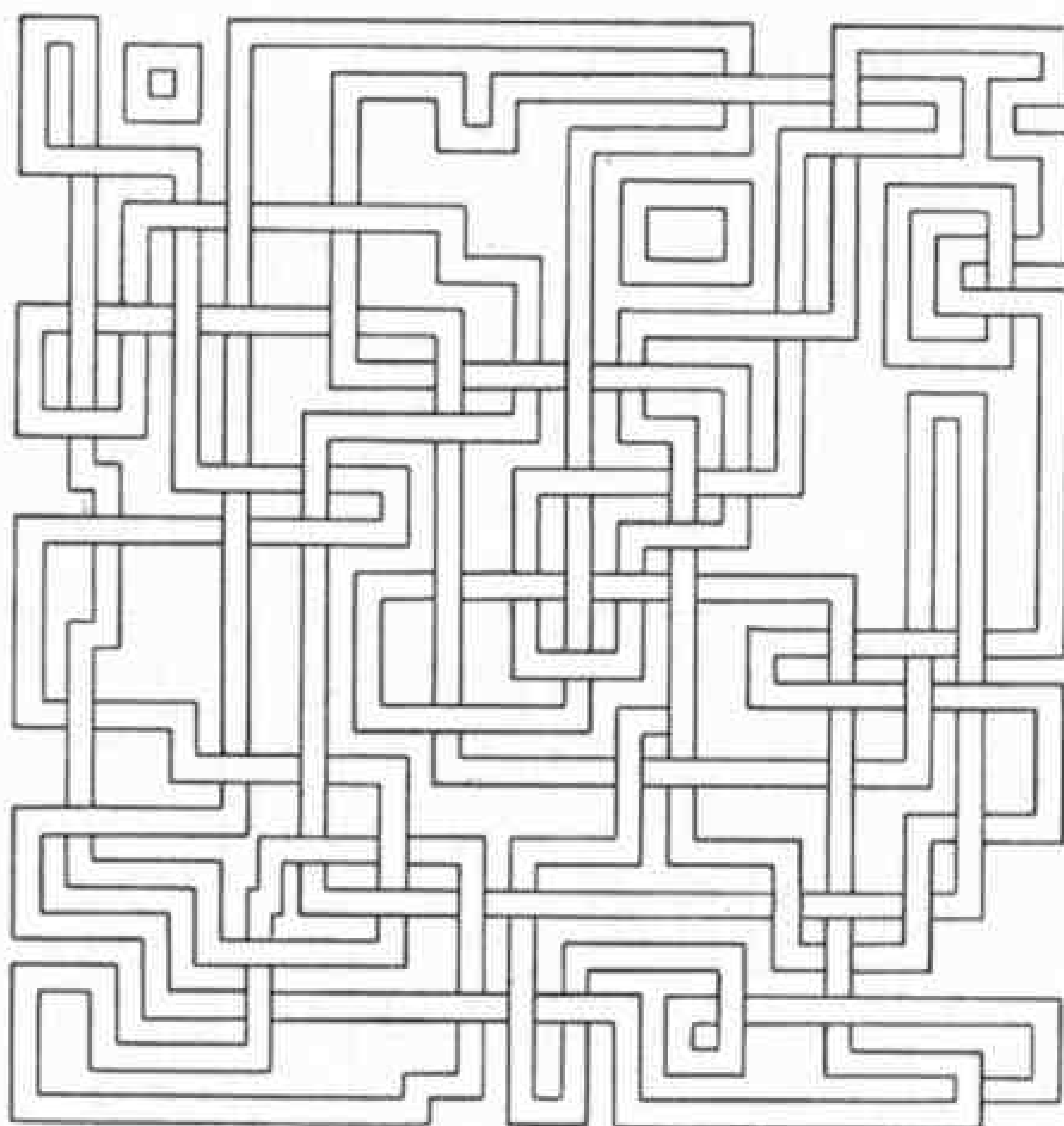


Fig. 6.

Goodwood and other places? Our artist appears to have done so because he tried to draw a number of these racing circuits. But unfortunately he got them hopelessly mixed up, as you can see in Fig. 6 which shows his drawing. Now see how clever you are and how quickly you can count the complete circuits. Be very careful,

because one or two incomplete circuits have been introduced just to try and mislead you.

WHERE DID HE SHOOT?

During the war ack ack guns were placed at strategic points, and special attention

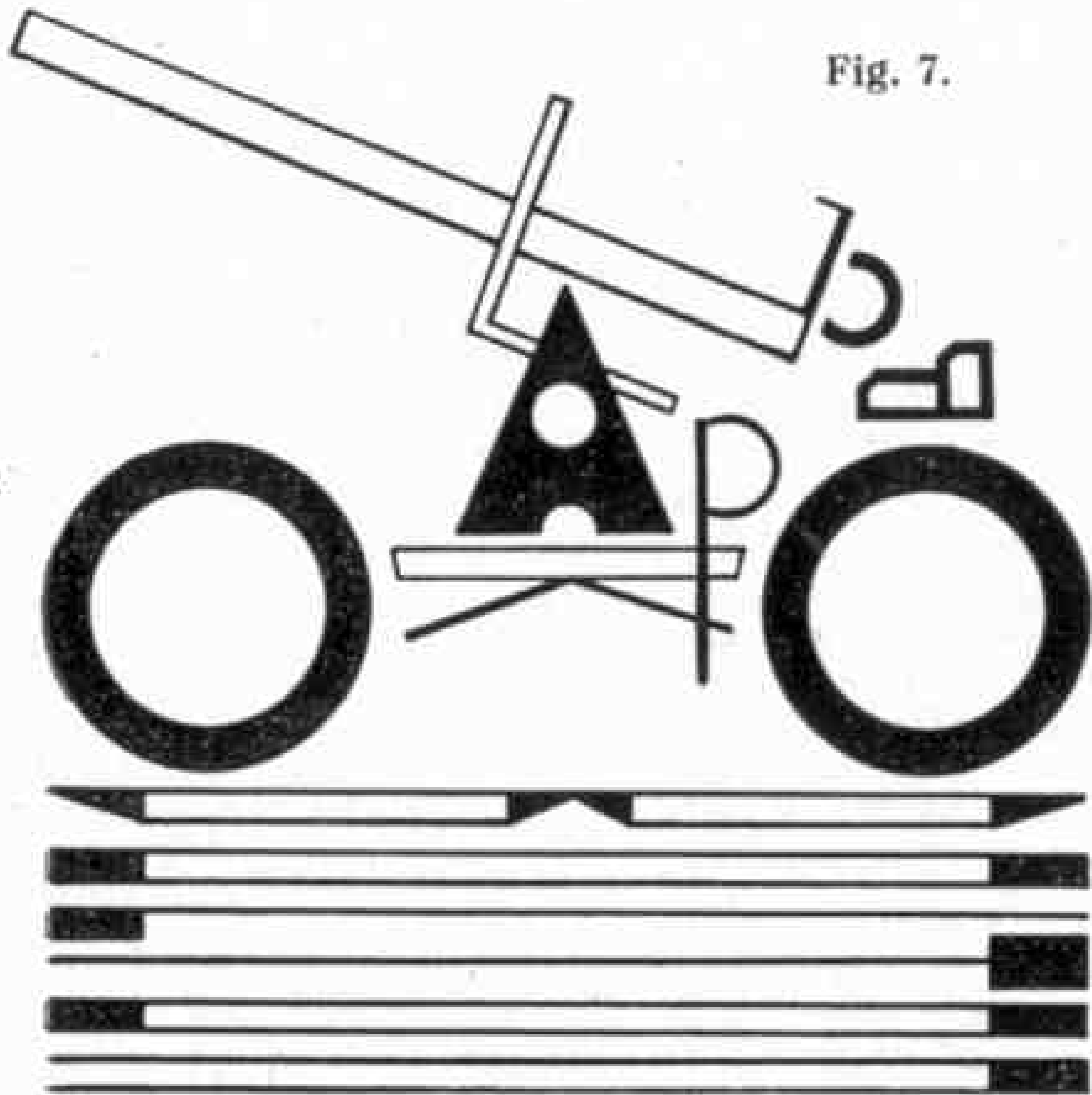


Fig. 7.

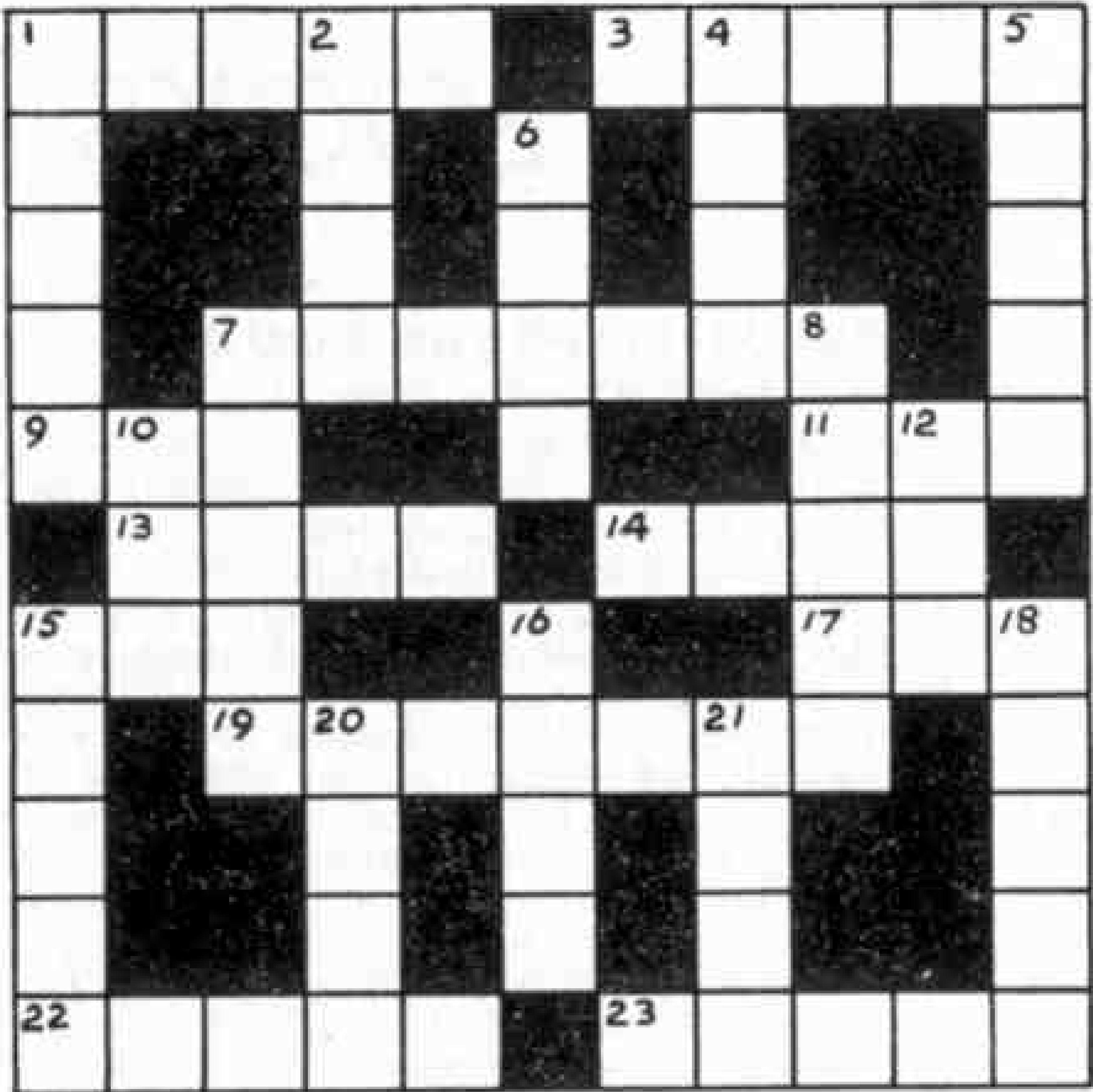


Fig. 8.

Clues Down

- 1. Centre of anything
- 2. Certain
- 4. Smart
- 5. Offspring
- 6. Cooking vessels
- 7. A dark colour
- 8. Edward
- 10. A stupid fellow
- 12. Noel (beheaded)
- 15. Brief
- 16. Close
- 18. Bright
- 20. Lazy
- 21. The raw material of steel

was given to our coast line. During his period of Service Sam Salty helped to man the guns at a number of ack ack sites, the names of two of which are hidden in Fig. 7. Can you find them? One of them is not on the coast.

CROSS WORDS

Fig. 8 shows a five-minute crossword puzzle for the young ones, and here are the clues.

Clues Across

- 1. A vaulting block
- 3. A lie
- 7. Usually disliked by children
- 9. Thick black liquid
- 11. A domestic animal
- 13. An amount
- 14. Surface of a cube
- 15. Point of the compass
- 17. Evil
- 19. Bedtime attire
- 22. Rise aloft
- 23. Nose of an animal

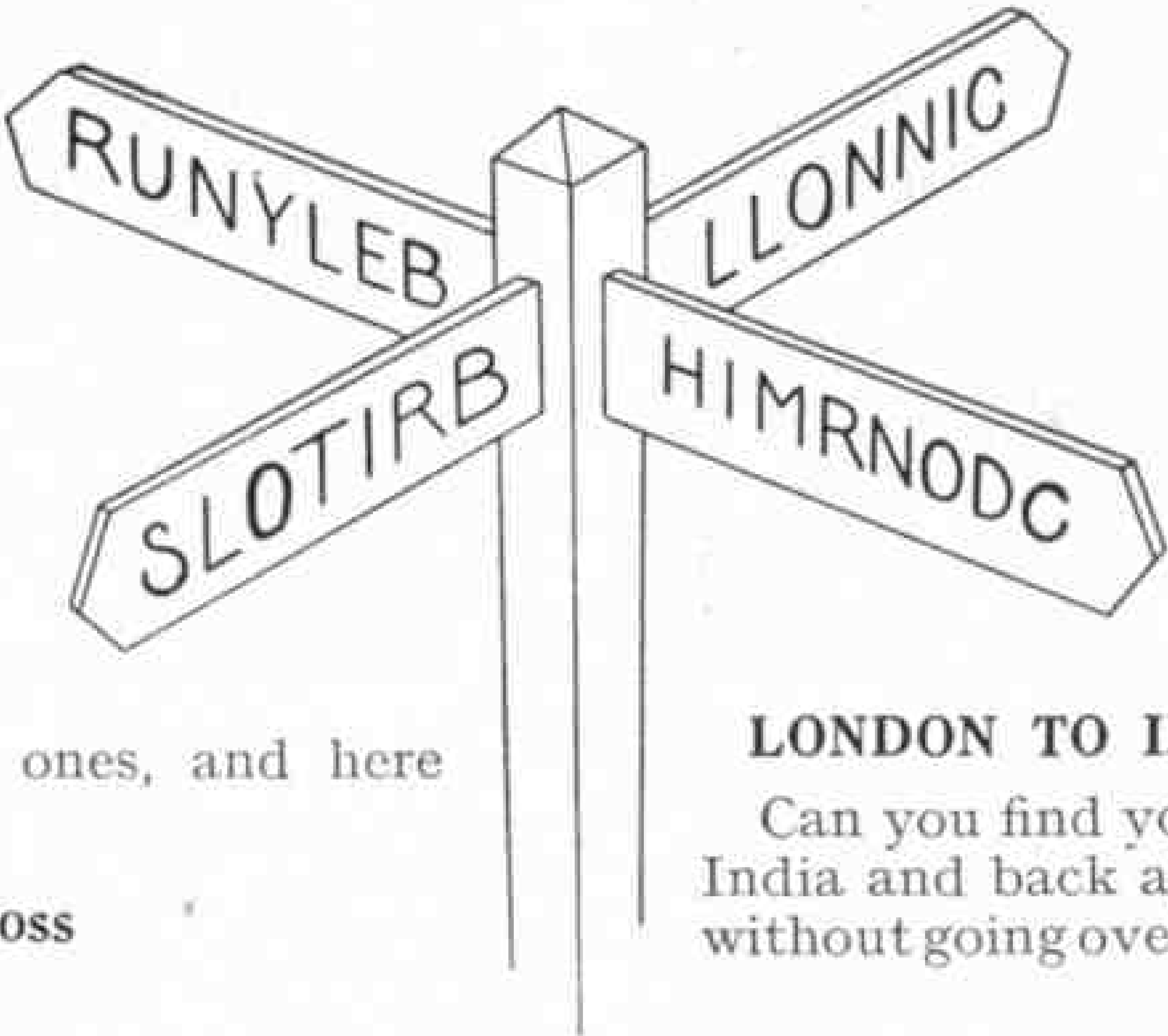


Fig. 9. Where do we go from here?

LONDON TO INDIA AND RETURN

Can you find your way from London to India and back again without a stop and without going over a line twice? Trace your path on the drawing in Fig. 10. It can be done and is not quite as difficult as it seems.

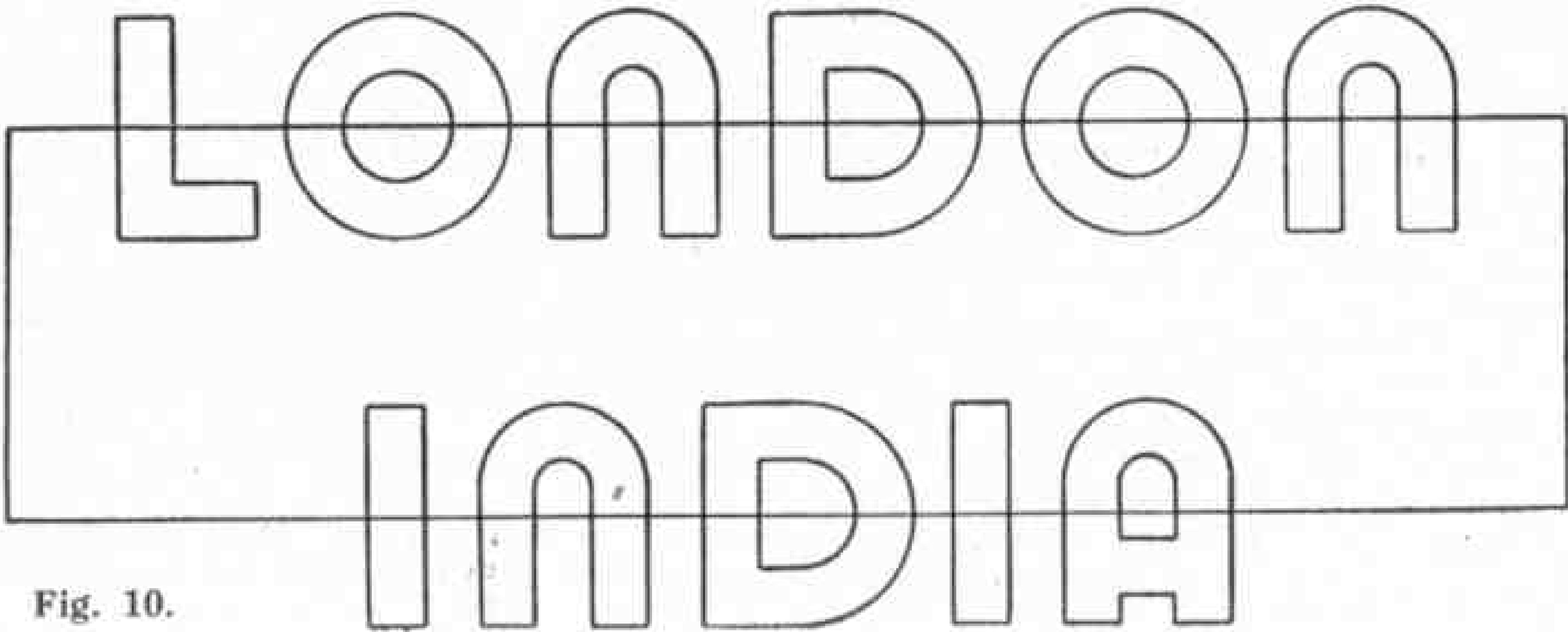


Fig. 10.

BOOKS TO READ

"FOOTBALL ROUND THE WORLD"

By TOM FINNEY (Museum Press Ltd. 8/6)

Many readers of the *M.M.* must be familiar with the magic of Tom Finney, the Preston wonder man. Here is a player who is original, full of craft and intelligence. A natural left-footed player, he usually appears on the right wing, to mystify opponents by his unorthodox way of taking the ball along with the outside of his left foot, which keeps them eternally guessing what he will do with it. And he does plenty, either carving out easy chances for his colleagues or weaving his way through in his own elusive fashion to score himself. Clearly Tom Finney is a man to watch—and it is not at all uncommon for two or even three opponents to be kept busy watching him.

All this makes it specially interesting to find that Tom Finney has written a book. In it he tells the story of his career in football, which in itself makes it attractive, but as we read through it we find sketches of other famous players, including of course the great Stanley Matthews, and on almost every page we learn something of the methods that Finney himself adopts in his play and his preparation for it. Football ability in itself is not sufficient to ensure success. Training and thinking are both essential, and in this respect Finney is a splendid example, on his day—and when he is playing most days on the field are his!—the complete master of every situation. That is how our friend Joe Mercer describes him in the introduction that he has contributed to this excellent and well-illustrated book.

"BRITISH STANDARD LOCOMOTIVES"

(The Locomotive Publishing Co. Ltd. 1/6)

The standard types of locomotives developed since the establishment of British Railways as a nationalised system form a distinctive engine family. The classes range from the "Britannia" Pacifics, weighing over 143 tons each with tender, to the 63-ton 2-6-2 tanks introduced fairly recently. All are two-cylinder engines and the larger ones at least have an impressive appearance. They rank as mixed-traffic engines, simple in design, with wide route availability and arranged for easy handling and maintenance.

The booklet here reviewed gives photographic and line reproductions of each of the classes so far turned out. These well illustrate the text, which summarises B.R. locomotive policy as well as giving brief general descriptions of each class and other useful details.

"CRASH KAVANAGH"

By ANTHONY RICHARDSON (Max Parrish 15/-)

Speedway enthusiasts all over the world know of Reg "Crash" Kavanagh, former speedway champion and film stunt man, and hundreds of thousands in stadiums from Singapore to Santa Monica, from Melbourne to Montevideo, have seen his spectacular film crash unit in its thrilling displays. The amazing career of this devil-may-care leader of the famous Kavanagh Hell Drivers is here told in the form of a novel; that is, with imaginary dialogue but authentic background.

In the course of his career Kavanagh has crashed practically every make of car in amazing spectacles, leaping off ramps at 60 m.p.h., driving through walls of flame and barricades, plunging in hair-raising delayed parachute drops, somersaulting and rolling cars, walking wingtip to wingtip from aeroplanes or crashing them into the ground, or colliding them in mid-air. In his time he has fractured practically

every bone in his body, and on several occasions has been given up for dead. All told, Kavanagh estimates that he has spent six of his 43 years in hospital. But every stunt is a calculated risk, and in this unique and dangerous career he has become the greatest living expert on the crashing of cars and aircraft.

Some of the incredible crashes staged by Kavanagh are shown in the remarkable half-tone illustrations to this truly exciting book.

"EAGLE BOOK OF AIRCRAFT"

By JOHN W. R. TAYLOR (Hulton Press 10/6)

Here the fascinating story of Aviation is told by an author well known to *M.M.* readers. The book is in three parts. The first one relates the history of Flying, from the birdmen of Greek and Scandinavian legends, the hot-air balloon of 1783, and the historical flights of the Wright Brothers at the beginning of the present century, to the high-speed jet flying of today. The second part, mainly pictorial, explains with a wealth of line drawings and concise explanatory notes the "how and why" of flying—the function of aeroplane slots, flaps, controls, etc.; the various branches of flying training; the work of a test pilot, and a host of other interesting aspects of modern Aviation. The final section, aptly titled "Wings to Lift a World," tells of the remarkable growth of model aeroplane flying, the many and varied jobs for which light aircraft are employed nowadays, the development of long-distance air passenger and freight services, how the helicopter is at last coming into its own, and so on.

There are hundreds of excellent half-tone illustrations, scores of explanatory line drawings, and some magnificent double-page colour plates showing sectional views of types of modern military and commercial aircraft.

An ideal Christmas gift for a young Aviation enthusiast.

"RAILWAY ADVENTURE"

By L. T. C. ROLT
(Constable 21/-)

The author of this book, Mr. L. T. C. Rolt, needs no introduction, as his varied works have become very well known. In this latest book

Railway Adventure, he deals with the history of the narrow gauge Talylyn Railway, the line in an obscure valley in Wales that when almost on its last legs suddenly rocketed to fame among railway enthusiasts both in Britain and abroad. Mr. Rolt speaks with the authority of one having a very personal interest in the line, for he was mainly responsible for the idea of the foundation of the Talylyn Railway Preservation Society, the noble band of railway lovers whose strenuous and enthusiastic activities have brought fame to the once-obscure little line, the last surviving public narrow gauge company-owned railway in Britain.

The book begins with a description of the country and people served by the railway, and then goes on to trace its existence from its construction till the close of World War II, when its fate seemed sealed. The picture is now a much happier one, and Mr. Rolt's stories of the arduous efforts of the Society, and of the many heart-breaking difficulties its members have overcome, make enthralling reading. We are also introduced to some of the men who had worked on the line for many years, and their personalities humanise the whole story.

There is no doubt that this book will be widely read, and we are sure that it will win for the railway many more loyal supporters to ensure it a sound future.

On these pages we review books of interest and of use to readers of the *M.M.* With certain exceptions, which are indicated, these should be ordered through a bookseller.

"THE CHILDREN'S WONDER BOOK IN COLOUR"

(Odhams Press 12/6)

This is a fine large book, with 192 pages, of which no fewer than 96 are in colour. Illustrations indeed play a very great part in it. The splendid pictures, printed in gravure, are full of interest and worthy of close examination, and the text corresponds, providing a wealth of historical stories, nature features, comic strips, puzzles and games, with explanations of how things work accompanied by splendid pictures designed to make the text perfectly clear. Altogether the book is a real feast of good things to delight boys and girls alike.

"ABC OF OCEAN LINERS"

By H. M. LE FLEMING

"ABC OF BRITISH RAILWAY STEAMERS"

(Ian Allan 2/- each)

These additions to the popular *ABC* series of pocket books will delight readers who are interested in ships. The vessels listed in *Ocean Liners* are those of some well-known companies whose ships call at British ports. The companies are dealt with in alphabetical order, and the details given of their ships include name, date, gross tonnage, dimensions, speed, type of engine and number of screws or propellers. With a few exceptions, the liners listed here are over 4,000 tons gross and over 400 ft. long.

Descriptions of the funnel markings and hull colours, and the routes upon which the ships concerned ply their trade are given at the head of each list. Some Dutch, Swedish, Danish, Polish and American shipping lines also are included. There are excellent half-tone illustrations of nearly 60 of the liners mentioned in the book.

ABC of British Railway Steamers begins with an account of the many and varied steamer services operated by British Railways, and the extent of these will surprise readers who may be unaware of this important branch of the B.R. organisation. The North Eastern, in fact, is the only B.R. region which does not operate steamer services.

Some 24 services are covered by the booklet, ranging from the well-known cross-Channel Continental sailings to the services on Lake Windermere and the Scottish lochs. The details of the steamers are tabulated as in the *Ocean Liners* booklet. The splendid half-tone illustrations in the book maintain the high pictorial standard of the publications in this series.

"HOW TO FLY"

By LAURENCE C. BAGLEY (Blackie 7/6)

Almost every youngster watching an aeroplane in flight wishes that he was the pilot. The next best thing to real flying is to read all about it, and this attractive book is ideal for this purpose. The reader is assumed to be a young trainee under instruction, and he is told in a chatty, non-technical way exactly what to do and why. The illustrations—nearly 70 of them—are very good, and include detailed line drawings of structural features of an aeroplane and colour plates portraying various aspects of flying training and some types of current aircraft.

"THE LOCOMOTIVES OF THE GREAT WESTERN RAILWAY"

Part 8

Modern Passenger Classes

(R.C.T.S. Price 10/-)

Another welcome Part of the Railway Correspondence and Travel Society publication dealing with the locomotives of the Great Western Railway has made its appearance, Part 8 of a series of 12 Parts that will constitute the complete work. The Parts are not appearing in chronological order, Nos. 1, 2 and 11 having already appeared.

The present Part deals with the Modern Passenger Classes of the G.W.R., that is the bigger engines of the period from 1902 onward. They are all 4-6-0s, with the exception of the *Frenchmen* or "de Glehn"

Compounds from across the Channel, their rivals the Swindon Atlantics, and that remarkable member of the Churchward locomotive family *The Great Bear*, the first Pacific tender engine in these islands.

Painstaking care in detail is in evidence in this section of the work, as in its predecessors, and its many excellent and informative illustrations show the various classes in practically every stage of their development.

"THE COMET AND FLYING WING"

(Brockhampton Press 4/-)

Here is a real novelty that will provide splendid recreational occupation for young readers of the *M.M.* It is what is called a press-out book, containing thick pages in good card on which are drawn the parts required to build up a 12½ in. scale model of the Comet, Britain's famous airliner, and a flying wing, both of which actually fly, or rather glide. No cutting out is required, as the scale model parts can easily be just pressed out of the pages on which they are drawn, and it is simple but interesting to build up the models themselves, following the very careful instructions given.

The particular example under review is one of a series, another in which allows a 17½ in. scale model of a rocket to be built, with two petrol rockets, all of which fly, and a space car that runs on wheels. In each case there is reading matter associated with the subject of the book itself, and those who are fortunate enough to obtain copies will have a delightful time building up the models and learning a good deal about their subjects in the process.

TRAINS DIARY 1954

(Ian Allan 3/1)

The 1954 edition of this handy pocket Annual contains 24 pages of interesting railway matter in addition to the usual diary pages for the year. There are short explanatory articles on the British standard headlamp code, standard signals and standard signal box bell codes, tables listing Britain's famous bridges and viaducts, longest tunnels, biggest stations, notable British locomotives, banks and track water troughs. Useful hints are given on calculating the speed of a train.

Several full-page illustrations of British locomotives and trains add to the interest and value of the diary.

"GAY VENTURE STAMP ALBUM"

(Gibbons. Price 2/6)

Stamp collecting must be real fun if it is to be of any benefit as a hobby. The famous stamp dealing firm of Stanley Gibbons realise this to the full, and have produced this attractive new album for the beginner, with the idea of encouraging boys and girls to take up collecting for themselves. A glance at the cover shows how exciting the hobby can be, for on it are illustrated in colour a large number of highly attractive and interesting stamps. There are 96 pages providing space for the stamps themselves.

The album is of the type in which there are printed headings, and it can be strongly recommended for beginners who are attracted by the stamps of many countries, and have not yet reached the stage when they begin to collect on carefully chosen lines, with larger blank leaf albums. It can be obtained from any stamp dealer.

"CYCLE SPEEDWAY ANNUAL 1953"

(Paylor Publications 2/-)

The comparatively young sport of cycle speedway riding is now splendidly organised, and there are some 40,000 youths interested in it. They are to be found in all parts of the country, and here is a complete guide to the Lions, Rangers, Panthers, the Jets, Aces, Eagles and other clubs enjoying the sport.

Graham Payne's Annual is now in its second year of publication and is a mine of information about speedway cycling, full of pen pictures of the stars of the game and of statistics and other details. It should be kept at hand by every boy or youth interested in this exciting development of cycling.

On the Road

High Lights of the Motor Show

By J. Dewar McIntock

OF recent months, my most exciting and interesting duty was to make a technical survey of the Earls Court Motor Show, at the end of October. As I have said earlier in the year, motor affairs become more fascinating these days, as more and more new cars come on to the

The Standard Eight and the two-door Austin Seven also swelled the ranks of the new class of inexpensive popular car, and I observed that Citroens showed the little twin-cylinder car with all-round independent springing of a novel and most effective kind. It is a very cheap car in

The Daimler Company showed a drop head coupe with excellent styling and performance. Photograph by courtesy of the Daimler Motor Co. Ltd.



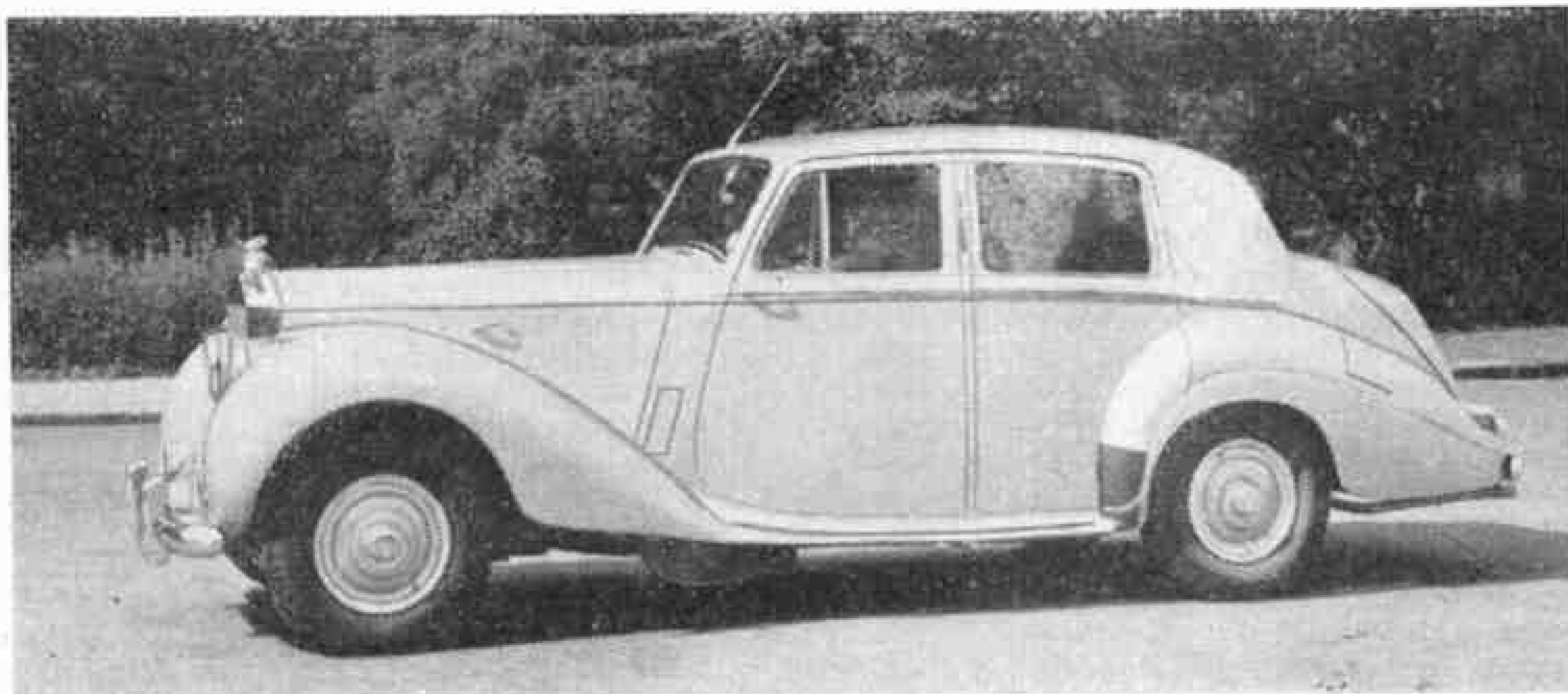
home market in goodly numbers and at more reasonable prices—and the Ford Motor Co. Ltd., certainly shook things up a bit with their new Popular model, which sells at well under the £400 mark.

That car particularly attracted me because it is fitted with the 10 h.p. Prefect engine—the “old” one, that is—and hence should have a splendid performance. Many readers will know that the Export Anglia had been available with a 10 h.p. motor, and I once followed one in a motor rally, and had considerable difficulty in keeping up with it, although I was in a much bigger car.

France, but not in this country, more's the pity.

At the other end of the scale, there were some beautiful new sports cars, and cars in the luxury class. I don't suppose there have ever been so many 100 m.p.h. cars at any previous show. In addition to the ones from which one expects “the ton”—as some of the sporting boys call the magic figure—there were cars like the new A.C. Ace, the Jowett Jupiter R4, and the Daimler Conquest Roadster. The Ace is a nice, sleek, businesslike-looking car, and has a body panelled in aluminium over a tubular frame, the chassis also being

tubular. It has independent front and rear suspension with transverse leaf springs.



The Rolls-Royce Silver Dawn is now available for the home market. It is slightly smaller than the Silver Wraith, but has the same 4½ litre engine. It is primarily intended for the owner driver.

The Jowett Jupiter is a model developed from Le Mans-winning cars, and has a body partly constructed from glass fibre. The Daimler Conquest Roadster is a hotted-up version of the normal Conquest, and has very pretty styling.

Mention of glass fibre reminds me that



The Riley Pathfinder is a very attractive new 2½ litre car with high performance—it is in the 100 m.p.h. class. Photograph by courtesy of the Nuffield Organisation.

the Singer people made a feature of the Export Roadster with a nicely-styled sports body, completely fabricated in this remarkable material.

In the luxury class, the Rolls-Royce and Bentley cars were more impressive than ever, especially in some of the forms seen on the specialist coachbuilders' stands. A fully automatic gearbox is now available as an alternative to the normal gearbox on all models except the Bentley Continental. On their normal boxes, these fine motor cars have had the gear-control on the driver's right as long as I can remember, and I was interested to note that the new

Riley Pathfinder—a high-performance 2½-litre with semi-continental lines—has this feature. I hope the control works like the Rolls one . . . like sliding a warm knife through butter, as somebody has said.

I expect those of you who visited the Show looked at the Mercedes-Benz exhibits.

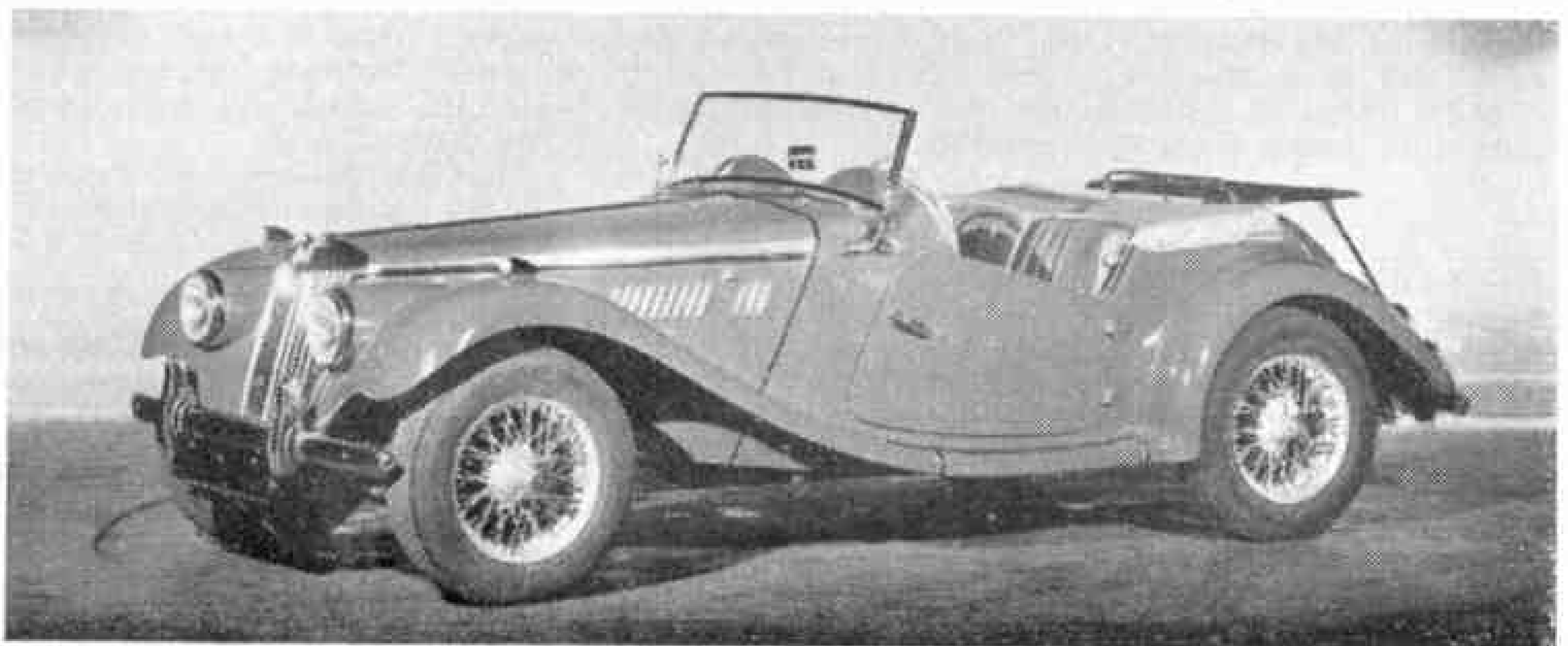
Those are wonderful cars, characterised by all that is best in precision engineering. I went to a party at the Dorchester, where we met the German chiefs, and they told me that "Merc" would be challenging the Italians and ourselves with a new Grand Prix racer next year!

I thought one of the most fascinating exhibits from the technical as well as the sporting angle was the Spanish Pegaso. I happened to reach the stand at the same time as the Duke of Edinburgh, and I noticed that he was more than ordinarily interested in this car. That was after he had made a speech in which he had suggested that Britain's motor industry ought to try to produce something as revolutionary as the Comet

has been in the air. I believe we can do it, too, and it will make the Pegaso look like a taxicab, when the time comes. One day, perhaps sooner than we realise, the gearbox, differential and axles will disappear, and the turbine engine will drive hydraulically to the wheels. That is my guess, anyway, and I am perhaps influenced by thoughts of the Rover turbine, and the knowledge that Austins filed a patent for hydraulic drive a long time ago.

There were many nice little parties in connection with the Show, and I saw our friends Stirling Moss and Ian Appleyard (with his wife Pat, of (Continued on page 648)

The latest version of the M.G. Midget, with restyled body. Increased power output has been obtained from its 1,250 c.c. by raising the compression ratio and fitting larger carburettors and valves, with stronger valve springs. Photograph by courtesy of the Nuffield Organisation.



Air News

By John W. R. Taylor

Triple Tanker

The battle of "flying boom" versus "probe and drogue" method of flight refuelling has been carried a stage further by Sir Alan Cobham's Flight Refuelling company, who have perfected a "probe and drogue" system for refuelling three aircraft at once. The photograph on this page, taken during secret tests over Southern England in 1951, shows how it is done. The tanker, here a B-29 Superfortress, trails hoses from its fuselage and wing tips; and fighters suck fuel from these hoses through probes on their noses.

The U.S. Services have already taken to flight refuelling in a big way, to increase the range and endurance of their fighters and bombers. The U.S. Navy use the British system; but the U.S.A.F. have concentrated so far on the Boeing Flying Boom method, which uses an external rigid metal boom instead of a flexible hose. B-50 Superfortress and B-47 Stratojet bombers have built-in flight refuelling equipment, and boom-equipped KB-29 and KC-97 Stratofreighter tankers are attached permanently to operational bomber squadrons. Using the same method, Thunderjet fighters have been flown non-stop, 75 at a time, 2,750 miles from Midway Island to Japan, across the Pacific.

Chief disadvantage of the Flying Boom method is that the big boom seriously reduces the speed of the aircraft to which it is attached. Sir Alan Cobham's latest "probe" refuelling pack, on the other hand, fits snugly inside the bomb-bay of the tanker, causing a very slight reduction in speed only during the actual refuelling operation, when the hose is wound out. This fact, combined with the new "three at once" technique, definitely puts the British system in the lead, and it is significant that the U.S.A.F. have already tested it, using a modified KB-47 Stratojet tanker to refuel Stratojet bombers.

The Last "Wimpey"

The R.A.F.'s last airworthy Wellington bomber—No. MF628, a Mk.10 trainer—made its farewell flight during this year's Battle of Britain Day display at R.A.F. Station, St. Athan, Glamorgan. The Air Ministry have not yet decided what to do with it, as the R.A.F. have no museum for historical aircraft.

Altogether 11,461 Wellingtons were built. Affectionately known as "Wimpeys," after a character in the "Popeye" comic strip named J. Wellington Wimpey, they bore the brunt of Bomber Command's offensive until the Halifax and Lancaster came into large-scale service.

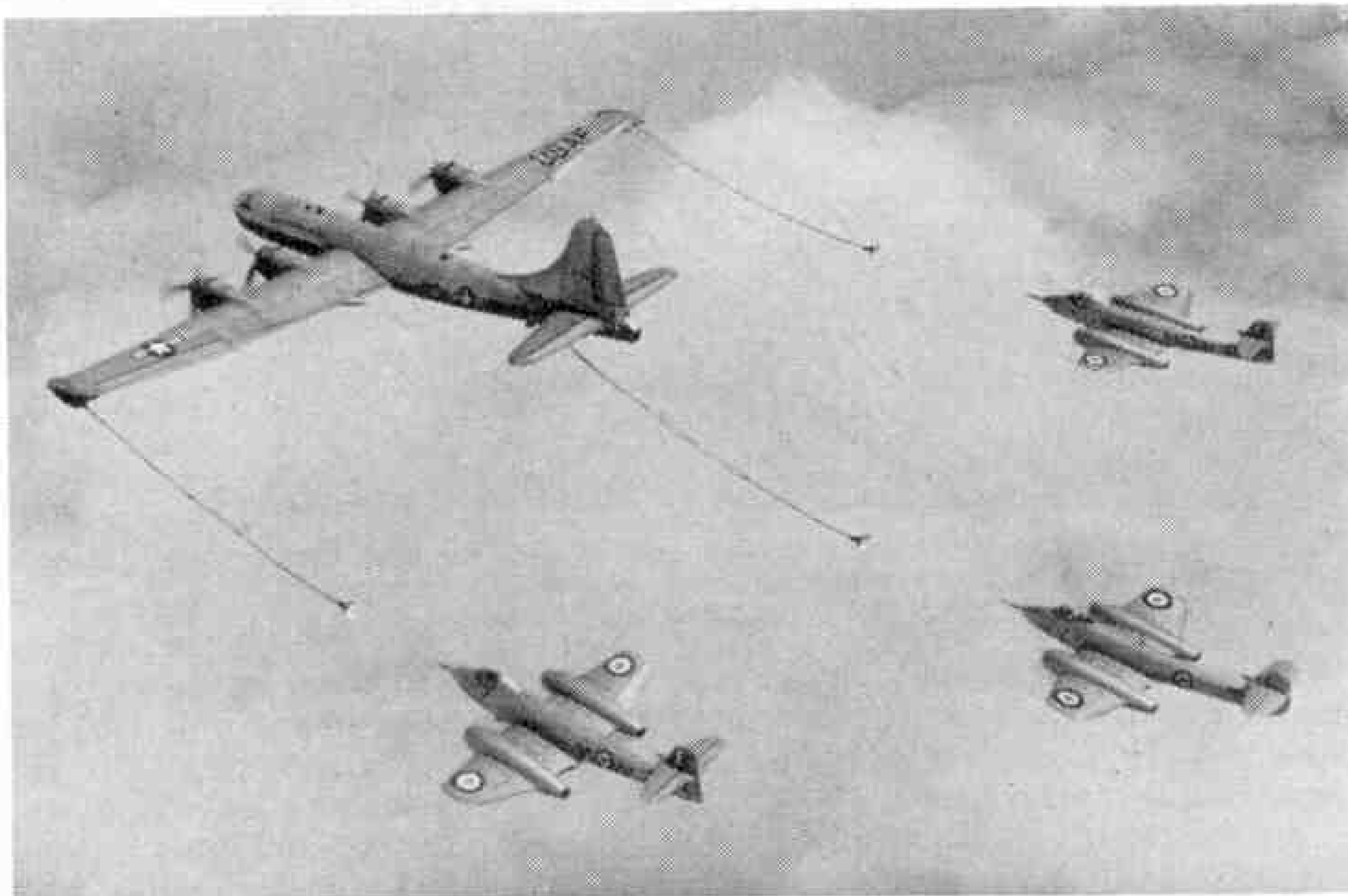
An Unwieldy Cargo

One of the most unusual cargoes ever carried by air was flown from London recently aboard a Skymaster of the Belgian Sabena company. Looking rather like an octopus with 300 ft. arms, it was actually a one-piece rubber lining, weighing a ton, and destined for Kampala, Uganda, where it is being used to seal cracks in a large concrete reservoir. Sabena flew three air cargo experts to London to supervise the loading operation, which took nearly two hours.

Delta Trials Completed

The Fairey Aviation Company announced recently that their Derwent powered F.D.1 delta-wing research aircraft has completed successfully its flight acceptance trials at Boscombe Down.

Since the news of its first flight on 10th March, 1951, little has been heard of this plane, whose stub wings span only 19 ft. 6½ in. But it is significant that the



Three Gloster Meteors in flight about to be refuelled simultaneously by a Boeing Superfortress tanker which has Flight Refuelling "probe and drogue" equipment.

rocket-powered Vertical Take-Off models described in the September *Air News* were half-scale replicas of the F.D.1, and the outcome of this enterprising programme of research should be very interesting.

Royal Freighters

Advance news of preparations made in Australia for the visit of Her Majesty the Queen and H.R.H. the Duke of Edinburgh reveal that the Army plan to provide a fleet of 115 vehicles for use by the Royal party. Some of these, together with luggage, will be carried between States aboard Bristol Freighter aircraft, which will accompany the aircraft carrying the Queen.

In New Zealand too, plans for the transport of the Royal visitors include use of Freighters of No. 41 Transport Squadron, R.N.Z.A.F., to carry the luggage.

* * *

Thunderjet production has been ended at Republic's Farmingdale factory, New York, so that work can be concentrated on the sweptwing F-84F Thunderstreak. Altogether, 4,457 straightwing Thunderjets were built, and they are in service with 16 Allied Air Forces.

The F-84G version was the first fighter able to carry under its wings a baby atomic bomb for tactical support of ground forces.

Salute the Sabre

By shooting down 800 Russian-built MIG-15 jet fighters in Korea, at a loss to themselves of 58 aircraft, North American Sabres have established their reputation as the finest fighters in large scale service anywhere in the world today. Latest version used in Korea was the F-86F, which is powered by a 5,800 lb. thrust General Electric J-47-GE-27 turbojet and has an improved radar gunsight—key to the Sabre's great success.

An even better Sabre, the completely new F-86H, with a more powerful General Electric J-73 engine, will soon follow the "F" into service. Slightly larger than earlier versions, it can be distinguished by its deeper air intake, which is also a feature of the Avon-powered Sabres being built in Australia by the Commonwealth Aircraft Corp.

Meanwhile, the U.S. Navy and Marine Corps are also getting Sabres. They call them Furies, and the latest FJ-3 Furies are almost certainly as fast as the U.S.A.F.'s F-86H, as they are powered by Wright-built J-65 Sapphire turbojets.

Exact performance figures are secret, but all Sabres can dive faster than sound.

Flying Boat Expansion

Following a 100 per cent. increase in bookings on their Madeira service last Summer, Aquila Airways have bought three more flying boats from the Ministry of Supply. One is a double-deck Solent and the other two are Hythes. All three are being fitted out at Aquila's Southampton maintenance base.

The Solent is due to enter service this month on the Southampton-Madeira route, to supplement the famous 42-seat Solent *Sydney* already in use. The company's present 31-seat Hythe will be used on the shorter Madeira-Lisbon and Madeira-Las Palmas



The F-86H, fifth and latest in North American's series of sweptwing Sabre jet fighters. Photograph by courtesy of North American Aviation, Inc., U.S.A.

routes, and the two new Hythes will be put on to additional routes next year.

Sandwich for Jets

British metallurgists have found an answer to the problem of building combustion chambers strong enough to withstand the intense heat produced inside our latest, tremendously powerful jet engines.

Chief ingredient is Nimonic 75, the alloy developed at Birmingham specially for Sir Frank Whittle's first jets, to meet stresses at temperatures that would have melted any other metal. In fact the series of Nimonic alloys not only made possible the Whittle engine, but have ensured the continued superiority of our turbojets ever since. They have been the standard material for the moving blades of all Britain's production gas turbines; and Nimonic 75 in sheet form is always used inside combustion chambers, where heat is most intense.

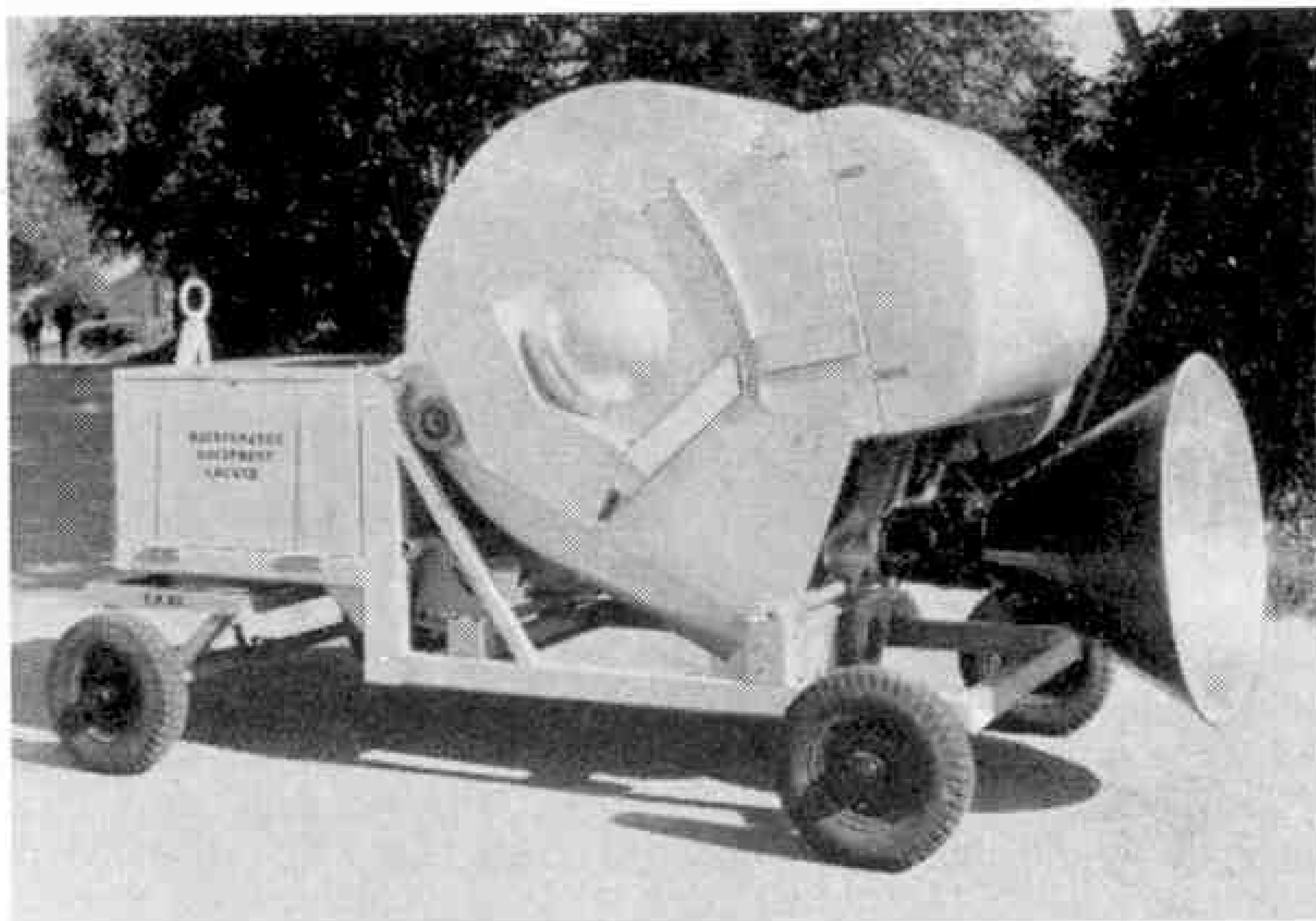
Big problem has been to dissipate the heat of combustion quickly enough to avoid damage to the chambers. "Nimoply" has now given the answer. It is a sandwich, with thin layers of Nimonic 75 on each side of a copper filling which, because of its high conductivity, spreads the heat quickly and evenly and so avoids "hot spots" which would in time attack the metal.

Twin-Engined Navion

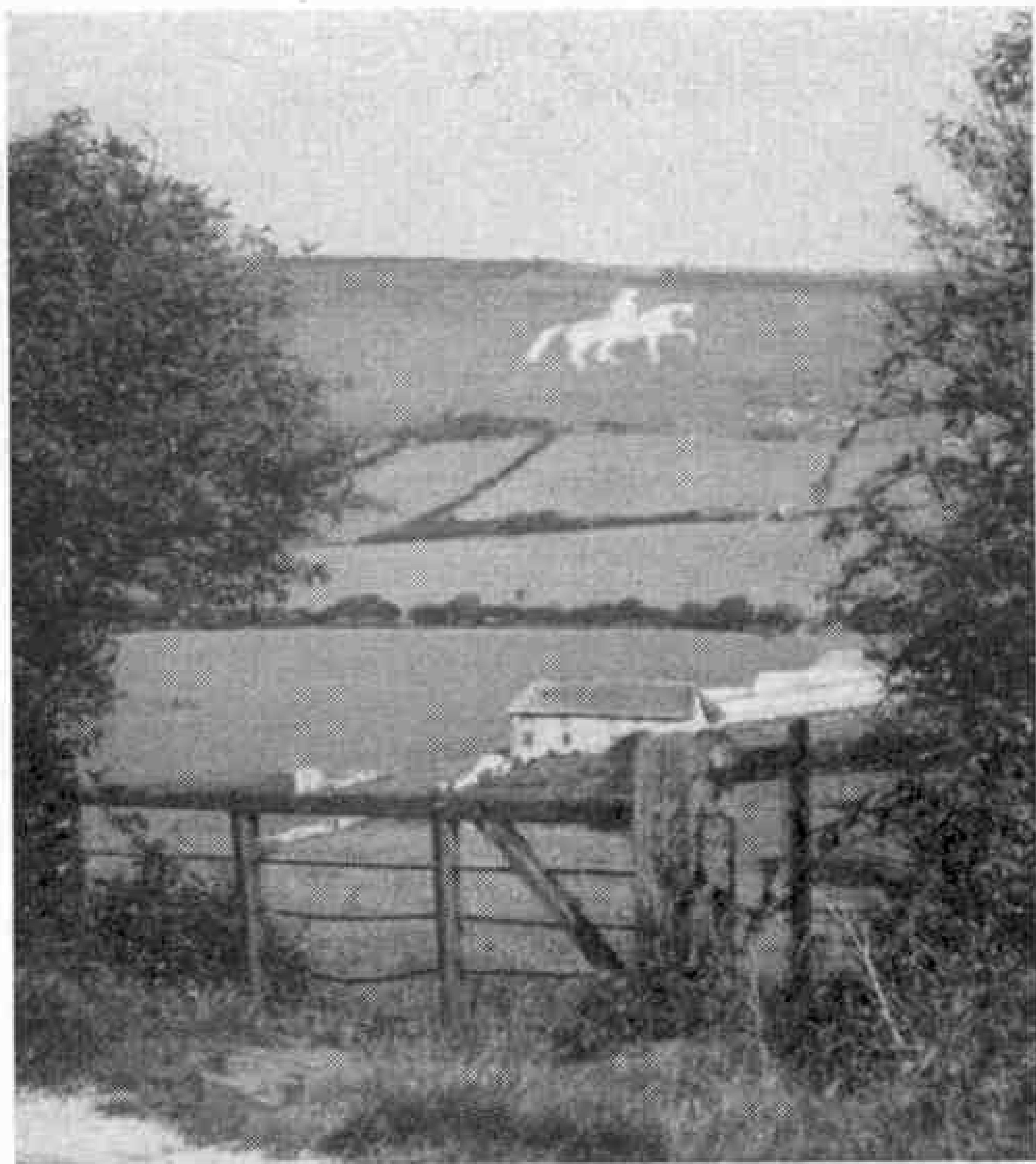
One of America's best and most popular light aircraft, the 4-seat Ryan Navion, has been converted into a baby air liner by the Riley Aviation Manufacturing Company of Fort Lauderdale, Florida.

Purpose of the conversion was to produce an executive transport offering full safety for night and "blind" flying at a fraction of the cost of a normal all-metal twin-engined aircraft. It involved replacing the original 260 h.p. nose-mounted engine with two 140 h.p. Lycoming engines in wing nacelles, reinforcing the wings, fitting a larger rudder and tailplane, new instrument panel and engine controls, and a new metal nose which is used as a luggage compartment.

The first Riley Twin Navion attracted so much interest from Navion owners that Riley have had to call on the resources of the big Temco Corporation.



Complete Flight Refuelling Mk.IV hose drum unit, suitable for wing-tip or fuselage installation on a tanker aircraft. The unit, with 100 ft. of hose, weighs 1,100 lb. It is shown here on a "dolly" for easy handling.



White Horses of the Chalk Hills

By Reece Winstone

The other White Horse just visible from the sea is the little known one near Westdean, Sussex. Cut rather too high on the hill to be quickly seen, the ground is historic in that Alfred is said to have met Asser the monk here. That venerable man helped the king with his studies, wrote his life story, and became Bishop of Sherborne. Charlestone Farm nearby belonged to a son of a half-brother of William the Conqueror, and two windows of this Norman period still remain. But little is recorded of the Sussex White Horse.

MOST tourists will have seen at least one white horse on a chalk hillside, but our landscape stable possesses some nine or so of these landmarks. Wiltshire has no less than five, with one each in Yorkshire, Dorset, Berkshire and Sussex, to the writer's knowledge.

Kilburn, in the North Riding, is the most northerly. Coming from Thirsk it is a landmark in the Vale of York. Stretching east from Roulston Scar, a sheer rampart in the long line of the Hambleton Hills, it is 314 feet long and 228 feet high. Its eye is big enough for twenty people to sit on, and when made, in 1857, 30 men in charge of a village schoolmaster did the work. The Horse is said to have been paid for by a local man who made good in London.

Dorset has the only one of the nine with a rider on his back. This is H.M. King George III, who brought prosperity to nearby Weymouth. On the hills above Osmington, the pair make a landmark visible from sea as well as land, although the monarch is less imposing than his steed. The artist responsible was also criticised for portraying the king riding away from the Georgian seaside resort, instead of towards it. It was cut in the years 1807 and 1808 by a local bookseller, Mr. Wood, to the order of one John Ranier; the carving is 280 feet long and 323 high.

The rider of the White Horse of Osmington, Dorset, seen in the picture at the head of the page, represents King George III, who often visited the neighbouring seaside resort Weymouth. This illustration and those of the White Horses on the opposite page are from photographs by the author.

Berkshire's hilltop carving is the oldest in these islands; once thought to be Saxon in origin, it is now considered to be prehistoric and as old as Avebury. It is a hundred yards long, and is formed by trenches in the chalk two or three feet deep. First considered to be a memorial to King Alfred's victory over the Danes at Ashdown, the act of scouring every seven years became a great festival in medieval times, and an occasion for feasting by the villagers. This is fully described in

Tom Brown's Schooldays. It is the carving that least resembles a realistic horse, being a "matchstick" design, such as a child might draw.

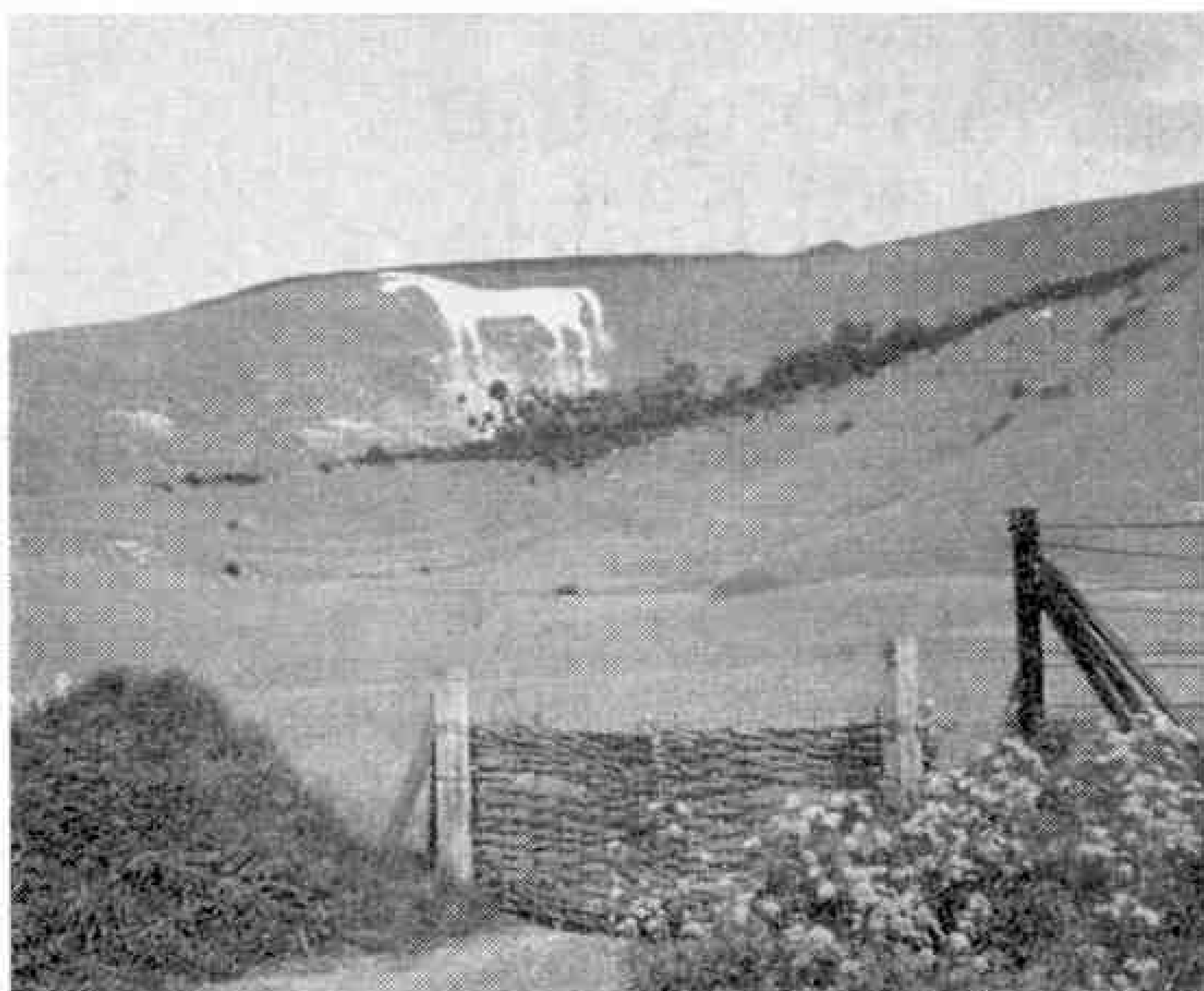
During wartime the White Horses had to be concealed from Hitler's airmen, and much "grooming" was necessary when peace came.

£100 was spent on one near Westbury in Wiltshire, and the job gave four men work for three weeks. This fine landmark has more recently been concerned in a protest by country lovers against the erection of a cement works nearby, which would spoil the landscape. Farmers see in it the further loss of good agricultural land in a county already overrun by the War Department.

Strictly speaking, this is the Bratton White Horse, and is on the site of one believed to have been cut by Alfred in 878,

to commemorate the victory over the Danes at nearby Ethandune. The White Horse was a Saxon emblem. For 900 years it decorated the hillside until came 1778, when a Mr. Gee, steward to Lord Abingdon, thought it resembled a carthorse too much and had it altered. He preferred a design to represent bloodstock and faced it the other way. This was restored in 1852, and is the one we see today. Its length is 180 feet from head to tail, and the eye is 25 feet in circumference.

Five miles south of the London Road, between Marlborough and Beckhampton and near the village of Alton Priors, is a spirited nag known as the Alton Barnes White Horse. He is well seen from the Devizes-Pewsey road, as he is on a 900 ft. eminence upon which meet two ancient tracks, Ridgeway and Wasndyke. The figure was cut in 1812 by Mr. Pile, of nearby Manor Farm. It covers an area 165 feet long and 180 feet high and was designed by a journeyman painter. It is similar to the animals drawing gig and chaise in sporting prints of that time, and it is said to have cost the farmer £20 to ensure that his village should not be outdone by Cherhill, where there is a White Horse referred to later in this article.



The Bratton White Horse is cut in the hillside near Westbury, in Wiltshire. The original horse, believed to have been cut out over a thousand years ago, was thought to resemble a cart horse, and the present one replaced it in 1778.

A lonely, little used road from Marlborough to Wootton Bassett crosses Hackpen Hill and another section of Ridgeway, near the village of Broad Hinton. This little place on the open Marlborough Downs gives its name to a frisky steed on the 800 feet hillside and is rarely seen by the ordinary tourist. It was cut in 1838, a parish clerk being responsible for its design. It is well worth the climb up to see the size of the head and to realise that some 20 or 30 people might stand on its eye.

The fourth example, though passed by much traffic all day long, is the least known. A mile westward along the Bath road from Marlborough, is the White Horse cut by the pupils of Dr. Greazley's school in 1840. On 600 ft. Grantham Hill, not far from the College, it was carved rather too low down for it to be seen well. A high hedge and tall trees also obstruct the view from the main road. This rather lanky animal with a thin long neck features in the "Leaver's School Song" sung by Marlburians at the end of every term.

"And when to Marlborough, old and worn,
We shall creep back like ghosts,
And see some youngster yet unborn
Run in between the posts,
Ah, then we'll cry, Thank God! my lads,
The Kennet's running still;
And see! the old White Horse still pads
Up there on Grantham Hill."

Let us end with the animal seen by most passing traffic.

(Continued on page 648)



The spritely White Horse on Hackpen Hill, near Broad Hinton, Wiltshire, has an eye on which some 20 or 30 people could stand.

Among the Model-Builders

By "Spanner"

A Neat Meccano Camera Tripod

From time to time in these pages I have described photographic equipment made with Meccano parts, and it is obvious from my correspondence that model-builders who are also amateur photographers have found these accessories very useful. This month I am able to give details of yet another item of interest to keen photographers, a neat camera tripod designed for use in connection with table-top photography. The tripod was built by C. E. Wrayford, Bovey Tracey, and it is shown in Fig. 1.

The legs are $6\frac{1}{2}$ " Rods, each of which is held in a Swivel Bearing that is bolted to a Bush Wheel, but is spaced from it by two Washers on the Bolt. Connecting the legs are three Obtuse Angle Brackets that are supported on the Rods between the Swivel Bearings and Collars. The Obtuse Angle Brackets are bolted by their elongated holes to a Wheel Disc 1.

The centre column of the tripod is a $6\frac{1}{2}$ " Rod 2, which slides in the boss of the Bush Wheel and may be locked in any required position by a handle 3. This handle is made by fixing a 1" Rod in a Threaded Coupling that is held by a nut on a 1" Screwed Rod. The Screwed Rod is supported in one of the threaded holes in the boss of the Bush Wheel.

The movable head of the tripod is formed by bolting a $1\frac{1}{2}$ " Flat Girder and a $1\frac{1}{2}$ "

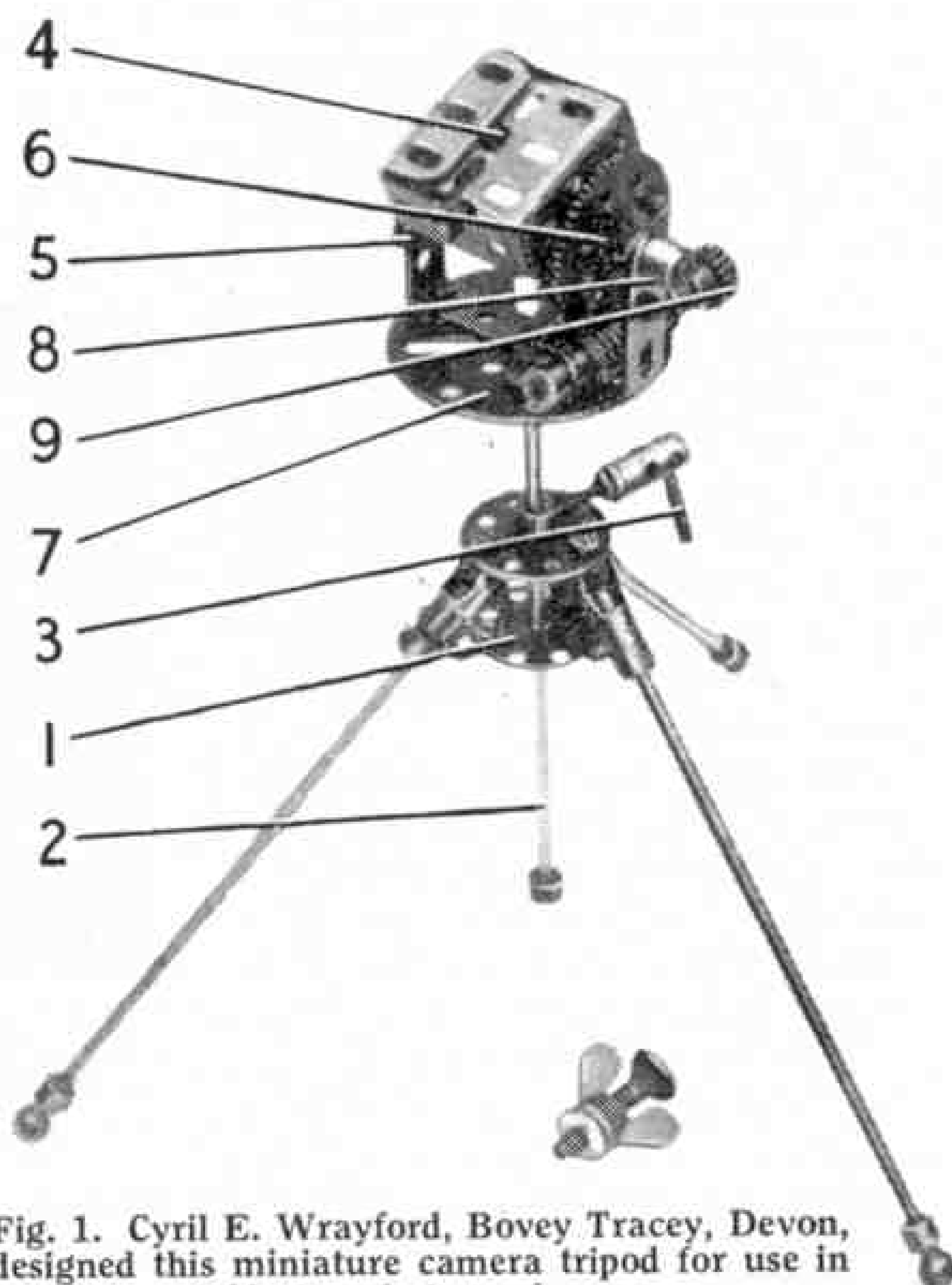


Fig. 1. Cyril E. Wrayford, Bovey Tracey, Devon, designed this miniature camera tripod for use in table-top photography.

Angle Girder to the lugs on each side of two $1\frac{1}{2} \times \frac{1}{2}$ " Double Angle Strips. An Angle Bracket is attached to each Double Angle Strip but is spaced from it by two Washers on the bolt. This arrangement leaves a hole approximately $\frac{1}{4}$ " square at 4, the purpose of which will be seen later. One of the Flat Girders is fitted with a Double Arm Crank 5, while the other carries a 57-tooth Gear 6 spaced from the Flat Girder by three Washers on each bolt.

The movable head is supported by a $2\frac{1}{2} \times 1\frac{1}{2}$ " Double Angle Strip fixed to a Face Plate 7. One lug of the Double Angle Strip is strengthened by a Crank 8, and a 1" Rod is passed through the boss of the Crank and is held in the Gear 6. A Threaded Pin is passed through the other lug of the Double Angle Strip into the boss of the Double Arm Crank 5.

The angle of the movable head is

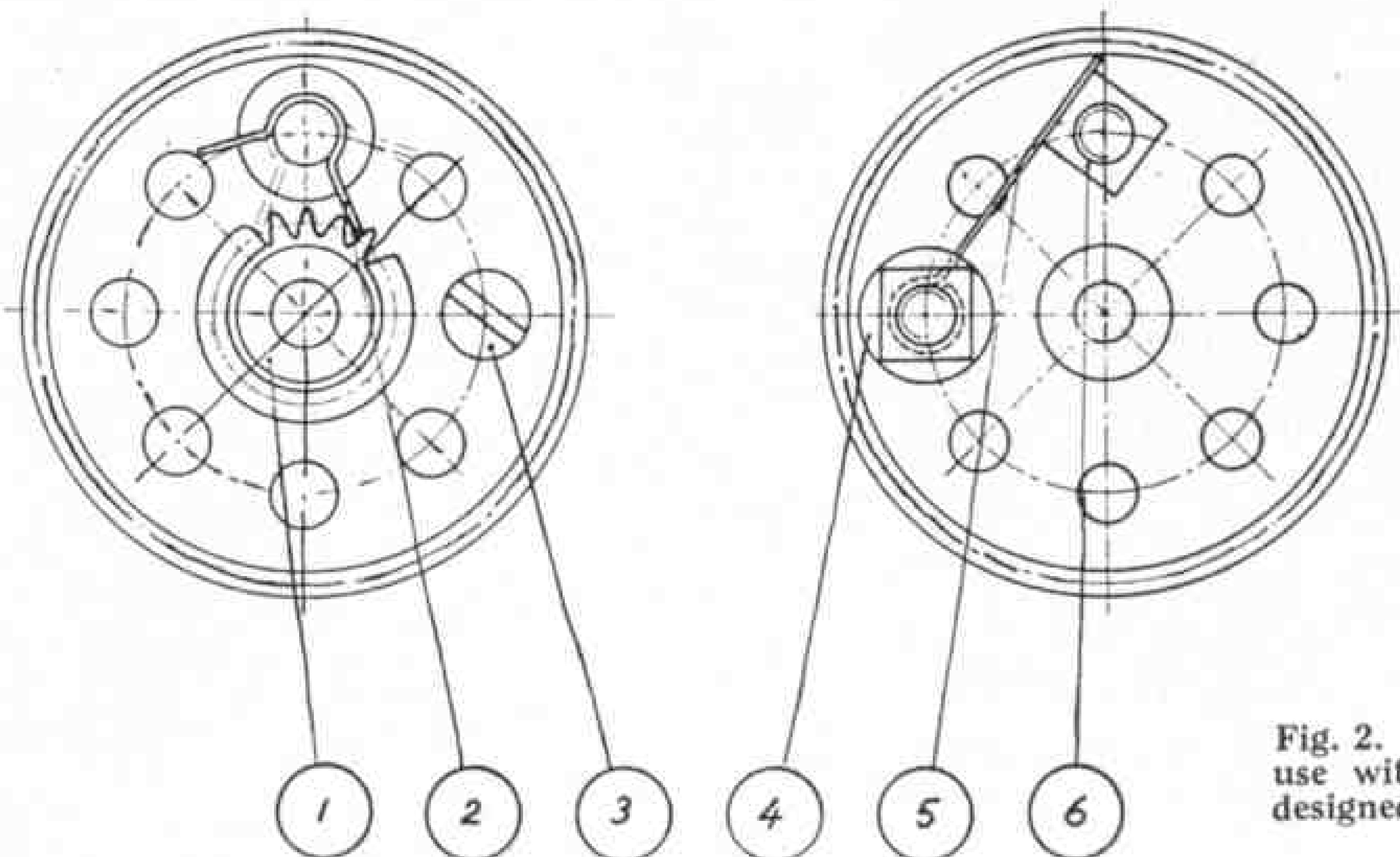


Fig. 2. A simple free wheel suitable for use with a very light drive. It was designed by N. Gottlob, Hjørtelkaer, Denmark.

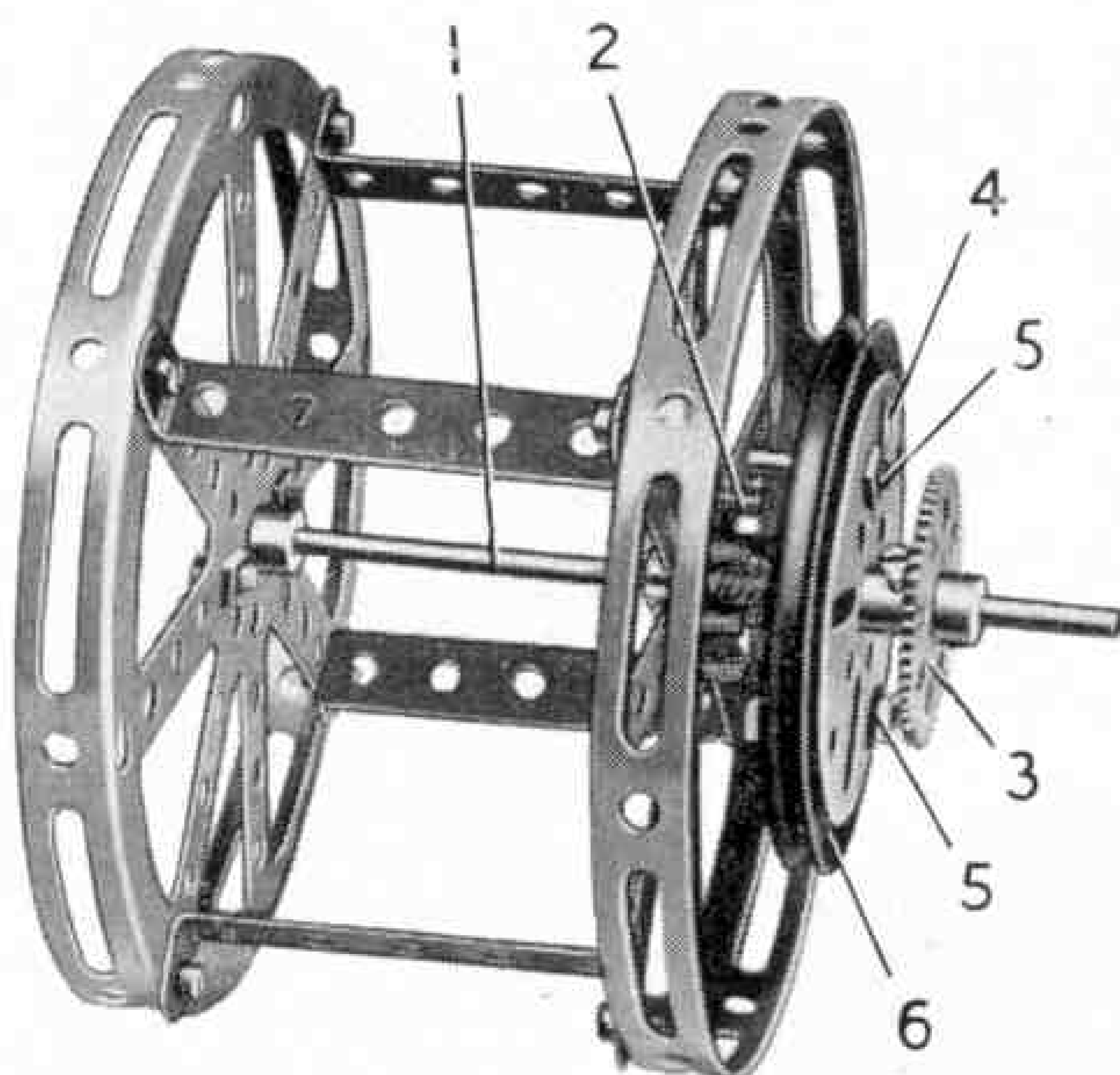


Fig. 3. A winding drum and clutch mechanism for a mine hauling engine. It is suggested by J. R. Goodrum, Consett.

altered by turning a $\frac{1}{2}$ " Pinion 9 fixed on a $2\frac{1}{2}$ " Rod. A Worm on the Rod engages the Gear 6, and the Rod is held by Collars in Corner Angle Brackets bolted to the Face Plate. Each Corner Angle Bracket is spaced from the Face Plate by a Washer.

The bolt shown below the tripod is used to attach a camera to the movable head. The bolt is fitted with a wing nut, is passed through the hole indicated at 4, to which reference has already been made, and is screwed into the tripod bush on the camera.

An Unusual Free Wheel Mechanism

Mr. N. Gottlob, Hjortekaer, Denmark, is one of my regular correspondents and several of his suggestions have been featured in past issues of the Magazine. Recently he sent me details of several original mechanisms he has designed, one of which is the interesting free wheel device shown in the drawing reproduced as Fig. 2. The use of a Spring Clip as a pawl is by no means a new idea, of course, but the mechanism

has several novel features that I think will interest other model-builders.

A Bush Wheel is freely mounted on a Rod between a Collar and a $\frac{1}{2}$ " Pinion 1, and a Spring Clip 2 is fitted over the plain shank of a Threaded Pin 6 passed through a hole in the Bush Wheel. A short length of light gauge spring wire, or a straightened piece of Spring Cord, is provided with a loop at one end and is held tightly between the Bush Wheel and a Washer 4 by a nut and bolt 3. The end of the wire presses against one side of the square shoulder of the Threaded Pin 6, and the position of the Spring Clip is adjusted so that one of its lugs engages the teeth of the Pinion 1.

The mechanism is suitable only for comparatively light drives, as a heavy load may dislodge the Spring Clip from the Threaded Pin.

A Clutch Mechanism for a Mine Hauling Engine

Mr. J. R. Goodrum, Consett, Co. Durham, wrote recently to tell me of an interesting clutch mechanism he has designed for a model of one of the powerful hauling engines used in mines. These engines drive huge winding drums, in some cases each holding about three miles of cable, and normally two drums are mounted on the same shaft. It must be possible to drive the drums independently, and this means that they must be free to turn on the shaft, with a suitable clutch mechanism to engage the drive as required. Mr. Goodrum tells me that the clutch shown in Figs. 3 and 4 has proved very satisfactory in the hauling engine he has built, and no doubt readers will find other uses for it in models where a large diameter winding drum is required.

The winding drum is made from two Hub Discs

(Continued on page 614)

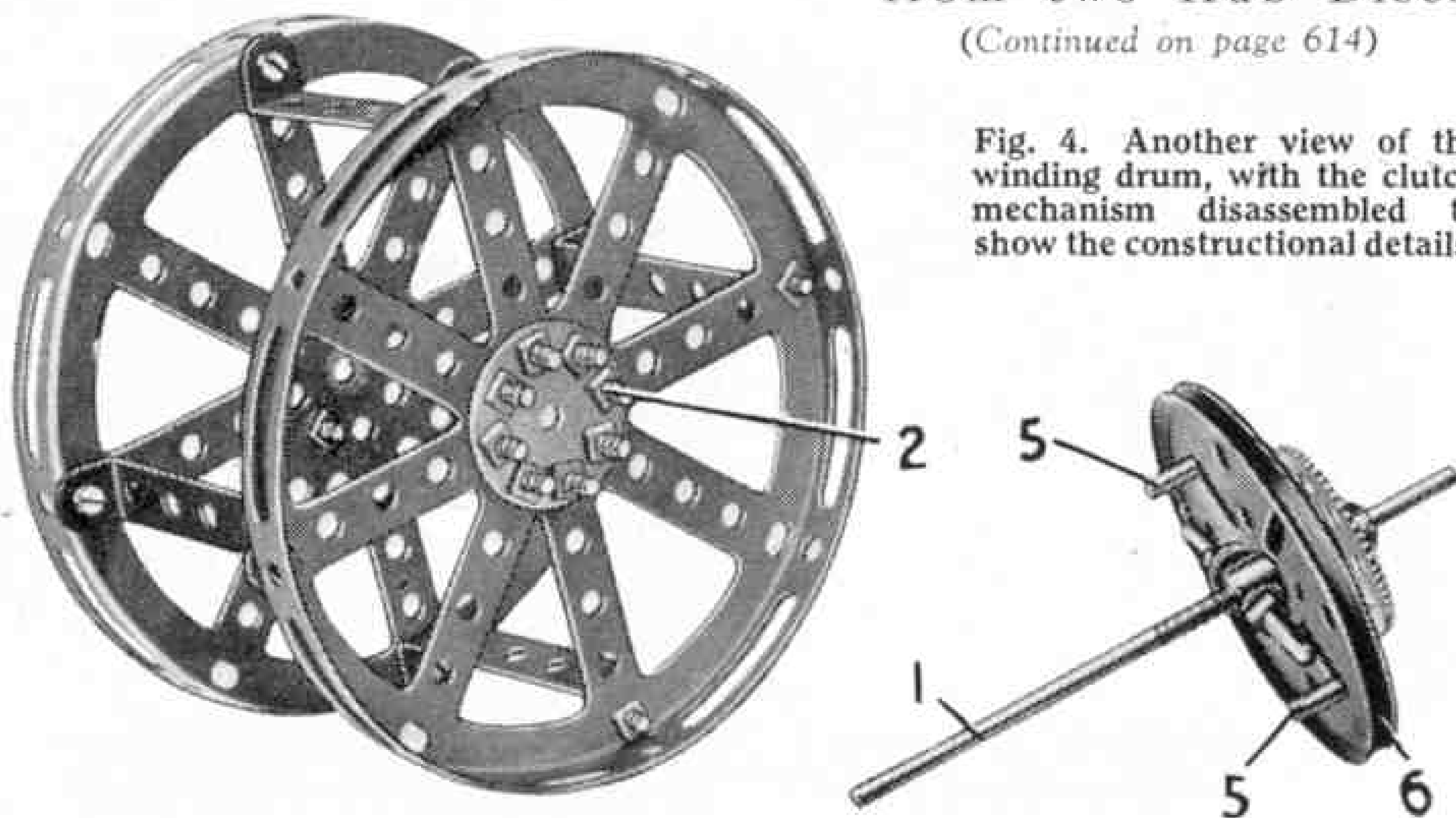


Fig. 4. Another view of the winding drum, with the clutch mechanism disassembled to show the constructional details.

Meccano Puzzles

Good Fun for the Christmas Party

THE Christmas season provides a fine opportunity for Meccano enthusiasts to indulge in the lighter side of the hobby by using their Outfits to make all kinds of games and puzzles. Three simple examples of models of this type are shown on this and the next page. All are interesting and they will be found particularly useful for amusing the younger children at a Christmas party. They are easily assembled and require only a few parts for their construction.

The ball puzzle illustrated in Fig. 1 is a real teaser and is well worth the few minutes spent in assembling the parts. The idea is to manipulate the puzzle until each of the Balls rolls into and remains in one of the four small holes in the Wheel Flange. It is fairly easy to get two of the Balls in place, but efforts to position the remaining Balls almost invariably result in one of them disappearing through the large central hole in the Wheel Flange, or in knocking those already in place out of their holes. Many readers will be

able to complete the puzzle after a few attempts, no doubt, but it is by no means as easy as it looks.

The puzzle is assembled by bolting four Fishplates to a Boiler End. Each Fishplate is spaced from the Boiler End by a Washer on the bolt, and the Wheel Flange fits neatly between the Fishplates.

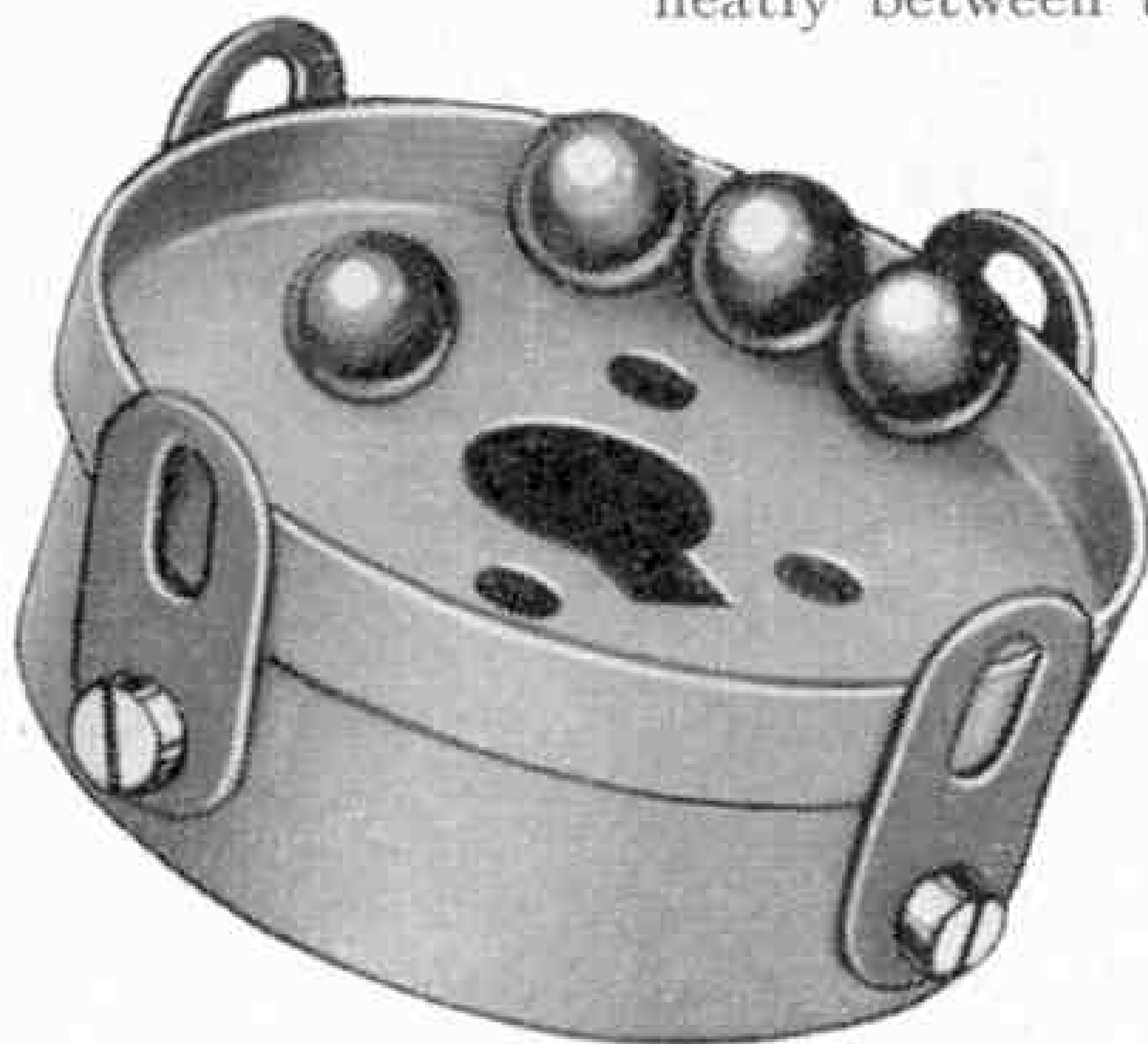


Fig. 1. The Meccano Ball Puzzle described on this page. It will provide good fun at a children's party.

It is a good idea to assemble a few of these puzzles and pass them around among a group of friends. Much amusement will be caused by the efforts of each one to complete the trick first.

An ingenious puzzle is always good fun, and the example shown in Fig. 2 should be particularly popular with model-builders, as it is made entirely with Meccano parts. The problem is to remove the Strip 2 from the frame, but cutting the

Cord or undoing the knot is not allowed!

The loop of Cord 1 attached to the end of the Strip 2 should be long enough to reach half-way along the Strip. To assemble the puzzle, the loop is passed first over the points indicated at 3, 4 and 5, and is then slipped down to the Flat Trunnion 6. Next the Strip 2 is passed through the space 7, and the loop is taken successively over the points 5, 4 and 3. The loop and the Strip 2 are now attached to the frame as shown in Fig. 2.

The task of removing the Strip from the frame is quite simple if the movements described above are carried out in the reverse order, but it is not so easy until the secret is known. Ask your friends to remove the Strip 2 from the frame. It looks impossible at first glance, and they will undoubtedly find it

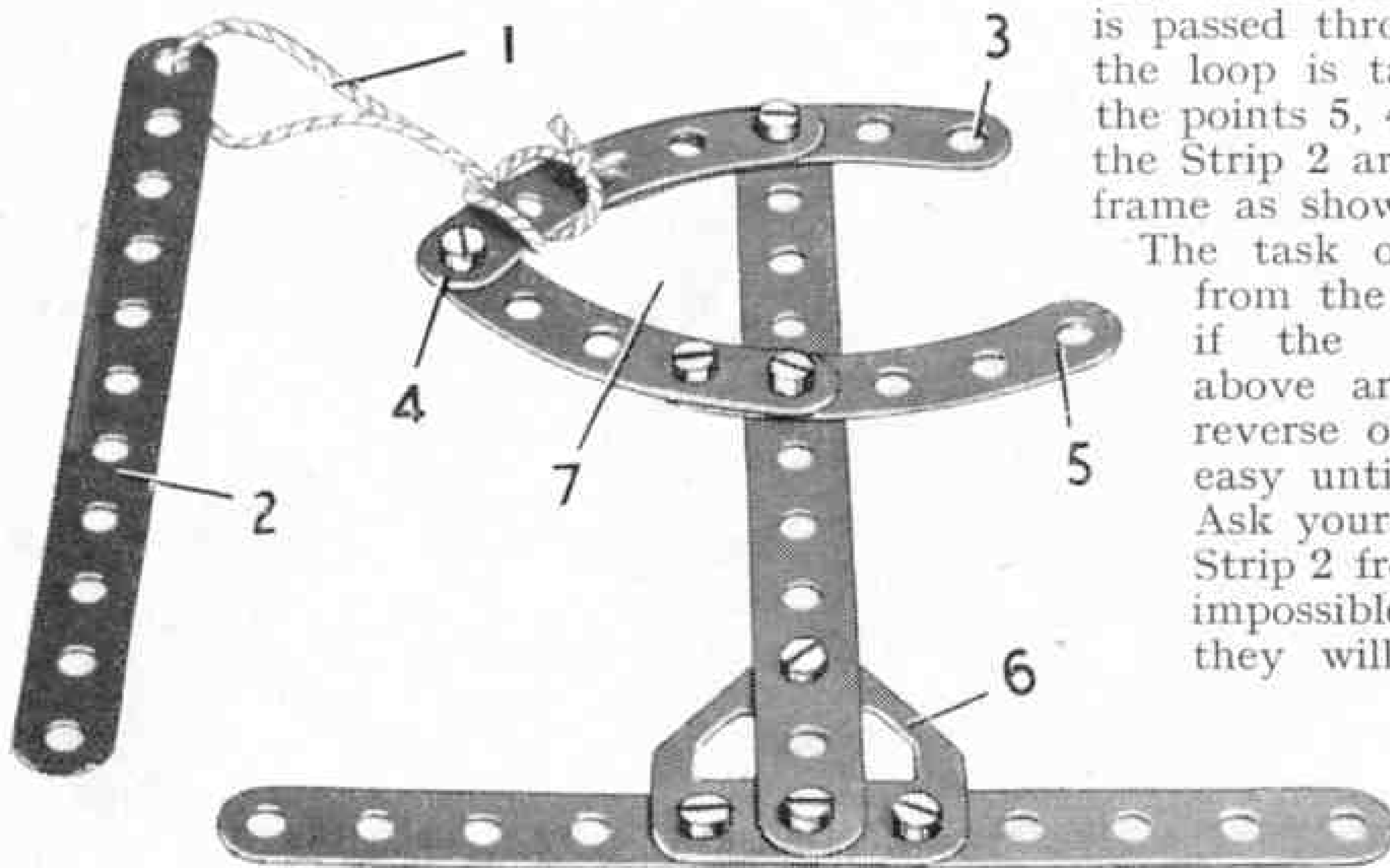


Fig. 2. Can you remove the Strip 2 without cutting the string? This is another good fun provider for the Xmas party.

difficult until they stumble on the correct sequence of moves.

Mr. H. H. Taylor, Huddersfield, sent details of the next puzzle. It is shown in Fig. 3, and it will be seen that it consists essentially of a square made from $4\frac{1}{2}$ " Strips, with a cross in the centre assembled from six $4\frac{1}{2}$ " Strips. Each of the free holes in the cross is occupied by a $7/32$ " Bolt, with the exception of the centre hole. At the corners of the square $\frac{3}{8}$ " Bolts are used to join the parts together, so that the puzzle rests on the shanks of these Bolts and allows the $7/32$ " Bolts to drop completely into the holes in the cross.

The idea behind the puzzle is similar to that of the game of draughts. Each Bolt in turn is lifted and moved over an adjoining bolt and is then dropped into a vacant hole in the cross. The "jumped over" or "huffed" Bolt is then removed from the frame, and the sequence of operations is continued until each Bolt in turn is removed from the puzzle. The moves must be arranged so that the final stage brings the last Bolt into the central hole of the cross. Moves can be made in any direction except diagonally.

So far Mr. Taylor has found only one sequence of moves that enables the puzzle to be solved correctly. It is certainly a brain-teaser, and we have no doubt it will appeal to all readers who delight in solving puzzles of this kind. Just a hint to help you on your way to its solution. Start off by jumping Bolt "A" over Bolt "B" into the central hole C to make the first move. It should be remembered that the next-to-last move must leave the centre hole in the cross unoccupied, so that in the final move the last Bolt can be dropped into this hole.

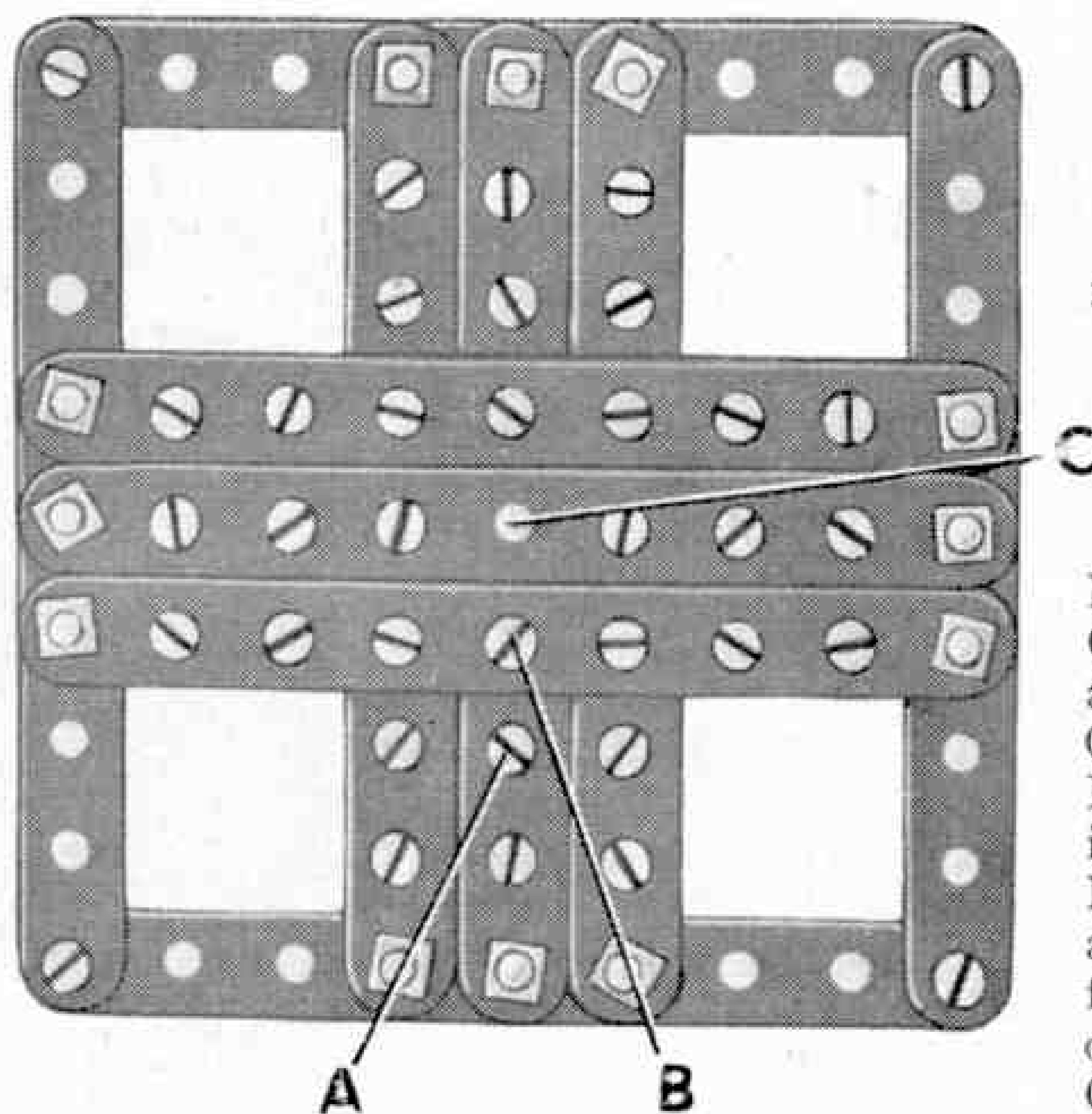


Fig. 3. "Huff-a-Bolt" an intriguing puzzle that can quickly be made from a few Strips and Nuts and Bolts.

October Model-Building Competition

Readers are reminded that there is still time to prepare and submit their entries for the General Model-Building Competition first announced in the October M.M. Cash Prizes are offered in this Contest for Meccano models of any kind built from any number of parts. The Competition is open to readers of all ages living in any part of the world,

and entries will be accepted up to 30th January 1954.

There are two Sections in the Contest: A, for competitors under 14 years of age, and B, for competitors over 14 years of age. The prizes awarded for the best models in each Section are detailed in the panel on this page. It should be noted that the actual model must not be sent; all that is required is a good photograph or a clear sketch of the model, together with a few notes describing any points of outstanding interest.

Entries must be addressed "October Meccano Model-Building Competition, Meccano Ltd., Binns Road, Liverpool 13."

Several readers have asked if a competitor can send in only one entry to this Contest, or if two or more models can be entered. There are no restrictions on the number of entries that each competitor can submit, but if two or more models are entered they will be grouped

together and will be assessed on their joint merits. No competitor will be awarded more than one prize.

Prize-winning entries become the property of Meccano Ltd., but unsuccessful entries will be returned, providing a stamped addressed envelope of suitable size is sent with the entry for this purpose.

OCTOBER MODEL-BUILDING COMPETITION

The Prizes

The following Prizes will be awarded in each of the Sections A and B.

- First - - - Cheque for £5
- Second - - - Cheque for £3
- Third - - - Cheque for £2

Ten Prizes each of £1

Ten Consolation Prizes each of 5/-

A New Meccano Loom

By "Spanner"

Motor Driven Weaves Real Cloth

I AM now able to give constructional details of a new Meccano weaving Loom that has been specially designed in response to many requests that I have received from Meccano enthusiasts. This Loom is easy to build and comparatively easy to adjust when completed, and it is one of the most simple automatic machines of this type that can be designed. Even so it is a complicated mechanism, and it is intended therefore as a subject for older model-builders. The shuttle used in the model is built up entirely from standard Meccano Parts.

The main constructional details of the model are given in this issue and next month I shall complete the instructions and give details for adjusting and working the Loom, together with details of a simple Beaming Frame that is required for preparing the warp ready for placing in position in the Loom.

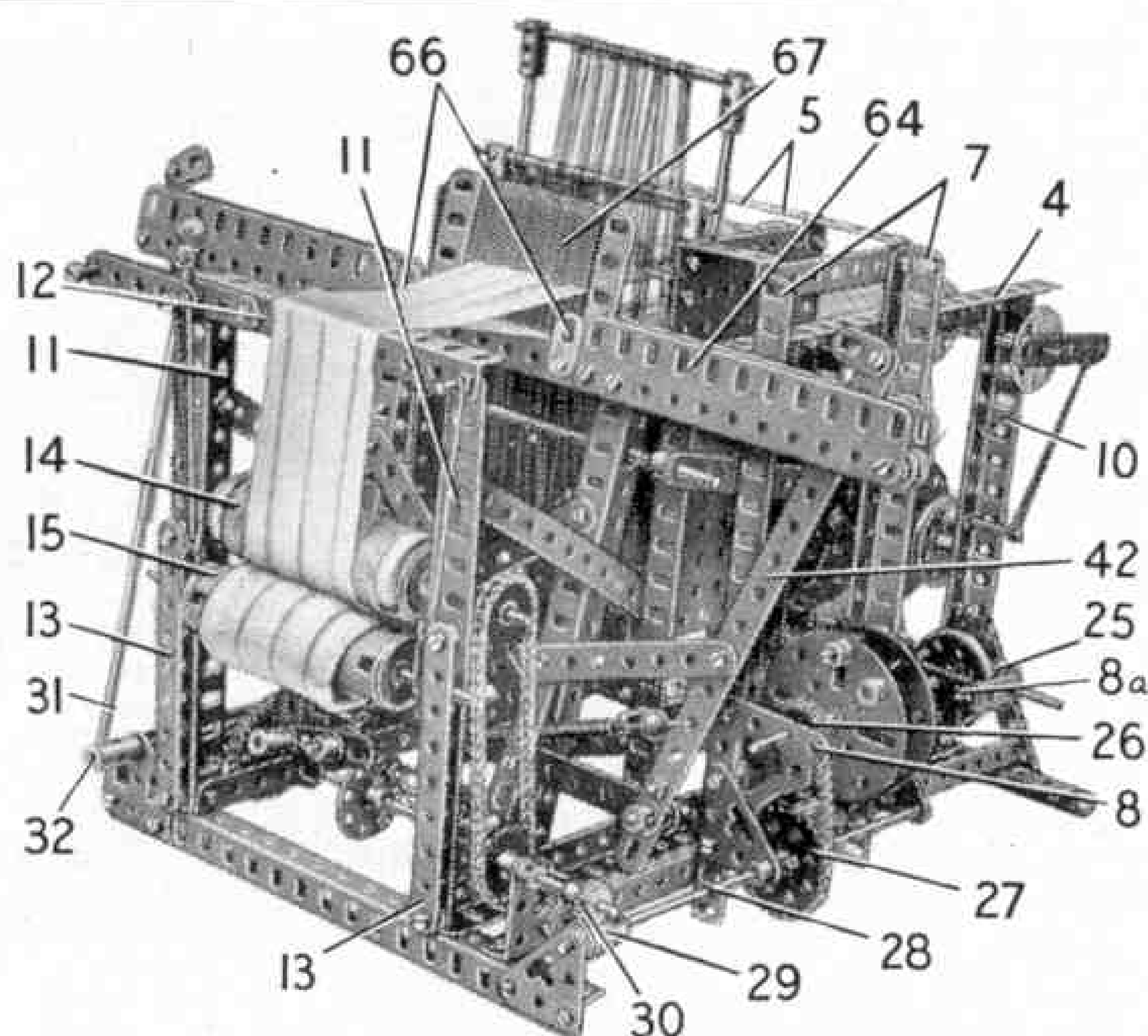


Fig. 1. The fine Meccano weaving loom described on these pages.

Construction of the Frame

The base of the frame (Fig. 2) is built from four $12\frac{1}{2}$ " Angle Girders bolted to two $9\frac{1}{2}$ " Angle Girders. Four $7\frac{1}{2}$ " Angle Girders 1 are bolted to the inside Angle Girders 2 and are held firm by two $5\frac{1}{2}$ " $\times$ $3\frac{1}{2}$ " Flat Plates 3, which support two $9\frac{1}{2}$ " Angle Girders 4 (see Figs. 1 and 2). Two $4\frac{1}{2}$ " $\times$ $\frac{1}{2}$ " Double Angle Strips 5 are fixed between the Flat Plates 3. Bolted to the inside of the Flat Plates 3 are four $3\frac{1}{2}$ " Angle Girders 6 (Figs. 2 and 4), spaced from the Plates by three Washers on each bolt. Two $9\frac{1}{2}$ " Angle Girders 7 (Fig. 5), are secured to the base and connected to the top of the Plate 3 by $1\frac{1}{2}$ " $\times$ $\frac{1}{2}$ " Double Angle Strips. Two Corner Gussets 8 and 8a and two $1\frac{1}{2}$ " Corner Brackets are bolted to the Girders 7 as shown in Figs. 1 and 5. To the Corner Gusset 8a two $1"$ $\times$ $1"$ Angle Brackets are fixed, and these, together with two Girder Brackets 9, form the bearings for the driving shaft 24 to the heald tappets. Two $7\frac{1}{2}$ " compound girders 10 (Fig. 5), are bolted to the base and to the $9\frac{1}{2}$ " Angle Girders 4, and are braced to the base by $3\frac{1}{2}$ " Strips. At the other end of the base two $7\frac{1}{2}$ " compound girders 11 are fixed. These support the *breast beam*, which is a $5\frac{1}{2}$ " Angle Girder 12. To the girders 11 are also bolted

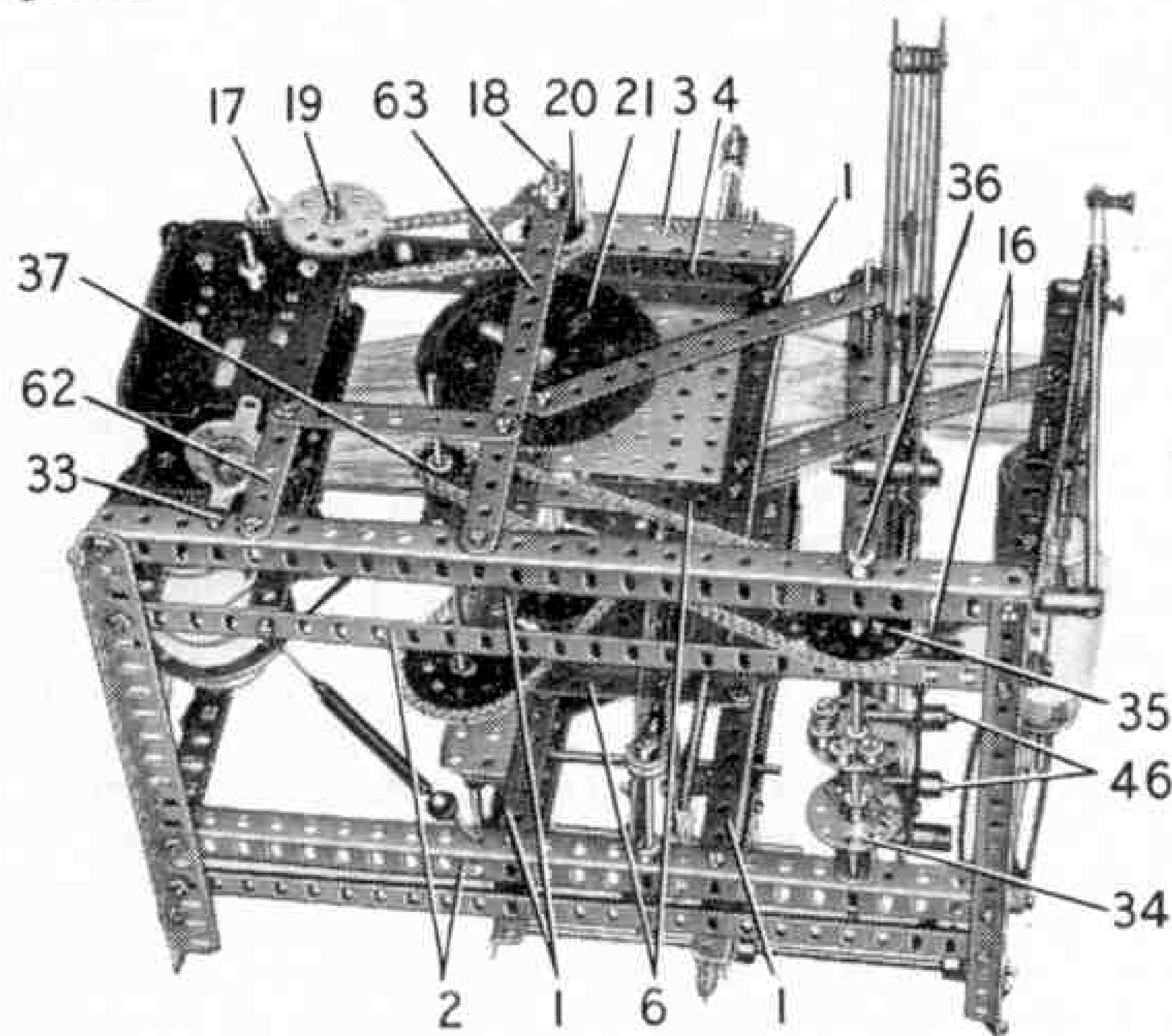


Fig. 2. The loom seen from below, to show details of the frame and the mounting for the E20R Electric Motor,

two $4\frac{1}{2}$ " Strips 13 spaced from the girders by four Washers on each of the Bolts. A lock for the Motor starting handle is a $2\frac{1}{2}$ " Strip mounted on Pivot Bolts and held by Compression Springs against a

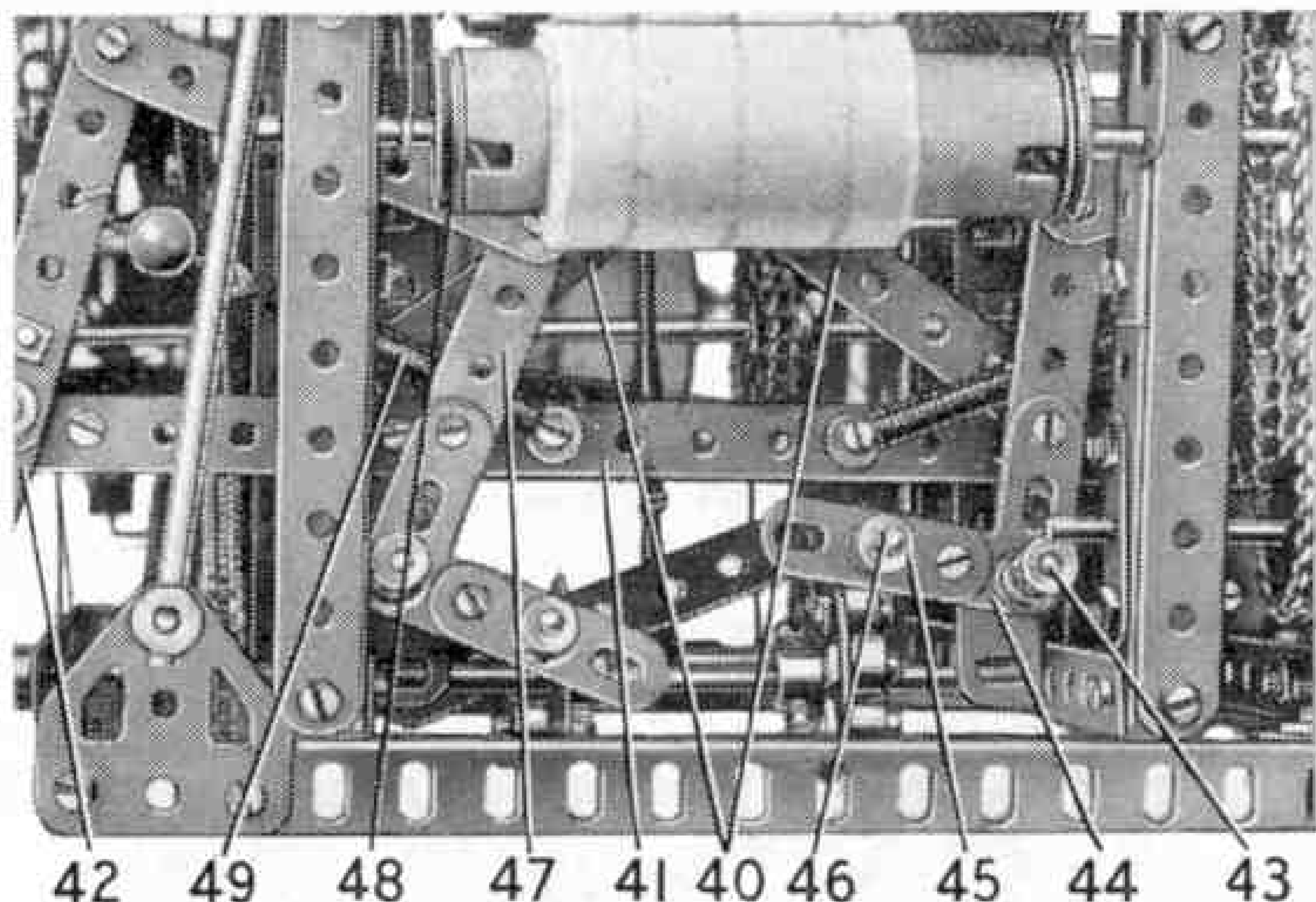


Fig. 3. A close-up view of the cam mechanism that operates the picking sticks.

$3\frac{1}{2}$ " Strip bolted to the side of the Girder 12 (Fig. 1). The sand roller 14, which is a Wood Roller with rough sand paper glued around, is held between 1" Pulleys on a Rod mounted in the girders 11.

The take-up Roller 15 is mounted on a Rod between 1" Pulleys, and the Rod slides between girders 11 and the Strips 13. This Roller is held against the sand roller 14 by the tension of two Driving Bands. These are attached to Fishplates slipped over the ends of the lower Roller Rod, and the Bands are anchored at their upper ends to the Pivot Bolt and $\frac{1}{2}$ " Bolt fixing the Girder 12 in position. The breast beam is braced by two $5\frac{1}{2}$ " Strips 16 placed as shown in Fig. 2.

The Drive

An E20R Electric Motor is bolted to one of the angle girders 10 (Fig. 5) and is supported also by a $2\frac{1}{2}$ " Strip 62 (Fig. 2) bolted to the base, and a $3\frac{1}{2}$ " Strip attached to a vertical $7\frac{1}{2}$ " Strip 63. A $2\frac{1}{2}$ " $\times$ $\frac{1}{2}$ " Double Angle Strip is bolted to the inner sideplate of the Motor and to one of the Girders 2. A $\frac{3}{4}$ " Bolt is used to fasten $2\frac{1}{2}$ " Strip 62 and the $3\frac{1}{2}$ " Strip to the Motor, and this Bolt acts also as a stop to prevent the Motor starting lever from going into reverse (Fig. 2). A $\frac{1}{2}$ " Pinion

on the Motor shaft engages with a 57-tooth Gear, on the shaft of which another $\frac{1}{2}$ " Pinion 17 drives a 57-tooth Gear on Rod 19, which also carries a 1" Sprocket. A Chain from this drives another 1" Sprocket 20 on Rod 18, which also carries a $\frac{1}{2}$ " Pinion that engages a $3\frac{1}{2}$ " Gear Wheel 21 on Rod 22 (Fig. 5). Rod 18 is supported in Strip 63 (Fig. 2), and one of the Flat Plates 3. Rod 22 (Fig. 5) has a 2" Sprocket 23 at its centre, and a $2\frac{1}{2}$ " Gear is fixed to the Rod at the opposite end to the Gear 21.

The $11\frac{1}{2}$ " Rod 24 carries at its centre a 2" Sprocket, which is connected by Chain to Sprocket 23, a $\frac{3}{4}$ " Pinion 25 at one end, and a $\frac{3}{4}$ " Sprocket 37 (Fig. 2) at the other end.

The two cams that operate the heald frame tappets each consists of a Face Plate 56 (Fig. 5), fitted with a Threaded Boss and a $\frac{1}{2}$ " Bolt carrying six Washers. These Face Plates are mounted as shown with the Threaded Bosses diametrically opposite to each other on a Rod supported in the Corner Gussets 8 and 8a, and the Rod carries also a $1\frac{1}{2}$ " Contrate that is driven by the Pinion 25.

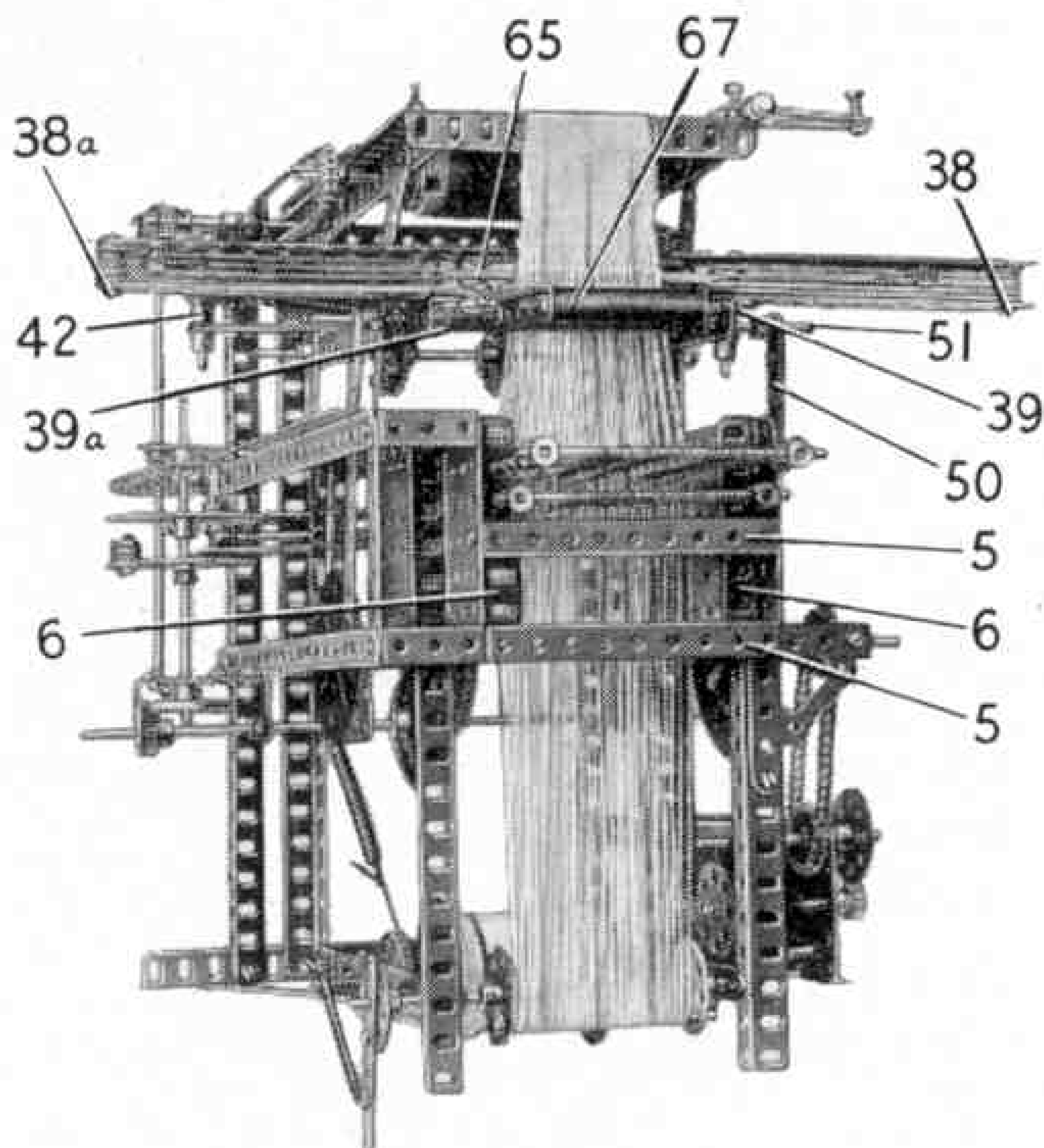


Fig. 4. The arrangement of the shuttle race can be seen in this overhead view.

This Rod carries also a $\frac{3}{4}$ " Sprocket 26 (Fig. 1), which drives a $1\frac{1}{2}$ " Sprocket 27 on Rod 28. Rod 28 is mounted in the Corner Brackets previously mentioned as bolted to the Angle Girders 7, and in another Corner Bracket fixed to the end of the base. This forms the drive to the sand roller, through a Worm 29 that engages a $\frac{1}{2}$ " Pinion 30. The Rod on which Pinion 30 is fixed is mounted in a $1\frac{1}{2}$ " Corner Bracket, and in a $1\frac{1}{2}$ " Strip bolted to one of the girders 11. A 1" Sprocket on this Rod is connected by Chain to a 1" Sprocket on the Rod of the sand roller 14.

The Motor is started and stopped from a control handle 31, which is a Rod fixed in a Threaded Coupling 32. An $11\frac{1}{2}$ " Screwed Rod is locked by a nut in the Coupling, and at a point about one inch from the other end of the Screwed Rod a Threaded Crank is fixed to it with two nuts. The end of the Screwed Rod is supported in a $1" \times 1"$ Angle Bracket held by Bolt 33 (Fig. 2) to the base. A $\frac{1}{2}$ " Bolt in the Motor starting lever engages with a $1" \times \frac{1}{2}"$ Angle Bracket bolted to the arm of the Threaded Crank.

The Picking Cams

The shuttle is "thrown" to and fro along the shuttle race or guide of the slay 64 (Fig. 1), by the action of picking sticks 42, which in turn are actuated by cams. Each of these two cams consists of four Collars bolted in four adjacent holes of a Bush Wheel 34 (Fig. 2), secured on a Rod 36. The entire slay assembly rocks to and fro on this Rod 36. A $\frac{3}{4}$ " Sprocket 37 drives a $1\frac{1}{2}$ " Sprocket 35 and rotates the cams in an anti-clockwise direction. It is important to note that these cams also are set at 180° to each other, that is with the Collars in each cam diametrically opposite.

The Slay and Shuttle Race

The shuttle race is made in two sections. Each of these is built-up by placing on a $\frac{3}{4}$ " Bolt 38 (Fig. 4) the following parts, in the order given starting from the head of the Bolt: a $5\frac{1}{2}"$ Flat Girder, a $9\frac{1}{2}"$ Strip, a Washer, a $5\frac{1}{2}"$ Strip, two Washers, a $5\frac{1}{2}"$ Strip, two Washers, a $5\frac{1}{2}"$ Strip, a $9\frac{1}{2}"$ Strip, a Washer and a second $5\frac{1}{2}"$ Flat Girder. The two

sections thus assembled are then placed together so that the $9\frac{1}{2}"$ Strips of one section overlap the same Strips of the other section by nine holes. The two sections are then connected together by the $1\frac{1}{8}"$ Bolts 39 and 39a (Fig. 4). The $5\frac{1}{2}"$ Strips of the sections are spaced apart on these Bolts by Washers, and in addition to the $5\frac{1}{2}"$ Strips the Bolts support three $4\frac{1}{2}"$ Strips 65 placed face to face at the exact centre of the shuttle race. Two Fishplates 66 (Fig. 1) are fixed to the front

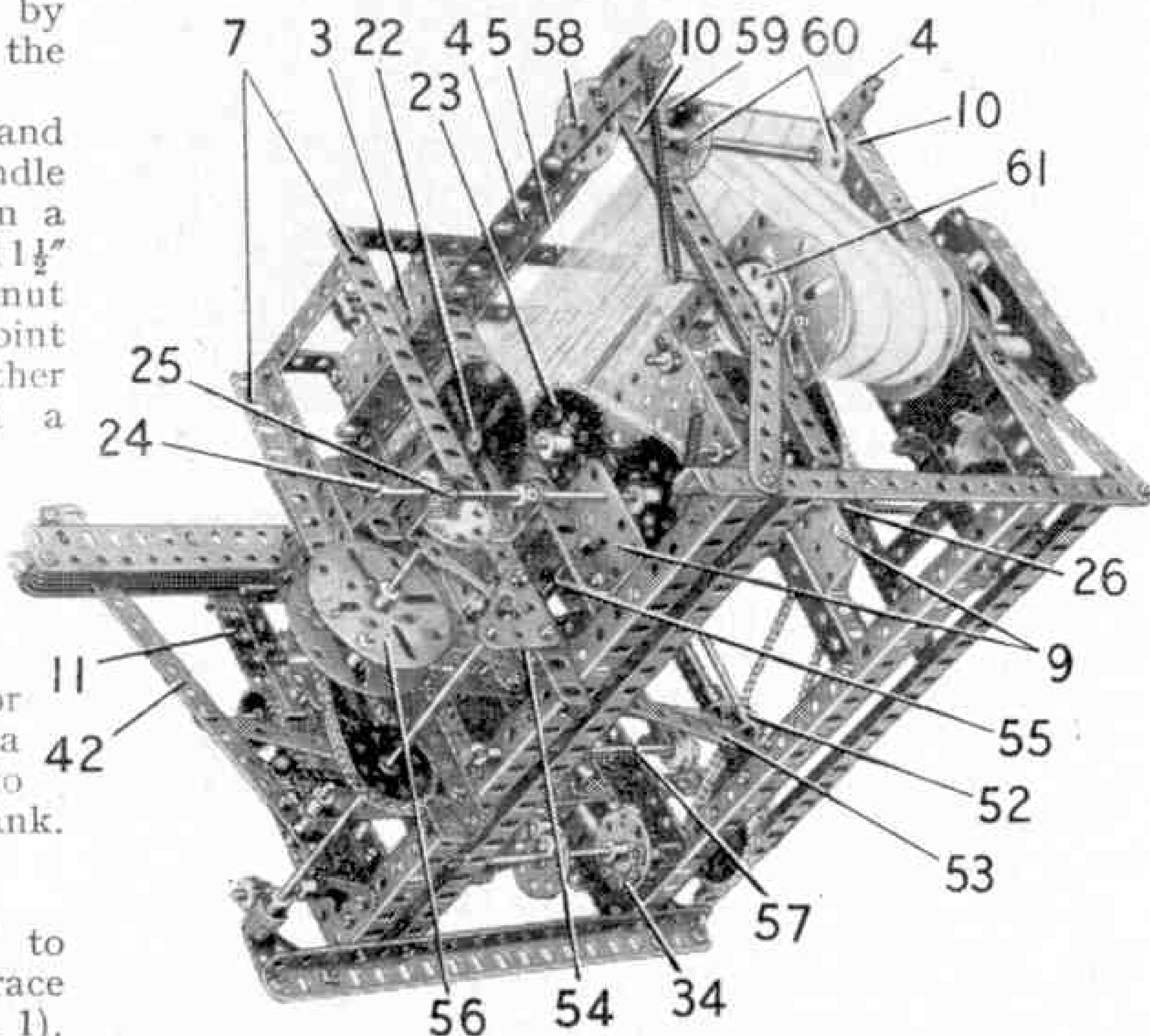


Fig. 5. The cams controlling the movements of the heald frames can be seen in this view of the loom.

edge of the shuttle race at the inner ends of the Flat Girders.

The reed 67 (Fig. 1) is built from $2\frac{1}{2}"$ Strips, which are spaced with Washers on two 3" Screwed Rods and edged at each side with a $2\frac{1}{2}"$ Angle Girder as shown. This unit is then bolted to the centre of the shuttle race. The shuttle race is attached by Bolts 39 and 39a (Fig. 4), to two $7\frac{1}{2}"$ Angle Girders, which are pivoted at their lower ends on the Rod 36 already mentioned. The Girders are braced by two crossed $5\frac{1}{2}"$ Strips 40 (Fig. 3). Two $9\frac{1}{2}"$ Strips 41 placed face to face are bolted centrally across the $7\frac{1}{2}"$ Angle Girders, and a Crank is bolted to each end of the Strips.

Each picking-stick 42 (Fig. 3), is a $7\frac{1}{2}"$ Strip, and it has a Fishplate fixed to its upper end as shown and a Double Arm Crank to its lower end. The Double Arm Crank of each

(Continued on page 614)



Club and Branch News



WITH THE SECRETARY

THE FESTIVE SEASON

I am delighted to again have the opportunity of wishing a Merry Christmas to all members of the Guild and the H.R.C., and to Meccano Clubs and H.R.C. Branches. Here in the Home country Clubs and Branches will celebrate the occasion by holding the traditional indoor Christmas party, to which parents and friends of members no doubt will be invited to join in the fun—and the eats!

In far-away Australia and New Zealand the celebrations will take the form of picnics and outdoor jollifications under the hot midsummer sun. In whatever part of the world they are held, however, they will express that spirit of goodwill that is the essence of Christmas and of the Meccano Guild and Hornby Railway Company.

BRANCH RECENTLY INCORPORATED

No. 546—ROYAL WOLVERHAMPTON SCHOOL BRANCH—Mr. V. R. Sleath, Royal Wolverhampton School, Wolverhampton.

CLUB NOTES

MILE END (PORTSMOUTH) M.C.—Meetings are now held at the Carnegie Library, Fratton Road, every Wednesday. Mr. P. Leggatt, Leader, demonstrated a mechanical road maker of his own design at the recent Mile End H.R.C. Branch Exhibition. A Quiz has been held in which members competed against those of the Mile End Branch. Club roll: 48. *Secretary:* Mr. A. J. Nicholson, 213 Sultan Road, Buckland, Portsmouth.

AUSTRALIA

MAYLANDS M.C.—The regular model-building programme has been interrupted by a Club Fête and a camping holiday. The Fête was organised by the Parents' Committee, and was the most successful to date, and it is estimated that a net profit of about £140 will result. Several members demonstrated the Meccano Block-setting Crane, Eiffel Tower and Streamlined Locomotive. Nineteen members have spent nine days at a National Fitness Camping Ground near the ocean beach, and in spite of variable weather had an excellent time. The table tennis tournaments are still in progress, and Games nights have been resumed. Club roll: 45. *Secretary:* B. Lee, 16 Kennedy Street, Maylands, Western Australia.

HOLLAND

MEMOKA (MONNIKENDAM) M.C.—Meccano model-building continues enthusiastically in this progressive Club, and recently a most successful Exhibition was well reported in the local press. The Club also took part in the local Annual Fair in August last, when they displayed a very fine model of the old bell tower at Monnikendam. The model had been built by the Leader, Mr. W. Visser, and was 11½ ft. high.

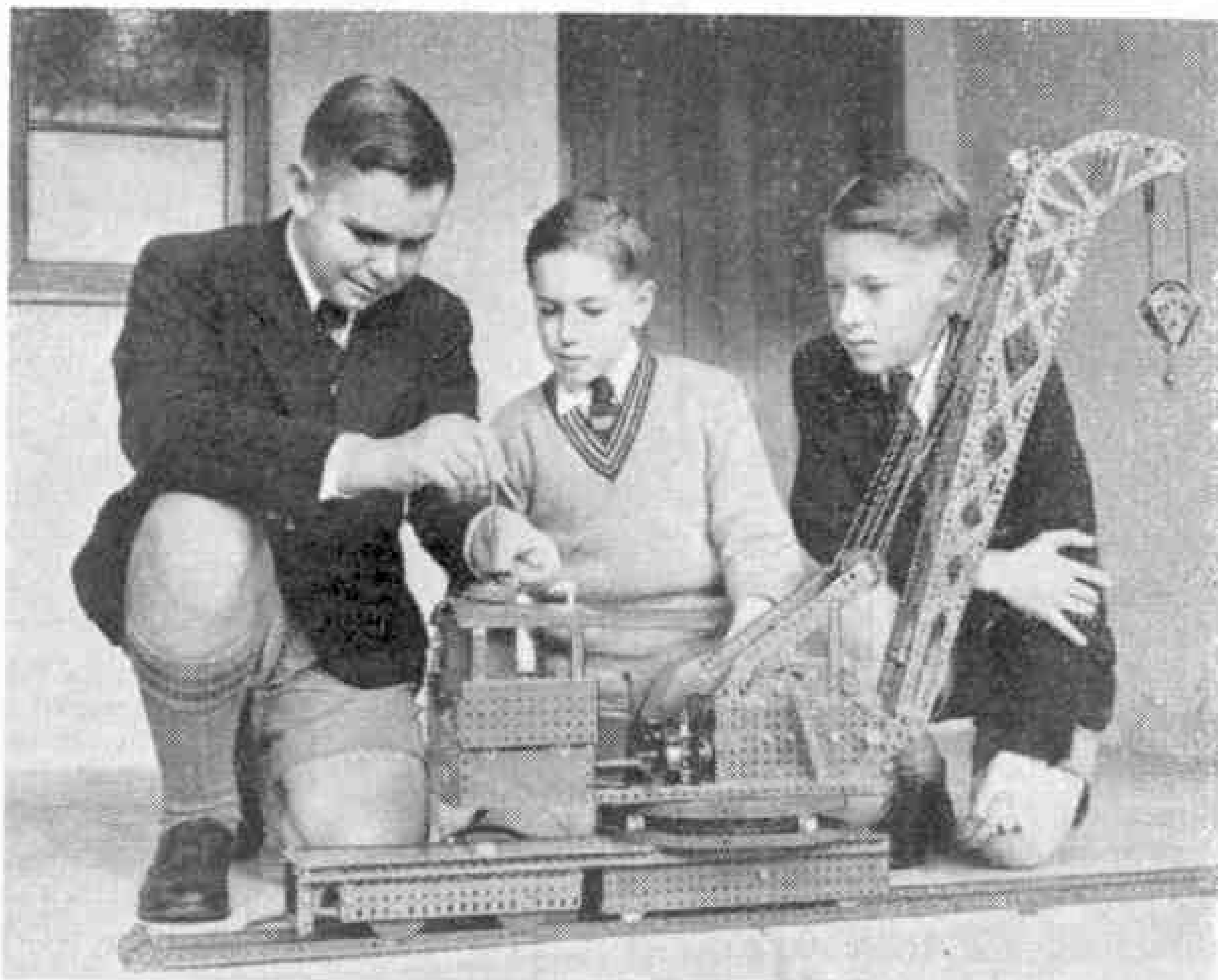
It attracted a great deal of attention. Club roll: 36. *Secretary:* Jan Paul van Dieren, Noordeinde, 12 Monnikendam.

BRANCH NEWS

HINDHEAD AND DISTRICT—Members recently took part in a very enjoyable outing organised by *The Enthusiasts Club*, of Farnborough, to the Tongham branch line, S.R., and the Longmoor Military Railway. The trip was made by special train. Lately members have been busy repairing the Branch model scenery and buildings, and constructing a stand for the forthcoming Exhibition. *Secretary:* B. J. Hinde, "Hindhead Brae," Hindhead, Surrey.

EAST GRINSTEAD—In order to familiarise members with the procedure governing signalling and train working on British Railways, one hour at each meeting is being devoted to lectures on these two aspects of railway operation. The lectures are being given by a signaller and a motive power representative respectively. A small billiard table has been installed and a library started, as additional Branch attractions. *Secretary:* B. Heasman, 69 Woodlands Road, East Grinstead, Sussex.

MAGDALEN COLLEGE SCHOOL (OXFORD)—At the first Layout meeting of the Session a single-track main line with a marshalling yard on one side and a station on the other was laid down. The running of a very long goods train was made an important feature of the evening, with excellent results. The Branch have been fortunate enough to be presented with a good deal of rolling stock, etc., by Mr. R. Avery, an old boy of the school, and are very grateful to him. It is hoped to visit Swindon Works and Motor Power Depot early in December. *Secretary:* R. E. J. Foster, 107, Southmoor Road, Oxford.



This fine electrically-operated Meccano breakdown crane was built by Graham Korck (left) and was one of the many outstanding models in the Cape Peninsula (Cape Town) M.C.'s recent very successful Exhibition. The two members looking on are Kenneth de Beer and Vernon Anderson. This splendid South African Club was affiliated with the Meccano Guild in March, 1952. Photograph by courtesy of "The Cape Argus."

HORNBY RAILWAY COMPANY

By the Secretary

The Hornby-Dublo Level Crossing

I HAVE a feeling that no railway is complete without a level crossing. I know that my Dublo friends share this feeling, and I am not surprised, for level crossings are picturesque features of real railways, and look equally interesting on model layouts. In villages the crossings always seem to attract little knots of onlookers whose day's work is done, and those still to be found in towns also possess a fascination of their own.

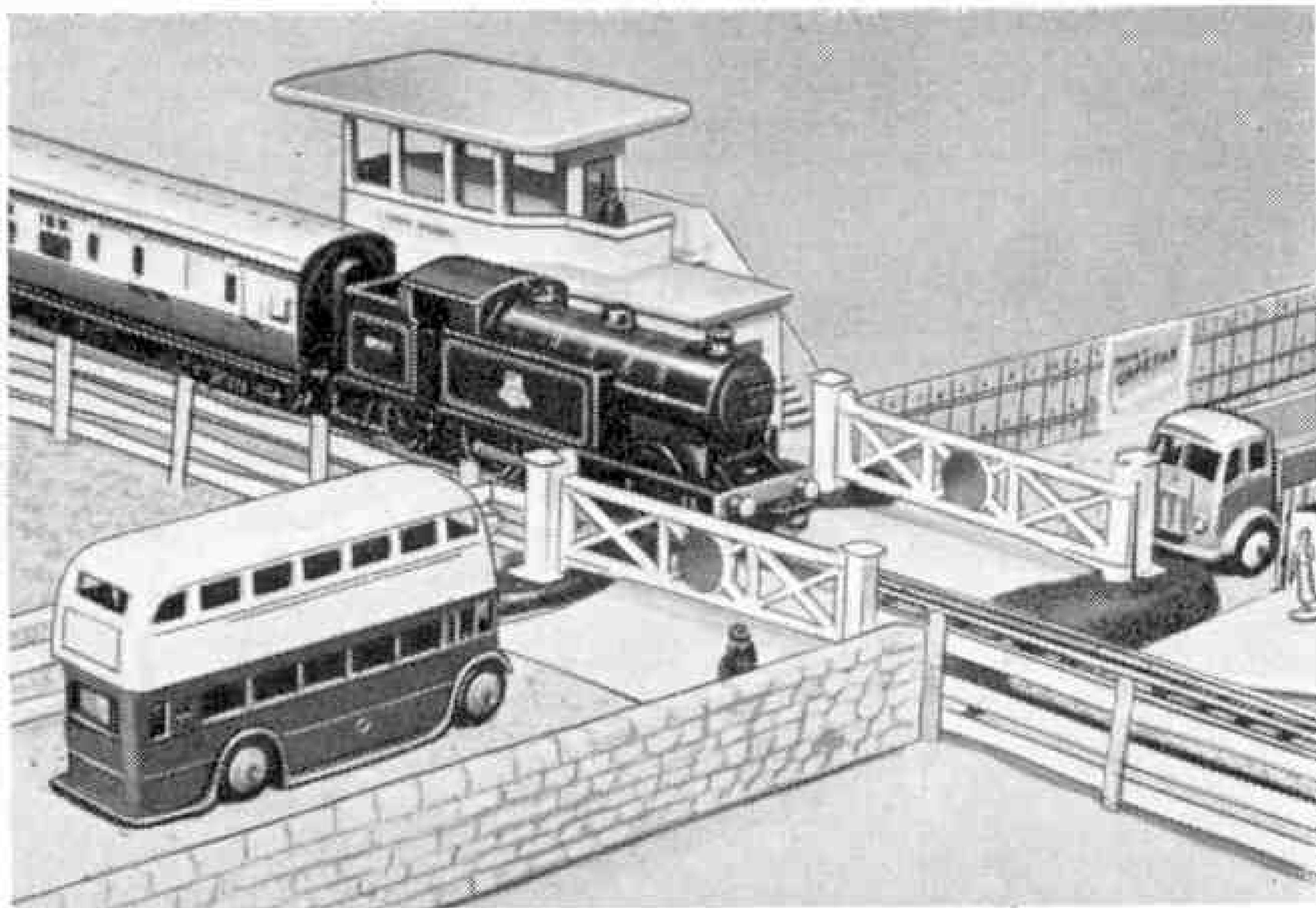
In view of this I am sure that every Hornby-Dublo owner will welcome the appearance of the Level Crossing that has just been added to the range. This has been well worth waiting for. It is made for single track layouts, and an interesting feature is that it has no track built in. Instead, between each of the two main side units, which are attached to a baseplate, there is a space in which a length of Hornby-Dublo Rail can be placed. The beauty of this arrangement is that there is no difficulty in putting a level crossing at any suitable point on a layout.

Let us have a look at this new accessory. Each side unit consists of a die-casting representing the sloping approach to the actual crossing of the track, where of course the roadway is brought up to rail level. At each side of the roadway the representation of a low bank is formed, and on each bank is a stout gatepost. The posts are finished off with correct capping, and the crossing gates are hinged from the left hand post on each side, as we look at the Crossing from the approach roadway.

The general design of the gates is typical of what is found in real practice and appropriately there is a red warning target attached to the centre of each of them. They can be moved easily by

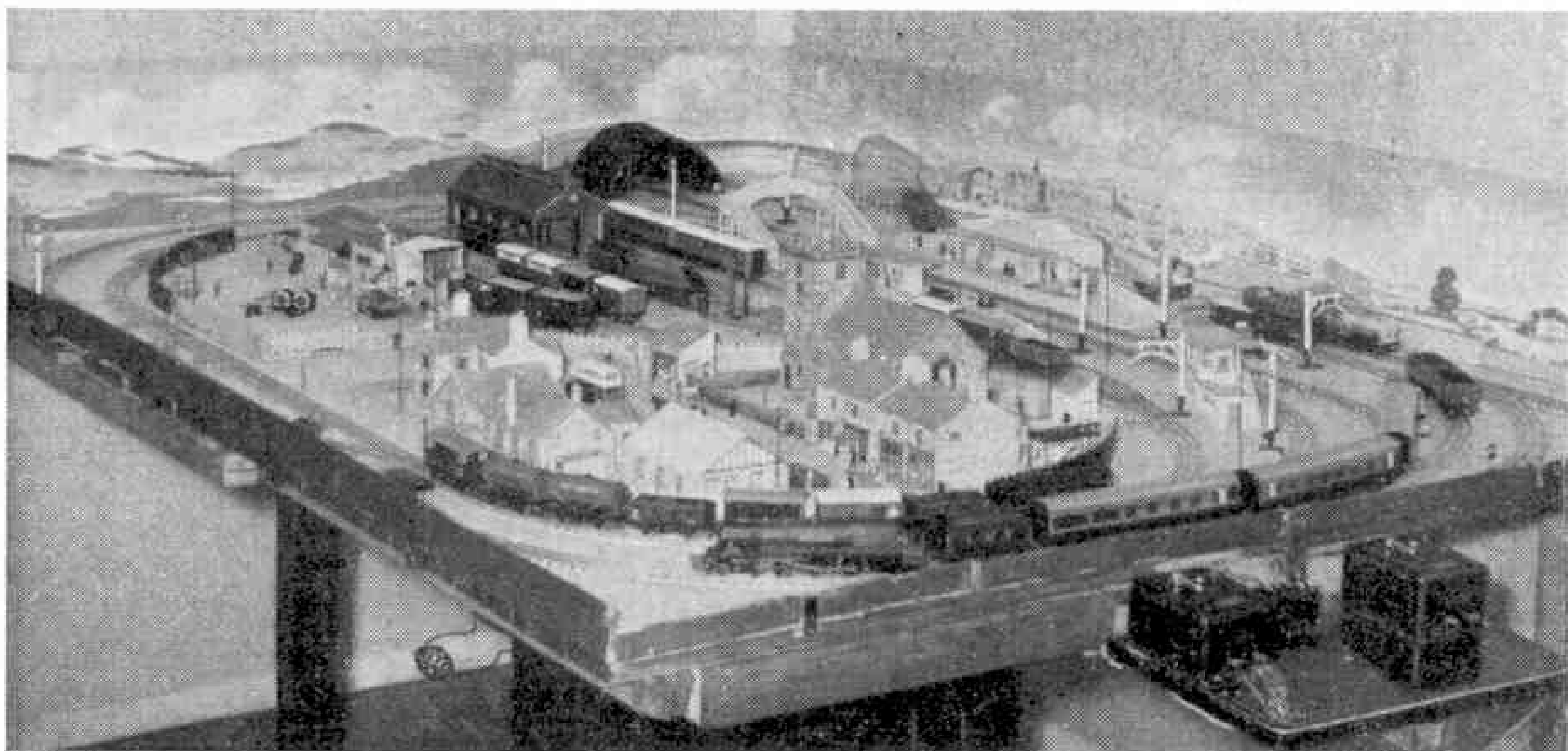
anyone performing the duties of crossing keeper, and as the outer vertical member of each gate slips into a simple ground locking arrangement at each end of its travel, there is no danger of the gates moving of their own accord, so that risk of mishap to either road or rail traffic is avoided.

Needless to say, the Level Crossing is very attractively finished. It provides the Hornby-Dublo owner with endless opportunities for realistic road movements with suitable Dinky Toys, such as the Double Deck Bus and the Forward Control Lorry that appear in the illustration on this page. Those who drive Dinky Toys vehicles over the track will find that although there is not yet any crossing unit for placing in the "four-foot" way, that is between the running rails, the tired wheels of their



Dinky Toy road traffic is held while a Hornby-Dublo train approaches the Level Crossing. This splendid new Accessory will be welcomed by all Hornby-Dublo owners.

motors will pass over the track easily. Later a special rail will be made available, and in the meantime the spaces can be filled with flat pieces of balsa or some other wood, one on each side of the centre rail, to make movements of Dinky Toys easier. Placing a Level Crossing at the end of a station platform and a Hornby-Dublo Signal Cabin opposite will reproduce a scene common in real practice.



Layout in a Corner Setting

IF a Hornby-Dublo layout is to be permanently arranged, or nearly so, the greatest care must be taken to choose a suitable site. A great deal of course depends on the all-important domestic arrangements, for these inevitably settle the amount of space that can be devoted to the line.

A layout that was placed after much thought on these points is that shown on this page. It occupies a position that has many advantages, of which Mr. D. Findlater, of Nairn, and his son David, who built it, have made excellent use. These enthusiasts indeed have lots of fun in its operation.

One special requirement was that the layout had to be made accessible from the invalid chair in which, unfortunately, David has to spend most of his time. This explains the arrangement of the Controllers and the bank of Switches on a separate control panel projecting from the board. There is much to be said for the separate control panel idea in any case. It keeps the baseboard itself free from the control gear and the whole area of the board is thus available for railway or lineside purposes.

One special advantage of a corner setting is that background scenery round the two wall sides of the layout helps to give depth to the scene when the railway is viewed from the normal operating position, and to give an air of real completeness to the line and its

surroundings. It is indeed quite easy to imagine that such a line stretches well into the distance instead of being a continuous track of the favourite oval type.

The Findlater railway has double track throughout for main line purposes and there are the usual sidings. The main station has the Hornby-Dublo Through Station on one side and the corresponding Island Platform on the other, the two Platforms being connected with the usual Footbridge. There is a miniature township in the near corner in our picture and other buildings are well placed elsewhere.

A favourite and important part of the working arrangements involves the running of an express goods train consisting of vans only. This is hauled by a main line tender engine. After making several circuits it is shunted direct into a reception road, where the

main line engine is uncoupled. This engine runs to the shed and then a Hornby-Dublo Tank Locomotive distributes the vans into the various sidings.

An effective piece of roadside work is the attachment of the odd van or two to a passenger train calling at the station. The van is placed in a convenient siding by the Tank Locomotive, which then goes away and the necessary movements are performed by the train engine.

The engines on the layout now are four in number, the latest addition being the *Duchess of Montrose*. Five coaches and about 40 goods vehicles are in use.

A corner site was chosen by Mr. D. Findlater and his son David, of Nairn, for the Hornby-Dublo layout they operate, and has been found by them to have many good features. Photograph by R. MacIntosh, Nairn.

Hornby Trains are Fun

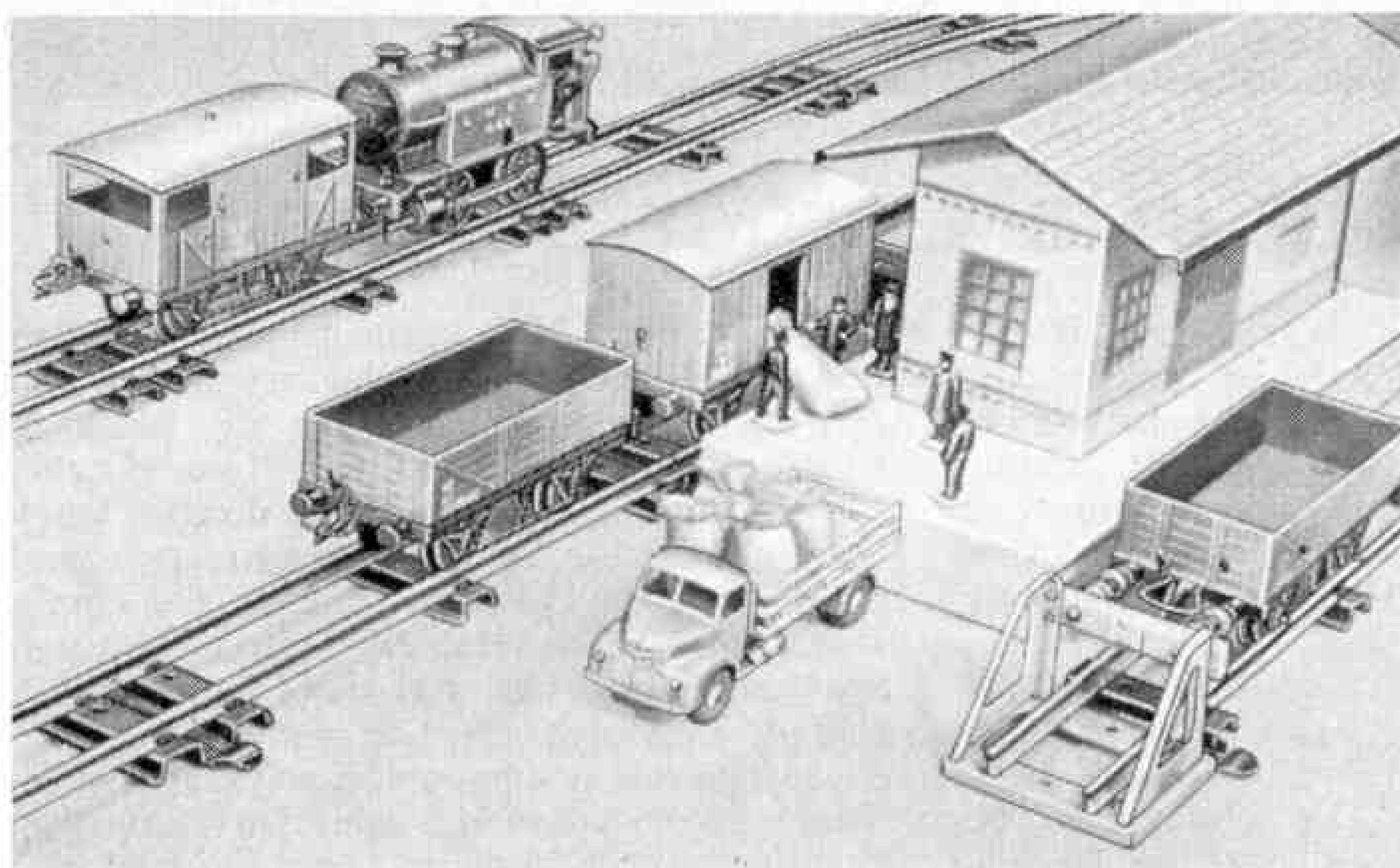
Making the Best Use of Them

WITHOUT a doubt this is the time for Hornby Trains, the time when *M.M.* readers will be looking forward to their first train sets or to making additions to the railway systems they already enjoy. To the beginners we wish many happy hours of good railwaying, and indeed they will be sure of these if they take care to follow up the instructions packed with Hornby Locomotives and Train Sets. All

An example of what can be done is given by those keen enthusiasts, the brothers Fred and John Roberts of Saffron Walden, whose railway is shown in the upper picture on the opposite page. These Hornby railwaymen not only work an attractive layout, which like so many others has been developed from a simple Train Set, but they make their railway more interesting and realistic by the

attention given to lineside accessories and effects. Among the latter of course Dinky Toys figure prominently, for so many of them are of a suitable size for use in conjunction with Gauge 0 railways. Working on rail and road together is really delightful, and this pleasure is within reach of every Hornby Train owner.

Running to a timetable is very interesting and on this layout has been carried out



The staff at the Hornby Goods Platform are unloading freight from a Van on to a Dinky Toys Leyland Comet Lorry that is standing by for road delivery.

too often in the excitement of opening up the box, and getting things moving, the instructions are not noticed for a time. They may even be lost. They are too good and too useful for this, but fortunately new copies can always be obtained from H.R.C. Headquarters, so write in at once if your own copy gets mislaid. It is much better to do this right away rather than to chance operating in the hope that everything will be all right.

A Hornby railway provides splendid opportunities for running trains of all kinds. Apart from this, there are many activities connected with good railwaying. There are stations to manage, signals to work, points to set, crossing gates to open or close and so on, and it is this varied activity, all real railway-like work, that makes the Hornby railway hobby so enjoyable, and the fun can be enjoyed at any time of the year.

very satisfactorily. Hornby Clockwork locomotives indeed are ideal for this purpose, as they are easily handled and give consistent performance. There are several of them, of both tank and tender types, on the layout. An interesting point is that the MO Train with which the railway was begun was passed on to a cousin's layout, where it began operations afresh. I like the way in which Hornby Train enthusiasts stand by each other and help others to join in the fun!

Of the present engines on the layout a popular one is a Hornby 501, which can so easily be reversed from the track by means of the BBR Brake and Reverse Rail. One of the latter is placed near the facing end of one of the Points on the system. There it allows an interesting manoeuvre. The engine approaches the Points from the trailing direction, along the curved branch for instance. The



Good working and an effective lineside are features of the Hornby layout shown here. Fred and John Roberts, of Saffron Walden, are the enthusiastic operators.

that is enjoyed with this clockwork railway. The maintenance scheme is even extended to include the Dinky Toys that are used in connection with the line.

These are all cleaned and their axles are lightly oiled.

The Dinky Toys are numerous, so much so that it is considered necessary to count them once a year.

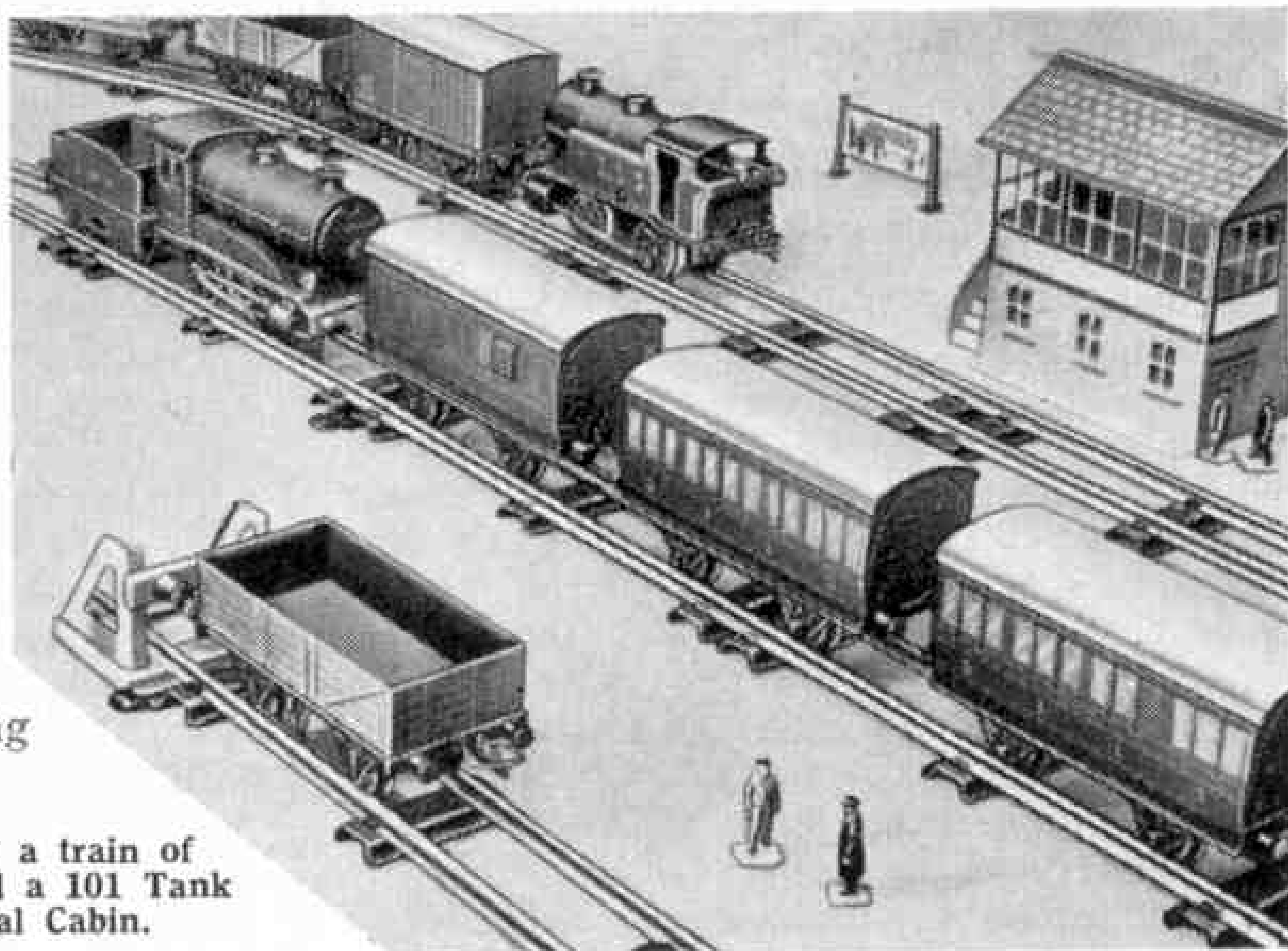
BBR is then set, the engine goes through the Points and, as soon as it has been reversed by the BBR Rail, the operator puts the latter out of action and turns the switch rails of the Points. Now when the engine runs back it moves along the straight section. Smart working of the BBR control and of the Points is necessary, but our friends are experts at this particular move, which is very useful when the running programme calls for an engine to run round its train on coming to rest in a terminal station or when carrying out shunting movements.

This is a floor railway and the owners have the advantage of a smooth stretch of carpet on which to work. The line is laid down during each school holiday period and towards the end of each session preparations are already in hand for the next spell of railway work. Thus during the last summer holidays a considerable amount of attention was given to lineside effects, so that these would be ready for the Christmas season.

A point to notice is the fact that before the equipment is finally put away for the school term all Rails and Points are cleaned and the engines and rolling stock are cleaned, examined and oiled. This careful attention has much to do with the successful operating

It is not surprising to find that on this railway careful planning results in effective running and operations generally. As a layout grows it helps a great deal if some definite scheme of train movement is worked to. Timetable working need not be regarded as a real necessity, in fact many layouts are not suited to it, and the average operator with not too great an amount of equipment will probably find it more satisfactory to run train services to a set programme rather than to a timetable.

The running of regular services means that the coaches or wagons composing the different trains must always be on hand when and where they are needed. This makes the movement of empty stock necessary at times.



A Hornby 501 Locomotive deals with a train of "empty coaches." In the background a 101 Tank brings a goods train toward the Signal Cabin.

Two Notable Hornby-Dublo Layouts

The Secret of Smooth Railway Working

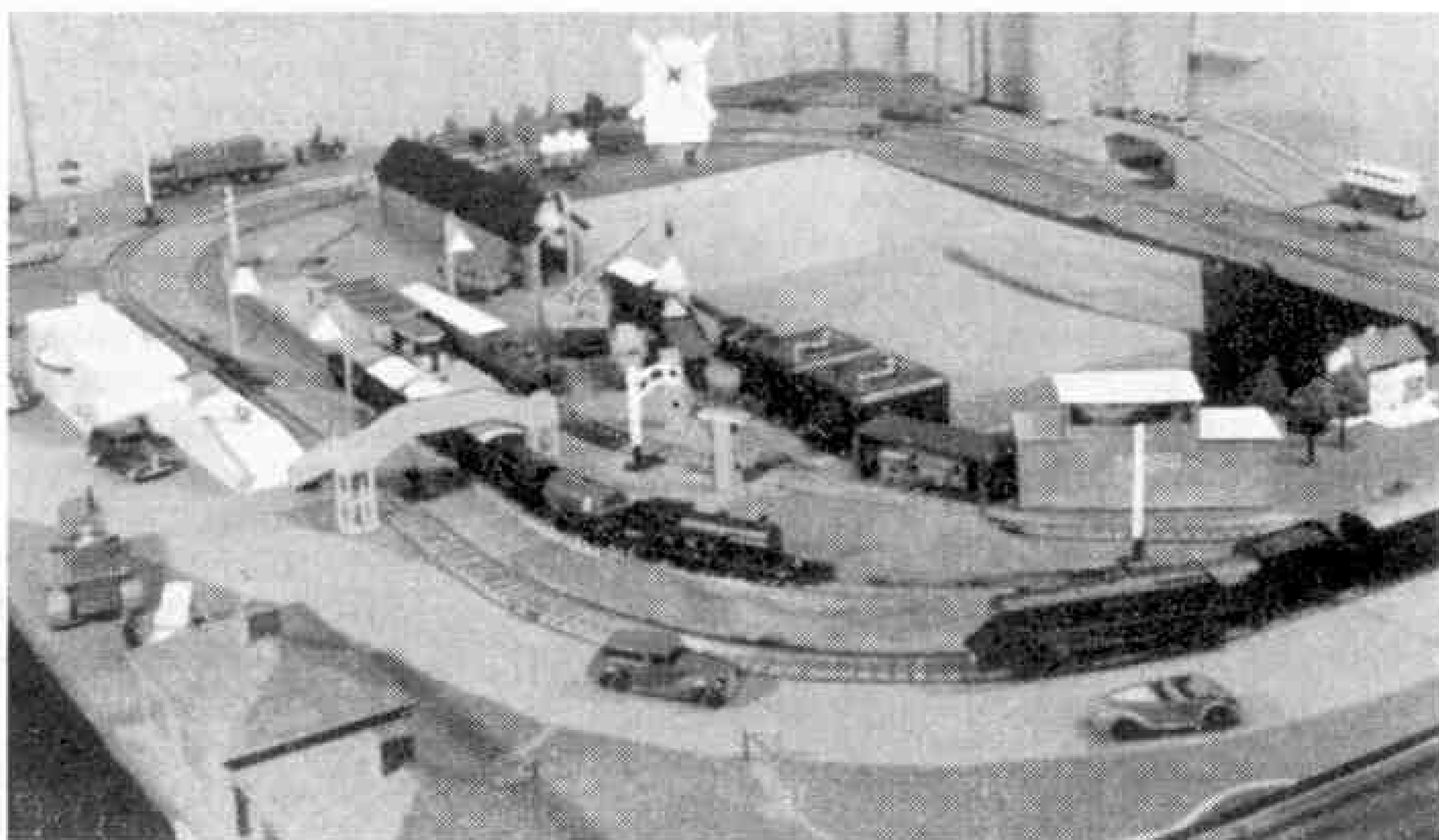
THE Hornby-Dublo layouts shown in the pictures on these two pages are probably typical of many similar systems that have grown up from the elementary oval track. Each of them remains basically simple, and this is a secret of successful operating. There is no real point in having a layout that is too complex to be worked smoothly and easily. Train working and the management of the railway should be enjoyable, not something of an ordeal or a difficult mental exercise.

It will be noticed in the picture on this page, which shows the layout of Mr. L. P. B. Smith, of Leiston, Suffolk, that the tracks surround a sort of operating "well" formed in the centre of the baseboard. There is a lot to be said for having the operator in the middle of things. He has to move very little, even where there are several separate sets of controls to be handled, and no part of his railway is really out of his reach. This complete layout occupies a space of approximately 7 ft. 6 in. by 5 ft. 6 in., but the whole of the area is not occupied by track. As has been said on several occasions, one can have such a thing as too much railway, but this is certainly not a fault of the system in question.

Although the railway is laid on a baseboard, the latter can be dismantled when required, so that the system is not permanent. This does not prevent Mr. Smith and his son, Anthony, from having a very good time indeed with their train working. A double track main line is available, and as the two tracks are connected by crossover Points the trains on the outer track have ready access to the inner one, and *vice versa*, while the sidings inside the tracks can be reached

easily from both tracks. The track leading into the sidings can be seen in the illustration. On reaching what might be termed "yard" premises this track divides, one line forming an ordinary siding while the other leads to an engine shed. This is the part of the layout where the Controllers and other equipment of that nature are installed, so that the operator of the layout has the yard and its working under his immediate observation.

Unlike many layouts, the railway track is not the most conspicuous part of the baseboard scene. It forms a part, and an important part too, of the general layout,



A general view of the Hornby-Dublo layout of Mr. L. P. B. Smith, Leiston, Suffolk, showing the space for the operator in the centre of the system. Photograph by Mr. P. Goldsmith, Leiston.

and fits in with its surroundings in the manner that is natural with real railways. So there is plenty of lineside space for roadway and similar developments.

A layout of a more permanent character is that shown in our other two illustrations. This has been developed by Mr. G. W. Alexander, of Stockport. Here we have a slightly smaller board, measuring 6 ft. by 4 ft. In this instance the operator is accommodated "outside" his railway, and the central area of the board, within the inner main line, is occupied by sidings and roadside features. Part of this interior is visible in the upper illustration on the next page, which is taken looking across from one corner of the layout inside the main line. In the foreground is the siding,

by a small area of grazing land, and beyond it is a roadway with Dinky Toys traffic and other features. Beyond the roadway comes a further stretch of country, and then another siding.

In the background is a station. This bears the picturesque name of *Millers Dale*, actually of course that of a well-known station in the Peak District. Peakland associations are suggested, too, by the name on the signal cabin, one end of which can be seen at the right hand end of the lower picture. This cabin bears the name *Peak Forest West*.

The baseboard itself is of interest, as it is built up of two pieces of hardboard joined by metal plates. The board proper is supported clear of the table by rubber door stops, thus leaving clearance for the wiring of the track to be carried out underneath the board. This is a good point, resulting in a neat finish on the upper surface. The plan is an admirable one for a compact layout such as this, on which the outer main circuit is divided into eight electrical sections, for wires on the surface could get horribly in the way. The inner circuit

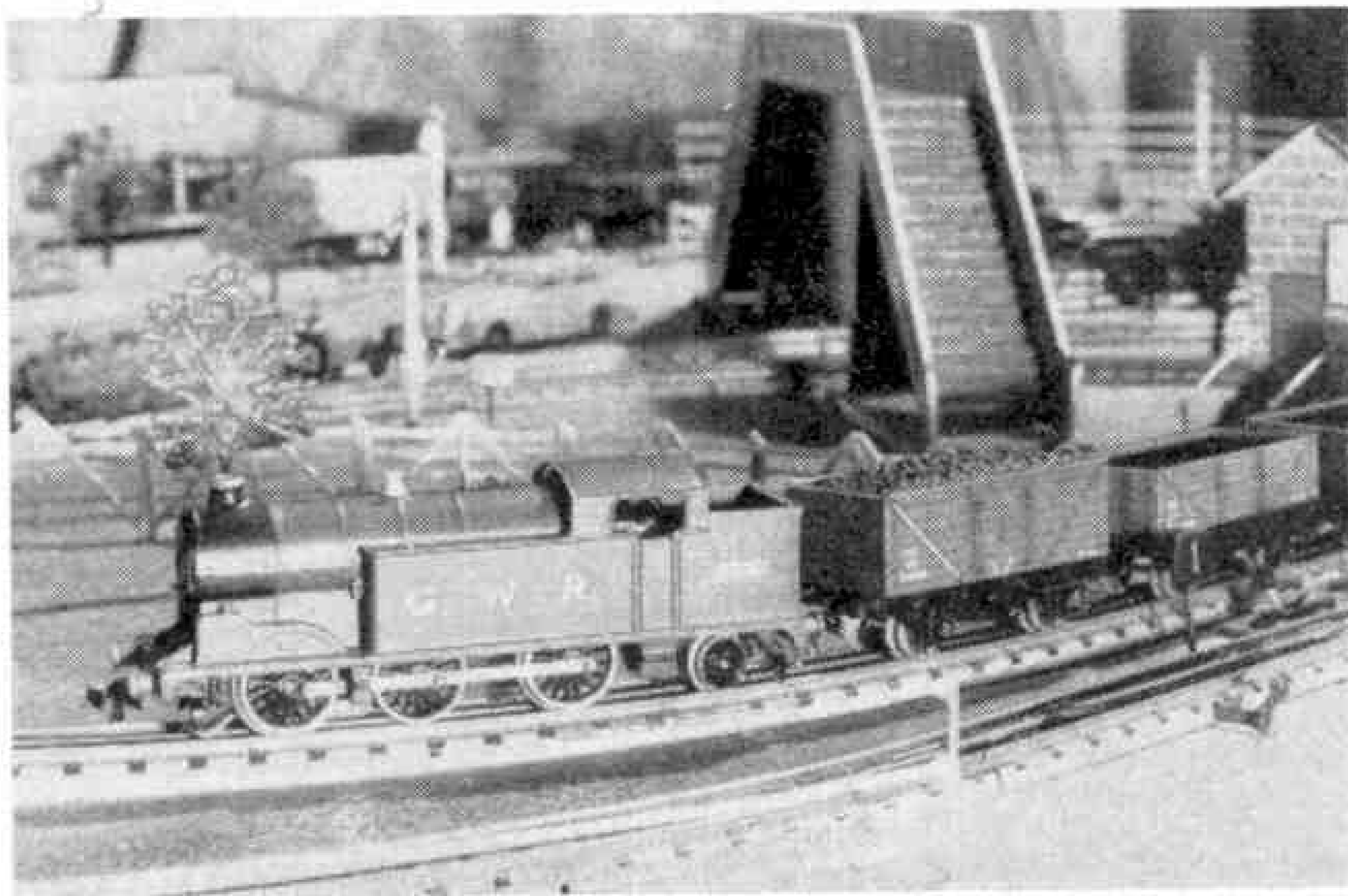
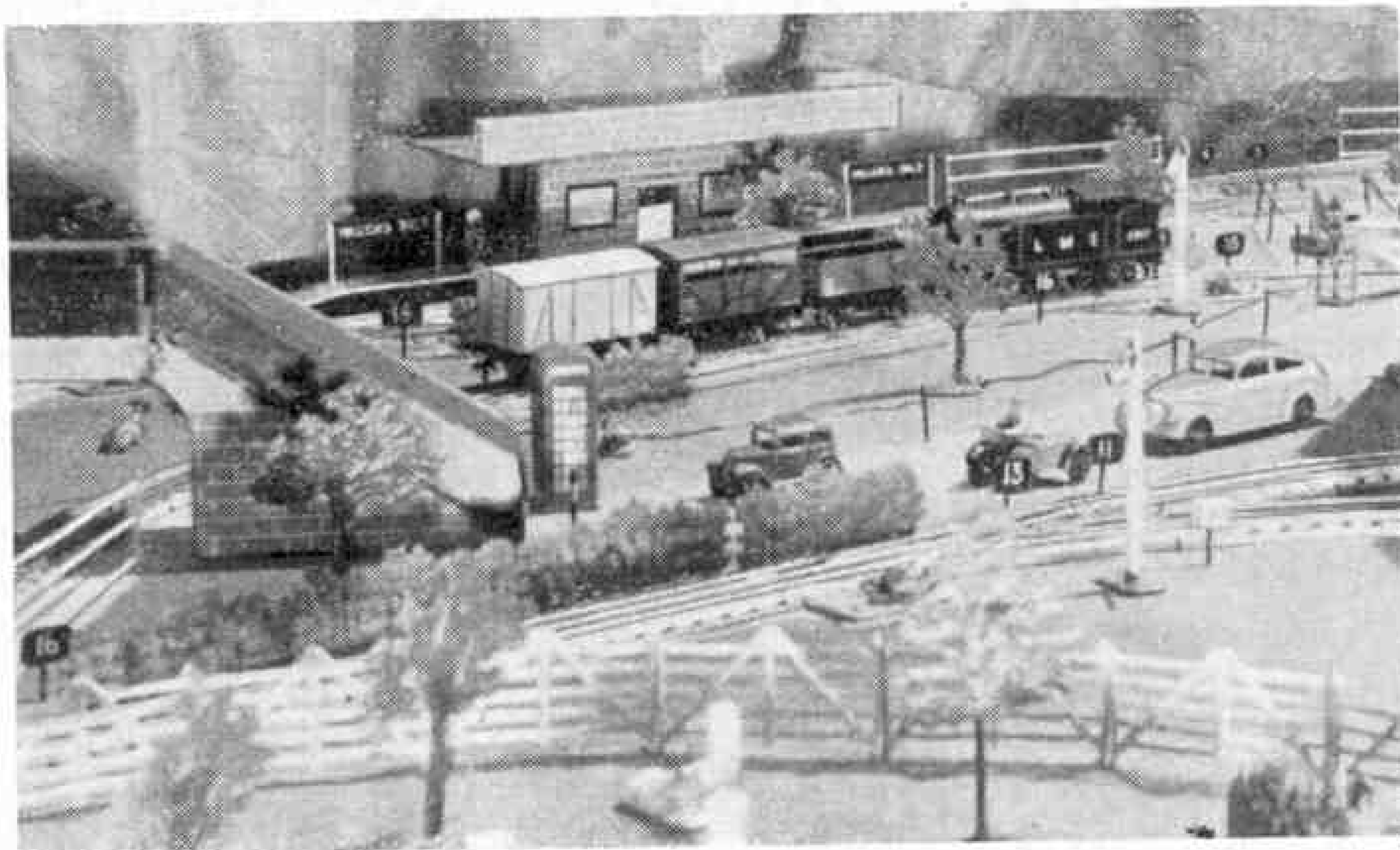
Scenes on the layout of G. W. Alexander, Stockport, appear on this page. Considerable attention has been given to lineside detail, with the happy results apparent in the illustrations.

contains two main sections, and the isolating arrangements are such that two trains can be run at the same time, each on a different track, while another one is standing by in a siding or section electrically isolated.

The various sections are indicated on the surface of the board by small number plates or indicators. At the crossover Points, between the outer and inner circuits, locomotives are worked from one circuit to the other by using the Controllers in sympathy. At the end of the crossover, on the outer track, an Uncoupling Rail is fitted, so that the rolling stock can be shunted over to the inner track, and taken over by another engine standing by there.

The scenic effects, roadbridge, signal cabin, engine shed, loading bays, station, water tower and so on were made at home. Miniature trees, shrubs, hedges, gates, railings, and even a herd of cows were bought. The layout board is painted in various shades of greens, yellows and browns, to give the effect of fields, roads and ploughed field.

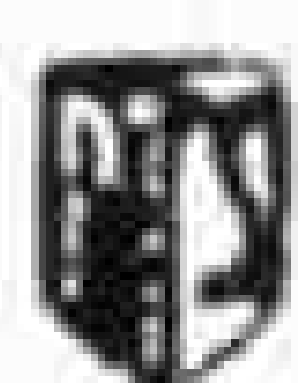
Purely for effect, curved guard rails made from wire are located at the corners of the layout, and these are painted white, with excellent results.



BARGAIN DISCOUNT APPROVALS!

Do you want really FIRST-CLASS Approvals? Then try our Bargain Discount Approvals. Only picked stamps included, with book of sets as well. They're post free one way, too. Br. Cols. or B.C. and Foreign Mixed available. "Wants" lists of single stamps welcomed. Send with confidence. You won't be pestered to buy.

THE BIRKDALE STAMP CO.
104 Liverpool Rd., Southport, Lancs.



Postal Business Only
(NO CALLERS)



FREE TO ALL COLLECTORS

2 CORONATION STAMPS
send 2½d. postage.

BARGAIN 50 CHINA .. 1/3
C.O.D. extra.

50 JAPAN	1/3
25 EGYPT	1/3
100 B. Cols.	2/-
200 B. Cols.	4/6
500 All diff.	4/9
50 RUSSIA	2/3
25 PERSIA	1/6
100 F. Cols.	2/6
25 Vatican	3/-
1000 All diff.	10/-

G. P. KEEF — WILLINGDON — EASTBOURNE

FREE—1/3 G.B. CORONATION

This scarce high value stamp will be given free to all genuine applicants for our famous ONE PENNY APPROVAL BOOKLETS of BRITISH COLONIALS. These Booklets abound with JUBILEES, CORONATIONS, VICTORY, BI-COLOURED PICTORIALS and the latest Q.E. II stamps. The best value on the market. N.B. Enclose 2½d. stamp for Postage. **S. FENLEY LTD., 250 Charminster Rd., Bournemouth**

1,000 STAMPS 7/6

ALL DIFFERENT. NO GREAT BRITAIN

500, 3/6. 250, 1/9. 100, 10d.

Br. Empire: 100, 1/6; 200, 3/6; 300, 7/3; 500, 15/6; 1000, 45/-. Triangulars: 10, 1/6; 25, 4/6; 50, 10/-; 100, 30/-; Rly. Engines: 15, 1/6; 25, 2/6; 50, 5/6. Maps: 10, 1/6; 25, 2/9. Ships: 10, 1/3; 25, 2/6. Postage 2½d. extra. All current British Colonial mint stamps in stock, including Coronation stamps and all new Elizabethan issues. Lists on request.

S. TATLOW & SONS, ECKINGTON, SHEFFIELD

FREE ★ FREE ★ FREE

These TWO beautiful stamps of NIGERIA showing Queen Elizabeth II FREE to everyone asking for our world-famous DISCOUNT approvals. **BEDFORD & CO. (Dept. M), 123 CONYBERE STREET, BIRMINGHAM 12, ENGLAND**

XMAS TURKEY AND GOOSE PACKET OFFER FREE (usually priced at 2/6). This Canadian Goose (Airmail) issue and Turkish Pictorials free to genuine discount approval applicants. Postage appreciated.

RINTON STAMP CO.

14 SUNNINGDALE DRIVE, BOSTON, LINCOLNSHIRE



6

FINE NEW REIGN ISSUES FREE

(Illustrated) All sent Free to collectors asking to see our Famous "Quality" Approvals. (Discount or non-discount). Send 3d. (abroad 6d.) to cover our postage and illustrated list of sets. IF you wish you may join "THE CODE STAMP CLUB." Sub. 1/-. You receive Badge and Membership Card. Approvals sent monthly. World wide Gift Scheme including Tweezers, Magnifiers, Duplicate Case, etc. We aim to Satisfy you and our Service covers the World. Monthly approval selections a speciality. Please state if adult collector. (Post Section Established 1897).

WRIGHT'S STAMP SHOP (M50)
PALACE STREET, CANTERBURY, KENT

For other Stamp Advertisements see also pages 646 and xx.

STAMPS FOR XMAS! Lots on paper; all contain large Pictorials! Gt. Britain, 1lb. 4/6. British Empire with Coronations and Q.E., 1lb. 25/-, ½ lb. 12/9, 4 oz. 6/9. Australia and/or Canada with latest issues and Coronations, 1 lb. 13/-, ½ lb. 6/9, 4 oz. 3/9. World on paper, 1 lb. 18/6, ½ lb. 9/9, 4 oz. 5/-. (Abroad 1/- lb. extra).

A. DAVIES, 111 HOLME LACY ROAD, HEREFORD

SENSATIONAL FREE OFFER

Contains New Gibraltar Queens, Coronations and other scarce colonials. Send no money, but rush your order to-day for **DISCOUNT APPROVALS**, with many bargains. **NORTHERN STAMP CO., 43 HAWTHORN TERRACE, NEW EARSWICK, YORK**

MYSTERY EXCHANGE PACKETS!

Exchange your "twickers" FREE from our guaranteed unsorted Free Exchange Packets which have circulated the World over. Different, profitable and interesting without payment. Details with 5 different GOLD COAST also FREE with APPROVALS. ENCLOSE POSTAGE. Dealers supplied. Overseas Agents Wanted.

ASTLEY & CO. (M)

103 CADMAN CRESCENT, WOLVERHAMPTON

FREE - EVEREST CONQUEST!

The newly issued Indian stamp to commemorate the ascent of Everest, together with three other up-to-the-minute new issues. Absolutely free! Just send 2½d. stamp for postage and price list and ask to see our famous "½d. UPWARDS" approvals.

Write to-day to:

CAPT. M. CAMPBELL & CO. (Dept. MM)
58 High Street, Watford, Herts.

FREE

1953 NEW ZEALAND HEALTH PAIR (SCOUTS AND GUIDES) JUST ISSUED, WILL BE SENT FREE TO ALL COLLECTORS ENCLOSING 2½d. STAMP FOR POSTAGE AND ASK TO SEE OUR FAMOUS APPROVALS. **DEPT. M0/4, BROADWAY APPROVALS, 12 CHEAPSIDE, LONDON E.C.2**

SPECIAL XMAS FREE GIFT

to all approval applicants enclosing postage. **Macao 1953 Flowers Set in Glorious Colours.**

YULWONTMOR STAMPS, P.T.S. (Dept. M)
175 PRIORY ROAD, ST. DENYS, SOUTHAMPTON

NIGERIA SET OF THREE MINT NEW ISSUES—REVOLUTIONARY DESIGNS WITH PORTRAIT QUEEN. 2½d. FOR APPROVALS PLEASE. **COOMBERS STORES, 20 MELBOURNE ROAD, CHATHAM**

Stamp Collectors' Corner

By F. E. Metcalfe

HERE ARE YOUR ANSWERS

WITH its huge circulation there are naturally many readers of the *M.M.* who are either already collecting postage stamps, or would like to do so, as our mail bag shows. The would-be collectors often write, and more or less ask the same questions. The impetus given to the hobby by the issue of the new stamps for Great Britain and the Commonwealth probably means that at the present moment there are more readers than ever anxious to take up stamps, if they only knew how to set about it. As it is evident that the same difficulties beset all beginners, it will probably be helpful if I deal with some of the queries I have received recently on the subject of starting a collection, so now let us get right down to it.

Are mint stamps worth more than used? This is always asked, and one cannot give a direct answer in a sentence. It mostly depends on the relative scarcity. Supposing 10,000 copies of a stamp exist, and of these 2,000 are mint, obviously the latter are scarcer and worth more. As a general rule mint stamps are worth more than used, but there are many exceptions, so do not accept this as applying in all cases.

What is the difference between mint and unused stamps? By mint, which is probably a term borrowed in the first instance from coin collectors, one means a stamp in the same condition as it left the post office. That is, one with full and undisturbed gum that is bright and clean. An unused stamp on the other hand means a copy which has not passed through the post, but which lacks gum, or most of it.

Latterly the term "part gum" has crept in. This refers to a stamp that has gum on the back, but has lost a little of it through having been mounted. In the case of an ordinary stamp this does not matter much, but when dealing with expensive items it is rather important. So the lesson to be learned here is to take care how you mount your stamps.

In a book on stamps it says buy the biggest packet you can afford; is this right? Such advice might have been valid in the old days, when there were few stamps and all aimed at a general collection. But in the conditions prevailing now, no advice could be more certain to be the ultimate undoing of a collector than this.

Thousands of new stamps are released every year, and already over 100,000 different varieties have already been issued, so unless you want to stick in a book any odd items that come your way, which can hardly be called stamp collecting, you must limit

your field. Otherwise, when you learn something about the hobby you will realise that you are getting nowhere, and interest soon dies with no target to aim at. Better realise at the very beginning that if you are to make a

show at all, you must be content to set a plan and stick to it. A big packet, no matter how big, will contain many stamps right outside any feasible plan, and a collection based on a nondescript packet will only prove to be a conglomeration of stamps without form or substance. Sooner or later this is realised and one more potential philatelist is lost, for it is very rarely that such a beginner will scrap any of these stamps and

start again. The resale value of the unwanted stamps bears no relation to what they cost, for so much of that cost went in labour entailed in getting them together.

Why are KG VI stamps so popular? There are several reasons, the principal ones being the necessity to limit the scope of one's collection, and the fact that this group so conveniently fits the necessity. Further, the formation of a worth-while collection is within the compass of most, and the stamps are mostly beautiful in appearance. Next, many dealers sell them. This leads to competitive prices, and with the big demand the resale value, which is important if one is going to spend more than one wishes to throw away on a hobby, as most collectors do, is on the whole higher than is the case with other stamps.

What kind of an album should I use? One with spaces already marked out for specific stamps, or one with plain pages? Most collectors start off with what is called a ruled album, but later they graduate to plain albums, so why not start off on the right foot. Booklets with printed titles of headings of countries can be bought. These are cut out and pasted at the top of a page. Then you can mount on that page any stamps you like of the country concerned.

I have decided to collect King George VI and Queen Elizabeth stamps. Which catalogue should I use? This question has been asked many times this year, and I'll answer it by quoting from a letter received only this week. "At Christmas I was given a Commonwealth Catalogue. I was afraid that it might be above my head, but after using it for a time I find that it gives added pleasure to know just which stamps I have, and the catalogue with all the data tells me that in a manner unequalled by any other catalogue which I have seen. I find I now get more fun from collecting KG VI stamps."

Is there a good and inexpensive book on Stamp Collecting? I have left until the last the question that is asked the most. Yes, as I mentioned recently, a grand little book on the hobby is *Stamp Collecting—How to Go About It*, by S. C. Johnson. It deals with all phases on stamp collecting, and costs half a crown. The publishers are Thorsons Publishers Ltd., London, but any stamp dealer will have it, or could get you a copy.



CAMEL AND GURGI FREE



ABSOLUTELY FREE. To all who ask to see a Selection of Windsor Stamps On Approval, the Windsor Stamp Co. will send **Absolutely Free** this Lovely New Issue, the first Queen Elizabeth stamp for **BRITISH SOMALILAND PROTECTORATE**. The native Somali is a nomad and uses a portable beehive-shaped house, called a **Gurgi**, which is carried about on a **Camel**, as shown in the picture on this stamp.

To get it free, just ask for a **Camel and Gurgi Stamp Free**, and ask to see a Selection of Windsor Stamps On Approval.

Please enclose 2½d. stamp for posting these to you. **WRITE NOW** before you forget and miss this wonderful offer to add this interesting new stamp free to your very own collection to:

WINDSOR STAMP CO. (Dept. M), UCKFIELD SUSSEX

QUEEN ELIZABETH PACKET

A fine packet of unused Colonial New Issues, all bearing the Queen's portrait, from Barbados, Gold Coast (fine map stamp), Northern Rhodesia (with view of the Victoria Falls), Trinidad and Tobago and Gibraltar (Coronation stamp), sent free to all genuine applicants for my discount Approvals enclosing 2½d. postage. Mention the Meccano Magazine.

R. D. HARRISON

20 PARK ROAD, HODDESDON, HERTS.

LOOK! 25 LARGE PICTORIAL STAMPS FREE

Just request our pictorial approvals. Postage 2½d.

MARTIN'S STAMP CIRCLE (M.M.)

24 CATHERINE STREET, SHEFFIELD 3

FREE GIFT OF STAMPS

to every applicant for approval books. The GIFT contains 30 British Colonials including 8 K.G. VI mint—no Great Britain. Good discount is given and a list of 98 Gifts is sent. These can be chosen by you and vary in value according to the money sent for purchases. They include K.G. VI Silver Jubilees; ALL the Colonial Victory sets mint; and Foreign stamps.

3d. postage please.

C. A. RUSH, 38 Queen's Avenue, Whetstone, London N.20

FREE—THE LATEST QUEENS

Merry Xmas to all readers and to celebrate it you must send for free present of the latest Q.E. stamps. Request approvals and enclose 2½d. for postage and you will receive the 3 new stamps issued by Montserrat plus the new 2c. Grenada.

H. B. LANG, BURNBANK, MAUCHLINE, Ayrshire

SPECIAL to approval applicants this month **FREE**. **S. AFRICA CAPE CENTENARY SET MINT**. 2½d. postage. **A. CUNNINGHAM (Dept. MM), 36 DOONFOOT ROAD, AYR**

STAMP OUTFIT FREE

Watermark Detector, Perforation Gauge, transparent envelopes and TEN pictorials incl. Coronation, Triangular, Afghanistan. Send 3d. postage, ask for approvals. **ROSTON (J.), 106 St. Dunstan's Road, London W.6.**

FREE - 5 CORONATION STAMPS

AND COMPLETE CHECK LIST. SEND 3d. POST AND REQUEST APPROVALS.

MAJOR WOOLLARD, KENYTHON, PARKSTONE, DORSET

For other Stamp Advertisements see also pages 644 and xx.

FREE 3 TRIANGLES FREE

THESE Three Beautiful stamps Free to all applicants who send 2½d. for postage and ask to see a selection of my approval sheets. No stamps sent abroad.

JOS. H. GAZE, 10 PIMLICO ROAD, CLITHEROE, LANCs.

100 DIFFERENT STAMPS FREE

To Approval Applicants enclosing 2½d. postage.

N. JOHNSON (Dept. M.M.), 19 Hillside, Slough, Bucks.



FREE

ANIMALS

Animals of the forest in **HUNGARY** for collectors. Large exquisite stamps, delightful pictorials, all can be added to your collection **FREE**. Make sure you trap these animal stamps now and board them in your collection, they may be valuable. Enclose 3d. postage, request our cheap discount approvals and illustrated price list.

LISBURN & TOWNSEND LTD. (MM), WEST KIRBY, WIRRAL

PACKET OF QUEEN STAMPS FREE

To help with your collection of Q. Elizabeth stamps, we will send this splendid packet of new issues **FREE** to all asking for approvals and enclosing a 2½d. stamp for postage.

These stamps **SELL**—good discount is given—and you will be pleased with each selection you receive.

For **GOOD** collecting write **NOW** to:

GEM STAMP CO. (Dept. M)

514 FAIRFAX DRIVE — WESTCLIFF — ESSEX

FREE CORONATIONS & Q.E. II ISSUES

Send immediately for my **50% DISCOUNT APPROVALS** and receive **ABSOLUTELY FREE** new issues from **GIBRALTAR** and **BARBADOS** as well as **CORONATION STAMPS** from **AUSTRALIA** and **SOUTH AFRICA**. In addition, the first 250 applicants will receive 50 assorted stamps.

2½d. postage appreciated.

M. THEOBALD (33), 6 DELL CORNER, WEST DRAYTON, MIDDx.

GREAT BRITAIN

1855 4d. rose, Cat. 15/-, for 2/6. 1860 2d. blue, Cat. 6/6, for 1/-, 1865 6d. lilac, Cat. 12/6, for 2/-, 1867 1/- green, for 1/3. 1881 2½d. blue, Cat. 4/6, for 8d. The five for 6/6. **HILLIER — 35A NORTHDOWN AVENUE — MARGATE**

FREE—STAMPS CATALOGUED 5/-

to applicants for ½d. approvals.

COX, 17 STONELEIGH PARK ROAD, EWELL

Stamp Gossip

GARGANTUA

WE have all said how very nice our new British stamps are. But wouldn't it be fun if we could have a few as well designed, and with such exciting designs, as that illustrating Rabelais' Gargantua? It isn't that we cannot match such figures.

Modern French stamps are gaining in popularity all over the world, and when you examine some of them you will not wonder. One thing we do lack perhaps is a designer who can turn out such work as is being produced today across the Channel.



Some time ago, a young collector with very little pocket money to spend on his hobby started a collection of French issues that have appeared since 1940. A couple of shillings or so a week was all he needed to make a good show. He haunted the local public library to learn all he could about the people and places depicted on the

stamps, and apart from having an awful lot of fun, he gathered plenty of useful information. His collection is well written up, and is an absolute joy to look at. That form of stamp collecting, compared with the gathering of page after page of stamps like the penny red, which in some quarters is supposed to be so much the right sort of thing to collect, is surely worth while.

U.N.O.

My article on the interesting and handsome stamps that the United Nations issued has brought several letters from readers asking for the address in London where they can buy them. Recently the U.N. Postal Administration, Russell Square House, Russell Square, London W.C.1, issued a circular containing some information that is worth passing on. They say that they will be glad to send copies of their booklet, which gives details of U.N. Postage Stamps and Postal Stationery. This is free, but don't forget that stamped envelope for a reply!

Besides this, another book will be on sale shortly at H.M. Stationery Office, P.O. Box 569, London S.E.1, which is titled *The Story of the United Nations Postage Stamps*. Mr. Sol Glass is the author, and for those who have ever read any of this gentleman's writings that is enough to assure them of something very interesting.

PIZARRO'S DOVE

When going through an "office lot" the other day, I came across a copy of a Polish stamp that has for its design the *Dove of Peace* as drawn by Pizarro. I must admit that hardly my idea of a dove is depicted, but I suppose the artist wished to convey that the dove is having a pretty hard passage.



Anyhow, as Sir Winston Churchill has said, anything by this artist has to be taken seriously, whether we understand it or not.

The stamp is an interesting one by any standard, and it can be picked up for a copper or so; thematic collectors at

least will be interested in getting a copy.

YOUNG FARMERS' CLUBS

These seem to be growing more popular here at home, but it has been left to Australia to be the first to honour them philatelically by the issue on 3rd September of a 3 1/2d. postage stamp to commemorate the 25th anniversary of the official establishment of Young Farmers' Clubs in Australia. With a life of only one month, the stamp is already obsolete, but copies are still available at little over face, and there will be plenty who will want to buy.

Incidentally, this is the first bi-coloured postage stamp that Australia has issued, although its postage dues are printed in two colours. We have had four new ones of these latter recently, of values 4d., 7d., 2/- and 5/-, and while once upon a time few would have taken much notice of such an announcement, there are plenty taking up postage dues nowadays.

To revert to the Young Farmers' stamp, copies of both mint and used will look very nice on a page, but be sure to leave room for the several other Australian commemorative stamps that are due for release



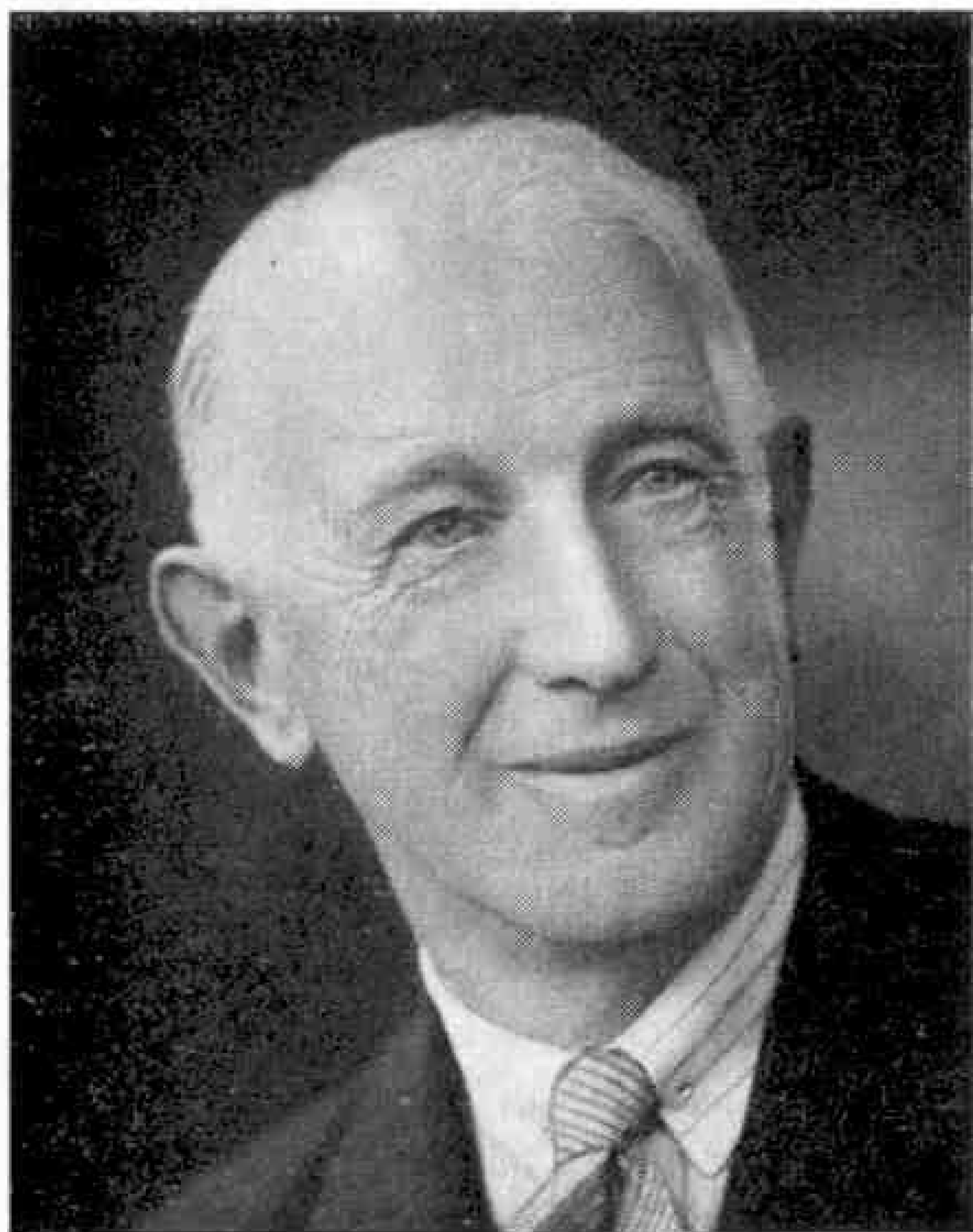
within the next few months. I suppose the most popular of these will be the Royal Visit trio, 3 1/2d., 7 1/2d. and 2/-, but I'll have something more to say about these shortly. The tour the Queen and the Duke of Edinburgh have now begun will be well documented philatelically, for a number of countries are bringing out sets of stamps in celebration. This is going to restore to popularity all those Royal Visit stamps that we so overbought when they first appeared, thereby reducing their value, and with all the forthcoming issues a delightful sideline collection can be formed. I am going to ask the Editor to let me deal fully with them shortly.

BE PREPARED

I am sure that the stamp shown in our fourth illustration this month will be exceptionally popular. There is no need to say who is depicted, but it can be mentioned that two stamps have been printed for Liechtenstein, by Waterlows. Usually this country goes to a Swiss firm for their stamps, but our British firm has now shown that they are second to no one in this class of printing—or any other for that matter.

RIPE CHERRIES

We are now in the thick of all the fun of new colonial stamps. The Crown Agents are releasing one set after another—in some cases up to three sets at a time—but don't let it worry you. Most of these stamps will be on sale for at least a couple of years before there is a new printing, with its possibilities of new perforations or shades, so there is no need to use up all your pocket money. In a word take it easy, it is earlier than you think.



Mr. W. J. BASSETT-LOWKE

Readers of the *M.M.*, and indeed all who are interested in miniature railways, will have learned with regret of the death on 21st October last in his 76th year of Mr. W. J. Bassett-Lowke, the founder of Bassett-Lowke Ltd., Northampton, the well-known firm of modelmakers.

Mr. Bassett-Lowke started his career as an apprentice in his father's engineering and boiler making business. He soon realised that he did not wish to remain in heavy engineering. Neat, well-designed engine and boiler fittings appealed to him much more than the huge boilers and large equipment manufactured in existing works, so he turned to model engineering, thus transforming what was his hobby into a full-time business.

This was the beginning of more than 50 years of model making, which in the course of the years came to cover every corner of this field, from reproductions of well-known locomotives, in various scales, to the making of waterline ship models and commercial models of every kind and size. Mr. Bassett-Lowke himself, an ardent model-builder, left his mark on every branch of the firm's activities, and Bassett-Lowke models were outstanding features of innumerable public exhibitions. Typical examples were models of *Queen Mary* and *Queen Elizabeth*, now on permanent exhibition in the Cunard White Star Offices in New York, and a wide range of models of warships, landing craft, bridges, vehicles and ship models, along with a miniature of Mulberry Harbour, that were built during the second World War. Other products of the firm include many garden railways and public miniature lines.

On the Road—(Continued from page 625)

course) at one or two of them.

When Nuffields introduced the lovely little station wagon version of the Minor, Ian was there and said a few words. He and Pat had just travelled from Rome to London in 24 hours, in a standard Minor saloon! He seemed to me to be quite genuinely astonished at his own performance, or at least at the way in which the Minor had made it possible for him to do what most people would not do in a top-rate sports car.

Just a word about my personal affairs . . . motoring, I mean. Among highlights, in the months since I last wrote, has been the use of an Austin Champ. This is the civilian version of the Army's latest form of "Jeep" and differs only from the military one in a few respects. I loved every minute of my test of this tough little 2½-litre job, and I have never known any vehicle except a trials special which would cross real rough stuff so fast and so effortlessly. It is a truck which any of you could handle, too, because it has no funny tricks or vices. Happy Christmas to you all!

White Horses of the Chalk Hills—

(Continued from page 629)

This is the Cherhill White Horse on the London-Bath road, which shares company with the monument on the Marlborough Downs. It was called the Lansdowne to commemorate the birth of Edward VII in 1841, and is nearly 60 years older. It was designed by a Calne physician, Dr. Christopher Alsop, and made in 1780. The figure was first plotted by means of small white flags, before a single sod was cut, and the orders for placing these were given through a trumpet from half a mile away. Nowadays we can imagine that some form of giant cine projector throwing the desired image might be used if new White Horses are ever made!

The good doctor stood on a hill called Labour-in-Vain, but in spite of this his work lives after him. A local farmer in those Regency days made the four-foot eye glint by filling it with bottles, a practice unfortunately not since maintained.

SOLUTIONS TO PUZZLES FOR BEGINNERS

After threading the maze of Fig. 1, on page 619, you should find that the solutions to the Clues Across in our cross-country puzzle (Fig. 2) are as follows: SKEGNESS; SPITHEAD; GRANTHAM; CARLISLE; ROCHDALE; CHESHIRE; RICHMOND; and WORTHING. So the place where quite a few potatoes are grown is SPALDING.

The few letters in Fig. 3, when put together in the right order, yield RADIO TIMES.

In the jumble of rings of Fig. 4 there are 32 small ones contained within one large one, making 33 altogether.

Now let us follow Sam Salty's holiday tour. Beginning with ACTON in the top right hand corner, we follow with NORWICH, HENDON, NEWARK, KENDAL, LEEDS, STAMFORD, DONCASTER, REDCAR and READING.

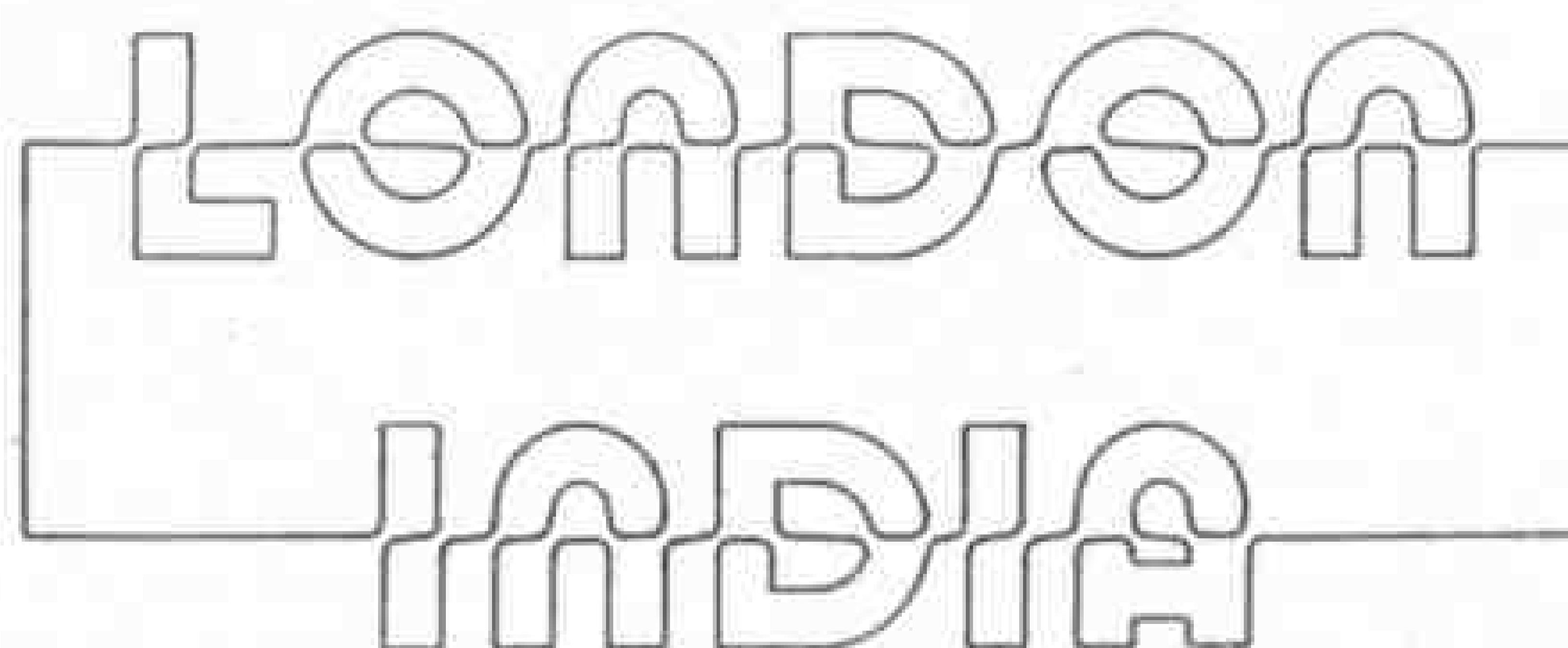
Are you still dizzy after trying to count the circuits in Fig. 6? The actual number is 9. Did you get that right?

Most of the letters in Fig. 7 are mixed up and twisted round. Put together these give BLACKPOOL. The other place, BOLTON, can be read by looking sideways at the diagram, holding this almost on a level with the eye.

The solutions to the crossword clues of Fig. 8 are as follows: ACROSS: Horse, Story, Bedtime, Tar, Dog, Sum, S.S.W., Ill, Ninety, Tower and Snout. DOWN: Heart, Sure, Smart, Young, Pots, Brown, Eddie, Ass, Oel, Short, Shot, Light, Idle and Iron.

The places named on the signpost in Fig. 9 should have been BURNLEY, BRISTOL, LINCOLN and RICHMOND. It would be interesting to know where this signpost could be found.

How to solve the puzzle of Fig. 10 is shown in the diagram below.



Competitions! Open To All Readers

Prize-winning entries in M.M. competitions become the property of Meccano Ltd. Unsuccessful entries in photographic, drawing and similar contests will be returned if suitable stamped addressed envelopes or wrappers are enclosed with them.

Find These Hidden Names

Christmas is not far off, and at this time of the year readers look over the advertisement pages of the *M.M.* with extra keenness, in order to see what good things are offered there. An advertisement competition this month therefore is very appropriate.

The novel panel on this page contains 80 letters which have been so arranged that the names, or parts of the names, of certain advertisers in this issue, or those of their products, can be read in them. This is done by starting at one point and passing at each move to the letter above or below it, or on the right or left. No diagonal moves are possible, but movement in any other direction, up, down or sideways, is allowed.

To complete the list of advertisers or advertised products every letter in the panel must be used at least once, but there is no limit to the number of times that each can be used. In fact, many are used twice, and in some instances a particular letter

actually appears in several different names. In certain cases initials may occur, but only where these are distinctive and actually appear in the advertisements concerned.

In their solutions entrants are asked to give the names of the advertisers or products that can be read in the panel, together with the numbers of the pages on which the advertisements referred to appear.

As usual there will be two sections, for readers at Home and Overseas respectively. In each there will be prizes of 21/-, 15/- and 10/6 for the best entries in order of

merit, and Consolation Prizes also will be awarded for other good efforts. In the event of a tie, the judges will take novelty and neatness into consideration. Entries must be addressed *December Advertisement Contest, Meccano Magazine, Binns Road, Liverpool 13*. The closing date in the Home Section is 30th January 1954, and in the Overseas Section, 30th April 1954.

Name These Bridges and Viaducts

Great railway bridges or viaducts stand as monuments to the great days of the enterprising railway builders, and they are worthy of being the subjects of a competition this month. In this the letters of the names of twelve well-known bridges and viaducts in different parts of the world have been mixed up deliberately, with the following results:

1. NNORURC;
2. KMOJIEDR;
3. IRABTINNA RTUUALB;
4. EPIOSUPGEHEK;
5. CQEUBE;
6. YTA;
7. NCOAYN ODLIBA;
8. HFTRO;
9. AKUINZ;
10. LRAOY TARLEB;
11. EBYNO;
12. SFEDA.

When a competitor is satisfied that he has found the correct names, he should make out a list of the structures in the order in which they appear on this page, adding if possible the names of the countries in which they are situated and the railways owning them.

E	S	B	N
G	H	T	I
A	G	R	A
M	A	E	P
O	C	C	C
X	H	A	N
S	O	M	O
Y	E	L	H
E	R	R	S
F	C	E	L
R	Y	S	D
N	B	O	N
R	E	R	I
G	H	T	W
I	W	A	O
R	W	T	L

This competition is divided into two sections, for Home and Overseas readers respectively, and in each section there will be prizes of 21/-, 15/- and 10/6 for the best entries, with a number of consolation prizes for other good efforts. Entries should be written on one side of the paper only, and should bear the full name, age and address of the competitor. They should be addressed *December Bridges Contest, Meccano Magazine, Binns Road, Liverpool 13*. The closing dates are: Home Section, 30th January 1954; Overseas Section, 30th April 1954.

December Photographic Contest

The twelfth of our 1953 series of photographic contests is a general one in which we invite readers to submit only one photograph, which must have been taken by him, and on the back of his print must be stated exactly what the photograph represents; also his name, address and age must be given.

The competition will be in two sections, A for readers aged 16 and over, and B for those under 16. Each competitor must state in which section his photograph is entered. There will be separate Overseas Sections, and in each section prizes of 21/-, 15/- and 10/6 will be awarded. Entries should be addressed: *December Photographic Contest, Meccano Magazine, Binns Road, Liverpool 13*. Closing dates: Home Section: 31st December 1953; Overseas Section: 31st March, 1954.

Fireside Fun

"How did you manage to have an accident with the car I sold you?"

"Manage? With that old wreck? I couldn't put my hand out going round corners when I was pushing it, could I?"

"What is that strap under your chin for, Officer?"

"Madam, that is to hold my jaw up when I get tired answering silly questions."

"I say, Smith, are you using your shears this afternoon?"

"Er... yes, I am."

"Righto! You won't be wanting your golf clubs then, so I'll just borrow them."

The horse would not move until an old lady began to pet it, and then it just leaped the hedge and streaked away across country.

"What did you do to him?" asked the groom excitedly.

"I only tickled the back of his neck" was the reply.

"Then tickle mine, quick. I've got to catch him."

"Yes, sir, over these Falls 20 million gallons of water flow every hour," exclaimed the guide.

"How many in a year?" asked the visitor.

"Billions and billions, sir."

"Perhaps you're right. After all, what is there to stop it?"

"Farmer Oates seems angry this morning. What's wrong with him?"

"Oh, I just said to him 'How's your milkmaid?'—she's been ill you know—and he said 'That's a trade secret an' I won't tell you.'"

"Good morning, I would like to see your master."

"Oh, you'll do that easy, sir. He's over six feet in height and weighs 18 stone."

"Here, waiter. I don't like all these flies buzzing round me."

"Yes, sir. Tell me which you do like and I'll chase the rest out."

"Twelve make a dozen."

"Twenty make a score."

"Some make centuries."

"But few make a million!"

"Did your father spank you, daddy?"

"Yes, my boy."

"And did your grandfather spank him?"

"He certainly did."

"And did his father spank your grandfather?"

"Yes—but what's all this about?"

"Well, I just wanted you to see that I must have inherited a lot of bad ways, so you ought not to blame me if I hit Johnny."

"Yes, there's something in that cupboard that cost me £5 and I haven't been able to use it yet."

"That seems waste money, but why not?"

"Well, we've never had a fire here yet."

"You know the money the cashier ran away with?"

"Yes, just over £200 in cash. What about it?"

"I don't know how to enter it in the books."

"Easy. Put it down to running expenses."

BRAIN TEASERS UNSQUARE THE LETTERS

Can you read any proverb in the letters shown in the square below? To do this definite rules have to be followed and the puzzle is to find how it is done, as well as to decide what the proverb is.

Y	N	E	B	H
A	C	H	T	R
M	O	T	T	O
O	O	O	P	L
K	S	S	I	O

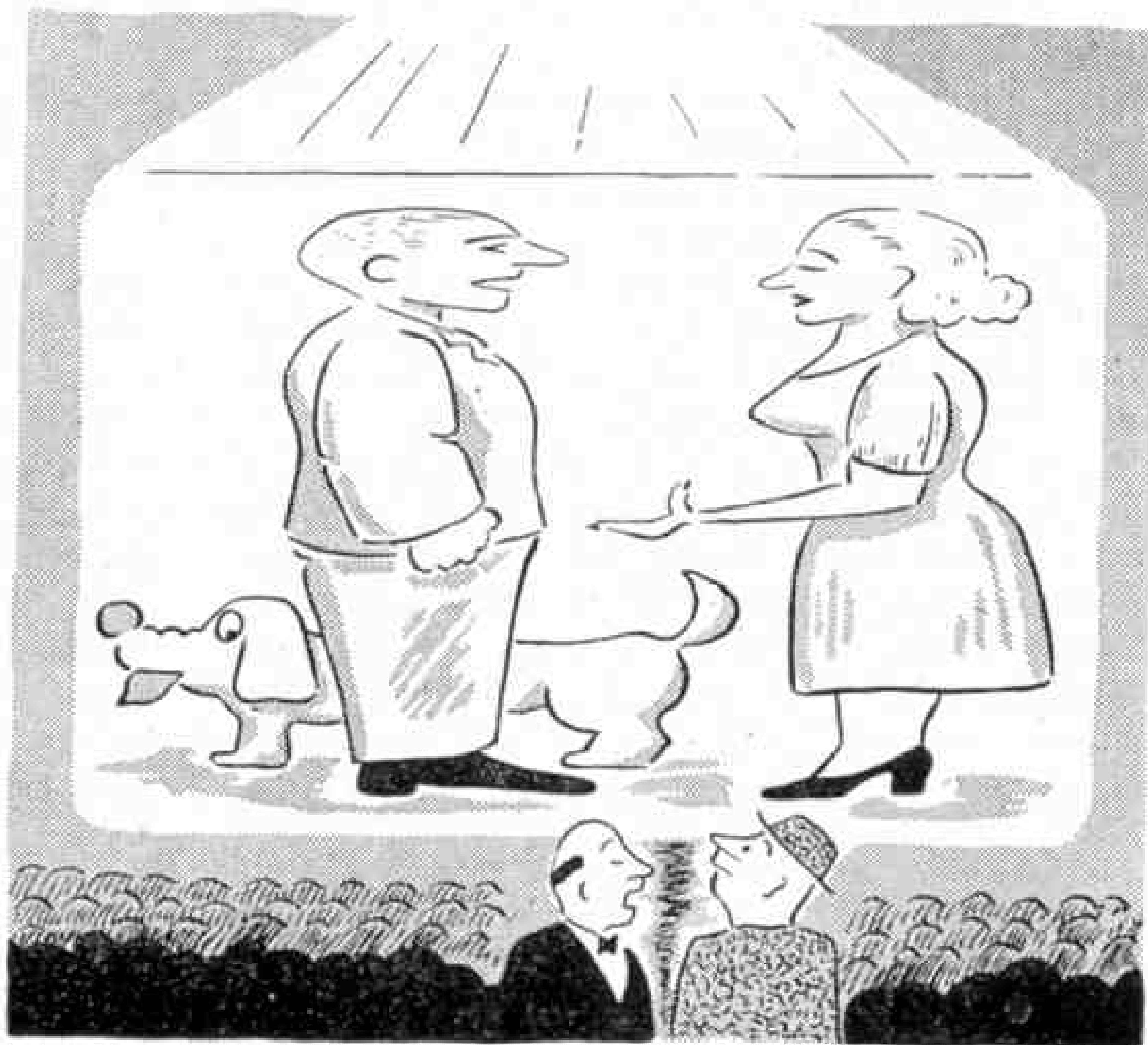
S.W.C.

JUST COUNT THEM!

A builder erected a row of houses, with numbers running up to 50. He used metal figures for numbering the gates of the houses. How many fours did he want?

THIS WOULD MAKE ANYONE OLD

Jack is twice as old as Bill was when Jack was as old as Bill is now. When Bill is as old as Jack is now Jack will be 35. How old is Bill?



Summerfield

"We haven't quite perfected our new widescreen system!"

SOLUTIONS TO LAST MONTH'S PUZZLES

The divisor in our first puzzle last month was 124 and the dividend was 97809.

Our word pyramid began with E, which was followed by the words HE, SHE, SHED, SHIED, DISHES, SHIELDS and HIDELESS.

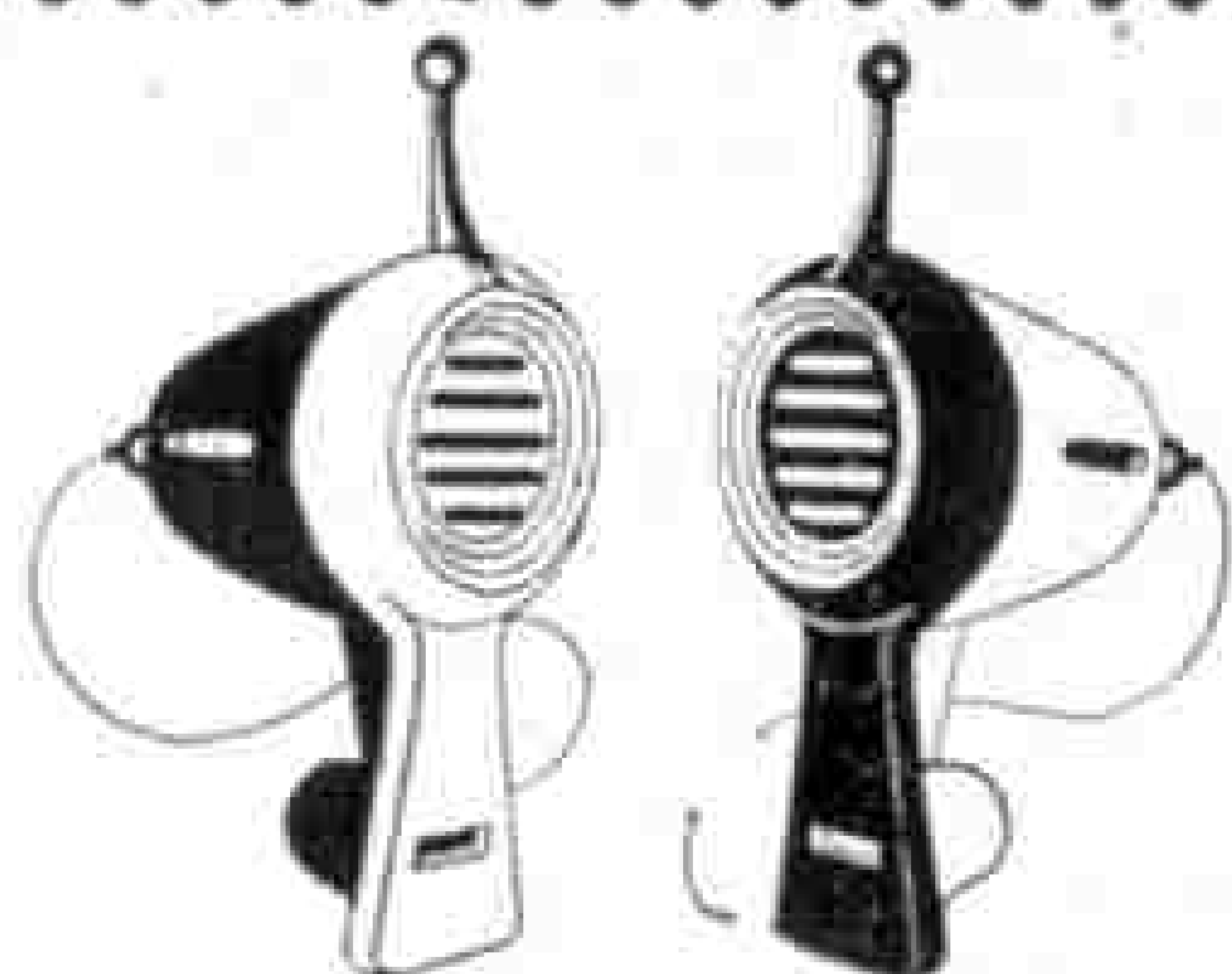
There are at least two curious things in the careless conversation of our third puzzle last month. One is that in spelling out the word "Match" Jones began with "M for Match" and the operator made no comment. It is even more queer that when the operator interrupted he showed that he knew the letter that was intended. Altogether a remarkable conversation. I wonder if there was anything else wrong in it?

INDEX

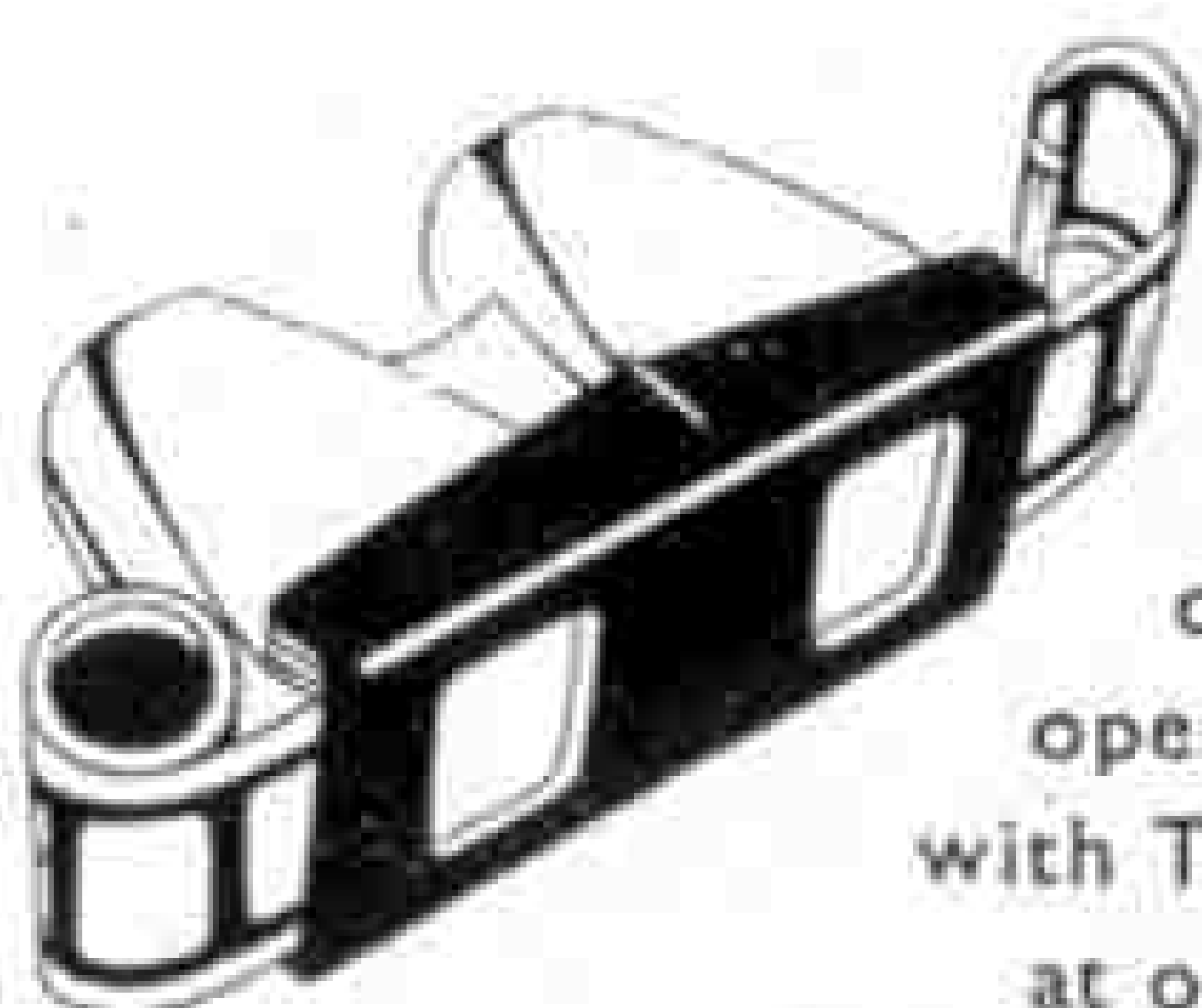
Vol. XXXVIII

Jan.—Dec., 1953

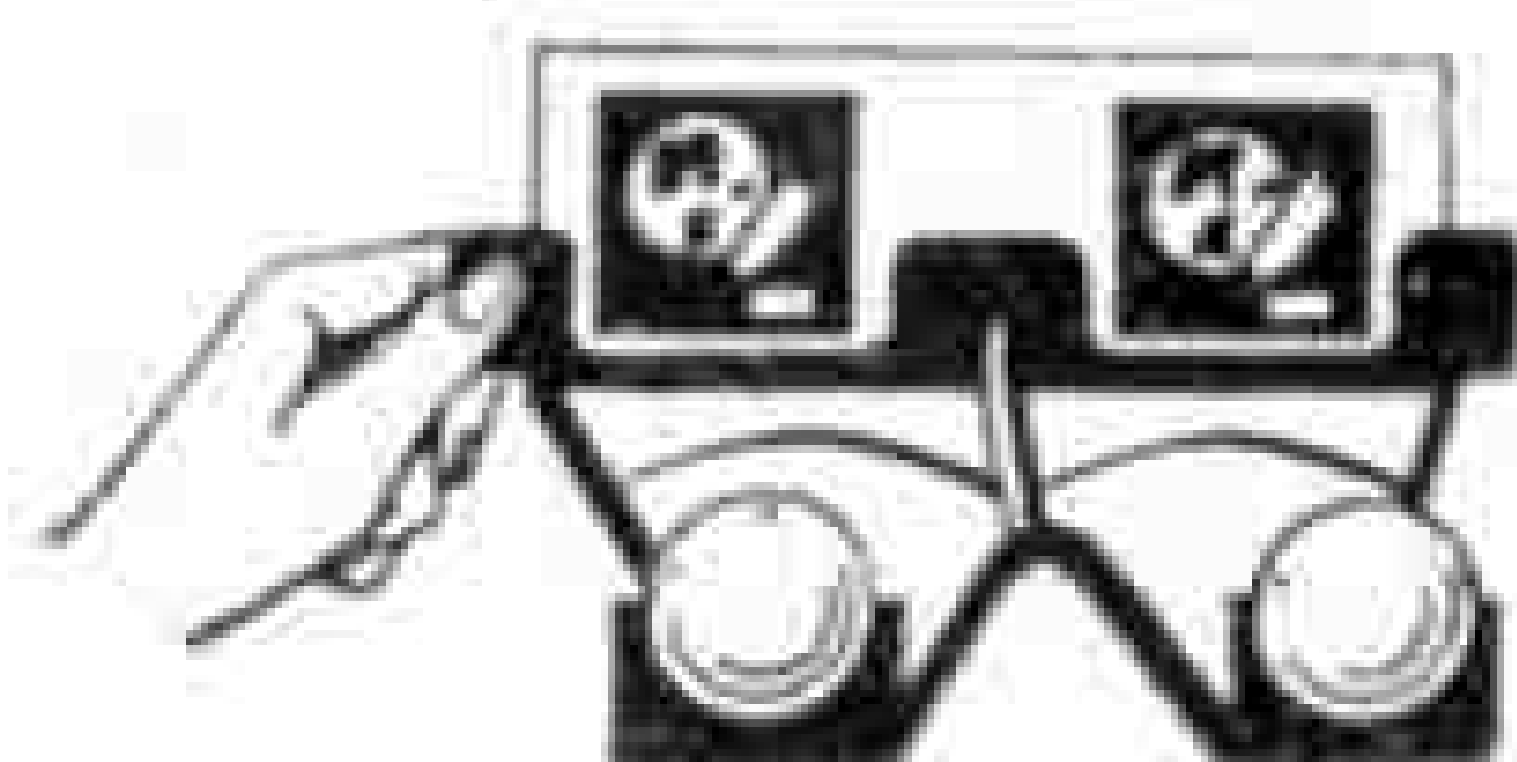
- Aboard the *Antietam***, 504
- Aircraft**:—Avro Vulcan, 123; "Battling Bantams," 178; Bristol Britannia, 4; Handley Page Victor, 555; Helicopters, 544; Strange Shapes, 62; Testing the Boeing B-47 Stratojet, 410
- Air News**, 20, 82, 146, 194, 248, 294, 354, 398, 462, 516, 568, 626
- Aviation**:—Arctic Air Routes, 358; Fiftieth Year, 616; Flying Training, 284; Hydro-Foils and Hydro-Skis, 360; London Airport at Night, 240; Master Pilot No. 1, 306; Paris Aero Show, 444; Stratosphere Suit, 345; Tom Hayhow, 136; True Story of Kitty Hawk, 599; Waterloo Air Terminal, 391
- Books to Read**, 12, 88, 129, 188, 267, 310, 395, 447, 453, 501, 563, 622
- Bridges**:—Building a Railway, 340; Chesapeake Bay, 570; Clifton Suspension, 298; Forth, 2; From Drawbridge to Bascule, 602; Haunted, 604; New for Old, 172
- Celestial Fireworks**, 556
- Chain Cables**, 390
- Christmas Bells**, 612
- Christmas in Peking, My**, 596
- Coronation**:—Photographing the, 250; Preparing for the, 228; Westminster Abbey, 280
- Cranes at Work**, Mobile, 176
- Dam, Claerwen, Britain's Largest**, 30
- Diaries by the Million**, 28
- Dinky News**, 134, 193, 251, 283, 350, 408, 448, 502, 550, 608
- Dog Show, Cruft's**, 60
- Engineering Notes**, 17, 71, 133, 235
- Eskimo Sledge, Building an**, 440
- Firth of Forth, Across the**, 244
- Fluorescent Lighting in Mecca**, 496
- From Our Readers**, 51, 75, 139, 220, 273, 328, 381, 433, 485, 589, 607
- Glass—But not Fragile**, 552
- Gunpowder Plot, Links with the**, 547
- Haunted Buildings and Bridges**, 604
- Highland Games**, 336
- Hocking Valley, Underground Fires of**, 196
- Hornby-Dublo Railways**:—British Railways, Colours for, 212; Engine Changing at Junctions, 375; Layouts, 43, 98, 101, 154, 156, 214, 264, 323, 372, 424, 426, 477, 532, 583, 639, 642; Lineside Effects, 582; New Items, 320, 530, 638; Points and Signals, Electrically-Operated, 42; Switch Points, 580; Traffic Working, 265, 478
- Hornby Gauge 0 Railways**:—Clockwork Running, 322; Creating a Railway, 100; Layouts, 45, 213, 266, 425, 532; "Over the Points," 476; Road Motors, 374; Station and Yard Working, 155; Van Trains, 581
- Horses of the Chalk Hills, White**, 628
- How Things are Made**:—Railway Wagon Wheels, 58; Steel Tube from Strip, 291; Tennis Rackets, 202
- Laxey's Big Wheel**, 231
- Lead Mining in Derbyshire**, 286
- Meccano Dinky Builder Models**:—Coach, Old-Time, 578; Houseboat, 578; Tank Ship, 311
- Meccano for the Blind**, 352
- Meccano International Competition Results**, 415, 470, 524, 574
- Meccano Models, New**:—Climbing Monkey, 208; Gantry Hoist, 150; Hand Car, American, 577; Helicopter, 38; Lifting Truck, 474; Locomotive, Diesel, 366; Mixing Machine, 474; Mobile Cranes, 38, 261, 314; Road Navvy, 314; Sawing Machine, 151; Steam Engine, 420; Stillage Truck, 96; Tractor and Trailer, 576; Tractor, Momentum, 420; Three-Wheel Sports Car, 208
- Meccano Parts, New**, 522
- Meccano Puzzles**, 632
- Meccano Special Models**:—Automatic Ticket Machine, 418; Block-setting Crane, 140, 206; Clock Mechanism, 316; Diesel Express Locomotive, 526; Engraving Lathe, 370; Loom, 634; Tunnel Excavator, 258
- Meccano, Toplis Level-Luffing Mechanism in**, 369
- Model-Builders, Among the**:—Amusement Machine, 256; Brake, Disc, 312; Brake, Internal Expanding, 256; Camera Tripod, Table-Top, 630; Clutch Mechanisms, 148, 312, 521, 572, 631; Crane Drive, Selective, 37; Creeper Track, 416; Free Wheel, Enclosed, 364; Friction Brake, Automatic, 417; Front Wheel Drive, Simple, 365; Intermittent Drive, 469; Intermittent Motion, Cam-Operated, 36; Locomotive, Quaint, 521; "Octopus" Roundabout Mechanism, 36; "Penny-in-the-Slot" Mechanism, 573; Reversing Device for Outfit No. 7, 257; Reversing Mechanism for Small Models, Automatic, 204; Servo Brake-Clutch for Cranes, 149; Spring Clips, New Use for, 93; Steering, Four-Wheel, 468; Three-Speed and Reverse Gear-box, 92; Tommy Gun, 37; Winding Drum, Self-Adjusting, 204; Unusual Free Wheel, 630
- Moon, How we Shall Reach the**, 560
- Motor Racing**:—Le Mans, 392; Stirling Moss, 10
- Nature**:—Animals, Healing Sick, 512; Bird Ringing, 142; Glow-Worm Caves, New Zealand's, 564; Insect Transformation, Miracle of, 288; Moles, 342; Sea Eagle's Nest, Iceland, 14
- Niagara, More Power from**, 236
- On the Road**, 76, 186, 308, 460, 624
- Owen Falls Hydro-Electric Scheme, Uganda**, 403
- Photography**, 25, 90, 145, 201, 303, 362, 414, 459, 515, 567, 615
- Pipeline, Launching a**, 128
- Port of London**, 78
- Press, 12,000-Ton Hydraulic**, 438
- Railway Locomotives**: Brighton "I 3" Tanks, 356; Diesel-Electric Shunting, B.R., 443; Diesel Twins Nos. 10000-1, 396; "Lightweight" 2-6-0, B.R., 189; Nicknames, 22, 72; Recovering Derailed, 138
- Railway Notes**, 32, 66, 126, 182, 238, 304, 346, 406, 454, 510, 558, 610
- Railway Photography**, 190
- Railways**:—Across the Andes by Train, 412; Australian Train Names, 518; Ballinluig to Aberfeldy, 175; Brighton Works, Trip to, 8; Building a Railway Bridge, 340; Careers on our, 246; Filming the *Titfield Thunderbolt*, 338; Leeds to Carlisle, 498; Nicknames, 464; Royal Trains, 296; Steam-Diesel Transition in Ulster, 252; Water Column, New B.R., 357; Waterloo to Padstow by A.C.E., 118; York, Round about, 84
- Road Safety Training**:—Burnley, 341; Dunfermline, 554
- Robin Hood's England**, 198
- Shipbuilding in Belfast**, 130
- Ships and Shipping**:—*Foudroyant*, Frigate, 117; Notes, 351; Queen's New Yacht, 181; Sunderland's New Dry Dock, 26; Tankers and Barges, 255
- Sixty Years with Sail and Camera**, 226
- Stamp Collectors' Corner**, 47, 103, 159, 217, 269, 325, 377, 429, 481, 535, 585, 645
- Survival School**, 300
- Telescope, Palomar, World's Largest**, 453
- Titanium Project**, 124, 237
- Towers and Roofs**, 114
- Trailers and Tractors, Giant**, 456
- Waterfall, Angel, World's Highest**, 184
- Water Supplies for Great Cities**, 30, 120
- White Hot Whip**, 87
- Writing by Telephone Wire**, 520
- Young Farmer's Clubs**, 348



SPACE ACE CALLING on the SPACE-PHONE! The Walki-Talki of the interplanetary rocket-ships lets you talk, listen, and signal on the high-frequency whistle up to a hundred yards away! Its self-generating Alimag vibrator needs no batteries or electricity. Two phones with cable cost 4/6, with 9d. for packing and postage.



3-D! Try this amazing "TRUE-VIEW" STEREOSCOPE and enjoy your own private view of 3-D films. It's easy to operate, and it comes complete with Two fascinating travel films at only 18/6 plus p. and p. 9d.



Your favourite Lone Star character in 3 Dimensions in the LONE STAR SPACE VIEWER! Complete with two exciting full-length picture stories, 2/11. p. and p. 6d.



Make your own "pictures in wood" with the MARQUETRY SET—a fascinating and profitable Winter hobby. The set includes veneers in many shades, full instructions, designs, and glue, and costs 6/5. 1/- for p. and p.

Please write in now for Hamleys Xmas Catalogue

Hamleys
ESTD 1790
HAMLEY BROTHERS LTD

The Finest Toy Shop in the World
200-202 REGENT STREET, LONDON W.1
(our only address) Telephone REGENT 3161

HIGHSTONE UTILITIES

Meters. 15 v., 2½ in., m/c, 9/6; 150 v., 2½ in., m/c, 10/-; 3.5 amp., 2 in. T.C., 6/-; 4 amp., 2½ in. T.C., in case with switch, 9/6; 100 m/a, 2 in., m/c, 7/6; Units containing 2,500 microamp. movements, 7/-, post 1/-. All meters post extra.

Bell Transformers. These guaranteed transformers work from any A.C. Mains, giving 3, 5, or 8 volts output at 1 amp., operate bulb, buzzer or bell. Will supply light in bedroom or larder, etc. Price 9/-, post 8d. BELLS, 6/-.

Ex-R.A.F. 2-valve (2-volt) Microphone Amplifiers as used in plane inter-com., in self-contained metal case; can be used to make up a deaf aid outfit, intercommunication system, or with crystal set, complete with valves and fitting instructions, 20/-, post 2/-. Ditto, less valves, 10/-. **Hand Microphones**, with switch in handle, and lead, 4/6; Tannoy, 6/-. Similar instrument, moving coil, 7/6, post 9d. **Mike Buttons** (carbon), 2/-. **Moving Coil**, 4/6; **Transformers**, 5/-. All post 4d. each.

Soldering Irons. Our new streamlined Iron is fitted with a curved pencil bit; 200/250 v. 50 watts, 11/6.

Standard Iron with adjustable bit, 200/250 v., 60 watts, 13/6. **Heavy Duty Iron**, 150 watts, 16/6, all post 6d. **Crystal Sets.** Our latest model is a real radio receiver, fitted with a permanent crystal detector, 12/6, post 8d. De Luxe Receiver in polished cabinet, 18/6, post 1/-. Spare Permanent Detectors, 2/- each. When ordered separately, 2/6, with clips and screws, 2/10, post 3d. Headphones, brand new, S. G. Brown, G.E.C., etc., 15/-, 23/-, and super-sensitive, 30/-, post 8d. **New Headphones**, 10/-. Balanced armature type (very sensitive), 12/6. Both post 8d. **New Single Earpieces**, 3/6. Bal. armature type, 4/6; ex-R.A.F. earpiece, 2/6, post 4d. **Headphones**, in good order, 6/- (better quality), 7/6, all post 8d.

Letters only. Money refunded if not completely satisfied

58, New Wanstead, London E.11

Illustrated List sent on request with 1½d. stamp and S.A.E.

THE BACK NUMBER SPECIALIST

Plenty of the following always available:

Meccano Magazines, 1942-1949 6d.; 1950 onwards 9d.; various pre-1942 issues available 1/- each.

Trains Illustrated. All issues Vol. 2 to Dec. 1950 1/- each; 1951 onwards 1/6 each. Various issues of Vol. 1 also available 1/6 each.

Railway Magazines, 1942—date 1/6 each; Pre-1942 2/- each.

"Model Railway News" } Any
"Model Railway Constructor" } issues
"Model Engineers" } 6d. each.

Glossy P.C.s of Buses, Trams and Locos. 6d. each.

Cigarette Cards. Loose 50 for 1/-; Sets 1/6.

LENS OF SUTTON 50 CARSHALTON ROAD
SUTTON, SURREY

WEBLEY AIR PISTOLS

Marvellously
accurate for
target practice

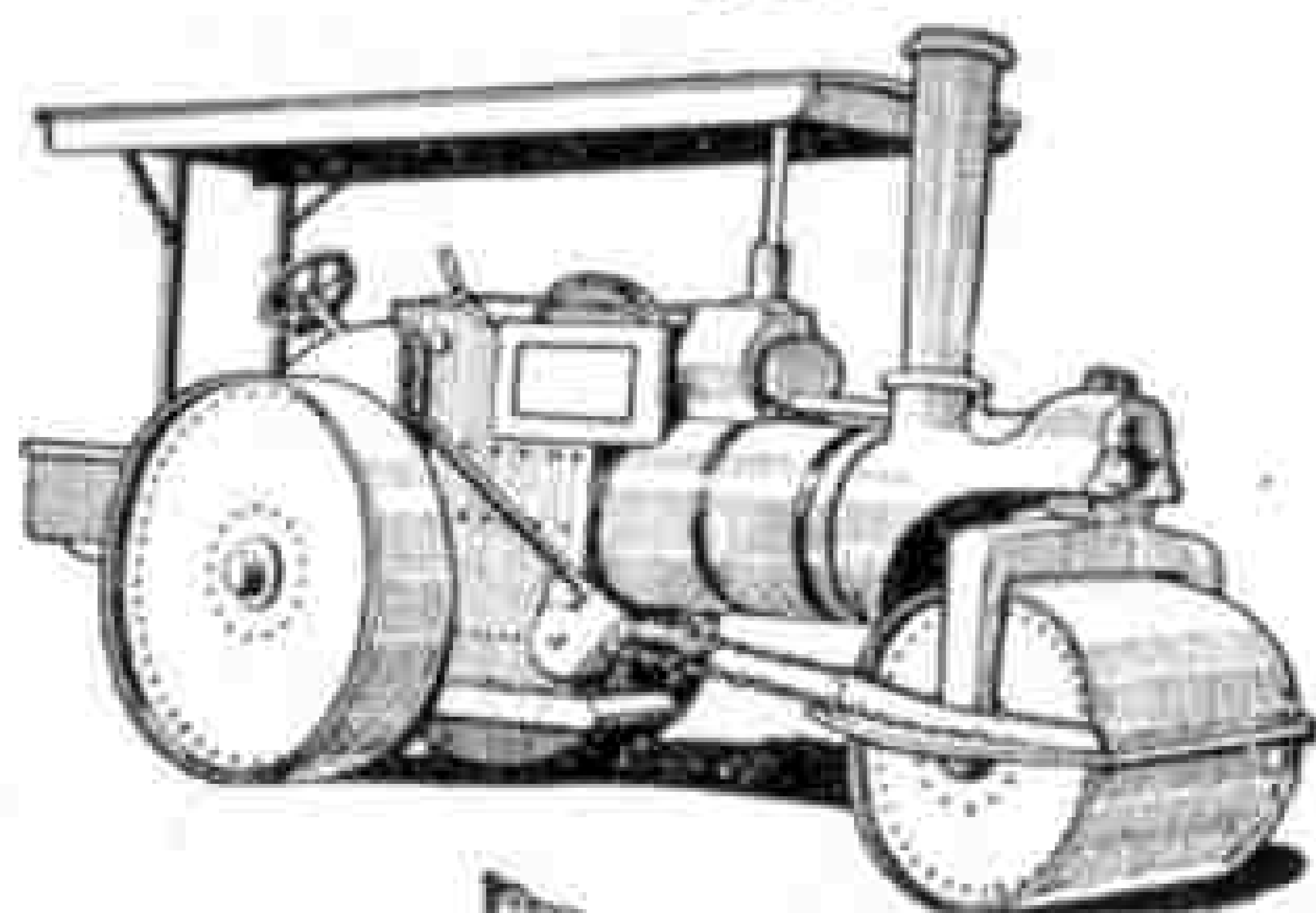


No licence required to purchase
for use on enclosed premises.

Write for Catalogue of Air Pistols,
Air Rifles and Accessories.

WEBLEY & SCOTT LTD.,
87, Weaman Street, Birmingham, Eng.
W.S.S.R.

YOU CAN MAKE MODELS LIKE THESE



Anybody can if they own a Hobbies Fretwork Outfit. And these are only a few of the hundreds of grand models and other articles these outfits make it possible to produce. They're a fine gift for any boy—sturdy tools that will give a lifetime of service and profitable pleasure—and they're not expensive. No need to run out of ideas for models, either—details of new ones are always being published in *Hobbies Weekly* (see details below) and in *Hobbies Annual Handbook*, price 2/- from newsagents and Hobbies stockists.

Hobbies outfits are obtainable at good class stores, ironmongers, Hobbies Branches in London, Glasgow, Manchester, Birmingham, Sheffield, Leeds, Hull, Southampton and Bristol, or post free from Hobbies Ltd., Dereham, Norfolk.



The Outfit illustrated here is the moderately-priced Crown at 20/-. Contained in a strong box are all the tools you need to make a start, plus a design and a 32-page instruction book. Another popular Outfit is the A1 at 34/6, and there are others from 12/6 to 62/6.

20/-

★ HOBBIES WEEKLY ★ (4d. Every Wednesday)

Whether your hobby is making models, cutting fretwork, turning out toys, photography, radio, stamp collecting—in fact, whatever your hobby—you will find the pages of *Hobbies Weekly* (4d. every Wednesday) packed with suggestions and ideas. A design sheet, worth from 9d. to 1/-, is given free every other week. See your newsagent today.



To HOBBIES LTD., Dept. 96, DEREHAM, NORFOLK

Please send me your Free 20-page Booklet and name and address of nearest stockist. Also send me the items I have marked thus X.

☐ **CROWN OUTFIT**
20/- post free U.K.

☐ **A1 OUTFIT**
34/6 post free U.K.

☐ **Specimen Copy of HOBBIES WEEKLY**, 5d. post free

I enclose
P.O. for

NAME.....

ADDRESS.....

Here's FUN for EVERYONE with **SPEARS GAMES**



CAPPIT

A game for 2-4 players, who try to "Catch and Cap" their opponents. As easy as ludo, but much more exciting. **7/9**

TELL ME

The queen of quiz games. Spin the wheel and roll out the questions! Endless fun for any age. Any number of players, the very thing for your party. **6/3**

Obtainable from good toyshops and departmental stores. If your dealer cannot supply, write for address of nearest stockist to:

J. W. SPEAR & SONS LTD.
DEPT. M • ENFIELD • MIDDLESEX

A XMAS PRESENT ALL THE YEAR ROUND

a subscription to

The RAILWAY MODELLER

What better present for the keen railway modeller than twelve issues of the leading magazine specialising in model railways? Lavishly illustrated and full of interesting and instructive articles, it is an essential for everyone with a model railway.

We can post the magazine direct to any part of the world for an annual subscription of

20/-

Simply send your remittance and the address to which you wish the magazine to be sent—we will do the rest. An attractive presentation card will be sent with the first issue.

The RAILWAY
MODELLER

Dept. MM, PECOWAY,
Station Road, Seaton, Devon

Send 6d. in stamps for specimen copy

CHEMISTRY APPARATUS



Send 2½d. Stamp
for latest
PRICE LIST

BOOKLETS:

"Experiments" 10½d.
"Formulas" 10½d.
"Home Chemistry" 2/3
Post Paid

BECK

(Scientific Dept. G), 60, High Street
STUKE NEWINGTON, LONDON N.16

H.A.C. SHORT WAVE EQUIPMENT

Noted for over 18 years for . . .
S.W. Receivers and Kits of Quality.

Improved designs with Denco coils:

One-Valve Kit, Model "C" Price 25/-
Two-Valve Kit, Model "E" Price 50/-

All kits complete with all components, accessories, and full instructions. Before ordering call and inspect a demonstration receiver; or send stamped, addressed envelope for descriptive catalogue.

"H.A.C." SHORT-WAVE PRODUCTS
(Dept. M.M.), 11 Old Bond Street, London W.1



Puppets for children of all ages. Hand-made and beautifully dressed, they introduce a new and fascinating hobby into the home, which will captivate the interests of grown-ups too, making it a worthwhile and happy addition to the Family Circle.

MERCERS

EST. OVER 50 YEARS

ARCHIE ANDREWS	30/6
DISJOINTING SKELETON ..	36/9
McBOOZLE, OPENING MOUTH	36/9
MR. TURNIP, T.V. STAR ..	30/6
WUFF, TUFF, SNUFF .. each	11/11
PINNOCHIO	32/-
NODDY (ENID BLYTON) ..	32/-
MICKEY MOUSE	32/-
PUPPET THEATRE	52/6
PUPPET SCENERY	12/3

Send for Latest List NOW

68 DARWEN STREET
BLACKBURN
DEPT. M

IT'S EASY TO BUILD WITH "ANORMA" 00 - 4mm. LINESIDE KIT



Station "A" KIT, PRICE 11/-

The above illustration is just one model from our range of 43 different 00 Lineside Building Kits. Our new 1953/54 Catalogue/Handbook gives full details of the complete range. It also features interesting and instructive articles on architectural work in relation to 00 Railways. Photographic illustrations with plans of typical layouts are also included.

NEW!

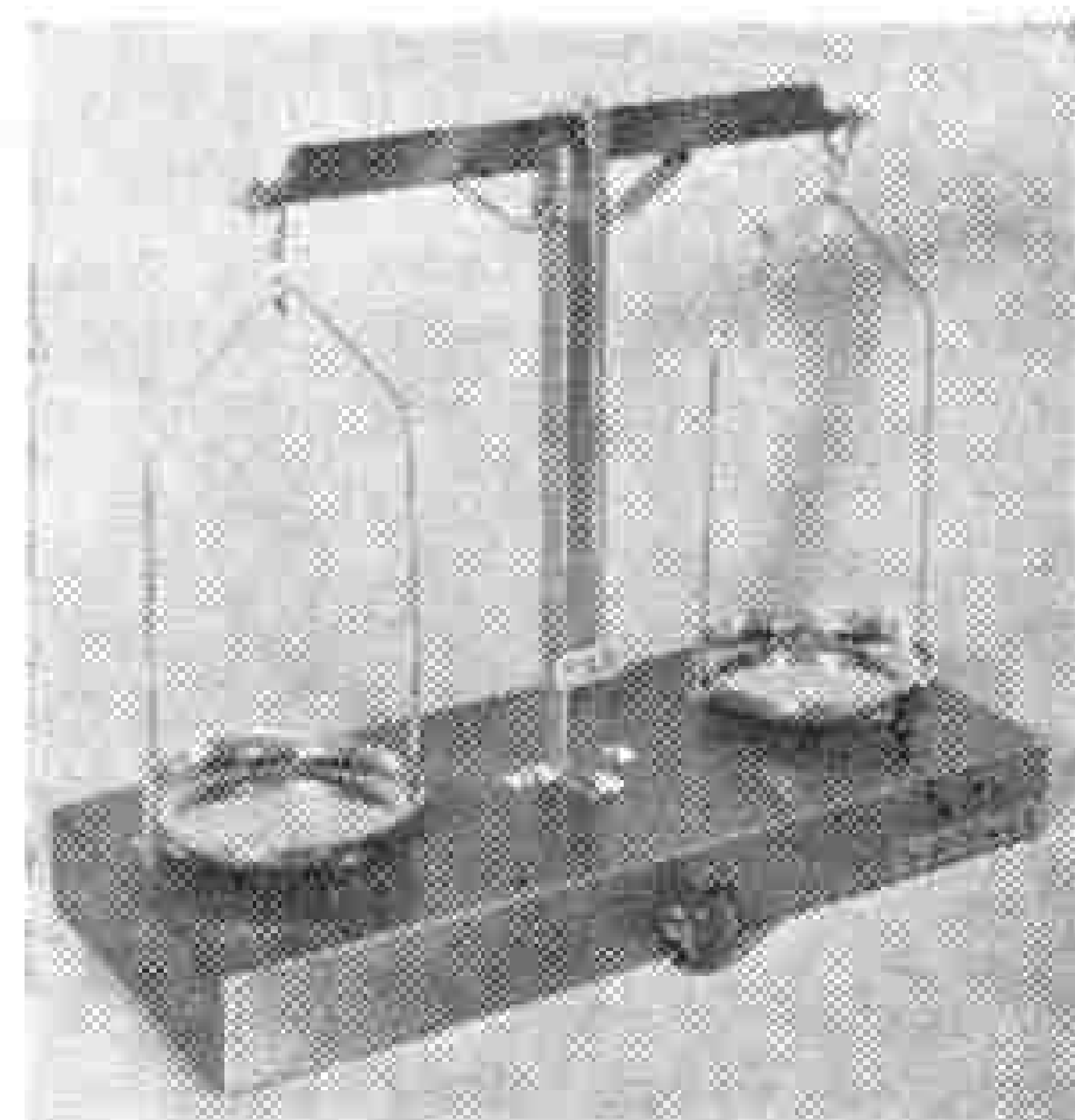


SEND NOW

FOR YOUR COPY
OF THIS "PACKED
WITH HINTS"
CATALOGUE/
HANDBOOK

PRICE 1/6

MINISCALE LTD.
CLIFTON ST., LIVERPOOL 19



The
'COURIER'
Precision
Balance
Outfit
(Pat. app. for)
for
SCIENTIFIC
STUDENTS
PHOTO-
GRAPHERS,
and anybody

requiring a sound reliable balance at an attractive price.

**COMPLETE OUTFIT.
FULL INSTRUCTIONS &
BLUEPRINT.**

**BUILD FOR YOURSELF
FROM GENUINE
COMMERCIAL
BALANCE PARTS.**

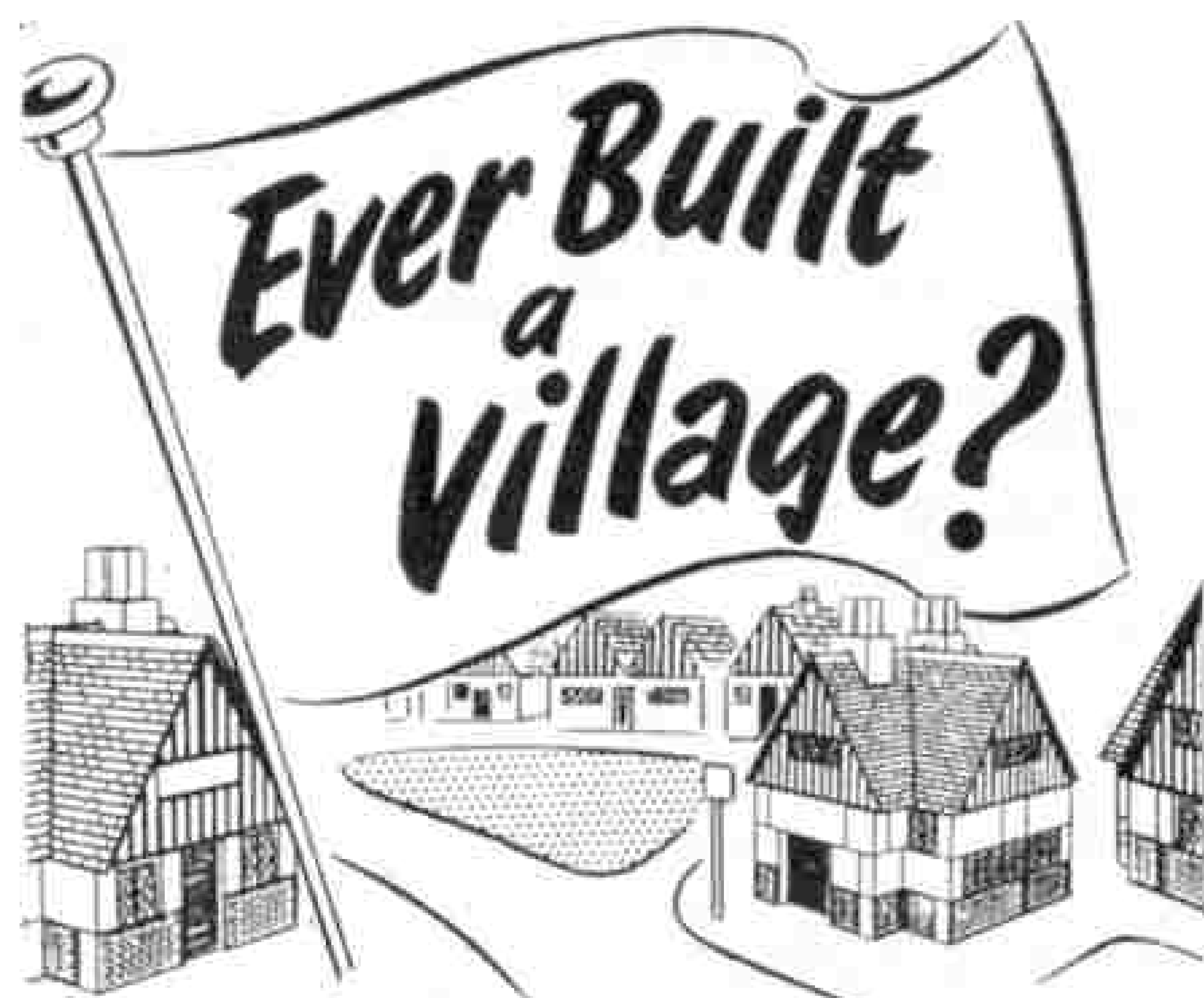
Real agate bearings, steel knives, brass pans and fittings. Designed and prepared by Precision Balance Manufacturers.

Capacity: 100 grm.

Sensitivity: 0.01 grm.

Price: **47/6** (plus U.K. Postage 1/-).

From your usual dealers or direct from the manufacturers
WILLIAM A. WEBB LTD. (DEPT. M)
1-9 Perrymans Farm Road, Ilford, Essex, England



You can...with LOTT'S Toy Stone Building BRICKS

If you've not yet tried your hand at building houses, railway stations, model farms and villages, catch up this Xmas with the fun you've been missing! Ask Dad or an uncle to give you a set of Lott's Bricks. They're made of coloured artificial stone and are supplied complete with book of instructions. Roofs and transparent windows are also included, so you can just imagine what a splendid variety of real-life models you can build.

Ask for
LOTT'S BRICKS *this Xmas*

If you're interested in chemistry you'll get a great deal of enjoyment from

LOTT'S CHEMISTRY

REGD. TRADE MARK

complete with apparatus, chemicals and book of instructions.

SPARES ARE READILY OBTAINABLE

Ask to see them at your dealer, or write to the manufacturers for current price list, enclosing stamped addressed envelope 1½d.

LOTT'S BRICKS LTD.
(Dept. 12), WATFORD, HERTS.

Christmas Railway Reading

TRAINS ANNUAL 1954

Edited by CECIL J. ALLEN ... 9/6

MIDLAND RAILWAY

C. HAMILTON ELLIS ... 25/-

TITLED TRAINS of GREAT BRITAIN

CECIL J. ALLEN ... 15/-

RAILWAYS BEFORE GROUPING

(1) L.B.S.C.R. (2) G.N.R. (3) L. & Y.
each 3/-

TRAINS DIARY 1954 3/-

SEND S.A.E. FOR NEW BOOKLIST

LOCOMOTIVE PUBLICATIONS

32 RAILWAY APPROACH, LONDON BRIDGE, S.E.1

SEE

THE CORONATION FILM IN YOUR OWN HOME

This amazing 35 m.m. Pocket Cinema with a Long Strip Film of the entire

CORONATION PROCESSION, SCENES AND CEREMONY

Showing everything as if you were there, plus a film of the Crown Jewels.

The whole outfit beautifully boxed in Gold and Purple. From all good stores and toyshops. If unable to obtain, send direct, adding 6d. for post and packing to:

7/6
FILM STIPS, EDELSBOROUGH, Nr. DUNSTABLE, BEDS.

RAILWAY ACCESSORIES

'00' SCALE - HAND FINISHED

RAILWAY STAFF (set of 5)	2/-
SEATED FIGURES (set of 5)	2/-
DOUBLE STATION SEATS (set of 2)	2/-
PLATFORM ACCESSORIES (set of 7 pieces)	2/-
MILK CHURNS (set of 12)	1/6
ELECTRIC TROLLEY AND TRAILER	2/6
ESSO OIL DRUMS (set of 3)	1/6
WATCHMAN'S HUT AND WORKMAN	2/6
CYCLE RACK WITH 4 CYCLES	2/-
MEN UNLOADING TRUCK (6 different)	2/6
LEVEL CROSSING GATES WITH RAMP	8/9
Post Extra. 2½d. stamp for full list of over 80 models.	

HANNANT'S (Dept. C)

56 London Rd. Nth., Lowestoft, Suffolk

ERG 00 MODEL RAILWAY FITTINGS AND ACCESSORIES

If you have a model railway—no matter how simple—you can get more fun by adding to it.

Skinley OscenO Backgrounds .. per set 12/6

Anorma Building Kits

for Stations .. 9/6 & 11/-

Goods Depot .. 7/5

Loco Shed .. 7/2

Signal Box .. 3/10

Bridges .. 2/5 & 2/8

and many other lineside buildings

Anorma 'Low Relief' Kits

(the latest form of scenic modelling) 4/11 to 7/-

Signals: hand operated .. 6/5

electrically operated .. 14/10

Ground Signals .. 2/7

Loading Gauges .. 3/2

Britain's Station Figures .. 2/6

" Farm Animals and Figures .. 2/4

Slaters' Huminiatures .. from 1/2

Flock Powder, green and brown .. 1/3

Tree-maker Kits .. 2/11

Brick Papers .. 2/d.

Point Levers .. 2/4

Signal Lever Frames .. from 8/3

Point Motors .. from 10/6

Blueprints and Constructional Plans .. from 1/-

Whatever track you use, you can build extensions to your 'Line' with **ERG Track Parts**—the finest track parts in the model railway world.

ERG (Bournemouth) LTD

529 ROUMELIA LANE, BOSCOMBE, BOURNEMOUTH

What a Gift!!!

EVERYONE CAN DRAW WITH

THE TRACERGRAPH

(REG.)

Traces, Enlarges, Illustrations, Maps, Etchings, Photographs, Signs, Rug Stencils, Embroidery Designs, Patterns, etc., etc.



MAJOR 7/6

1½ up to 8 times.

JUNIOR 3/6

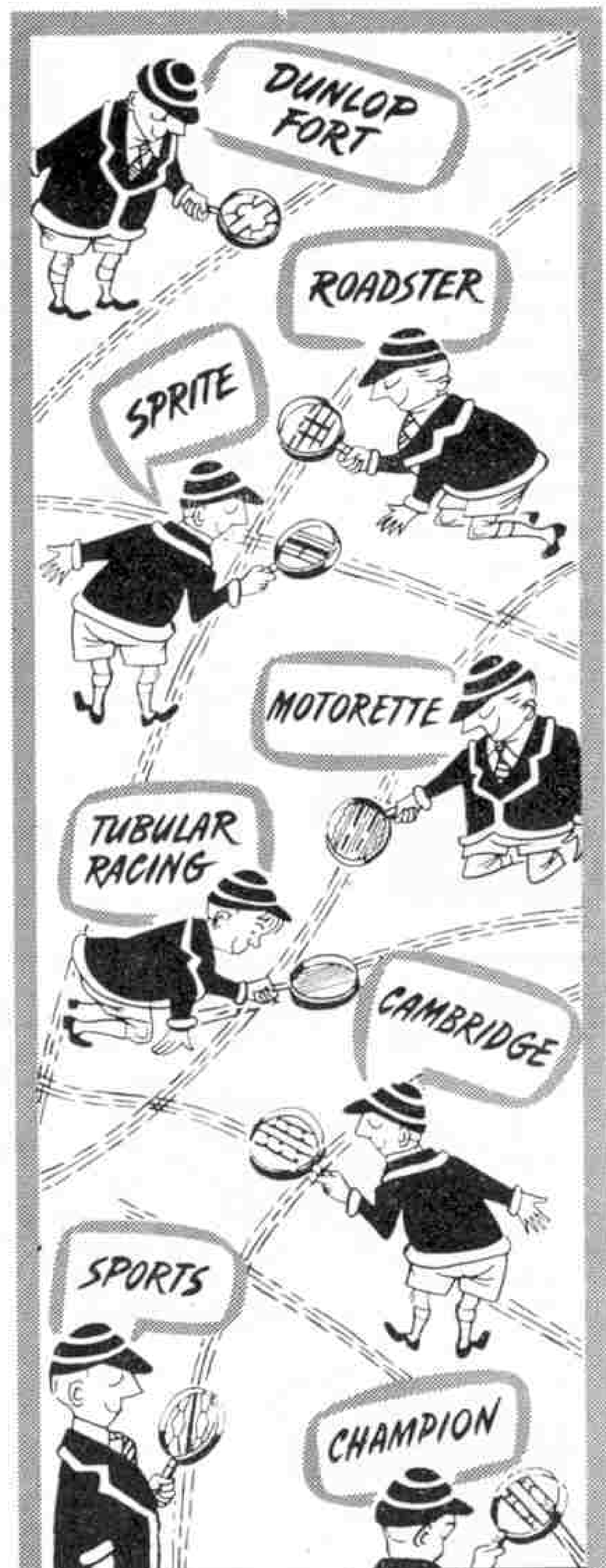
1½ up to 2½ times.

Post Free
with
Instructions
from:

THE TRACERGRAPH MFG. CO.

GORDON I. PEEL, I.O.M.

(WORLD-WIDE POSTAL SERVICE)



*It's more than an impression—
it's a fact that more cyclists
than ever ride on*

DUNLOP

THE IDEAL CHRISTMAS PRESENT

Everything you need to start the fascinating hobby of developing your own negatives and prints. A comprehensive and complete HOME DARK-ROOM set. Contains chemicals, developing tank, printer and darkroom lamp and all the accessories to produce fine pictures. A complete 94 page book of instructions is enclosed, making every step clear.

PRICE 130/-

Less expensive sets are also available from 15/6
See them at your local dealers.

THE WORLD-FAMOUS
MANUFACTURERS OF
PHOTOGRAPHIC
CHEMICALS,
APPARATUS AND
ACCESSORIES.

LONDON N.W.4
ESTABLISHED 1743

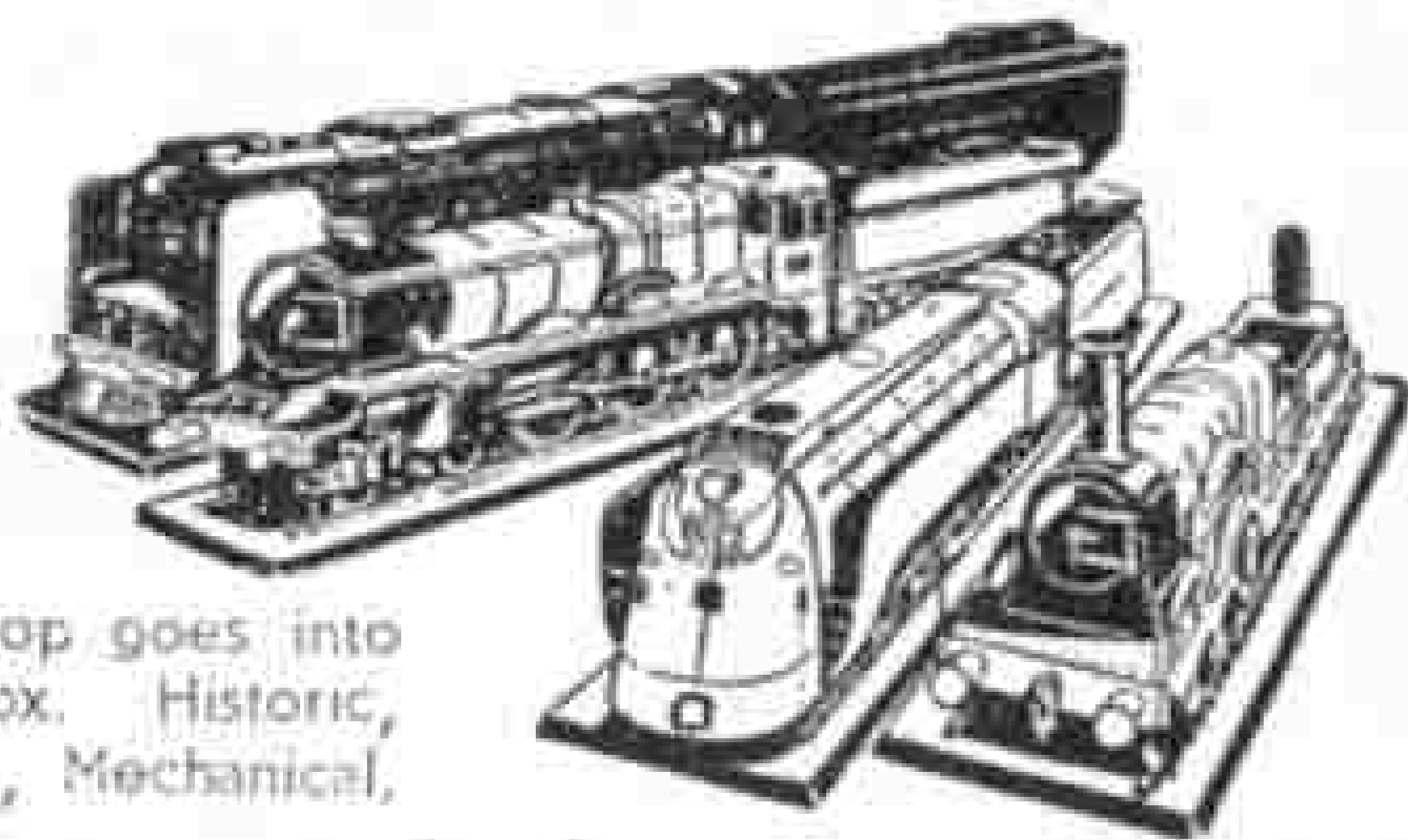
**JOHNSONS OF
HENDON LTD**



Micromodels

BUILD
YOUR OWN
MUSEUM

MAKING three-dimensional volumetric models is fascinating; neat and tidy too; your workshop goes into a cigar box. Historic, Architectural, Mechanical,



Railway, Maritime and other subjects. Cost pence but often sell for guineas.

● Send stamped addressed envelope for Illustrated Catalogue of 100 Models.

BRISTOL 173
and two others 2/6



MICROMODELS LTD., 3 (M.M.) Racquet Court,
Fleet Street, London E.C.4.

REAL MOVIES THIS YEAR!

PATHE 'ACE' £6.19.6

Projector (as illus.)

(motor drive can be added later for £5 5s. 0d.)



Films available include:

News - Sport - Travel - Comedy - Drama - Cartoons.

Invite Laurel & Hardy and Chaplin to your home.

Films from 5/6.

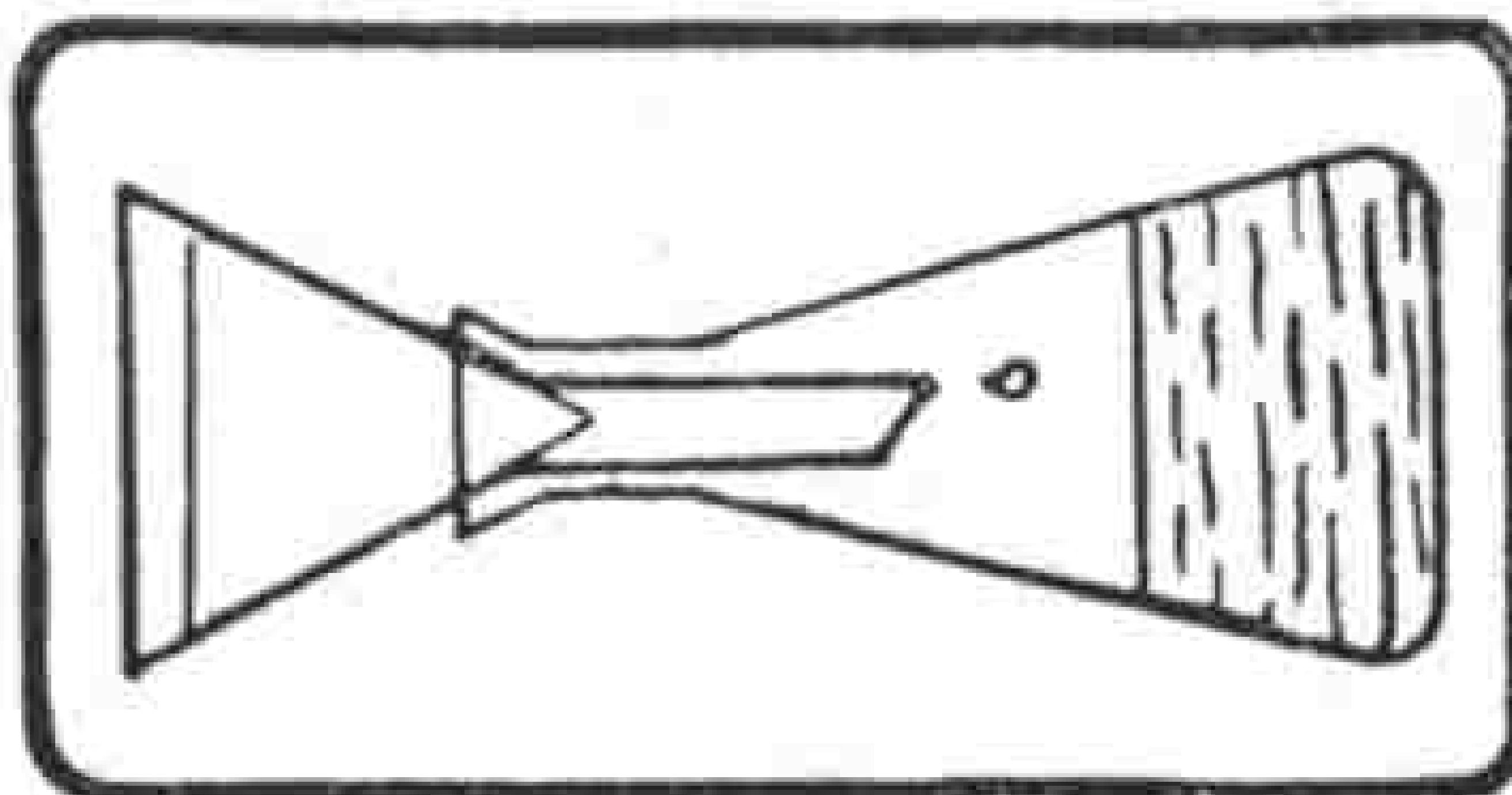
This machine is approved for use with our Library films.

Send 6d. for lists (illustrated complete Pathescope Catalogue 2/-).

SEND TODAY TO

ROYAL SUTCLIFFE CINE EQUIPMENTS
Godwin Street, Bradford

SPECIAL! TRIAL PACKAGE



Comprising apparatus and chemicals suitable for beginners.

PRICE

7/6

P. & P. 1/3

ALSO A LARGE SELECTION OF EQUIPMENT SUITABLE FOR STUDENTS AND AMATEUR EXPERIMENTERS IN GENERAL, SEND STAMP FOR LISTS TO:

A.D.P. Chemicals & Apparatus

14 (D/M.M.) SURREY ROAD, BARKING, ESSEX

GAMAGES

THE WORLD'S MOST FAMOUS CHRISTMAS BAZAAR

A WONDERFUL NEW FUN FAIR with Mirth Provoking Mechanical Sideshows! Crazy Tricks from the animated life-like Clowns, Acrobats and Hula Girls! LUCKY PARCELS for every boy and girl.

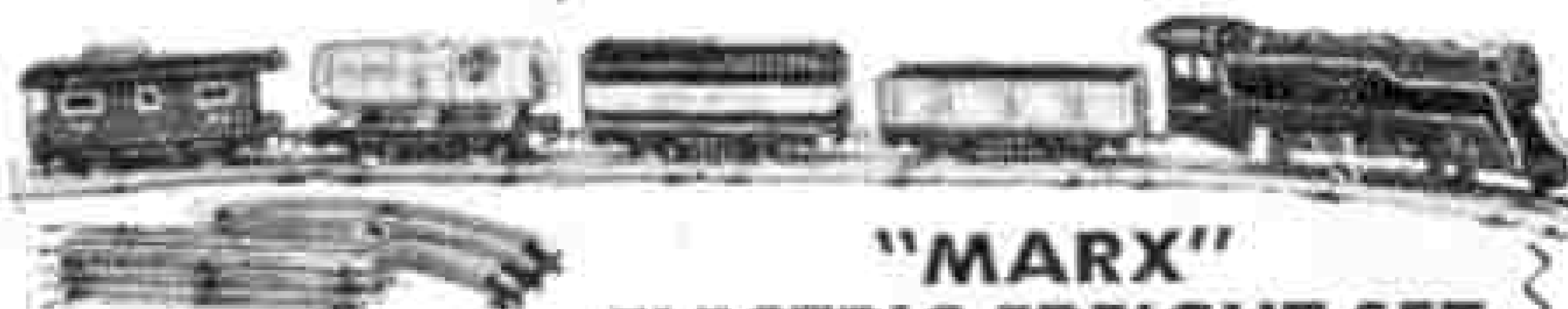
See the World's Largest WORKING MODEL RAILWAY 1,000 sq. ft. of realistic layouts and scale track in three gauges. More than 200 pieces of rolling stock—Scores of Locos.!



Have you had your copy of our **68-PAGE TRAIN BOOK**

Filled with facts and details of GAMAGE—TRIX—TRI-ANG—HORNBY—FLEISCHMAN—

MARX—LIONEL TRAINS, etc., etc. Railway Track, Lineside Models, etc., etc. From this book you can plan your own Model Railway. **PRICE 1/- (Post 3d.)**



"MARX" ELECTRIC FREIGHT SET

Mains input 200/250 volts A.C. A powerful 0-4-0 Loco. with dull black sheet metal body and automatic illuminated head light. Four American streamlined freight wagons. Oval 3-rail track, measuring approx. 34 in. x 26 in. Complete with de-luxe **TRANSFORMER. Post Free £7.17.6**

GAMAGES, HOLBORN, LONDON E.C.1.



Gamages NEW CONJURING CATALOGUE

Fully illustrated. Packed with details of thousands of Jokes, Novelties and Puzzles, also Theatrical Props, Wigs, Stage and Make-up Puppets, etc.

68 PAGES 1/- (Post 3d.)

"GAMAGIC" Box of Tricks

Many of today's well-known Magicians started off with a "Gamagic" Compendium of Tricks! Easy to do, even the earliest beginner can stage a complete show soon after opening the box. **BOX No. 12/6** 1 as illustration. **Post & Pkg. 1/-.**

BOX No. 2 21/- Larger version.



HOLborn 8484

MAKING MODELS ?

Then you must have the Modelcraft Handbook for life-like scale models. It lists over 600 items of Plans, Kits and Accessories for Galleons and Old Time Ships, Clippers, Naval, Maritime and Merchant Vessels — Also Railway Models — Road Transport — Cars — Dolls Houses — Aircraft and Weapons of War — as well as many others. 52 pages packed with interesting Editorial matter — Drawings and Photographs. Price 1/- Post Free includes a full Refund Voucher.

MODEL CRAFT

77 (H) GROSVENOR ROAD, LONDON S.W.1.

Now a New Edition!

The Observer's Book of AIRCRAFT

By WILLIAM GREEN and GERALD POLLINGER

With a Foreword by Peter G. Masefield, M.A., F.R.Ac.S., M.Inst.T. 288 pages. 5s. net.

The new edition of this topical reference manual has been enlarged and completely revised. Used throughout the world by all interested in aircraft, laymen and specialists alike, it is wider in scope and gives a greater wealth of detail of the latest aircraft of eight nations than any comparable publication. Many new illustrations have been included, and 171 of the most recent aircraft types are described, the majority being illustrated with a photograph as well as a three-view silhouette in accurate detail. The book is recommended by three leading aviation organisations—The Aircraft Recognition Society, The Air Scout Department of the Boy Scouts' Association, and Air-Britain—who believe that their members, and, indeed, all who have to do with the air, will find this famous pocket-sized volume invaluable.

From any Bookseller

Write today to the address below for the 32-page illustrated booklet, *Books Make Ideal Gifts*, in which books for all ages are described.

WARNE, 1 Bedford Court, London W.C.2

RAWLPLUG PRODUCTS

INDISPENSABLE
IN THE WORKSHOP
HANDY IN THE HOME



THE RAWLPLUG POPULAR OUTFIT

Larger sizes are obtainable.

Whatever your fixing problems, there's a Rawlplug Device that will solve it for you—easily and quickly. Rawlplugs make neat and absolutely firm fixings in any material from brick or tile to stone or slate, with a size for every screw from No. 3 up to $\frac{1}{2}$ " coach screws. Rawlplug Tools are easy to use and ensure a perfect hole without damage to surrounding surfaces. Other Rawlplug Devices include Rawlbolts for heavy duty fixings, Rawlanchors and Toggle Bolts for thin or hollow materials and Rawlclips for instant fixing of conduits and cables to girders—a device in fact for every need.

DUROFIX

The indispensable adhesive for instant use on crockery, glass, wood, metal, celluloid and the thousand and one things handled by the hobbies enthusiast. Instant drying, insulating, waterproof and heatproof. Durofix is grand for repairs to electrical, sports and leather goods. Durofix Thinner and Remover is sold in handy 2 oz. bottles.



B410F

SOLDERING IRONS

MAKES SOLDERING
CERTAIN AND SIMPLE

This is a guaranteed electric tool which will pay for itself many times over by repairing and giving longer life to metal household goods. In the workshop it is indispensable. Supplied with Standard bit, Hatchet or Pencil bit.

Voltages 100/110, 200/220, 230/250. Universal AC/DC.

DURIUM DRILLS

SILENT OPERATION, QUICK PENETRATION
CAN BE USED IN A HAND-BRACE



Spiral fluted masonry drills which can be used in a hand-brace for boring clean round holes easily and quickly in brick, stone, marble, tile, etc. They have fifty times the life of ordinary drills because the Durium Carbide tip is harder than any metal or alloy. Sizes from $\frac{5}{32}$ " to 1" diam. and in long lengths for penetrating right through walls.

PLASTIC WOOD

APPLIED LIKE PUTTY,
DRIES LIKE WOOD



Can be cut, planed, polished and painted like wood. Will take nails and screws like wood. It does not blister, crack or decay. Rawlplug Plastic Wood is actually the best quality product of its kind on the market. Plastic Wood Softener and Remover is sold in handy 2 oz. bottles.

THE RAWLPLUG COMPANY LIMITED
CROMWELL ROAD · LONDON S.W.7

A CAREER AT SEA

His training over at
**THE
PRINCE OF WALES
SEA TRAINING
SCHOOL**

he begins life in the
Deck Dept. of the
Merchant Navy.

If your ambition is
to be a sailor, an intensive training course of
four months duration at one of the finest
establishments of its kind in the United King-
dom will equip you with the knowledge
and opportunity to fulfil that ambition.

Free training for sons of seamen

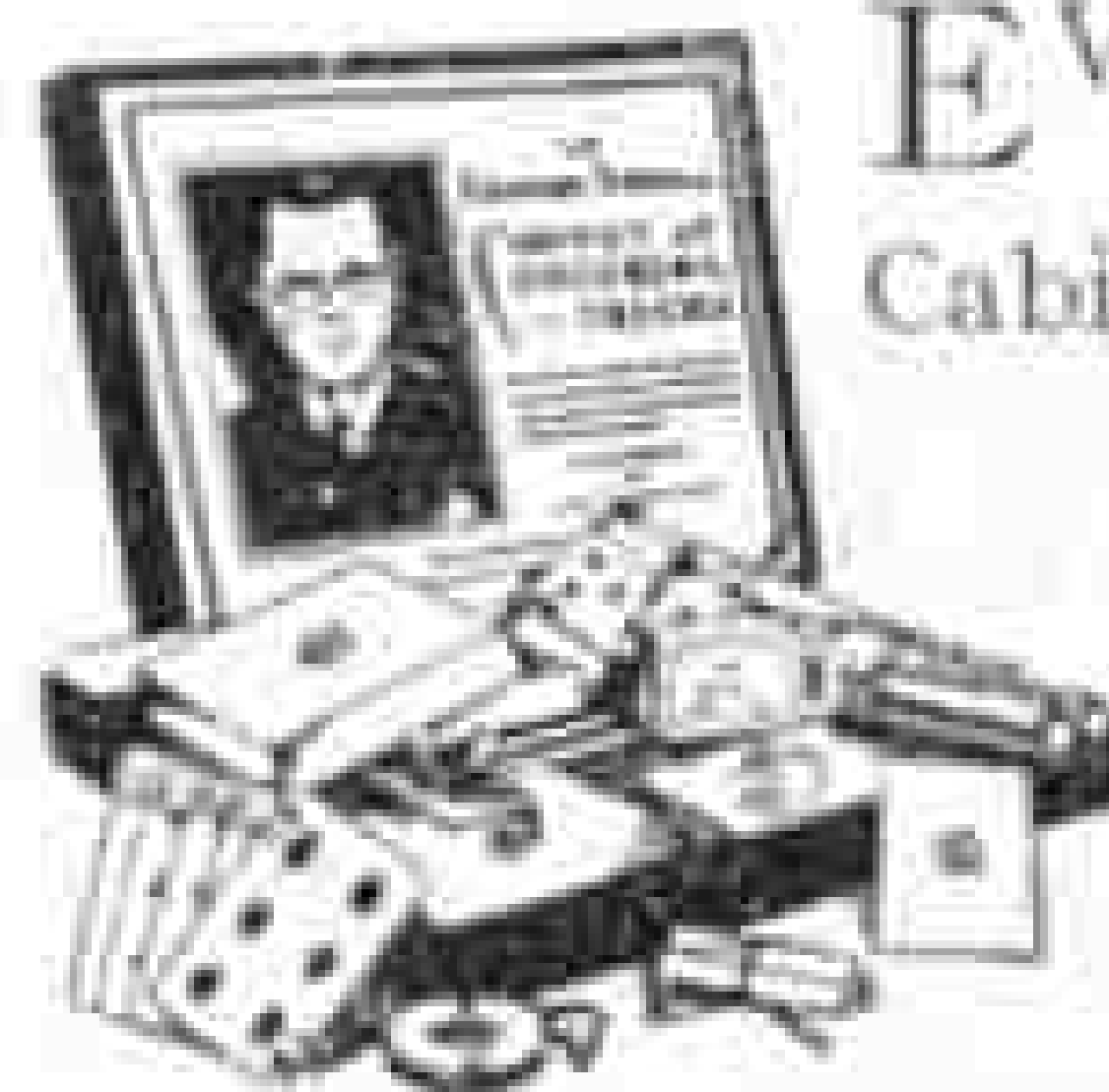
Enquiries from applicants between the ages of
15 years 8 months and 16 should be addressed:

General Secretary:

BRITISH SAILORS' SOCIETY
680 Commercial Rd., London E.14. (Tel. East 4191)



The Ernest Sewell CONJURING CABINETS



EVERY boy should possess an Ernest
Sewell Super-Wizard Conjuring
Cabinet, on sale at all good Toy Shops and
Stores, prices $\frac{3}{4}$, $\frac{6}{7}$, $\frac{8}{6}$, $\frac{14}{7}$,
 $\frac{26}{3}$, and $\frac{66}{6}$ each. Ask your
Toy Dealer about them. Acknow-
ledged the World's Best Conjuring
Tricks. Also Actor's Make-up,
Angler's Set, Card Tricks, Dupli-
cating Printing Set, Bow and
Arrow, Joke Cabinet, Kites of all description, and
Bell Tents.

To all who send 2½d. stamp for illustrated list and postage,

ABSOLUTELY FREE

we will send you
one of our wonderful
Magic Card Tricks.

You see Magic on Television. Why not do it yourself?

LONDON MAGICAL CO. (Dept. N),
FRANCIS TERRACE, JUNCTION ROAD, LONDON N.19

PERSONAL ATTENTION MEANS A LOT TO THE MODELLER

We have the largest stock of model materials,
aircraft and railway kits and accessories in the
North. Your mail order by return. Send 4d. stamp
for eight-page list.

WILMSLOW MODEL CO.

Water Lane, WILMSLOW, Cheshire

CIGARETTE CARDS

Send 4d. for CATALOGUE of 1,000 different series,
100 different cards $\frac{2}{9}$. Albums to hold 200 cards $\frac{1}{9}\frac{1}{2}$.
CHEESE LABELS, 25 different $\frac{1}{9}$, 50 $\frac{3}{-}$, 100 $\frac{7}{6}$.
E.H.W. Ltd., Dept. "M", 12 Sicilian Avenue, London W.C.1

Mamod

Minor No. 2 Steam Engine

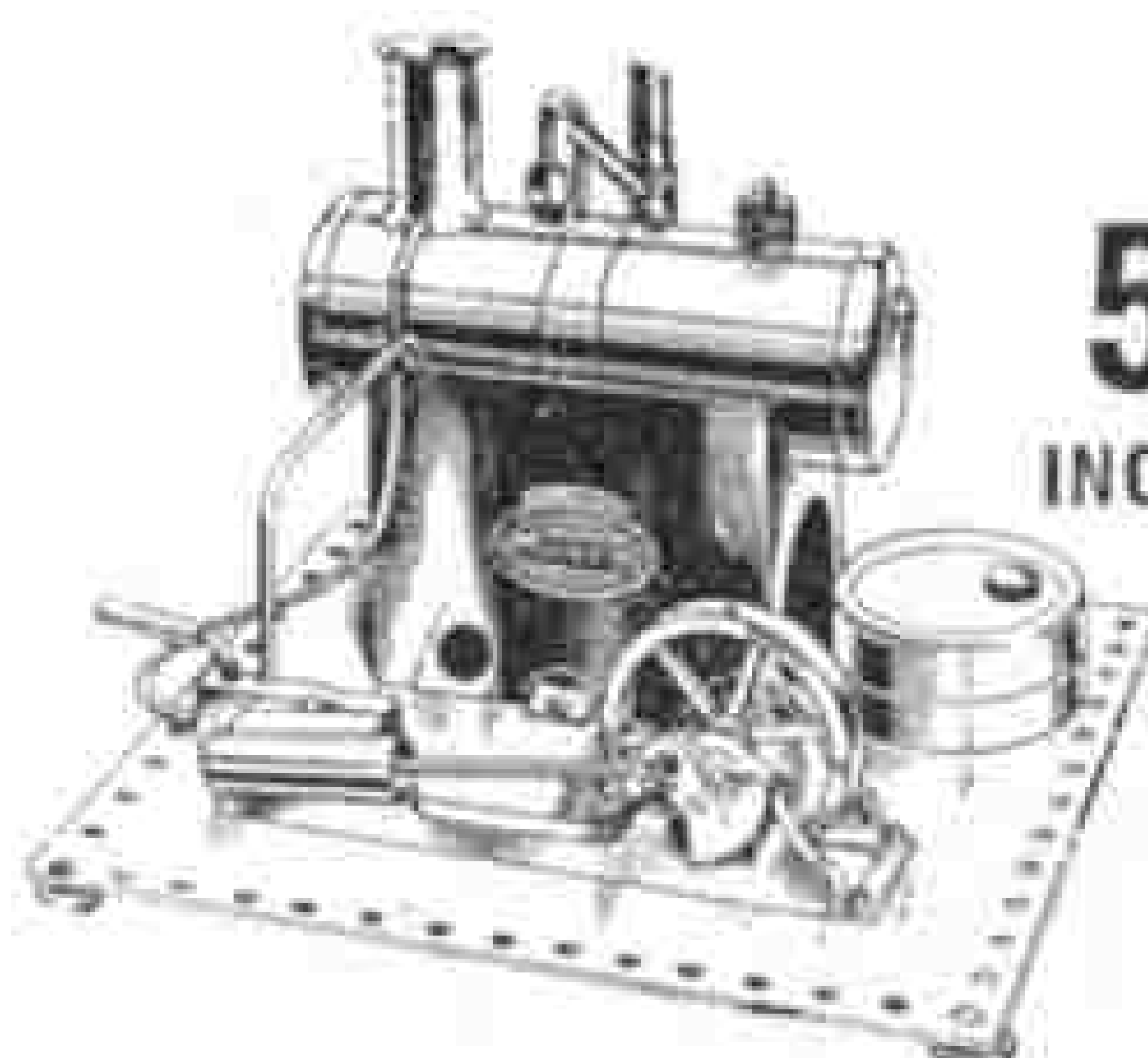
31/-
INC. P. TAX



THE PERFECT
MINIATURE
POWER PLANT
TO DRIVE
YOUR MODELS

S.E.2 Variable Speed Steam Engine

50/-
INC. P. TAX



MAMOD MINOR No. 1 STEAM ENGINE
MAMOD S.E.1 STEAM ENGINE

22/6 inc. Tax
40/6 inc. Tax

All these Engines are precision made from high-class materials. They fit Meccano and are 100% guaranteed. Be sure to ask your dealer to show you this famous range.

MALINS (ENGINEERS) LTD., 25-31 CAMDEN STREET, BIRMINGHAM 1

BOOKS ON SHIPS

RECOGNITION SERIES. Warships, Liners, Merchant Ships, Yachts. Each volume profusely illustrated with photographs and drawings. **12/6 each.**

POCKET SERIES. Flags, Funnels and Hull Colours of some 450 companies, **6/-.** Ships of the Orient Line, **6/-.** Ships of the Royal Mail Lines, **6/-.** Knots and Splices (nearly 200 photographs) **5/-.**

Prospectus of books free on application. Publishers:

ADLARD COLES LTD.

WEST PARK ROAD, SOUTHAMPTON

BOOKS:

A.B.C.s, L.M.R., E.R., W.R., S.R.	..	..	2/-
Layout Plans	..	..	1/3
Scenic Modelling	..	..	1/9
"Railway Modelling"	..	..	2/6
Trains Annual, 1954	..	..	9/6

RAILWAY ACCESSORIES:

S/L Level Crossings for Hornby or Trix	6/6	6/9
D/L Level Crossings for Hornby or Trix	11/6	—
Station Staff	2/-	3/8
Working Ground Signals	2/7½	2/6
Napier House Kits, Semi's or Rows	8/2	—
Stone Walls, 8 in.	11d.	11d.
Station Lamps (3-4 volts)	5/6	5/6
Bookstalls	4/6	—
Hump Back River Bridge	6/3	6/3

Postage extra New "00" or "0" Parts List 6d. per post.

TYLDESLEY & HOLBROOK (M.E.T.A.)
109 DEANS GATE, MANCHESTER 3

BOND'S

SUPER DETAIL SCALE MODEL TRACK PARTS

These parts will make up a super detail track, just like the real thing and give much better running for the rolling stock.

PRICES

	Gauge "00"	"0"
Steel Rail	5/-	5/6 doz. yds.
Brass Rail	9/-	15/- doz. yds.
Cast Chairs	3/6	4/- 100
Electric Raised Chairs ..	7/-	4/6 100
Fishplates	11d.	11d. doz.
Wooden Sleepers	2/-	4/6 100
Spikes	9d.	9d. pkt.
Track Gauge	1/6	1/9 each

LATEST TYPE FLAT BOTTOMED RAIL

	Gauge "00"	"0"
Brass Vignoles Rail	10/-	15/- doz. yds.

NAIL PRESSERS

For easily driving in the spikes instead of using a hammer.

Gauge "00"	4/6 each
Gauge "0"	4/6 each

POINT LEVERS

Locking type for direct coupling to the point blades.

Gauge "00"	2/5 each
Gauge "0"	3/- each

ALL PRICES PACKING AND CARRIAGE EXTRA

BOND'S CATALOGUES. Bond's Model Railway, Boats and Aeroplanes' Fittings and Castings, 1/9. Bond's Gear, Tool, Steam Fitting, Electric Motor and Material Catalogue, 1/6.

BOND'S O' EUSTON ROAD LTD.
357 EUSTON ROAD, LONDON N.W.1
Est. 1887 Phone: Euston 5441-2

GENERAL CERTIFICATE

Wolsey Hall (founded 1894) provides successful postal tuition for the G.C. of E. exams. of London, Oxf., Camb., the Northern Universities, and others. Moderate fees, instalments. **Prospectus** from C. D. Parker, M.A., LL.D., Dept. GK50,

WOLSEY HALL, OXFORD

STAMP ADVERTISEMENTS

(see also pages 644 and 646)

ALL THESE STAMPS



1. **Conquest of Everest** stamp (as shown).
2. A new **Triangular** sports stamp.
3. A **Lundy Island** (Puffin Bird).
4. New **Angola** (Leopard).
5. A Pictorial **Ceylon**.
6. Holland. Queen Juliana.
7. Fine **RED CROSS** stamp.
8. A Q.E. II **CORONATION** stamp.

**F
R
E
E**

TO GET THIS WONDERFUL GIFT send 3d. in stamps to cover postage and lists. Write **NAME, ADDRESS** and **AGE** in **CAPITAL LETTERS**, AND **ASK TO SEE OUR "CHEAPER THAN OTHERS" APPROVAL SHEETS. THESE CONDITIONS ARE ESSENTIAL.**

5/- ROYAL FAMILY PARCEL 5/-

contains special Album showing 134 dif. portraits of 21 members of the British Royal Family. An Album for Coronation issues, 25 dif. stamps of Royal Family and 10 dif. Coronation stamps to start collections of these groups.

HARRY BURGESS & CO. (Dept. M.M. 5), Pembury, Kent

BARGAINS! BARGAINS!

All stamps at half marked prices! Send 2½d. stamp for approvals.

D. J. Palmer (M28), 35 Sunningfields Rd., Hendon, N.W.4

**FREE
100**

STAMPS ALL DIFFERENT including Jet Bomber, Skymaster Plane, Railway Engine and other Fine Stamps to all applicants requesting Bargain Discount Approvals enclosing 4d. for postage, etc. (Without approvals 1/3).

A. HUGHES, 34 LOCHALINE STREET, LONDON W.6

FREE

To every applicant for my

VALUE approvals, enclosing 2½d. for postage.

AIR MAIL STAMPS — Cat. at least 10/6.

T. R. HUGHES, KINGSTON BLOUNT, OXON.

3,000 STAMPS FREE!! Send 2½d. stamp for details and approvals.
Yeoman, 18 Devon Rd., Hersham, Walton-on-Thames, Sry.

FREE

50 different incl. pictorials. Send 2½d. stamp for bargain discount approvals incl. pictorials at ½d.

G. M. WALKER, 13 BROOM ROAD, HALE, CHESHIRE

MECCANO MAGAZINE

Registered at the G.P.O., London, for transmission by Canadian Magazine Post.

EDITORIAL AND ADVERTISING OFFICES:

LIVERPOOL 13, ENGLAND.

Telegrams: "Meccano, Liverpool."

Readers' Sales and Wants. Private advertisements (i.e., not trade) are charged 1d. per word, minimum 1/-. Cash with order. Readers' advertisements are published as soon as possible; inclusion in the first issue after receiving them cannot be guaranteed.

READERS' SALES AND WANTS

SALES

No. 10 Meccano Outfit (wooden cabinet) new 1950, plus over £25 extras. Electric Motor, Transformer, Literature. List price £63. Will take £39 or near offer. View by appointment.—D. S. Martell, 40 Park Avenue, Bedford. Tel.: 3605.

"Episcopo" reproduces any picture in its natural colour. Requires only two 75 watt bulbs. In excellent condition, £2/10/- or best offer.—Graham, 10 Donnington Road, Kenton, Harrow.

Large Hornby Clockwork Railway and Accessories, 70 ft. Track, three Locomotives (reversing), two Crossings, six Points, etc., £9 or nearest offer.—B. French, 68, Bloomfield Avenue, Belfast, N. Ireland.

Large red and green Meccano Outfit in strong wooden chest. Many Gears, Angle Girders, etc. E20R Electric Motor, T20 Transformer, list price over £30. Send S.A.E. for list of parts.—M. Beeching, 19 Walmley Ash Road, Sutton Coldfield, Warks.

"M.M.s" August 1948–December 1952 (one missing). All except five, perfect condition. Offers—Leeks, Brett House, Hadleigh, Suffolk.

"Biggles" and "William" books in good condition, S.A.E. for price list.—Low, Woodlands Road, Dingwall, Ross-shire.

Hornby-Dublo layout hardly used consisting *Duchess of Atholl* Locomotive, Tender, three Corridor Coaches, Hornby-Dublo Tank Locomotive, Open Wagon, Oil Tank Wagon, Brake Van, Goods Van, Transformer, Controller, over 40 ft. Track comprising: One Terminal Rail, 14 Straight, 18 Curved, six Half straight, six Half curved, five Isolating, and Switches, two Uncoupling Rails, three L.H. and two R.H. Points, Electrically Operated Signal, Railer, five Buffer Stops, two Coal Boxes, Loading Gauge, plus odd assortment, Stations, Staff, Passengers, Names, Signals and Box, etc. Bargain. £20 first offer or nearest.—Debling, 6 Manston Road, Ramsgate, Kent.

WANTS

Will exchange Super Model Leaflets Nos. 8, 11, 21, 26, 33, 34, for Nos. 3, 4, 5, 16, 22, 32.—D. K. Wilson, "Wilton Grange," Rein Road, West Ardsley, Nr. Wakefield.

Two Hornby-Dublo G.W.R. Brake Vans, good condition, state price.—Mr. F. Randall, 10 Syon Lane, Isleworth, Middlesex.

MATCHBOX LABELS

25 different Austria 2/6, Belgium 2/6, C.Z. 4/-. Finland 3/-. India 3/-. Italy 3/-. Jap 5/-. Sweden 3/-. 4-page list 3d.

CHEESE LABELS. 25 different 1/9, 50–3/-. 100–7/-. E.H.W. Ltd., Dept. "Y", 12 Sicilian Avenue, London W.C.1

Crystal Set Kits 17/6

All good quality components. Endless entertainment and no further expense. Ideal for School or College. Lightweight Headphones 15/-. All post free.

W. Buckle (Dept. M), 77 Horringer Rd., Bury St. Edmunds

SHORTHAND in 1 Week. Test lesson 2½d. stamp. Duttons (MO/SV), 93 Gt. Russell Street, W.C.1

Every boy can build with Meccano

Meccano appeals to boys of all ages. The smallest outfit can be built up by accessory outfits and extra parts into a big collection. All kinds of machines and mechanisms can be constructed with Meccano. An attractive new booklet about the Meccano hobby is obtainable from any Meccano dealer, or direct from Meccano Ltd. Liverpool 13.



Model builder
W. M. Debenham
of London, N.W.8,
constructed this fine
working Meccano model
of a tank. It reproduces
all the movements of
the real vehicle, and won
a cash prize in the 1952/3
Meccano International
Model-building
Competition.



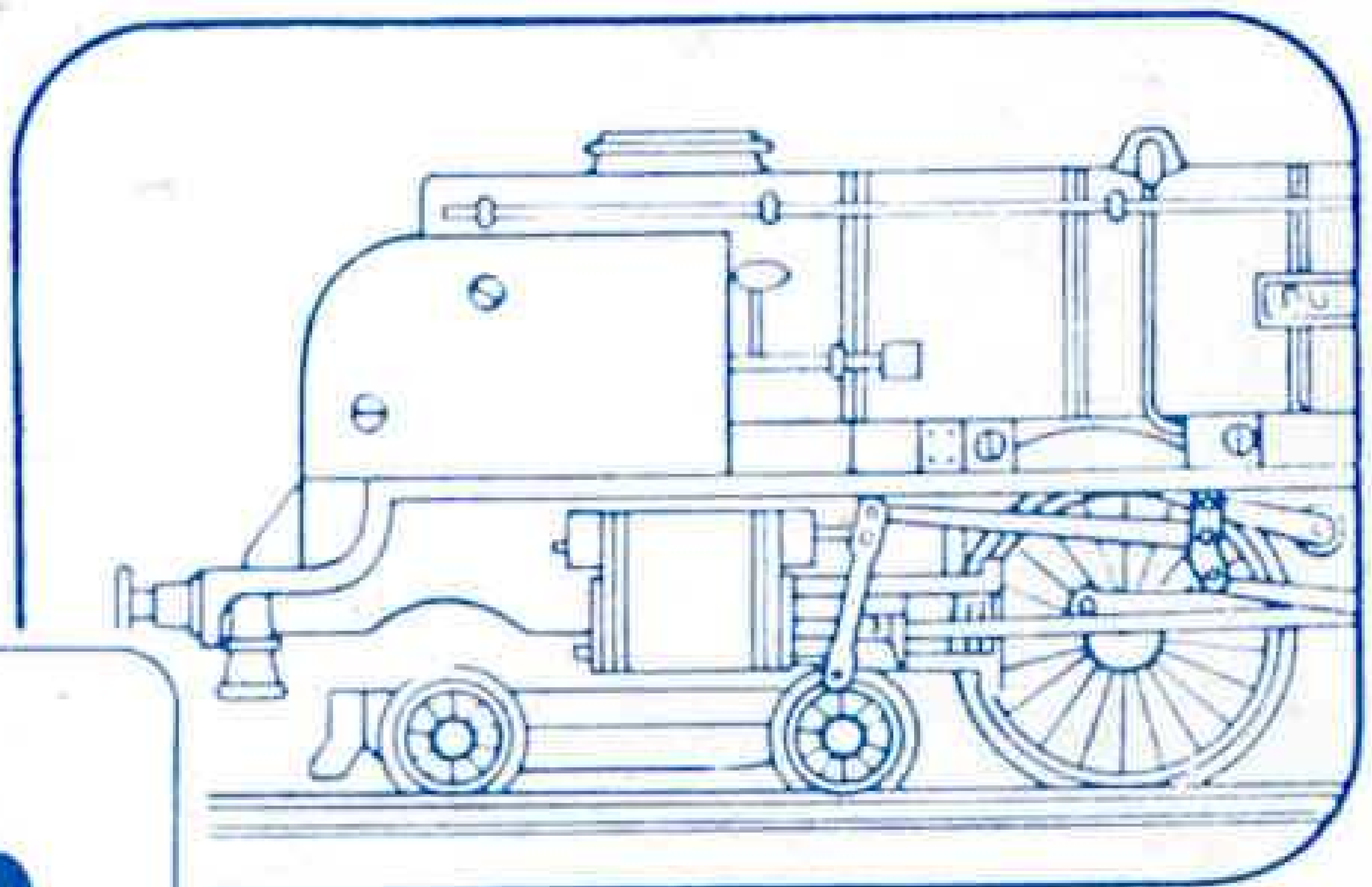
MECCANO

Table-top scale with wonderful detail



Hornby-Dublo offers unrivalled value in scale-model railways. The engineering precision and solid metal which go into every part ensure long life and accurate operation. For *lasting* pleasure there's nothing to equal the Hornby-Dublo system, worked by remote control. A whole railway can be set up on a table.

The 'Duchess of Montrose' is a superb 'Pacific' Locomotive of the type used by British Railways to haul main line expresses. Note the Walschaerts valve gear, smoke deflectors, double chimney and other wonderfully accurate modelling on this Hornby-Dublo Locomotive.



**HORNBY
DUBLO**
ELECTRIC TRAINS

Ask your dealer for a copy of the new coloured folder, or write direct to Meccano Ltd., Liverpool 13.