VOL. XLII. No. 9 SEPTEMBER 1957

MECCANO MAGAZINE

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(See page 427)

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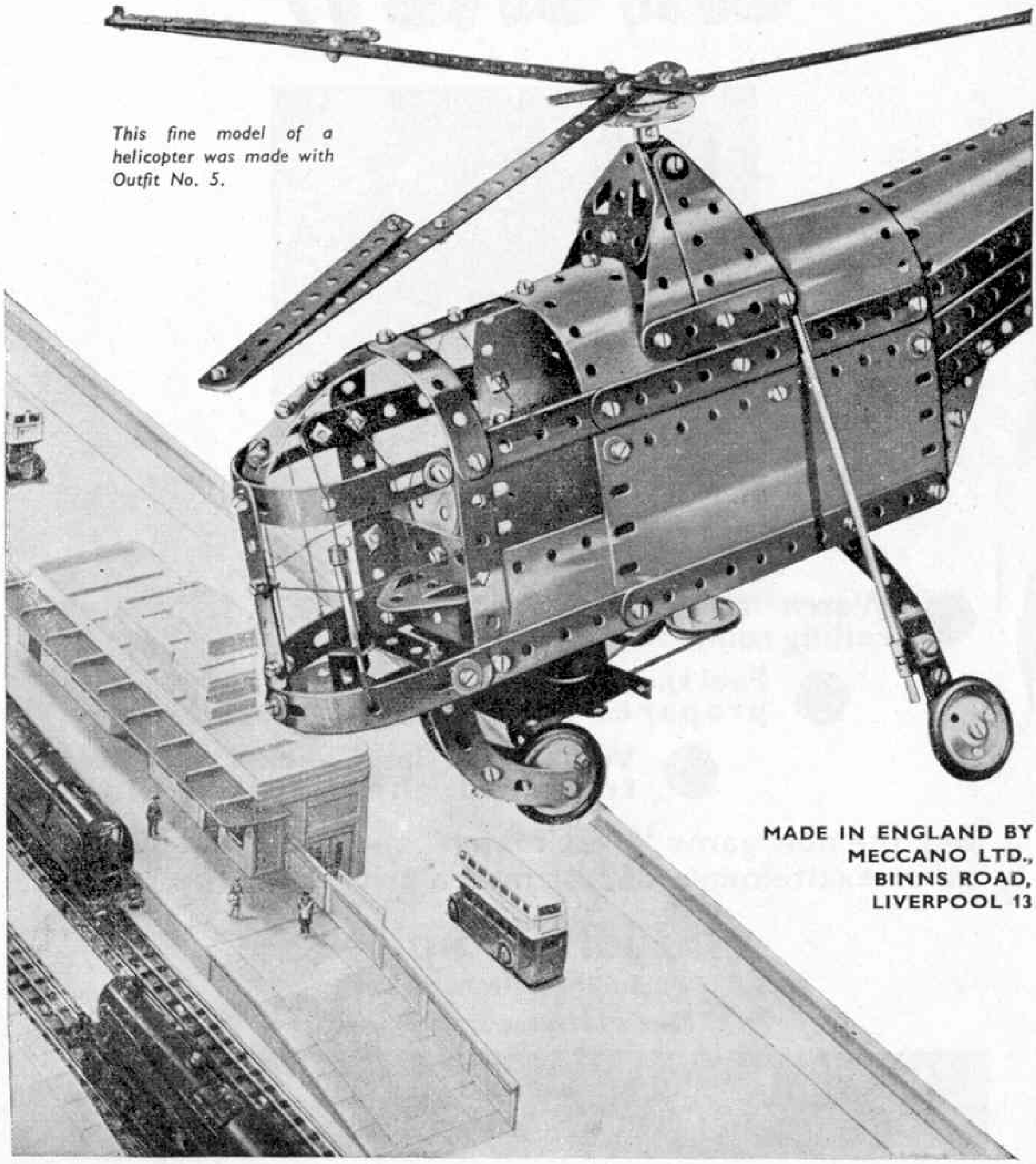

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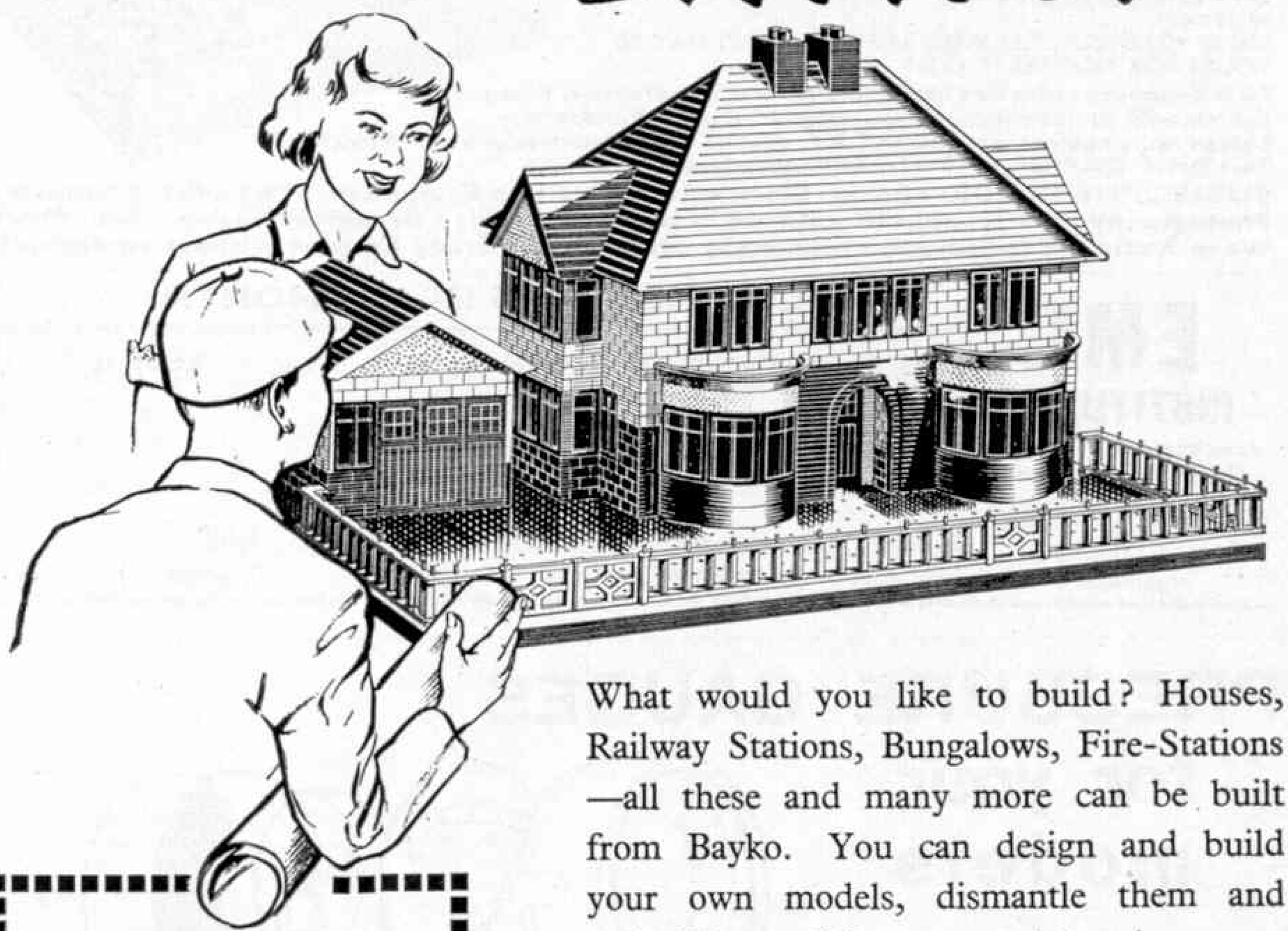

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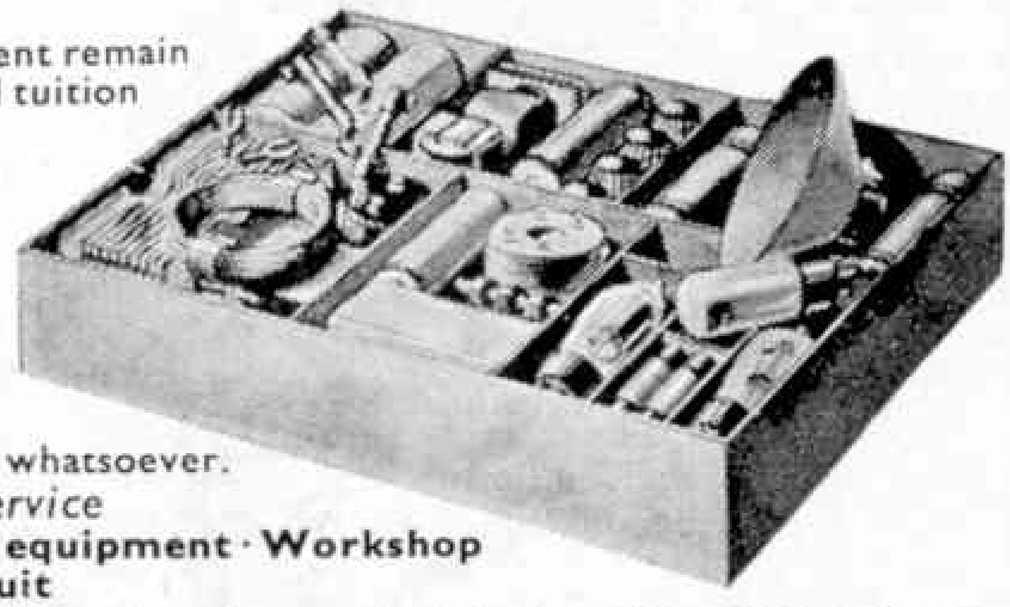

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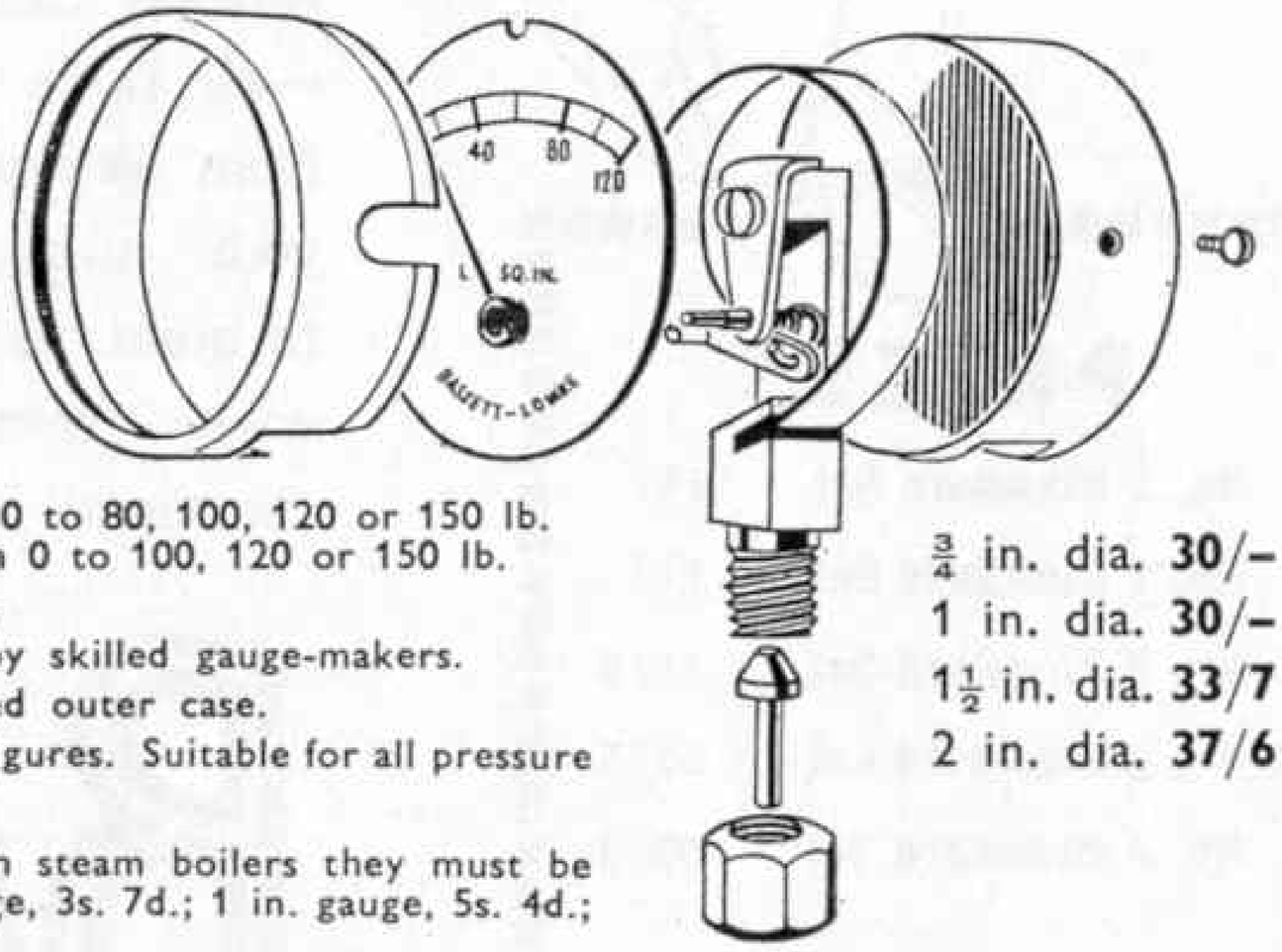

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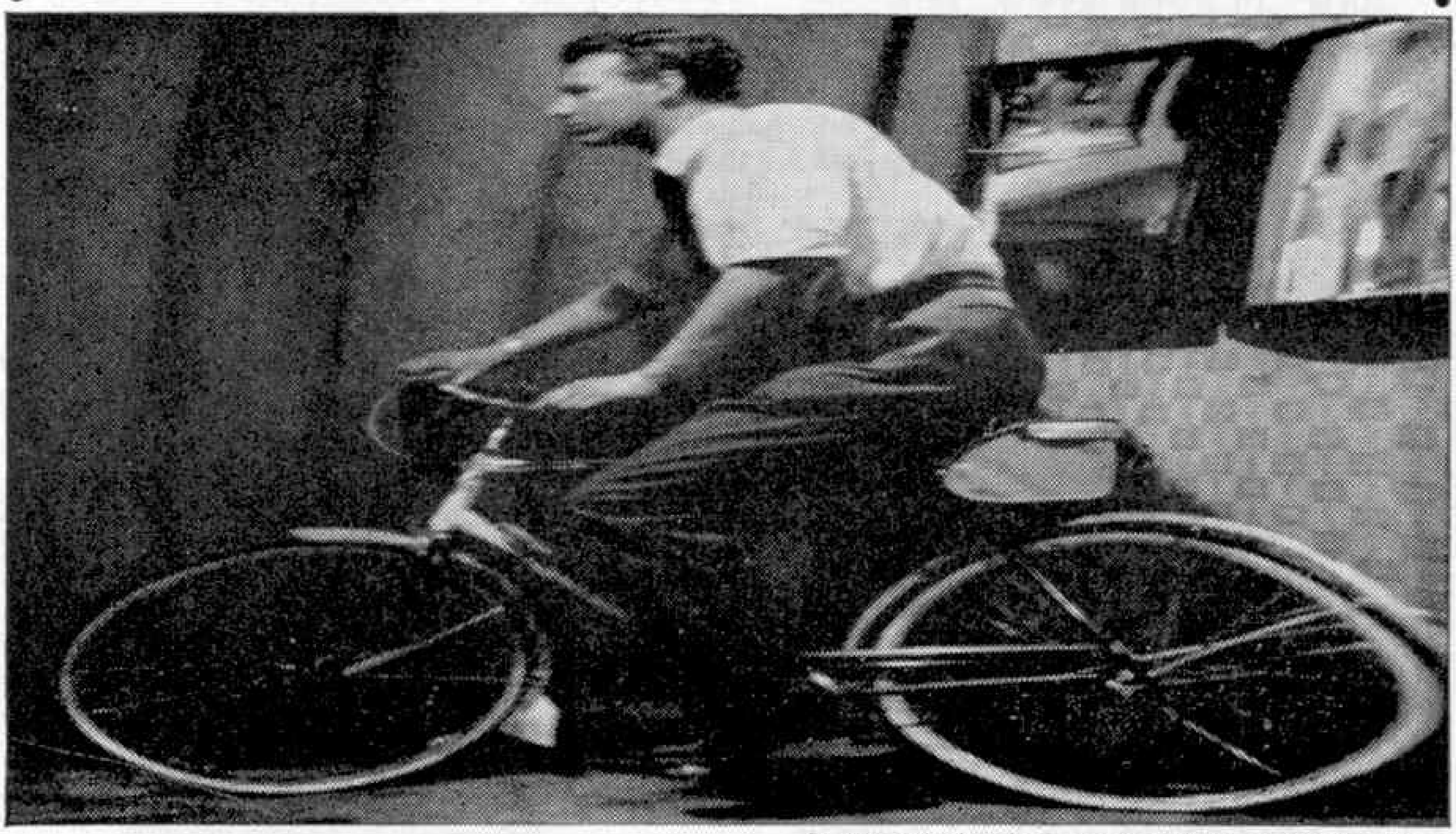

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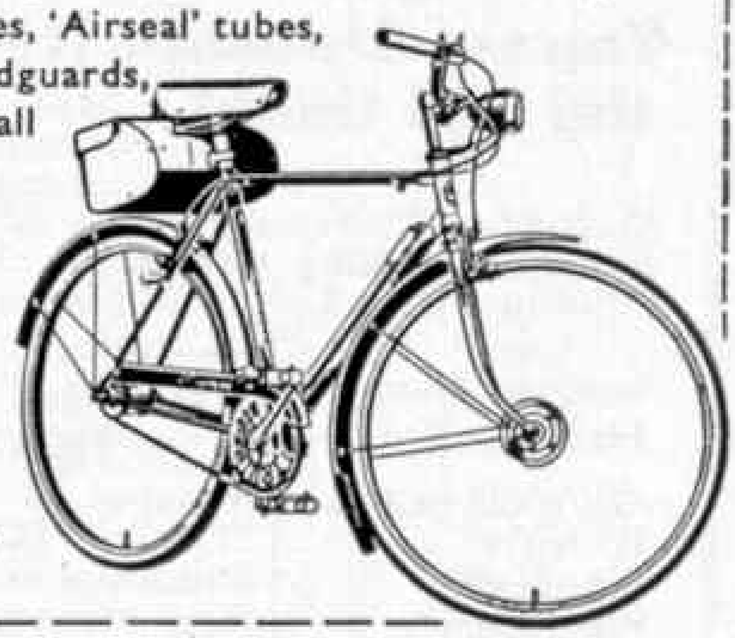

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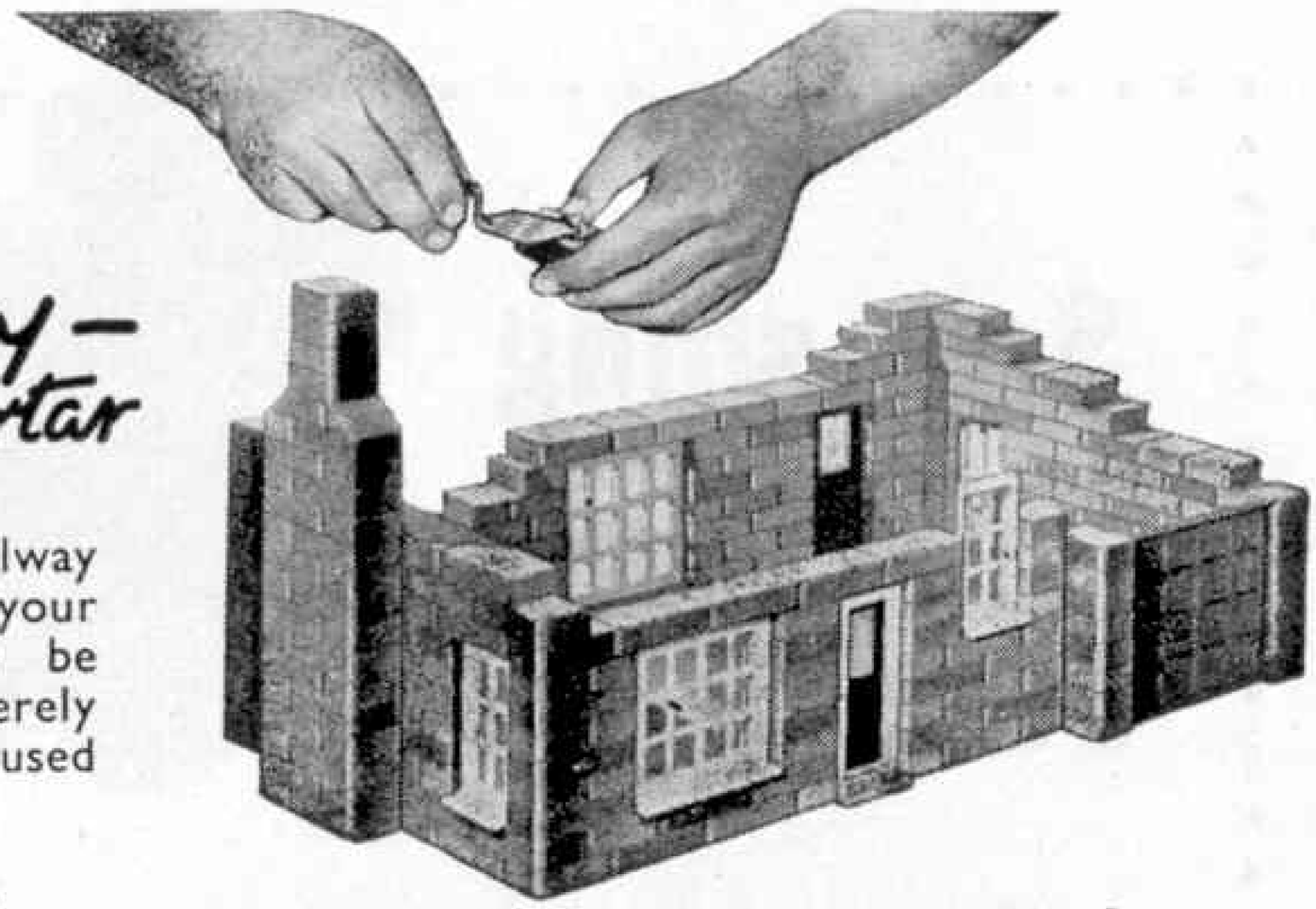

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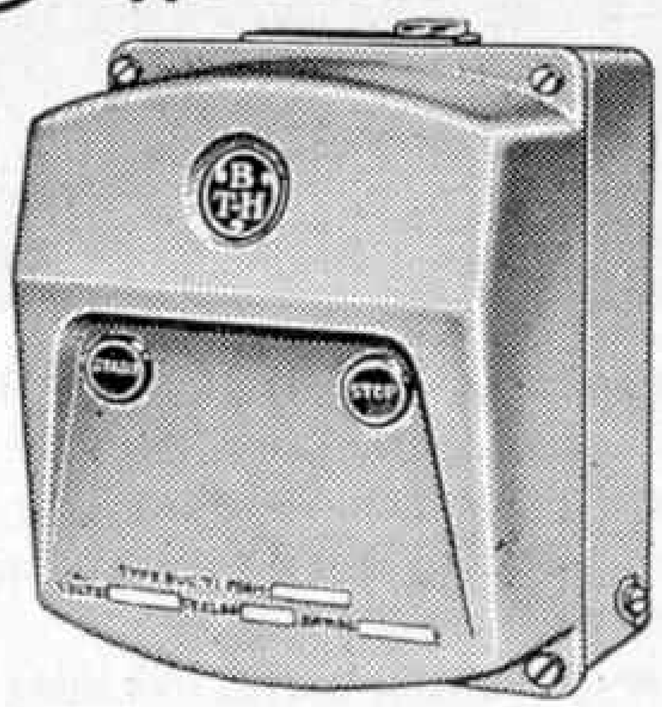

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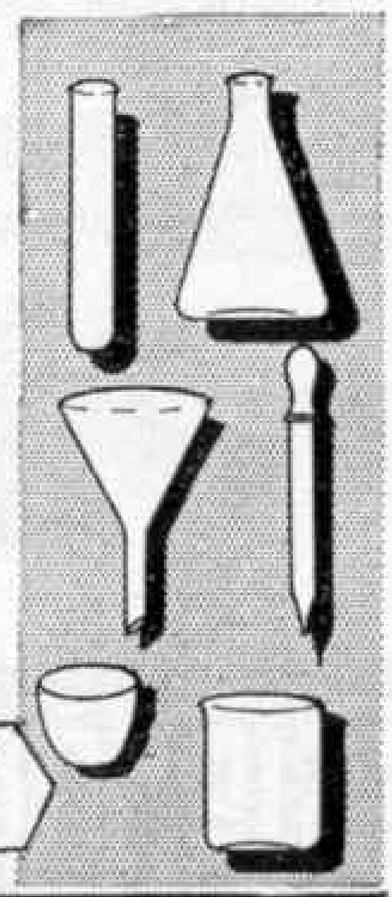

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MECCANO MAGAZINE

Editorial Office:
Binns Road
Liverpool 13
England

EDITOR : FRANK RILEY, B.Sc.

Vol. XLII
No. 9
September 1957

A Motor Racing Jubilee

Road and Track this month has some interesting notes on Brooklands, the first motor racing track ever constructed. It was created by Mr. Locke King, a racing enthusiast who spent an enormous amount of money on it, and the first race there was run in July 1907, 50 years ago.

Lord Brabazon, himself a racing driver of the pioneer days of Brooklands, in the 1908 G.P. Austin in which he led the parade of famous cars and motor cycles at the recent Golden Jubilee celebrations of that famous track.

Brooklands is not now a motor racing track, but such an event as its Golden Jubilee could not be overlooked and it was duly celebrated by a rally in which many famous racing cars of the past made yet another appearance. These were paraded before enthusiasts of past and present, but only on part of the track, for much of it has disappeared since Brooklands was given up to aircraft production during the war.

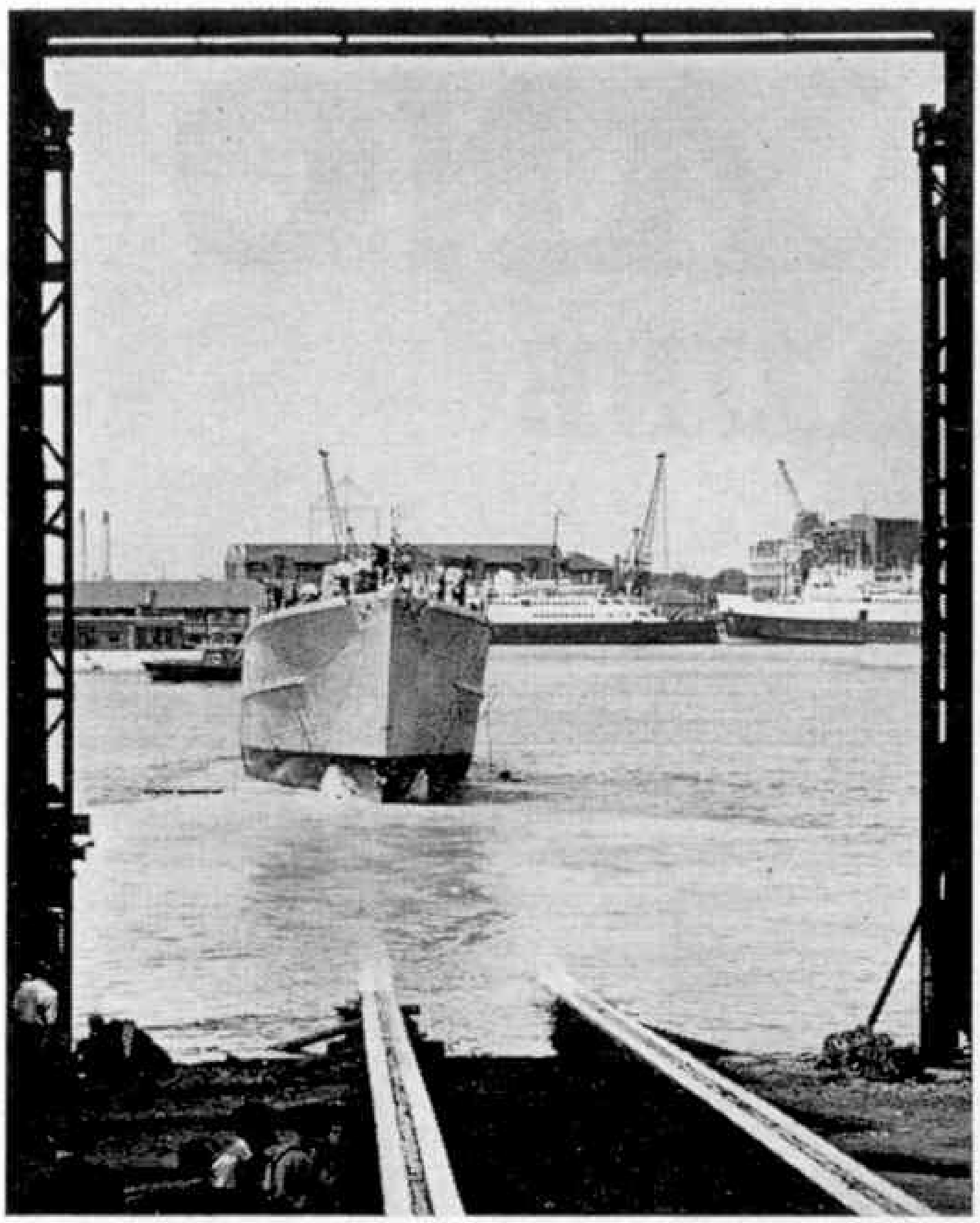
One of the cars of the great days of Brooklands is seen in the picture on this page. It is an Austin Grand Prix racing car, and at its wheel is Lord Brabazon, a keen race enthusiast who was a driver in the very first Brooklands racing meeting. In the G.P. Austin he headed the parade at the Golden Jubilee meeting after unveiling a memorial carrying in large letters the legend *Brooklands 1907 - 1939*, the second of these dates being the year in which Brooklands was last used for its intended purpose. The memorial has been erected by Vickers-Armstrongs Ltd., who now occupy Brooklands and arranged the Golden Jubilee celebrations.

The New "M.M."

Now let me turn to this issue of the *M.M.*, the first at its new price. Its contents are varied, ranging from the story of a driver who took part in this year's Mille Miglia, the fabulous Italian thousand miles race, to an account of a Death's Head Hawk Moth invasion of Britain and a modest account by myself of the launch of a minesweeper at which I was present.

With the somewhat larger magazine I shall be able to give you more articles and features of the kind that you will find in this issue, and also to give more pages to Meccano Model-building, Hornby and Hornby-Dublo Trains and Dinky Toys.

The Editor



The coastal minesweeper S.A.S. "Windhoek" immediately after her launch at the Woolston Shipyard of John I. Thornycroft and Co. Ltd.

Launch of a Minesweeper

by

The Editor

RECENTLY I had the pleasure of taking a small part—that of an observer—in a launch. The vessel concerned was a coastal minesweeper for the South African Naval Forces, built at the Woolston yard of John I. Thornycroft and Co. Ltd.

I was in London on the day of the launch, which was Friday, 28th June. So I joined the official party of guests at Waterloo, and travelled by train to Southampton for the occasion. This I found interesting in itself, for the engine was No. 30858 *Lord Duncan*, one of the Lord Nelson class designed by R. E. L. Maunsell for the former Southern Railway, and it so happened that this was the first time I had ever travelled in a train drawn by an engine of this class, although the first Lord Nelson made its appearance as long ago as 1926.

Most of you probably know what happens at a launch, from pictures in our newspapers and magazines and, nowadays, from the television screen. In the yard where the vessel has been built, it is resting on cradles carried on the standing ways, which are giant wooden beams sloping at an angle downward to the water, down which the cradles will slide when the moment comes for the launch. In preparation for the event the shores staying up the vessel have been removed, and at the moment of launching only two chocks, one on each side, prevent the movement of the vessel. On a platform erected at the bows of the vessel is the launching party. By custom a ship is launched and christened by a lady, who nowadays pulls a lever at the right moment to release the vessel and at the same time to swing a bottle of wine against her bows as her name is pronounced, with a fervent spoken wish that good fortune will attend the ship and all who sail in her.

How this was done when the *Windhoek* was launched can be seen in the lower illustration on the opposite page. The ceremony was performed by Mrs. H. S. Cilliers, wife of Brigadier H. S. Cilliers, O.B.E., who is military adviser to the High Commissioner for the Union of South Africa in the United Kingdom, and in the picture she can be seen pulling the lever. The bottle of wine that then broke on the bows of the *Windhoek* also can be seen, as can the ropes from the launching platform that were cut at the same time to release the vessel.

I did not follow all this from the launching platform. Instead I made my way down the yard to the port side of the vessel, where I could see her towering above me, resting on cradles at her bow and stern. By this time all restraints had been removed except two. Crouching alongside the ways was a rigger, patiently waiting for the signal that would tell him to pull out a large pin, which would leave the vessel held in position only by the special launching triggers.

This picture of H.M.S. "Highburton" shows how the S.A.S. "Windhoek" will look when completed.

Up above me the ceremony had begun. This was a religious one, conducted on this occasion by the Reverend Canon G. T. Waldegrave, M.B.E., M.A., Vicar of St. Mary's, Sholing, Southampton. No Admiralty vessel built in Great Britain takes to the water without a religious service, which has become one of the great traditions of the seafaring race that inhabits the British Isles, whose very life has long depended upon ability to sail the oceans.

The reading of the service, here as always a moving part of the delivery to the sea of another British built vessel, was followed by a hymn that every Briton knows, and then came the moment for the launch itself. The rigger crouching by the hull received the signal to pull out the pin in his charge, and held it up for the official in charge of the launch to see. A further signal, this time to the launching platform, and then in the voice of Mrs. Cilliers, plainly heard by all present, came the time-honoured good wishes. As they ended the lever was pulled, leaving the vessel free to slide down into the water.

For a few moments the *Windhoek* remained still, as if girding herself for her freedom, and then slowly she began to slide down the well greased ways. Gradually she gathered speed, and finally slipped easily and, it seemed, completely naturally into the water, giving all on shore behind the berth in which she was built the view that is seen in the picture on the opposite page. Although what had been launched was only the hull, she already seemed alive.

At the moment of launching. Mrs. H. S. Cilliers pulls the lever that launches the "Windhoek" and swings the be-ribboned bottle of champagne against the bows. Behind her is Sir John Thornycroft.

While watching the launch, from my vantage point practically under the hull, I had been able to see that the outer bottom of the *Windhoek* was wood planked. I knew that aluminium had been used in her construction, for both the framing and structural castings. There was good reason for employing these materials. A minesweeper nowadays has to deal with magnetic mines, and for this reason her hull must be largely constructed of non-magnetic material.

The *Windhoek* will be able to deal with all types of mines. She is termed a coastal minesweeper because

(*Continued on page 474*)

Driving in the Mille Miglia

By Jack Reece

NORMAN GARRAD, who is in charge of the Competition Section of the Rootes Group, invited me to join the Sunbeam Rapier Team entered for this year's Mille Miglia, the 25th of the series. This race of 1,000 miles distance around the roads of Italy has long been recognised as one of the classic events of the motor racing calendar. It starts and finishes at Brescia, and is run over closed roads.

The route includes every type of road condition imaginable, from the long sweeping fast straights down the Adriatic Coast via Ravenna to Pescara to the tortuous 6,500 feet ascents and descents of three of Italy's most famous Alpine Passes over the Apeninnes to Rome. These are followed by a narrow winding 250 miles stretch to Florence, the crossing of another mountain barrier to Bologna, and then the tremendously fast straights to Mantua, the birthplace of Nuvolari, and the final fast run into the finish at Brescia.

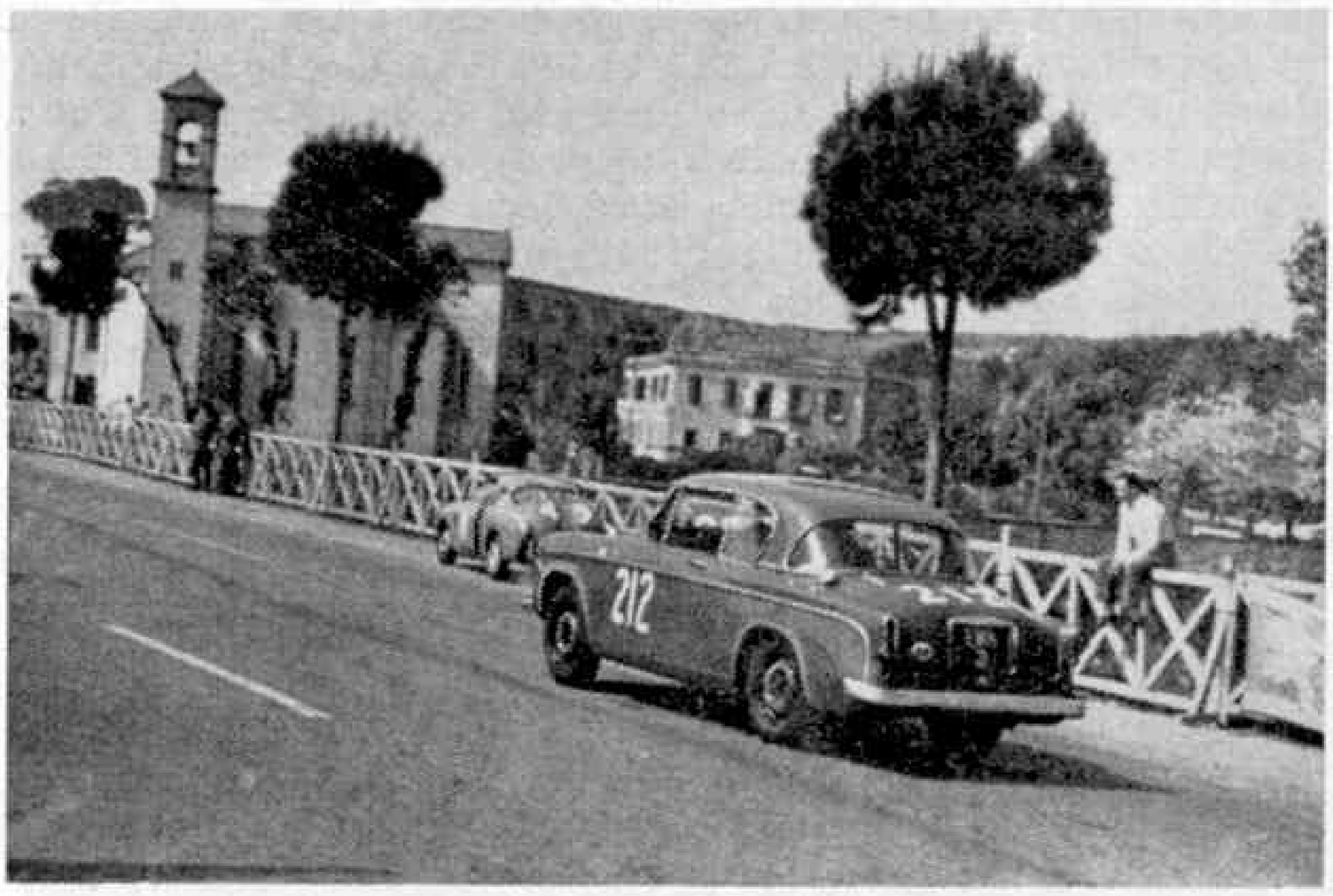
My arrival at the Rootes Group factory to join the team coincided with the appearance out of the engineering shop of the car I was to drive in partnership with the experienced and successful Peter Harper. The car was superbly finished in bright red, had obviously been very carefully prepared and sounded extremely healthy. It bore the registration number T.W.K.2. The other car, T.W.K.1, was to be driven by Sheila Van Damm accompanied by David Humphries, another young "veteran" of scores of International competition events. Sheila and Peter had of course driven in the previous year's Mille Miglia, and the experience they had gained while winning the Up To 1600 c.c. Grand Tourismo Class proved invaluable.

Under the watchful eye of Norman Garrad we did a complete reconnaissance of the 1,000 mile route in a Humber Hawk Estate Car. Using the numbers on the kilometre stones at the roadside, we compiled a comprehensive roll of notes that the co-driver could use to warn the driver of what type of bend or road conditions he was approaching. This reconnaissance, naturally over open roads, was enlivened by the appearance of some of the stars out practising. It was quite a revelation to see von Trips and Taruffi driving 4.1 litre Ferraris—allegedly Sports Cars, but in reality just as quick as the Grand Prix machinery—passing ordinary road traffic on busy straights outside of Rome at 130 m.p.h. with an exhaust note that could be heard a mile away.

The author, on the right, and his co-driver Peter Harper with the Sunbeam Rapier in which they achieved second place in the 1,300-1,600 cc. Special Touring Section of this year's Mille Miglia, the famous Italian 1,000 mile road race. Illustrations by courtesy of Rootes Motors Ltd.

There were several casualties among the "quick boys" during these hair-raising practice days. Jean Behra of France crashed and broke an arm, and the ill-fated de Portago wrote off his own personal Ferrari half-way up the Raticosa Pass, that time without injury. During these four or five hectic days of practice, the local constabulary amazed me by their enthusiasm. I recall an excited policeman waving to a man to get off his bicycle in a

little village as two Maseratis went through in a cloud of dust and stones at well over 100 m.p.h. and saying happily, "Ah! the practice is going well." I shudder to think what the reaction of both police and motorist would be if the event were allowed in England. It was also fascinating to realise that the distance that had taken us three days on the reconnaissance was to be covered in 14 hours or so if all went well in the race.



In Pescara, the Sunbeam Rapier driven by Jack Reece and Peter Harper passes an unfortunate competitor whose car has become a casualty.

Our car was numbered 212, which meant that we started the race at 2.12 a.m. on the Sunday morning. The starting line scenes are beyond description. In the interests of thousands of excited Italian spectators, the competing machines drive up a ramp some 25 feet in the air amid hordes of Press photographers and Television cameras, with the excited cheers of the onlookers thrown in. The starting flag is dropped and the great Race has begun.

A certain amount of starting line drill is necessary if one remembers that within two miles of the start, at speeds of anything up to 180 m.p.h., the drivers leave the street lighting of Brescia and plunge into the dark country road. It has been known on many occasions for drivers to forget to switch their head lamps on at the starting ramp, with disastrous results when they reach the wall of darkness that heralds the end of Brescia.

We had long discussions before the race as to what period each driver should do at the wheel, and as the rhythm of driving at our cruising speed of 100 m.p.h. was difficult to attain, we decided that Peter Harper should do the first 10 hours, which meant all the difficult sections, leaving me with the last relatively easy four hours of long straight main road motoring.

There is a saying in the Mille Miglia, "It takes courage to drive slowly for the first half-hour." If this saying be true, my driver was the biggest coward on earth, for to the Ravenna control and then to the Pescara control we averaged a fantastic 80.12 m.p.h. When one remembers that the initial two hours of this was in total darkness, and entailed also the passage through the tortuous city of Verona and the difficult semi-light of early dawn, readers will realise just how magnificently Peter drove.

To ensure that every control is visited, the driver has to get a route card stamped

Refuelling at the Rome control. In only 39 seconds 20 gallons of petrol were poured into the tank and the windscreen was washed.

at each of the six controls on the route. The stamping of this card entails scenes of furious enthusiasm. Approximately one mile from the control warning signs appear emblazoned with the word "Controllo." As one approaches at speeds of anything up to 150 m.p.h., agitated officials wave chequered flags to slow the competitors down, and an intrepid Italian official, waving a large rubber stamp, leaps around the control area waiting to stamp the route card. It is no exaggeration to say that he is frequently knocked over by competitors who have overshot the control area and has even been known to be knocked over by over-enthusiastic drivers who have had to back-up.

Down the long fast straights to Pescara and L'Aquila we began to overtake some of the smaller cars, which had started ahead of us. The little Fiat Stanguellinis, with an engine of only 750 c.c. yet capable of some 85 m.p.h., proved exceptionally difficult to overtake, as their drivers are usually deafened by their engines and are bounced all over the road in their fragile machines and not easily made aware of our presence. The wall of spectators hardly ever finished, and I was amazed at the courage of the average Italian spectator, who would cheerfully stand on the outside edge of bends that are taken by the "heavy metal" at 160 m.p.h.

Our progress to Rome was perfect. The car cruised at a steady 100, braking, steering and suspension were superb, and brilliant sunshine and dry roads completed a feeling of satisfaction. The mountain section between L'Aquila and Rome brought out the best in Peter, and the many hairpins were taken in a style that evoked enthusiastic applause from the spectators. Approximately a mile from Rome, almost half distance, the engine stopped. A minor failure in the throttle linkage had caused this, and we rolled into the Rome Control at approximately 5 m.p.h. which according to an eye-witness inspired the comment from the Italian commentator, "See how the English arrive at a control displaying their traditional phlegm."

As we refuelled, Peter and I wrestled with the recalcitrant throttle linkage. With the aid of some copper wire and a hastily "borrowed" screw-driver, a jury control was rigged and after some three minutes delay we left to tackle the mountains en route to Florence. I thought that Peter had reached his peak form before, but tired as he must have been, intermittent storms of sleet and rain on top of the Futa and Raticosa Passes seemed to inspire him to drive even better. The surface was covered in burnt rubber and oil and was incredibly slippery, and I was truly thankful for the years of Alpine experience that gave Peter a sure touch on the steep descent. Another quick refuel at Florence and we were off on dry roads once again, winding interminably, lined with spectators, on our way to Bologna.

Crossing the finishing line at Brescia. The 1,000 mile course was covered at an average speed of nearly 71 m.p.h., inclusive of stops for refuelling and adjustments. On long stretches the average speed was over 80 miles an hour, with a maximum of 105.8.

At Bologna Peter's stint was done and his 10 hours of high-speed driving on a scorching hot day had exhausted him. Now I set off on the last stretch to Brescia. We had been told at Bologna that we were lying 2nd in our Class, that our other car had crashed near Verona, and a French Peugeot lying 3rd was challenging us for 2nd place.

I do not recollect a great deal of this last

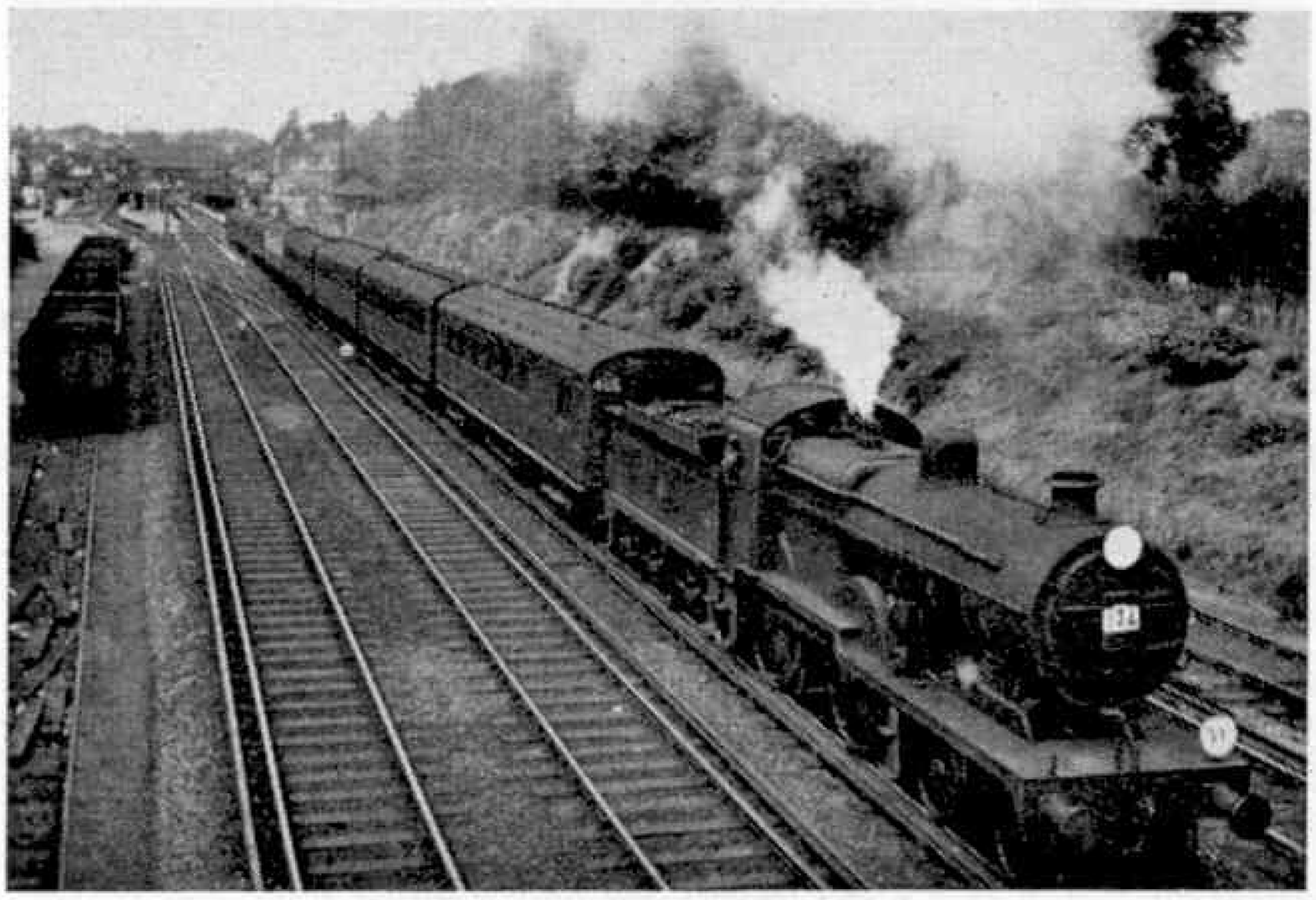
(*Continued on page 474*)

Over the Hills to Thanet

The London-Chatham-Kent Coast Main Line

By R. A. H. Weight

OUR cover this month, from a photograph by S. Creer, pictures the 5.5 p.m. Ramsgate to Victoria, now leaving Ramsgate at 5.2, climbing the well-known bank at Sole Street on this line. The train runs non-stop from Whitstable, the last coast station, to London. The formation when photographed included 1st and 2nd class Pullman cars with ordinary corridor coaches, and was the return working of the 11.35 a.m. from Victoria during winter service.



An excursion from Herne Hill to Ramsgate passing Bromley South. The engine is E1 class rebuilt 4-4-0 No. 31067. The illustrations to this article are from photographs by B. C. Bending.

These trains, or the alternative summer *Kentish Belle* all-Pullman expresses, are the only regular ones on the London-Thanet service in which Pullmans run. But the Pullman Car Company staffs and operates the S.R. refreshment cars attached to a number of the trains. Some of these normally run to and from Cannon Street (City) instead of Victoria, by way of the St. Mary Cray-Chislehurst spurs and London Bridge, as there is considerable long distance season ticket business.

The line to and from Thanet, once referred to as "The Chatham" from the name of the railway company that built it, is now part of the Eastern Section of the Southern Region of British Railways. It is a steeply graded route. There are many sharp ups and downs as well as some continuously longer inclines, the most severe of which is the Sole Street bank, rising from the Medway Valley, soon after leaving Rochester, to the North Downs, presenting London-bound trains with nearly five miles of climbing, mostly at 1 in 100. As it comes so soon after severe service slacks, if not stops, at Chatham and Rochester, and begins on a sharp curve, it cannot be rushed. From its lower stretches there are spectacular views over the broad waters of the Medway of bridges, shipping and factories, with the Maidstone-Strood line and its junctions and the venerable Cathedral and Castle at Rochester. And as the trains climb upward the view changes to inland wooded hills.

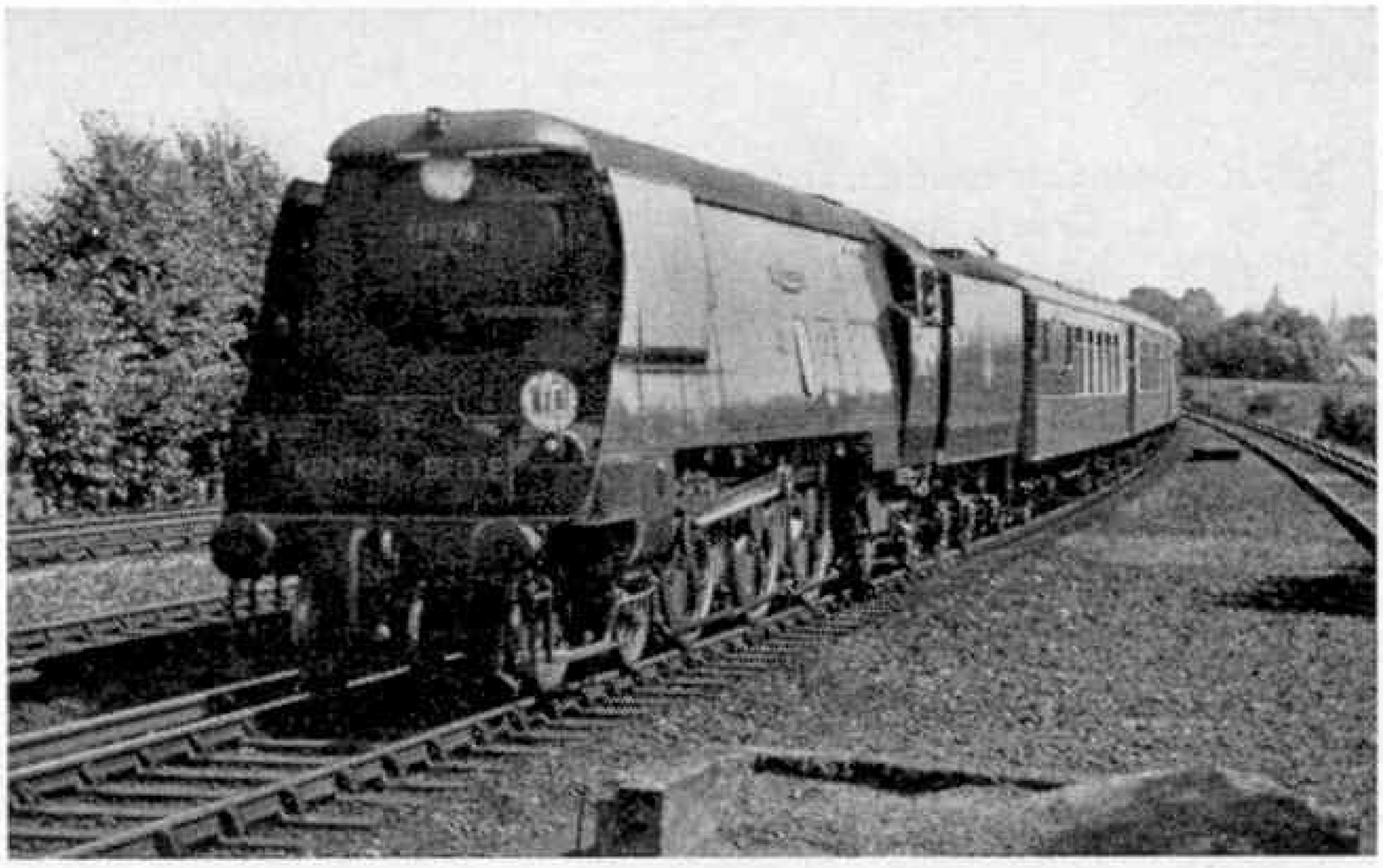
Our cover shows Battle of Britain No. 34077 *603 Squadron* well up the incline in a deep cutting spanned by high bridges. I remember well the busy hours I spent watching and recording peak Saturday traffic from one of these bridges in August last year. It was fascinating to watch how in very damp weather engines differing widely in size, age and power, and operating in various conditions of load, fuel and handling, tackled the last mile or so. Their speeds at this stage probably ranged from about 26 m.p.h. to 40 as they approached the summit near the country station and village named Sole Street, 27 miles from London.

On another occasion, when I logged the 5.5 p.m. from Ramsgate as a passenger, a light Pacific worked easily and on time was doing 36 m.p.h. there with 8 coaches on, 290 tons. Minimum speeds of well over

40 have been noted with 10-coach loads behind those 4–6–2s, however, as well as class 5 B.R. 4–6–0s, which have recently appeared there, while the performance in expert hands of small 4–4–0s with up to eight corridor coaches is sometimes astonishingly good in comparison. Electric trains also go up, traversing the main line between Gillingham-Chatham-Rochester and London, usually on an hourly basis and calling at all stations on the country side of Swanley. Steam still reigns supreme east of Gillingham—one of the group of "Medway towns"—and for all the coast trains.

The route out of London is from the Eastern side of Victoria terminus, generally with banking engine assistance to help up the sharp rise to Grosvenor Bridge over the Thames. Then it runs high on viaduct and embankment, with good views down to the extensive Stewarts Lane Motive Power Depot and the neighbouring maze of railway tracks, including the main lines from Waterloo. On from Brixton through numerous suburbs one notes various junctions and other S.R. lines, some stiff climbs or sudden ups-and-downs typical of much of the journey. There is a tunnel at Sydenham beneath the elevated grounds of the old Crystal Palace, then more trees and gardens are sighted.

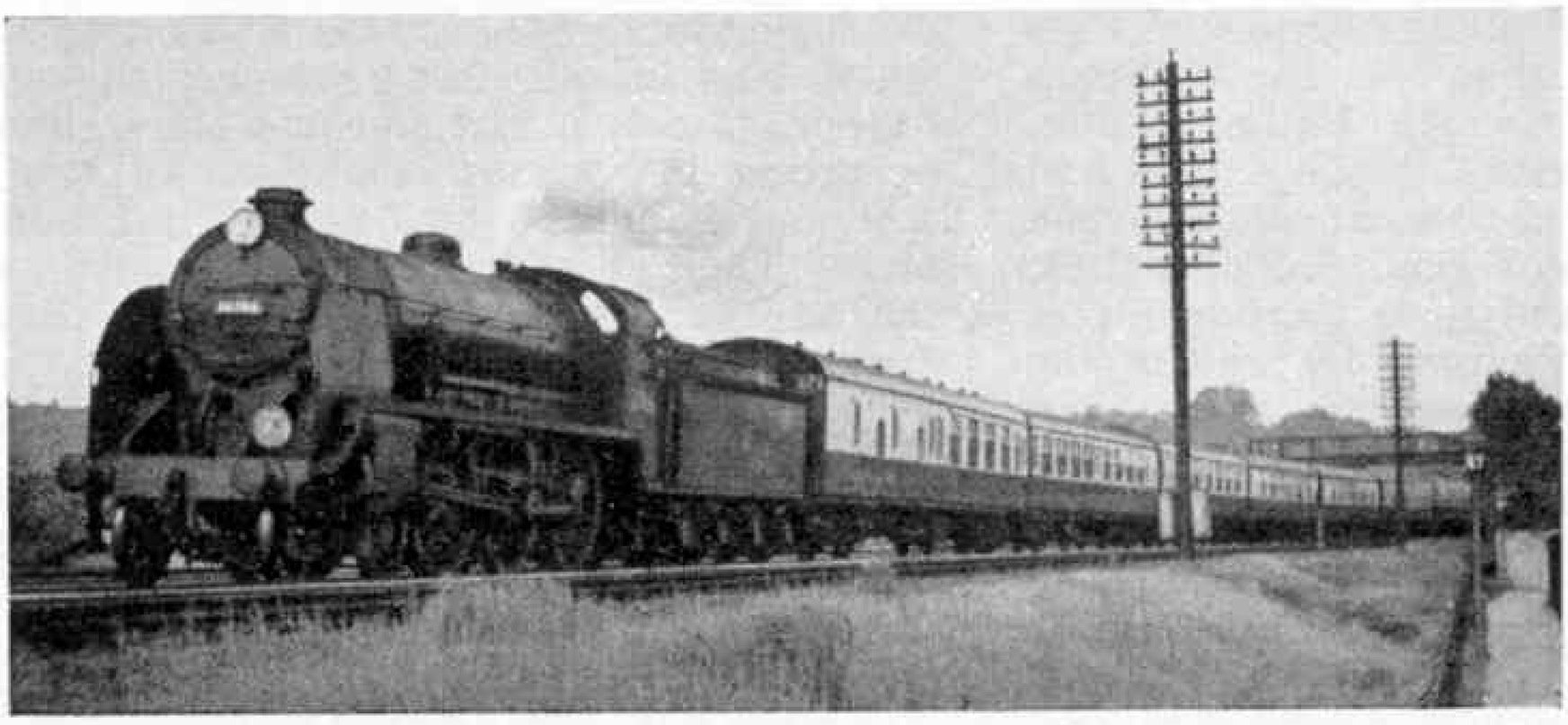
An alternative way known as the Catford Loop, passing through suburbs more to the north, joins the main one at Shortlands, near Beckenham. This is used by a number of coast expresses which, as on the stretch through Sydenham Hill, have to fit in along the same two tracks with frequent suburban electric or other trains.



The up Kentish Belle Pullman train at Kent House in charge of No. 34079 "141 Squadron," a light Pacific of the Battle of Britain class.

After three miles of four tracks past Bromley and Bickley, we see the network of burrowing junctions with up and down single lines interconnecting the Victoria and Charing Cross-London Bridge main lines, used by a number of important fast trains. Beyond Swanley, junction for Maidstone and Sevenoaks routes, we are soon in a land of cherry and other fruit orchards, extensive hop gardens and the like extending for many miles.

Here there may be high speed bursts when downhill opportunity offers. Near Rochester, following the descent of Sole Street bank, we can see signs of Chatham Naval and other maritime activity. A little farther on, in the Sittingbourne neighbourhood, there are long views northward of the Medway and other tidal estuaries merging into



A Ramsgate train of modern stock in B.R. red and cream is shown here on a Kentish incline. The engine is No. 30766, Sir Geraint, one of the King Arthurs long familiar on this route.

the sea, of the Isle of Grain and its huge oil refinery, visible in rather a tangled mass of flat land and water. To the south, inland, are more wooded hills and downlands.

Beyond Faversham, where the Canterbury-Dover line goes straight ahead, we curve past the locomotive shed and soon enjoy a real view of the sea at Whitstable, 59 miles from London and famous for its oysters. Though not visible from the train very much more, the waves are never far away during the next 15 miles to Margate and beyond, as the line is laid more or less along the cliff top through Herne Bay and Birchington and into the heart of Thanet holiday area, with connecting tracks continuing on from Ramsgate round the Kent coast, to Canterbury and Ashford, etc.

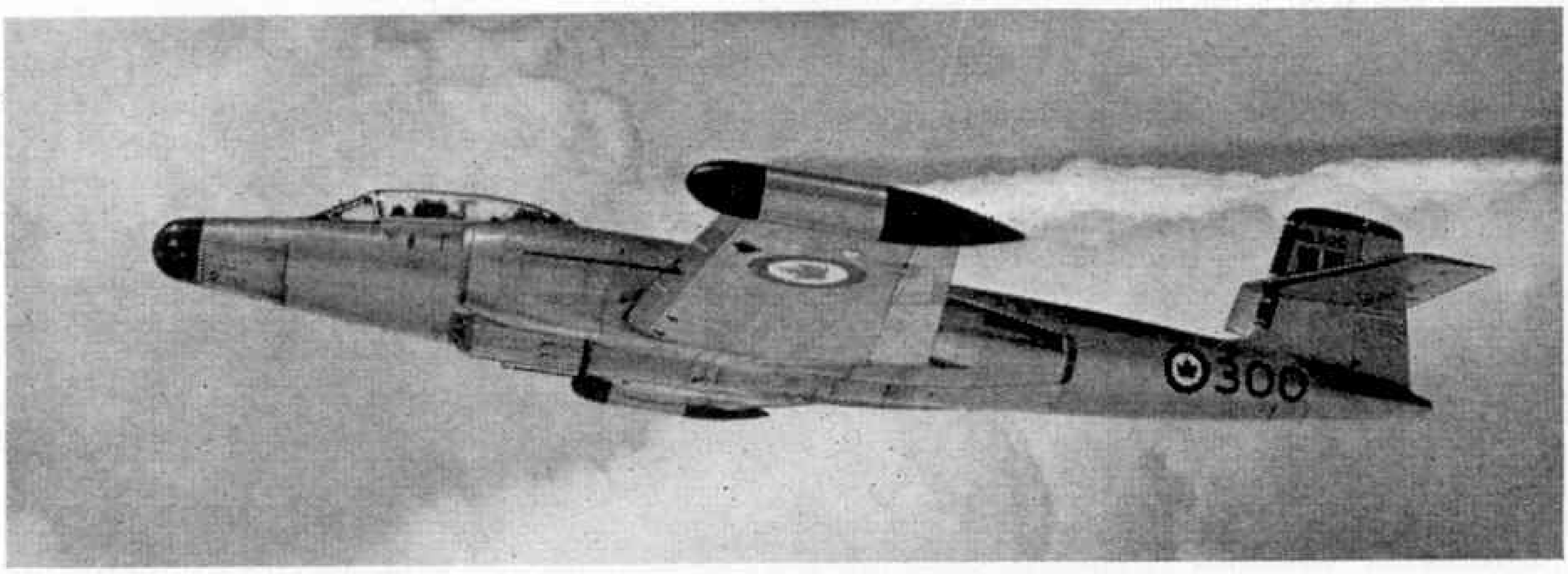
Some London trains call at all or most of the coast stations between Faversham and Ramsgate, and at the principal places west of Faversham including Bromley South, an important changing point for suburban electric services. The whole of this Kent coast line is scheduled for electrification within the next few years, but meantime the present variety of steam locomotive usage will probably continue. The principal engines are the West Country and Battle of Britain Pacifics, with a considerable share now taken by B.R. Standard 4-6-0s in the 73080-9 series stationed at Stewarts Lane. So the King Arthur 4-6-0s, long a mainstay of the Chatham road, are not so much in evidence except at busy times. Schools 4-4-0s take expresses sometimes, with lesser 4-4-0s and 2-6-0s on semi-fast duties, that is during winter and on ordinary weekdays.

In the summer holiday season the number of passenger trains to and from North Kent resorts increases enormously, and heavy demands are made upon supplies of engines and rolling stock, especially on July-August Saturdays, when over 50 London services may be run each way. Stopping trains, through Midlands ones, some Dover ordinary or Continental Boat expresses and so on are fitted in over parts of the same route. To spread the loads, a number of coast trains call only at certain stations and are started at intermediate points. Longer non-stop runs than usual are scheduled, up to the 74-mile Victoria-Margate as a maximum both ways, with fairly generous timings owing to the hard and often congested "road", and because the locomotive may be a mixed traffic or even goods 2-6-0 of classes U1, N1 or N, or a 3P 2-cylinder 4-4-0 of S.R. class L1, or ex-S.E. & C.R. L, D1 or E1.

A Maunsell Mogul, U1 class No. 31907, a type of engine much used in large numbers on summer traffic on Kent Coast routes, passing Ravensbourne with a semi-fast train.

The two last named classes were rebuilt with superheater, piston valves, more efficient boiler, etc., over 35 years ago from a selection of the old D and E types, especially for the principal trains on the Chatham main line. In spite of their age they are still remarkably capable engines within limits. Last May, No. 31545, a D1 looking extremely smart, on a Stephenson Locomotive Society special, made the fastest London-Margate run for many a year with six green corridor coaches, improving on a slick 1½-hr. timing by 2 min., including a repair slowing on Sole Street descent. We were doing 75-80 m.p.h. at several points where there was a chance, and the veteran 4-4-0 was brilliantly handled by Driver Gingell, just before his retirement, and Fireman Williams.

There was some stirring running too during the return journey without a stop from Folkestone through to Chatham. There water was taken before the final stage was run by the Catford loop to Holborn Viaduct, a London City terminus.



Avro CF-100 Mk.4 of the Royal Canadian Air Force. Note the rocket containers on wingtips and under the fuselage.

Air News

by

John W. R. Taylor

Canadian Fighter Exported

News that the Belgian Air Force have chosen the Avro CF-100 as their new two-seat, all-weather fighter represents a major achievement for Avro Aircraft of Toronto, as it is the first Canadian-designed combat aircraft ever ordered by a foreign country. The order, placed under the U.S. Mutual Aid Programme, is worth $43 million.

Powered by two 7,500 lb. thrust Orenda 11 turbojets, the latest CF-100 Mk.5 has a top speed of around 650 m.p.h., and is armed with 58 2.75 in. rockets, which are carried in wingtip containers and fired automatically by a radar fire control system. The Mk.6 is similar, but is armed with six Sperry Sparrow air-to-air guided missiles. There are four R.C.A.F. squadrons in Europe equipped with the earlier CF-100 Mk.4B, and nine in Canada with CF-100 Mk.5 and 6 fighters.

Battle of Britain Recalled

September is, perhaps, the most exciting month of the year for aircraft enthusiasts, with Battle of Britain Day air displays at many R.A.F. stations for those who are unable to get to Farnborough for the great S.B.A.C. Display there.

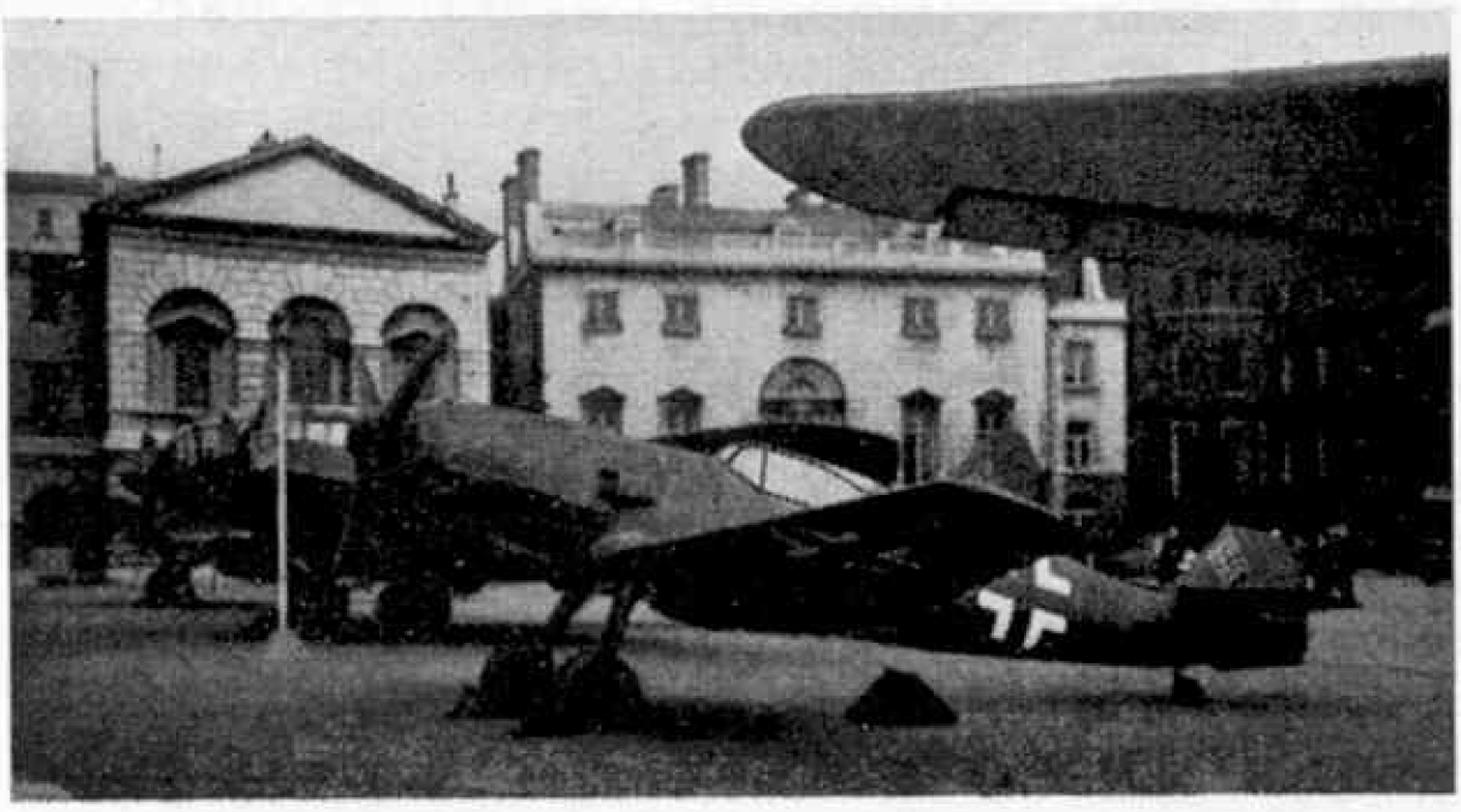
I was reminded of this when Shane Guy, an *M.M.* reader of Cosham, Hampshire, sent me the photograph reproduced below. It shows some of the historic aircraft that have been exhibited on Horse Guards Parade, London, during Battle of Britain week for several years past. Nearest the camera is a Messerschmitt Me.109, which was the principal German single-seat fighter used in the battle, then a transport version of the Heinkel He.111 bomber and one of the Hawker Hurricanes which, with a smaller number of Spitfires, won that great victory in the skies over southern England 17 years ago.

Cats Conscripted in Malaya

A very different kind of battle was fought recently in Malaya. It started when the Commander of Fort Telanok in the heart of the jungle sent out an urgent radio message "Rats getting out of control. Please send cats".

Ready for all emergencies, the personnel of the Air Supply Force at the R.A.F. Station, Kuala Lumpur, quickly obtained two large Malayan cats and made them comfortable overnight, ready to be dropped by parachute with the rest of the supplies for the fort on the following morning. Unfortunately, by take-off time the cats had gone absent without leave.

Two more cats were found and carefully packed in a padded case drilled with air-holes, and with a tasty snack of fish to keep them happy during the 40-min. flight to Fort Telanok, which is accessible only by air. They dropped slowly and safely into their new home and were immediately put on operations. Latest reports claim that the cats have saved the fort from the four-legged invaders.



The Messerschmitt Me109 and other historic aircraft which have been exhibited in London in recent years during "Battle of Britain" week. Photograph by Shane G. Guy, Cosham, Hants.

Atomic Flying Boats?

Discussions are taking place on the possibility of using at least one of the three giant Saunders-Roe Princess flying boats to flight test Britain's first atomic aero engines. At the moment the Princesses are in storage at Calshot and Cowes; but it would be comparatively simple to de-cocoon the prototype, which has done a good deal of flying, and to re-engine it with the latest type of Proteus turboprops.

Presumably, the atomic engine would be mounted inside the great hull and would be used,

after take-off on the power of the turboprops, to drive fairly conventional turbojet or turboprop engines. At the present stage of development, it is likely that only an aircraft the size of a Princess could house such an engine with sufficient shielding to ensure safety for the aircrew.

New British Trainer

The neat little jet-plane shown in the upper picture on this page is the Miles M.100 Mk.1 Student, which made its first flight on 14th May this year. It has a French-designed Turbomeca Marbore turbojet of 880 lb. thrust, mounted on top of the fuselage behind the cabin, and is one of the most versatile aircraft in the air.

The prototype is equipped as a trainer with two side-by-side seats in a roomy cabin which has large car-type doors and dual controls. But the M.100 can be modified easily into a four-seat "business" aircraft, or even into a lightweight ground attack aircraft armed with guns, bombs and rockets. Wing span is only 29 ft. 2 in. and top speed over 300 m.p.h.

Nor is that all, for a Mk.2 version is available with two 390 lb. thrust Turbomeca Palas 600 turbojets for twin-engine training; and the M.100 Mk.3 Centurion has an identical airframe but is powered by a de-rated Rolls-Royce R.B.108 turbojet which gives a considerably higher performance.

More B.E.A. Viscount Services

To spearhead their record summer programme of more than 3,000 flights a week, B.E.A. introduced Viscounts for the first time on their routes to Hamburg, Berlin and Cologne on 1st July last. Taking over from Elizabethans, the 47-seat Series 701 Viscounts have reduced the flying time on these routes by up to 40 min.

At the same time, the Corporation replaced Elizabethans and Viscount 701's by larger, more powerful Viscount 802's on services to Copenhagan, Nice and Amsterdam.

By July Vickers had delivered 18 Viscount 802's to B.E.A. out of a total of 24 ordered, to supplement the Corporation's 25 Viscount 701's. Delivery of another fleet of 14 faster Viscount 806's is due to start this autumn for regular service during the coming winter. Like the 802's, these newest air liners will carry 57 passengers in seats that can be folded quickly against the cabin walls to make room for cargo when the aircraft are used on freight services.

SAS Buy French Air Liner

The French Sud Aviation company are achieving well-deserved success at last in selling their graceful Caravelle jet-liner. Until recently, the only customers were Air France, who have ordered 12 Caravelles, with an option on 12 more. Now Scandinavian Airlines System have placed a contract for six, with an option on 19 more, and several other airlines are likely to follow their lead.

The Miles M.100 Mk.1 Student, which made its first flight on 14th May last. The wing span of this turbojet aircraft is only 29 ft. 2 in.

Intended for medium-range services, the Caravelle carries up to 80 passengers for 1,600 miles at a cruising speed of 500 m.p.h. In a somewhat smaller class than the Comet, it is powered by only two Rolls-Royce Avon turbojets, which are mounted on the sides of the rear fuselage.

We are likely to see a good deal more of this unique engine arrangement in the years ahead, because it keeps the wings clean aerodynamically and reduces their structure weight as they do not have to carry the engines. In addition, it eliminates turbulent airflow from the jet exhaust in front of the tailplane, and reduces the noise level in the cabin.

No Windows

Air liners of the future may not have any windows for passengers. Designers see little prospect of being able to make cut-outs for them in the highly-stressed skin of a supersonic air liner and point out that there is little to see when cruising above 50,000 ft. Passengers may be given a closed circuit TV picture of the territory over which they are flying.

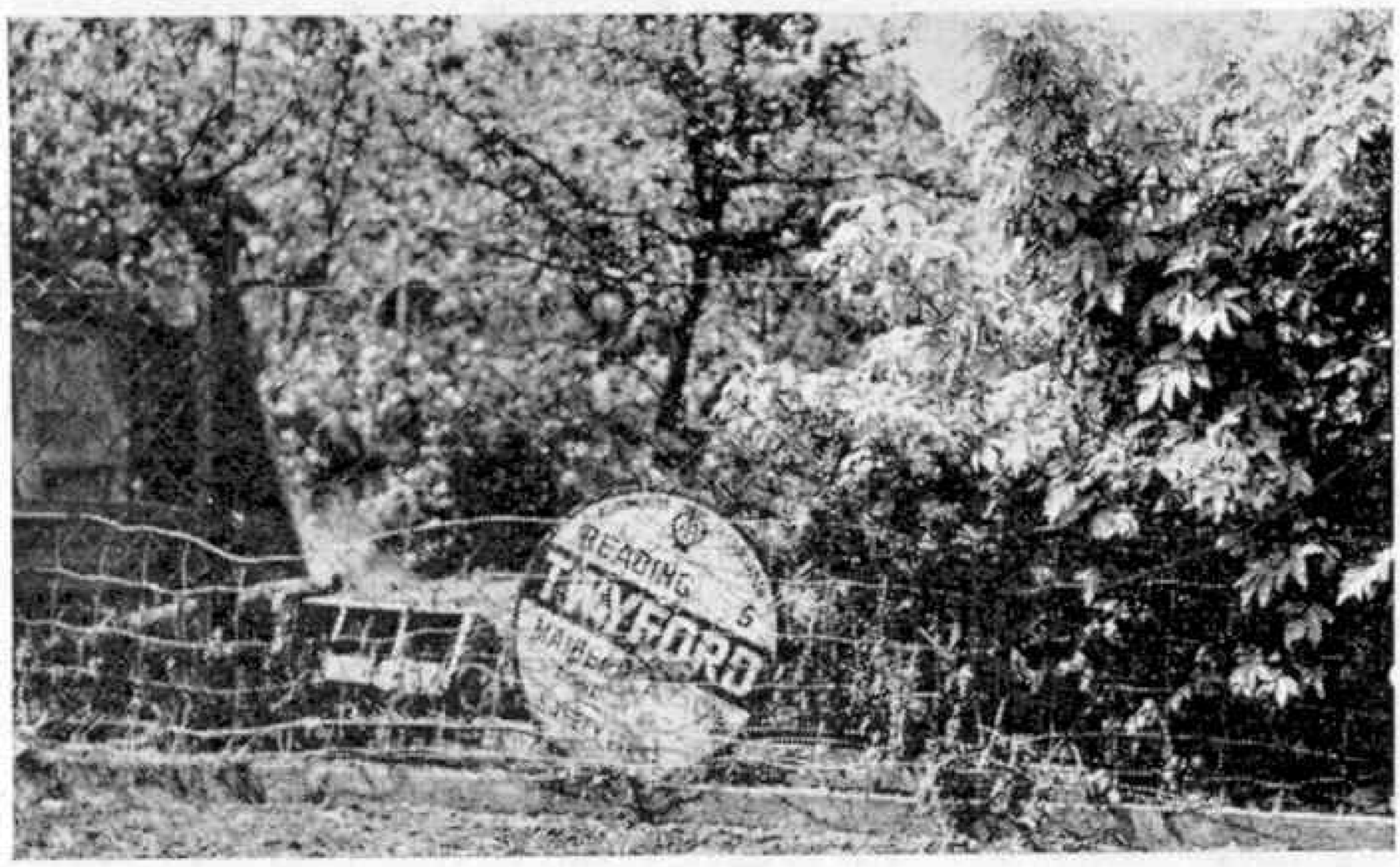
One of two prototypes of the fine French air liner SE-210 Caravelle. The aircraft shown here recently completed a highly successful tour of North America.

Of General Interest

For Pigs to Read

The sign in the picture on this page seems to have got into a peculiar place. The one thing about which you could be fairly certain is that it cannot be much use to road users where it is. This is true, for I am told that it is in a pigsty, the occupants of which are more interested in comfort than in geography.

Most people seeing the sign in such a peculiar position would probably begin to wonder how it got there. The story is rather interesting. Before the war the Automobile Association had large black and yellow name signs at the approaches to practically every city, town and village in the British Isles. These had to be taken down in the early days of the second World War, to avoid giving help to such intruders as hostile paratroopers who might have landed in the country. This of course happened also to direction signs, but these were replaced when the War was over, while the useful AA place signs were not. So this sign was never called for and eventually it became part of a fence that restrained a herd of pigs. As Twyford is in Berkshire, though, this might have been appropriate if the pigs had been of the famous breed of black pigs known by the county name.



A queer place for an A.A. place sign. Photograph by H. L. G. Heath, Reading, who sent in the story of the sign given on this page.

Century-Old Mile Post

The lower illustration on the opposite page also has a road significance, but this time in far away New Zealand. It is an historic post, almost a century old, as the sign erected on it shows, and clearly is very highly cherished, as it is preserved by the Auckland Automobile Association.

The place where this post is to be seen is on the main road to the south from Auckland, one of the earliest settlements in New Zealand. The road continues to Rotorua, where are the famous Hot Springs of the North Island of New Zealand.

Iron Ore Transporter Cranes

In the *M.M.* for July last there was an article describing giant transporter cranes used to unload iron ore from the vessels in which it is imported. They are in Bidston Dock, in the Merseyside Docks and Harbour Board system, and the ore is delivered by them into large capacity railway wagons that carry it to the works of John Summers and Sons Ltd., Shotton. The article gave the information that three cranes were in use, but the picture accompanying it showed only two of them, as the photograph from which it was reproduced was taken before the scheme was completed.

Now I can show readers all three at work, as they are seen in the upper picture on the next page. They can be moved along the quay on the specially prepared track

(Above). The three transporter cranes of Bidston Dock, all unloading iron ore from one vessel. Photograph by courtesy of Rea Ltd., Liverpool.

(Below). An historic mile post in New Zealand. Photograph by Flt. Lt. J. L. Hunt.

to work in different positions and in different ships, or all three can be concentrated on one vessel, if this is suitable, as shown in the picture.

The transporters were made by Clyde Crane and Booth Limited for R. and J. H. Rea Ltd., Liverpool, coal and ore contractors.

The Anglesey Column

While on holiday in Anglesey I came across the Marquis of Anglesey's Column, sometimes referred to as Anglesey Column. It was erected in 1816 in memory of the first Marquis of Anglesey, who commanded the cavalry at the battle of Waterloo, where the Marquis lost a leg.

The column stands on a knoll 250 feet above sea level, near Llanfair. It is 91 feet high and is surmounted by a statue of the first Marquis in Hussar uniform. A small admission fee is charged. The top is reached by climbing 115 steps. The climb is well worth while, as a panoramic view of the surrounding countryside, including the mountains in North Wales, can be seen from it.

It is said that upon the first Marquis's leg George Canning, the statesman, wrote an epitaph. This consisted of nine verses, of which here is the first.

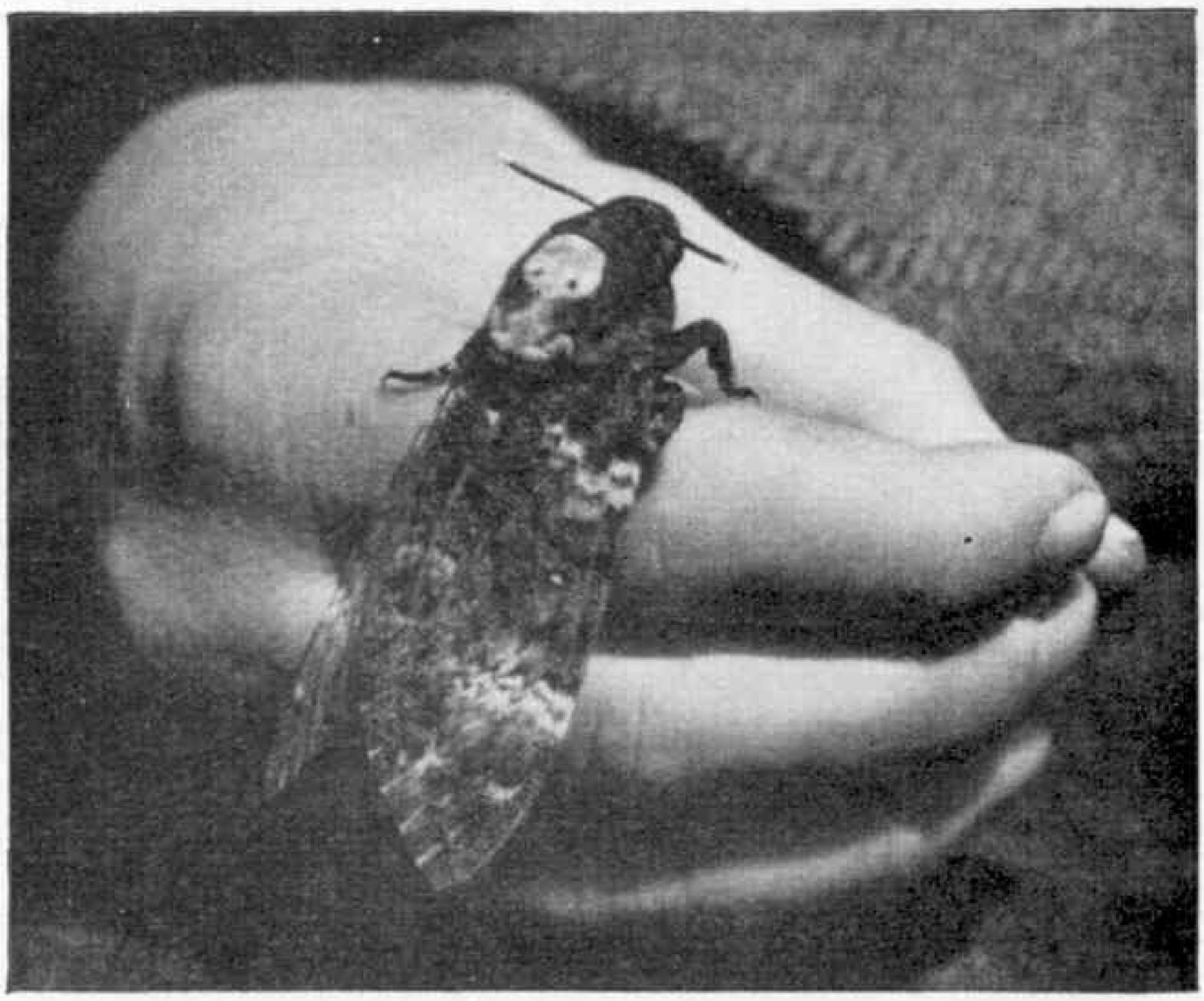
Here rests—and let no saucy knave
Presume to sneer or laugh
To learn that mould'ring in this grave
There lies—a British calf.

MICHAEL THEAKER (Rhyl).

Moth Invasion

Death's Heads in Britain

By L. Hugh Newman, F.R.E.S.



POSSIBLY you didn't hear about the invasion of England that began on 2nd September, 1956. It wasn't an invasion of enemy forces, so it didn't get a lot of publicity, except among naturalists, but we certainly were very excited about it, for it was mainly one of Death's Head moths.

As perhaps you know, the Death's Head is the largest of all the moths that ever put in an appearance in this country. I wonder if you have ever seen one alive—or even dead? It's an impressive insect either way, but much more interesting alive than when it is pinned and set in a butterfly cabinet. It is about two and a half inches long and its wing span is nearly five inches. It isn't what you'd call a pretty moth exactly, for its wings are dark, and when it's sitting at rest you can't see the yellow under-wings, or the body, which is banded in yellow. But what you would notice at once, if you ever found one of these moths, is the skull mark on the back. It's this mark, a cream coloured one very much resembling a small skull, that has given the moth its name.

Did you know that early in September of last year there was an airborne invasion of England? It went on for a couple of weeks. But the invaders were moths that carried on their backs a cream coloured mark resembling a skull. This you can see in the picture of one of the invaders at the head of the page, and here is the story of their exploits.

In the old days ignorant people in Europe used to be very frightened of the Death's Head. They thought it was a bad omen to find one and because of the skull mark it was said to foretell all kinds of disasters like pestilence and famine and war. And if it happened to squeak it was worse still, for somebody in the household was then bound to die very soon!

On the whole insects are silent. Just a few of them can make chirping and scraping noises, or hum when they fly, but precious few of them can squeak like a mouse. But just to be different from other moths, the Death's Head can squeak, and nearly always does squeak when you touch it. Sometimes it'll make the noise even though it isn't being touched—any sort of unusual excitement seems to make it vocal.

Now a Death's Head hasn't got vocal cords, so the noise it makes isn't a voice in the usual sense. It is really a kind of whistle and it's produced when the moth forces air through its short stumpy tongue or proboscis, which is a little hollow tube. Most of the other moths have either got very long tongues or no tongues at all, and as far as I know the Death's Head is the only one that has this tongue-cum-whistle arrangement.

But let us get back to the invasion. Every year a few Death's Heads fly over to England from the Continent, usually early in the summer, and on an average nine or ten are seen and recorded. But this time they came in swarms and they spread out all over the country. Nobody saw these swarms arrive, but one letter I had about

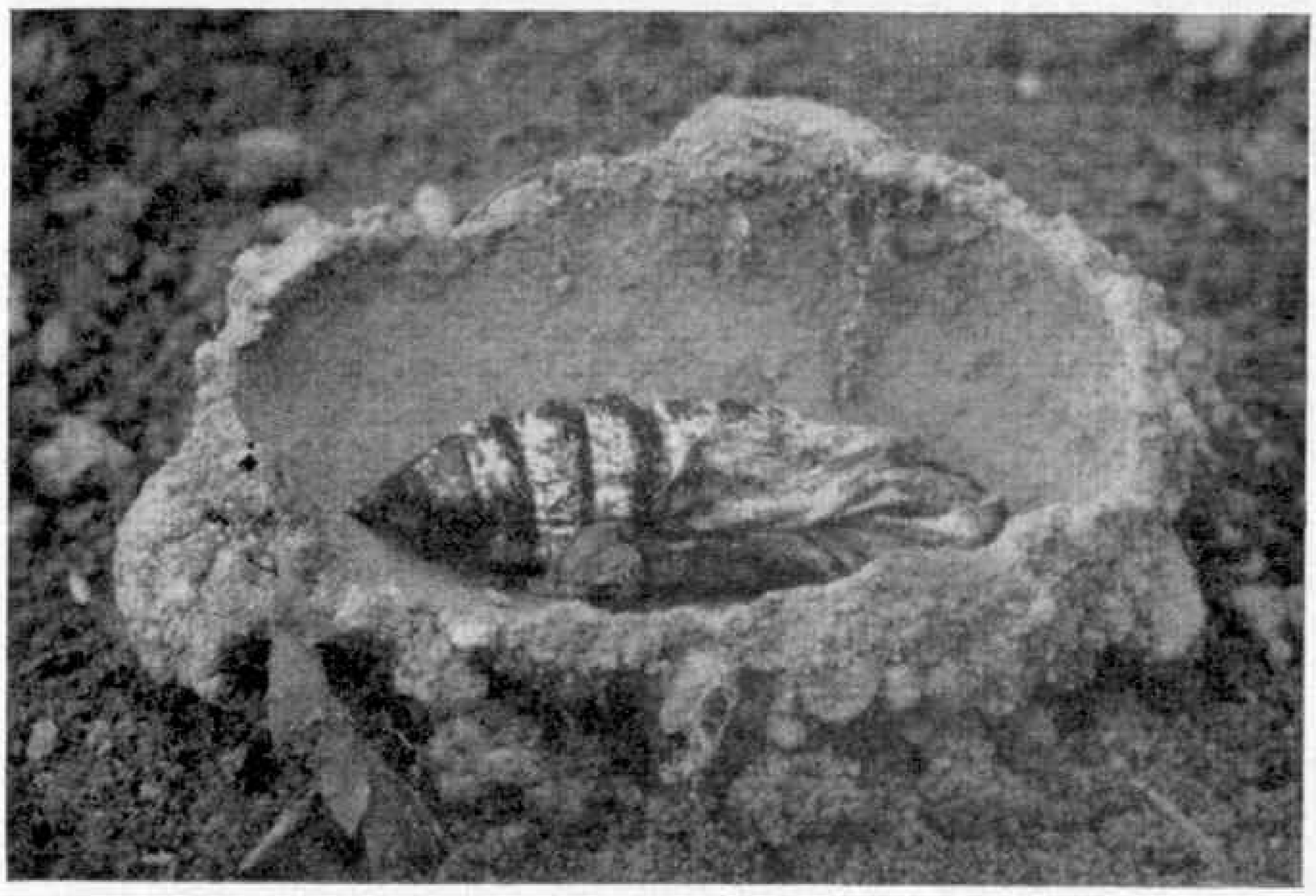
these moths is proof in itself of the invasion. It came from a yachtsman who was crossing the Channel from France, making his way towards a harbour in East Anglia, during the first week in September. During the small hours of the morning he noticed something peculiar about the deck and rigging, and when it became light enough to see properly he found that hundreds of Death's Heads were settled all over the boat. Just before sunrise they all took off and headed northwards, towards the mainland.

If a swarm like that just happened to find a resting place in mid-Channel, it is certain that a great many more crossed in other places. Actually Death's Heads were picked up all along the South and South East coast, sitting on breakwaters, huddled in the porches of seaside houses, and in sheds and gardens. These were just chance finds, and for every moth that was seen, dozens and even hundreds must have been missed. These big migrations usually take place at night, when the chances of anybody noticing the moths at all are very small. Nearly all the Death's Heads that were found seemed to be in a very exhausted condition, as if they had travelled a long way, and most of them died very soon afterwards.

But even though they were exhausted, they didn't stop when they crossed the coast. The invasion went on, and the moths continued their journey, spreading out all over the country, both to the west and to the north, right up to the northernmost part of Scotland and the Outer Hebrides. On the island of Canna a friend of mine found one sitting on a butterfly net he had left lying in his porch! There's an extraordinary coincidence for you!

You might very well expect to find a rare insect in your garden, say on a plant or even on a fence, but so many of these Death's Heads were picked up in peculiar places. A lady who was helping to decorate a church in the East Riding of Yorkshire for Harvest Festival found a Death's Head in one of the pews. In a small village in Northumberland one of these big moths came blundering round the lights of a fun-fair and in Great Yarmouth harbour one was found in the hold of the ship, settled on a heap of pea-nuts. Several were found in garages and one even in a bus depot. In Tunbridge Wells a man went to look at his car, which was covered with an old raincoat, and as he lifted the coat a Death's Head fluttered out.

Several Death's Heads were found in towns. One was picked up in Derby, another in a busy shopping street in Bath, and one even in London, where it was seen crawling on the pavement of Victoria Street.



The pupa of a Death's Head moth unearthed. This photograph and the one on the opposite page are by Walter J. C. Murray, Horam, Sussex.

Like all moths, these big hawks are attracted by bright lights. Many entomologists in this country have moth traps, which are switched on in the evening and left during the night to attract any moths that may be passing. In the morning their owners go out and see what has been caught. Last autumn several of them had a real surprise. A Death's Head isn't the sort of thing you expect to find in a moth trap in the ordinary way. Several collectors found single specimens, one or two extra lucky ones caught three or four, and one man in Wiltshire thought he was still dreaming when he went to the trap and discovered no fewer than sixteen. He was so overcome that for quite a while he didn't tell anybody a word about it, but as the news of a general Death's Head invasion began to spread he spoke of his

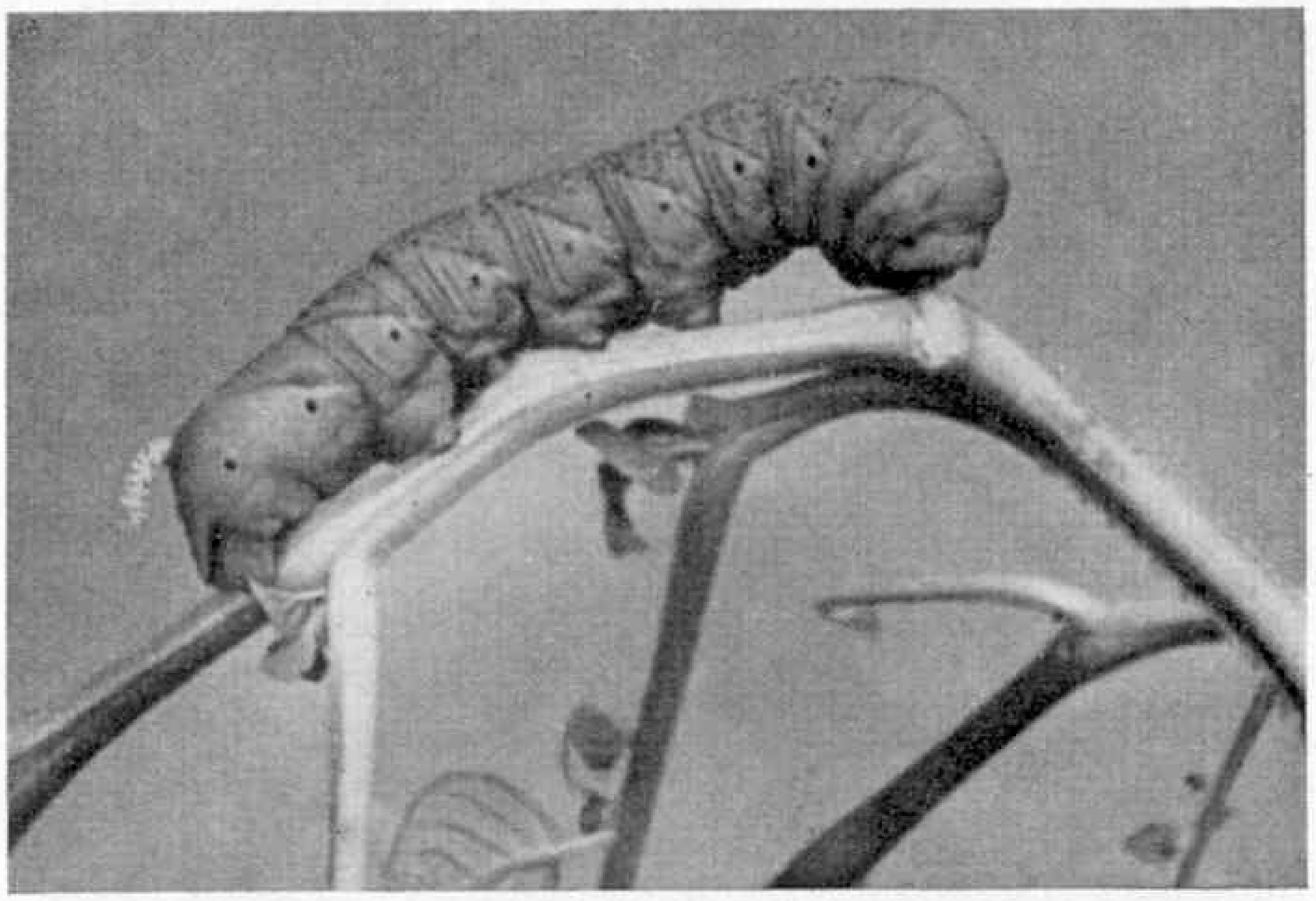
amazing experience—the sort of thing he would certainly never live to see again.

Now why did these moths come here like this last autumn? That's a question I'm afraid nobody can answer. There was obviously something about the weather at the beginning of September that encouraged migration. A lot of birds crossed the Channel then as well, and also quite a number of Convolvulus Hawk moths.

The Death's Head breeds in Africa and in the Middle East, where its caterpillars can find food all the year round. It is a moth that has the instinct to migrate, and there was obviously a migration in the early part of the summer and just a few of those travellers came to England. The rest probably bred in France, and most naturalists think that the big September invasion consisted of moths that had been bred in France and continued the northward journey their parents had begun. They must have had travel fever in their blood, so to speak, but I'm afraid that for them it was a journey of no return. It was too late in the year to breed here, and I very much doubt whether any of them would have had the strength to return south again.

Death's Heads do breed over here though, if they arrive early enough. Nearly every year somebody finds an odd caterpillar or two feeding on potato plants, or digs up a shiny brown pupa when the potatoes are harvested. There's certainly no mistaking a Death's Head caterpillar. When it's full grown it's more like a small snake than a caterpillar. Very few caterpillars ever eat potato leaves anyway, so if you find such a creature chewing away in the potato rows you can be pretty sure that it *is* a Death's Head.

A full grown Death's Head caterpillar is four and a half to five inches long and its waist measurement is pretty nearly two inches. It is usually clear greeny-yellow in colour, with seven short sloping purple stripes along each side. The back is dotted with little rough black spots, looking very much as if somebody had given it a good sprinkling with black pepper. The head is quite small, but the two segments just behind it are rather puffy and swollen, so that the creature appears to have a big head. At the opposite end is a rather silly looking short tail, that curls downwards. It always reminds me of the tail of a bulldog.



The caterpillar stage in the life of a Death's Head moth. Photograph by Oliver G. Pike, Leighton Buzzard.

If you should ever happen to find one you can quite easily enough encourage the moth to emerge by placing it on a bed of damp moss in a warm atmosphere. The moth will come out in a few weeks. You can keep it alive for a long time by feeding it on honey or on sugar syrup. An old English name for it was the Bee Tyger, and in the countries where this fine big moth breeds it is very usual to find it among the bee hives. Bee keepers in Africa and the Middle East take special precautions to prevent it from entering their hives, by making the entrances too narrow for their big fat bodies. The bees certainly don't like these visitors, and many a Death's Head has been found stung to death at the bottom of a hive. Old naturalists used to think that the squeak of the Death's Head had a sort of hypnotic effect on the bees, so that they just stood aside and let the robber enter unmolested to feast on their stores, but I'm afraid this was just a pretty fancy.

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.

An Automatic Potato Planter

On a farm near Comber, Co. Down, I saw a new machine for the planting of potatoes at work last spring. The potatoes were put into hoppers at the back, and from there, as the machine moved, they were lifted one at a time by means of a conveyor chain with prongs. The prepared ground was opened up by means of a small disk and a fork, or coulter, and the seed potato dropped down a tube into the drill. Two inclined disks coming on behind covered up the potato with soil.

Potato planting by machine in Northern Ireland. Photograph by R. P. Bainbridge, Belfast.

A very interesting thing was that if the prongs did not lift a potato, a lever at the top opened a circular box and let a potato down the tube. So there were no misses!

The machine is driven by the power take off of the tractor. The accompanying illustration shows two drills being used. A third unit can be added, and sometimes is, to make three drills.

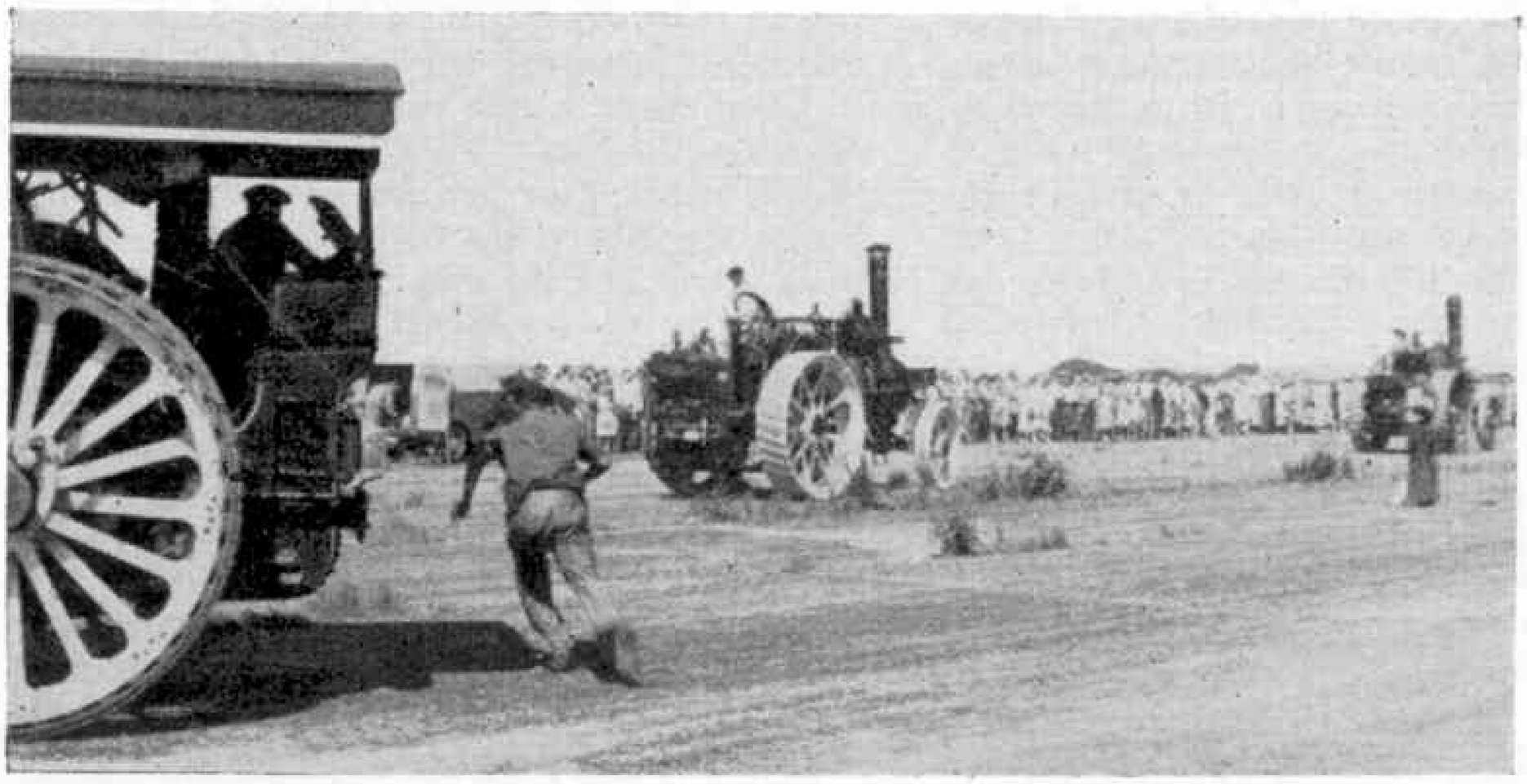
R. P. BAINBRIDGE (Belfast).

Steam Musical Chairs

Can you imagine playing musical chairs with a 10-ton steam roller? This is what I saw at a "Steam Festival" run by a Young Farmers Club. The 23 steam engines, road locomotives, road rollers etc. to be seen came from all parts of the country to join in the races and games. The oldest was a 7 h.p. Burrell traction engine that was new in 1902; the newest was a mere twenty years old.

I was surprised at the engines' turn of speed when they had full steam up. One event consisted of driving in and out of a row of metal drums and then reversing down the same course.

JON AMSDEN (Goldacre, Cambridge).



Competitors in traction engine "Musical Chairs" running to sit on drums at the fall of the flag on the right. Photograph by J. Amsden, Cambridge.

Road and Track

By Peter Lewis

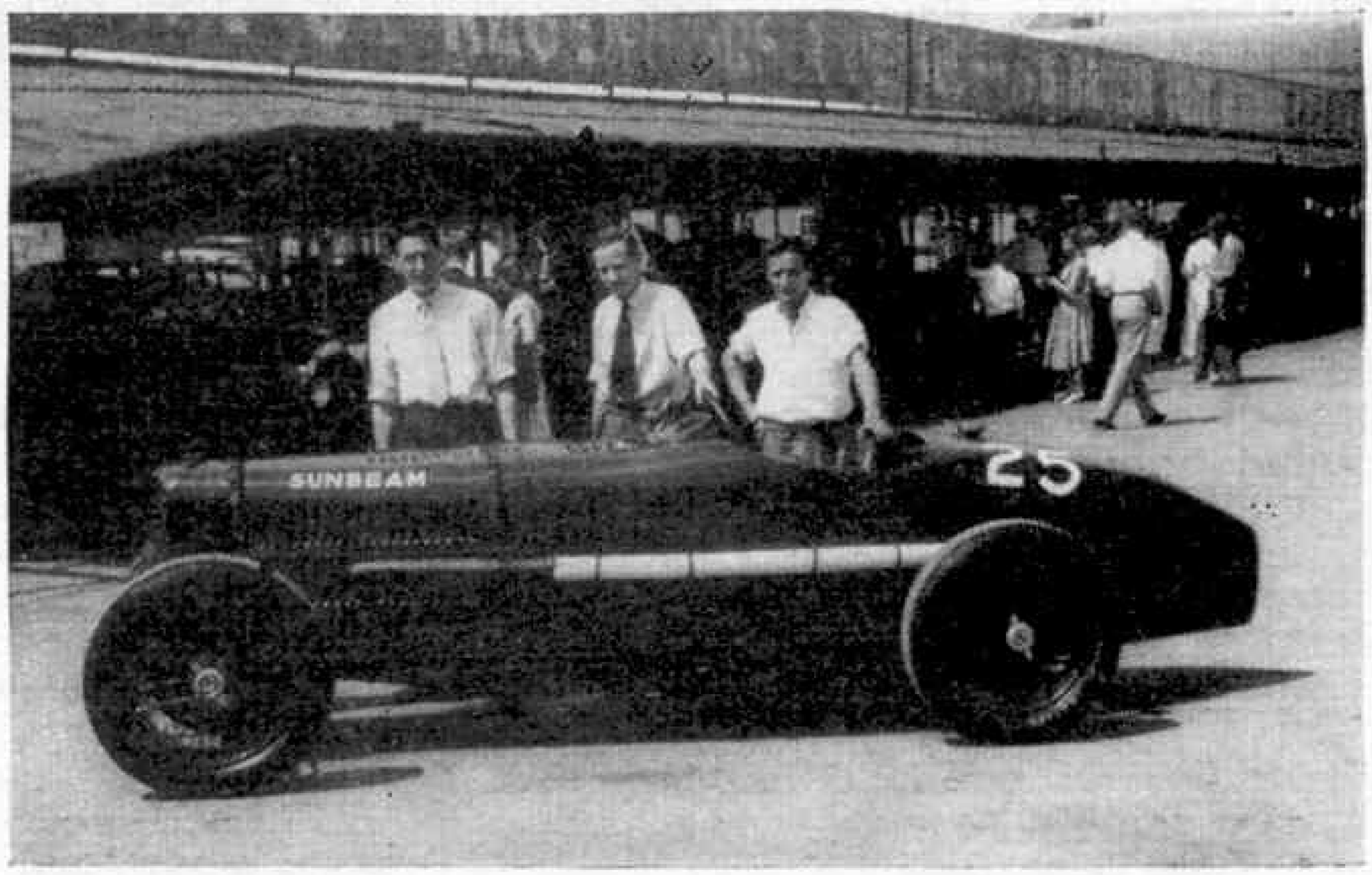
IT was a strange trick of fate that Stirling Moss should win the Grand Prix of Europe at Aintree—the first victory in a major classic of a British driver on a British car since the late Sir Henry Segrave won the French G.P. at Tours in 1923—only two weeks after the Golden Jubilee of Brooklands, a track where so much motoring history has been made. It was a sad occasion, this farewell on Jubilee Day by many personalities in the world of motoring and aviation to the world-famous track, which now belongs to Vickers-Armstrong.

I drove down there some hours before the unveiling of a memorial by The Rt. Hon. Lord Brabazon of Tara, who on 6th July 1907 drove in the first race held on the Brooklands circuit. I wanted to see what had become of the track we knew so well before the war, for although I only visited Brooklands for the first time in 1934, I became an ardent supporter and a great admirer of the men and machines that raced there.

I drove slowly round parts of the famous banking, where many sections are overgrown and almost hidden from view by foliage, and others are occupied by aircraft frames and spares. At one point several hundred yards of the banking has been destroyed so that aircraft can take off and land on the Vickers - Armstrong runways. Yet standing there in the sunshine one could imagine once again John Cobb's 1934 12 cyl. 23,936 c.c. Napier-Railton thundering round the banking on its record lap of 143.44 m.p.h. in 1935—or Noel Pope, astride his famous 998 c.c. supercharged Brough-Superior, raising the record for a solo machine to 124.51 m.p.h.

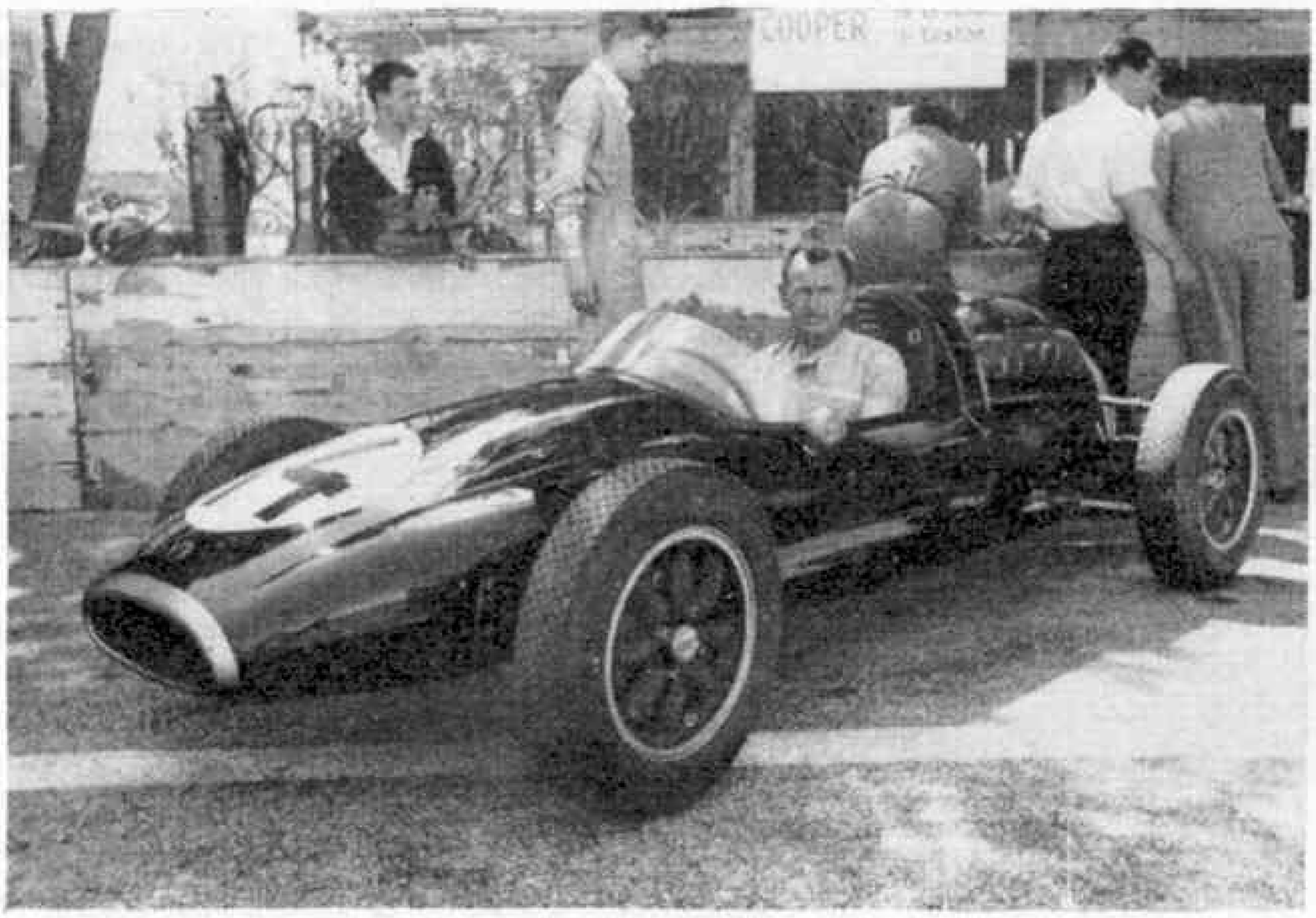
In the paddock on Jubilee Day, the stalls were occupied once again by many of the cars and motor cycles that used to race at Brooklands, including the two mentioned above, and at frequent intervals we heard the sort of delightful crackling exhaust noise that one usually associates with the Mark 1 B.R.M., but which was commonplace in pre-war days.

As these wonderful old machines, many of which still take place in events for vintage cars, were prepared for the farewell parade that followed Lord Brabazon's speech, the paddock became a meeting point where old friendships and acquaintanceships were renewed.



One of the 1924 Sunbeam team cars, which had been driven by such famous racing motorists as Sir Henry Segrave and Kaye Don, appeared again at Brooklands on Jubilee Day last July.

They made a fine, nostalgic sight, these Brooklands cars. To mention only a few there was the record-breaking 4-litre Sunbeam driven by Kaye Don, who drove it again in the parade, Sir Henry Segrave, Sir Malcolm Campbell and John Cobb; the 1929 Bentley of "Tim" Birkin, one of the famous "Bentley Boys"; the 1925 Grand Prix Delage; the 1913 Benz which was once Hindenburg's staff car; the fabulous Chitty-Chitty-Bang-Bang II with its massive aeroplane engine; the first M.G. ever built, in 1923; the 1910 10-litre Fiat, which was still winning races in 1925; Tazio Nuvolari's Bugatti; and two 1924 30/98 Vauxhalls that can still do 120 m.p.h.



Alf Francis, the famous motor mechanic, in the Cooper Climax of Jack Brabham at Monaco. Photograph by courtesy of Motor Racing.

The Minx/Rapier Engine

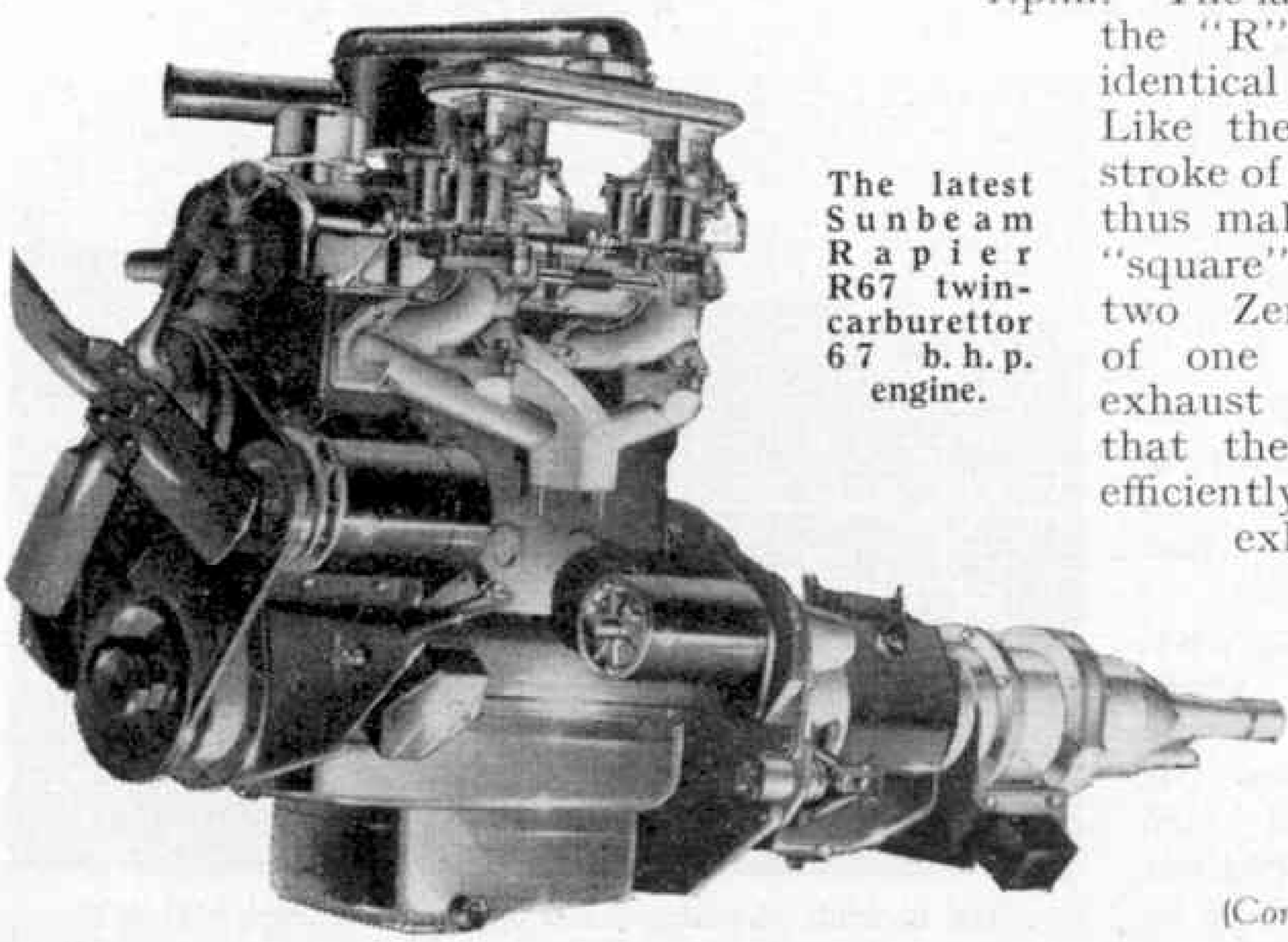
There are numerous examples today of motor cars using the same basic power unit in different body shells and a very good example is the Hillman Minx engine, which is modified slightly and tuned for extra performance so that it can be used in the Sunbeam Rapier. Incidentally the body shell of the Rapier is the Minx convertible with a hardtop.

It is now just twenty-five years since the Hillman Minx made its debut and it rapidly established a name for itself as a sturdy, reliable saloon with an economical petrol consumption figure. Nowadays, as I found recently when the Rootes Group loaned me one of the latest Minx saloons, the car is not only reliable and economical, but is also a surprisingly agile and fast 1.4 litre saloon, with good handling qualities. With a top speed of 75 m.p.h. and a third gear that takes the car to over 60, the Minx invites hard driving and likes it.

It came as no surprise to those who had owned Minxes when, at the 1955 Motor Show, Sir William Rootes introduced the Sunbeam Rapier and powered this graceful car with the same basic 4-cylinder, 1,390 c.c. O.H.V. engine as that used in the Minx. The following year the Rapier was first and second in its class in the gruelling Mille Miglia, at an average over the whole course of more than 65 m.p.h. This year the Rapier of Peter Harper and Jack Reece covered the thousand mile course fifty minutes quicker than last year—a fine run described on page 424 of this issue—was second in its class and was reaching a maximum of more than 105 m.p.h. on the fast stretches down the Adriatic coast.

The 1957 Minx engine, with a single Zenith downdraught carburettor, has a compression ratio of 8 to 1 and a maximum brake horse power figure of 51 at 4,600 r.p.m. The latest Rapier engine, known as the "R" Sixty-Seven, is basically identical with that used in the Minx. Like the Minx it has a bore and stroke of equal dimensions, 76.2 mm., thus making it what is known as a "square" unit, but it is fitted with two Zenith carburettors instead of one and both the inlet and exhaust manifolds are modified so that the engine can breathe more efficiently. New type heat resistant exhaust valves are also fitted to give longer life.

With a compression ratio of 8 to 1, as on the Minx, the "R" Sixty-Seven develops 67 b.h.p. at 5,400 r.p.m. Gear ratios of the four-speed



The latest Sunbeam Rapier R67 twin-carburettor 67 b.h.p. engine.

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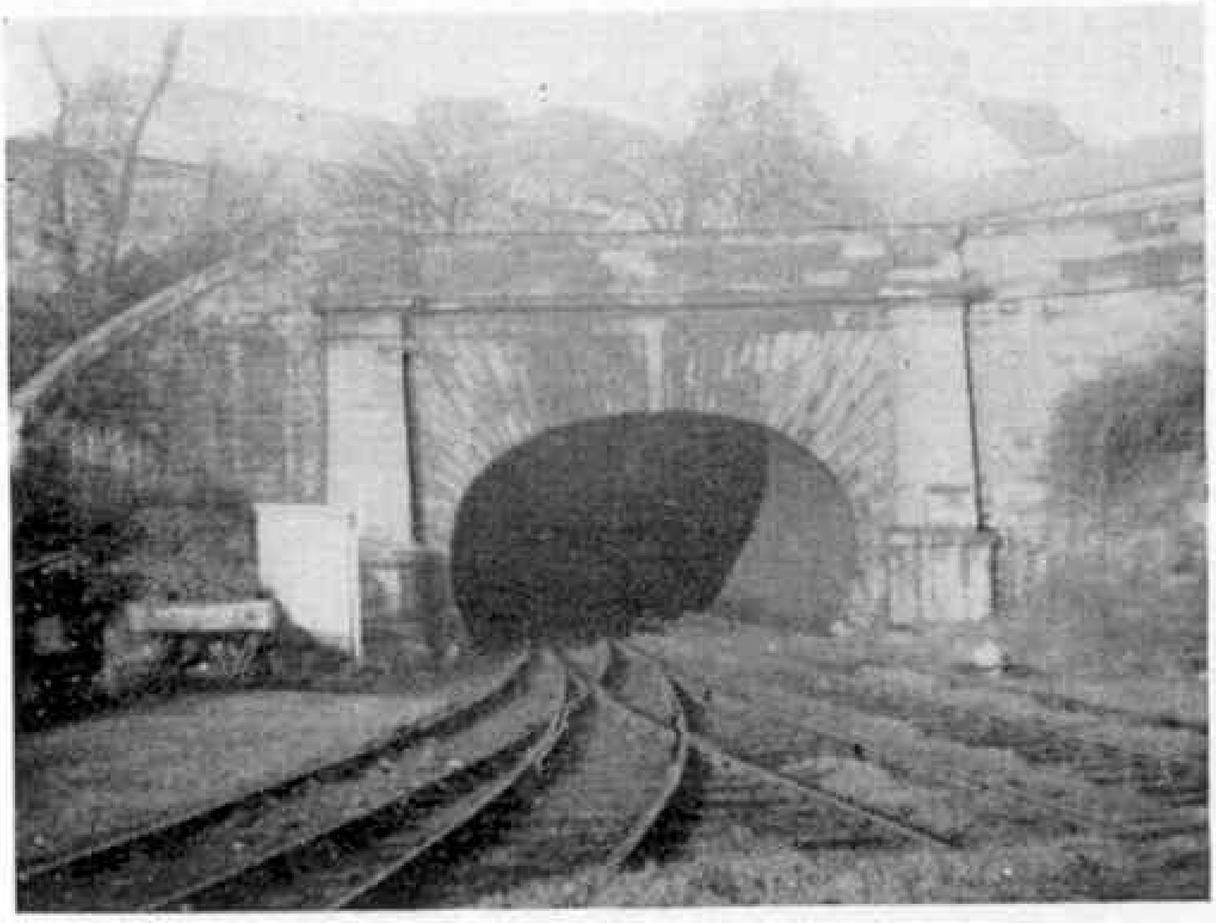


The tunnel mouth where once hump-backed dragons crouched and puffed.

I Live On a Tunnel!

By R. V. Dickson

FORTY years ago in Edinburgh's Canonmills School, the little ones at "Playtime" on a wet day stayed indoors and sang a little song:

The rain is falling very fast, we can't get out to play.
But we'll be happy in our school, upon a rainy day.
(Chorus) So it's Tramp, Tramp, altogether, Tramp, Tramp away,
We'll be happy in our school, upon a rainy day.

With each resounding "Tramp" our old-style "tacketty buits" thundered upon the floor and, though we knew not, down through the foundations and into the earth to resonate on the roof-slabs of a piece of ancient railway history, Edinburgh's old Scotland Street Tunnel.

Forty years on and contractors acting as undertakers to Edinburgh's defunct tram system unearthed, a few yards from my door, a sequence of oddly curved slabs of stone beneath the roadway, and across the torn-up street they lay exposed —the old roof slabs of Scotland Street Tunnel.

The Scotland Street Tunnel was driven in 1841 by the Edinburgh, Leith and Newhaven Railway to provide a link between the then Canal Street station, just North of where the vast Waverley sprawls today, down through the steep slope of Edinburgh's new North Town to Canonmills. Thence the line went on to the environs of Leith pier, where ferries carried patient passengers in more leisurely days to the Fife shore to join the trains of the Edinburgh and Northern Railway and thus to Tayside, later to the remoter fastnesses of Northern Scotland.

The incline was 1 in 30, and was originally worked by cable traction upwards and by gravity downwards, a spectacular example of either the efficiency or the optimism of our forbears.

The Tunnel and its ferries from Edinburgh via Leith to Fifeshire struck the first blow at that Queensferry passage 10 miles west of the City, later to be conquered by the mighty Forth Bridge familiar to all Meccano model-builders.

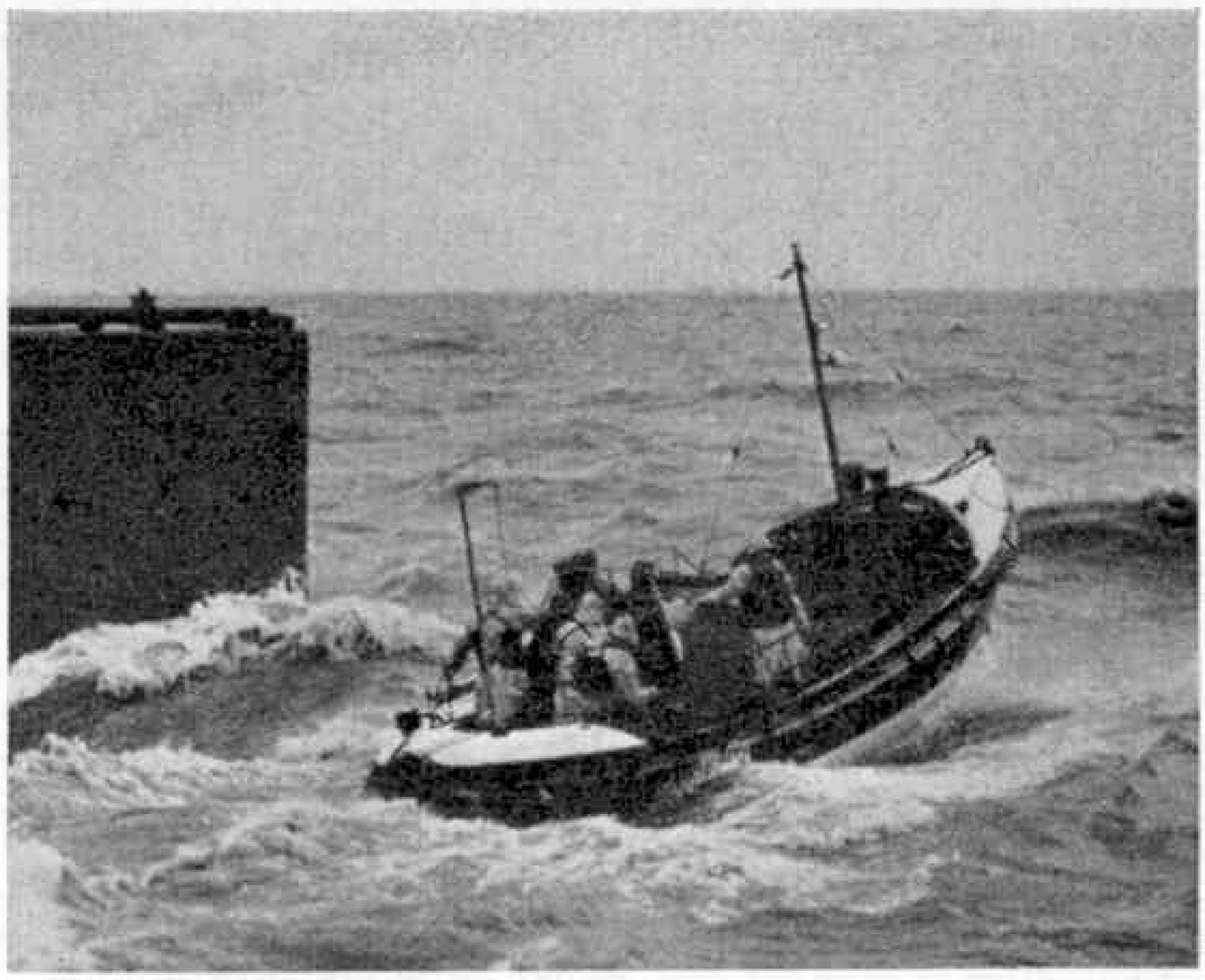
Scotland Street Tunnel proper emerged at its lower end from its spectacular descent—brakes were brakes in those days!—just beside the school, into an open section called the "Coalfall," a brick and coal yard much frequented by adventurous youth, unlawfully. It then ran on in tunnel again under the school and Edinburgh's Rodney Street, and out through the pleasant pastures of Warriston to the sea.

Still today the 0–6–0 "maids-of-all-work" of British Railways toil with their coal-wagons to that happy haunt of youth, the Coalfall, through the last remaining section of the Tunnel, but the 1 in 30 slope to Canal Street station, whose remains are now lost under the stately pile of our General Post Office, is barred forever to even the

(Continued on page 474)

The Coalfall, to which 0-6-0 maids-of-all-work still toil.

The Life-boat Service Today



The Bridlington life-boat putting out to sea. Illustration reproduced by courtesy of "The Yorkshire Post."

IN the 134 years since the Royal National Life-boat Institution was founded its life-boats have saved many thousands of lives. Today the calls for help that it receives are more numerous than ever, and average over 600 a year.

The appeal for aid may come from a vessel in distress—and this may be anything from a small yacht blown out to sea by a sudden gale to a large ship fast on the rocks or aground on sands—or it may be a call to go out in search of survivors from an aircraft which has come down in the sea, or to rescue bathers who have got into difficulties. Sometimes the life-boat may take a doctor out to a ship, or go to bring in an injured seaman; and in the outer isles, where no other boat is available, a doctor or a patient may be taken from an island to the mainland.

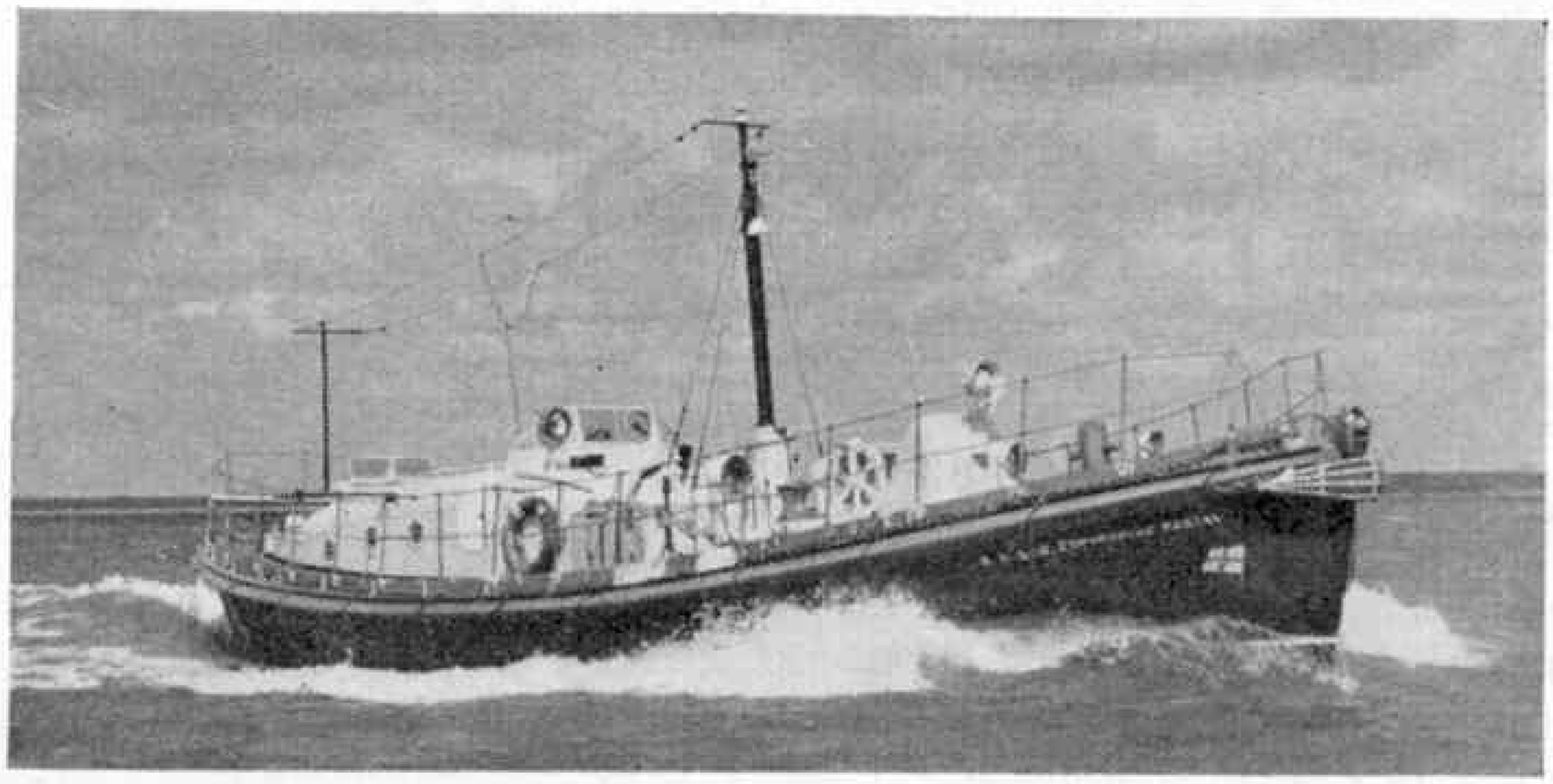
Very often these errands of mercy are carried out in most hazardous conditions. Such was the case in July last year when, between the late evening of Saturday 28th July and Sunday 29th the Life-boat Service experienced the busiest day in its history. Widespread gales swept the coasts, and gusts of 88 m.p.h. were recorded. Coming unexpectedly at the height of summer, the gales wrought havoc among yachts and pleasure craft at sea, and urgent calls for help were received at 38 life-boat stations. The response was immediate, and the 52 launches on service that took place during that stormy period resulted in 107 lives being saved. Some of the heroic rescues that were effected are described in the Royal National Life-boat Institution's booklet *The Story of the Life-boat, 1957.**

In the early days of the Institution its fleet of rescue craft were all sailing boats—indeed, the last of this type of life-boat was retired as recently as December 1948. Today, with the exception of one pulling type life-boat stationed at Whitby and used for a special purpose, all the craft are power-driven. Petrol motors were first tried out in life-boats in 1904, and the earliest experiments with diesel engines in these boats were carried out in 1932. The early power-driven life-boats had single screws, and used their sails as a source of auxiliary power, but when twin-screw vessels were introduced this secondary aid became unnecessary and sails were dispensed with. Now the Institution's fleet includes 64 diesel-engined life-boats, and it is intended that all future boats shall be twin-screw, diesel-engined craft.

A modern life-boat, such as the one illustrated below, may cost as much as £37,500. The hull and machinery of course account for most of this heavy outlay, but a great variety of equipment and stores is carried. With the exception of seven short-range boats, all the Institution's life-boats are equipped with radio telephony. No radar equipment is fitted, however, as tests have shown that it would not offer practical advantages. One snag is that the radar scanner cannot be fitted high enough above the water to give satisfactory results, except in very calm seas—and that is when, normally, life-boats are not needed!

A new aspect of life-saving around our coasts is the use of helicopters for air-sea rescue work by the Royal Navy and the R.A.F., and in some places by the United States Air Force. As a result, many R.N.L.I. life-boats are now equipped with V.H.F. radio-telephones.

* *"The Story of the Life-boat, 1957." Published by the Royal National Life-boat Institution, 42 Grosvenor Gardens, London S.W.1., price 1/6.*



One of the modern 52 ft. life-boats is the "Euphrosyne Kendal," stationed at St. Peter Port, Guernsey. R.N.L.I. photograph.

"I Would Not Miss It For Worlds"

Farnborough's Greatest Flying Display

By John W. R. Taylor

SEVERAL people have told me that they will not bother to go to Farnborough this month to see the S.B.A.C. Flying Display and Exhibition, because it is likely to get more and more dull each year now that fighters and bombers are beginning to give way to guided missiles. With all due respect to them, this is utter rubbish. The 1957 Display will be as good as ever, and perhaps the most exciting of all.

Obviously, if you go to Farnborough every year, successive displays will seem very similar; because new aeroplanes often appear within weeks or even days of their first flight and then turn up repeatedly year after year. This is true particularly in the case of important aircraft, like the Viscount, which earn a great deal of money in foreign orders, for the S.B.A.C. Display is first and foremost a trade show, designed to show all our aviation wares to customers from overseas.

The picture at the head of the page shows the H.D.M.105 freighter, a Miles aircraft fitted with a French Hurel-Dubois type of wing—hence the initials H.D.M.

Nevertheless, each year produces its crop of new types—sometimes quite a lot, sometimes only one or two—and this year will be no exception. At the time this is being written, no decision has been taken on what will appear, but there are some interesting possibilities.

For example, F. G. Miles Ltd. will probably demonstrate their little Student jet trainer, described and illustrated in this month's *Air News*, and the H.D.M.105, which is a small freighter fitted with the amazing French Hurel-Dubois type of wing. It seems almost impossible that such a long, narrow wing can produce sufficient lift to keep a heavily-loaded aeroplane in the air; but it does, and if you think that a cargo-plane does not sound very exciting you may change your mind after you have seen the H.D.M.105's quick take-off, incredibly tight vertical banks and other manœuvres.

Aviation Traders may show for the first time their new Accountant transport, powered by two Rolls-Royce Dart turboprops. It is an interesting machine, because it was designed primarily as a "business" aircraft for companies that want to move their executives around in a hurry. The Americans go in for this form of travel in a big way, but British firms have been slow to follow suit, mainly because distances are so short in the United Kingdom.

The Accountant should help to change this state of affairs, especially now that we are beginning to trade more with the Continent, because it has a maximum range of 2,420 miles and cruises at almost 300 m.p.h. It can be equipped to carry eight people in great luxury, up to 28 passengers in airline-type seating, or heavy loads of freight; so it promises to be a useful addition to our world-beating series of transport aircraft.

If you are more interested in high-speed machines, you may get a close look at the English Electric P.1 fighter for the first time this year, although it is doubtful if the Ministry of Supply will let us see much of

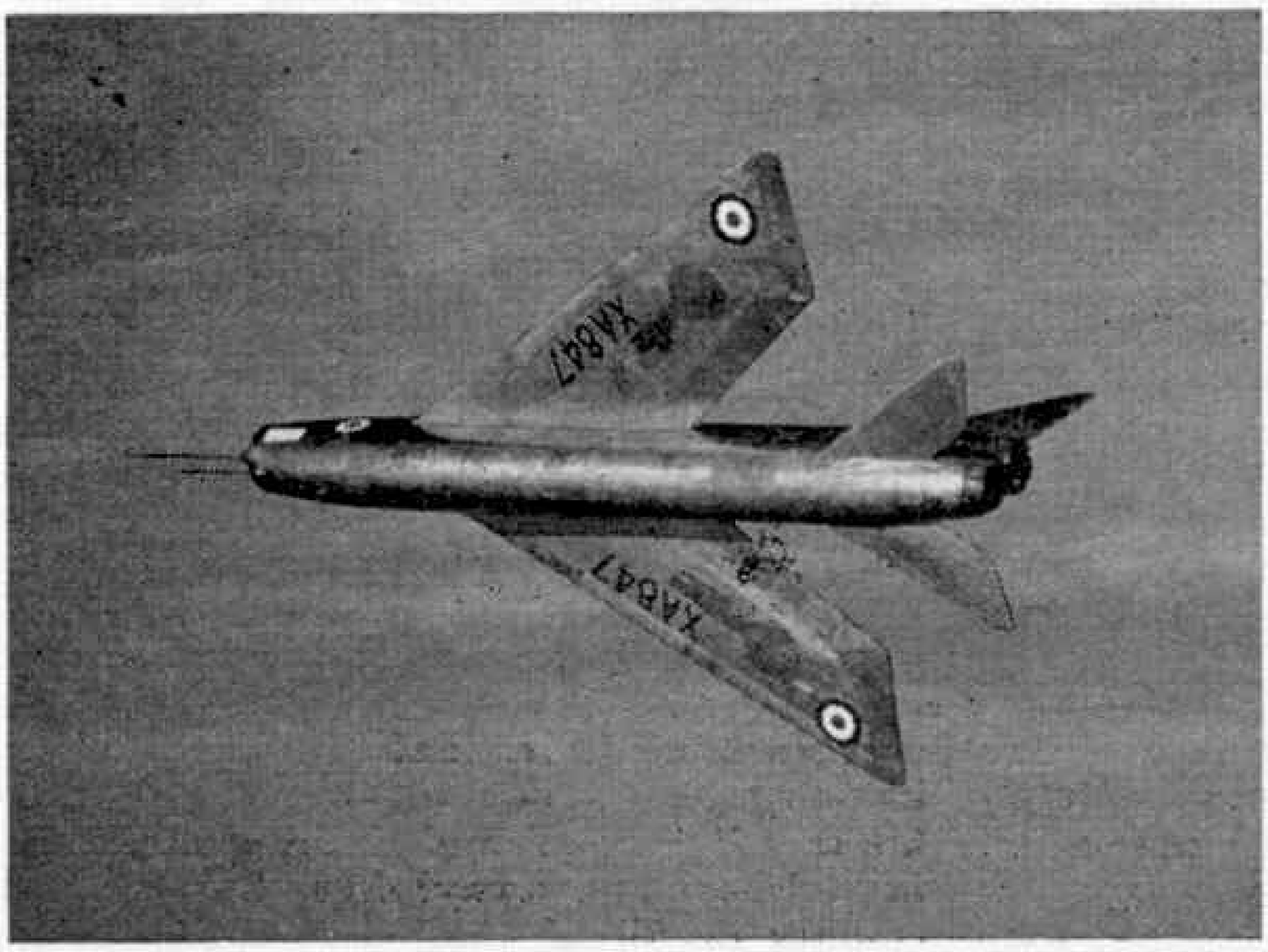
the new P.1B version, as its engine air intake is still secret. Nor is it known yet whether they will let Saunders-Roe show the new S.R.53 jet-and-rocket fighter; but if it is there it will be one of the stars of the show because, like the P.1B, it is intended in its developed form to reach speeds of up to 1,500 m.p.h.

The prototype of Aviation Traders' Accountant transport being wheeled from the hangar. It will be noticed that at this stage the propellers had not been fitted.

This brings us back to the question of missiles replacing piloted interceptors. Some newspapers give the impression that the Royal Air Force is about to change overnight into a corps of button-pushing boffins, which is far from true. At the moment, there are no anti-aircraft missiles in service in Britain, and it will be at least seven to ten years before they are good enough to replace piloted interceptors completely. Before that time, perhaps within two or three years, they will take over the close defence of certain vital targets, such as the bases for our V-bombers; but there will be a big job for the P.1B to do right up to the middle '60's.

Nor does the Government's statement that the R.A.F. will have no more piloted interceptors after the P.1 mean that we shall see no more new British fighter 'planes. The R.A.F. will certainly want a ground attack fighter, and Hawker's are building one as a private venture that we should see at the 1958 S.B.A.C. Display. In addition, the Royal Navy will continue to need interceptors to defend its ships at sea, and will probably order a developed version of the Saunders-Roe S.R.53 to follow the Supermarine Scimitar and de Havilland Sea Vixen, of which production versions will be seen for the first time this year.

It is always dangerous to try and look too far into the future in this aviation business, because every now and again some revolutionary new development like jet propulsion comes along to bring sudden tremendous increases in performance. But we can be quite certain that the next 15 years will be the most thrilling in flying history.



An English Electric P.1B fighter aircraft.

Quite apart from the introduction into service of jet air liners that will link London and New York in only six hours, we are at the beginning of a completely new pioneering age that will change not only the shapes of aeroplanes but the whole method of operating them.

We shall see the first signs of this at Farnborough this month if the Fairey Rotodyne or Short S.C.1 take part in the Display, because the primary aim of the new

pioneering is to dispense with the need for ever longer and stronger runways as the speed and size of aircraft increase. The Boeing 707 and Douglas DC-8 jet-liners will need up to two miles of concrete from which to operate safely, and it is frightening to think of the length that will be required by the next generation of supersonic air liners unless something is done to get them off the ground more quickly.

The answer may be some form of vertical take-off like that used in the S.C.1, which lifts itself off the ground by directing downward the thrust of four Rolls-Royce R.B.108 jet-engines mounted in its fuselage. When it has reached a safe height, the pilot opens up a fifth R.B.108 in its tail to thrust it forward, and when its fixed wings develop sufficient lift to keep it up, the downward-pointing jets are switched off.

For shorter journeys of up to 400 miles, the Rotodyne—which combines the vertical take-off ability of a helicopter with the cruising speed of a fixed-wing aircraft—promises completely new standards of performance and economy on inter-city journeys, provided towns will build helicopter landing sites in their centres.

So much for this year: what about the future?

Well, we know that there are improved, more powerful versions of the Victor and Vulcan bombers to come, which should be impressive. Blackburns are building a supersonic strike aircraft for the Navy, capable of carrying atomic bombs and rockets. Bristol are developing the Type 192 tandem-rotor helicopter for B.E.A. and the Army.

Westland will show their new turbine-powered Wessex naval helicopter this year and are working on the prototype of the 40-seat Westminster twin-turbine transport helicopter. Beyond these types is the Vickers VC.10 jet-liner, scheduled for service with B.O.A.C. in 1963 and powered, it is rumoured, with four Rolls-Royce Conway turbojets mounted on its rear fuselage like the engines of the French Caravelle.

Looking still further ahead to the mid-1960's, we should then see the prototype of the first supersonic air liner, which will mark a tremendous step forward; and beyond that are atomic-powered aircraft, engines for which are already under development by Rolls-Royce and other companies.

The prototype of the Westland Wessex helicopter making its first flight at Yeovil, Somerset, on 20th May last.

Nor is there any reason why missiles should be dull and uninteresting. Admittedly it will not be possible to have them demonstrated in flight; but they have already reached the stage where they will put a second "moon" in orbit around the world within the next few months as part of the International Geophysical Year research programme. America's Project Vanguard earth satellite rocket will attain a peak speed of 18,000 m.p.h. Another 7,000 m.p.h. would enable it to break away from the pull of gravity and speed off into space. How long is it likely to be then before a rocket sets out on the first journey to the Moon? The answer may be within ten years.

Is not the thought of space flight exciting? and vertical take-off? and supersonic air liners that will race the sun, bringing New York within two or three hours of London and making Australia only 16–20 hrs. away? We shall see the coming of all of these and many other equally exciting developments at

(Continued on page 455)

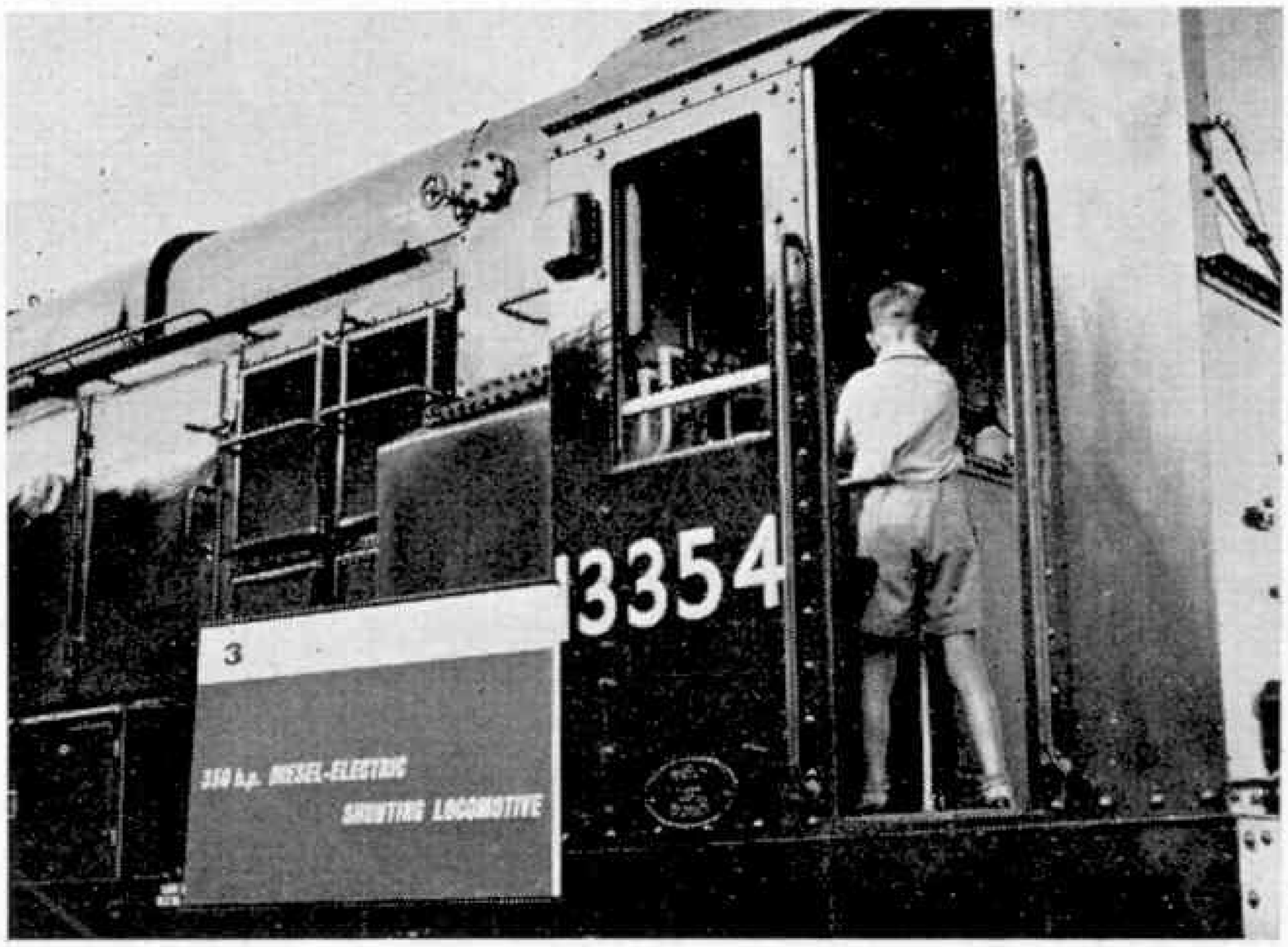
MECCANO MAGAZINE

Junior Section

LAST month I told you I would let you know where Taumatawhakatangihangakoauauotamateapokaiwhenuakitanatahu is. I hope that some of you found out for yourselves. I am sure that a good number of my New Zealand readers would do so and perhaps some of those who did not would be able to gather from the general appearance of its long name that the place is in New Zealand. The name is indeed that given to a hill in the North Island of New Zealand which has a height of 1,002 ft. above sea level. It is about five miles south west of Porangahau, a coastal township in the province of Hawkes Bay.

I heard about this place from a New Zealand reader, David Brown, Dunedin, who had noted with interest the picture of the sign on the famous railway station at Llanfair in Anglesey that appeared on the Editorial page of the *M.M.* for January last. That name, which I will not repeat here, has 58 letters in it, one more than the New Zealand example, about which David's father has sent me more information.

The position may change as far as the number of letters is concerned, for the name of this famous hill seems to have changed—for the longer—from time to time. In 1937 an official map gave a version with a mere 46 letters in it. But longer versions are now in existence, and David Brown suggests that perhaps future maps will accept one of these as official in order to outstrip the 58 letters of Llanfair. David Brown points out that so far as most railway enthusiasts are concerned Llanfair wins hands down anyway, for the hill possessing this long New Zealand name is nearly 30 miles from the nearest railway!



Curiosity and interest combined. A railway enthusiast inspects the controls of a 350 b.p. diesel-electric shunting locomotive at the recent Modern Railway Travel Exhibition in London. Photograph by Colin Betts, Romford.

Apparently the meaning of the formidable name of Llanfair's rival is "The summit of the hill where Tamatea, the great traveller, played on his koauau (nose-flute) to the lady of his choice." Tamatea was one of the leaders of the Maori migrations from the land of Hawa-ika—perhaps Tahiti or Rarotonga—to "the land of the long white cloud," as those pioneers called New Zealand, their future home. He is said to have sailed along the shores of both main islands of New Zealand, and it was because of this that he became known as a great traveller.

Easy Model-Building

Spanner's Special Section for Juniors

Cranes for Outfits Nos. 00 and 3

THE model Radial Crane shown in Figs. 1 and 2 can be built from the parts in Outfit No. 00. It is best to begin building it by making the built-up strip 1 that forms the swivelling base of the crane. For this purpose you will require two 2½″ Strips and you should bolt them together so that they overlap two holes. Now use one of the bolts joining the Strips to fix in place a Trunnion 2, and then bolt a second Trunnion 3 to one end of the strip 1. One of the bolts used to fix Trunnion 3 is used also to attach two Angle Brackets 4 to the end of strip 1, and these Angle Brackets support two 5½″ Strips that form the jib of the crane. These Strips are connected by a bolt at their upper ends, but they are spaced apart by a nut screwed on the bolt between the Strips.

The next step is to mount the crane on its fixed base. To do this a bolt 5 is passed through the strip 1, and a nut is screwed loosely on it. Now pass the bolt through the centre hole of a 5½″ × 2½″ Flanged Plate, and screw a second nut tightly in place on the bolt underneath the Flanged Plate. The crane wheels are 1″ Pulleys, and you should fix them on bolts passed through holes in the Trunnion 3. Take care to tighten the set screws in the Pulleys so as to fix them on the bolts.

To support the jib you should pass a piece of cord through the 5½″ Strips and the Trunnion 2, and then tie the ends of the cord together. To complete the model all you have to do now is to pass a Crank Handle through the 5½″ Strips, tie a piece of cord to the Crank Handle, and then pass the cord over the bolt at the top of the jib. To make the crane hook fix a ⅜″ Bolt in a Fishplate and tie the Fishplate to the cord.

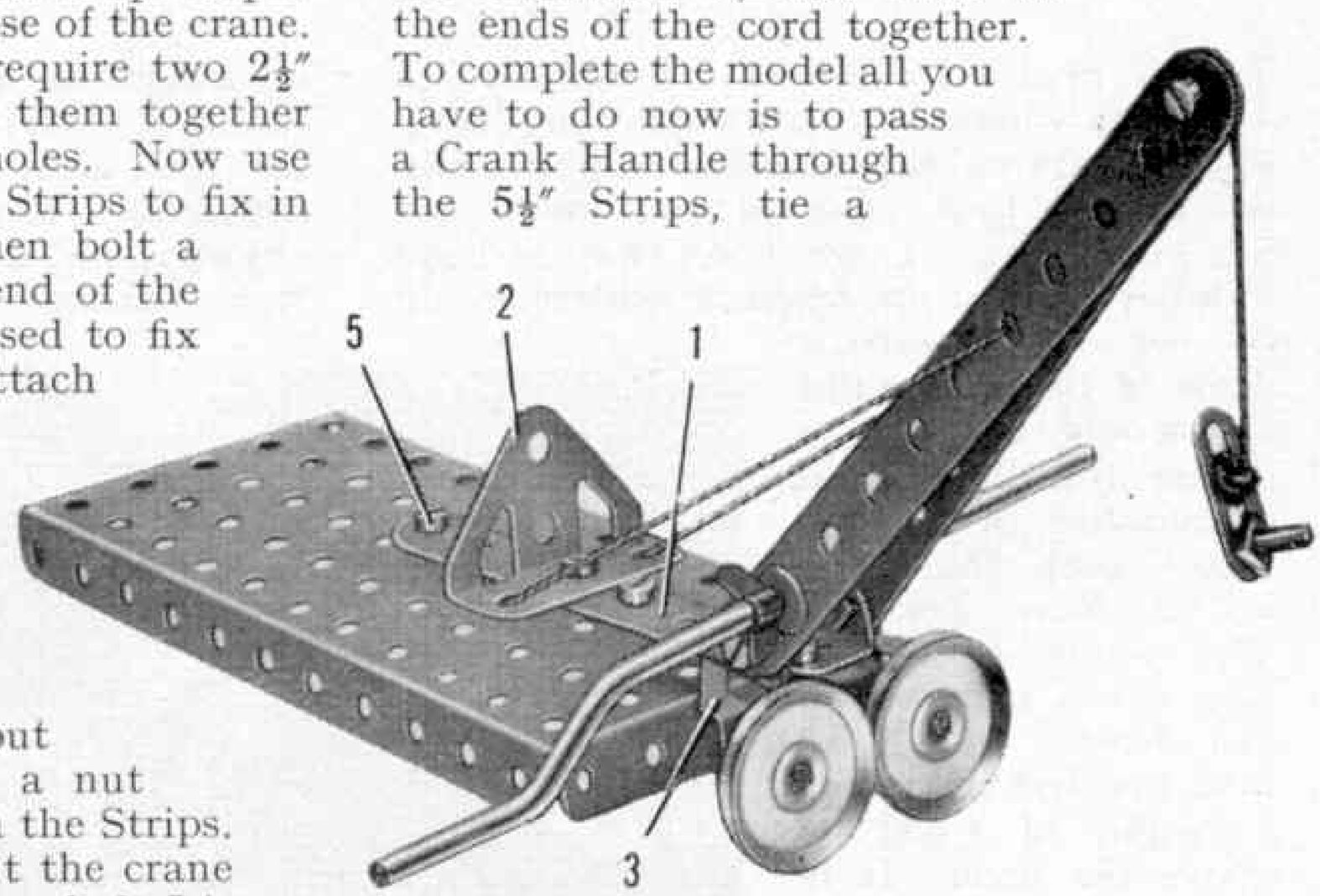


Fig. 1. This model Radial Crane makes an excellent subject for owners of a No. 00 Outfit.

There is a list of the parts you will require to build this model on the next page.

The simple Derrick Crane pictured in Figs. 3 and 4 is designed for construction with parts in a No. 3 Outfit. Although the model is easy to build, the jib can be raised and lowered and turned from side to side, and the load hoist is operated by a *Magic* Clockwork Motor. If a *Magic* Motor is not available the hoist can be worked by hand, and a control wheel is fitted for this purpose.

Construction should be begun by assembling the vertical pillar that supports the jib. For this you require two 5½″ Strips extended upward by two 2½″ × ½″ Double Angle Strips 1. Bolt an Angle Bracket to the lower end of each 5½″ Strip, and connect the Angle Brackets and two

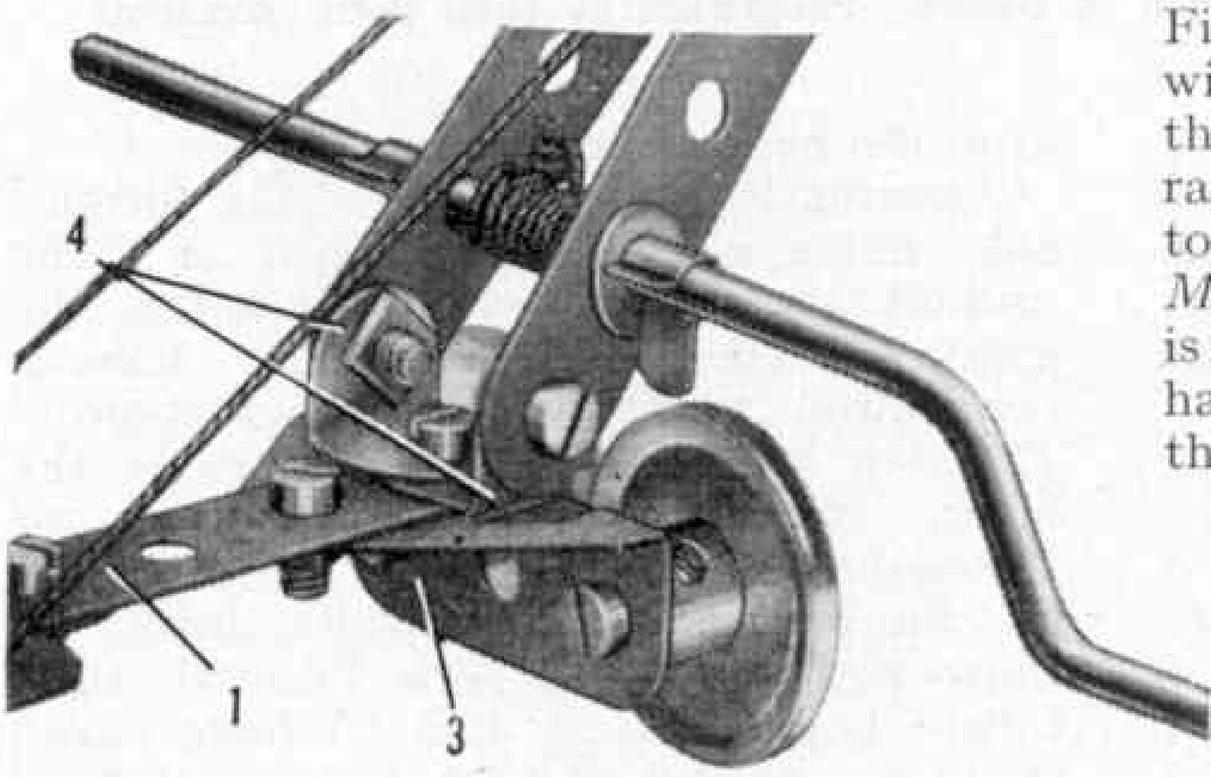


Fig. 2. A close-up view of the wheel assembly of the Radial Crane.

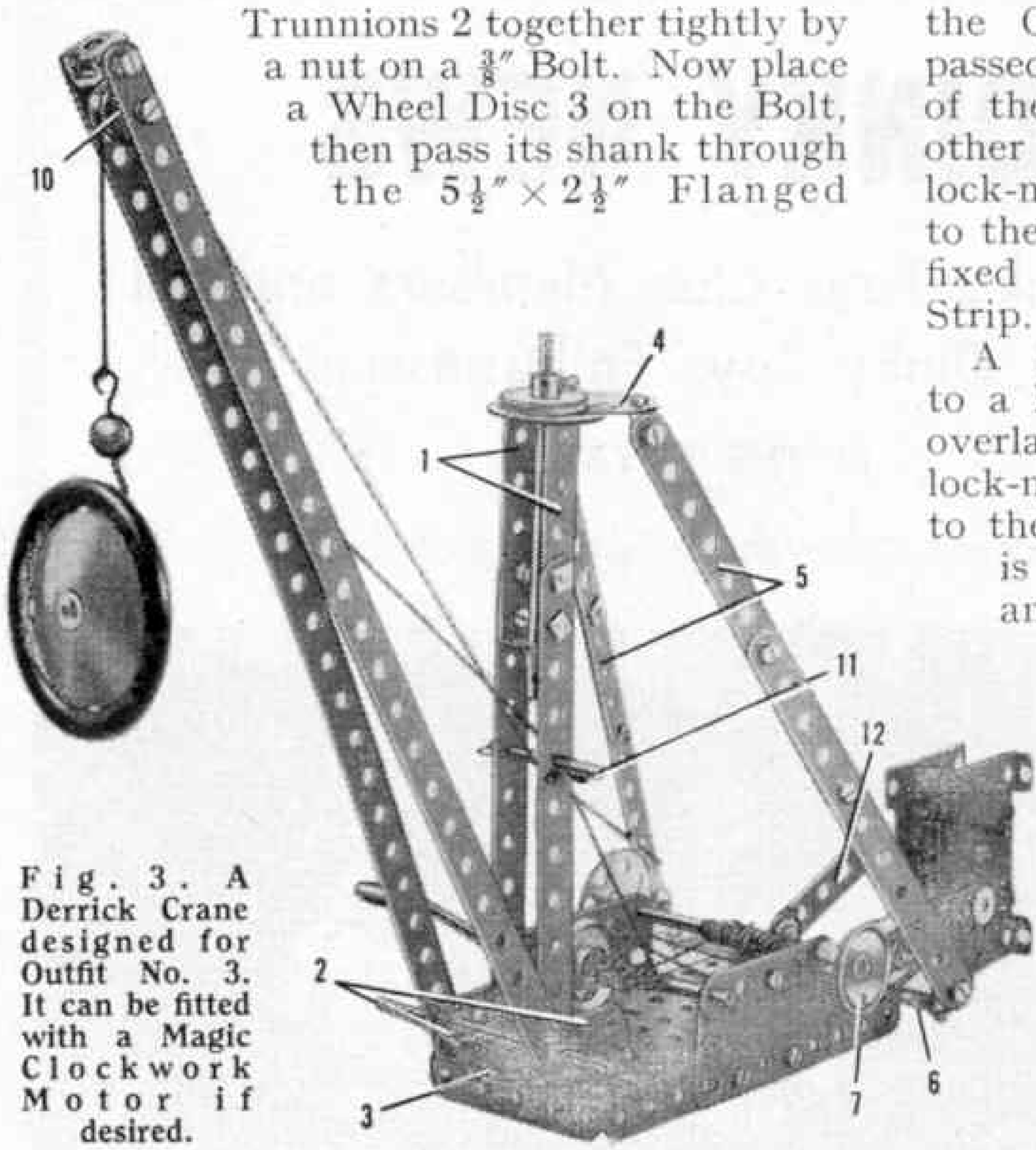


Fig. 3. A Derrick Crane designed for Outfit No. 3. It can be fitted with a Magic Clockwork Motor if desired.

Trunnions 2 together tightly by a nut on a $\frac{3}{8}''$ Bolt. Now place a Wheel Disc 3 on the Bolt, then pass its shank through the $5\frac{1}{2}'' \times 2\frac{1}{2}''$ Flanged Plate that forms the base and fit lock-nuts on the Bolt underneath the Flanged Plate.

The upper end of the vertical column pivots on a 4″ Rod mounted in the Double Angle Strips 1 and in a Flat Trunnion 4. The Rod is held in place by a 1″ Pulley and a Cord Anchoring Spring. Bolt two Angle Brackets to the Flat Trunnion, and to each of them fix one end of a strip 5, made from two $5\frac{1}{2}''$ Strips overlapped five holes. Bolt the lower ends of the strips 5 to Angle Brackets attached to $2\frac{1}{2}''$ Strips 6, which much be fixed across one end of the base.

Fix two $2\frac{1}{2}'' \times 1\frac{1}{2}''$ Flexible Plates to the sides of the Flanged Plate and bolt a $2\frac{1}{2}''$ Strip to the upper edge of each Flexible Plate. Now mount a Crank Handle and a $3\frac{1}{2}''$ Rod in the Flexible Plates, using Spring Clips to keep the Crank Handle in place and a 1″ Pulley 7 and a Bush Wheel 8 to secure the $3\frac{1}{2}''$ Rod. Place a 1″ Pulley 9 on the Crank Handle, and fix a $\frac{3}{8}''$ Bolt in the Bush Wheel to serve as a handle.

To make the jib, join together at their upper ends two $12\frac{1}{2}''$ Strips by means of a Double Bracket. Mount a $\frac{1}{2}''$ loose Pulley 10 on the shanks of a $\frac{3}{8}''$ and a $\frac{7}{32}''$ bolt fixed in the Strips by nuts, and pivot the jib on a $3\frac{1}{2}''$ Rod held by Spring Clips in the Trunnions 2. Tie a length of Cord to the jib, pass it over a $1\frac{1}{2}''$ Rod 11 and attach it to the Crank Handle. A brake on the Crank Handle is formed by Cord passed round the Pulley 9. Tie one end of the Cord to the base and fasten the other end to a $2\frac{1}{2}''$ Strip 12, which is lock-nutted to an Angle Bracket bolted to the base and is weighted by a 1″ Pulley fixed on a $\frac{3}{8}''$ Bolt passed through the Strip.

A *Magic* Clockwork Motor is bolted to a lever 13, made from two $2\frac{1}{2}''$ Strips overlapped four holes. The lever is lock-nutted to an Angle Bracket bolted to the base, and a 6″ light Driving Band is passed round the Motor pulley and the Pulley 7. By raising the lever the Driving Band is slackened and the drive to the Rod carrying Pulley 7 is disengaged. The hoisting Cord is tied to this Rod, is passed under Rod 11 and over Pulley 10, and is fitted with a small Loaded Hook.

Parts required to build the Derrick Crane: 2 of No. 1; 6 of No. 2; 7 of No. 5; 2 of No. 11; 7 of No. 12; 1 of No. 15b; 2 of No. 16; 1 of No. 17; 1 of No. 19g; 4 of No. 22; 1 of No. 23; 1 of No. 24; 2 of No. 24a; 6 of No. 35; 45 of No. 37a; 35 of No. 37b; 6 of No. 38; 1 of No. 40; 2 of No. 48a; 1 of No. 52; 1 of No. 57c; 4 of No. 111c; 2 of No. 126; 1 of No. 126a; 1 of No. 176; 1 of No. 187; 2 of No. 188; 1 *Magic* Clockwork Motor.

Parts required to build the Radial Crane: 2 of No. 2; 2 of No. 5; 1 of No. 10; 2 of No. 12; 1 of No. 19s; 2 of No. 22; 2 of No. 35; 12 of No. 37a; 9 of No. 37b; 2 of No. 38; 1 of No. 52; 2 of No. 111c; 2 of No. 126.

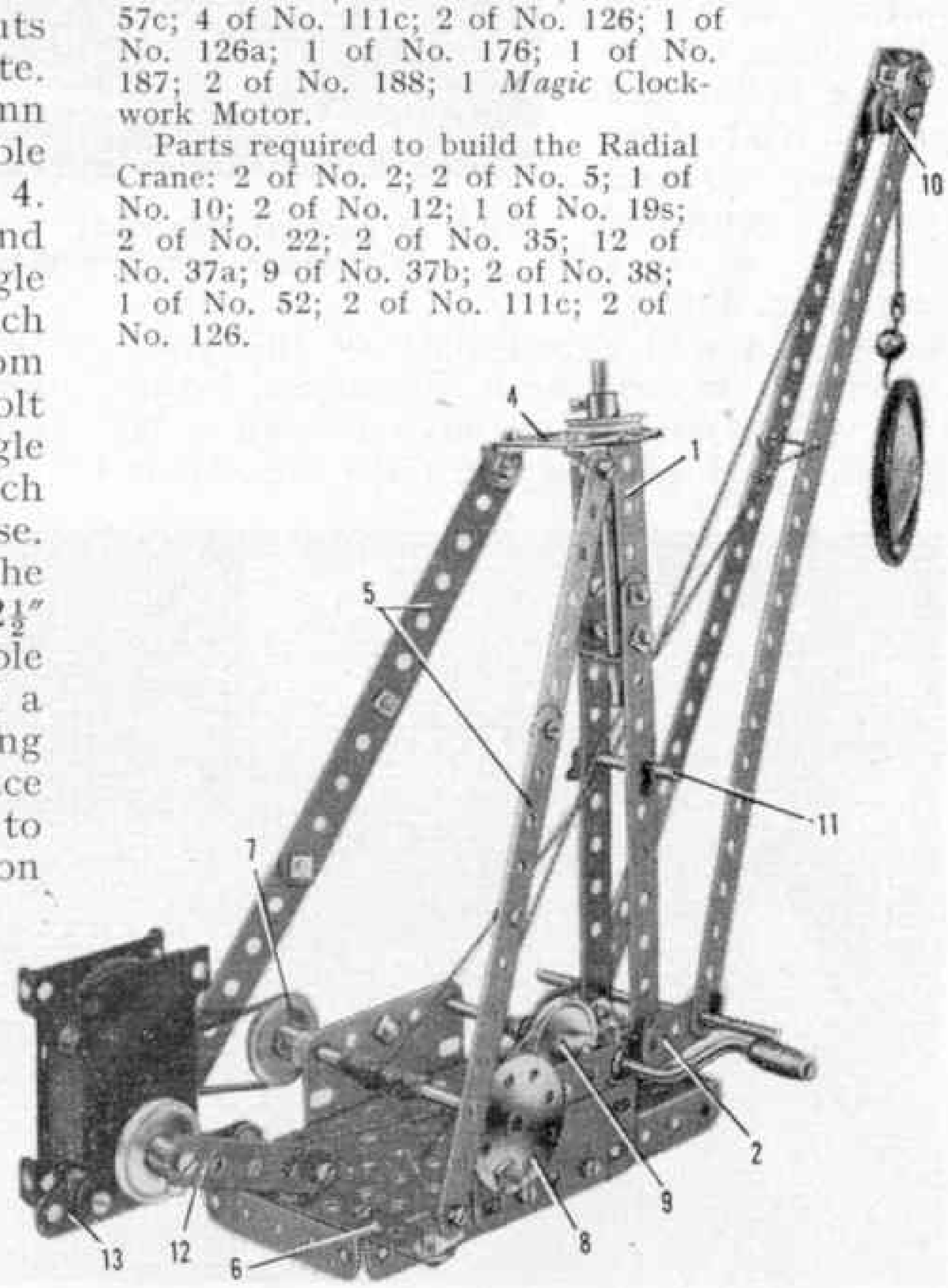


Fig. 4. Another view of the Derrick Crane.

DINKY NEWS

For Dinky Toys Club Members and All Dinky Toys Enthusiasts

By **THE TOYMAN**

"Look at our fine collection!" Club members David and James Starkey, Salisbury, S. Rhodesia, proudly display their wonderful assortment of Dinky Toys.

BY the time this Magazine reaches you I expect that you will have had your summer holidays and will now be remembering wistfully the many jolly hours you spent on the seashore or in the countryside—and perhaps thinking what a long time it will be before the next holiday season comes round again! Summer undoubtedly is the jolliest and nicest part of the year, especially in northern countries. But Dinky Toys enthusiasts have no need to be downhearted because the days are slowly becoming shorter and the dark evenings longer, for the autumn and winter months are the ideal time for indulging in Dinky Toys collecting and for making and playing with Dinky Toytown layouts.

This young gentleman busily arranging his Dinky Toys garage is another enthusiastic Club Member, Martin Rice, who lives at Wantage, Berkshire.

And don't forget—the best way to ensure that you get the utmost fun and pleasure from these activities is to become a member of the Dinky Toys Club. So if you are not already a member of this world-wide organisation of Dinky Toys enthusiasts send in your application today. Just write to the Secretary, Dinky Toys Club, Binns Road, Liverpool 13, enclosing a P.O. for 1/- to cover the cost of the Club Badge and Certificate of Membership. The

Secretary will be very pleased to hear from you and to enrol you as a new member.

And now for some news about the latest additions to the rapidly growing range of Dinky Toys. I have two fine items to speak about this month. The first of these is a splendid new addition to the range of Dinky Toys Racing Cars. Yes, I thought you would guess right; it is a remarkably realistic miniature of the famous Type D Jaguar Racing Car.

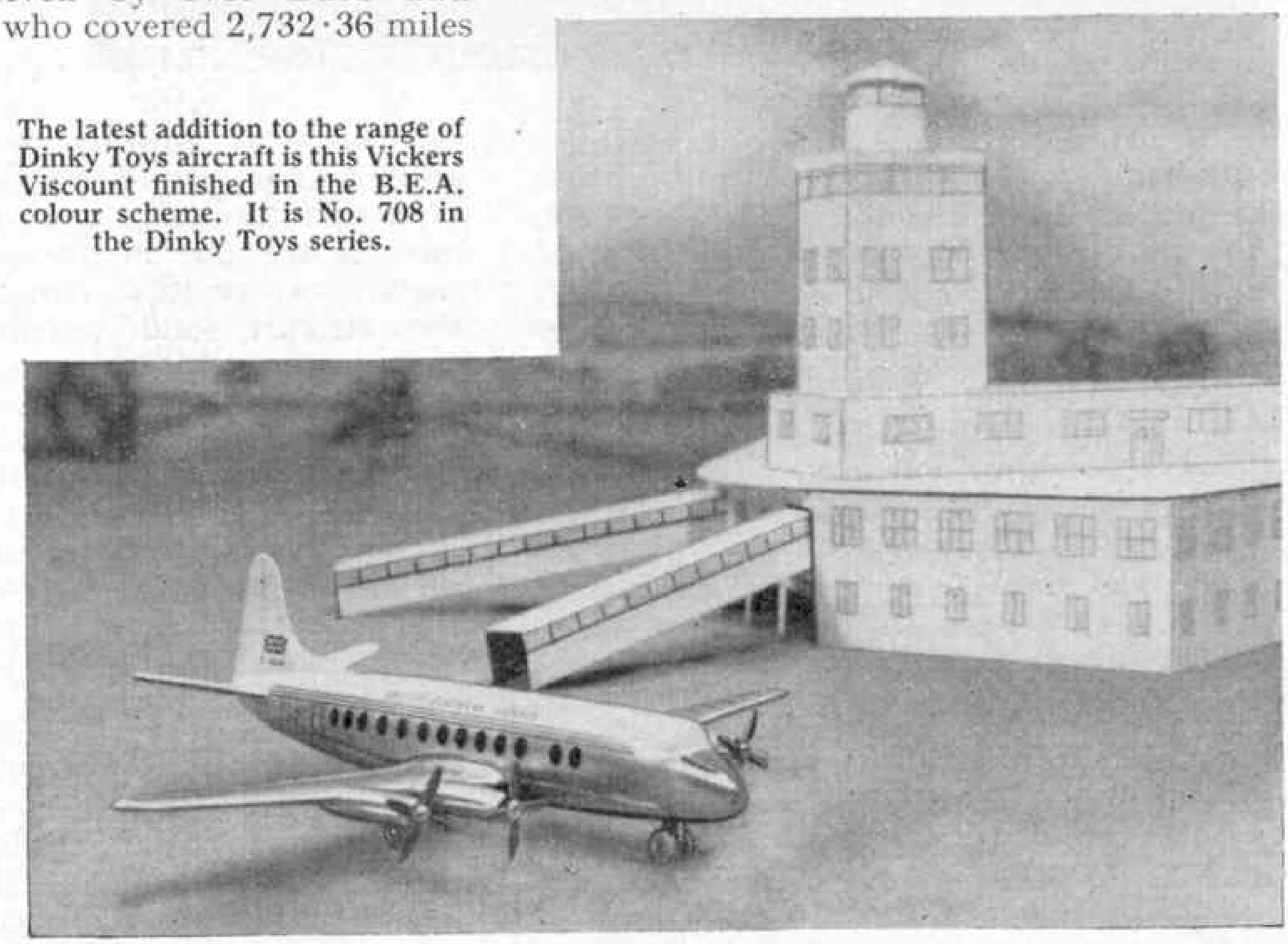
During the last few years D-Type Jaguars have been so successful that it would now be a surprise not to find them among the prize-winners in races for cars of their class. Their outstanding success this year was in the gruelling Le Mans 24-hour race, in which Jaguar cars occupied the first four positions. The winning Ecurie Ecosse Jaguar was driven by Ivor Bueb and Ron Flockhart, who covered 2,732·36 miles in 24 hours at a record-breaking average speed of 113.85 m.p.h. These successes and many others not only add to the prestige of British cars among overseas motorists; in addition the knowledge and experience gained in racing help to increase the safety and improve the performance of cars available for everyday motoring.

The Type D Jaguar is noteworthy for its splendid aerodynamic lines, and the Dinky Toys miniature captures the sleek, streamlined appearance of the actual car perfectly. A prominent feature is the offset tail fin extending from the head fairing behind the driver. The model is fitted with a driver in white overalls, and as it represents a car used for racing, the passenger seat position is covered in.

The new model is listed as Dinky Toys No. 238, Jaguar Type D Racing Car, and the body is finished in an attractive shade of pale blue. The wheels are a darker blue. For such an important addition to the Racing Car series a striking setting seemed to be called for, and one of my pictures shows the Jaguar duelling with a Connaught on a realistic miniature race track.

Readers who like building scenes for their models may be interested to know that modelling plaster is put to good use in making the scenic effects on this layout. The main stand is of cardboard, but the hut, hills and other small items are made of modelling plaster spread over blocks fastened to the baseboard. The plaster is easy to work and it can be painted realistically when it sets.

The use of modelling plaster in this way is easy and effective, but a good strong baseboard that will not flex or twist is necessary, for if the baseboard bends the plaster is liable to crack and crumble away. If you use plaster for the hills of a layout, it is a good plan to spread muslin over the blocks to round off the corners. This gives a more realistic appearance to the scene, and saves quite a lot of plaster that otherwise would be needed to fill in gaps between the blocks. You should be able to obtain modelling plaster quite easily from shops dealing in hobby supplies.



The latest addition to the range of Dinky Toys aircraft is this Vickers Viscount finished in the B.E.A. colour scheme. It is No. 708 in the Dinky Toys series.

Now for some news of a splendid addition to the range of aeroplanes in the Dinky Toys series. The number of these models available is increasing steadily, and now collectors can add further variety to their air fleets by the addition of the latest model, a Vickers Viscount in B.E.A. colours.

The new Dinky Toys Jaguar Type D Racing Car (No. 238) with a Connaught (No. 236) on a miniature race track.

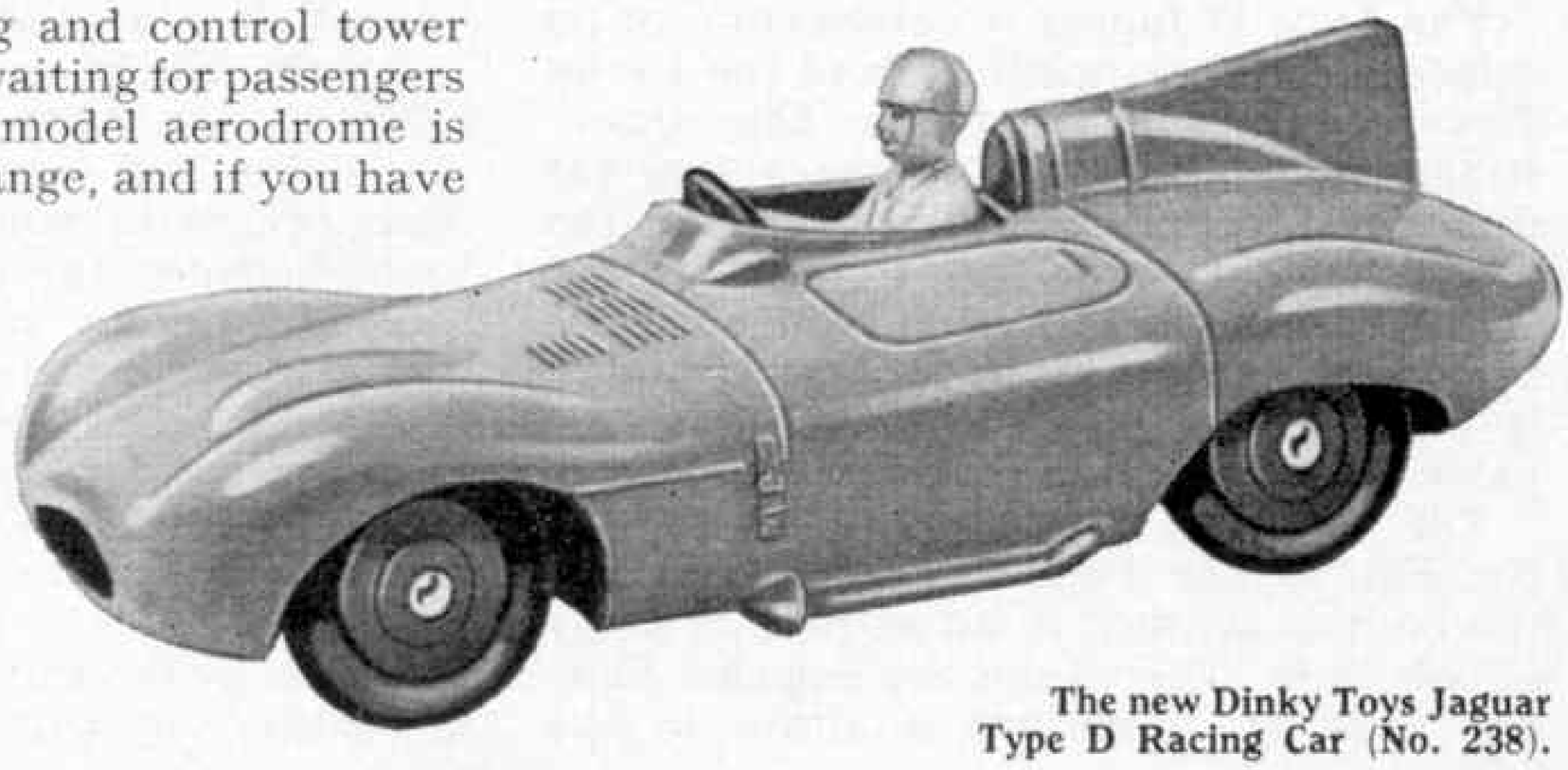
The Air France version of the Viscount has been available for some time and it has proved an exceptionally popular model. The new B.E.A. Viscount is sure to be at least equally well received, especially by the many collectors who have written to me to suggest just such an arrangement.

The Dinky Toys Vickers Viscount, B.E.A., is No. 708 in the range, and it makes a really splendid model in its striking finish. The wings and the lower section of the fuselage are in aluminium finish, and the top part of the fuselage is white. The letters B.E.A. are printed in red on the port wing, while the starboard wing carries appropriate registration letters, also in red. The nose section carries the well-known red flash, and along each side of the fuselage are three lines, with the name *British European Airways* above them. A Union Jack and registration letters appear on each side of the tail fin.

My picture of the new B.E.A. Viscount shows it drawn up in front of the administrative building and control tower of a miniature airport, waiting for passengers for its next flight. A model aerodrome is really quite easy to arrange, and if you have not already made an airport for your models I suggest you try building a layout of this kind. For a simple scene you will need only a few buildings, and you should have no difficulty in making these. The one shown in my picture looks quite an imposing structure, but actually it was very easy to make, as it consists entirely of cardboard cut to shape and glued together. The windows and doors are simply drawn on the cardboard and the model is finished by painting it in suitable colours with ordinary water paints.

In addition to a control tower on the lines of the one in my picture, you will require two or three hangars for servicing the aircraft, and possibly a cafe for passengers and sightseers. If you want to make a really detailed model you can add other buildings to house vehicles for fire-fighting and rescue work, and mark out a car park in a suitable position.

If you can, visit an airport, and try to model your miniature on what you see. I am sure many of you can improve on my own effort, and you will have a lot of fun in arranging a busy airport scene and in operating your Dinky Toys aircraft from it. I look forward to seeing photographs of your productions and reproducing them in these pages, if they are sufficiently clear and sharp and otherwise suitable for this purpose.



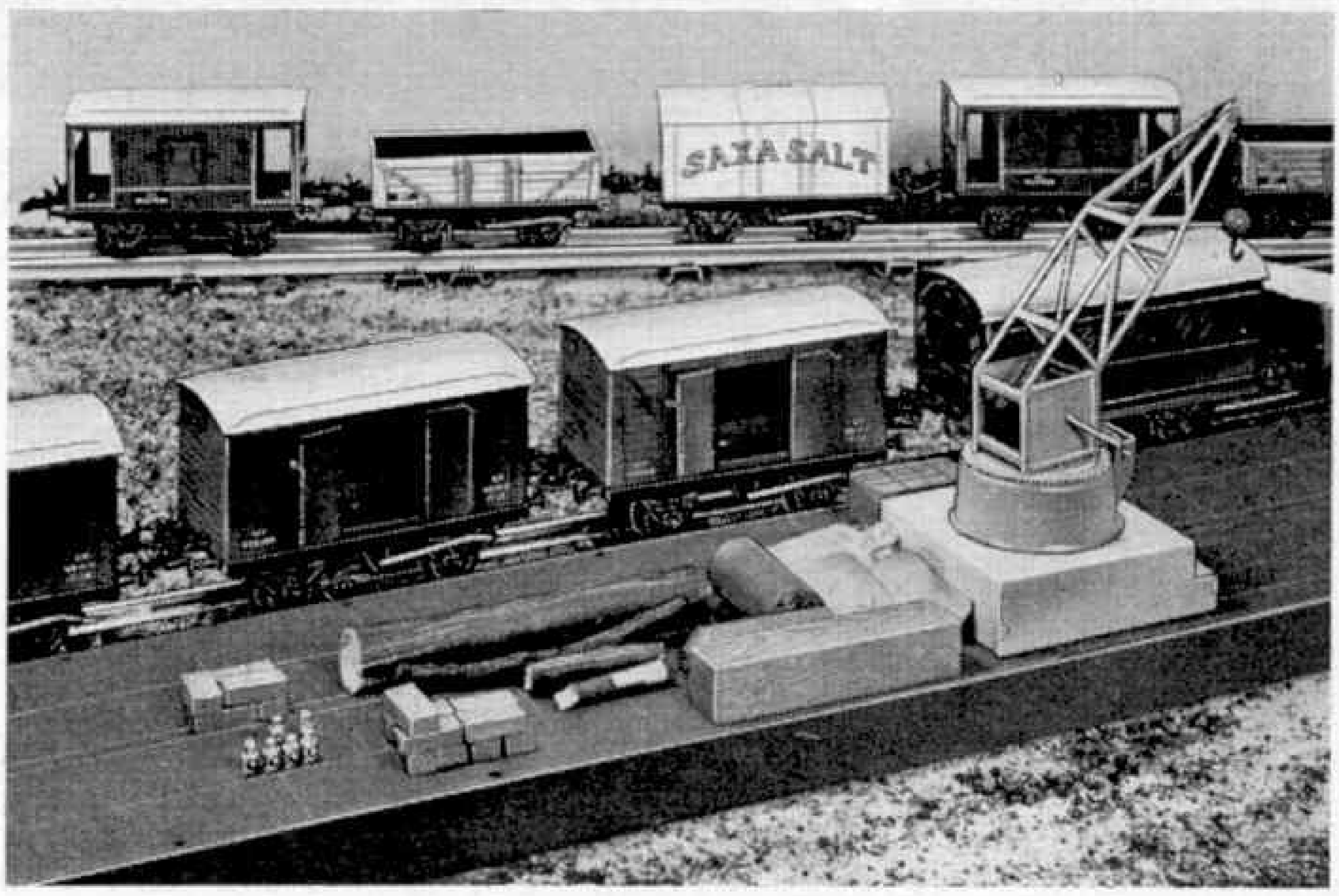
The new Dinky Toys Jaguar Type D Racing Car (No. 238).

"Tommy Dodd" writes about

The No. 50 Vans

BY now you will probably have seen most of the revised No. 50 rolling stock for Hornby Railways at your dealers. Besides the Wagons I mentioned last month, this includes the No. 50 Goods Van, the No. 50 Refrigerator Van and the No. 50 Cattle Truck. In spite of its name, the latter is, as you will know, actually a van, because it has a roof. Real vans, somehow, are rather exciting, for they hide what they are carrying; but often you can see what this is when they are alongside the goods loading bank with their doors open, being loaded or unloaded.

A representation in miniature of this sort of scene is shown in the picture on this page, where there are several No. 50 Goods Vans alongside the platform. Apart from any other details of their design and construction, you will notice right away that they are fitted with a pair of hinged doors in each side, which can be swung back in a most realistic manner while the vehicles are at your goods depot. In this respect they follow the latest B.R. standard practice, where hinged doors are apparently preferred to the sliding doors that have been popular in recent years in ordinary van construction.



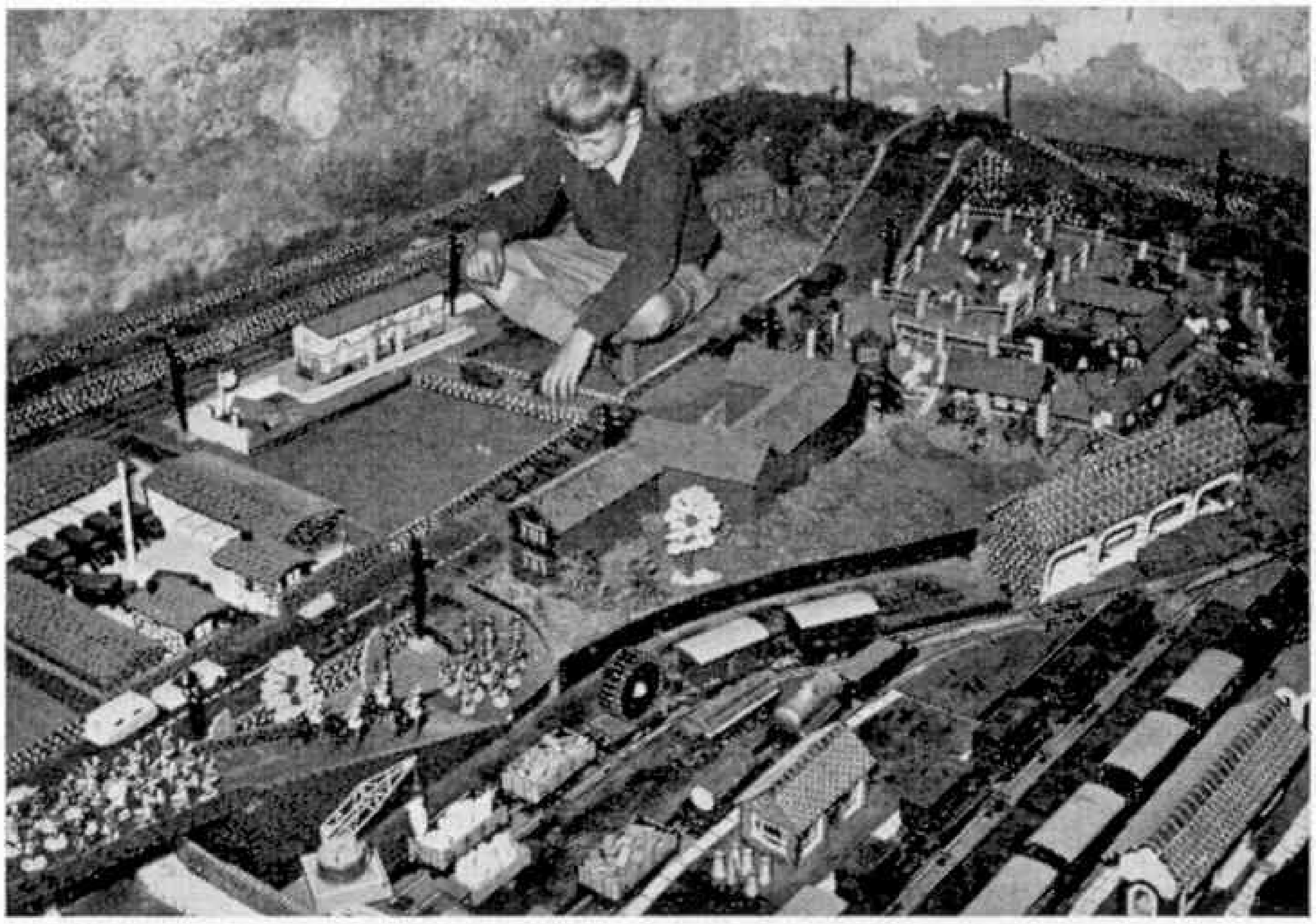
New No. 50 Goods Vans are alongside this loading platform, with their hinged doors swung back for loading purposes.

This "new look" does not stop with the doors. The bodywork is finished by the tinprint process, which allows the inclusion of a remarkable amount of detail—and B.R. Standard vans have plenty of this. The Hornby No. 50 Goods Van represents the Standard 12-tonner built in large numbers by B.R. and it is finished in the reddish-brown livery, known as bauxite, that distinguishes vacuum brake fitted stock. The printed design on the sides include all planking and metalwork details, together with the correct lettering appropriately disposed at each end on each side.

You should take a good look at the ends of these Vans. They are interesting because they reproduce finely the pressed steel ends, which have corrugated "ribs" for strengthening purposes, that have been applied to many vehicles in recent times. And Hornby Gauge 0 owners will be pleased to see the lamp brackets at the ends, on which to put a tail lamp if a Van happens to be attached in the rear of a passenger train, which is possible in view of its "brake fitted" character. Incidentally, the printed design at each end includes the vacuum pipe.

The No. 50 Refrigerator Van is similar in construction to the Goods Van, but its white colour indicates its special purpose, that of carrying perishable traffic, more particularly meat. This is indicated too by the code words *INSUL-MEAT* that appear at the left hand end of each side, above the tonnage and the vehicle number. A train including several of these *"reefers,"* as such stock is called by American railroad men, has an important and distinctive appearance.

The Hornby Refrigerator Vans can be



William John Fuller busy with his layout, which includes an effective road system and military and other establishments as well as the railway.

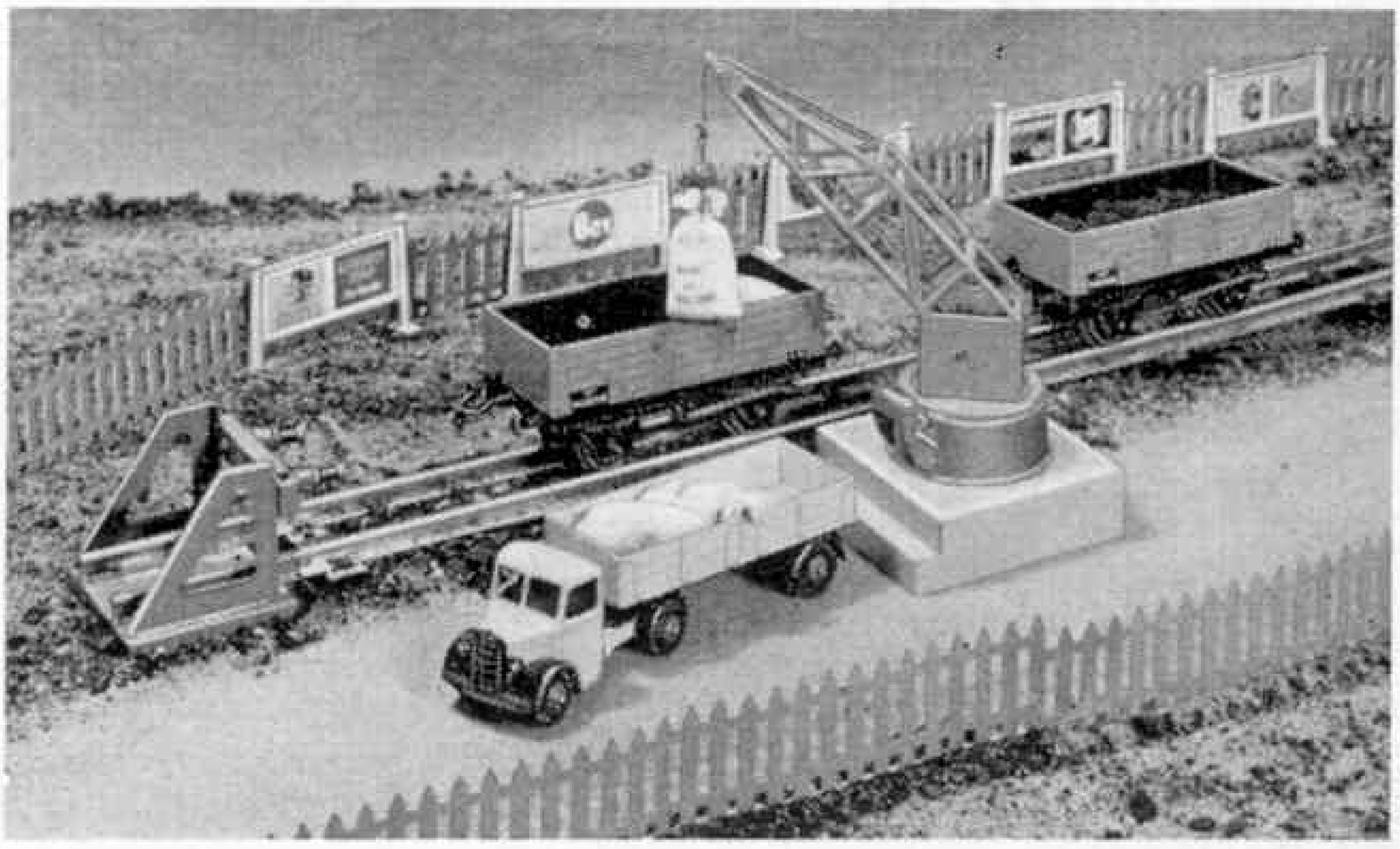
used in conjunction with the Insulated Meat Containers on the Low Sided Wagons mentioned in my previous talk. In view of the handiness of containers, you may wonder why all perishable traffic is not handled in this way. The answer is that some traders prefer the greater carrying capacity of refrigerator vans and there is of course something to be said for this view. At all events it gives you two possible ways of handling perishable traffic on your Hornby layout, and that all adds to the fun.

I suppose I should have dealt with the Cattle Trucks before the Refrigerator Van, as the real cattle trucks carry the live beasts, whereas the regrigerator vans transport just parts of the dead ones! But never mind. All are interesting. In real practice the demand for cattle trucks seems to vary quite a lot from time to time. B.R. have built many of them in recent years and it is their standard 8-ton design that is represented by the Hornby No. 50 Cattle Truck.

This fine vehicle has the characteristic openings in the upper part of the sides and above the doors. The latter, by the way, are not made to open on this miniature vehicle, as they are on real cattle wagons, but they are represented correctly in the printed design to show that the lower hinged section drops down to form a flap for loading purposes, while the upper part is formed of two hinged sections that open horizontally, like the doors of a cupboard. This means plenty of hinges, strapping and securing details, and they are all there in the printed design on the Hornby vehicle.

The lower openings in the body sides are not actually pierced, but they too are printed effectively, and the bauxite colour, the representation of the vacuum pipes and the fitting of lamp brackets shows that the No. 50 Cattle Truck is a "fitted" vehicle.

All the new Vans have a more tidy look than the older ones. The eaves of the roofs do not project outward so much, and this gives the new vehicles a distinctive appearance.



A Meccano Loaded Sack being hoisted aboard the No. 50 Goods Wagon. The Dinky Toy in the yard is the Bedford Articulated Lorry, No. 409, which is extremely useful for road-rail work.

Museum of Transport Bygones

By Arthur Nettleton

IT is hard to realise that the motor car was a novelty at the beginning of the present century, and that within less than six decades such vehicles have changed from slow, lumbering, solid-tyred contraptions to the swift, comfortable cars of today. The bicycle too has altered considerably in that period, both in its form and in the metals used for its construction. The modern cycle is a big improvement on its forerunner of barely 25 years ago, though the changes are less obvious than those that have affected the motor car during that time.

A sleigh that was in use around the Nunburnholme Estate, in East Yorkshire, until about 60 years ago.

At Hull these developments are strikingly portrayed, along with earlier changes in transport, for the city has a museum of transport bygones in which a wide variety of vehicles is displayed. The collection includes some rail vehicles and also presents interesting examples of the way our ancestors travelled before railways were invented. From the days immediately preceding the railway locomotive there are stage coaches and private carriages—reminders that the era of stage coaching is not as far behind us as we are apt to think. Stage coach services were still operating in many parts of Britain when Charles Dickens was a young man!

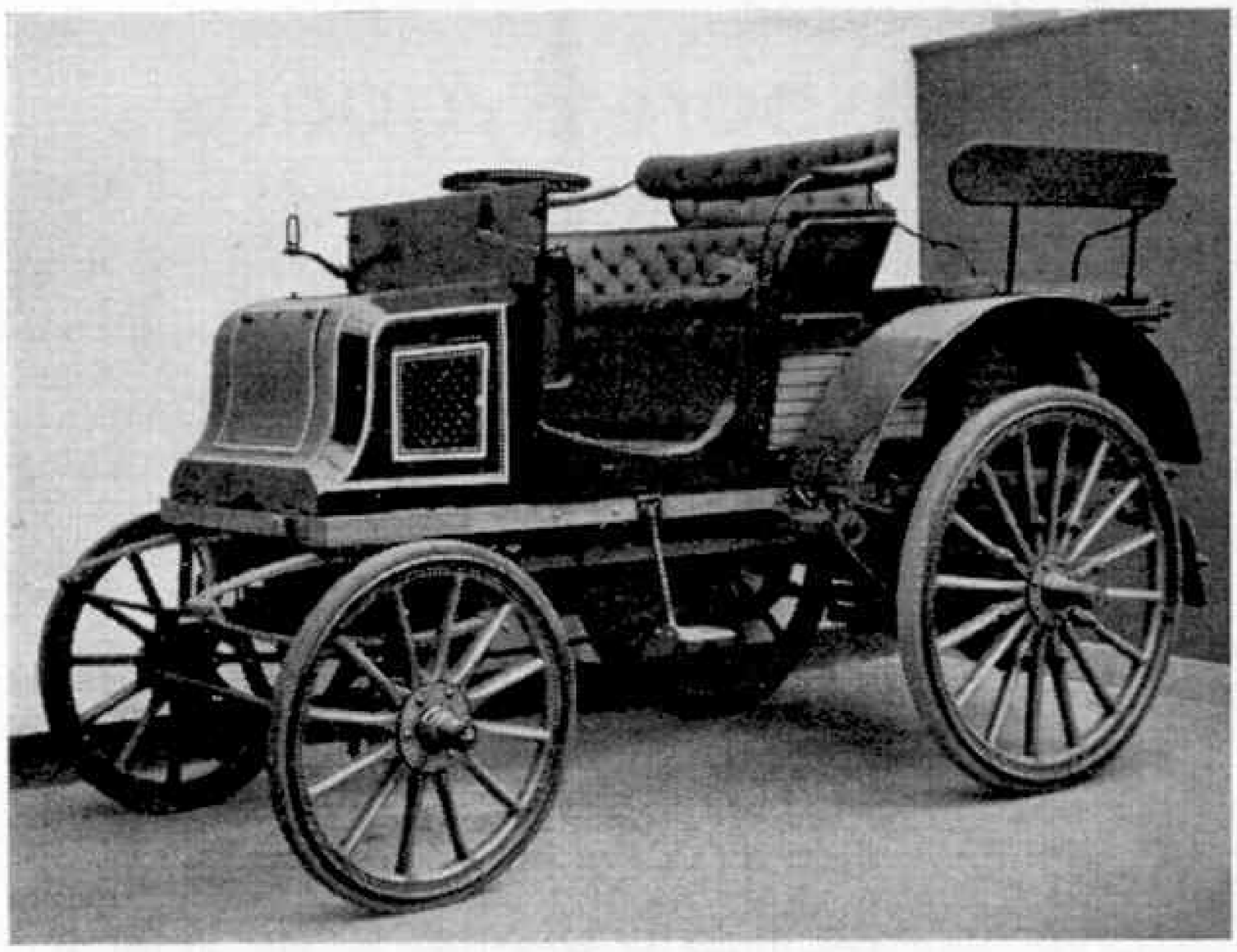
The Hull Municipal Transport Museum was founded more than thirty years ago, but was closed by bombing during the War. It has been re-organised and re-opened this year, with some additional exhibits, and it now forms an engaging panorama of transport history in Britain during the last 150 years or so.

Here is the *Quicksilver*, a coach that carried mail and passengers between London and Devonport early last century. It was regarded as a flier in those days, for it could attain more than 10 m.p.h., a speed that made it the record-holder among coaches plying from London.

Whether the passengers welcomed such a speed over the rutted roads of those days is open to doubt! The *Quicksilver's* pace did prove advantageous on one occasion, in October 1816, when a lioness was encountered on the road! The animal had escaped from a menagerie, and the perilous incident was made the subject of a picture. This stage coach, in fact, has often been painted by artists, and is typical of those depicted in Christmas card scenes today.

Other horse drawn vehicles in the Museum include family coaches and carriages of various types, from the nearer days when stately homes maintained large stables and nearby coach houses contained several vehicles for everyday use and special occasions.

On display is a state carriage used for a number of years by the Earl of Yarborough, and from the Sykes estate at Sledmere comes a barouche—a four-wheeled carriage, with two seats facing each other and a folding top—that dates from 150 years ago.



An example of a pioneer motor car in the Hull Municipal Transport Museum is this Panhard car of 1897.

A hansom cab that visitors can inspect was in service at Hull only 30 years ago. Equally likely to attract attention is an ornate sleigh with a pillion seat. The front is shaped like a kneeling unicorn, and the well-decorated runners are carried upward to end in a swan's neck. This unique sleigh was owned by Lady Chesterfield and was not built primarily for pleasure. It provided her with a handy means of transport across the Yorkshire Wolds when they were covered by snow. She is believed to have had the sleigh modelled after those popular among Russian nobility.

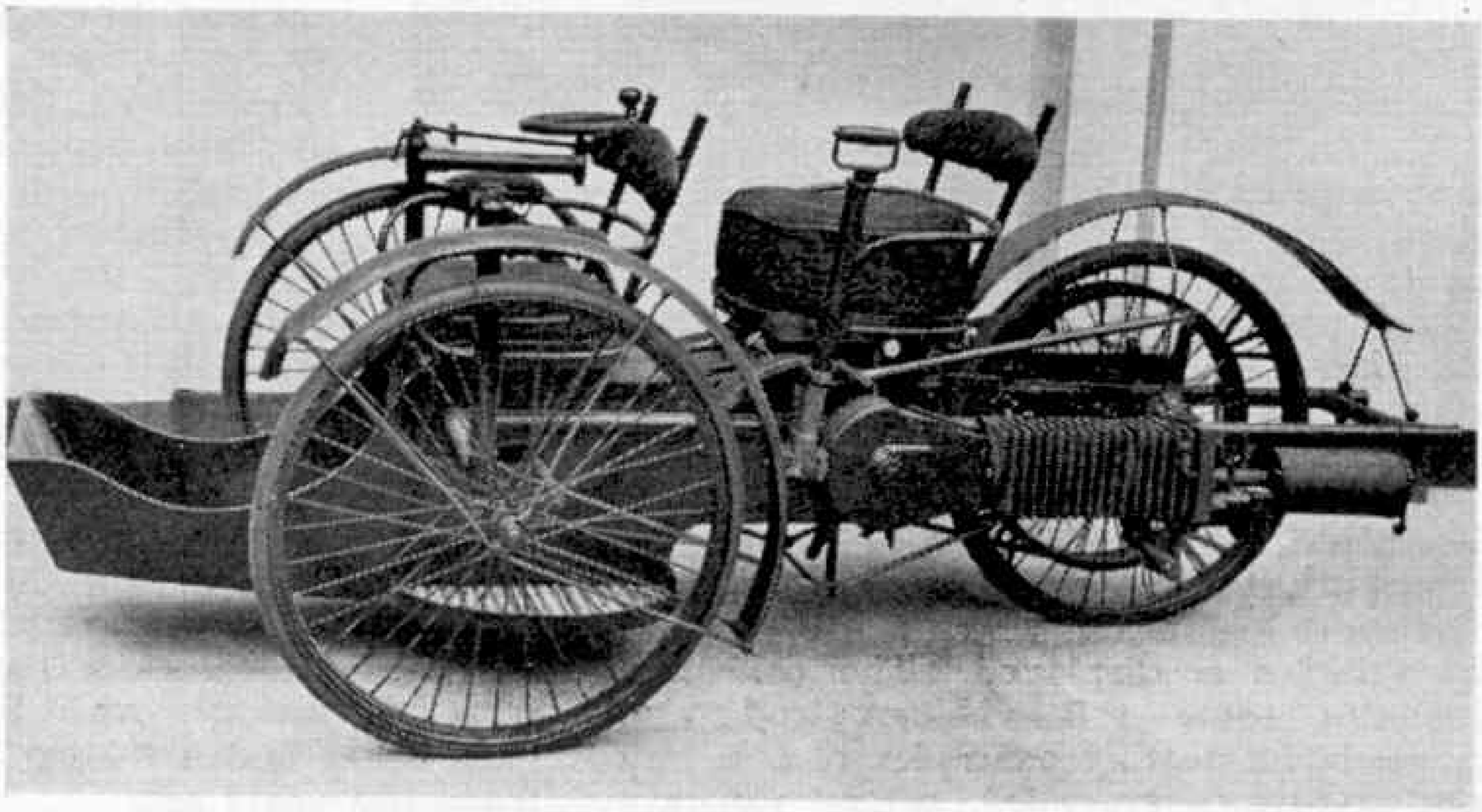
The story of the bicycle is shown by a series of exhibits, starting with the dandy horse, the two-wheeled vehicle that was propelled without pedals, the rider pushing himself along with his feet touching the ground. A bicycle with a more entertaining story, however, is a velocipede built more than 150 years ago for a 37-stone Beverley cleric, whose portliness prompted him to get about the town by trundling himself along on this vehicle.

The range of cycles continues with the "penny-farthing," and there are some strange inventions from the early days of popular cycling, such as a quadricycle built in 1899. More recent stages in bicycle design are shown by the "sit up and beg" style popular not so very many years ago.

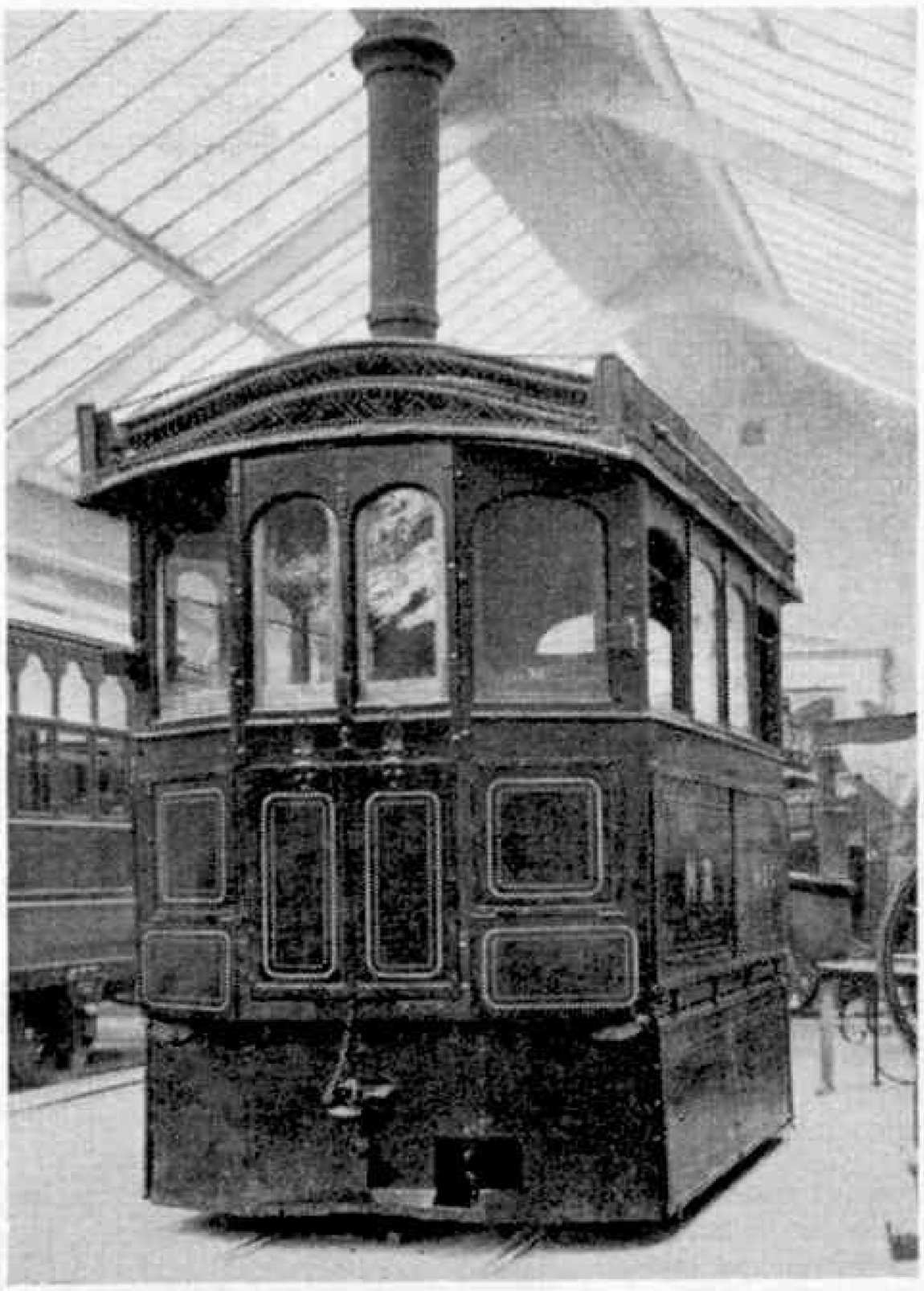
The oldest of these cycles, of course, have solid tyres, but the later ones are fitted with pneumatic tyres. It is worth mentioning that although the tubes were "flat" for several years before the Museum was re-opened this year, on being re-inflated they held their air for two months before the tyres became soft again.

Vintage motor cars form another fascinating section of the Museum. Some of them have taken part in veteran car runs, and one exhibit, a Panhard made in France just 60 years ago, may claim some reflected glory, for it is identical with one in which Queen Mary took her first motor drive when she motored near Hendre, Monmouthshire, with the Hon. Charles S. Rolls as chauffeur.

This continental car, very solidly built



Bollée tricar, or motette, which was built in 1898.



A locomotive from the Portstewart Steam Tramway, in Northern Ireland. It was built by Kitsons, of Leeds, and was in use until 1925, when the tramway was closed.

and with chain drive, was one of the type designed to popularise motoring, although when Queen Mary sampled this mode of transport the maximum legal speed permitted on British roads was a mere 12 m.p.h.

The Museum has another motor-driven vehicle almost as old, though it is a tricar and much more lightly built. It is a three-wheeler Bollée, popularly known in 1898 as a "motette." It carried two persons, the passenger being seated in front of the driver.

From the year 1900 there is a curious Sturmey cycle car, with cycle type wheels and tiller steering. The seating accommodation is made of basketwork!

Not all the vintage cars here are petrol-driven; among them is a Gardner-Serpollet steam car that first ran in 1901. It can hardly claim to have been introduced to "bring motoring to the million," for even at that time it was priced at £600, which is equivalent to at least £1,500 today.

This steamcar is not the only steam-driven vehicle in the Museum. One of the trams on show is really a steam locomotive that ran between Portstewart and the Giant's Causeway in Northern Ireland. It drew a train of open-sided carriages along that picturesque route. The tram was built at Leeds in 1882 and was in regular use until 1925. Weighing six tons, it is 11 ft. 6 in. long, 6 ft. wide, and 10 ft. 3 in. high. Its tall, plain chimney is reminiscent of the early days of steam traction.

But the most interesting tram in the exhibition comes from Ryde, in the Isle of Wight. It has more than one claim to distinction, for it is the oldest tram left in England, and was patronised by Queen Victoria when she was staying at Osborne House. Moreover, it represents several modes of propulsion. Originally it was drawn by horses. Then a steam engine was harnessed to it, and later still it was electrically driven. Finally, it was pulled by a petrol-driven car. Today it has been restored to the appearance it presented 90 years ago.

This array of transport bygones is not confined to vehicles alone, but includes many items associated with them. We see uniforms worn by coachmen in the colourful days of horsedrawn transport, waywisers for measuring road distances, many horse brasses, sets of harness, and collections of tram tickets.

Yet another exhibit in this unusual Museum is a Sicilian cart built to carry lemons. It was decorated by progressive generations of owners, who added both painted panels and carvings. Among the carved features are several comical heads, each with a bowler hat.

Both for amusement and as a means of studying the growth of transport during the last 150 years, this collection of vehicles and associated souvenirs is becoming increasingly popular in the North-East, and is attracting visitors from as far away as the heart of the West Riding.

"I Would Not Miss It For Worlds"—

(Continued from page 444)

Farnborough in the next few years—not only in the flying display, but on the stands in the great tented exhibition hall, where already the first rocket-engines, space-suits and fearsome-looking guided missiles are appearing.

This year's Display, open to the public on Friday, Saturday and Sunday, 6th-8th September, will be the biggest ever, with no fewer than 350 exhibitors, and contributions from the Royal Air Force and Fleet Air Arm in the flying display. I personally would not miss it for worlds!

Railway Notes

By R. A. H. Weight

D.8000 Makes Its Bow

At a recent ceremony at Newton-le-Willows, Lancs., the first of a new series of main line diesel-electric locomotives for British Railways was handed over to the Chairman of the London Midland Area Board at the Vulcan Works, where it has been constructed in conjunction with the English Electric Co. Ltd. It is of Type A, 1,000 h.p. with eight wheels for mixed traffic duties, especially cross-London freight haulage, and is to be stationed with others at Devons Road, Bow, a former North London Railway-L.M.S. depot that has been adapted for stabling and servicing diesel locomotives.

D.8000, in the new numbering referred to elsewhere in these notes, is the first of a series of 20 of the same design destined for the L.M. Region. As already announced, there will be numerous batches of similar engines as well as others of greater or lesser power. They can work singly or in multiple unit coupled to another, including passenger train haulage, their equipment being of a very complete and robust nature.

Scottish Tidings

More express freight trains have been given names, such as the *Galloway Piper*, *Killie* and *Sweep*, serving Inverness, Kittybrewster, Stranraer, Aberdeen, Greenock, etc.

Novel special trains have included what was described as the World's first T.V. special, comprising 64-seat, centre-corridor coaches fitted with viewing screens, with another vehicle rigged up as a soundproof studio with adjacent diesel-electric generator. The train ran from Glasgow to London and also to the Highlands.

Another successful innovation was the Amateur Photographers' Western Highlands tour, repeated owing to its popularity. The train stopped at scenically attractive points and prizes taking the form of weekly holiday season tickets or the like were awarded for what were adjudged to be the best submitted prints.

A greatly improved train service is operating from the Fifeshire stations such as Markinch, Kirkcaldy, Leven and Thornton to Glasgow, Buchanan Street, and back. B1 and L.M.R. class 5 4-6-0 engines often share this working. K4 2-6-0s have been reported at work in the Fife area, and some of the recently new B.R. class 5 4-6-0s with Caprotti valve gear have been noted on Glasgow-Dundee-Aberdeen expresses.

The *Caledonian* limited express is the fastest Anglo-Scottish service this summer, averaging just over 60 m.p.h. between Glasgow and London, including a brief stop at Carlisle. On several occasions reported up to the time of writing, schedule has been improved upon and lost time has been regained, as has also been the case with the quickest Edinburgh-London trains along the East Coast route.

Some Fast Runs, Mainly Without Steam

The English Electric *Deltic* Co:Co diesel-electric locomotive, continuing trial running on L.M.R. express and other trains, possesses enormous power and has attained very high speeds downhill or on the level, as well as presenting what were probably record uphill minima on several occasions. With one of its 1,650 h.p. 18-cylinder diesel engines cut out, on a light 6-coach special, despite a succession of signal or track-repair slowings interspersed with rapid accelerations up to 88 m.p.h., the 140¾ miles from Crewe to Watford were covered in 150 mins. start to stop, followed by a very rapid finish towards Euston.

The Brown-Boveri Swiss gas-turbine, No. 18000, a less powerful though lively machine, returned to express service to and from Paddington last spring. She got the *Merchant Venturer*, 9-coach train, from Paddington to Bath exactly to time at an average of just over 60 m.p.h., although 5½ mins. late passing Reading on account of extra slowings. From Reading to Bath, over an easy course, a mean speed of 68.8 m.p.h. was maintained with a minimum of 63½ and maximum of 82. This was similar to some of the best comparable steam performances, but not as fast as the 7-coach Castle-hauled *Bristolian*, nor the 1.15 p.m. from Paddington sometimes.

On the same timing in the opposite direction with the recently instituted 6.10 p.m. express from Bristol, with only six modern coaches, No. 18000 made a very fast start from Bath. Swindon, 29½ miles, was passed in 27¾ mins., well ahead of working time. Then several delays were suffered but Acton, 102½ miles, was passed punctually in 98¼ mins. No. 5084, *Reading Abbey*, an orthodox Castle 4-6-0, took longer to get under way with the same train and load, but averaged almost 69 m.p.h. from Swindon to Acton, passing there decidedly early in 94¼ mins., though with only one slight check. In both cases there were signals against when approaching Paddington from Acton at a busy time. These interesting runs were logged by Mr. D. S. M. Barrie, M.B.E.

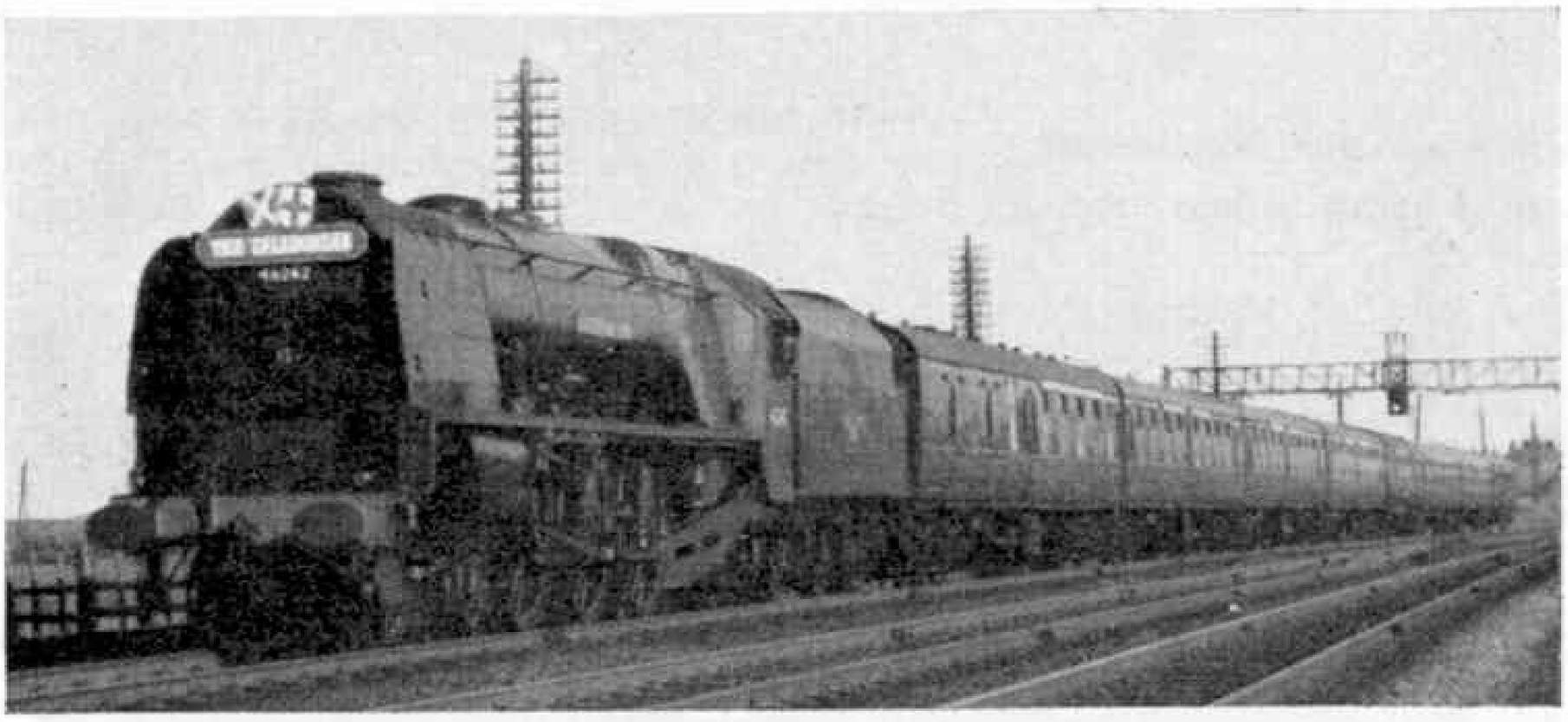
B.R. Standard 4-6-0 No. 73085 with an up Ramsgate train passing Sole Street station, near the summit of the incline of the same name. This route is referred to in the special article on pages 427-9. Photograph by S. Creer.

Grantham as a Railway Centre

The important E.R. main line junction station of Grantham, in Lincolnshire, has for many years been an important stopping place where engines are often changed. It is about half way from King's Cross to York or Leeds, 105½ miles from London and about 5½ miles north of the well known Stoke Signal Box, summit of a long rise from the direction of Peterborough.

Grantham Locomotive Shed is a depot of renown. Pacifics of classes A1, A3 and A4 are stationed there, and there are regular workings to London, Leeds, York, Newcastle. There are two through platform lines on the down or northbound side of the station, but only one in the opposite direction, with short

bay platforms on each side at the north end mainly handling arriving and departing branch trains, many of which are diesel sets. Trains on the normally busiest branch route, to and from Nottingham and Derby, can arrive or start clear of the main line. Those I saw on a recent summer Saturday were hauled by J6 0-6-0 and L1 2-6-4T locomotives.



The down "Caledonian" on its first trip caught near Golborne by the camera of W. S. Garth. The engine is No. 46242 "City of Glasgow", an appropriate choice for this service.

Frequent main line trains to and from the North and Scotland came and went. Some passed northbound at speed. Several southbound ran through at a slower rate, as they were going uphill following cautious passage of a long stretch where track renewal work was in hand. Among the latter was the week-end version of the *Elizabethan*, hauled from Edinburgh to King's Cross by A4 No. 60022 *Mallard*. There were Pacifics working through between London and Doncaster, Leeds or Newcastle, calling or passing. In addition 4-6-2 and V2 2-6-2 locomotives stationed at King's Cross, Grantham, Copley Hill (Leeds), York and the Newcastle depots, Heaton or Gateshead, etc., brought in or took on fast trains that changed engines there. Quite a remarkable sequence of non-stop runs is scheduled on summer Saturdays each way over the 105½ miles between Grantham and King's Cross. There are a good many every day in fact.

I had a steady, timekeeping run in a 14-coach Newcastle express from King's Cross to Peterborough, headed by A2 No. 60506, *Wolf of Badenoch*, rebuilt some years ago from "Cock o' the North" 2-8-2 type. I went on to Grantham in the care of a B1 4-6-0 by stopping train so as to obtain more views of passing expresses.

Locomotives in the News

In order to provide more scope for future construction diesel locomotives are to be numbered separately with a prefix D. New engines according to type will be in groups D.1-10, 200-9, 5000-19, 8000-19, and upwards, for example, with other series as required. The present numerous 350 h.p. diesel-electric shunters will be changed from the 13000 upwards numbering to the D.3000 group, and the 200 h.p. diesel-mechanical to D.2000 onward.

This is taking effect now and various examples are in service. For instance, following Nos. 13356-7 come D.3358-9. D.3454-6 are new engines allocated to 56G, Bradford, and D.3457 is at 55B, Stourton. Allocations of engines with old numbers are No. 13551 to 66B, Motherwell, and Nos. 11166-8 to 32A, Norwich. Nos. 13363-5, lately added to W.R. stock, were allocated to 88B, Cardiff, East Dock, and No. 13352, 87F, Landore.

New steam locomotives were recently announced and shedded as follows: class 5 4-6-0 No. 73153, 65B, St. Rollox, Glasgow, and Class 4 4-6-0 Nos. 75062-4, 16A, Nottingham; class 4 2-6-0 No. 76090, to 67A, Corkerhill, Glasgow, and Nos. 76100-1 to 65D, Dawsholm, Glasgow.

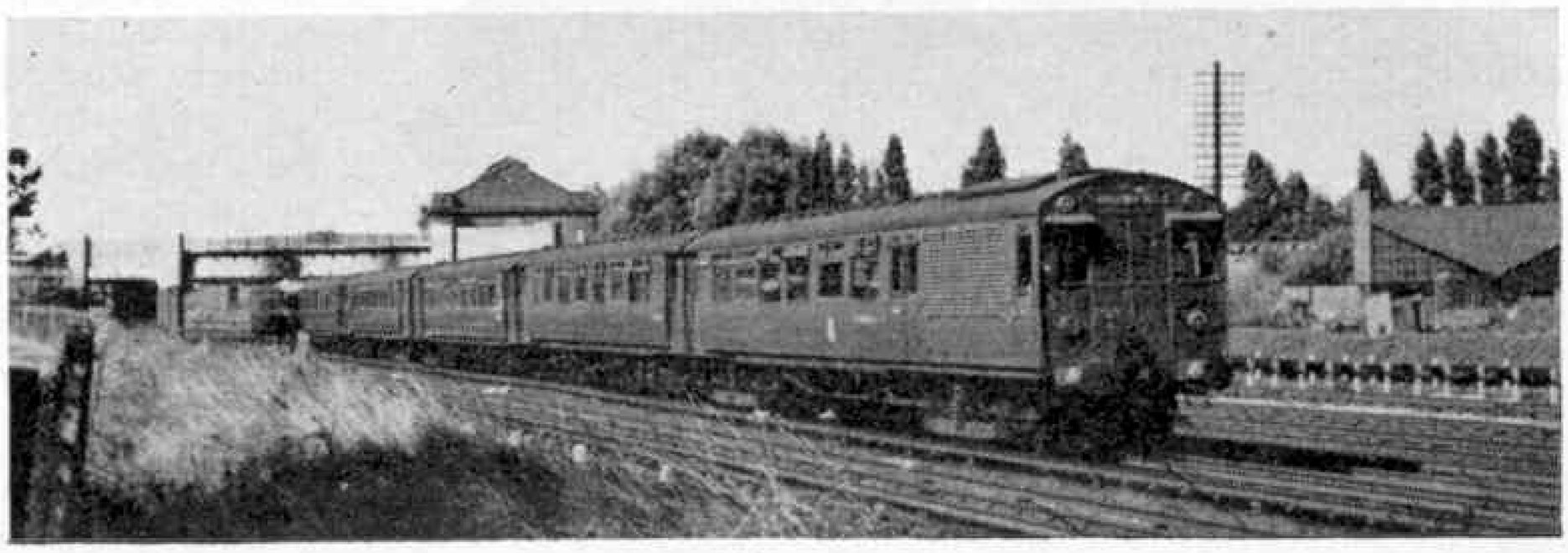
Britannia Pacific No. 70045 has been named *Lord Rowallan*, the Chief Scout taking part in the naming ceremony at Euston. It was announced that this engine would haul at least one of the principal special trains run in connection with the International Jamboree near Birmingham in August. Royal Scot 4-6-0 No. 46169, *The Boy Scout*, was also on view at Euston. No. 70045 is stationed at Holyhead, with four similar locomotives so far unnamed.

W.R. No. 4000 *North Star*—the original 4-cylinder 4-6-0, rebuilt to Castle class in 1929—and the last Dean old-time 0-6-0 No. 2538 have been withdrawn. More L.M. type 0-6-0T shunting engines are working in the Merseyside area. Ex-Lancashire and Yorkshire 2-4-2T No. 50712 was lately station pilot at Liverpool Exchange.

Owing to an inadvertence, the Schools 4-4-0 illustrated at the head of the Railway Notes pages in June was described as *King's Canterbury* instead of *King's Wimbledon*. No. 30939, *Leatherhead*, green and polished, headed several recent Royal specials from London on the Southern system.

* * * *

Available by any train to and from any station on the whole of the London Midland Region for a week, "Freedom of the Line" season tickets are issued this summer at a charge of £9. A child's ticket costs £4 10s. 0d.; if travelling with parents, £4.



A six-car L.M.R. electric train of the former L.N.W.R. type now being superseded on the Watford-City-Euston services by B.R. Standard trains. Photograph by A. R. Brown.

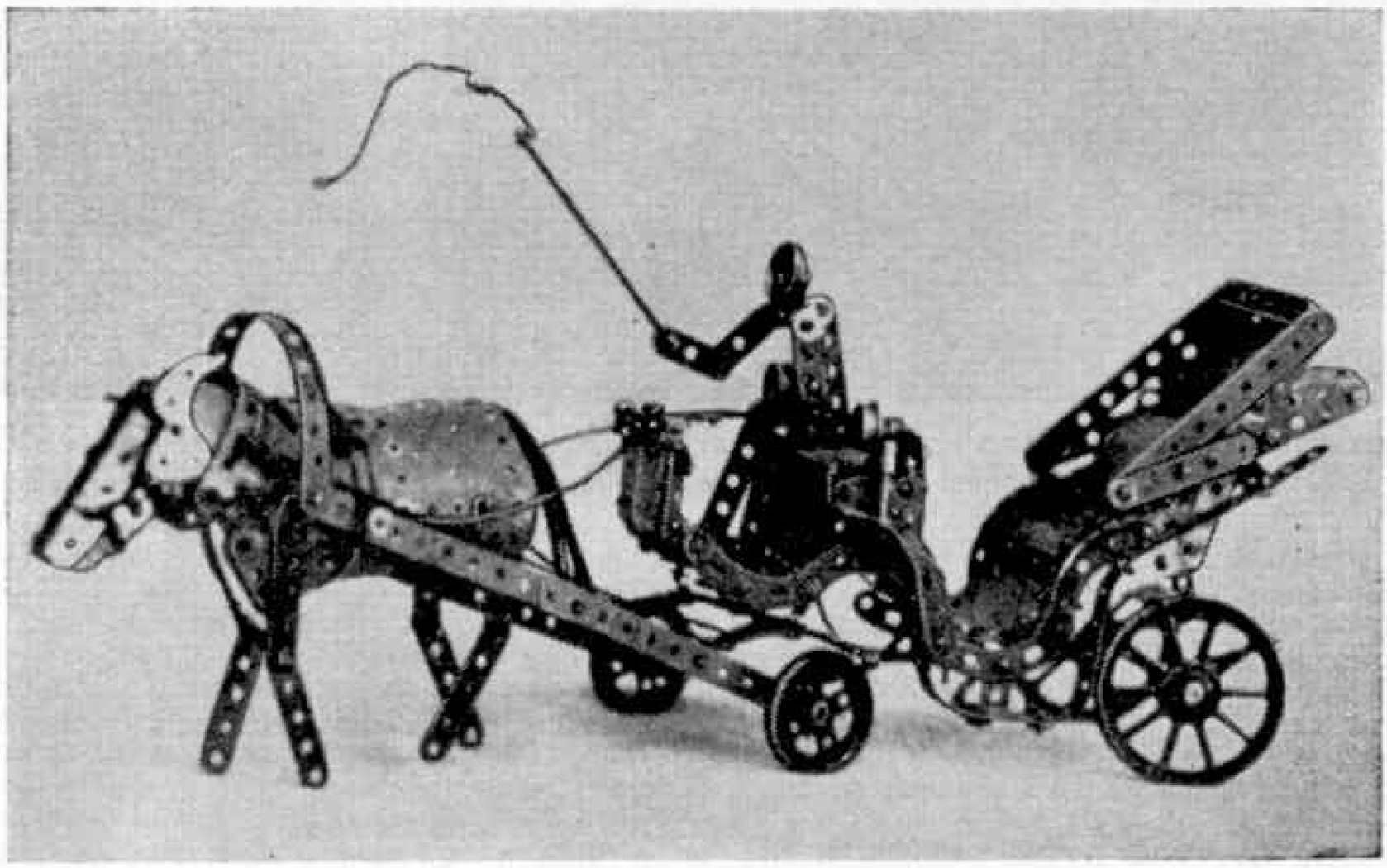
Among the Model-Builders

By "Spanner"

An Unusual Rack and Gear Mechanism

Some time ago I was asked by a correspondent to design a suitable bearing for a special rack and pinion driving mechanism that he required. Normally in a mechanism of this kind a ½″ Pinion is meshed with a Rack Strip, and when this arrangement is used there is no difficulty in providing bearings, as the centres required for these coincide with the spacing of the holes in Meccano parts. This standard arrangement was not suitable for my correspondent's special drive, since he required a 1″ Gear to be meshed with a Rack Strip, and in view of this I suggested the arrangement for mounting the parts that is shown in Fig. 1.

In my arrangement a Coupling 1 is attached to each end of the Rack Strip by means of a ¾″ Bolt, and these Couplings are able to slide freely on Rods of suitable length supported in bearings as shown. With this arrangement the Rack Strip can be set to mesh accurately with a 1″ Gear fixed on a Rod mounted in standard equi-distant holes.



This unusual model represents a type of horse drawn carriage used in some parts of China. It was built by Chinese boys at the C.S.V. Mission School, Lai Tso Li, Taiching, Taiwan, China.

Four Movement Crane Gear-Box

The mechanism shown in Figs. 2 and 3 is designed specially for use in models such as cranes and excavators where several different drives are required. It provides four movements from a single input shaft, but the gearing is arranged so that only two levers are needed to operate the gear-box. Control of the mechanism therefore is very simple. In a luffing crane the movements can be used to operate the load hoist, to luff or raise and lower the jib, and to provide power for travelling and slewing purposes.

The baseplate on which the mechanism is assembled is a 5½″ × 3½″ Flat Plate

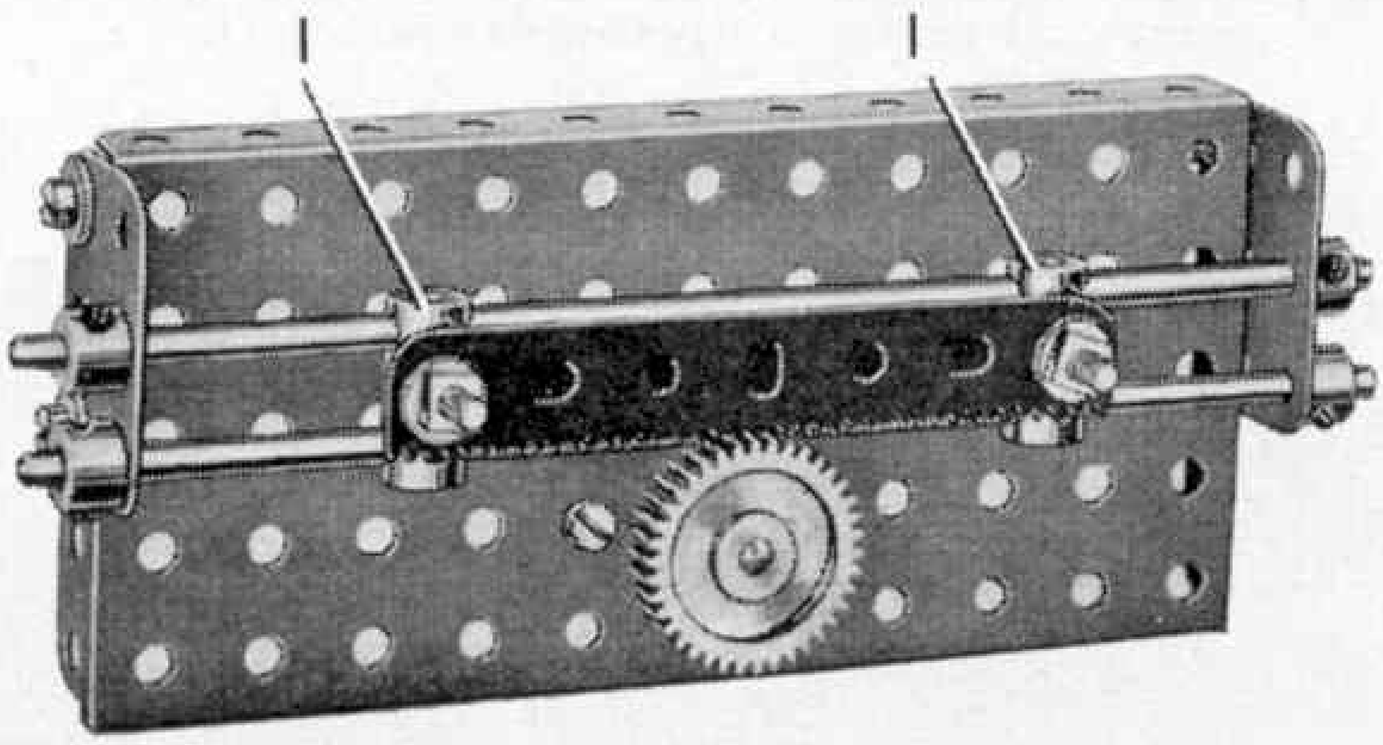


Fig. 1. A rack and gear mechanism designed for use with a 1 in. gear.

edged by two 5½″ Angle Girders. Two 3½″ × 2½″ Flanged Plates are fixed in position and are connected by a 3½″ Strip. A third 3½″ × 2½″ Flanged Plate 1 that serves as a base for the control levers is bolted in place as shown. The Plate 1 is braced to the gear-box frame by a 3″ Strip attached to an Angle Bracket bolted to Plate 1.

The input shaft is a Rod 2, and it carries two Double Arm Cranks 3 and 4, a ½″ Pinion 5 and a ¾″ Sprocket. The Double Arm Cranks are placed one on each side of Pinion 5 with Washers for spacing purposes, and they are free on the shaft. The Pinion 5 is *fixed* on the shaft, and Collars are used to prevent the Double Arm Cranks from sliding.

A ½″ Pinion 6 is mounted freely on a ¾″ Bolt held in the Double Arm Crank 3 by two nuts, and a ½″ Pinion 7 is supported by a ¾″ Bolt attached similarly to the Double Arm Crank 4. A 4½″ Strip 8 is lock-nutted to each Double Arm Crank and to the control levers 9. These levers are 3½″ Strips lock-nutted to 2½″ Angle Girders bolted to the Plate 1. A guide frame for each lever is made from 2½″ Stepped Curved Strips supported by 2½″ Strips.

When its control lever is operated, Pinion 6 can be moved into mesh with either one of two 57-tooth Gears 10 and 11, which are fixed on shafts that carry Sleeve Pieces and Flanged Wheels to form winding drums. Similarly Pinion 7 can be meshed with 57-tooth Gears 12 and 13, which are fixed on Rods that carry also ½″ Pinions. These Pinions engage ¾″ Contrates on vertical Rods that can be connected to the slewing and travelling movements of a model crane.

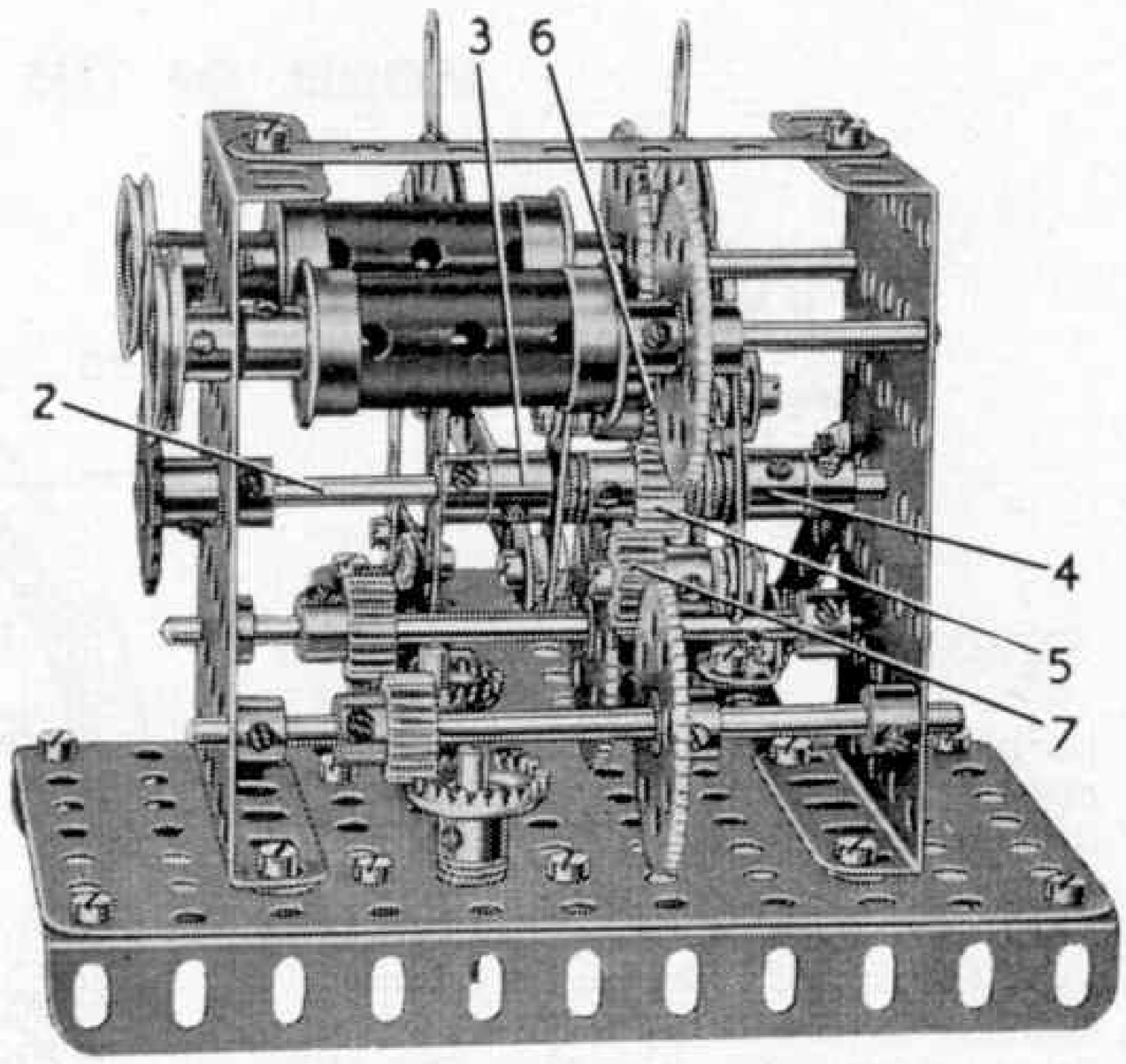


Fig. 2. This gear-box is designed for use in a model crane and provides four separate drives from a single input shaft.

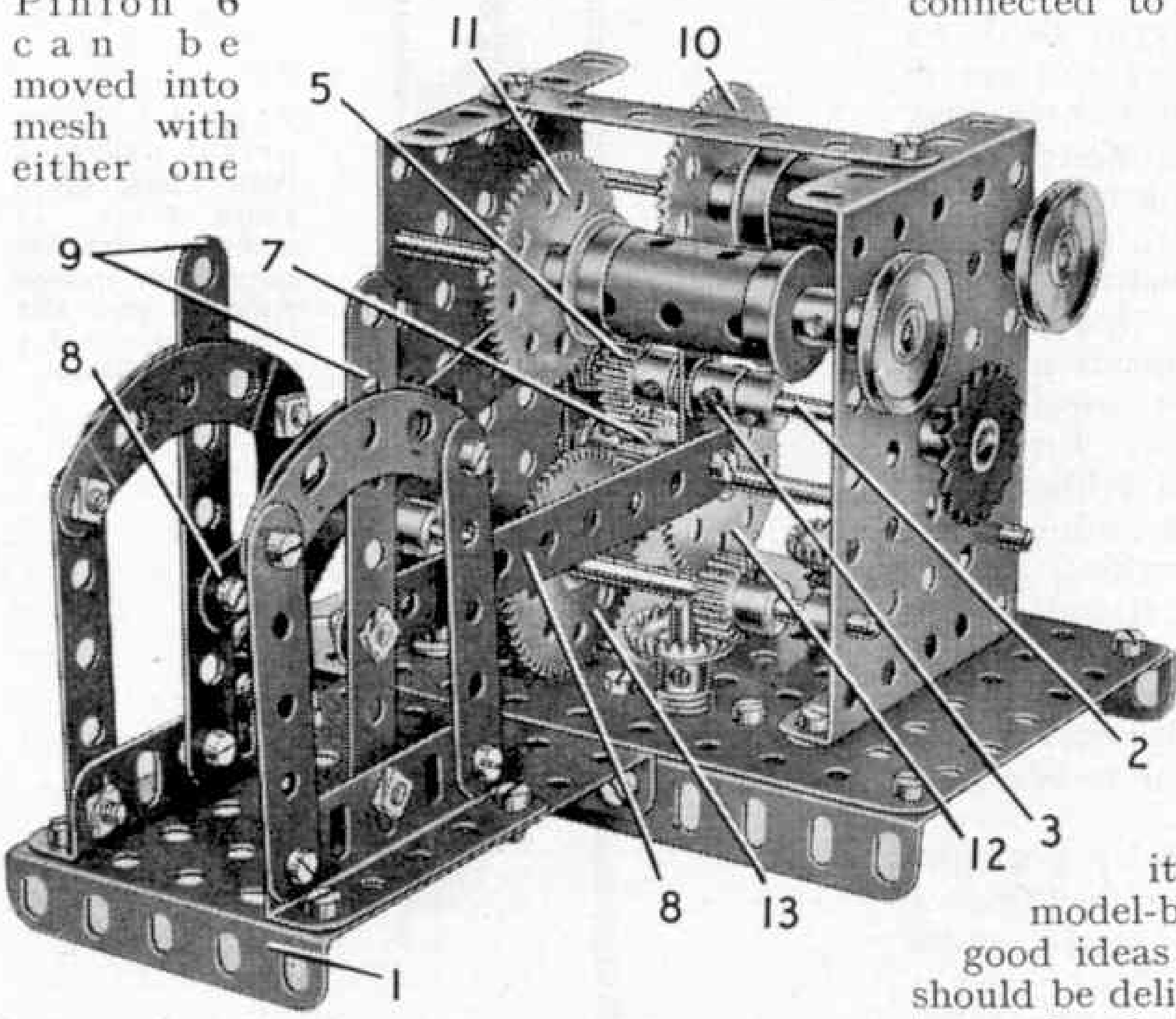


Fig. 3. Another view of the four movement gear-box.

Any Ideas?

I have been busy lately designing an automatic reversing mechanism for a special job. It is of course easy enough to build up a mechanism of this kind if consideration of overall size does not matter, but for the particular job I was concerned with the auto-reverse gear had to be very small and compact. I did succeed in making a suitable mechanism for the job, but it occurs to me that other model-builders might have some good ideas on this subject and if so I should be delighted to hear from them and to receive details of their mechanisms, together with a photograph or drawing if possible.

MODEL OF THE MONTH

Wall Clock

WORKING models, especially those that serve a useful purpose when they are completed, appeal to every model builder, and our latest "Model of the Month" is one that is sure to create a lot of interest. It is a weight-operated Wall Clock and is based on a model entered in a Meccano Competition some time ago by Mr. R. B. Bagshaw, London S.E.26.

Since the very earliest days of the Meccano hobby enthusiasts have been fascinated by the construction of working clocks, and to judge by the requests we receive for details of such models the interest in Meccano clock mechanisms is increasing steadily.

The construction of a really satisfactory clock is a challenge to even an experienced model-builder, for absolute accuracy in assembly is essential if reliable timekeeping is to be obtained. It is a real thrill to complete a model of this kind and set it working, and we are sure every enthusiast who builds this "Model of the Month" will feel a sense of achievement as he watches the pendulum swing to and fro and listens to the steady beat of the escapement.

The clock is designed to hang on a wall, and as illustrated it consists of little more than a frame for the mechanism and the clock face. This form of construction has been adopted deliberately, as we think that most model-builders will want to demonstrate the working of the model to their families and friends. The model as illustrated is neat and effective in appearance, but if desired the frame can be enclosed in a case quite easily, and no changes in the design of the mechanism should be necessary.

The Wall Clock is operated by a weight of between 4½ and 5 lb. suspended from a length of Sprocket Chain that passes round a 1½" Sprocket Wheel. The Sprocket Wheel is the driving member of the clock gear train, and it is connected to its shaft by a neat ratchet mechanism. The ratchet

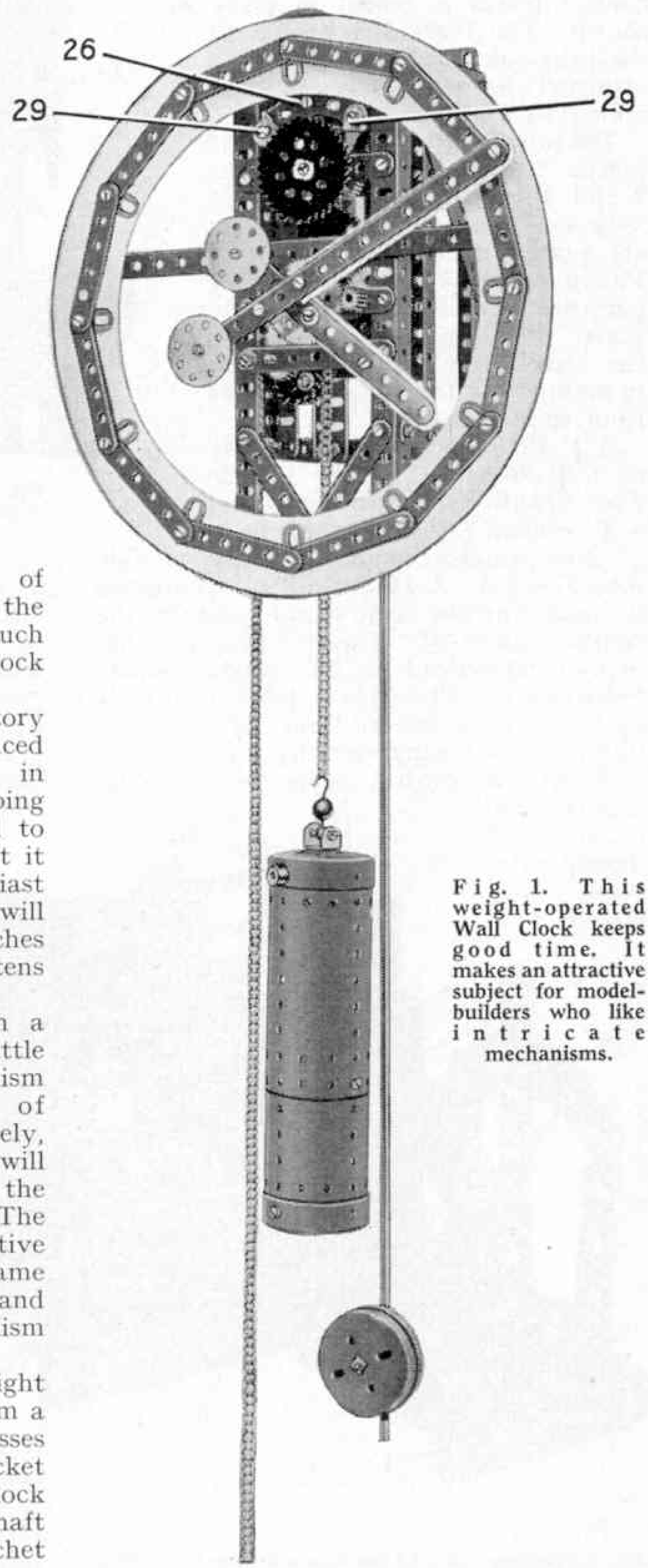


Fig. 1. This weight-operated Wall Clock keeps good time. It makes an attractive subject for model-builders who like intricate mechanisms.

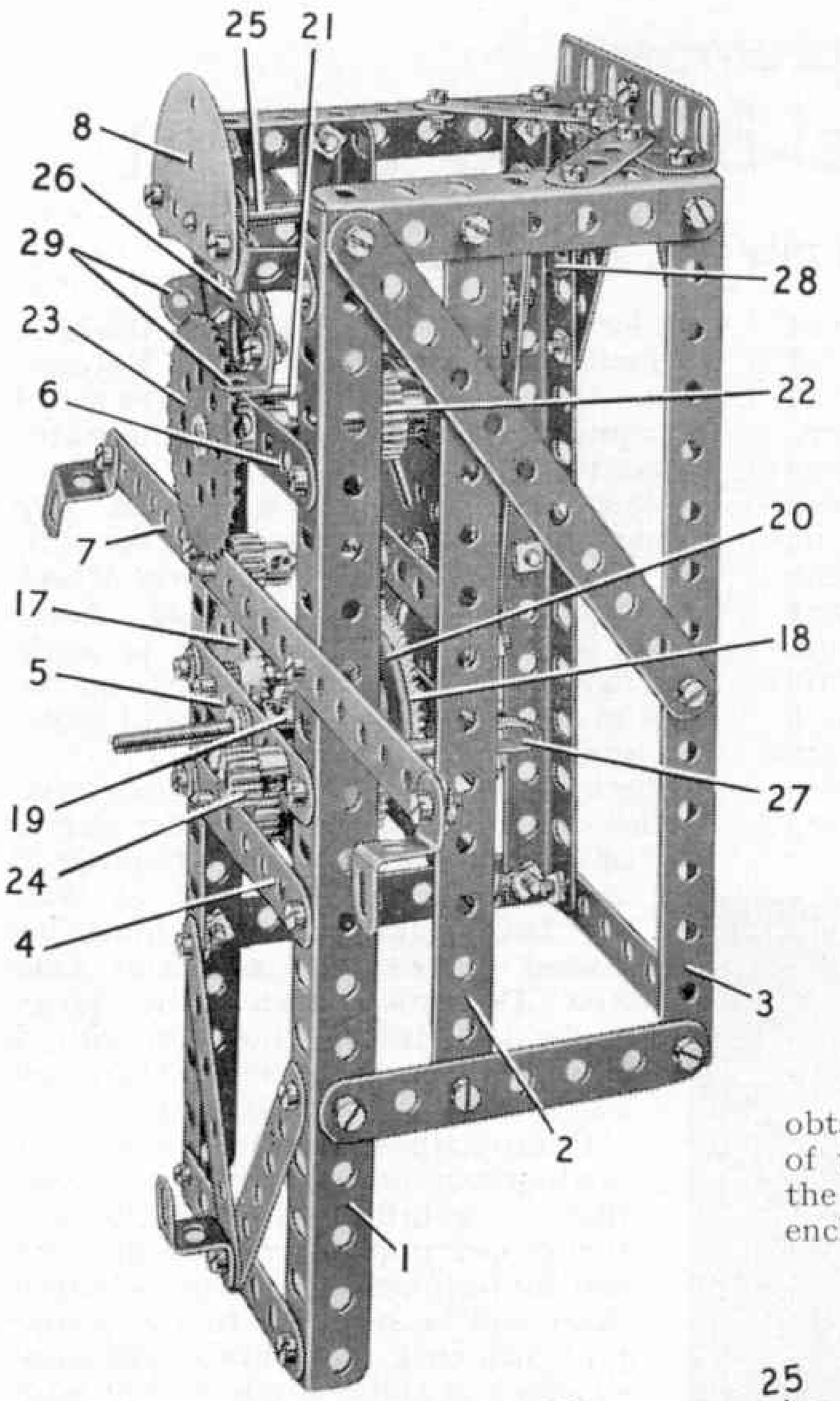


Fig. 2 (above). A side view of the clock mechanism revealing details of the frame and the bearings for the gear shafts.

arrangement allows the Chain to be pulled round to raise the weight without affecting the main gear train. Thus winding the clock is a simple matter, and as a slip clutch is included in the drive to the hands, these can be adjusted while the mechanism is working.

The escapement mechanism is the heart of the clock and in this Wall Clock a 2″ Sprocket is used for the escapement wheel. This ensures that the escapement teeth are evenly spaced, a matter that is not easy to arrange when a built-up escapement wheel is used. The adjustment of the pallet of the mechanism is critical, but once the correct setting has been obtained the clock will operate smoothly and steadily. The time-keeping of the mechanism can be varied by adjusting the position of the bob weight on the pendulum.

Full constructional details and a list of the parts required to build the Wall Clock can be obtained by writing to the Editor, enclosing a 2d. stamp for return postage. Readers living in Canada, Australia, New Zealand, South Africa, Ceylon, Italy, Rhodesia, and the United States of America can obtain their copies of the *current* Model of the Month Instructions by writing to the main Meccano agents in those countries, enclosing suitable stamps for postage.

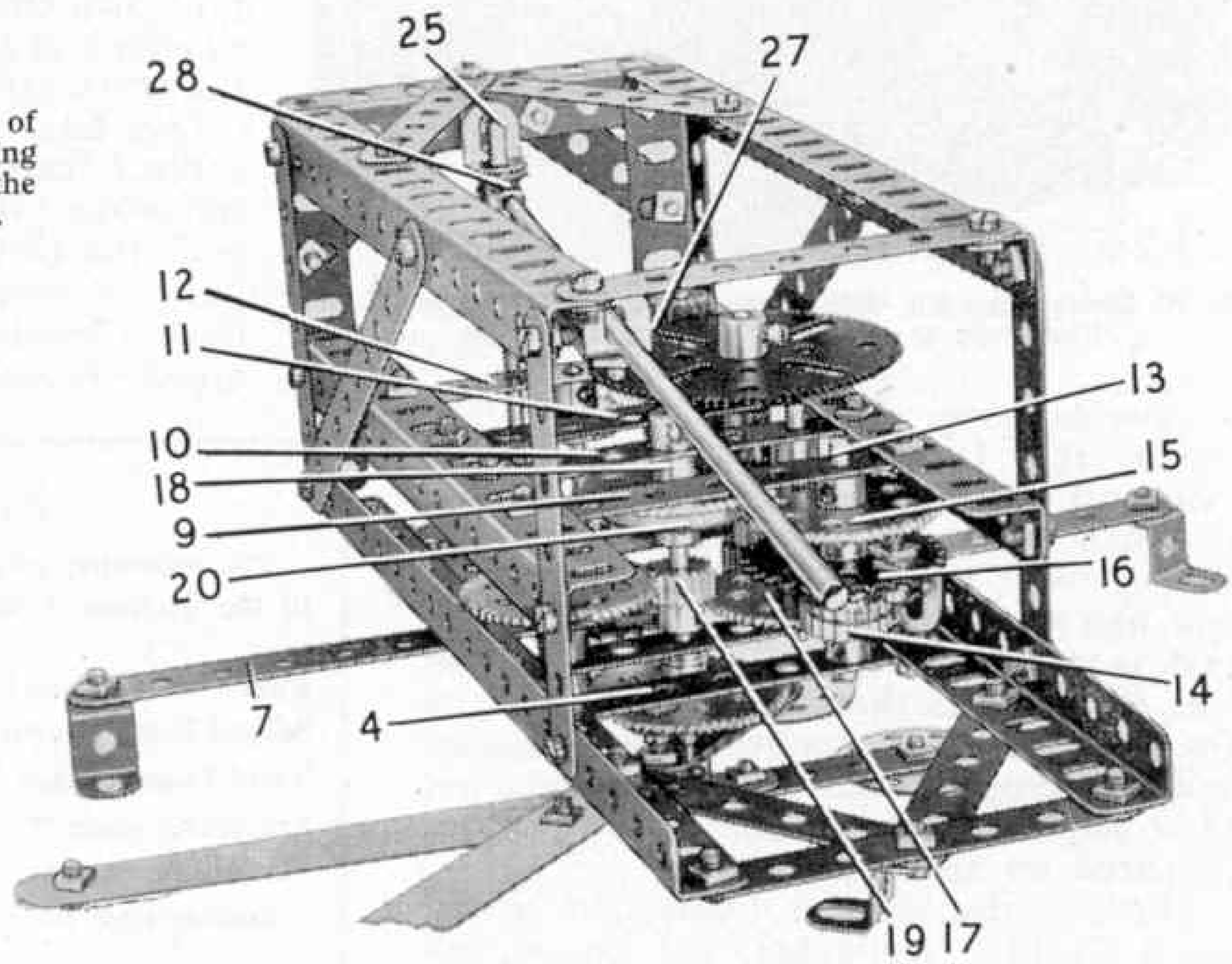


Fig. 3 (right). This close-up picture of the clock gearing shows the arrangement of the ratchet winding mechanism.

September General Model-Building Contest

A Splendid Opportunity to Win a Cash Prize

ANOTHER summer is almost over, and before long readers in this country will be turning once again to indoor hobbies to keep them busy during the dark evenings. This is just the time to make preparations for an active model-building season, and to provide a good start we are arranging another of our popular general model-building contests. We shall look forward to receiving a splendid crop of entries.

R. W. Denny, Ipswich, with a fine mobile crane that won him First Prize in a recent "M.M." Competition.

For the benefit of new readers, a "General" Model-Building Contest is one in which models of any kind and size may be entered. You can choose any subject you like for your model, and you can use just as many parts as you wish to build it. The only rule is that each model must be the result of the competitor's own unaided work, although the photographs or sketches of it required for the entry need not be prepared by the entrant.

Don't be discouraged if you have only a small Outfit. Remember, the judges will look for neatness in design and construction, originality and the novel use of Meccano parts. Allowance will be made for the age of the competitor also, so send in your entry no matter how old you are.

When your model is completed, you should obtain photographs or sketches of it, and send them to *September General Model-Building Competition, Meccano Ltd., Binns Road, Liverpool 13.* Take care to write your age, name and address clearly on the back of *each* photograph or piece of paper you send.

There will be two Sections of the contest. Section A is for competitors under twelve on 31st December next, and Section B is for those aged twelve or over on that date. Entries must be posted to reach us not later than 31st December next. The prizes to be awarded for the best entries submitted in each Section are set out in the panel on this page.

Competitors should note that photographs and sketches of models that are awarded prizes will become the property of Meccano Ltd., and will not be returnable. An unsuccessful entry will be returned to the sender provided that a stamped addressed envelope of suitable size is sent with the entry for that purpose.

One final word. In choosing your subject make sure it is one you can reproduce sturdily and realistically with the Outfit or parts available to you. A small well-built model will have a better chance of success than a large flimsy construction.

THE PRIZES

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

	£	s.	d.
First Prize, Cheque for	4	4	0
Second Prize, Cheque for	2	2	0
Third Prize, Cheque for	1	1	0
Ten prizes, each of		10	0
Ten prizes, each of		5	0

Closing Date for Entries: 31st December, 1957.

Club and Branch News

WITH THE SECRETARY

A WELL-MERITED AWARD

A particularly happy occasion recently at the Launceston M.C., Cornwall, was the first presentation of the Club Challenge Cup, and our illustration this month shows this taking place. The Cup has been bought out of Club funds, and it is to be presented each year at the time of the annual Exhibition to the member who has attended meetings most regularly, has recruited most new members, has been most helpful to the Club during the year, and has exhibited the best models at the annual Exhibition.

This is a popularity award, too. Not lightly won, is it? But that is as it should be, and I am sure that the prospect of winning this beautiful Trophy will spur every member to do his best for his Club. I congratulate the Launceston M.C. on their enterprise in instituting this award, and Ron Screech on being the first winner of the Cup.

There is a similar award from Headquarters that is available in all Clubs. It is the Merit Medallion, for members who have done most to advance their Club's interests. Two are awarded each session, on the nominations of Club Leaders, and I hope Leaders who have not taken advantage of this award for recent Sessions will let me have their nominations immediately.

CLUB NOTES

St. Thomas District (Exeter) M.C.—Games Evenings have continued, but some good model-building also has been done. Models completed have included a heavy trailer lorry, water pump wheel, car and a biplane. The Second Anniversary party went off well, and one of the most enjoyable items was a delicious cake made by the Mother of one of the Club's earliest members. Club roll: 20. *Secretary:* E. Milton, 17 Beaufort Road, St. Thomas, Exeter.

AUSTRALIA

Fremantle and District M.C.—A most enjoyable visit has been paid to the Government Railway Workshops. Model-building has included the construction of a meccanograph, a fairly large marine steam engine, motor bus and a sports car. The construction of model racing cars mentioned on this page last June is continuing, and about four of them have been completed. Model aeroplane building also is being taken up. Club Roll: 14. *Secretary:* J. Yeomans, 46 Clayton Street, East Fremantle, W. Australia.

Maylands M.C.—After a break of nearly three years cycling runs have been resumed. The first was to the Club's old camping site near Sorrento Beach and the second was to the ever popular hills resort "Rocky Park", in the Darling Range National Park. Substantial model-building in preparation for the September Exhibition has been done, and large models completed include a loom, breakdown crane, combine harvester, aircraft carrier, grandfather clock, and the motor chassis featured in the January 1957 *M.M.* At one model-building meeting members had the pleasure of a visit from the Leader and several members of the Fremantle and District M.C. During the school holiday period model-building was suspended, and games evenings and film shows held instead. Club roll: 48. *Leader:* Mr. V. Malmgreen, 16 Kennedy Street, Maylands, W. Australia.

BRANCH NEWS

Mile End (Portsmouth)—A lighthearted event at a recent meeting was the acting of a realistic "railway station scene" by the members. There was the familiar blowing of whistles, the making of station announcements (by a member speaking into a glass tumbler), the slamming of "coach" (Club room) doors, and cries of *Close doors, please!* and *Right away there!* Members "dressed up", with their attache cases, acted as passengers, and of course there was a ticket collector! An interesting Quiz arising from a recent Train Spotting Night was much enjoyed. *Secretary:* Mr. A. J. Nicholson, 213 Sultan Road, Buckland, Portsmouth.

UNINCORPORATED BRANCH

Potters Bar—The shelves for the new layout have been fixed in position and the track put down, and additional rails bought with Club funds. The layout is a terminal one, and excellent running operations are being carried out. Lineside buildings are being constructed, and the members are visiting railway stations in the area to check up on details. A visit to Stratford Engine Works has been arranged. *Secretary:* R. Woods, 120 The Walk, Potters Bar, Middlesex.

Mr. B. Tunbridge, co-Leader, presenting the Launceston Meccano Club Challenge Cup to Ron Screech, the first winner of this beautiful Trophy.

HORNBY RAILWAY COMPANY

By the Secretary

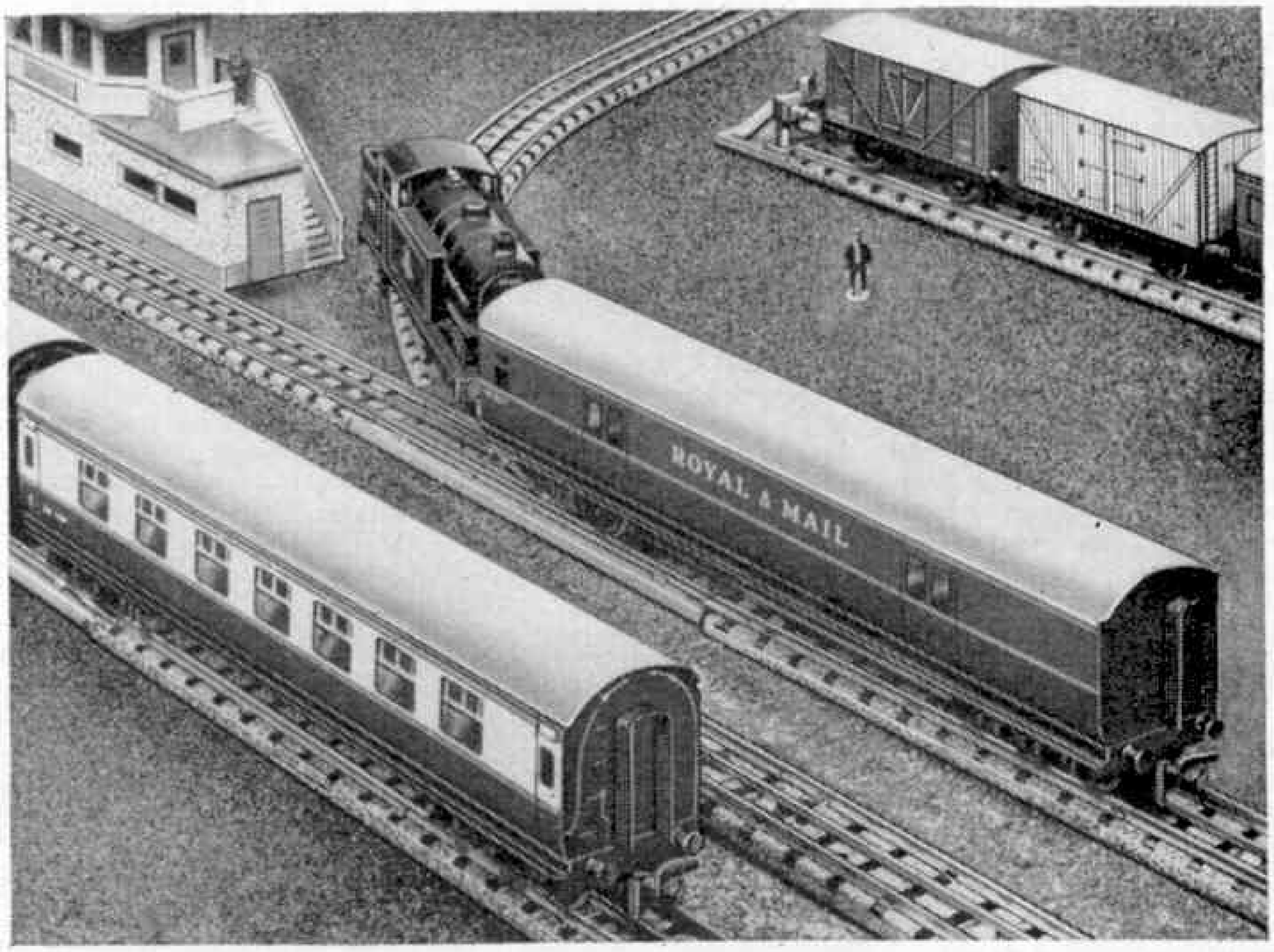
Up and Down with the T.P.O.

TO judge by the letters that still continue to reach me regarding the T.P.O. Mail Van Set, I think that this must be one of the most popular Hornby-Dublo introductions ever made. Certainly its introduction has given rise to any amount of correspondence regarding T.P.O. services and practices, and of course on the use of the splendid Hornby-Dublo T.P.O. Mail Van Set and its separate components.

A point that has cropped up fairly frequently arises out of what I may term the "one sided" design of the T.P.O., that is the fitting of the mail discharge and collection apparatus to the near side of the van only. The reason for this obviously is that the ground apparatus must be situated at this side of the track. What happens then when a T.P.O. reaches the end of its journey? Unlike the ordinary coaching stock it cannot simply be transferred to another track and run the opposite way. It must be turned round in order to bring its operating side "right way round" for the return journey. Sometimes the layout at or near a terminal station allows the T.P.O. van, or perhaps a whole train of such vans, to be turned by means of a triangular junction. At other points recourse has to be made to the use of a turntable.

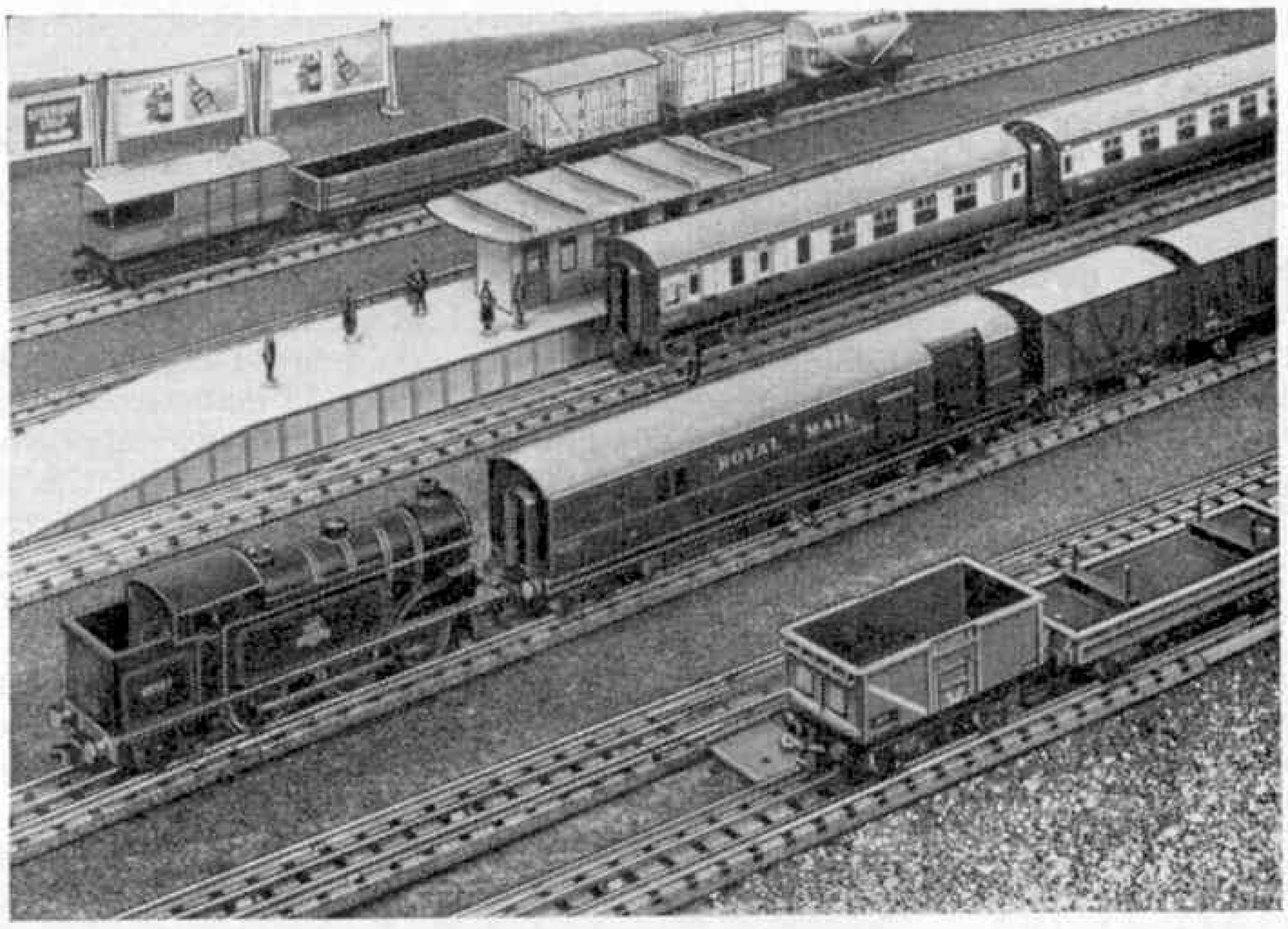
This turning business is something that will provide the Hornby-Dublo owner with a nice opportunity for some realistic planning. Even on a continuous layout, with up and down tracks, he is quite likely to want to operate his T.P.O. on up and down trains in turn. So he must do something to allow him to set the Van the right way round again for its return journey after making a trip in one direction. With a dead end or terminal station, where the tracks finish at the platform Buffer Stops, the T.P.O. must be turned round in such a way that it can be shunted back on to its train, in its correct place next to the engine.

Possibly the layout may already have in it a triangular junction section, such as that shown in the article on page 358 of the July *M.M.* If so, then turning is relatively easy. The carriage pilot locomotive must take charge of the Van and work it round each side of the junction in turn.



The Hornby-Dublo 0-6-2T is taking the T.P.O. on to a triangular junction layout in order to turn it round ready for the return journey.

Possibly the ordinary Coaches forming the train can first be dealt with by another engine, which will transfer them from the arrival to the departure track, or perhaps move them to a convenient siding for the moment. If not, the T.P.O. can be left in a siding that has an Uncoupling Rail in its make up, so that the Van can be detached



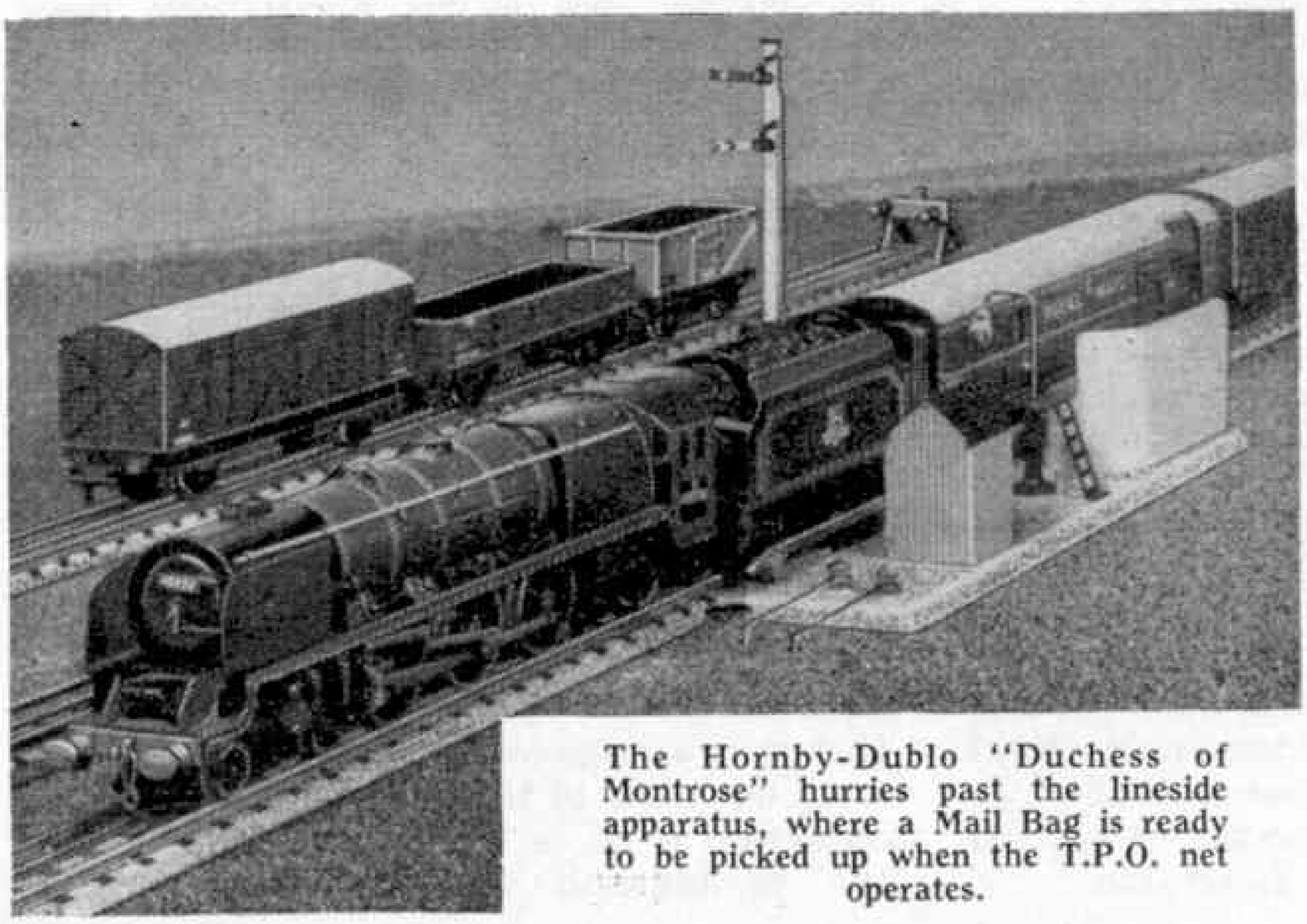
The station pilot engine is moving the T.P.O. and other Vans ready to attach them to the Corridor stock waiting alongside the platform.

from the shunting engine while this goes to deal with other stock. Then the T.P.O. can be placed at the front of the train again and left ready for the main line locomotive to take over. The exact order in which the different moves are made will depend on the layout arrangements and the engines available.

Another way of reversing the T.P.O. Van is to use an "S" shaped reverse loop connecting the opposite sides of the main oval track. This indeed forms part of many layouts, and here is another use for this device, which is so valuable for reversing the direction of complete trains as well as turning engines. Naturally this involves some to and fro shunting movements, but that applies to the triangular junction arrangement as well, and it is good fun to work out how these moves can be fitted in between the operating arrangements for other trains run on the system.

One or two readers have suggested the use of a Hornby-Dublo Turntable for turning a T.P.O., but the position is complicated here by the fact that the engine needed to place the T.P.O. on the Turntable will also have to be detached from it. This is scarcely possible on the Turntable, as an uncoupling ramp cannot be provided there. Some of my younger friends get round the difficulty by separating the Couplings by hand, but that is scarcely playing the game!

It is quite possible that the T.P.O. and perhaps other Vans with it, such as the long wheelbase Ventilated Van, may not be required over the whole journey of one of your Mail-and-passenger trains, but they may have to be attached or detached at an intermediate point. This kind of operation is carried out regularly in actual practice and it can be reproduced in Hornby-Dublo, if care is taken in the placing of the Uncoupling Rails and isolating sections that are involved. Station working of this kind is always interesting, whatever the traffic. Not only Vans for mails, but also Horseboxes, Fish Vans and similar stock may be involved.



The Hornby-Dublo "Duchess of Montrose" hurries past the lineside apparatus, where a Mail Bag is ready to be picked up when the T.P.O. net operates.

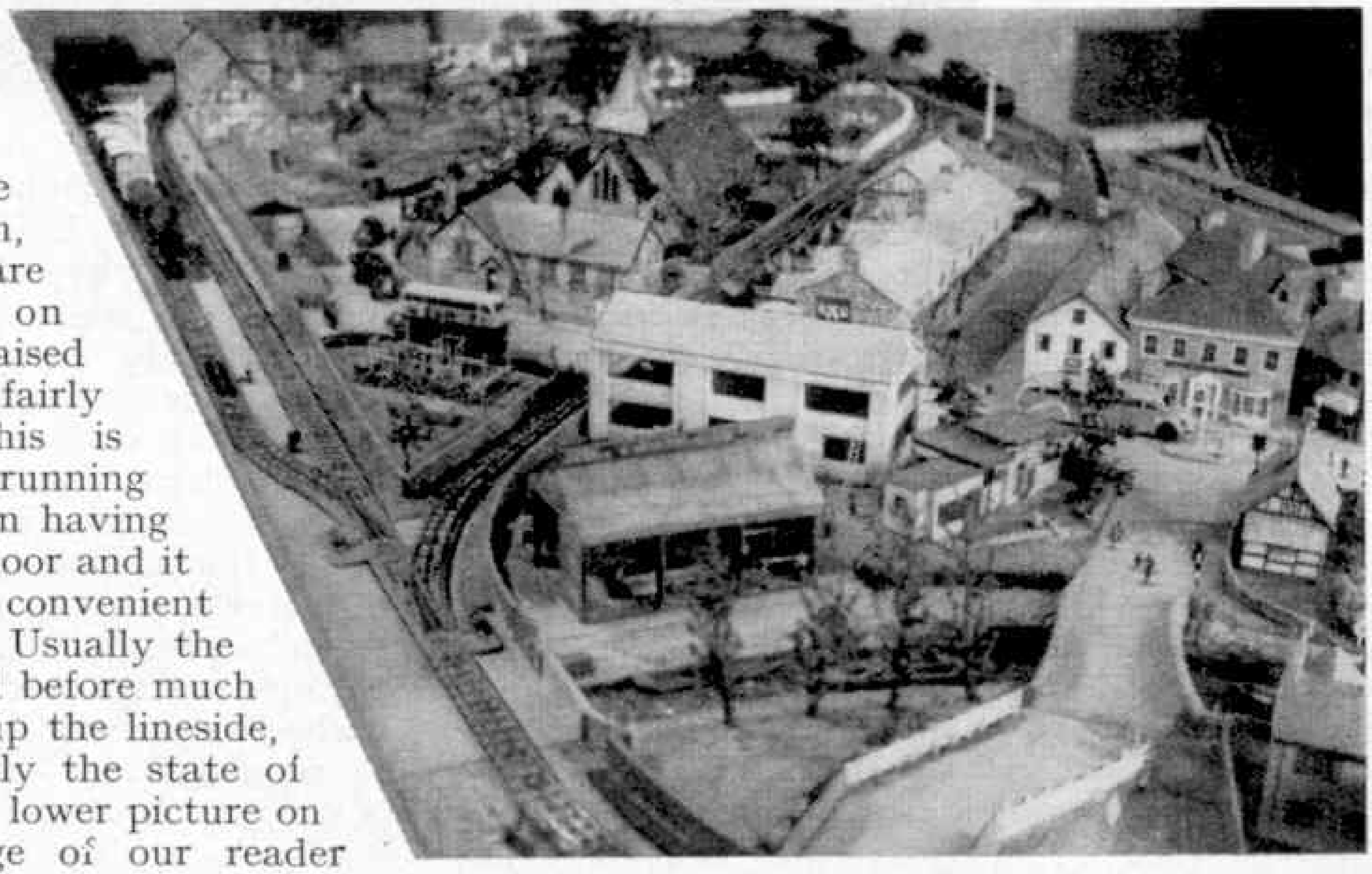
"Step by Step" in Hornby-Dublo

MOST miniature railways develop by degrees and it is really an advantage that they should do so. Some Hornby-Dublo owners do, we know, obtain all they need for a given layout at once and get on with its construction without delay. Even they usually find that they wish to make changes or additions to increase interest, or to provide variety in running, and it is safe to say that there is no such thing as a layout that is not being extended step by step. For all owners this "building up" is great fun.

In this "step-by-step" business let us start at the beginning. Many initial layouts have a simple track plan, but most of them are placed, wisely, on some kind of raised baseboard at a fairly early stage. This is better from the running point of view than having the track on the floor and it is certainly more convenient for the operator. Usually the track is developed before much is done to build up the lineside, and this is exactly the state of affairs seen in the lower picture on the opposite page of our reader Raymond Holder, of Thundersley, Essex, with his Hornby-Dublo system. Obviously Raymond is taking advantage of a fine day to enjoy himself with his railway outside and to use various Dinky Toys in conjunction with his train services.

This illustration is used here to show a simple portable layout in its early stages, but since the photograph was taken some time ago it has gone several steps further, as was to be expected! Both lineside and track developments have been made, and miniature buildings of various kinds have given it a fuller and more attractive appearance. On the track side, the layout plan has been modified to fit a raised base following the walls of a room, thus passing from the portable to a more permanent state, and the general scheme is that of an end-to-end layout, with operations carried out in accordance with a timetable.

Even when a system is still in the growing stage a great deal can be done to improve its general aspect by the addition of various lineside features. Many things of this kind can be made successfully at home, and a good example of this is the cattle pen and platform shown in the upper illustration on the next page. This is the work of G. Malcolm Kennedy, a keen Canadian Hornby-Dublo owner, of Toronto. Such pens are used in loading or unloading cattle, which are sometimes awkward customers! In making this sort of thing the home-worker can make good use of card, stripwood and various odds and ends. With the aid of tube glue and a little paint some really convincing lineside items can be made by the keen modeller.

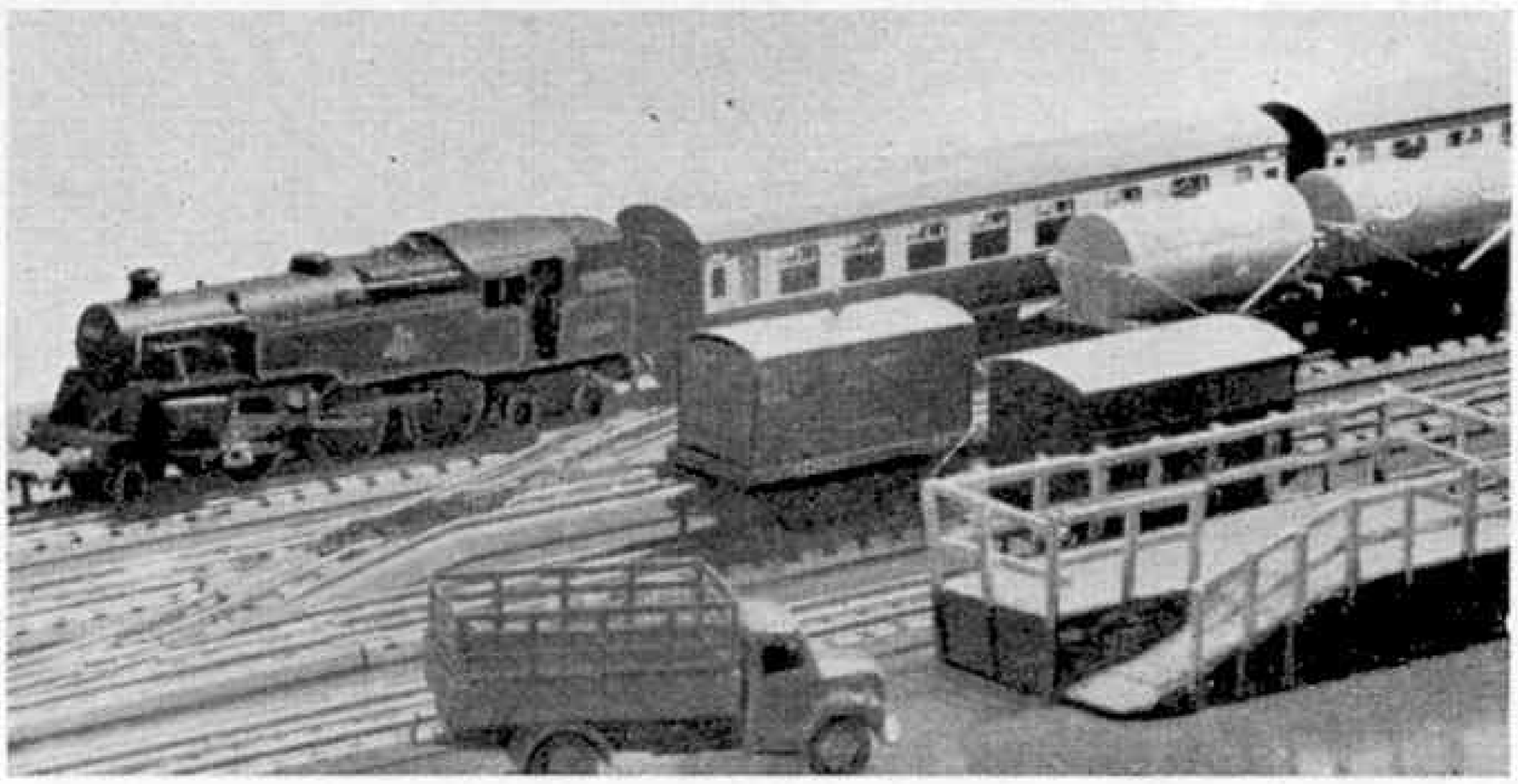


An extensive view of the Hornby-Dublo layout developed by Patrick Jourdain and his mother. These enthusiasts are to be congratulated on the realistic and effective appearance of their system.

You will note in this picture that an interesting use has been found for Dinky Toys No. 343, Farm Produce Wagon. It makes a good cattle or stock carrier, as well as being excellent for its designed purpose. Strictly speaking, it is a little on the large side for use in conjunction with Hornby-Dublo, so we must imagine that it is a large vehicle of its type. There were no cattle in the pen, the Cattle Truck alongside it or in the motor vehicle when the photograph was taken. No doubt

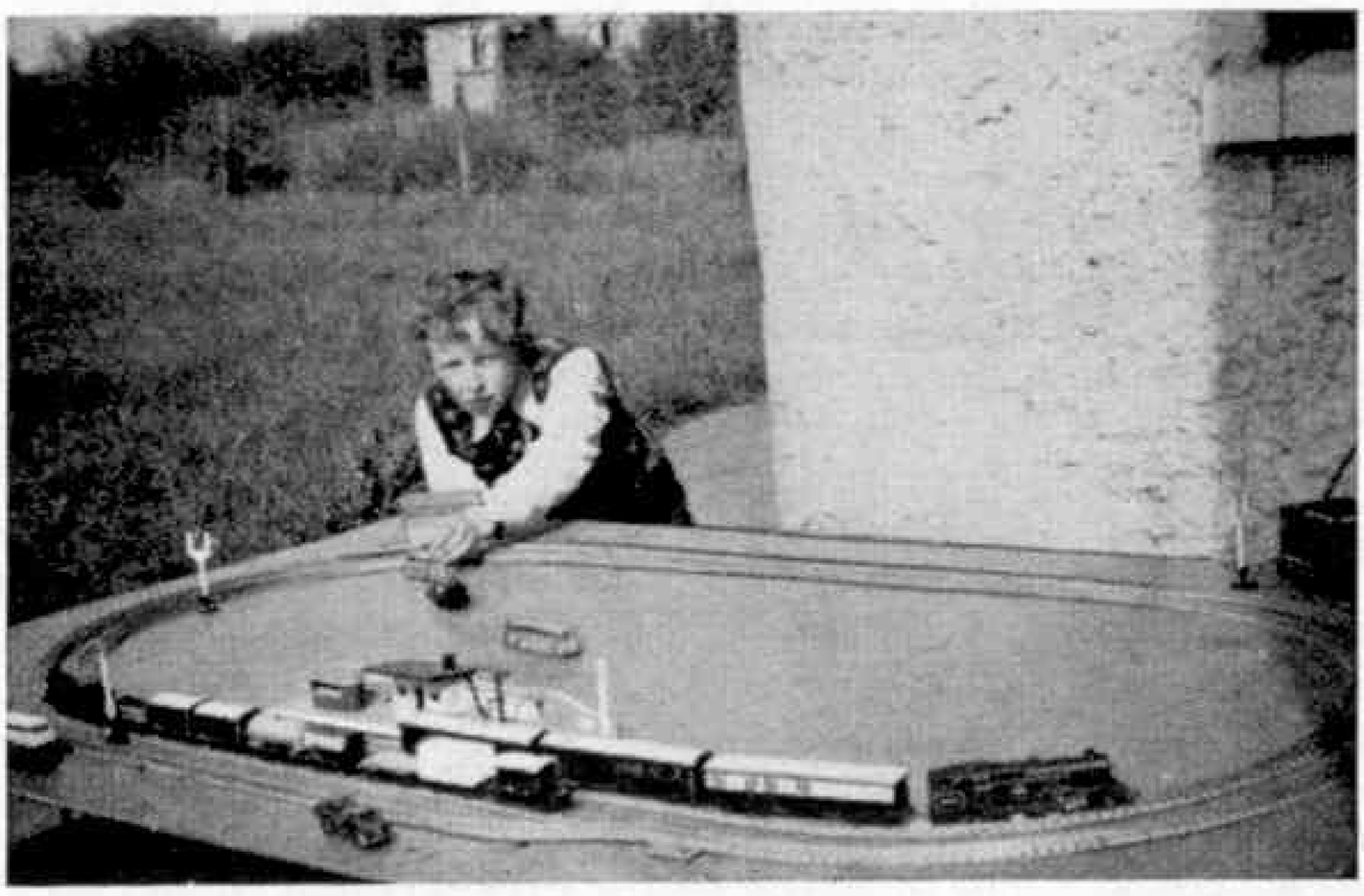
they were to arrive by train in due course!

A later stage of miniature railway development invariably includes certain scenic effects and for a good example of what is possible in this direction we turn to our first picture. This shows the attractive layout developed by Patrick Jourdain, of Woking, with the help and encouragement of his mother. Mrs. Jourdain has taken care of providing the scenic and architectural work, with really admirable results. The layout is on a baseboard 8 ft. × 4 ft., which is well reinforced by timbers. All wiring and switches are mounted on the board, and these and the track remain in place when the board is stored away out of use. The scenic and similar lineside features are of course removed when this is done.



A home-built cattle pen is prominent in the foreground of this picture of part of the layout of G. Malcolm Kennedy, Toronto. The Dinky Toys motor vehicle, No. 343, near the pen makes a good stock carrier.

This system shows a fairly advanced stage in step by step development from a simple Train Set, and like that of Raymond Holder it has gone further. Now it includes a main oval with inside reverse loop, and other tracks. The track laying and wiring is Patrick's special province. He has had plenty of opportunity to give expression to his ideas and wishes. His Signals and Points are electrically operated, and he has installed a lighting system serving some of the lineside houses, as well as an electrical device that causes a bell to ring when the train approaches the Level Crossing.

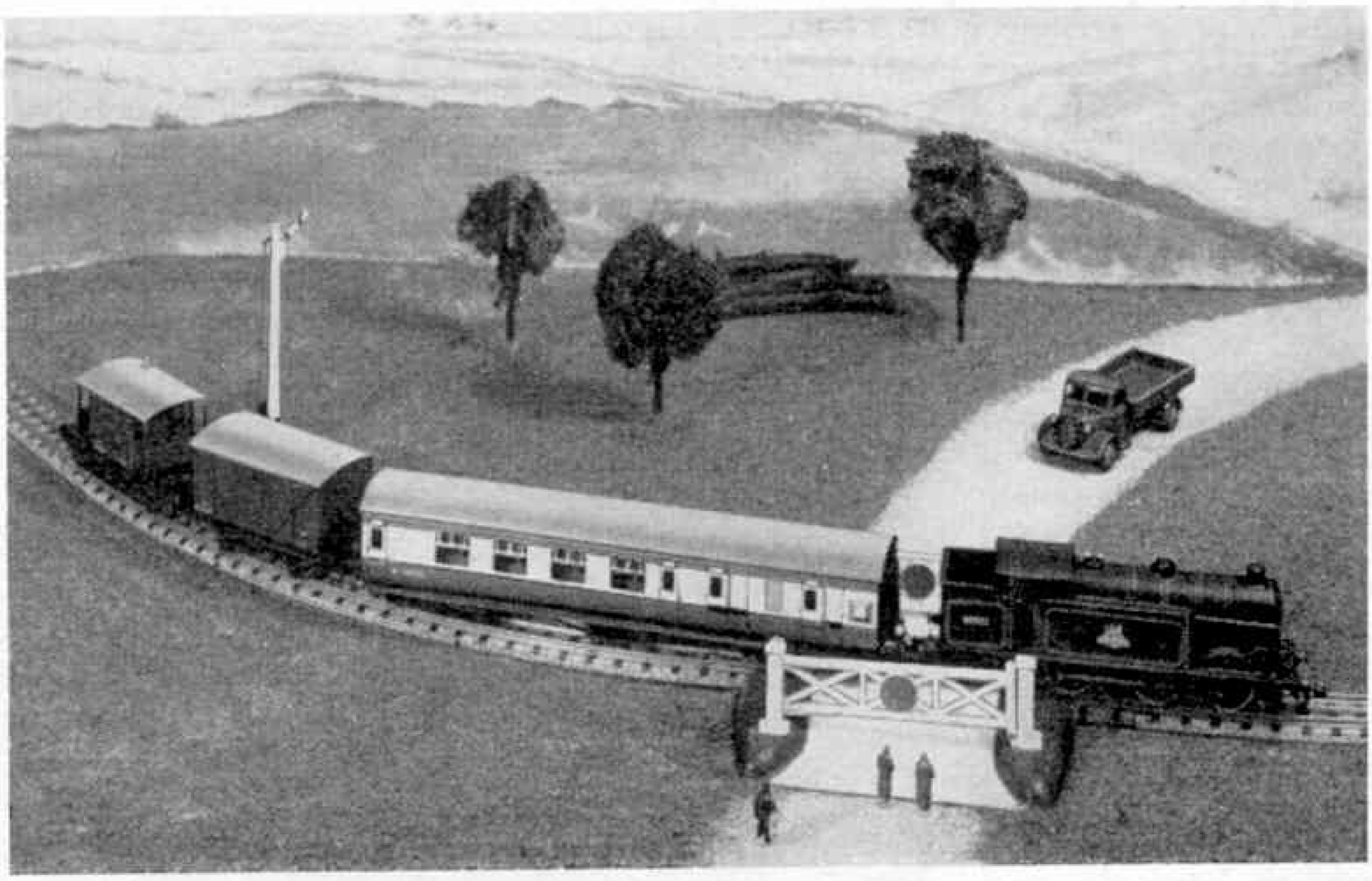


Hornby-Dublo enthusiast Raymond Holder is busy out of doors with his layout. In addition to the trains, good use is made of various Dinky Toys on the layout board.

The stock in use includes two Locomotives, so that two trains can be handled, layout and isolating arrangements making it possible for one train to wait in a section that can be isolated electrically while the other is traversing the main line.

In developing this system the rule observed is that only rails and rolling stock and operating equipment are bought, all the lineside features being of home construction. But there are a few buildings made up from commercial kits that were used in the earlier stages of development. Houses, shops and a church as well as the railway station are provided, to cater for the needs of a population of about 135 miniature figures, most of which have been made and finished at home. This is a branch of modelling that offers plenty of scope to the enthusiast. Patience and a penknife are about the most essential items in following up this rather special form of miniature railway activity.

There is lively movement on the layout apart from the trains on the railway. Among the various items that add so much to the effect of the line is a miniature working Windmill, in which Meccano Parts are incorporated. This is powered by a small electric motor.



"Mixed Train Daily" might well be the title here. A branch line train of mixed stock makes its way over the Level Crossing.

The Simple Life in Hornby-Dublo

ALTHOUGH most Hornby-Dublo owners try to work up layouts on which main line practice and running is reproduced, others for one reason and another adopt a simpler type of layout on which so-called branch line practice can be followed. There is a good deal to be said for this type of railwaying, and even those with large layouts would thoroughly enjoy a spell of simple running of this kind.

Like any layout, the "truly rural" type of railway can begin in a small way with a train set, in this instance one of the simpler Sets such as the EDP10 or the EDG16. New items can be added one by one, chosen according to the type of traffic that you wish to reproduce, and altogether the development of a railway on these lines can be quite fascinating.

A miniature system of this simple kind will almost certainly have single track, although there may be a passing loop or a short section of double track in the neighbourhood of the Station—or Stations, if there are more than one. This makes for easy rail planning, and as a single engine will often be sufficient for the traffic the arrangement of power supply and electrical sections will present few difficulties.

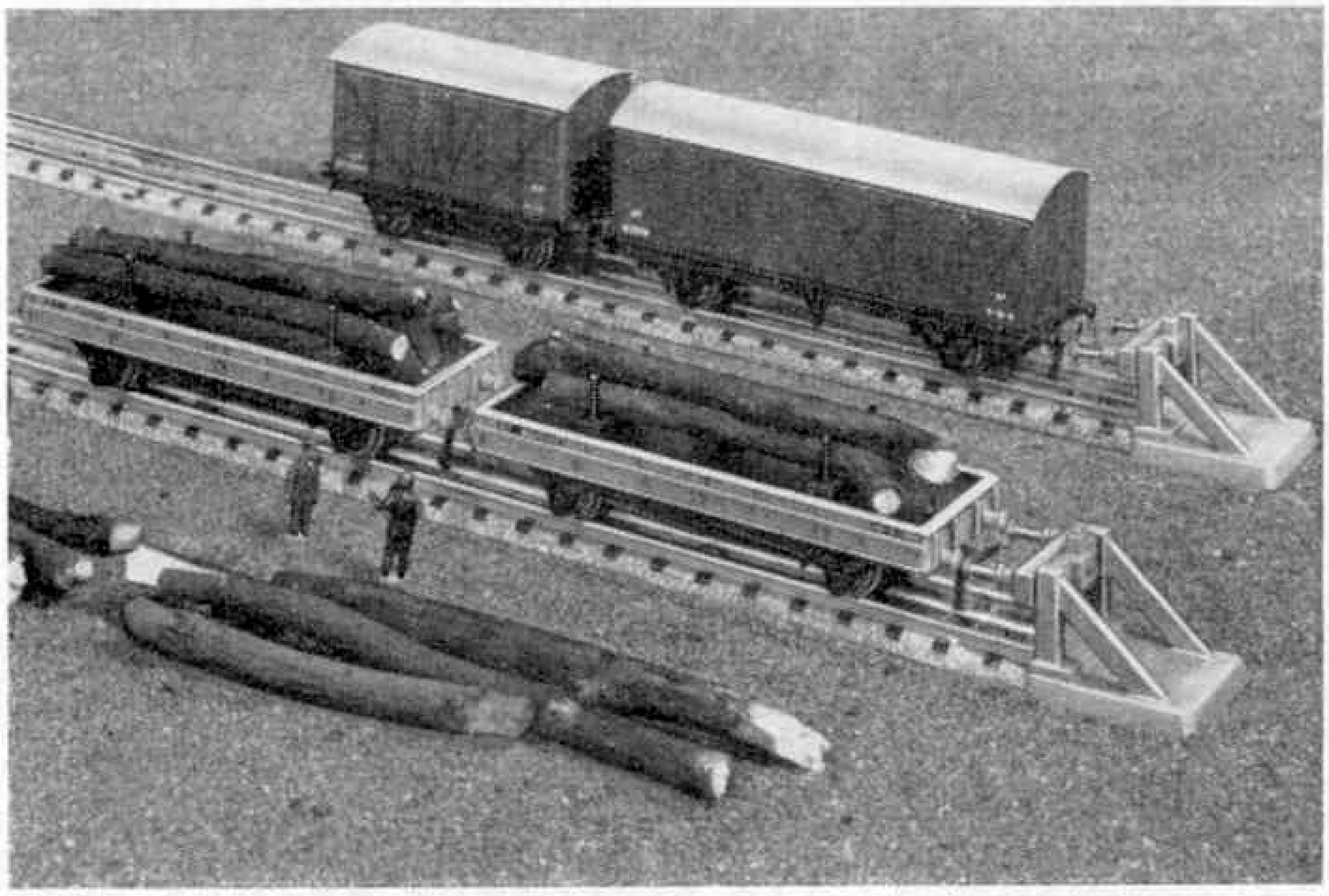
This brings up the subject of Level Crossings. There are frequently highway and what are known as occupation crossings along the lines in country districts, so you can introduce the Hornby-Dublo Level Crossing with very good effect on a railway of this kind. And then you can go on to provide road effects. As a rule it is possible to devote particular attention to lineside and scenic matters. Various articles in these pages from time to time have given some useful hints on this point, but the keen railway owner should experiment on his own account and adopt the methods that suit him best.

Station layouts do not have to be elaborate on a small branch railway, but there should be suitable provision for the shunting movements that are required, especially if the railway is worked only by one engine "in steam." If there is more than one engine, then attention will have to be given to the arrangement of electrical sections, so that one engine can be held in an isolating section while the other is working. This sort of thing will be familiar to the practised Hornby-Dublo owner, but the beginner is not always clear on such points.

For ordinary passenger traffic workings the D14 Compartment type Coaches of the Hornby-Dublo system will be ideal. If there are to be through Coach workings between the branch and a main line—

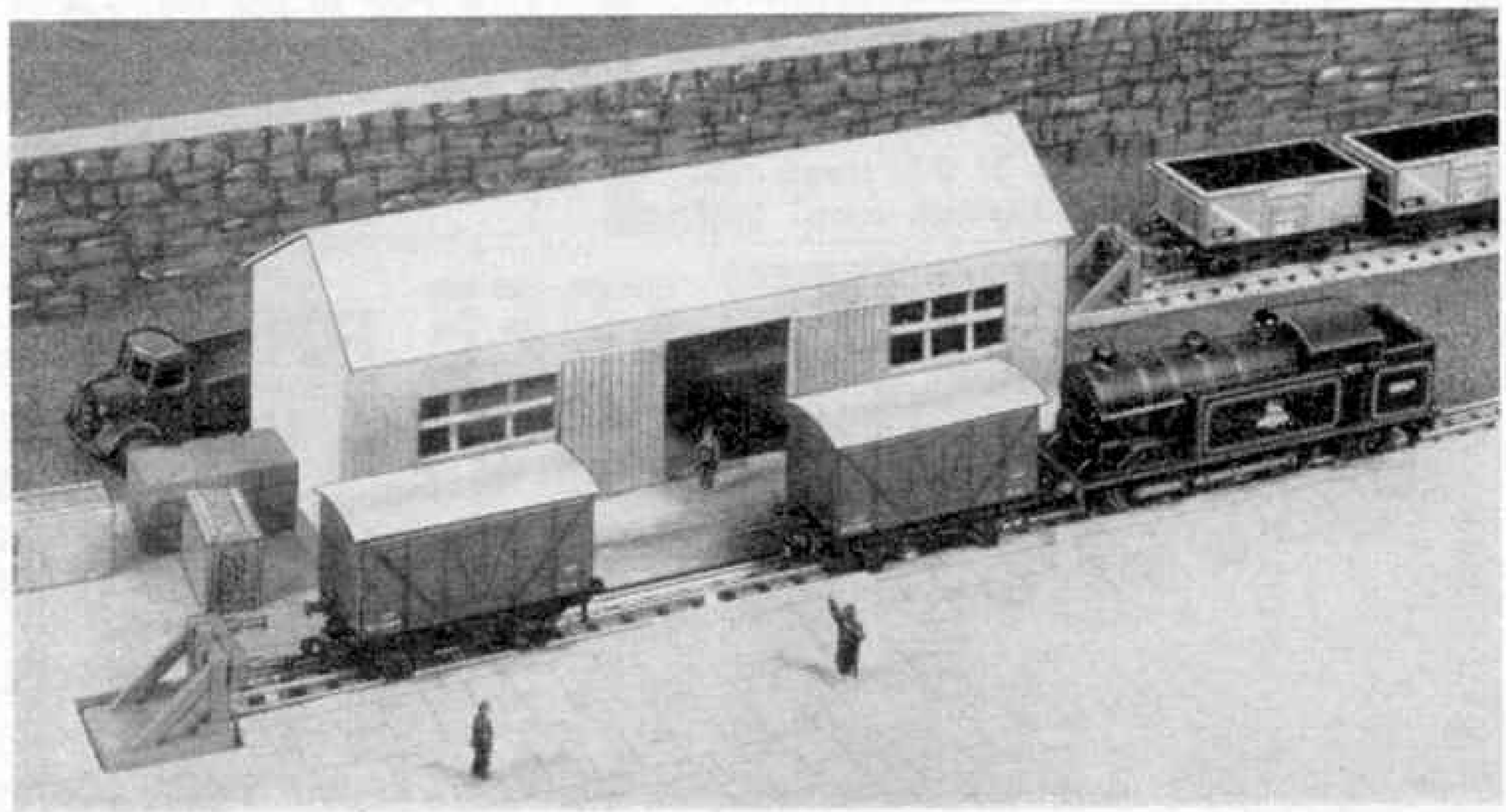
possibly an imaginary one—then perhaps a single D12 Corridor vehicle may be introduced. This can be used at intervals, as though it were making out-and-return journeys, either alone or attached to a local train, according to the timetable and working arrangements in any particular operating scheme.

Freight trains can provide some variety, as obviously certain supplies for the district supposed to be served, such as coal, will require rail haulage. Then again it must not be forgotten that the engine providing the motive power on our branch will need "coaling" from time to time. Similarly there may be some particular outward local traffic, possibly timber, or fish, according to the district served, and here the Hornby-Dublo owner will be able to exercise his imagination. Quite hefty miniature tree "trunks" actually cut from a suitable bush—with permission of course—can be loaded on the Hornby-Dublo long wheelbase Double Bolster Wagon, which is ideal for the purpose. Interesting loading and unloading operations can be staged, apart from the fun of conveying the actual load along the line.



Timber! Two of the Hornby-Dublo long wheelbase Double Bolster Wagons are loaded with miniature tree trunks, which make an effective and realistic load.

There are also various kinds of traffic for which a certain amount of "pretending" has to be done. The Hornby-Dublo Fish Van may have to find a place on the line, or there may be other perishables for which the Refrigerator Van is required. Whatever may be the particular "local industry," there is sure to be plenty of scope for the use of the ordinary Wagons and Vans. In addition there are such items as cattle or horse box traffic to engage the attention of the miniature railwayman. And the Hornby-Dublo System includes suitable vehicles for these in the shape of the Cattle Truck and the Horsebox.



Shunting operations in progress at a simple goods depot. The yard surface alongside the track is paved with card.

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Stamp Collectors' Corner

By F. E. Metcalfe

GHANA

Ghana is the newly adopted name for an old colony that has become a Dominion. It has been much in the news lately, and unless I am very much mistaken this will continue.

Recently, in an American stamp magazine, I came across a full page advertisement that must have cost a lot of money. Evidently someone overseas has faith in Ghana postage stamps, for heading the page in big type was the name GHANA, and the rest was concerned with offers of its stamps. This was in the U.S.A., remember, so it would seem that the moment is opportune for us to see if there is anything worth our attention in these stamps.

Gold Coast, which was the name for our latest Dominion until 6th March 1957, issued its first stamps in July 1875, but up to twenty years before that date letters from there were known with postal markings giving date and posting place. The latter was often Cape Coast Castle, the headquarters of the local administration.

When the first set of stamps was placed on sale, there were three values, 1d., 4d. and 6d., and the watermark was the old Crown C.C. and the perforation 12½. This latter point is important, for the next lot of stamps to appear in 1876 had the same Queen's head design, with two extra values, ½d. and 2d. The only difference was in the perforation, which by now had changed to 14.

The design was plain enough, and although in the meantime many other stamps were issued, it was not until 1938 that there was any outstanding change in this respect, with the exception of the set issued ten years before, when a tiny portrait of King George V surmounted a small view of Christiansborg Castle.

As time went on portraits of new monarchs replaced the old, but the stamps were still much of a muchness. The original design was changed in 1889, the head of the Queen being reduced in size, and one of them, the 20s. green and red, is rare enough to be catalogued at £125.

While on the subject of rare stamps, it should be mentioned that a provisional issued in 1883 is one of the rarest that exists, for only two copies are known. One is to be seen in the Taplin Collection in the British Museum, but nobody seems to know where the other copy is. The stamp was a 4d. value, overprinted 1d. in black. A letter from a postal official who was there when the stamp was issued vouched for its authenticity, so the fact that it has not been catalogued by Gibbons is of little moment. The Taplin stamp is not likely to be sold, but if the other copy turned up, it would make a big price.

A characteristic of Gold Coast stamps in the early days was that the practice of bisecting stamps and using half for postage was not uncommon. I do not suppose that there was any written official permission for such things. There rarely is. Some of these "splits," as philatelists call them, were made with an eye to selling to collectors, but covers showing them, which can be accepted as genuine, may bring up to £20 apiece. They too are not catalogued, but again, as the prices show, that doesn't matter much.

Before I come to the stamps bearing the head of King Edward VII, I should mention another interesting variety that would put a ten pound note into anybody's pocket who found one. In 1901, to make up for a shortage of 1d. stamps, current 2½d. and 6d. stamps were overprinted 1d. and copies are known where the ONE was omitted on the 6d. value.

Perhaps I had better explain why the 20s. stamp, already referred to as being catalogued at £125, is worth so much. In April 1893, over a thousand copies of this stamp were stolen from the Colonial Secretary's Office, at Victoriaborg. A number of them were recovered, but in view of the fact that some of the stolen stamps were still abroad, it was decided to change the colours. The new stamps, are not anything like as valuable, and copies can be bought for about £3.

Now we come to the first change in portraits, as far as a new monarch is concerned. In 1902 stamps similar in design, but with the King Edward VII portrait instead of that of Queen Victoria were issued. I am afraid that only philatelists will be interested in these dry as dust issues, and to me it is always very amusing to hear old collectors complain about present day pictorials, for I remember clearly how bored they used to be with what are known as the key type design.

There were three separate sets with King Edward VII portrait, and a single value, 1d., with the design changed, before we got the first King George V set. Again only the portrait was altered, but there are some very fine shades, and the coloured papers used for the 3d. 1/-, 5/- and 10/- values showed several variations.

In 1918 we got the first War Tax stamp. This was an extra 1d. on 1d. stamp. They are common enough, and a couple of coppers will buy one. In 1928 we got the set with Christiansborg Castle incorporated in the design. There is nothing very startling about the appearance of this set, particularly if we compare it with those very attractive sets that we get today, but many of the values are quite scarce, and personally I like it very much.

We had the Silver Jubilee and the KGVI Coronation issues following, and then in 1938 came the first KGVI definitive set, which was a clear break from stamp tradition as far as Gold Coast stamps were concerned. This set was engraved by Bradbury, Wilkinson, and first releases differ in perforation from subsequent ones. Both perforations are listed in the Commonwealth Catalogue and the first, Perf. 12, line, are much scarcer than the second, Perf. 12×11¾, comb. The first are keenly sought after by philatelists. There was a

(*Continued on page 474*)

BARGAIN FOR STAMP COLLECTORS

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For other Stamp Advertisements see also pages 470 and xviii

Stamp Gossip

THE PLUNKET SOCIETY

A New Zealand reader has kindly sent me a copy of the commemorative stamp issued on 14th May in honour of the 50th anniversary of that very fine Plunket Society. The design shows a portrait of Sir Truby King, who was its prime mover and founder. Originally in the banking world, he came over to Edinburgh, and after obtaining his medical degree he returned to his native New Zealand and became head of a hospital in Dunedin. He had a house in Karitane, which was then a peninsula, and later, after doing all possible to save it from being obliterated in time by the sea, he turned it into an island and there founded his hospitals. His work impressed Lady Plunket, and she assisted in the founding of a society for the improvement of the health of young children.

Incidentally look at the postmark. How would you like to live in Papatoetoe?

JOHN REDMOND

Whenever I see that Eire is going to issue a recess printed stamp, I know that it will be a worthy production. The latest pair, issued in honour of the Irish Parliamentary Leader John Redmond, is no exception. The stamps are issued to commemorate the centenary of his birth, which occurred last year, but better late than never.

THE QUEEN'S STAMPS

No stamps are so popular, with the exception of those issued during the reign of King George VI, as those issued by the British Commonwealth since the accession to the throne of Queen Elizabeth, and I am proud to have some connection with the only catalogue devoted entirely to these issues. A new edition of this, the Commonwealth Catalogue, was published at the end of August.

Many new stamps have been issued since the last one came out and many have gone obsolete. I can recommend the stamps themselves above all others. Those taking the Queen's stamps up for the first time will be surprised how many there are.

STARTLING DESIGNS

Some outstanding designers are at work on modern stamps. I think that collectors have a good deal to do with this, for the stamps they buy at least pay for all production costs, and in this respect they are doing good work, for art as expressed today in postage stamps is something really worth while.

From time to time, however, we get some real startlers. Recently I was struck with a stamp on a letter I received from Chile, and I think *M.M.* readers will be interested in it also. It was issued last December, along with another, to commemorate the 25th anniversary of the Santa Maria Technical University. Apparently the design has something to do with atomic symbols. I wouldn't know much about that. Yet the stamp intrigues me so much that I would like to find out.

"SOCKED ON THE NOSE."

That, good collectors, is how our American friends, perhaps a trifle inelegantly but aptly, describe stamps cancelled in a manner that with some collectors is so popular that they actually form collections of these kind of stamps.

First let me explain what the expression means. A stamp is being illustrated that has been very truly "socked on the nose." It will be seen that a stamp is cancelled thus when the circular postmark is bang in the centre. If you have never tried to get examples of these you may think it is quite easy to obtain them. That is not the case, and to find a stamp with the whole circle on it can entail a lot of searching indeed. Just have a go, for fun.

TIP OF THE MONTH

I am going to mention a whole set this time, though all you need do is to buy the lower values only, if you don't want to go to the top.

A day or two after these lines appear in print, two entirely new New Hebrides sets will be coming out. This country is a condominium between Britain and France, and so a set in English and another in French is called for. I am going to suggest that British collectors buy New Hebrides stamps in their own language only, not the new set, though if they can afford that as well so much the better, but the 1953 one that is being replaced. It has sold badly, and I think the set is worth buying while it can be obtained at current rates.

Buy the set, put it in your album, and later on you may find you have got quite a scarce item.

Launch of a Minesweeper—

(*Continued from page 423*)

she can be employed in shallow coastal waters, the term distinguishing vessels of this class from inshore minesweepers, which are intended for shallow estuarial waters.

When she is completed *S.A.S. Windhoek* will be the twelfth coastal minesweeper to be built by John I. Thornycroft and Co. Ltd. What she will look like when fitted out and ready for service can be seen from the upper illustration on page 423 of one of her predecessors. The vessels of this group are 152 ft. in length, with a beam of 28 ft. 9 in. Their main machinery comprises Deltic diesel engines, made by D. Napier and Son Ltd., and the armament consists of three small guns.

Driving in the Mille Miglia—

(*Continued from page 426*)

extremely fast section, for the concentration we had extended over the last ten hours had tired us both. We "found" and passed the Peugeot, and with him stationed some 10 yards behind us, the last 400 miles, including the halt at the Mantova Control, fled by. Probably the only highlight of this section happened 100 miles from Brescia when I spotted two red specks in my driving mirror while I was doing 100 m.p.h. In less time than it takes to read, Taruffi, the eventual winner, with von Trips some three feet behind him, passed us at approximately 160 m.p.h. To drive machines at that speed after 900 miles seemed to me to be incredible. The outskirts of Brescia came into sight, and with a feeling of tremendous relief we crossed the finishing line 14 hours 4 seconds after we had left. We were second in our class.

This was easily my most enjoyable International Competition event, and I shall always feel secretly proud that I have competed in a Mille Miglia—and finished.

Road and Track— (*Continued from page 439*)

box on the two cars are very similar, but a different final drive ratio is used on the Rapier to take advantage of the improved performance.

To match the increased power, the Rapier has 9 in. diam. brake drums with a total lining area of 121 sq. in. as opposed to the 8 in. drums on the Minx with 92 sq. in.

Alf. Francis

If you are fortunate enough to be able to go to Silverstone on 14th September for the major international Meeting organised by the British Racing Drivers Club, you will see on the starting grid or in the paddock a man with a coloured woollen hat and blue overalls. He is Alf. Francis, a racing mechanic who is well known on practically every circuit in the world. After the war Alf. Francis decided that he would like to become a motor racing mechanic.

In 1948 he joined H. W. Motors Ltd. and was with them when the famous H.W.M. team of John Heath and George Abecassis barnstormed its way round Europe. It was then that Francis met Stirling Moss, who drove in the H.W.M. team for 1950 and 1951, and their friendship eventually became a partnership when, in 1953, Stirling raced his ill-fated Cooper-Altas and Alf. Francis looked after the two cars.

The year of achievement of the Moss/Francis partnership was 1954, when they raced together all over Europe with the independent 250 F. Maserati. It was the strength of their partnership that eventually forced Maserati to offer Moss a place in the works team. The green "Maser" was becoming too much of an embarrassment.

In 1955, while Moss drove for Mercedes-Benz, Francis raced the "Maser" with many different drivers, including Mike Hawthorn, Bob Gerard and Lance Macklin.

Last year Alf. Francis left Stirling Moss and joined Rob Walker at Pippbrook Garage, Dorking, and it was Alf who was the driving force behind that remarkable 1,960 c.c. Cooper-Climax that Jack Brabham raced at Monaco and brought home sixth in the World Championship race, to the consternation of the crowds massed around the Monte Carlo circuit.

There is nothing that Alf likes better than racing the 1,960 c.c. car against the Ferraris, Maseratis and Vanwalls, but quite apart from this he excels also in the Formula II field. It is a Francis-tuned F.II Pippbrook Cooper-Climax that Tony Brooks drives and I predict great things for Francis and the Dorking *equipe*.

Like all racing mechanics, Francis has very little time to call his own, but over the last twelve months he has written a book that describes ten hectic years in the fascinating world of motor racing. The life of a mechanic is one of blood, sweat and tears, and Francis has had more than his fair share of all three, while his achievements over the years are second to none.

I Live on a Tunnel—(*Continued from page 440*)

most gallant of engines.

The story goes that some time ago a University Chemical Department seeking dark and damp conditions for certain experiments, utilised the old tunnel, and an elderly lady resident in the area, convinced that nothing less than atomic bombs were in preparation, in fact vacated her house and took herself off to the country! But our ancient tunnel knew no such modern glory. Where once old-time locomotives spread their fiery glare and puffed like humped-backed dragons crouched in the tunnel mouth, now there is silence and darkness and the mushrooms grow in the night.

Stamp Collectors' Corner—(*Continued from page 471*)

full pictorial set in 1948, and when the Queen came to the throne the portrait was changed, but not the designs. It is this latter set, overprinted Ghana Independence 6th March, which is on sale at present, and apparently it will not be replaced until next year.

Besides the overprinted set, four values, showing a fish eagle and a portrait of Dr. K. Nkrumah, the Prime Minister, appeared on Independence Day, and that brings us up to date. The popularity of Ghana stamps may perhaps decline a little. Still it will be a nice country to collect, and if the conservative policy that has characterised its stamps up to now is changed, it may provide some fun for collectors.

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" — Only a little 'un, skipper—shall I throw 'im back?"

"How many fathoms?" asked the captain.
"Can't touch bottom, sir."
"Well, how near do you come to it?"

* * * *

Tenant: "The people upstairs are very inconsiderate. Last night they stamped and banged on the floor after midnight."
Landlord: "Did they keep you awake?"
Tenant: "No, as it happened. I was still up practising on my saxophone."

* * * *

"Well, little man," said the barber, "how do you want your hair cut this time?"
"Just like Pop's," the little fellow replied, "with a hole in the top."

* * * *

Teacher (returning to class in uproar): "I wonder how it is that you are never working when I come back into the classroom?"
Little Jimmy: "Because you wear crepe soles, Miss!"

* * * *

"Don't you know, Rastus, that you can't drive a car without a state licence?"
"Yes, sur, I knowed I couldn't drive, but I didn't know the reason."

* * * *

"I trust," said the employee, "that now I have proved my capabilities, you'll pay me what I'm worth."
"Oh, I couldn't do that," exclaimed the boss. "You've got to live, haven't you?"

* * * *

Teacher (at reading lesson): "Now, Willie, you may read the first sentence."
Willie got up slowly, and read in a hesitating monotone, "There is a warm doughnut. Step on it."
Teacher: "No, Willie, the sentence reads, 'There is a worm. Do not step on it.' "

Fireside Fun

During the war, an aeroplane pilot, whose plane crash-landed on one of the South Sea Islands, came face to face with a leering cannibal. The airman snatched at his gun, but the cannibal made no move. He merely stood studying the flyer from every conceivable angle.
"Why do you stare at me that way?" enquired the airman.
"It's part of my job," replied the cannibal, "I'm the food inspector."

* * * *

Doctor: "How do you feel today, sonny?"
Wee Angus: "The same as usual—with my hands."

* * * *

BRAIN TEASERS

A RAILWAY PUZZLE

A train sets out from Burton, travelling to Broom, at a speed of 60 m.p.h. At exactly the same time a train sets out from Broom travelling to Burton at a speed of 40 m.p.h. The distance between the two towns is a little over 250 miles. How far apart are the two trains an hour before they meet?

* * * *

FIVE MINUTE CROSSWORD

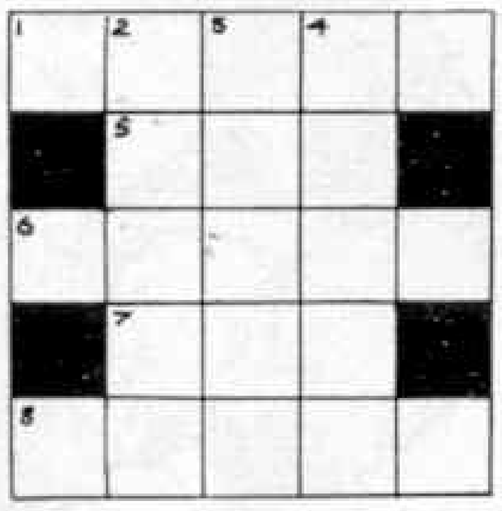
Can you complete this crossword in five minutes from the clues given below:

Across

1. A small wood; 5. Beheaded animal; 6. Guardsmen don't on parade; 7. This could be a river in *Scotland;* and 8. To show contempt.

Down

2. It must be made of oats; 3. Definitely not poetry; and 4. Do this to keep the home fire burning.



* * * *

ANSWERS TO LAST MONTH'S PUZZLES

The Mystic Square

The manner in which the square is reassembled is indicated in the diagram below. The thick black lines show how the original square is cut.

1	11	6	16
8	14	3	9
15	5	12	2
10	4	13	7

* * * *

Mind the Rocks

The solutions to the clue phrases are as follows:

1. Plymouth Rock; 2. Blackrock; 3. Wolf Rock; 4. Blackpool Rock; 5. Eddystone Rock; 6. Bell Rock; 7. Bass Rock.

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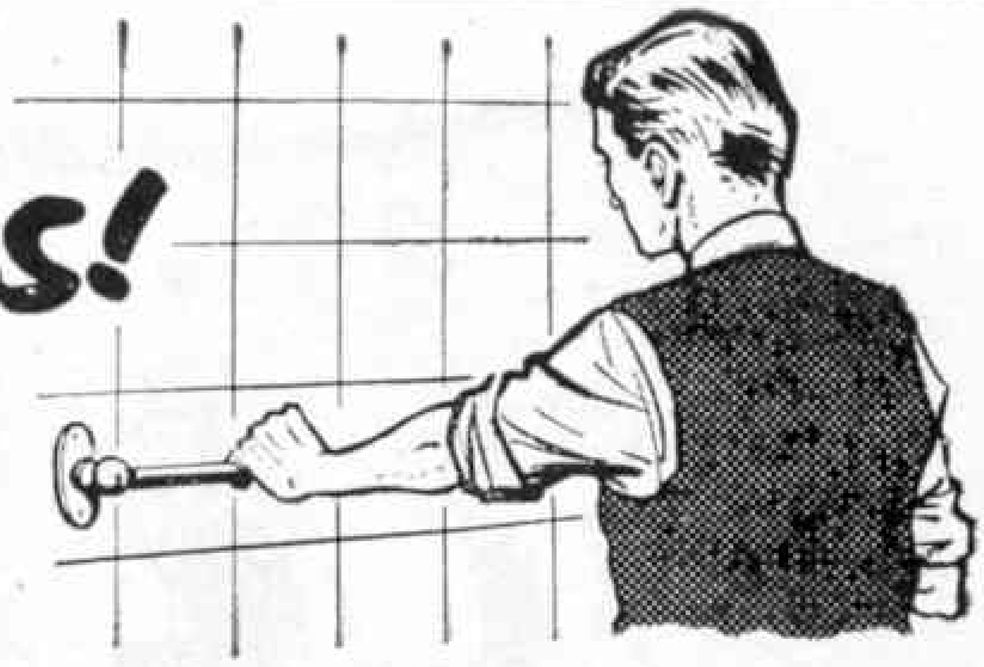

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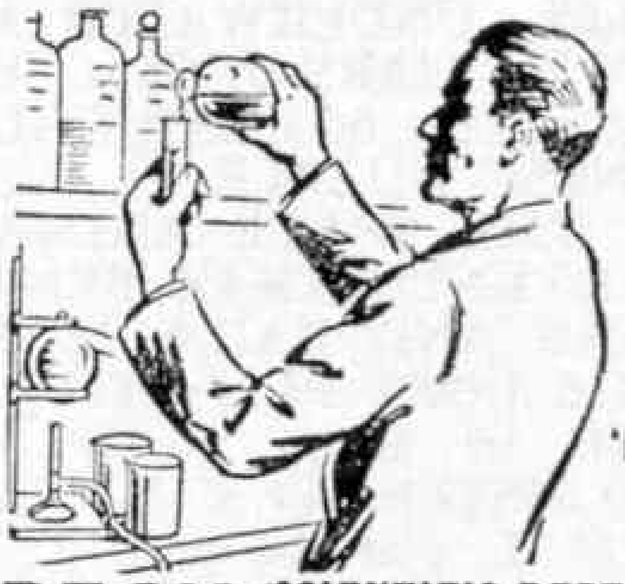

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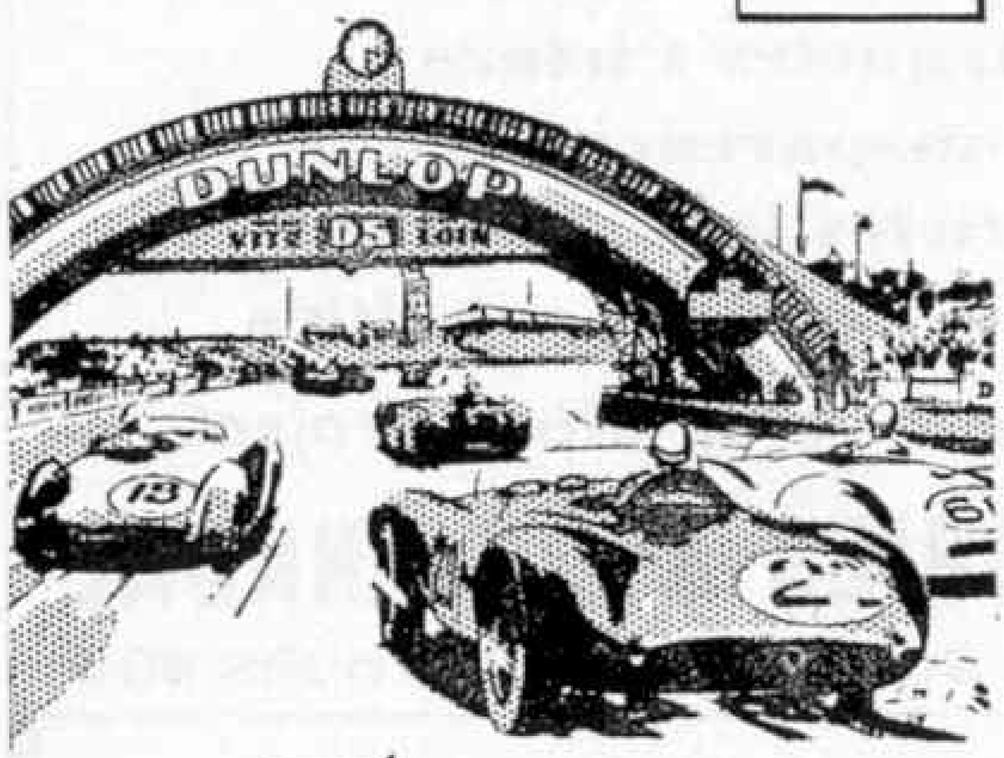

The great chewing gum victory!

Chewing gum helped to win the 1934 Le Mans race for Louis Chinetti! Towards the end of the race the Alfa-Romeo driven by Chinetti and Philippe Etancelin was well-set for a comfortable win. The Alfa had only to keep going in order to gain the trophy. But suddenly the petrol tank sprang a leak. Everything possible was done to mend the split, but without success. Then came Chinetti's brainwave. Why not plug the hole with chewing gum? Immediately his mechanics began to chew for all their worth. The treatment worked —and off went the Alfa once again. And so, periodically calling into the pits for fresh supplies of gum, Chinetti held off his pursuers and went on to win the race.

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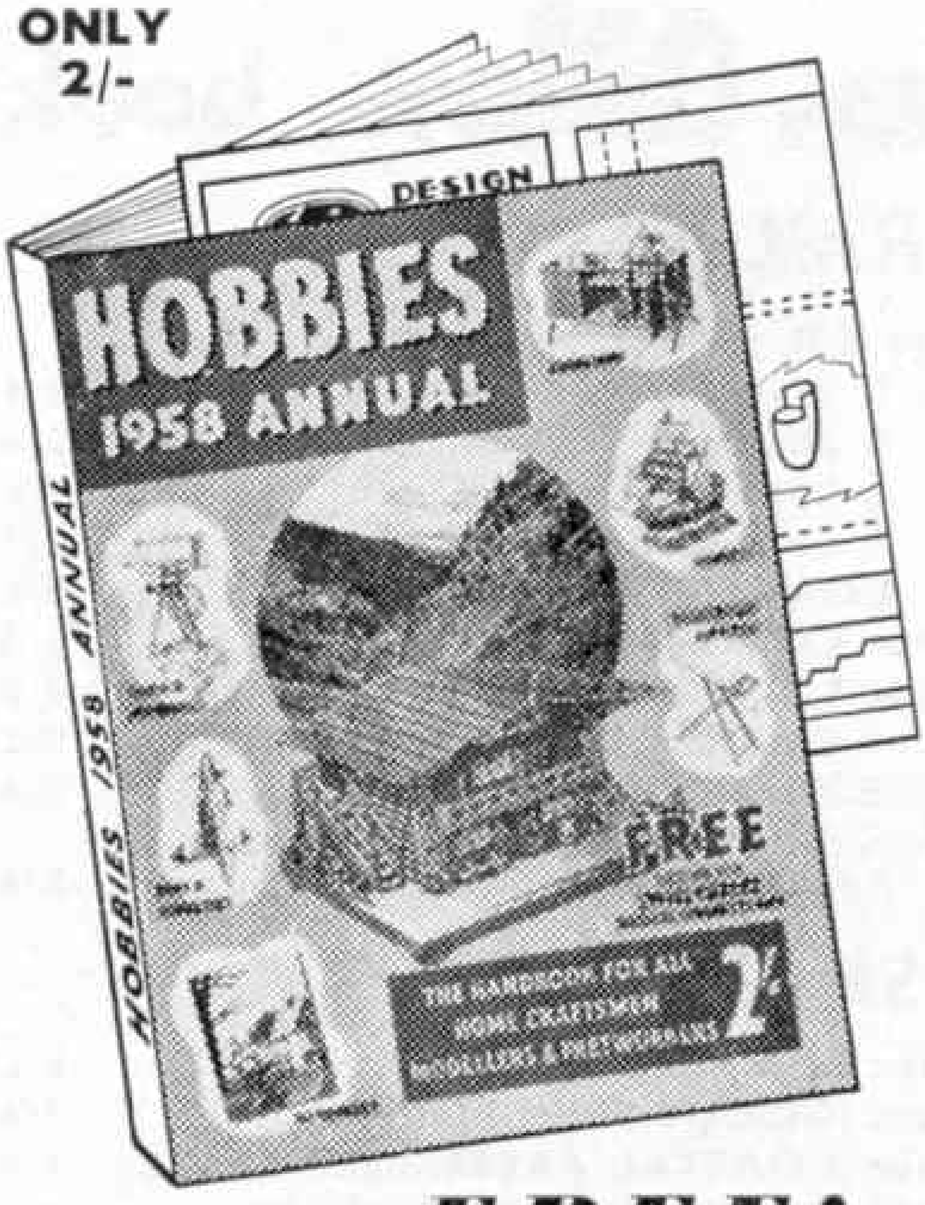

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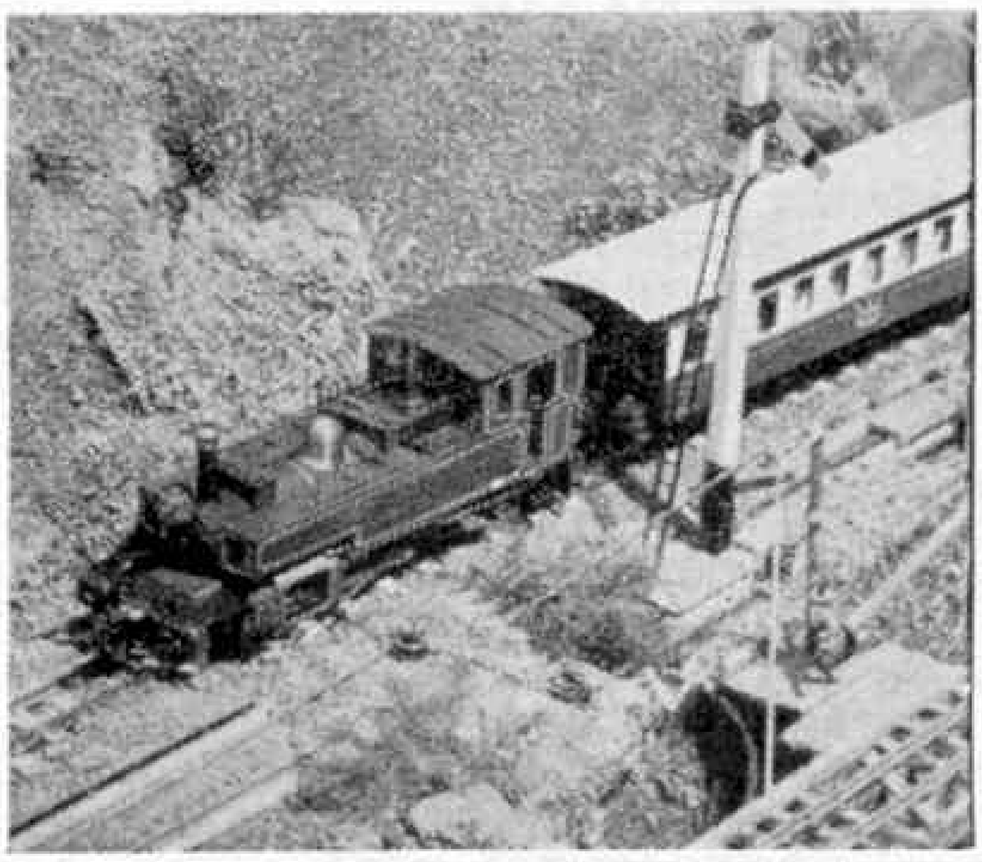

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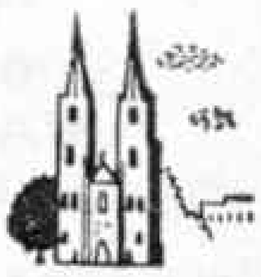

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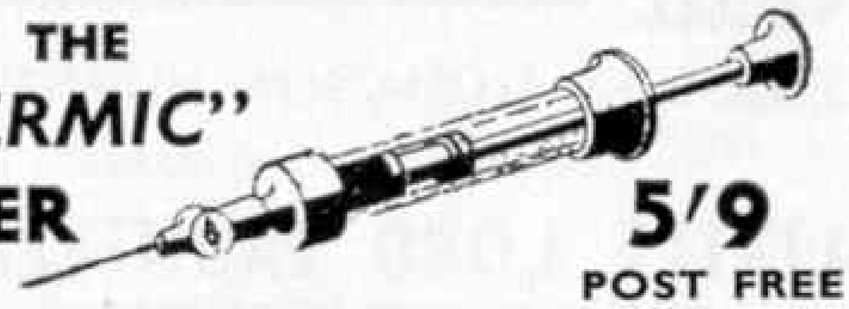

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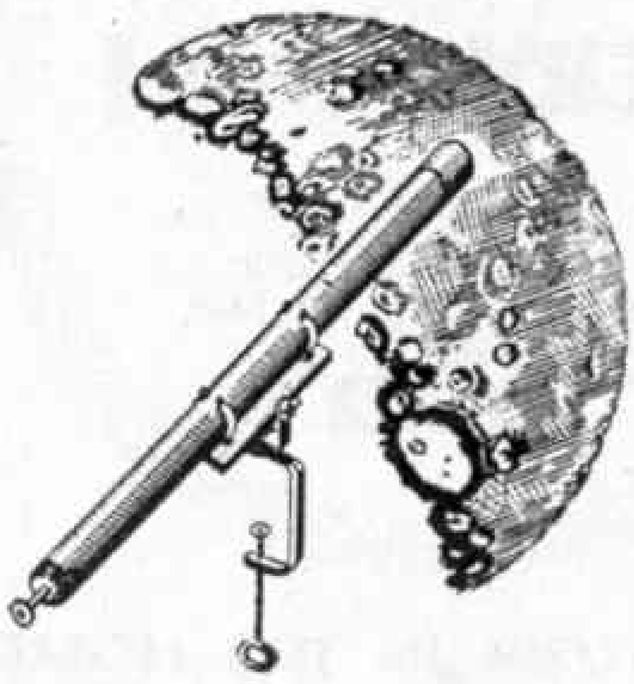

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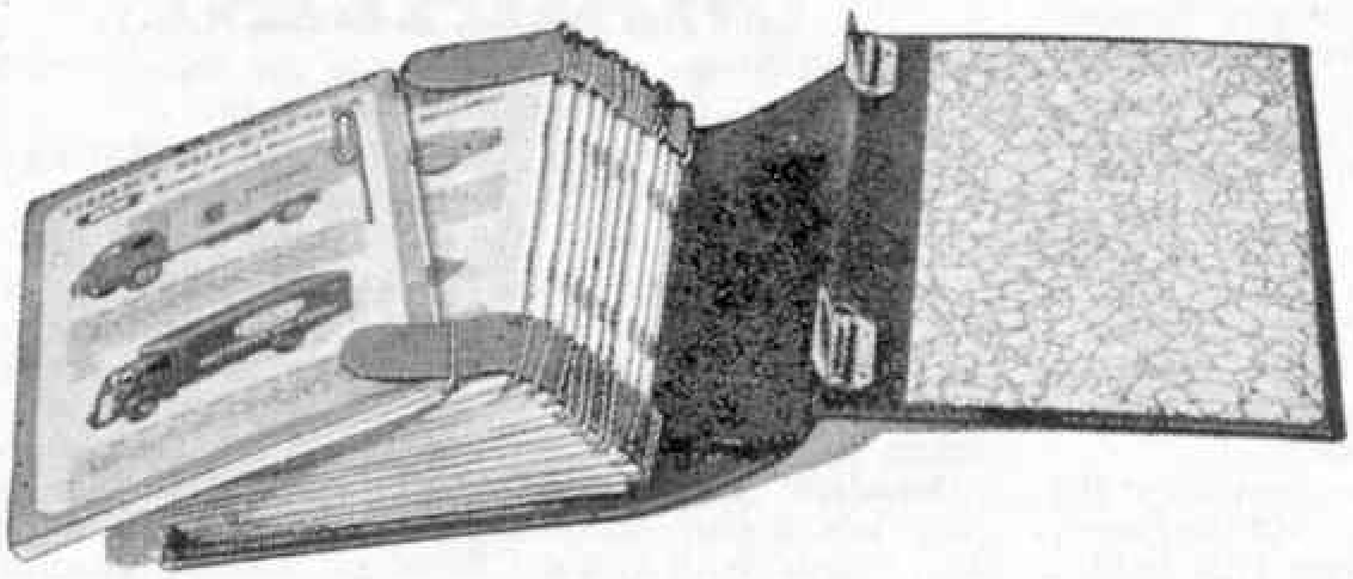

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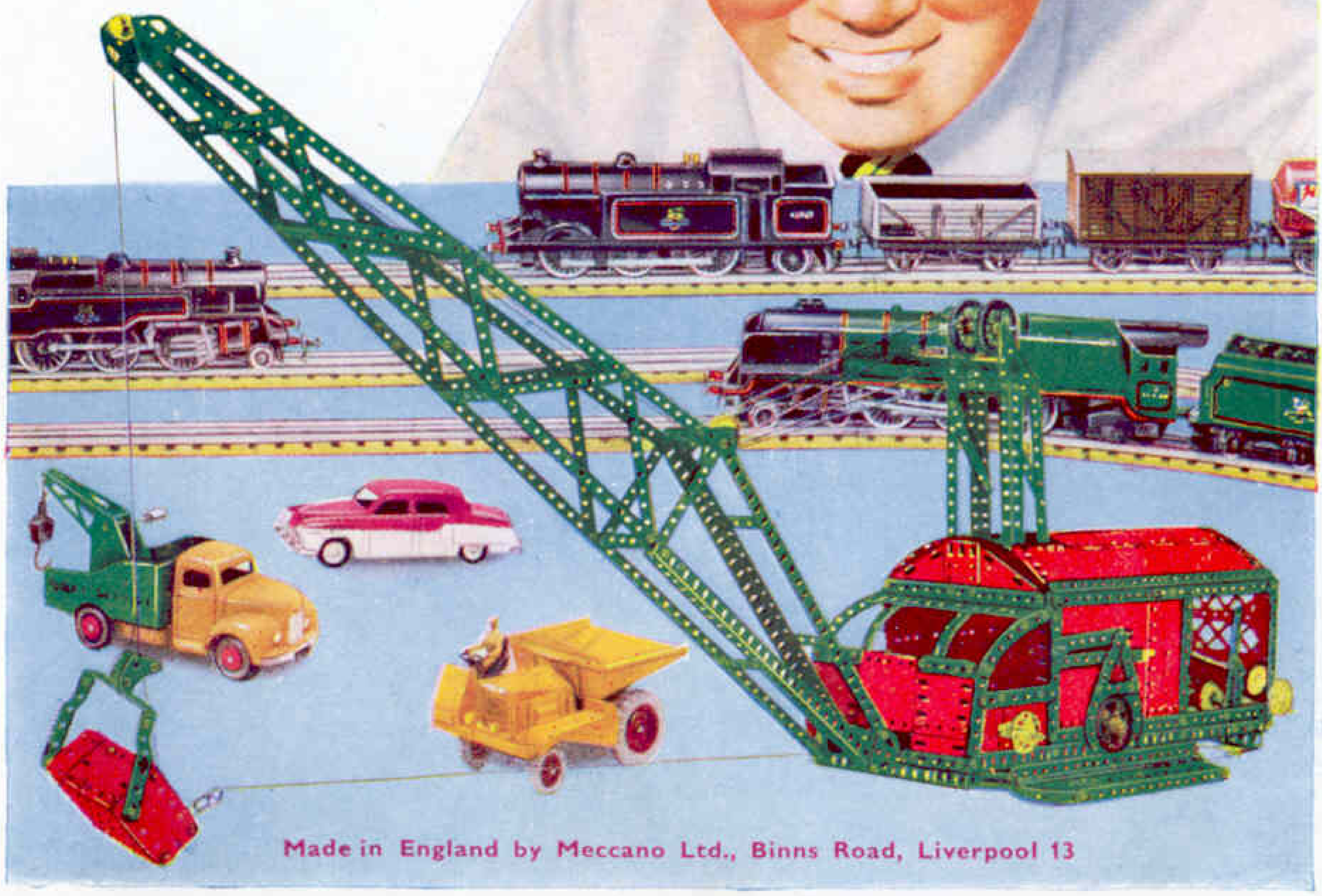

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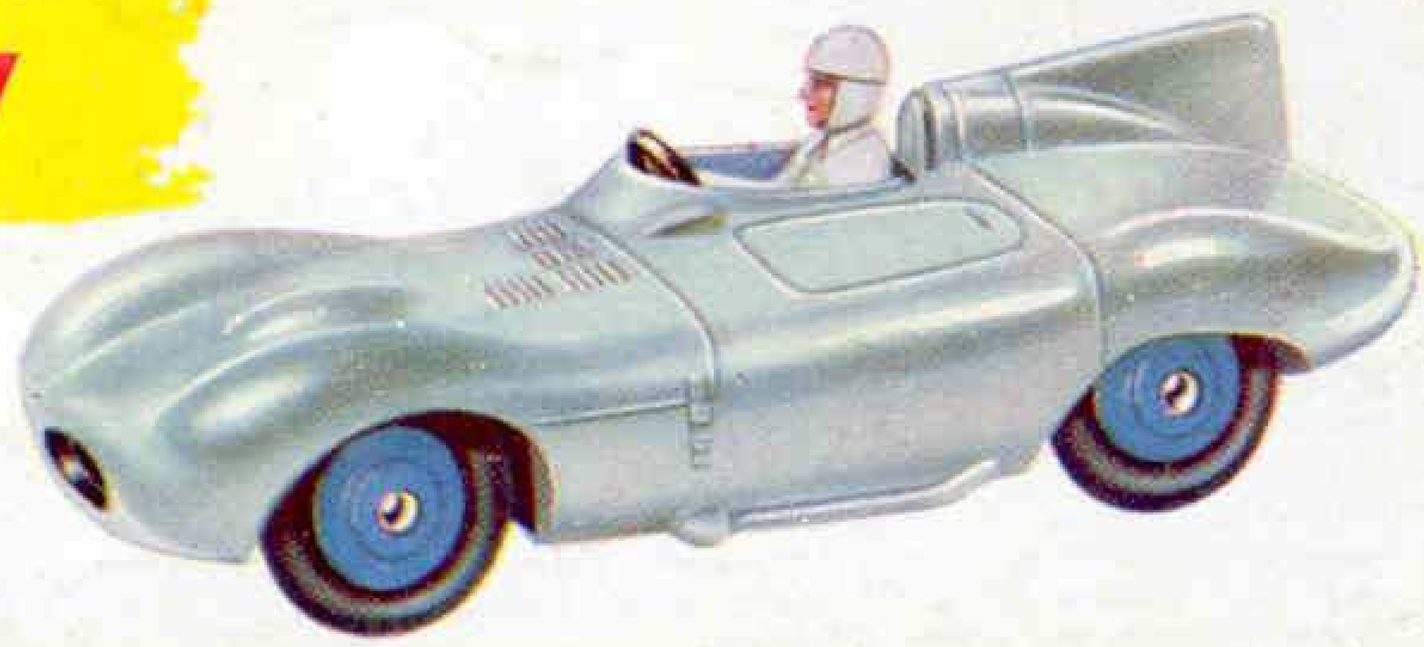

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MODEL OF THE MONTH

WALL CLOCK

Illustrated in the September 1957 issue of the "Meccano Magazine"

The Clock Frame

Each side of the frame consists of a 9½" Angle Girder 1, a 7½" Angle Girder 2 and a 7½" Angle Girder 3 connected at their upper ends by a 3½" Angle Girder, and level with the lower ends of the 7½" Angle Girders by a 3½" Strip. The side is braced by a 5½" Strip.

The sides are connected by four 3½" Strips and a 9½" Strip bolted between the Girders 1. Three of the 3½" Strips are numbered 4, 5 and 6, and the 9½" Strip is indicated at 7. The upper ends of the Girders 3 are connected by a 3½" Angle Girder, with 2" Strips bolted between it and the 3½" Angle Girders of the sides. The lower ends of the Girders 3 are connected by a 3½" Strip, and 3½" Strips are arranged between the Girders 3 and the upper 3½" Angle Girder to brace the rear of the frame. The front of the frame is braced by 3" Strips bolted to the Girders 1 and to the 3½" Strip used to connect their lower ends.

A Semi-Circular Plate 8 is attached to ½" Reversed Angle Brackets bolted to the Girders 1. Four 3½" Strips numbered 9, 10, 11 and 12, are fixed between the Girders 2.

Arrangement of the Gearing

The driving shaft is a 2" Rod 13 mounted in the Strips 4 and 9. The Rod carries a Ratchet Wheel 14 and a 57-tooth Gear 15 fixed in place, with a loosely mounted 1½" Sprocket 16 placed between them. An Angle Bracket is lock-nutted to the Sprocket Wheel but is spaced from it by a Washer. A short length of wire is cut from a Heald, and is shaped so that when one end is bolted to the Sprocket 16, the other end passes through the free hole in the Angle Bracket and presses the latter part against the teeth of the Ratchet Wheel 14. The piece of Heald acts as a light spring and can be replaced by a length of spring wire if desired.

The Gear 15 drives a ½" Pinion on a 2" Rod that carries also a 57-tooth Gear 17. The ½" Pinion engages another 57-tooth Gear 18 on a 3" Rod fitted with a ½" Pinion 19. The Gear 18 is loose on the Rod, but a 1" Pulley 20 fitted with a Rubber Ring is pressed against the Gear to provide a light friction drive.

The Gear 17 drives a ½" Pinion on a 2½" Rod mounted in Strips 7 and 11 and held in place by a Collar. The 2½" Rod carries a 2½" Gear that engages a ½" Pinion on a 2½" Rod 21 supported in the Strips 6 and 12. A 50-tooth Gear on Rod 21 drives a ¾" Pinion 22 on a 2" Rod that also is mounted in Strips 6 and 12. The last-mentioned Rod carries a 2" Sprocket 23 that forms the escapement wheel.

It should be noted that Washers are placed at suitable positions on the Rods to ensure that the various Gears and Pinions do not rub against the frame or each other. The exact positions and the number of Washers used are best found by experiment, as individual models may vary slightly in this respect. It is essential for the complete gear train to be perfectly free-running, and it is advisable to duplicate the grub screws in the Gears and Pinions in the main gear train to avoid any tendency to slip.

Details of the Hands

The hour hand is a $5\frac{1}{2}$" Strip bolted to a Single Bent Strip that is fixed to a 60-tooth Gear. A Wheel Disc is attached to one end of the Strip, and a piece of white cardboard can be bolted to the other end to outline the hand. The 60-tooth Gear is mounted freely on the 3" Rod that carries the Pinion 19, and it engages a 7/16" Pinion 24 on a 2" Rod mounted in the Strips 5 and 10. A 57-tooth Gear on the 2" Rod meshes with the $\frac{1}{2}$" Pinion 19. This gearing provides a 12:1 ratio between the 3" Rod and the 60-tooth Gear that carries the hour hand.

The minute hand is a $7\frac{1}{2}$" Strip bolted to a Double Arm Crank, which is fixed at the end of the 3" Rod. The Strip is fitted with a Wheel Disc and can be outlined with white cardboard in the same way as the hour hand.

The friction drive between the Pulley 20 and the Gear 18 allows the hands to be moved without affecting the main gear train.

The Escapement Mechanism

A 4" Rod 25 is mounted in the Semi-Circular Plate 8 and in an Angle Bracket attached to the rear of the clock frame by a $\frac{3}{8}$" Bolt. The Angle Bracket should be spaced from the frame by Washers until Rod 25 is horizontal. Two Cranks are fixed to the Rod so that they hang vertically. One of the Cranks carries a $2\frac{1}{2}$" Stepped Curved Strip 26 and the other supports a $5\frac{1}{2}$" Strip, to the lower end of which an angle Bracket 27 is bolted. A Rod and Strip Connector 28 is placed on Rod 25, between one of the Cranks and the Angle Bracket that supports the Rod

Two Angle Brackets 29 are fixed to the Curved Strip 26, in the positions indicated in Figs. 1 and 2.

The Clock Face, Weight and Pendulum

The clock face consists of 12 3" Strips bolted to a ring of white cardboard as shown in Fig. 1, with Fishplates held by the bolts used to connect the Strips together. The face is bolted to $\frac{1}{2}$" Reversed Angle Brackets fixed to the Strip 7 and to the $3\frac{1}{2}$" Strip between the lower ends of the Girders 1.

The weight consists of two Boilers bolted together to form a long cylinder. A Boiler End is attached to one end of this, and the cylinder should be filled with suitable ballast to form a weight of between $4\frac{1}{2}$" and 5 lbs. A Boiler End, to which a Double Bracket is bolted, is fitted over the upper end of the cylinder and is held in place by a $2\frac{1}{2}$" Rod and two Collars. A small Loaded Hook is placed on a $\frac{3}{4}$" Bolt held in the Double Bracket by lock-nuts, and is connected to a long length of Sprocket Chain. The Chain is passed round the $1\frac{1}{2}$" Sprocket 16.

The pendulum consists of two $11\frac{1}{2}$" Rods and a $3\frac{1}{2}$" Rod joined by Rod Connectors. It is passed through the Angle Bracket 27 and is inserted in the Rod and Strip Connector 28. The bob weight is formed by a Boiler End and a Wheel Flange held together by a 1" Screwed Rod. A nut is placed at one end of the Screwed Rod, which then is passed through the Boiler End, the Wheel Flange and a $\frac{3}{4}$" Washer and screwed into a Collar. The Collar is placed on the lower end of the pendulum and is fixed in position by its grub screw.

Adjusting the Mechanism

The positions of the Angle Brackets 29 must be adjusted so that

as the Curved Strip 26 is rocked by the swing of the pendulum, the Angle Brackets allow the escapement wheel 23 to rotate one tooth at a time. One Angle Bracket should just clear the teeth of the wheel when the other is fully engaged between two teeth. This adjustment is very critical, and it may be necessary to experiment for a while in order to find the best setting for the Angle Brackets. Once this setting is obtained and a smooth, even escapement movement results, the bolts holding the Angle Brackets should be tightened firmly to prevent the Angle Brackets slipping.

The timekeeping of the clock can be adjusted by altering the position of the bob weight on the pendulum. Raising the weight will speed up the mechanism if the clock is losing time, but if it is gaining the weight should be lowered.

PARTS REQUIRED

1 of No. 1a	1 of No. 22	1 of No. 90a
1 " " 1b	2 " " 24a	2 " " 94
4 " " 2	1 " " 25	1 " " 95
13 " " 3	4 " " 26	1 " " 95a
14 " " 4	1 " " 26c	1 " " 101
2 " " 6	1 " " 27	1 " " 102
2 " " 8a	4 " " 27a	1 " " 111
4 " " 8b	1 " " 27d	1 " " 111a
3 " " 9b	1 " " 27c	4 " " 111c
12 " " 10	87 " " 37a	3 " " 125
1 " " 11	79 " " 37b	1 " " 137
5 " " 12	20 " " 38	1 " " 148
2 " " 13	1 " " 38d	1 " " 155
1 " " 15b	1 " " 57c	2 " " 162
1 " " 16	8 " " 59	1 " " 212
3 " " 16a	2 " " 62	2 " " 213
1 " " 16b	1 " " 62b	1 " " 214
4 " " 17	1 " " 82	