

VOL. XXXII. No.II. NOVEMBER 1947

MECCANO

MAGAZINE



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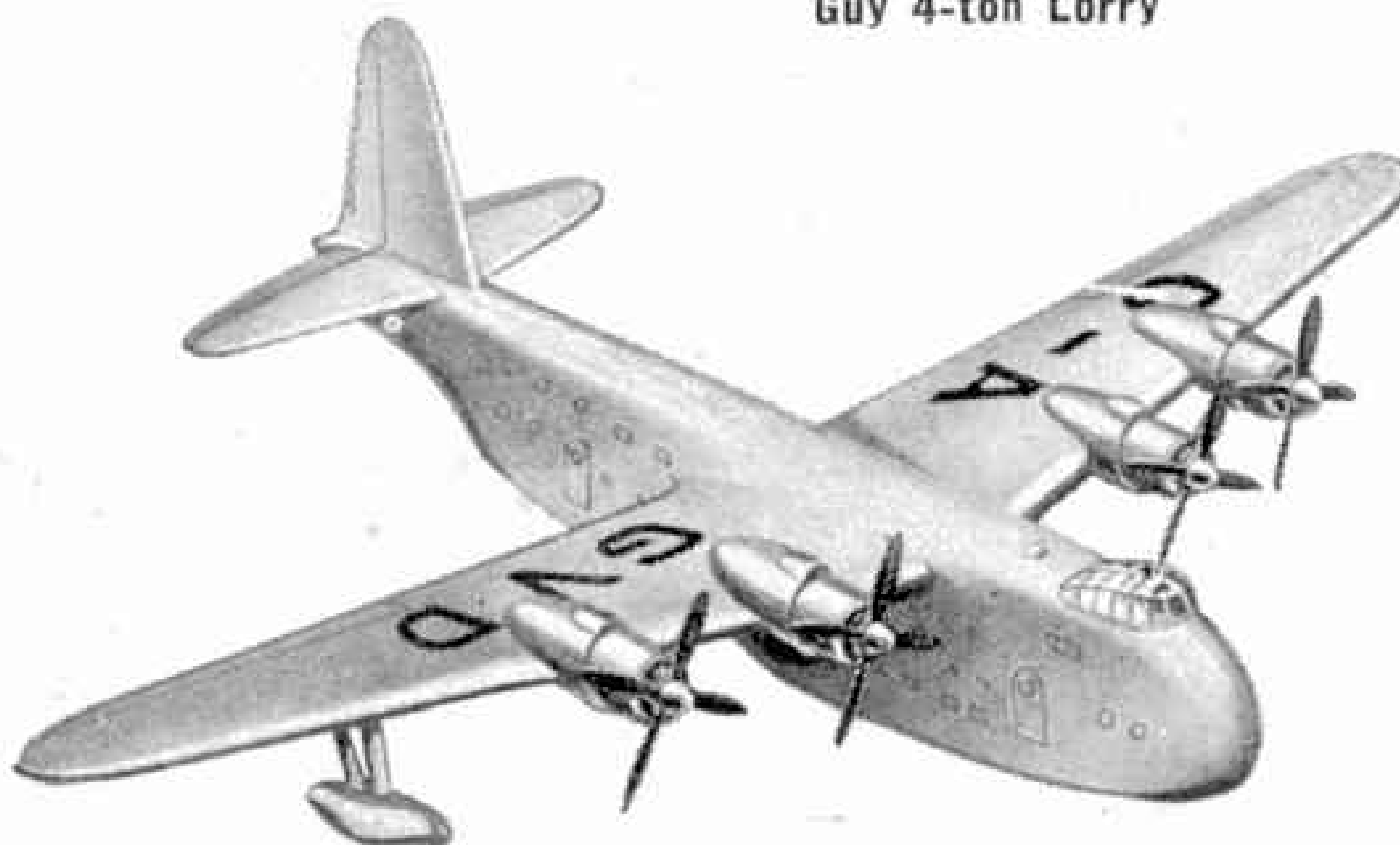
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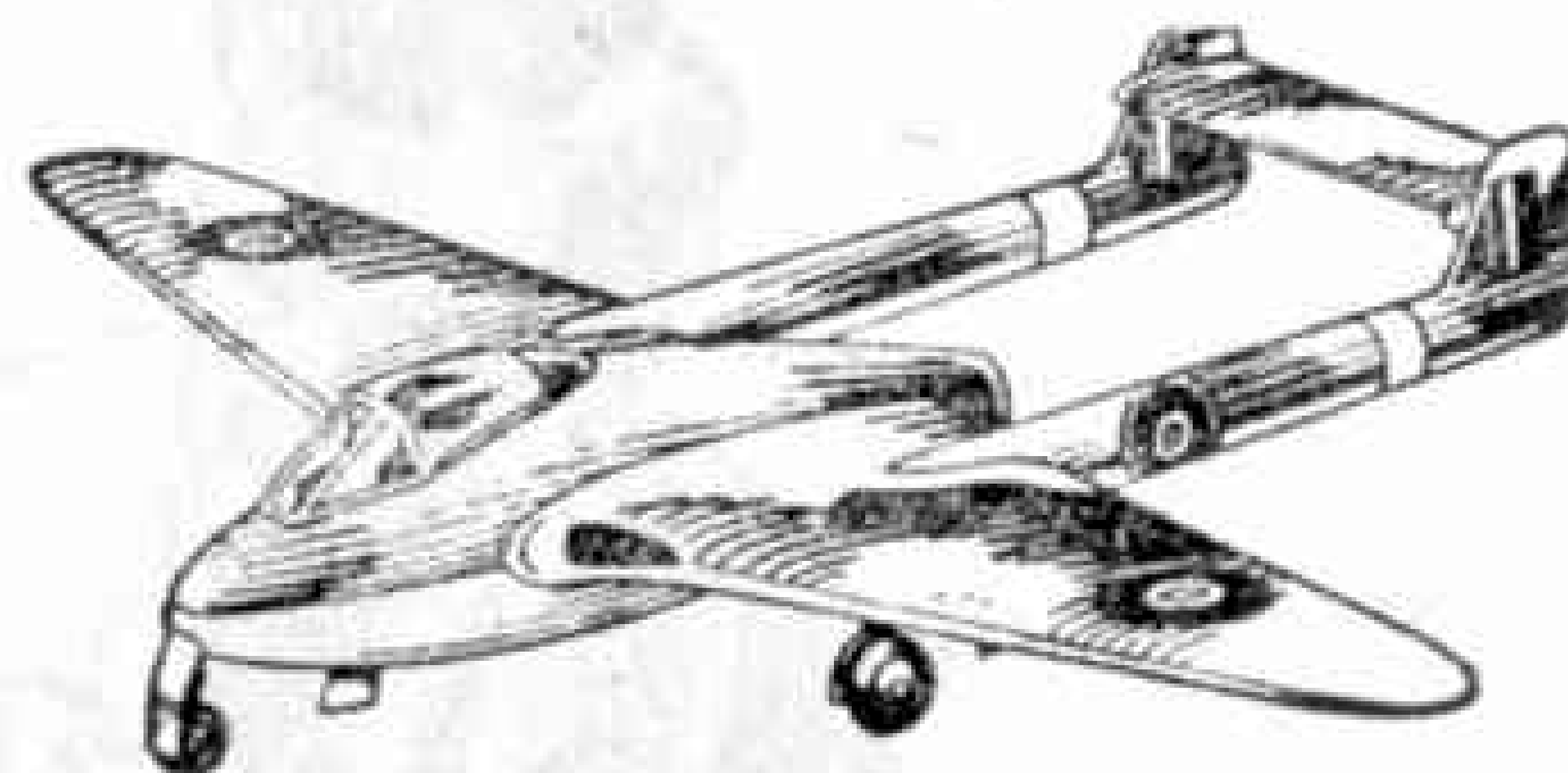
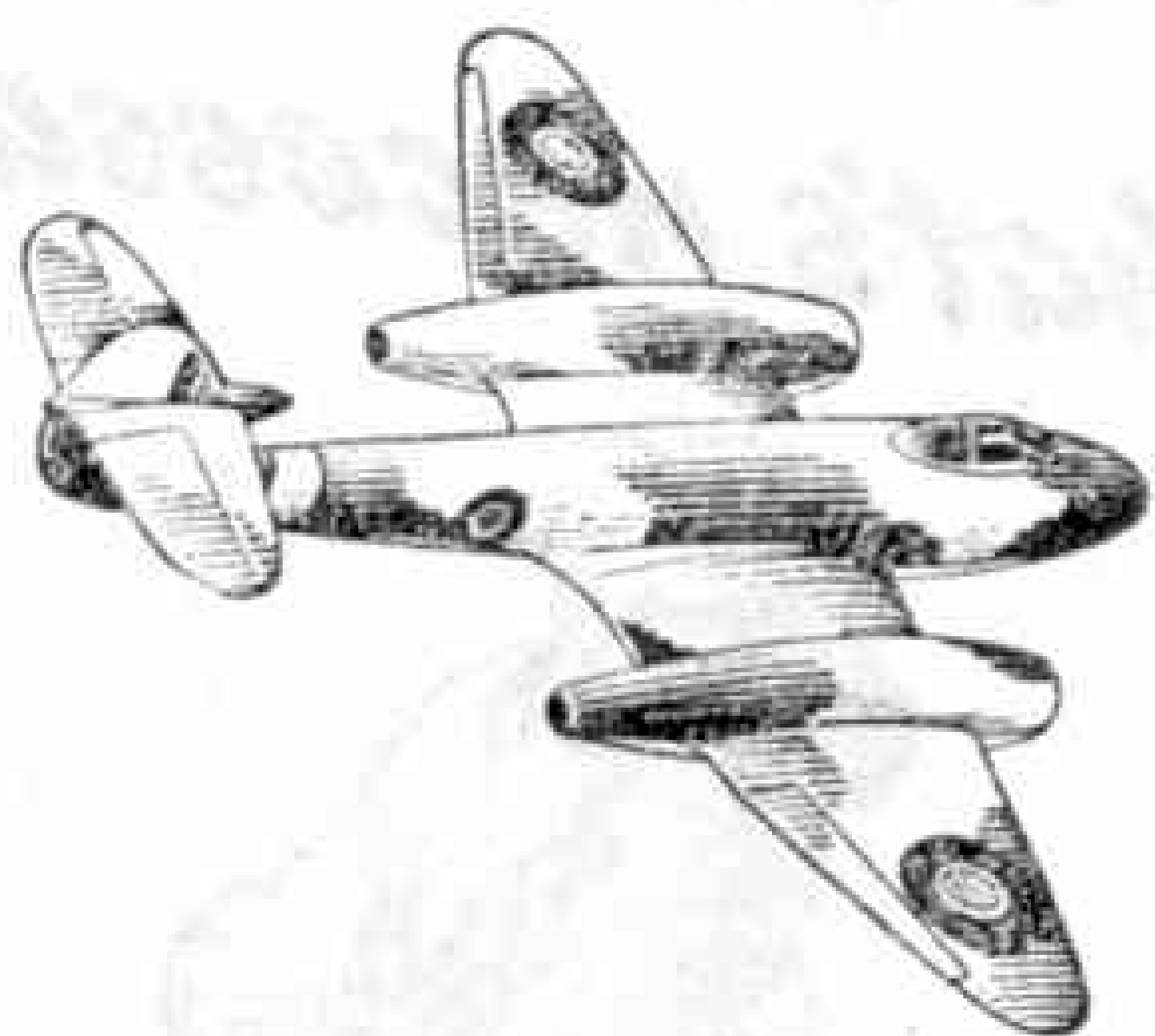
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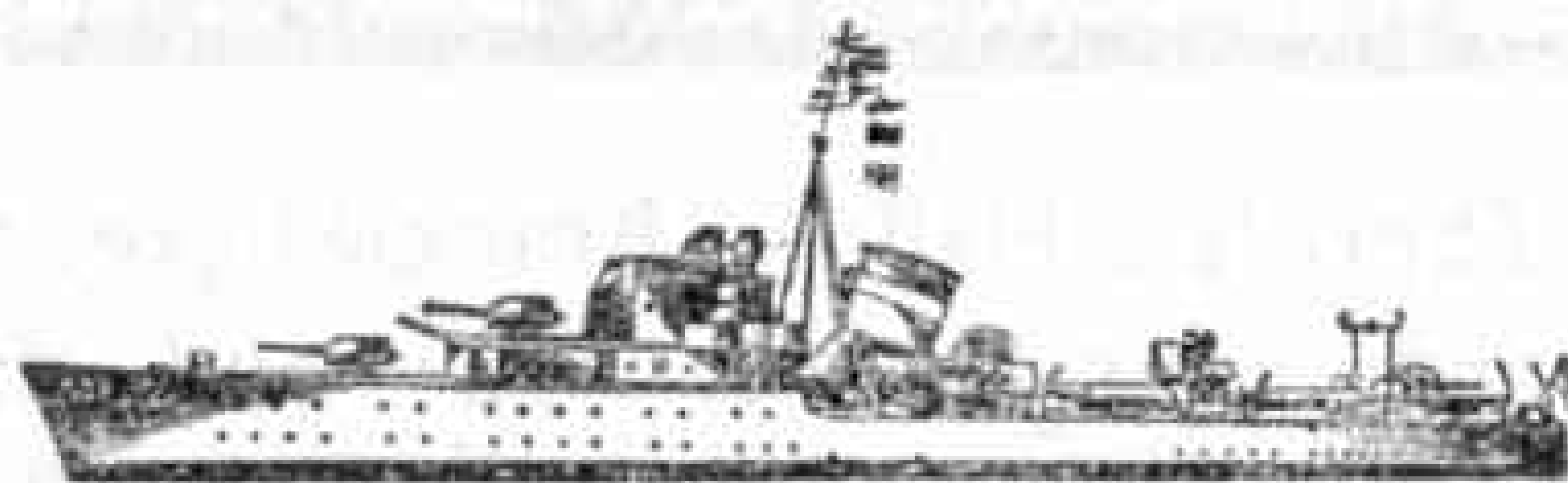
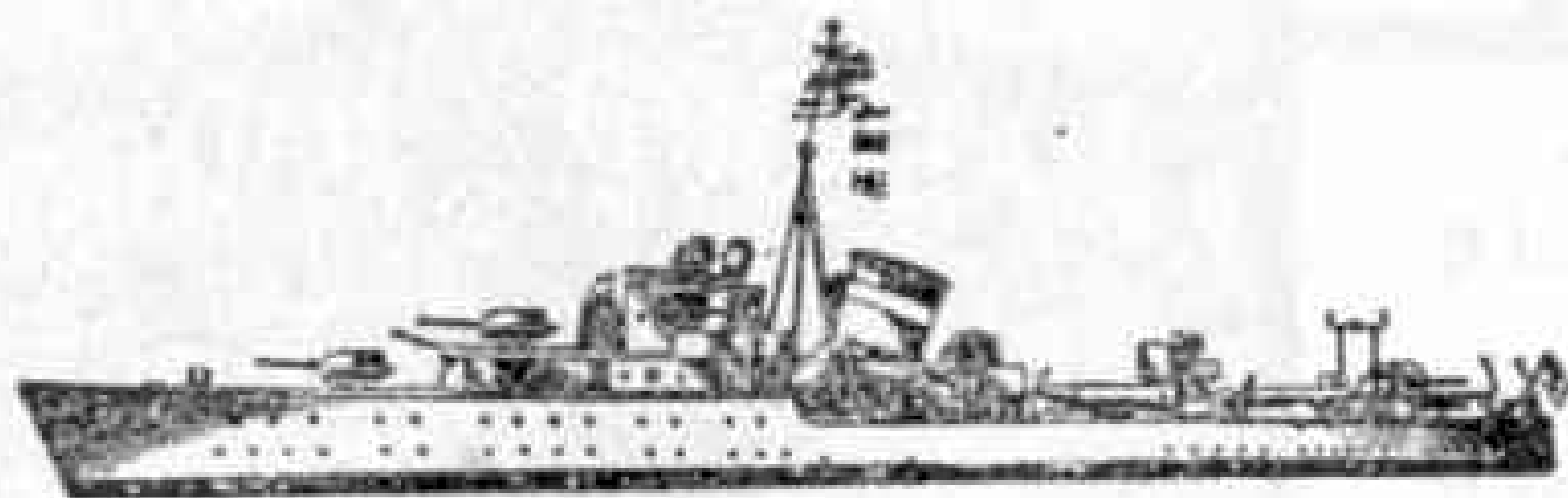


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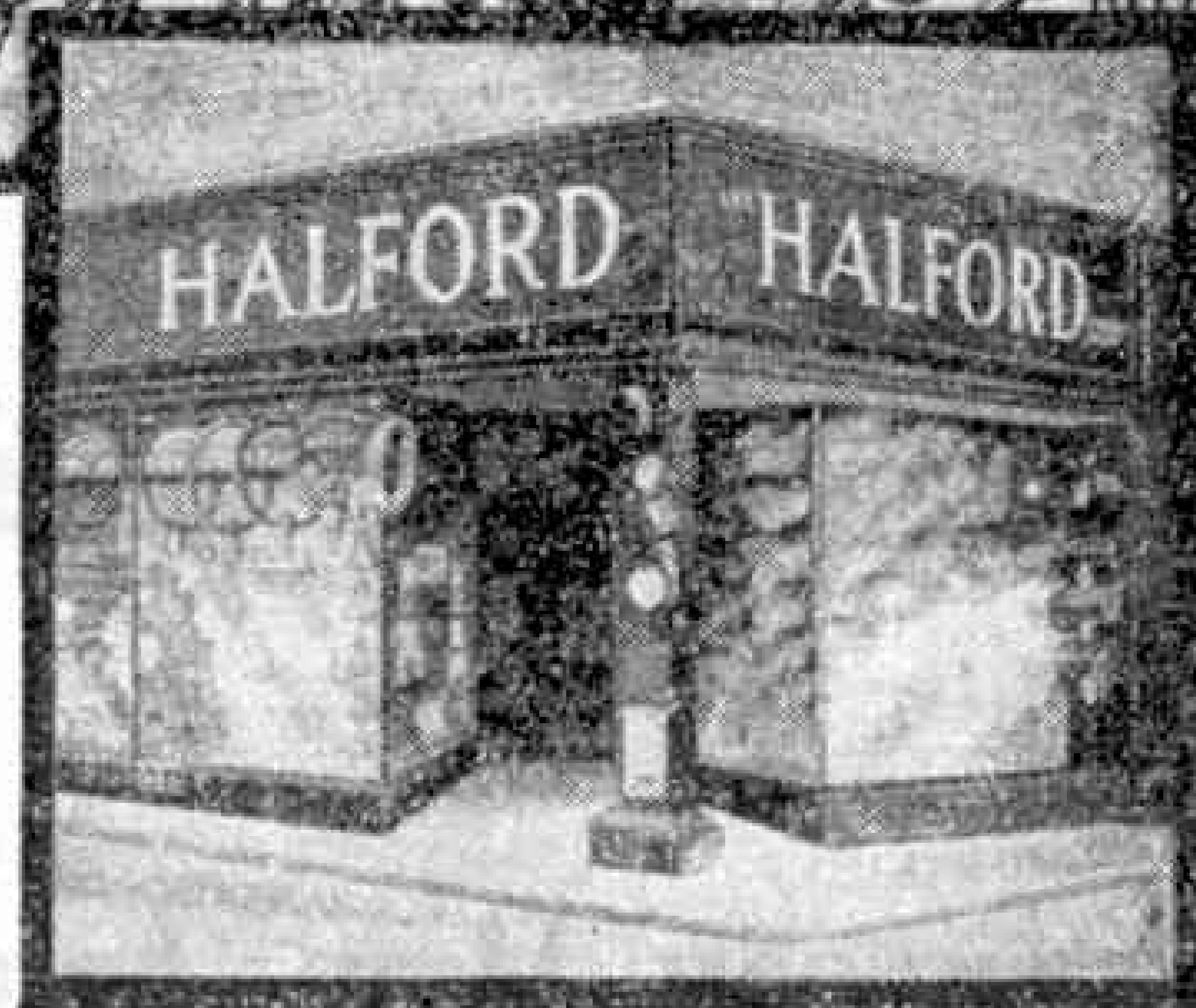
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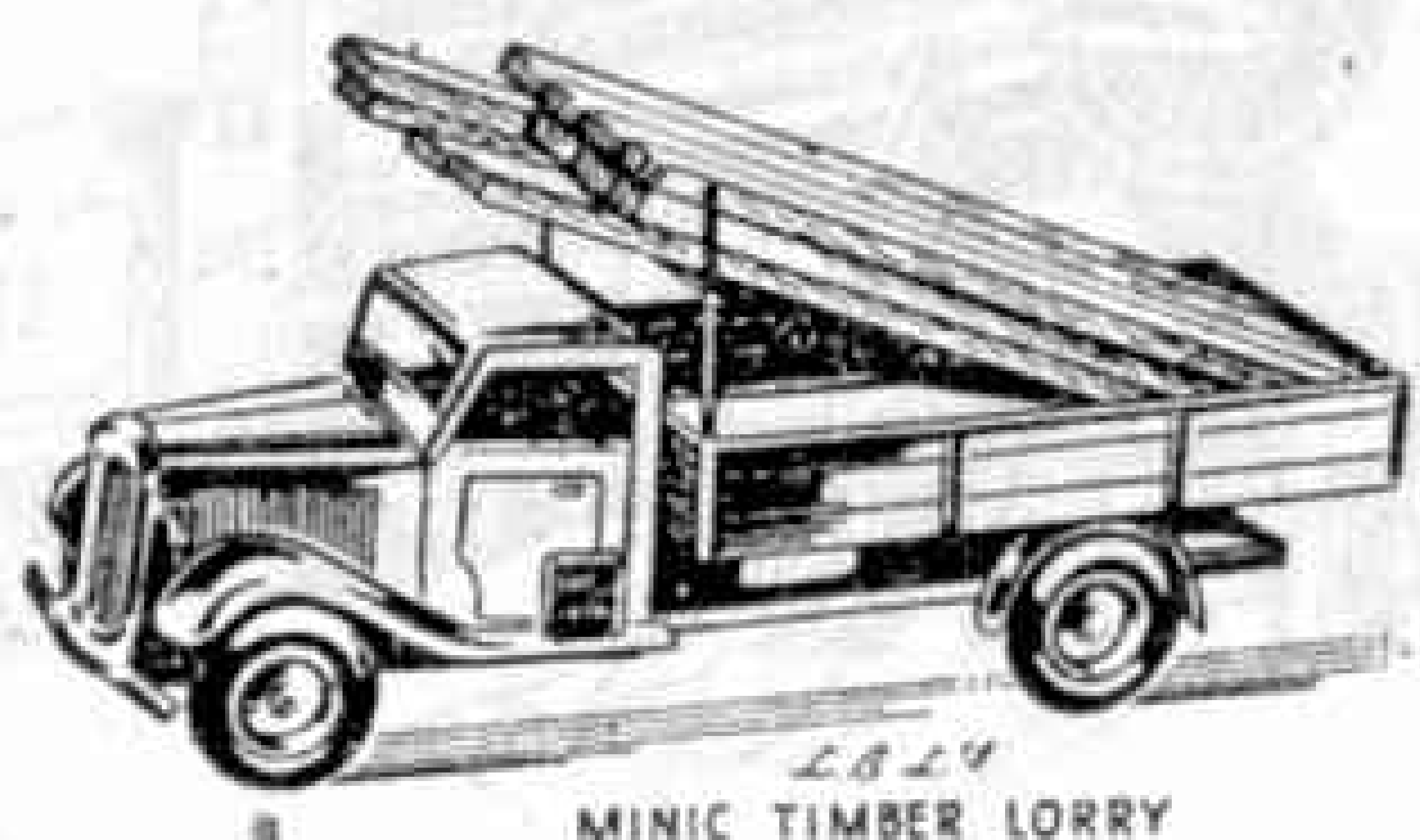
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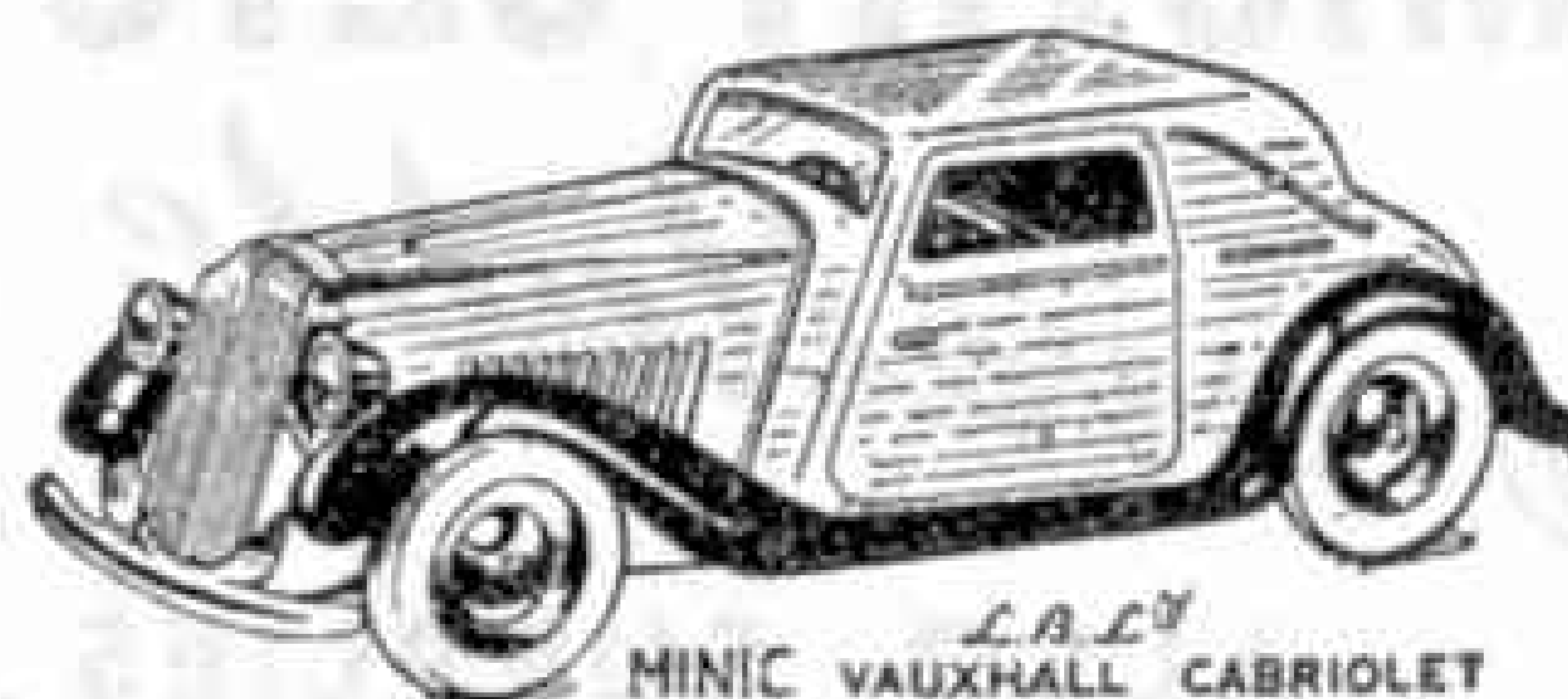
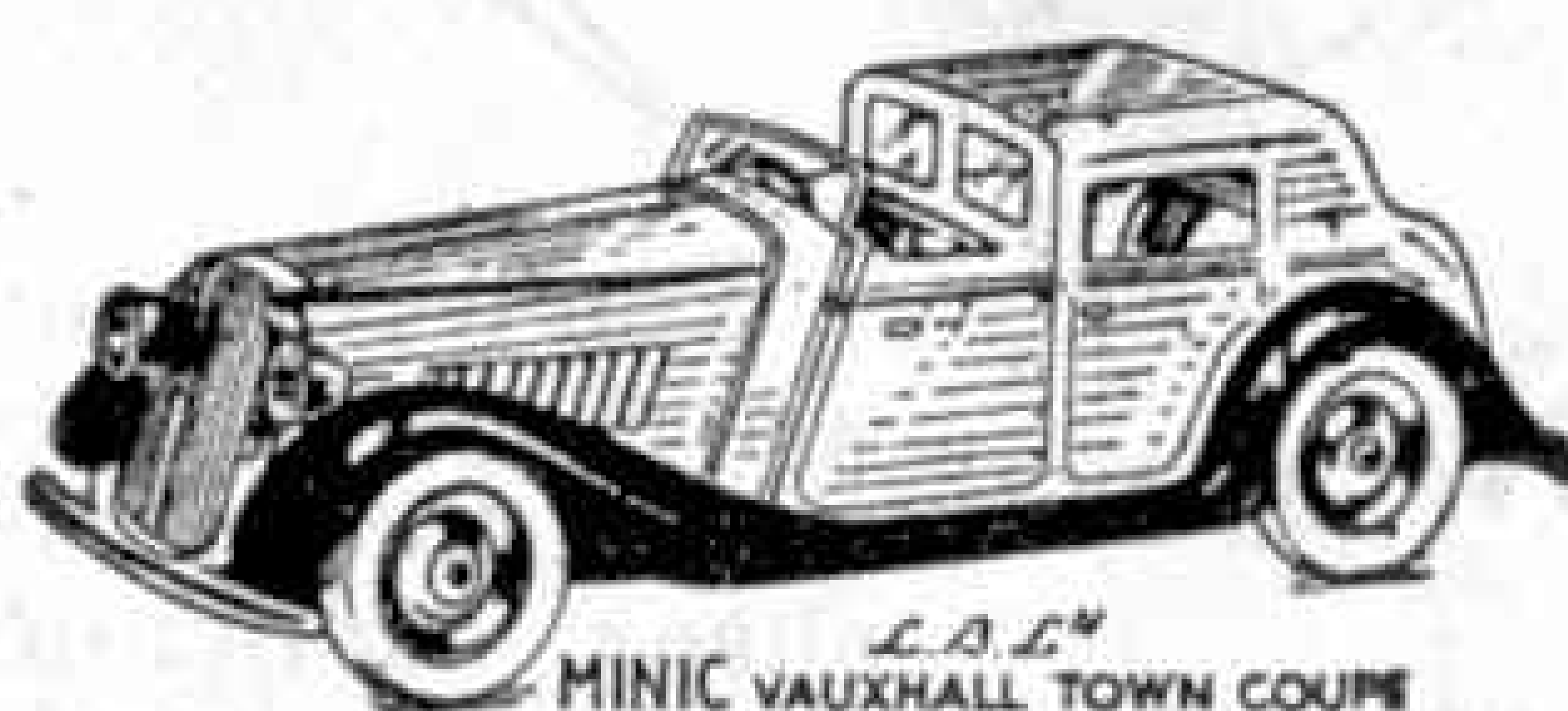
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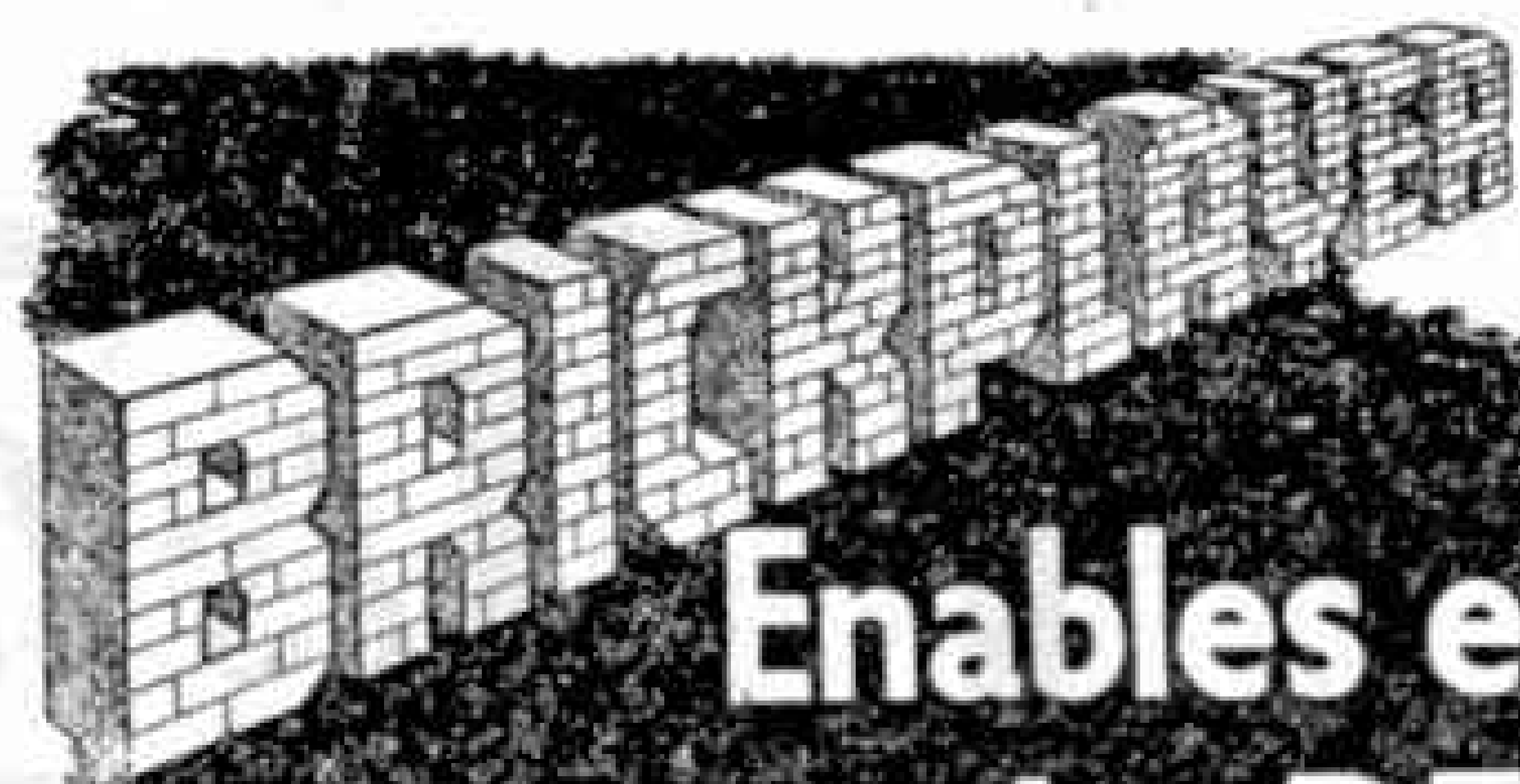
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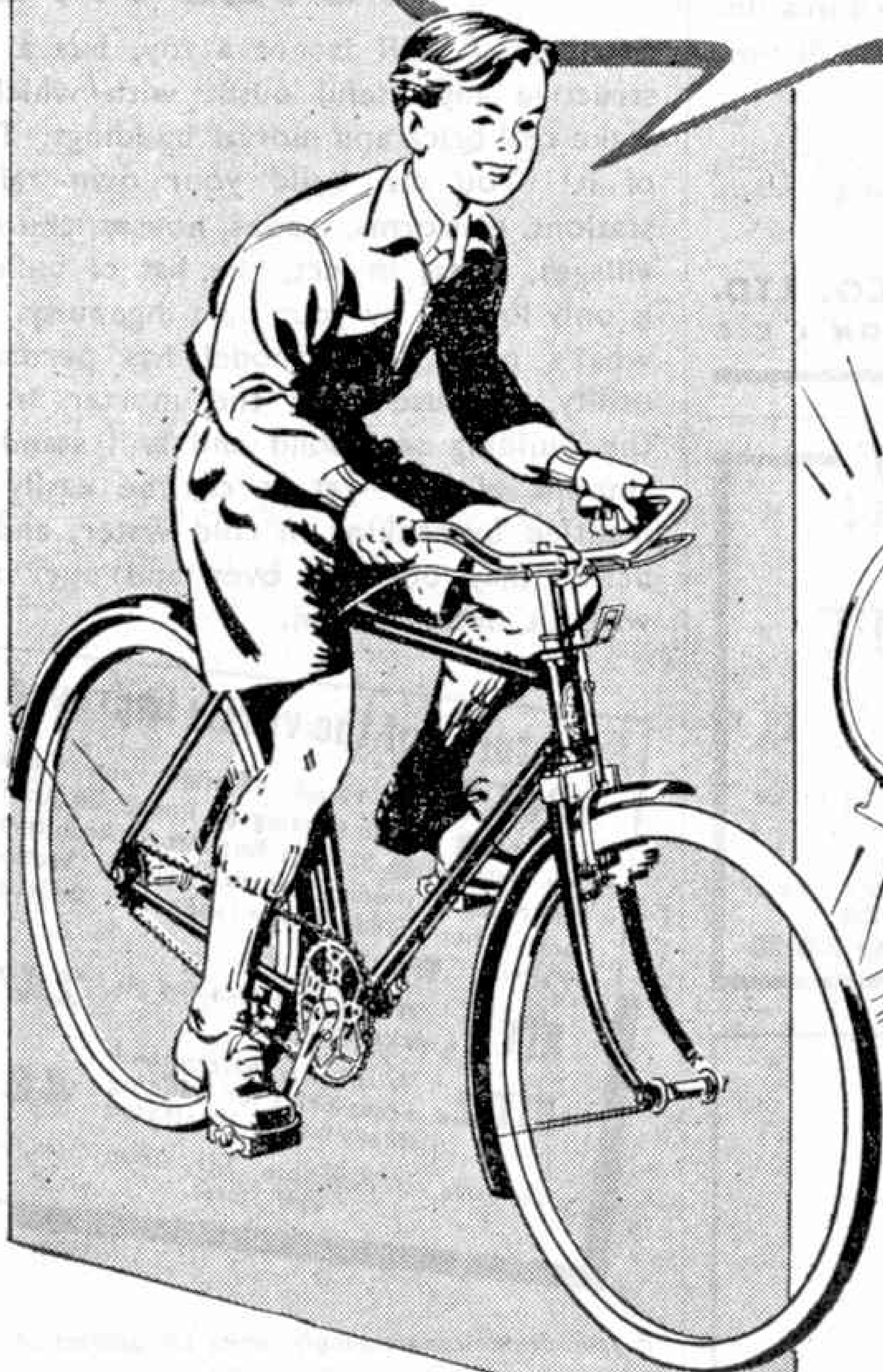
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MAGAZINE

Vol. XXXII
No. 11
November 1947

With the Editor

400 m.p.h. on Land

In September John Cobb achieved his great ambition to be the first to drive a motor car at a speed of more than 400 m.p.h. The new figure that he established for the actual land record fell short of the magic "400," as his average speed over the measured mile in both directions was 394.196 m.p.h.; but on the run in one direction he actually reached 403.135 m.p.h. This is a really wonderful achievement, and it is very gratifying that it is a British record in every respect, except that it was made on an American course.

Air speeds much higher than 400 m.p.h. have been reached, but progress on land has been just as sensational as that in the air. In 1927 Sir Henry Segrave reached what was then thought to be the incredible speed of 200 m.p.h., so that in the 20 years since then the record has been doubled. It is curious that the rate of progress has been roughly the same in the air. The record air speed of 20 years ago was 308 m.p.h., and now it is 650.6 m.p.h.

Calling All Cars

When I have been paying off a taxi at my door I have often thought of the waste of mileage that might be involved in the return of the taxi empty to its headquarters. Quite likely at the same moment somebody in the immediate neighbourhood was trying frantically to get a taxi for some urgent purpose, and here was one being literally wasted. I was therefore very interested to read recently in "*The Commercial Motor*" of a scheme introduced by Camtax Ltd., a Cambridge firm, to prevent just such waste.

The head office of the company has a low-power transmitter and a receiver working on a very short wavelength, and

each of the cars owned by the firm is fitted with a similar small receiver-transmitter. The set is housed in the luggage boot of the car, the control panel and loud speaker being fitted into the glove compartment on the passenger side of the driver. Each car has a code number, and as a driver starts on a journey he switches his set to the "receive" position. As soon as he hears his code number called he switches over to "receive-transmit," listens to the instructions from headquarters, acknowledges them and switches back to "receive."

The result is that all the firm's cars are under control over a 15-mile radius, so that each one can be directed from place to place as required. This radio control reduces empty mileage and improves considerably the efficiency of the service.

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The Decoration of Ships

By Frank C. Bowen

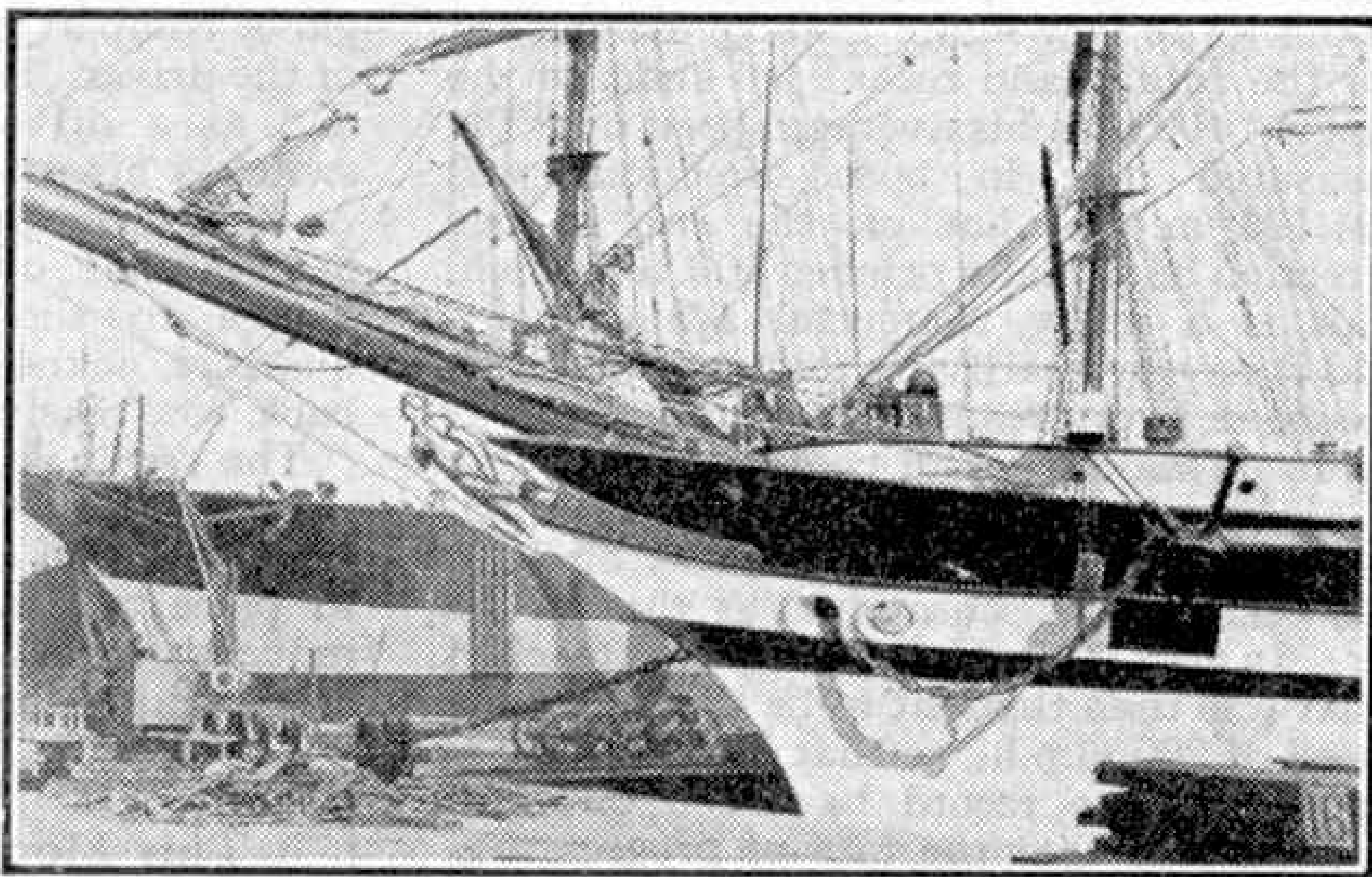
ONE of the saddest features about the strictly utilitarian viewpoint in modern shipping is, perhaps, the disappearance of practically all the decoration which used to make the old-timers things of beauty. External decoration is of course expensive, both in the first place and in its maintenance, and it may be argued that it is useless for the purpose of attracting business from passengers or shippers. It is also an open question as to whether the modern seaman has any of the interest in decoration which made his forbears give so much attention to the figurehead in the pride of ship which was then a big factor in efficiency, both in peace and war.

But it is interesting to note that the Scandinavians, who are among the most practical-minded of all the shipping peoples of to-day, are paying more and more attention to external decoration, and are frequently contriving very striking effects. Whether this has contributed to any great extent to the obvious pride which the average Scandinavian forecastle hand takes in the ship in which he happens to be serving, or whether he would possess that quality anyhow, may be argued, and there is no certainty about the possibility of British owners following the Norwegian and Swedish lead.

Our early ancestors believed in decorating anything which they held in high esteem and ships were no exception; but in the very early days their opportunities were limited. The first form of decoration appears to have been the figurehead, and to begin with that was more of a national ensign than an individual decoration. Egyptian ships all had the lotus flower, and Roman ships the goose to honour those whose cackling had given the alarm and saved the Capitol. Both of these were placed on the sternpost instead of forward, facing over the deck. The Phœnicians called their ships "Sea Horses" and a horse's head was their

universal decoration, but as to whether it was carried forward or aft there is no definite evidence. When any of these ships was sunk or captured, the emblem—lotus, goose or horse—was taken by the victors as a trophy just as the ensign of an enemy ship would be taken nowadays.

After the lapse of several centuries the Viking pirates decorated the stemheads of their long ships with terrifying carvings. These would appear to have been individual to the ship rather than national, and their purpose was obviously to frighten their enemies into easy surrender, just as the pirates' black flag was in the



An effective scheme of decoration in the sailing ship "Mountstewart."
Photographs by Nautical Photo Agency.

eighteenth century. These figureheads were made to unship when they were not necessary for their purpose, or when there was any chance of their being damaged.

There is no evidence that the Norsemen's round ships, used for trading or their long voyages into the Atlantic, carried figureheads, but ships of their type which were used throughout Northern Europe for centuries after Viking days certainly did so, and even at that early age they seem to have made their strong appeal to the sailor. When the Norsemen's open boat, with her big sheer forward and aft, was converted into a fighting ship by the addition of fore and after castles, and when these castles became more elaborate and, in the case of the forecastle, projected over the stem, the figurehead had

to accept a very awkward position under the fighting platform, but there was no thought of abandoning it.

Another practical feature of the Viking ships was adapted to pure decoration. The long ships were rowed by free men with their arms beside them, and for convenience their shields were slung along the gunwale between the oars. In the course of time these shields became pevasses, made of light wood and bearing heraldic devices, fixed to the rails of all sizeable ships well into the Tudor era.

The sails were elaborately painted for several centuries, partly for decoration, partly for religious purposes, and partly to display the armorial bearings of the nobleman who owned them or who was the patron of the owner. The hull of the ship, on the other hand, was occasionally varnished, but more often covered with a thick coating of tar which was certainly not decorative. By Tudor times, however, this had been replaced by more striking colour schemes, chequers giving the opportunity of the contrasts which were popular both afloat and ashore.

The long beak head which had been inherited from the galley's upper ram, and the high stern which was the legacy of the age-old fear of being pooped by a following sea, gave great opportunities of elaborate decoration by carving and gilding, as did also the wreaths round the gunports in the seventeenth century; and soon this decoration was covering

practically the whole of the hull in particularly important warships. In Charles I's famous "*Sovereign of the Seas*" no less than one-sixth of the total cost was spent in gilding and carving. It has to be remembered that she was one of the

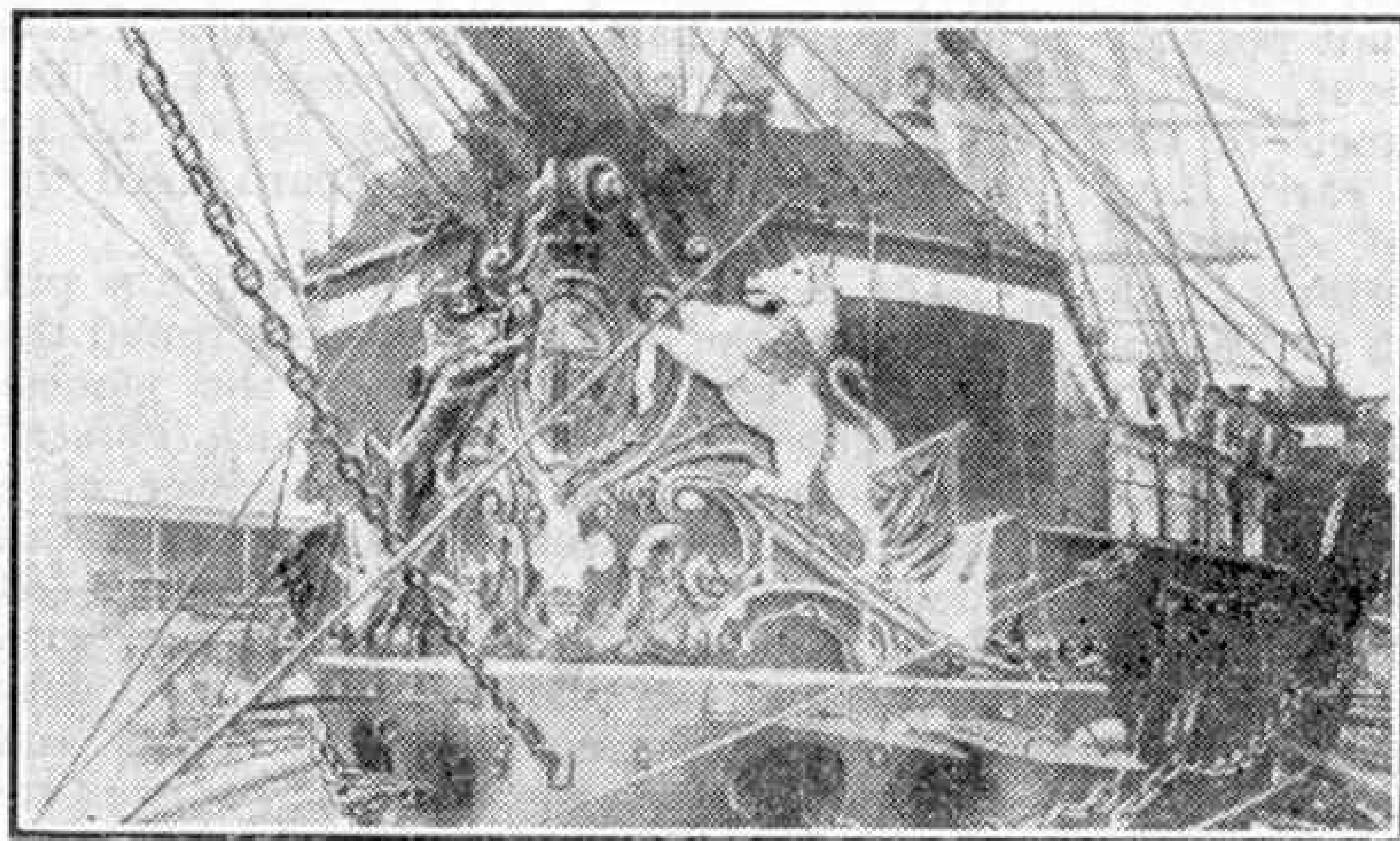


The figurehead of King Harold was appropriate for the sailing ship "Harold," but sailors always preferred the figure of a lady.

ships built with the hated "Ship Money" which cost him his head; yet when the Puritans came into power and ordered that all fighting ships should be repainted "sad colour," the people so loved her gilding and decoration that the Government dared not enforce the order in her case, and from the Dutch she earned the nickname of "*The Golden Devil*" by her fighting qualities.

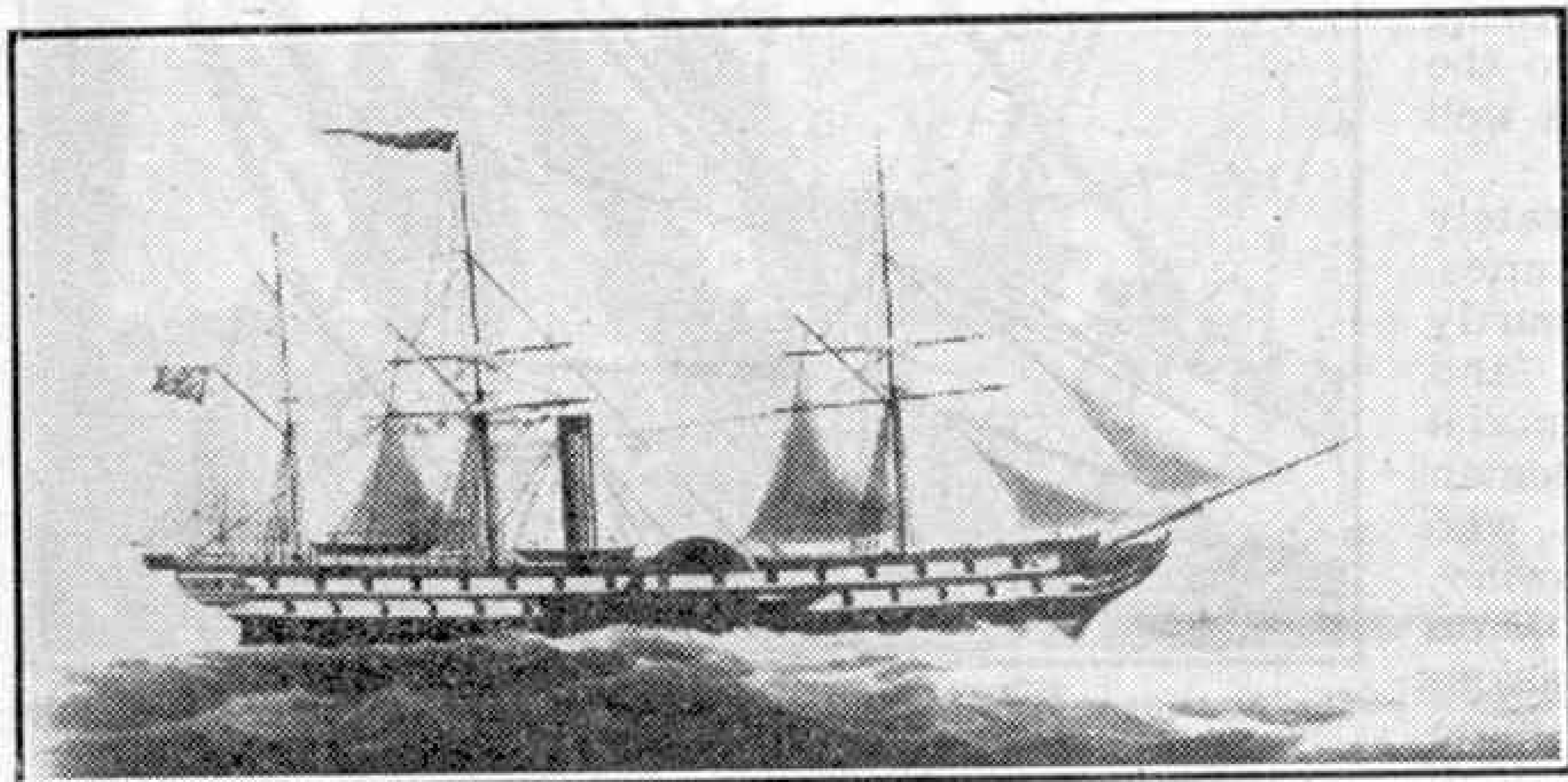
This lavish decoration was eventually checked for considerations of economy and the sides of men-of-war were simply varnished. But when it came to abolishing figureheads and stern carvings the seamen objected so strongly that the Admiralty dared not insist, although they were sometimes so mean about the figureheads that the captains provided better ones at their own expense for the sake of the morale of their men.

Back in Tudor days the merchant ships of the Levant and Muscovy Companies had copied the decoration of contemporary men-of-war in order to impress the semi-civilised peoples with whom they traded; and later the East Indiamen copied the



The figurehead of H.M.S. "Agincourt," built in the sixties.

decorations of the Royal Navy, largely in order that they might be mistaken for men-of-war by possible attackers. Warships painted ribands round their hulls in line with the gunports in order to make them more easily distinguished from an enemy in the smoke of an action, and the East Indiamen copied these with, as a general rule, an extra riband and dummy black ports to make them look more impressive.



The tradition of the "Nelson gunports" carried to a ridiculous extreme in the steamer "Precursor" of 1841.

After the end of the Napoleonic Wars this custom of painting a line of dummy ports round a sailing ship—"Nelson ports" they were generally called—became more and more usual although, curiously enough, the fashion was never adopted by the China clippers who had far more chance of meeting pirates than any other merchantmen. It was a very smart fashion, particularly when the ship's hull had a graceful sheer and was painted black above the line of ports and grey below it. When it was adopted by steamers and carried over the paddle boxes, where it was obvious that guns could not possibly be mounted, it became ridiculous.

At the same time the funnels of the steamers, particularly in the early days when they were generally of abnormal height, gave a great opportunity for decoration by paint, although it cannot be pretended that all the ideas were particularly pleasing. Many of the earlier funnels were simply bizarre, not only by their painting but also by the highly decorative tops which were frequently fitted. The sides of the paddle boxes also gave a great opportunity of striking and very pleasing results. A carving in the boss and gilded or coloured louvres radiating from it to release the water was a popular and often striking design, but

some of the big American paddlers, whose wheels and boxes were very much bigger than those of British ships, went in for startling designs.

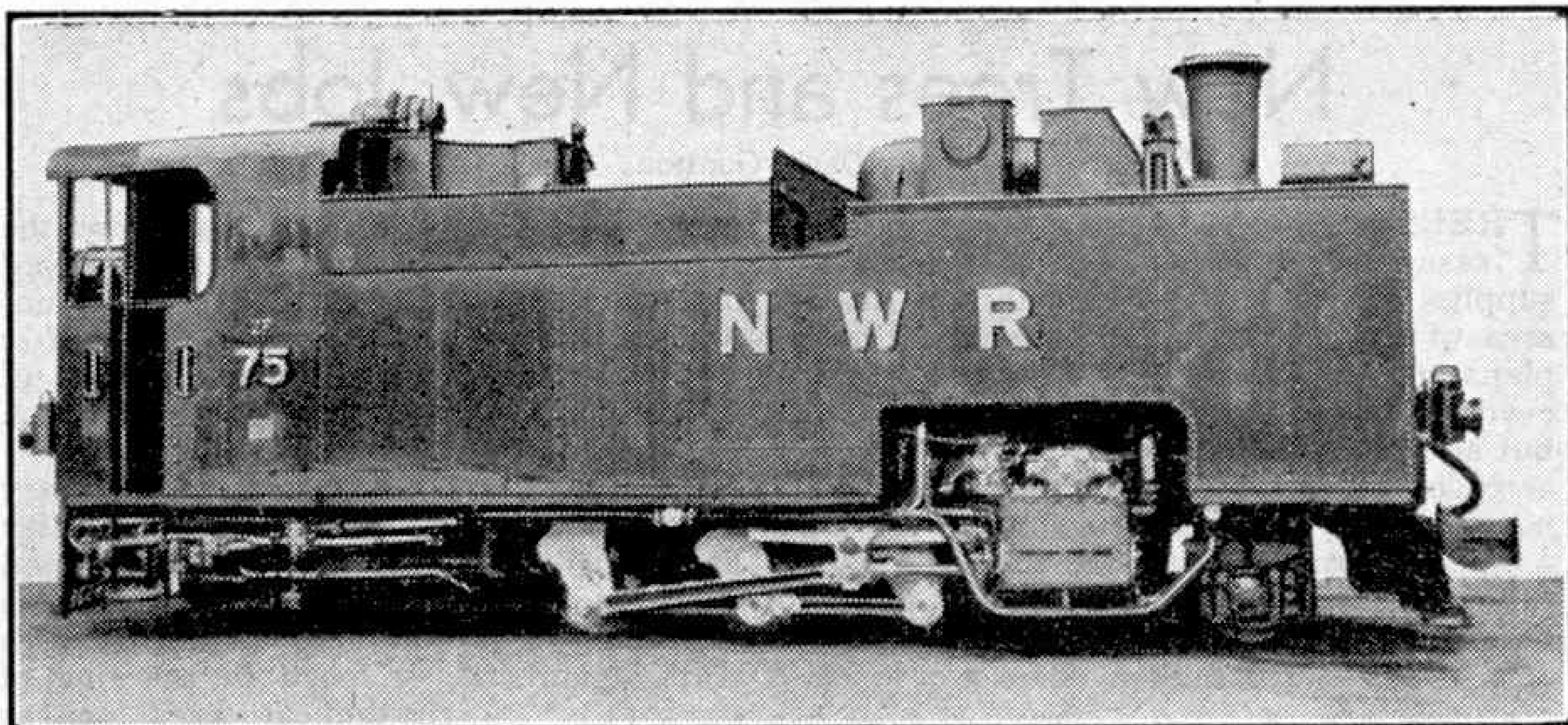
Both steamers and sailing ships were generally clipper-stemmed so that figureheads and trail-boards became practically universal, even for the smaller ships which had usually been without any decoration before the nineteenth century. The disadvantage of having unnecessary

length in merchant steamers which had to dock, and of an overhanging bow which neutralised the ram in men-of-war, led to the clipper stem being abandoned in steamers; and after attempts to fit figureheads in a very awkward vertical position, and then replacing them with scrolls round the top of the stem and the hawse pipes, the

decoration of the bow was abandoned.

Sailing ships continued to be given clipper stems to support the bowsprit and they made the most of the opportunity for figureheads and trail-boards. Although they were not as elaborate as those fitted in eighteenth century men-of-war, the figureheads of nineteenth century sailing ships were often more beautiful and far more graceful. They were liable to be damaged when driving into a head sea, and so much alarm was caused by parts of figureheads or trail-boards washing ashore that they were often made to unship any part, such as Nannie's outstretched arm in the figurehead of the "*Cutty Sark*," which was liable to be broken, and to stow it inboard until the end of the voyage.

The beginning of the ironclad era put an end to the decorative ribands round the hulls of men-of-war. When the pioneer ironclads "*Warrior*" and "*Black Prince*" had several times the gun power of a towering four-decker, but carried all their big guns on one deck, it was felt that they would look undignified with one riband, so that the black hull, with white upperworks and ochre masts and funnels, became the rule until it was replaced by the present grey in the early days of the century. (Continued on page 448)



Engine No. 75 of the Kalka-Simla line. Photograph by courtesy of Associated Locomotive Equipment Ltd., London.

The Kalka-Simla Railway

THE Kalka-Simla Railway is an interesting 2 ft. 6 in. gauge line in India, about 59 miles long. Before the partition of India it was operated by what was the State-owned North Western Railway. This railway itself underwent partition and the Indian section, which includes the Simla line, is now designated "Eastern Punjab Railway."

The Kalka-Simla line climbs some 5,000 feet in the course of its length. The climb is broken but the ruling gradient of 1 in 33 is still severe. The route clings to steep hillsides and takes refuge in more than 100 tunnels on its way. Steel bridges are few but there are numerous masonry viaducts, some with many arches in tiers.

Special interest is always attached to the locomotives of hill railways. The engines of Class "ZF," such as No. 75 shown in the illustration, have the flexible 2-6-2 wheel arrangement and are fitted with British-Caprotti valve gear and poppet valves. The engines are worked chimney first uphill as shown in the striking cover illustration to this issue. The downhill trip is made with the cab leading and the driver is thus afforded a particularly good view, which is valuable on a steeply-graded and curved line such as this.

An interesting feature of one of the "ZF" class is the provision of the Riggerbach counter-pressure brake. In the ordinary way if a locomotive is put into reverse gear when running downhill it compresses air in the cylinders which has a braking effect.

The Riggerbach brake uses this principle and makes it a working proposition by the provision of a silencer and pressure regulating valve to keep the brake effect under control, and by injecting water into the air drawn into the cylinders so that the moisture absorbs the heat generated by the compression of the air.

If no provision is made to alter the valve events, compression only takes place for about 82 per cent. of the piston stroke and in consequence a relatively high compression pressure is necessary.

The rotary drive of the British-Caprotti Gear enables the valve events to be adjusted so that compression is moderate and even throughout practically the whole stroke; a small unit called a "gear shifter" enables the driver to advance or retard the timing as desired.

To use the Riggerbach brake after closing the regulator to shut off steam, the driver puts the engine into full reverse gear. By means of cab control he opens a flap valve on the exhaust pipe, and a water valve which admits a spray of water into the exhaust pipe. This ensures that only clean air mixed with water vapour is drawn into the cylinders.

After opening the pressure-regulating valve which allows the braking effect to be increased or decreased the driver then operates the gear shifter lever; and thus he runs down the long gradients, keeping control on the speed by means of the pressure-regulating valve. Normal brake gear can be used as well if necessary.

New Trees and New Jobs

By David Gunston

TREES were high among our wartime casualties, and the loss for emergency supplies of timber out of an unduly small area of forest was indeed grievous. Now plans are in operation not only to replace every tree that was felled for wartime use, but also to replant the country with a vast acreage of new woodlands so that we shall never be short of timber again.

The Government have set the ambitious target of some five million acres of forest, or nearly a tenth of the whole country, and of this three million acres are to be

come are to be used. It is said that the Forestry Commission, guardian and organizer of our woodlands, have an unwritten motto which runs: "*Fell a tree and plant three.*" This gives some idea of the task before them and the work which it must involve.

Just what are the processes necessary to raise a great tree to a size and quality fit for felling and the securing of good timber? What has to be done before a patch of open ground is covered with sturdy giants being felled to the ring of

rhythmical axes or, as often as not in these days, the churring of a speedy motor-driven circular belt hand-saw?

Before a true answer to these questions can be given it must be fully appreciated that all forestry work is long-term in nature. Farming works with its planned results in mind within one or two years; forestry thinks more in terms of 50 or 100 years. The average time necessary for a tree to reach full maturity is around 80 years, with 50 years as a shorter figure for certain faster-growing trees. Most of the trees we see about the countryside to-day,

especially those in any form of forest, wood or coppice, were not self-sown, but were planted by our ancestors within the last 100 or 150 years or so. So the forester seldom sees much of the full result of his work, a fact which in a way gives an added responsibility to his job; he feels that he is working for posterity, just as did those who so prudently planted the trees we have used in the last few years.

Like plants, all trees are grown from seed, beginning life as a rule in big tree nurseries where the ground is divided into two sections, the seeding lines, and the transplanting lines to which the young trees are moved later. There are some seed firms specialising in tree seeds, but many of the trees are raised in the State nurseries, where some of the most interesting work in forestry is to be found. Before the war most of our seed was imported; now



A power driven saw in operation. With its $1\frac{1}{2}$ h.p. motor this can fell a large tree in $1\frac{1}{2}$ min.

secured by the planting of bare ground with suitable trees. The Forestry Commission, recently placed under the Ministry of Agriculture, set out to achieve this stupendous programme within the next 50 years. Not only the mere planting of trees is planned; there are also schemes of rural resettlement whereby numbers of part-time workers can be given smallholdings of their own to work inside the forestry areas, and even ideas for revival of village communities. What is seldom realised in conjunction with all this is the vast scope for jobs that lies open in the future to any who seek a healthy and interesting career.

The re-forestation of Britain is to be a vital part of the general post-war reconstruction, and nothing but the best methods of securing both first-class forests and efficient management of our timber resources for the next two generations to

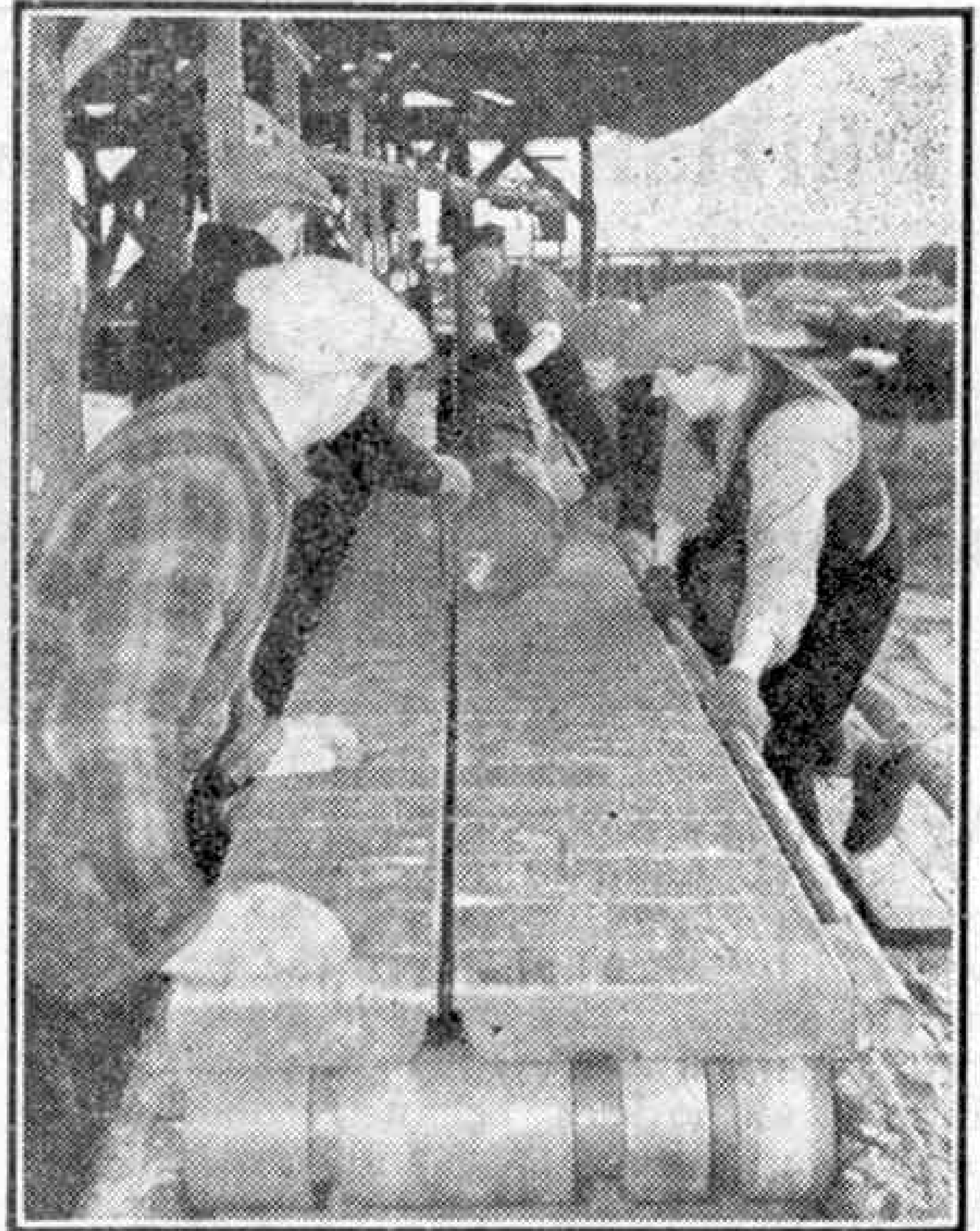
we produce large quantities ourselves.

Seeds for softwood trees are collected in the cones of the trees on which they grow. The collector cuts open cones here and there to look for the white flesh that tells of good fertile seed within. If you have ever tried to get the little flat seeds out of a fir cone you will know how difficult it is, and in the nurseries the cones are heated to extract the seeds easily. Some of the seeds are then tested in the laboratory in humid heat under little glass covers to obtain some idea of their powers of germination and to determine just how thickly they will have to be sown to ensure regular plants.

The seed is usually coated in red lead and sand by way of protection against birds and the wind, and sowing is done carefully by hand, the seeds being covered with grit and set in close lines. The easiest trees to sow are the oak and beech, for the acorns and beechnuts from which they spring are large enough to handle comfortably.

Germination is very slow, some seeds taking up to five months to push through. Before they appear the weeds that spring up are burnt off with a blowlamp but once the tiny seedlings are up hand weeding commences. The tree seedlings are tended here for at least a year, when they are taken up and transplanted at 2 in. intervals in lines 10 in. apart. Lining-out, the forester's name for this transplanting, is a difficult and lengthy job. Each miniature tree, around 3 in. high, has to be handled separately and planted perfectly in the long shallow trenches to avoid any wastage.

The Forestry Commission like to have about 300 million seedlings and some 70



Newfoundland lumberjacks cutting logs in camp in the North of England during the war.

million transplants in hand all the time, of which the latter may be put out at the rate of 300,000 to the acre, and all of these, with care and skill, may one day be full-grown trees. Records are kept of seeds and seedlings to study the varying rate of growth in different parts of the country. All the lines have to be tended regularly, and coverings of latticed wood are put over them in frosty weather.

Much of the intermediate planting of the growing transplants, as they are called, is done with the aid of long wooden boards bearing regularly-spaced grooves.

The little trees are placed in the grooves in the top part of the board, which is hinged over, slipping them all evenly into the planting trench.

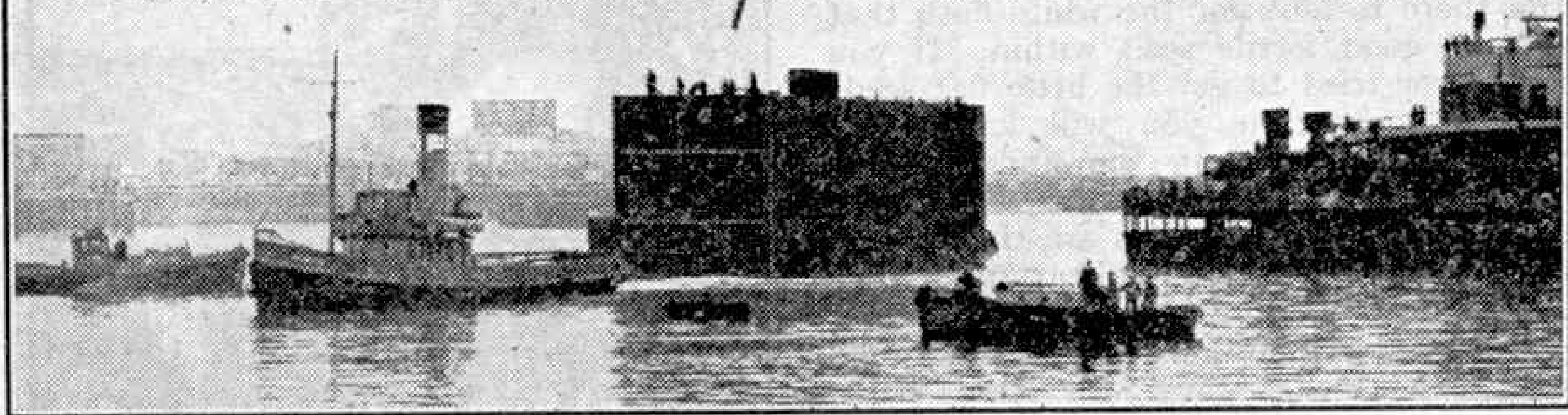
A year or more later these young trees are finally set out in the forests. This is most tricky work, for it is important not to lose the trees at this stage. It is mainly done with a spade and a practised planter can set out up to 800 trees in a day. A sheltered or wind-free site is usually chosen and the slender three-year-old trees that do fail are replaced periodically. Rabbits have to be kept out by buried



Planting seedlings in the nurseries of the Forestry Commission.

(Continued on page 448)

BRITISH CAISSON *for* FRENCH DRY DOCK

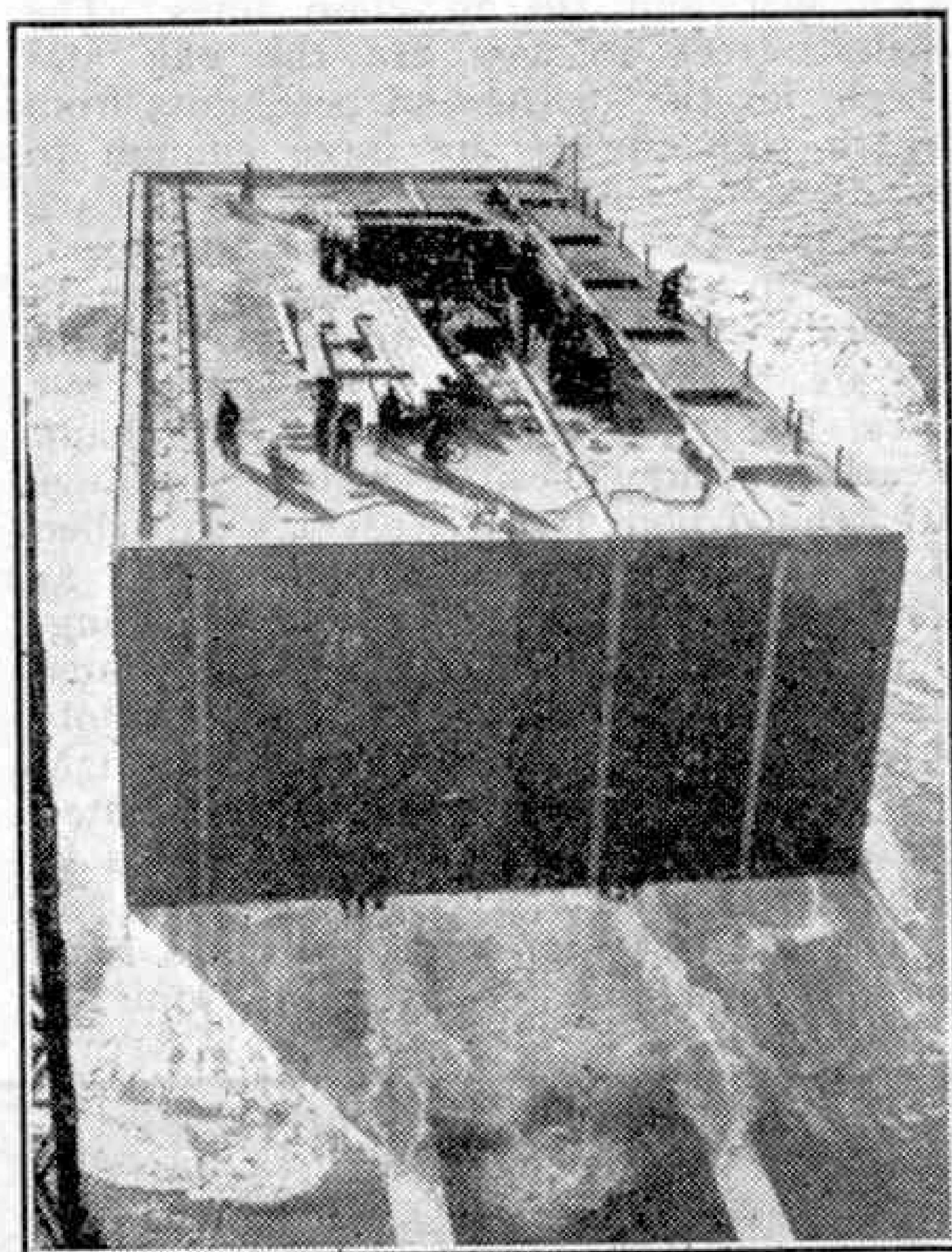


WHEN the Germans were driven from Le Havre in 1944 they destroyed the port. The large dry dock, No. 7, was wrecked by mines placed in the walls and in the entrance caisson, and by scuttling two ships and a dredger in the dock. The French authorities began reconstruction of the port in June 1945, and commissioned Vickers-Armstrongs Ltd. to design and construct the new entrance caisson.

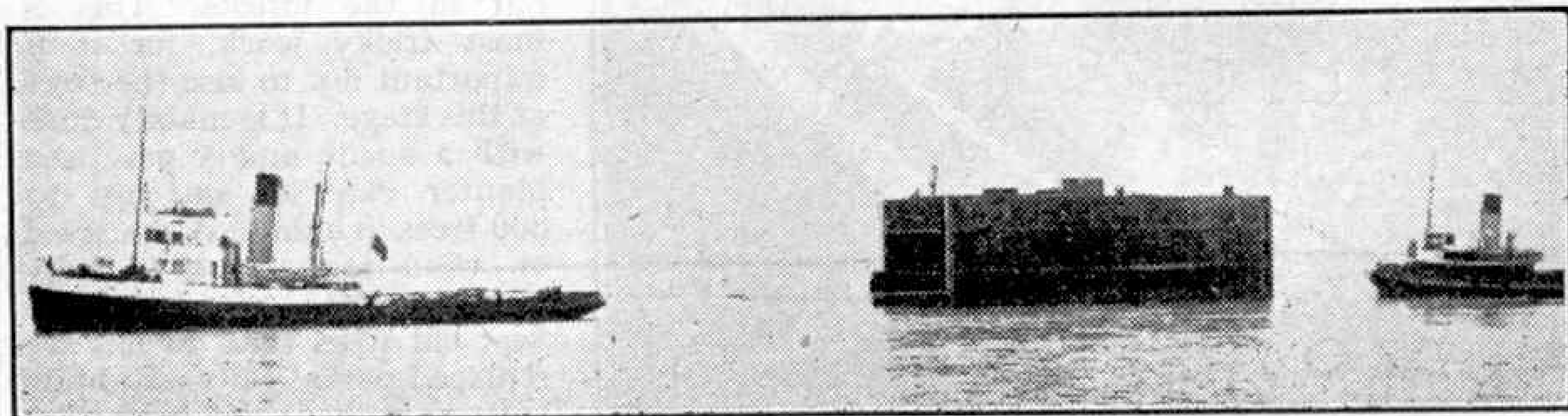
The caisson, which is of welded construction, was built at Barrow-in-Furness. Its main particulars are length 132 ft.; height from keel to top deck 58 ft. 10 in.; beam 27 ft. 10 in.; normal draught 26 ft. 6 in., and displacement 2,734 tons. It was launched on its side and righted by adding the permanent ballast. On completion it was towed from Barrow to Le Havre and had an eventful voyage in heavy easterly gales between 25th February and 12th March 1947.

At Le Havre the caisson was cautiously manœuvred into position, where it was found to meet all requirements and to provide an excellent seal for the dock. It is now possible to deal with the sunken vessels in the dry dock and to repair the walls preparatory to raising and docking the "*Liberté*" (ex-"*Europa*"), which broke from her moorings during the gale of 8th December 1946 and sank in the tidal basin

after collision with the wreck of the liner "*Paris*," which is shown on the right in the above illustration.



Launching the caisson at Barrow-in-Furness.



The caisson leaving Barrow-in-Furness for Le Havre. The illustration at the head of the page shows the caisson at Le Havre, nearing its final position. Photographs by courtesy of Vickers-Armstrongs Ltd.

Engineering Notes

Britain's Largest Press

The largest press ever built in Great Britain has been completed at Newcastle by Vickers-Armstrong Ltd. It has been built for the Rootes group, and is being installed at the plant of British Light Steel Pressings at Acton, London.

The press has a thrust of 1,500 tons and is capable of stamping out in one blow the entire side or top of a motor car body. It weighs 350 tons and can mould steel sheets either from above or below at a maximum rate of 400 an hour. The electric motors driving it have a total power of only 140 h.p., and its powerful thrust is given by the impetus of fly-wheels, some of which weigh over 500 tons and turn at 365 r.p.m. Push button control is installed and the machine is capable of cracking the shell of an egg without spilling its contents.

A Concrete-Placing Octopus

The shafts of gold mines that are under construction on the Rand and on other gold fields in South Africa usually require concrete linings, and these are now placed in position quickly and easily by the use of a device called the octopus. The sea creature of this name is remarkable for a small globular body from which live tentacles spread out. Imagine the body of the octopus replaced by a metal shell or drum, and its tentacles by ten 6-in. rubber tubes attached to nozzles in the bottom the shell, and this gives the shaft concreting octopus.

At first the octopus was lowered down the shaft whenever concreting was required. The concrete was mixed on the surface and lowered in a bucket to be tipped into its shell, from which it was fed rapidly to the required positions by means of the rubber tubes. The plan usually followed is to place pre-cast concrete blocks in position round the shaft, and to pour the concrete from the octopus shell between them and the rock. On setting this forms a structure of great strength, with the new concrete and the blocks bonded well together. More recently the octopus has been built into the staging used in the shaft instead of being lowered into position when concreting is to be done.

Roof-Top Roadways

Some means are now required for speeding up traffic in city areas, especially in London, so that vehicles can pass through them at speeds of 40 m.p.h. without encountering difficulties due to cross-roads or to pedestrians. It has been suggested that underground roadways should be constructed for this purpose, but these would be expensive and would give rise to other serious difficulties, and the proposal was made at this year's British Association meeting to provide instead a system of roof-top roadways.

At the present time there is a demand for large buildings rising to a height of 100 ft. These are all of the same type of construction, with steel frameworks, and they would provide the necessary support for the roadways suggested, which would be carried over the main thoroughfare by archways. The suggested roof top roadway width would be 60 ft., and at the sides there would be ducts large enough for the maintenance staff to walk inside. These would also act as parapets to prevent traffic falling into the streets below in the event of accident. The loads on the roadway would be carried down to

the ground through the steel frameworks of the buildings, and no change from normal construction methods would be required to allow for them.

For approaches to these roads there would be sloping spurs at intervals of about a mile, and the existence of these would allow the provision of car garaging accommodation on successive floors of the buildings alongside which they run.

One roof-top roadway of this kind that has been suggested for traffic crossing London would run from Shepherd's Bush along a line north of Oxford Street to the east side of the city.

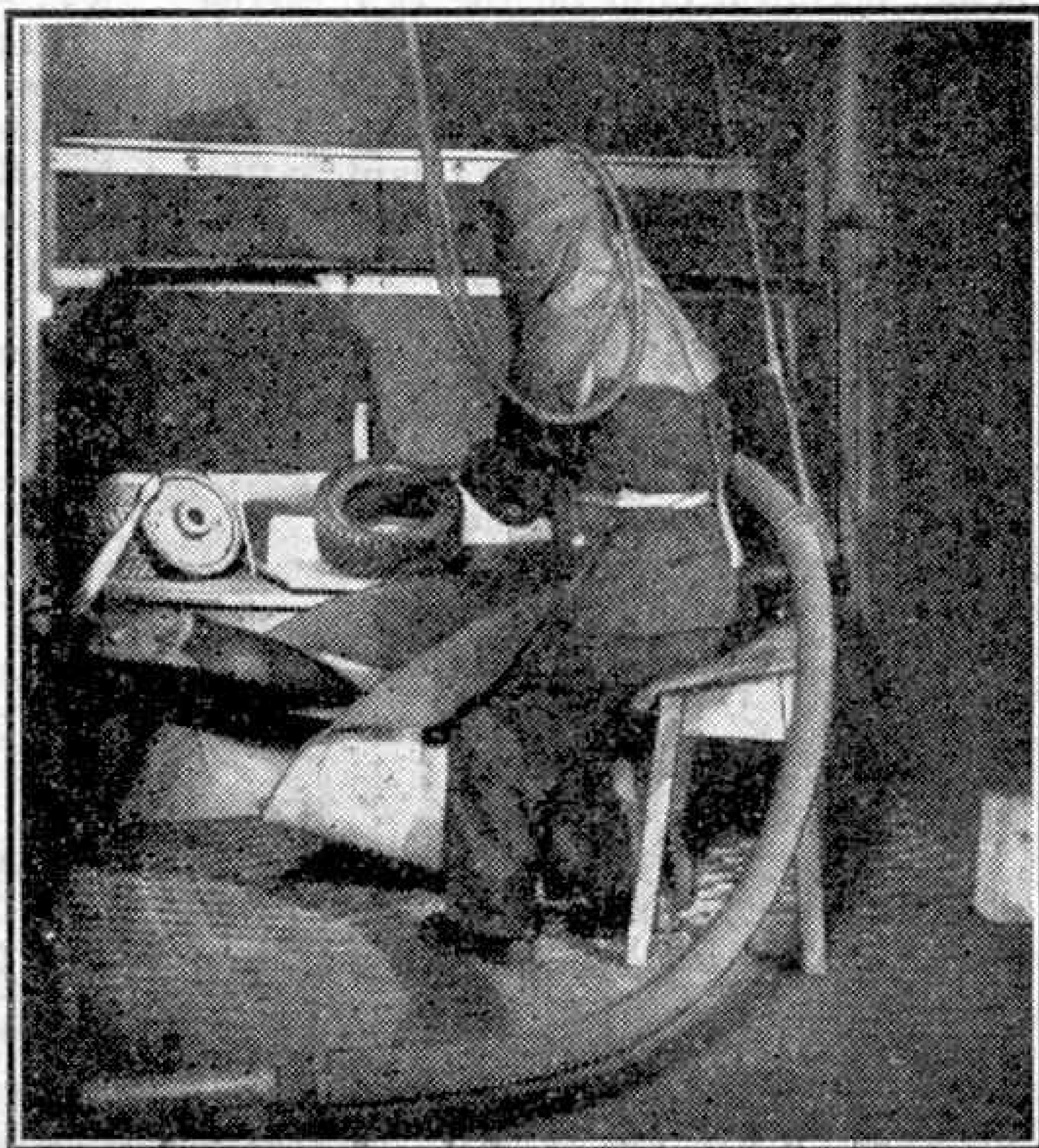
A New Bridge Over the Tagus

A new suspension bridge with a central span 850 ft. long and two side spans of 425 ft. each, is to be built over the Tagus at a point about 19 miles from Lisbon, Portugal. It will accommodate a 29 ft. 6 in. roadway and two footpaths each 5 ft. wide.

The Eupen Dam

A large dam is at present under construction in Eupen, Belgium, for the purpose of providing a reservoir to increase the drinking water supply of the City of Liege. It will also serve to regulate the flow of the Vesdre River.

The height of the dam above the bed of the river is 214 ft. and it will be 1,475 ft. long. The total volume of concrete required in the construction is about 520,000 cu. yds., of which 470,000 cu. yds. are already placed. Construction of the dam was commenced in 1936 and before the war 3,600 tons of building materials were used every day. Work was considerably delayed by the war, and it is estimated that the dam will not now be completed before the end of 1948.



An interesting photograph of a workman shot-blasting gears after special heat treatment. The operation is performed in a steel cabinet, and the operator wears special protective helmet and apron as shown. Photograph by courtesy of David Brown and Sons (Huddersfield) Ltd.

Ships with Wings

By John W. R. Taylor

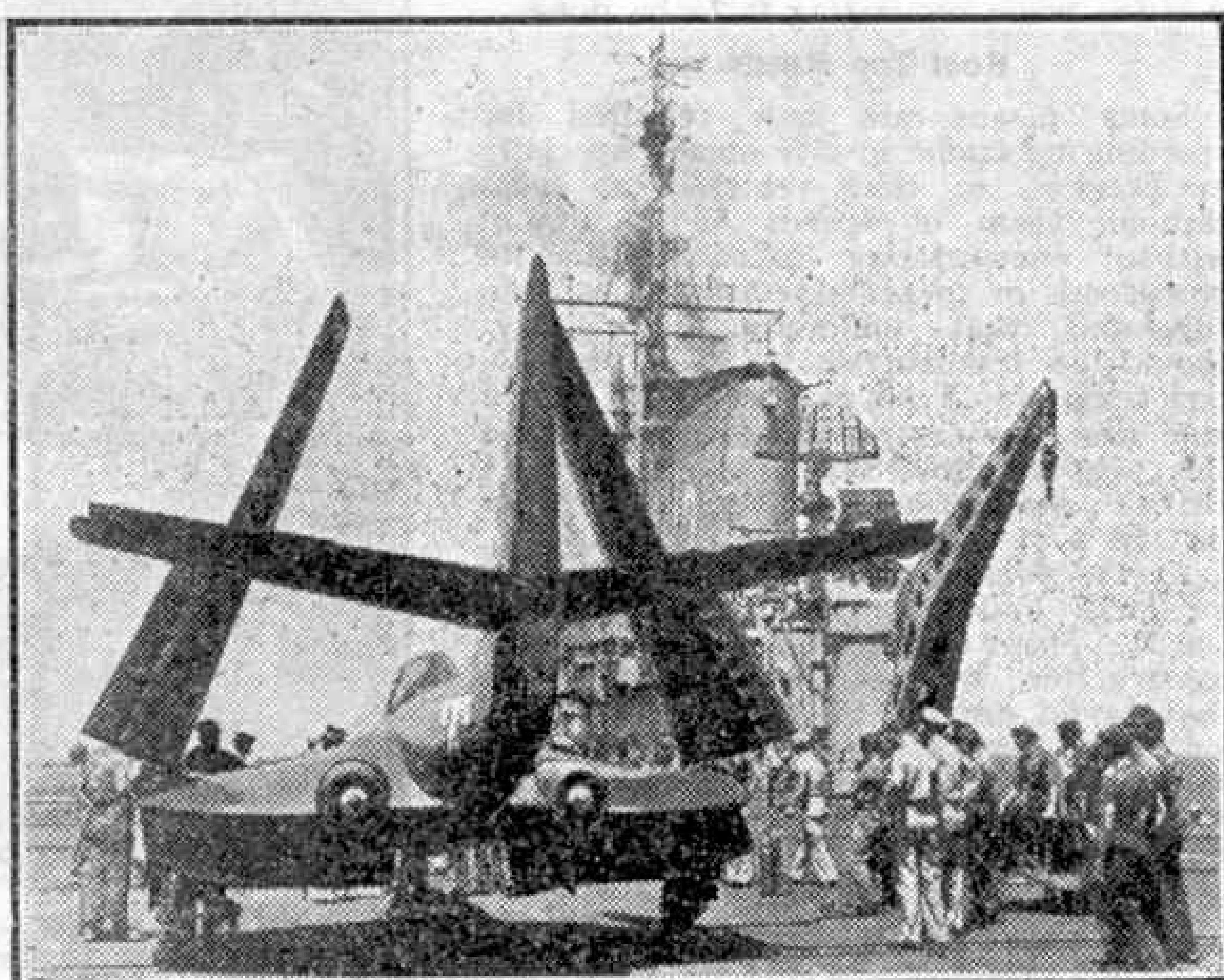
THERE was an air of tense excitement about the U.S. aircraft carrier "*Franklin D. Roosevelt*" as she steamed into the early morning breeze off the Virginia Capes on 21st July 1946. On her deck a select group of naval officers, aviation experts and pressmen chatted and watched a sleek new fighter 'plane, its wings folded like those of a giant butterfly at rest. Suddenly all talking stopped as the aircraft's wings slowly spread themselves; its engines started up with a hardly perceptible whine that quickly swelled into a deep-throated roar of power. Two minutes later the fighter streaked down the deck and up into the air, gracefully and almost effortlessly. The McDonnell "*Phantom*" had made its *debut*, signifying the start of a new era in sea-flying—the coming of the naval jet fighter.

Our story really begins 36 years earlier, again in American waters. Few people took flying very seriously then, and the naval officers who watched Eugene Ely fly a decrepit looking Curtiss biplane off a wooden platform built on the U.S. carrier "*Birmingham*" can be forgiven for considering the whole thing rather amusing. But Ely had started something that was destined to make the officers' giant battle-ships about as obsolete as a bow and arrow in modern warfare. He very nearly started nothing, for the platform was only 57 ft. long and the aircraft had not attained flying speed by the time it had reached the end. It dipped towards the sea, touched the water with its wheels and splintered the tips of its propeller blades. Fortunately, Ely was able to reach land and, a year later, he made the first deck landing in a similar machine on the cruiser "*Pennsylvania*."

Sea-flying has come a long way since then, a way that has involved a struggle against official prejudices as much as against natural difficulties. When the Royal Naval Air Service came into being in 1914 many problems remained to be solved and it cost many years of hard work and many valuable

lives to solve them. But, even in 1914, the achievements of the British sea-flyers were not negligible. A few pilots had managed to fly Short biplanes off runways built on warships as early as 1912. It was found that, if the ship steamed at a speed of 10 knots into a 12 m.p.h. breeze, the 'plane lifted almost as soon as it moved. After the flight the seaplanes had to be put down on the water and hoisted aboard, which was not very satisfactory but better than nothing. In 1913 some naval engineers at Calshot had managed to persuade a French Borel seaplane to fly with a torpedo, a feat that was bettered by the pilot of a Sopwith seaplane who dropped a torpedo from the air, the first time this had ever been done. In addition, experiments in bomb-dropping had been carried out and a large calibre *cannon* had been fitted experimentally to one aircraft. But many official minds remained unconvinced, and although on the outbreak of war permission was given for a few cross-Channel steamers to be modified to carry seaplanes little was expected of them.

Not discouraged, the pioneers began to show their paces a few weeks after the outbreak of war. R.N.A.S. pilots based in Belgium bombed and destroyed a Zeppelin in its shed at Dusseldorf; others bombed Cologne railway station and



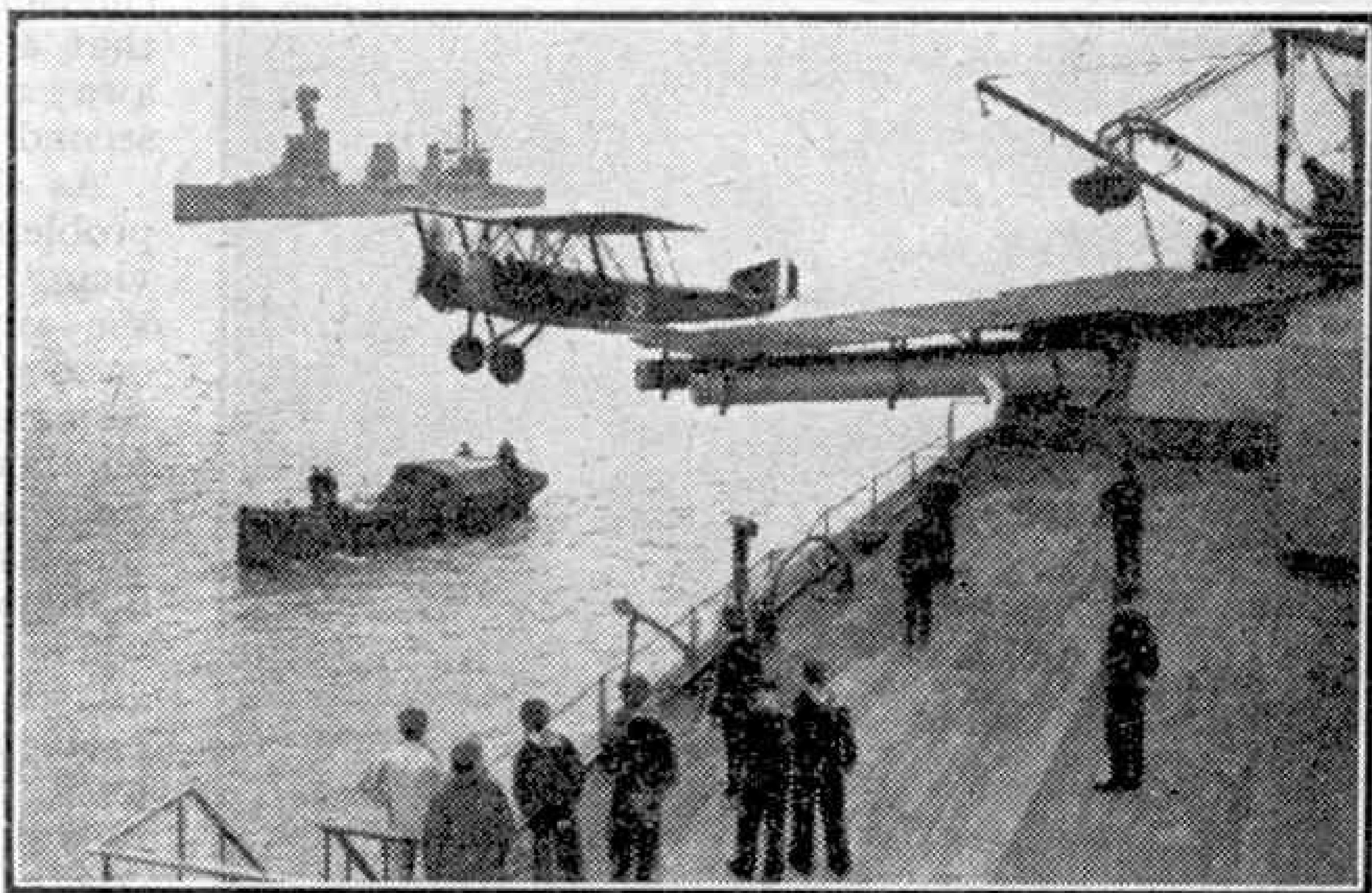
Like a giant butterfly at rest The "*Phantom*" prepares for its first take-off. Photograph by courtesy of McDonnell Aircraft Corporation, U.S.A.

destroyed two Zeppelins in the air, one of them with small bombs! The ship-based aircraft got their first chance on Christmas Day, 1914, when they bombed the ports of Wilhelmshaven, Cuxhaven and some German warships. Unfortunately, the seaplanes had to be lowered into the water for take-off and could thus be used only in calm weather—a fact that enabled more than one Zeppelin to escape. This difficulty was soon overcome by fitting wheeled trolleys under the floats. The seaplanes could then be flown off the carriers' decks, jettisoning the trolleys as soon as they were airborne. In this way, the little Sopwith "Babys" were able to put in a lot of good service, especially in the Dardanelles where they carried out reconnaissance duties, plotted minefields and spotted for British naval guns. A few of them were even fitted out to carry light bombs, two of which were deposited on the Turkish battleship "*Turgud Reis*" without, however, doing it much damage.

Even more efficient aircraft went into service late in 1916. For several months, squadrons of Sopwith "Pups" and "1½-strutters" had been fighting alongside Royal Flying Corps squadrons on the Western Front, proving themselves superior to many of the R.F.C.'s officially designed, standardised types. So, as soon as they could be spared, squadrons of these aircraft were put aboard the carriers. They proved so successful that it was decided to supplement the carriers by fitting flying platforms to a number of cruisers. The 35 ft. long platforms were made of wood and were usually fastened to the gun barrels of a two-gun turret in such a way that they did not hamper movement of the guns in any direction. When the aircraft were ready for take-off the turret was turned into wind, the pilot opened the throttle and, at a signal given from him, the quick-release hook holding the aircraft back was opened and it raced down the runway into the air. It was a nerve-wracking business, but it worked, and on 21st August 1917 Flight-Sub.

Lieut. Smart flew a "Pup" off H.M.S. "*Yarmouth*" and shot down Zeppelin L.23 off the Danish coast. Later the "Pups" were superseded in this work by that war's greatest fighter, the deadly little Sopwith "Camel."

Meanwhile the first real aircraft carrier had been put into commission. It consisted of a fast cruiser named "*Furious*," with a wooden flying platform built upon her fore-deck and carrying a complement of "Pups." Her high speed of 30 knots made

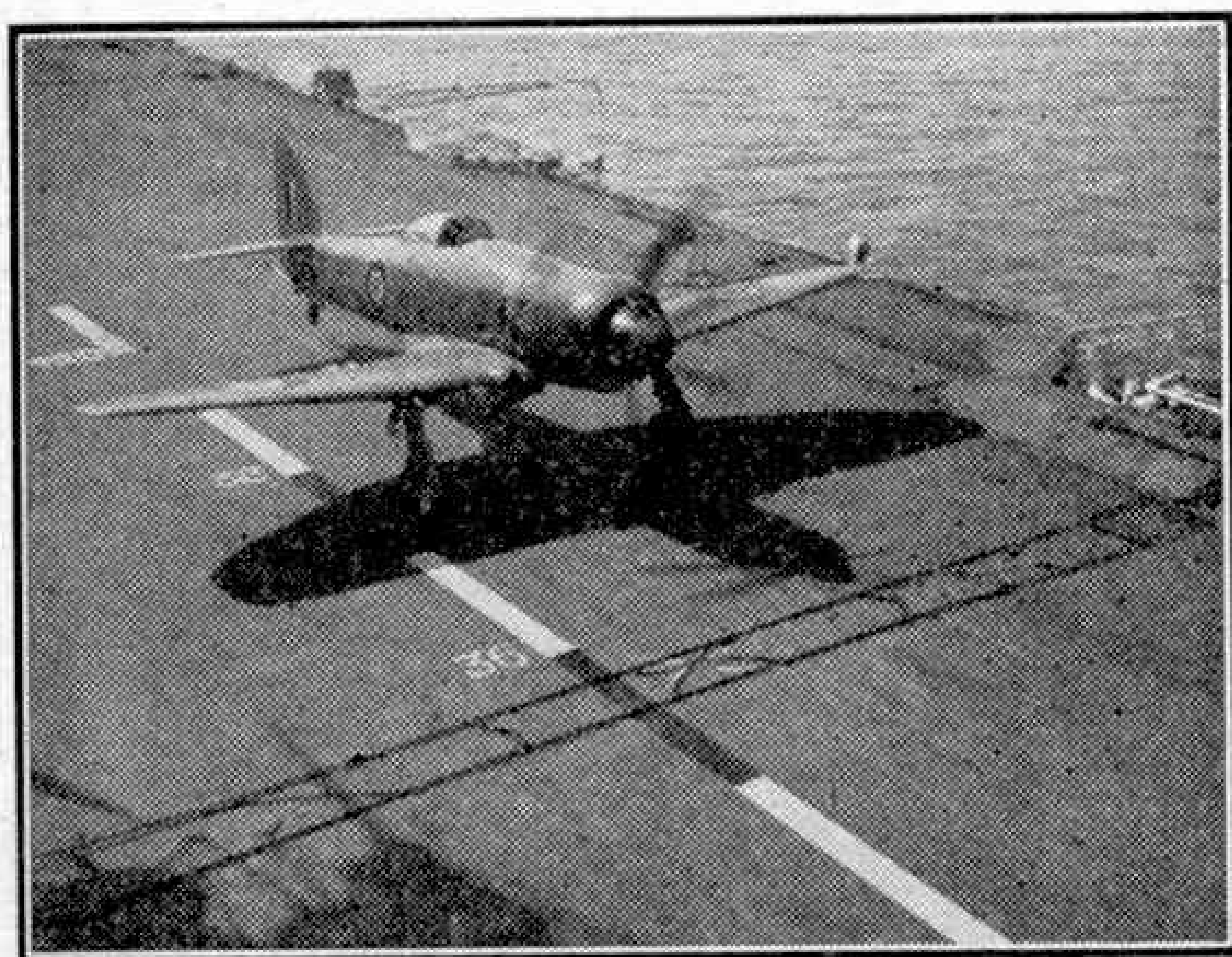


Taking off from a wooden platform on a cruiser during the 1914-18 war. Photograph by courtesy of Imperial War Museum, London.

it a simple matter for aircraft to take off from her 228 ft. long deck, but it was still necessary for her to stop and hoist them in after flight. This was not good enough for Squadron Commander E. H. Dunning who determined to land a "Pup" on her deck. On 3rd August he took off, flew parallel to the carrier's course, just off her starboard side and past the bridge structure. Then he dodged sharply to port and let the aircraft sink into the deck, helped down by a squad of officers who grabbed at loops under the wings and tail. Although he had made the first landing on a ship under way, Dunning was not satisfied for he realised that, as aircraft speeds increased, it would become highly dangerous and impracticable to man-handle them to a stop. So, a few days later, he made a second attempt without help. As he touched down a tyre burst, the little "Pup" swerved over the side and Dunning was drowned. The first lesson had been learned the hard way, and the "*Furious*" was sent back to dock to have a proper landing-deck

built aft of the bridge structure.

A primitive arrester gear was fitted to the new deck, consisting of fore-and-aft ropes a few inches apart, supported some six inches above the deck. Other ropes weighted at each end with sandbags were laid across them at 30 ft. intervals. The "Pups" were fitted with skids instead of wheels, and horns attached to the skids were designed to pick up the fore-and-aft ropes, the transverse ropes being engaged by a hook under the fuselage—a scheme



Hawker "Sea Fury" taking off from H.M.S. "Illustrious." Photograph by Cyril Peckham for Hawker Aircraft Ltd.

used by Eugene Ely seven years earlier. Unfortunately the airstream over the landing deck was upset by eddies from the funnel and superstructure. Three successful landings were made; nine others ended in crashes before somebody decided that the whole idea was not exactly successful. But "Pups" and, later, "Camels" continued to take off from "*Furious*," and in July 1918 two special squadrons of her "Camels" raided Tondern and destroyed two of Germany's newest Zeppelins.

When H.M. Aircraft Carrier "*Argus*" went into service in September 1918, her clear unrestricted flight deck, 550 ft. long, was considered safe for "Pups" with ordinary wheeled undercarriages, horns being fitted to pick up the arrester wires. The results were considered fairly satisfactory as there were "only" 130 accidents in 500 landings! But it was not until the Americans built their new carrier "*Saratoga*" in 1927 that a comparatively safe type of arresting gear was developed. This consisted of a series of transverse spring-loaded wires, designed to be picked

up by a hook under the aircraft's fuselage, a simple development of Ely's idea. It proved rather violent but was obviously the answer. In fact, it is still in use to-day, although hydraulic dampers now replace the springs.

As an experiment, a dummy bridge and funnel were built up on the starboard side of the "*Argus's*" deck to see if they would have any serious effect on landings or take-off. They did not and this feature became standard on all carriers built after that time. The reason for choosing the starboard side is that a pilot instinctively turns away to port if he has to make a second attempt at landing.

As carriers grew in size, the problems of stowage and servicing became simpler. At first the aircraft had to be stowed on deck, which caused damage from exposure and limited the number that could be carried. Folding wings helped and, in the case of their "Camel" naval fighters, Sopwiths made the whole fuselage detachable just aft of the cockpit. But the problem was not solved properly until below-deck hangars were provided, in which the aircraft could be stowed and serviced when not in action. Lifts were built into the deck to carry them below and folding wings were adopted as standard.

Through the 1920s and '30s improvements in the design of carriers and aircraft continued until, in 1938, the famous "*Ark Royal*" was commissioned—the world's finest carrier. When war came a year later, the Germans probably realised her power more than many of our own still-sceptical naval officers and, time after time, they "sank" her rather wishfully on their radio. But still the "*Ark*" sailed the war-swept seas together with her sister carriers, their aircraft harassing the enemy from the Arctic to the Tropics. Their magnificent fighting record is still too fresh in memory to need repeating—the heroic Norwegian Campaign, victories over the "*Bismarck*," at Taranto, Matapan, against the mighty "*Tirpitz*" and in the Pacific. Both the carriers and their aircraft won immortal fame wherever there were enemy ships to be destroyed or captured, or enemy shore installations to be attacked. And slowly the myth of the battleship's invincibility was shattered by the certainty

(Continued on page 448)

Landing on the Carrier

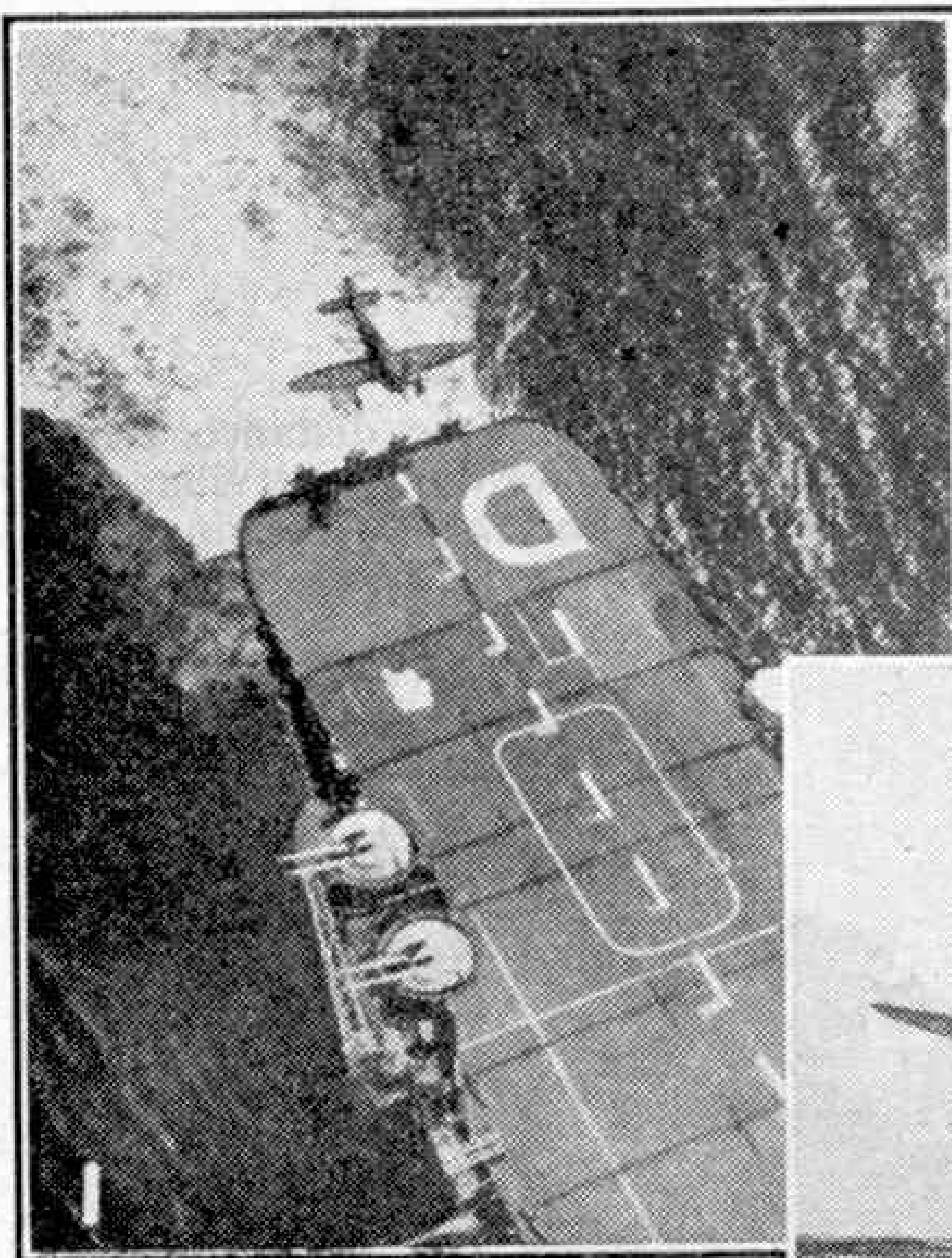


Fig. 1. A remarkable photograph of a Hawker "Sea Fury" landing on H.M.S. "Illustrious," taken a second or two before the machine touched down.

Fig. 2. The "batsman" signals the "Sea Fury's" pilot to cut his engine for landing.

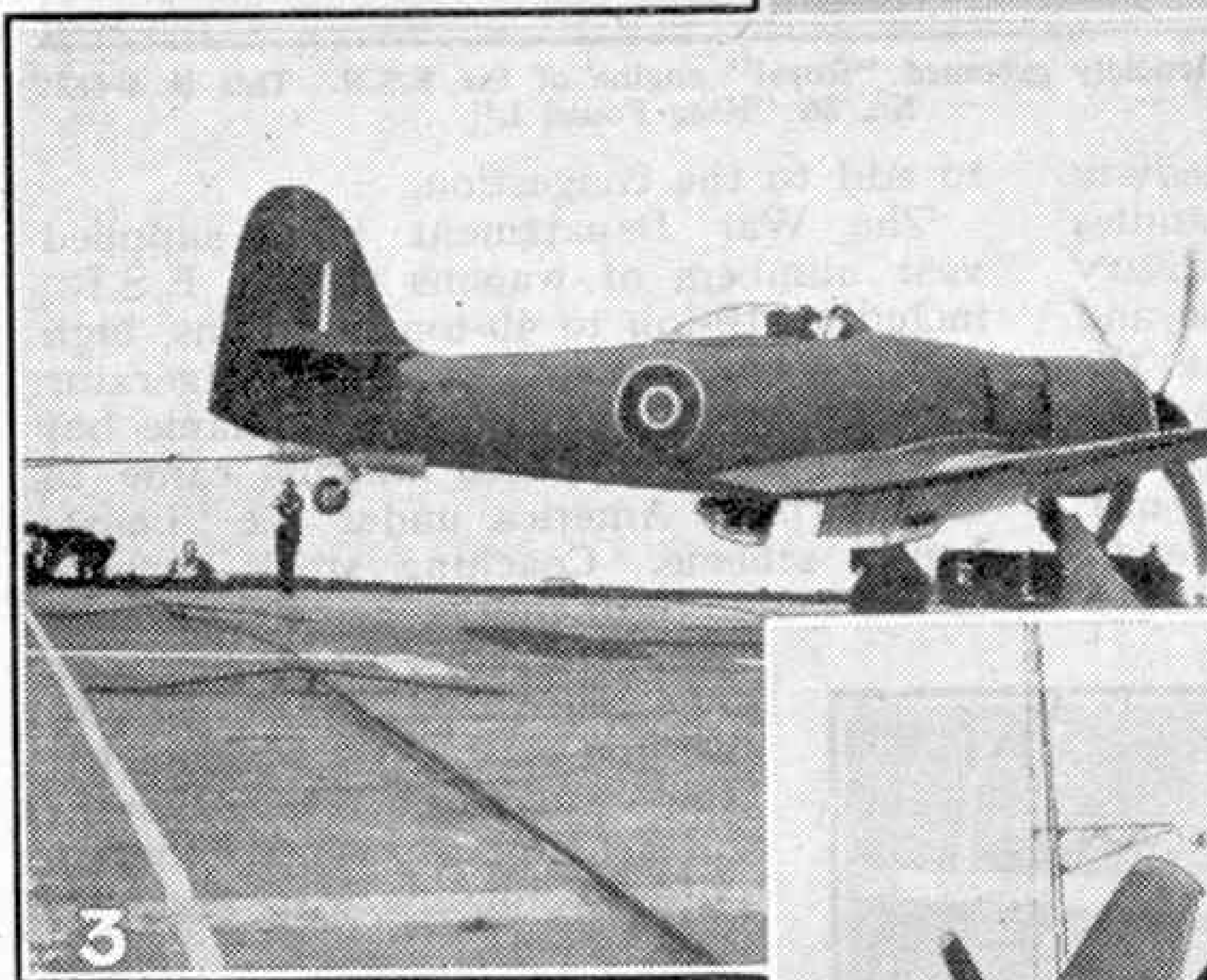
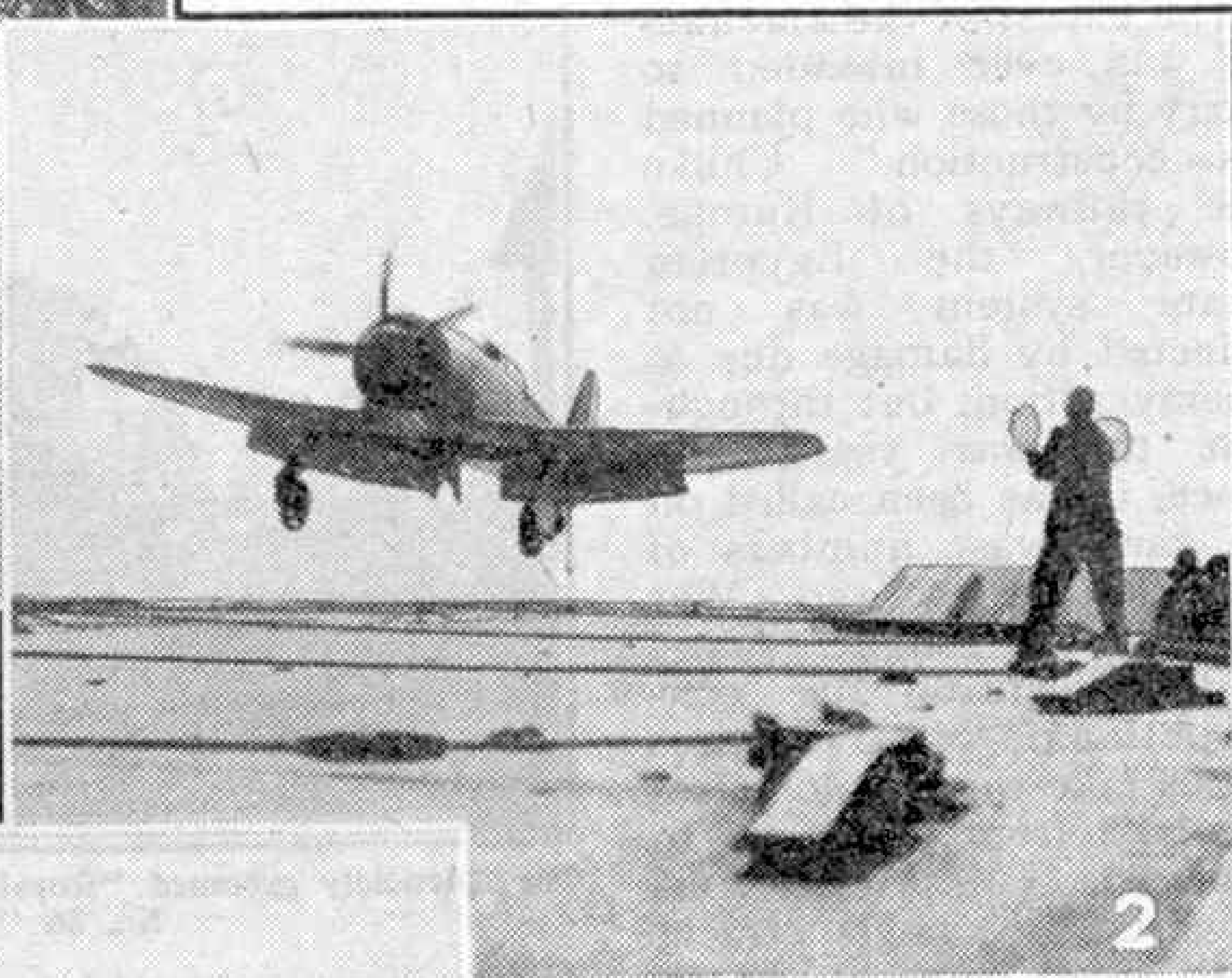


Fig. 3. Even this fine action picture cannot reproduce the tense atmosphere as the 5½-ton aircraft picks up the arrestor wire and thumps into the deck.

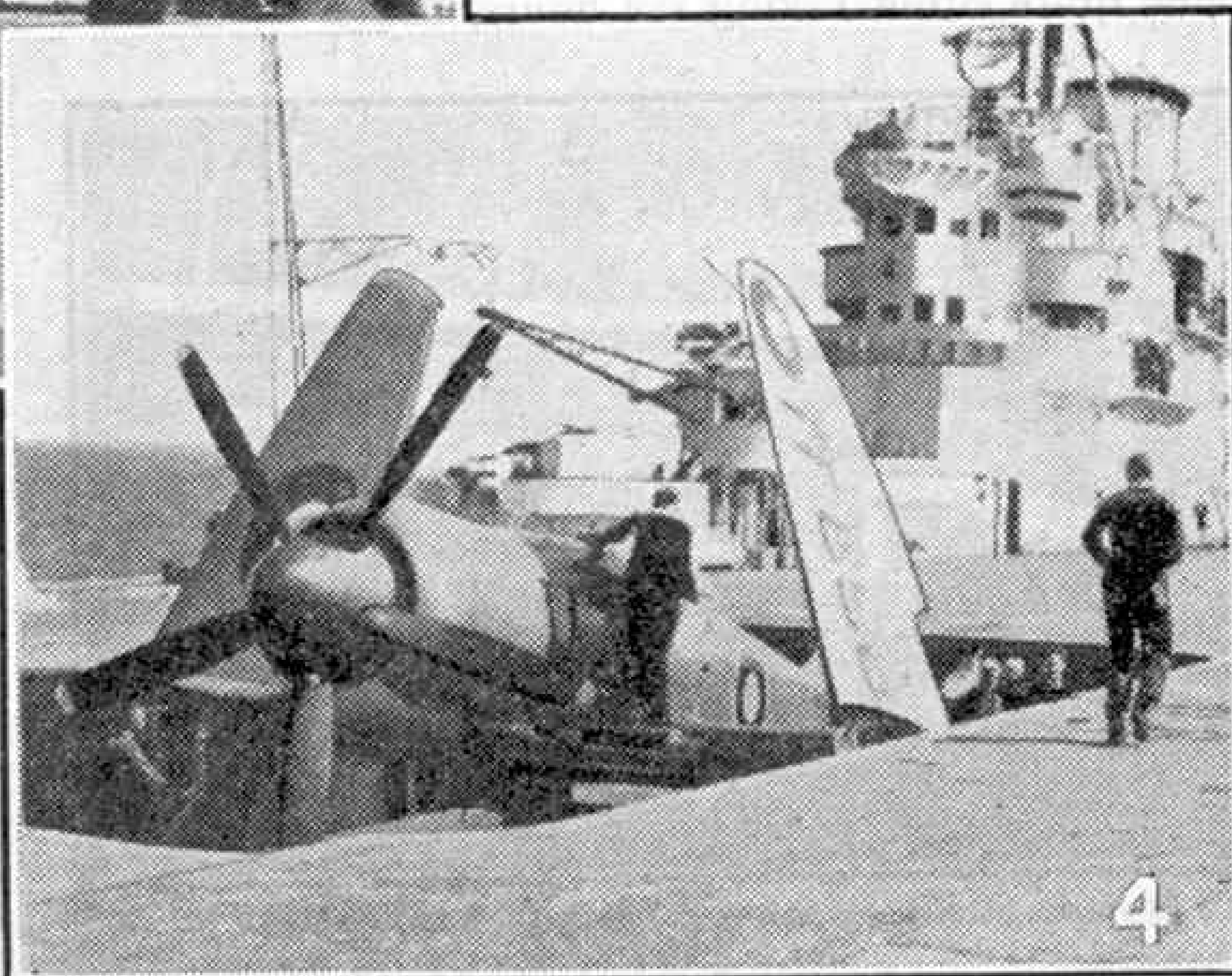


Fig. 4. "Going down now sir!!" The "Sea Fury" going down by lift to the hangars (on the "Illustrious").

The photographs on this page were taken by Cyril Peckham for Hawker Aircraft Ltd.

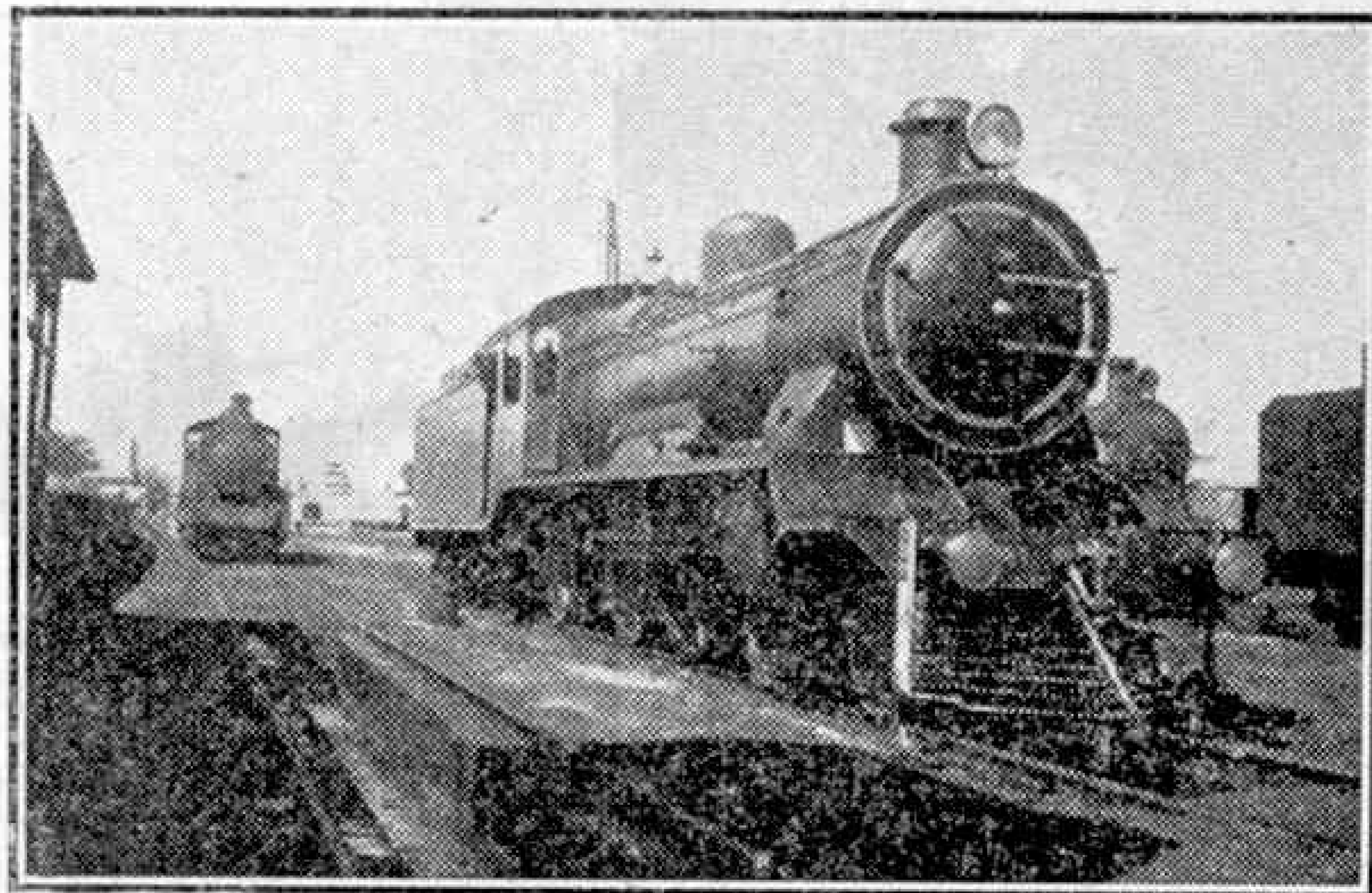
Some Notes on the Egyptian State Railways

By G. Tanner (Royal Engineers)

CONDITIONS on the Egyptian State Railways to-day, as on so many other railways, can be summed up in the following phrase: "A railway system doing its utmost to cope with traffic far in excess of the amounts it was ever intended to carry by those who planned its construction." Unlike the railways of Europe, however, the Egyptian State system was not affected by damage due to enemy action; but throughout the war years, and since, it has been called on to carry vast numbers of British troops and War Department freight.

To illustrate the constructional disadvantages let us take the 78 kilometres of track from Port Said to Ismailia. Most of this consists of single track, with small loops at the few intermediate stations. As I write, Port Said handles all the incoming and outgoing military traffic between the Western Universe and Egypt and Palestine. This means the running of many special troop trains each day which have to be fitted in on this single line already in continuous use. Delays are therefore considerable, freight trains quite often taking six hours, some-

times more, to cover the distance. Also on this single line lies the small village of El Quantara, important as the junction between the E.S.R. and Palestine Railway,

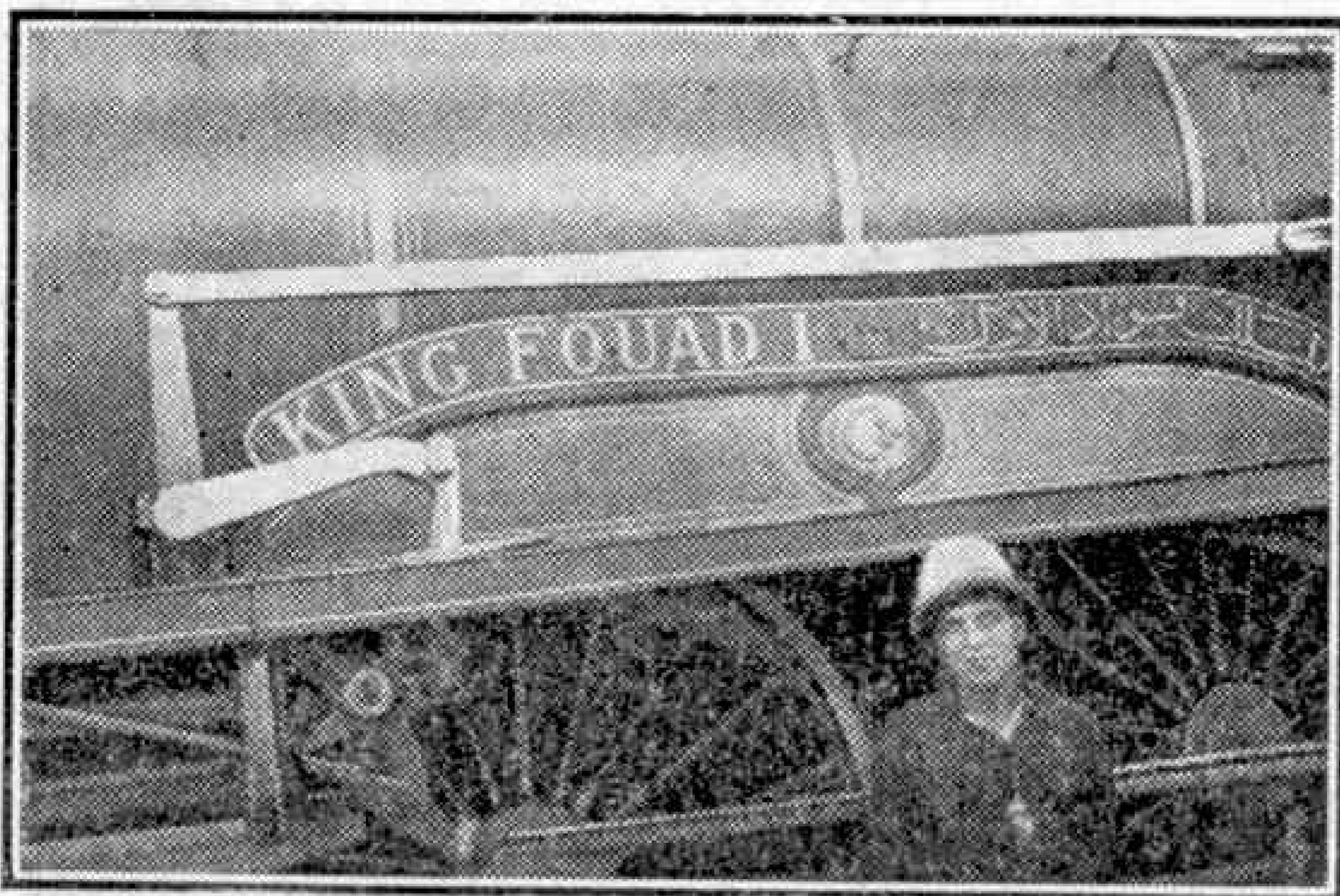


The splendidly groomed "Royal" engine of the E.S.R. This is 4-4-2 No. 56 "King Fouad I."

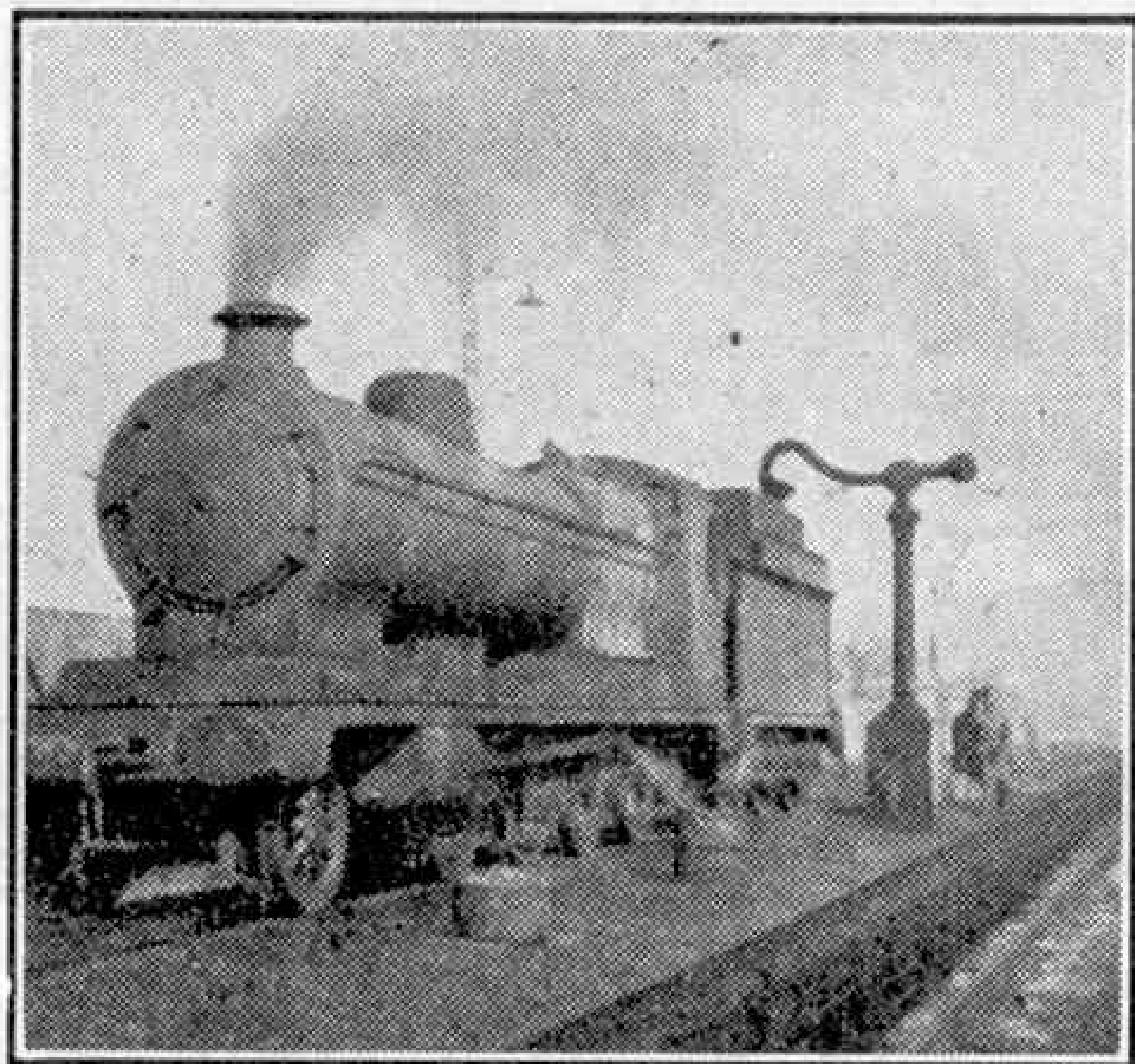
to add to the congestion.

The War Department have supplied vast numbers of wagons to the E.S.R., including 10-ton to 40-ton box vans, high and low-sided open wagons, refrigerator vans and goods brake vans, to name but a few. Many of these wagons came to Britain from America under the "Lend-Lease" scheme. Coaching stock consists of the usual Continental type of third-class coaches with wooden seats, some quite comfortable second- and first-class stock with bucket type seats, and a few restaurant and sleeping cars which compare quite reasonably with those in use at home.

The same remark could scarcely be applied to the locomotives; Egypt is in urgent need of many new types, for there do not seem to be sufficient engines to meet the present-day traffic requirements. Many of those now in service are either in need of a good overhaul or should have retired from active service many years ago. The freight engines are almost all



An Egyptian fitter poses below the bi-lingual nameplate of No. 56.



An ex-L.N.E.R. Robinson 2-8-0, now No. 9760 of the Egyptian State Railways, taking water at Port Said.

of the ex-Great Central 2-8-0 "Robinson" class oil burners shown on this page and similar to the "R.O.D." class still in service in Britain. They can be seen any day pounding along with loads which have to be seen to be believed.

The War Department have helped by providing a number of 0-6-0 oil-burning tank engines of American build. These are employed on shunting duties and are operated by Egyptian crews who give them high praise.

Engines used on passenger trains are in a somewhat better condition than the freighters. E.S.R. No. 56, an "Atlantic" or 4-4-2 shown in the pictures on the opposite page is a typical example of those employed on the express passenger services that are booked to cover the 236 kilometres from Port Said to Cairo in 4 hrs. 15 min. from start to finish. Of this 32 min. are allowed for the four scheduled stops en route. These 4-4-2 locomotives are oil burners, and were mostly built in Britain for the E.S.R. Others in use on passenger services are of the 2-6-0 type, also oil burning. Although mainly employed on the lighter loaded passenger services these engines are often used on freight trains and are a very useful general-purpose type.

Also used on the railways of Egypt are

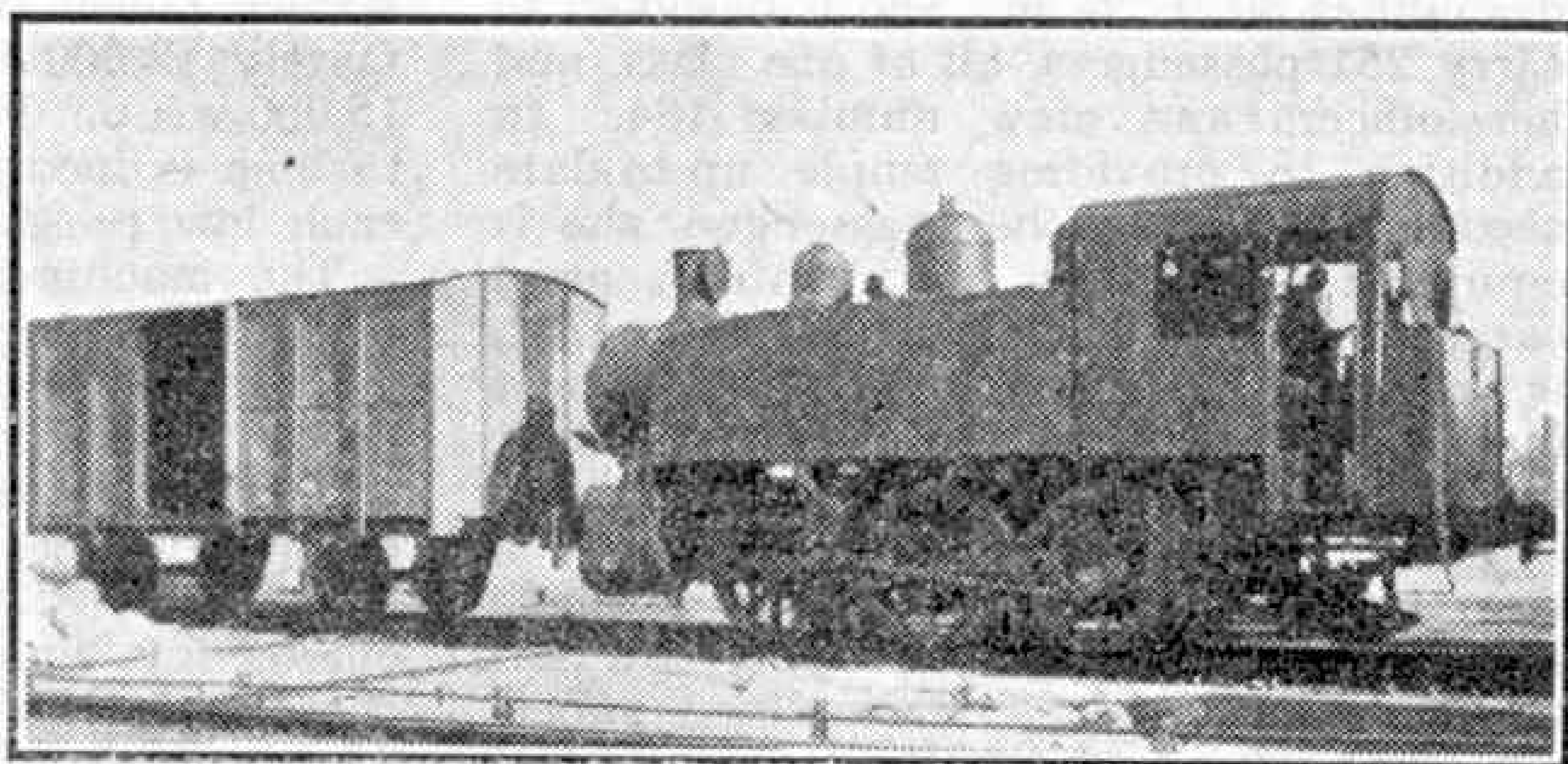
numerous types of tank engines, most of them built in Britain. There are a few coal-burning 0-6-0 tender type believed to be relics of the London and South Western Railway sent to Palestine in the first World War, and some of the L.M.S. 2-8-0 type Class 8 as adopted early in the war as a W.D. standard which are providing much needed strength to the Locomotive Department. According to the E.S.R. authorities more of these engines are expected.

Egypt also owns a number of diesel railcars which perform the fastest passenger services to date, completing the Port Said-Cairo journey in 3 hrs. 50 min., less 20 min. allowed for scheduled stops.

The E.S.R. seem to use engines of the Robinson 9700 Class on the majority of Special Troop Trains, and with loads of nine or ten coaches behind they manage to keep up a steady average speed of between 25 and 30 miles per hour. The state of repair of these locomotives can be judged by the statement that nine out of every ten Troop Trains which they haul are delayed for repairs to the engine en route.

Between 1927 and 1935 the E.S.R. put into service several steam rail cars. Some were two-coach articulated units.

The track out here is kept in fairly reasonable shape although sand is always a menace. The signalling is quite efficient, its general arrangement and equipment being on the same lines as those of the

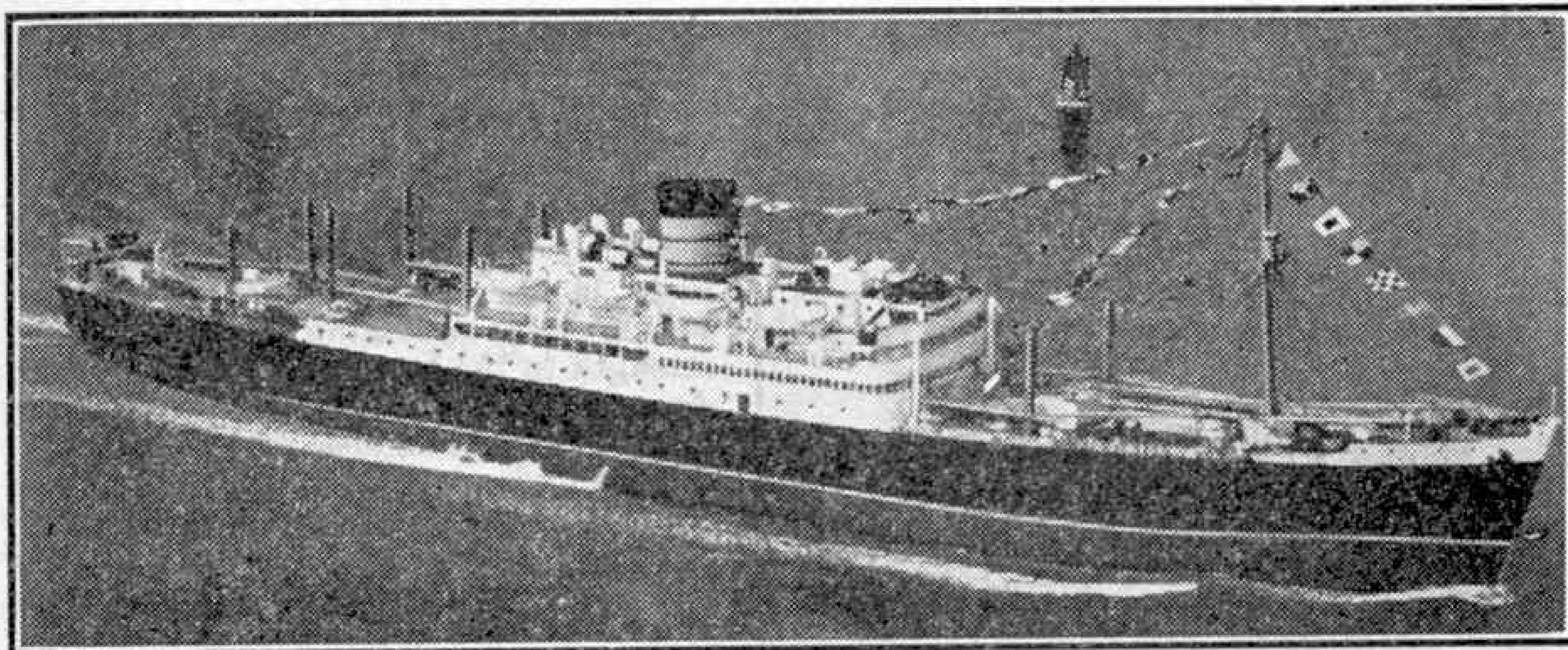


An American-built 0-6-0 tank No. 1156. Like the other engines illustrated it is an oil burner.

British railways.

A point of local interest is the provision by the E.S.R. of schools for the children of railwaymen.

On the whole the E.S.R. staff are doing a fine job of work in the face of adverse conditions which in no way are due to any fault on their part.



The New Cunard-White Star Liner "Media"

THE new Cunard-White Star Liner "Media" left Liverpool on 20th August on her maiden voyage to New York. She was the first ship of the company to leave the ways in the yard of John Brown and Co. Ltd., Clydebank, since the "Queen Elizabeth" was launched in 1938. Her keel was laid on 12th November 1945 and she was launched in December 1946. Her trials took place in the early part of last August in the Firth of Clyde, and there her performance was in excess of the service speed of 17 knots laid down for her.

The "Media" has a length of 534 ft. overall, an extreme breadth of 70 ft., and a gross tonnage of 13,700. Her loaded draught is 30 ft. 2½ in. She is designed to carry 251 passengers, all of one class, and her officers and crew number 184. In addition to providing ample up-to-date accommodation for her passengers she is equipped to handle a considerable general cargo, for which a space of 371,430 cu. ft. is provided; there is also 60,000 cu. ft. of insulated space for the transport of freight requiring refrigeration.

The "Media" is distinguished by a smartly raked curved stem and a single mast and funnel, and her shapely bow and cruiser stern, with a streamlined superstructure curved at the forward end, give her a handsome appearance. The passenger section is remarkably compact. The whole of the promenade deck is devoted to public rooms, including a lounge with windows on three sides and provided with a stage and a cinema screen. The aft windows of this room look out on the sports deck, which is 50 ft. in length. The accommodation for passengers includes a high proportion of outside cabins, all of

which have private baths or showers, and there is an extensive public address system by means of which entertainment by broadcasting, record playing or the ship's orchestra can be relayed to 35 loudspeakers in various parts of the vessel. These loudspeakers can be used also for announcements, while a separate system allows the Captain to communicate from the bridge to the boat and promenade decks and the crew's quarters.

The "Media's" twin screws are driven by geared steam turbines, for which steam at an initial pressure of 415 lb. per sq. in. and a temperature of 740 deg. F is supplied by two oil-fired Yarrow boilers. The service power of the turbines is approximately 13,600 s.h.p., with a maximum of 15,000 s.h.p. For going astern a simple turbine is incorporated in the aft end of each low pressure ahead casing.

The machinery incorporates the latest features in high-speed turbine practice, and auxiliary plant to meet all possible needs is provided. The main electrical generating plant consists of four seven-cylinder marine oil engines directly coupled to 375kW 220V generators, and for emergency lighting and other purposes there is a 50kW diesel-driven generator. As a means of maintaining light in the interval between a possible failure of the main supply and the start of the emergency set there is a 220V battery, which would serve the emergency lighting system immediately the main current failed.

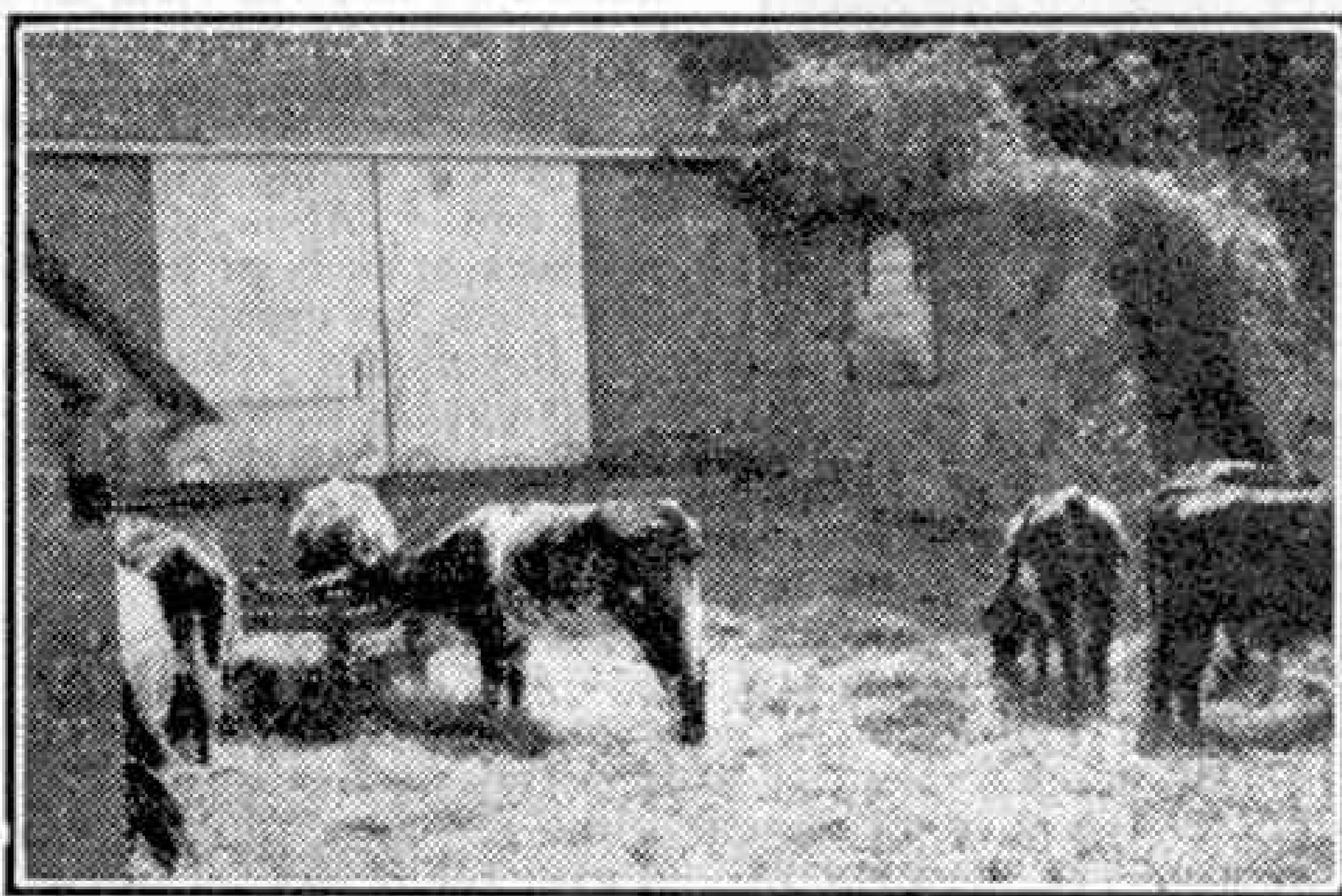
The "Media" has eight steel life-boats each 26 ft. in length. Two of these are fitted with engines and two with special hand-propelling gear, while the remainder are arranged for rowing by oars.

Photography

Preparing a Holiday Album

LAST month we dealt with the making of gaslight prints, and no doubt many readers will now have a good stock of prints of holiday subjects on hand, which will form a permanent record of their summer holidays when suitably mounted in an album. Such a record can be turned to with pleasure during the long winter evenings.

In selecting prints for the album only the best and most interesting should be chosen. Each should then be examined carefully with a view to trimming it in the best way. Often it is found that a print includes something that is not wanted, and which tends to spoil the picture. All such things should be trimmed away, even if this involves reducing the size of the print to a considerable extent.

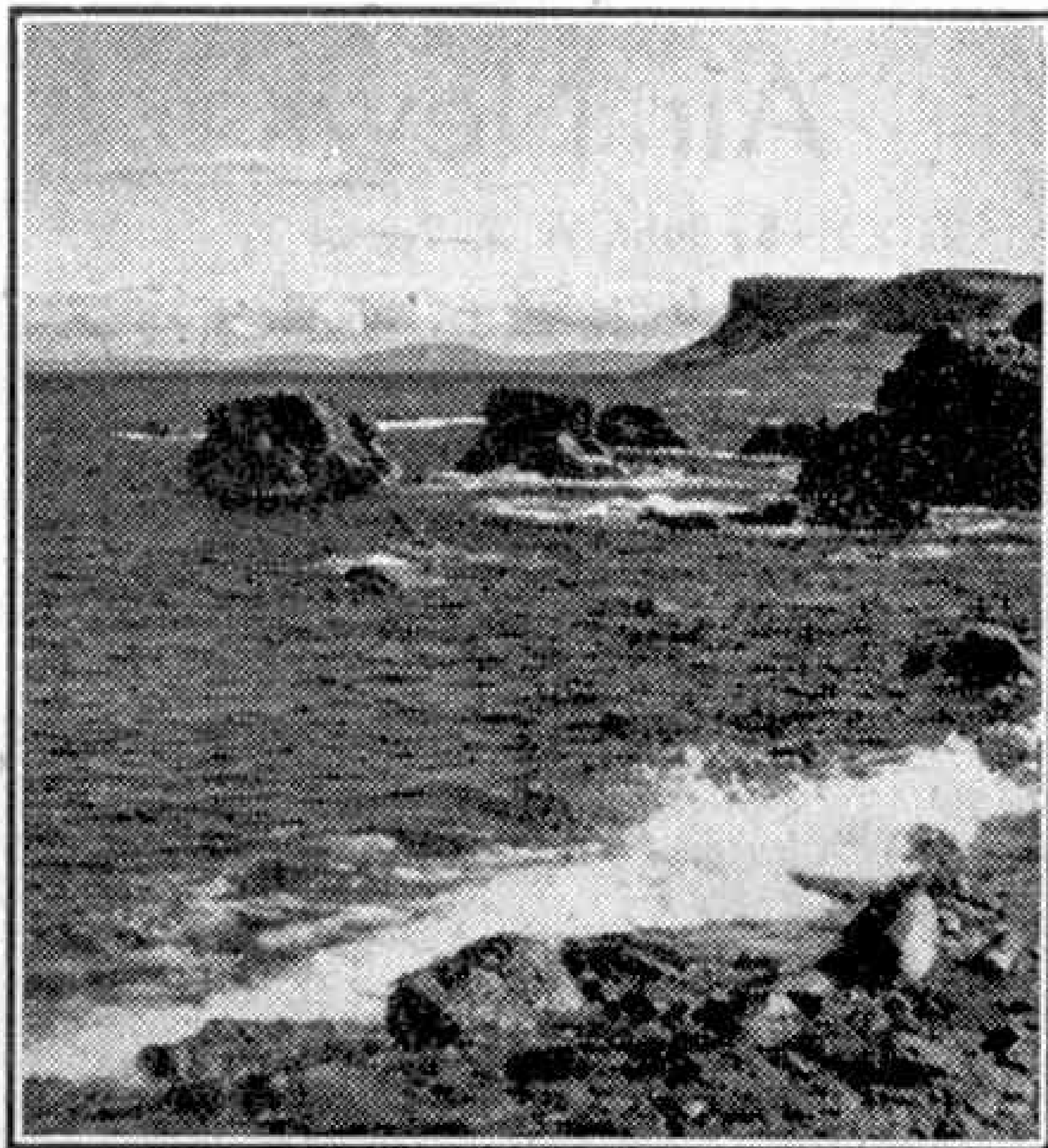


"Mealtime." Photograph by G. R. Brown, Hove.

Trimming should not be done with scissors but with a sharp pen-knife and a ruler. It is best to lay the print on a sheet of fairly thick cardboard.

The paste-on type of album with plain pages is the best because it allows the insertion of prints of any shape or size. The layout of the pictures on the page should be planned before any are fastened down. Place the selected prints on the page and move them about until the most suitable arrangement is found.

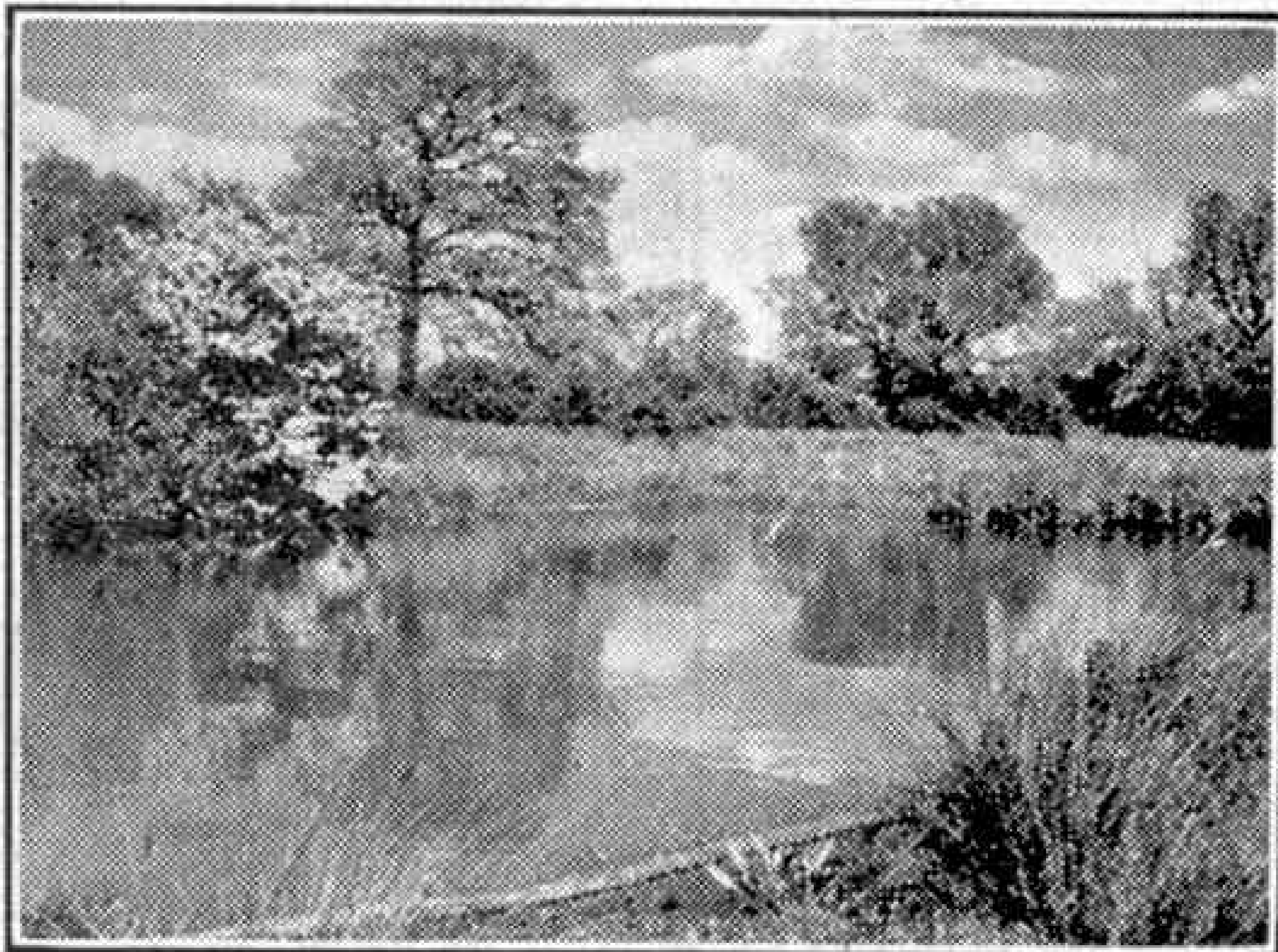
The mounting should be done with one of the special photographic mountants that are available. Ordinary paste, gum or glue should never be used. Special



Fair Head and the Mull of Kintyre from Ballycastle. Photograph by E. M. Patterson, West Kilbride, Ayrshire.

attention should be given to the edges and corners of each print to make sure that these are really fixed in place. If any of the mountant is squeezed out around the edges of the print, it should be wiped away quickly with a piece of clean rag. When all the prints have been mounted, close the album and place a few heavy books on it to prevent the leaves and prints from "cockling" as the mountant dries. It should be left like this for a day or so.

A few words or a short description of the scene or incident should be written neatly under each print, and in every case the date when the photograph was taken should be included.



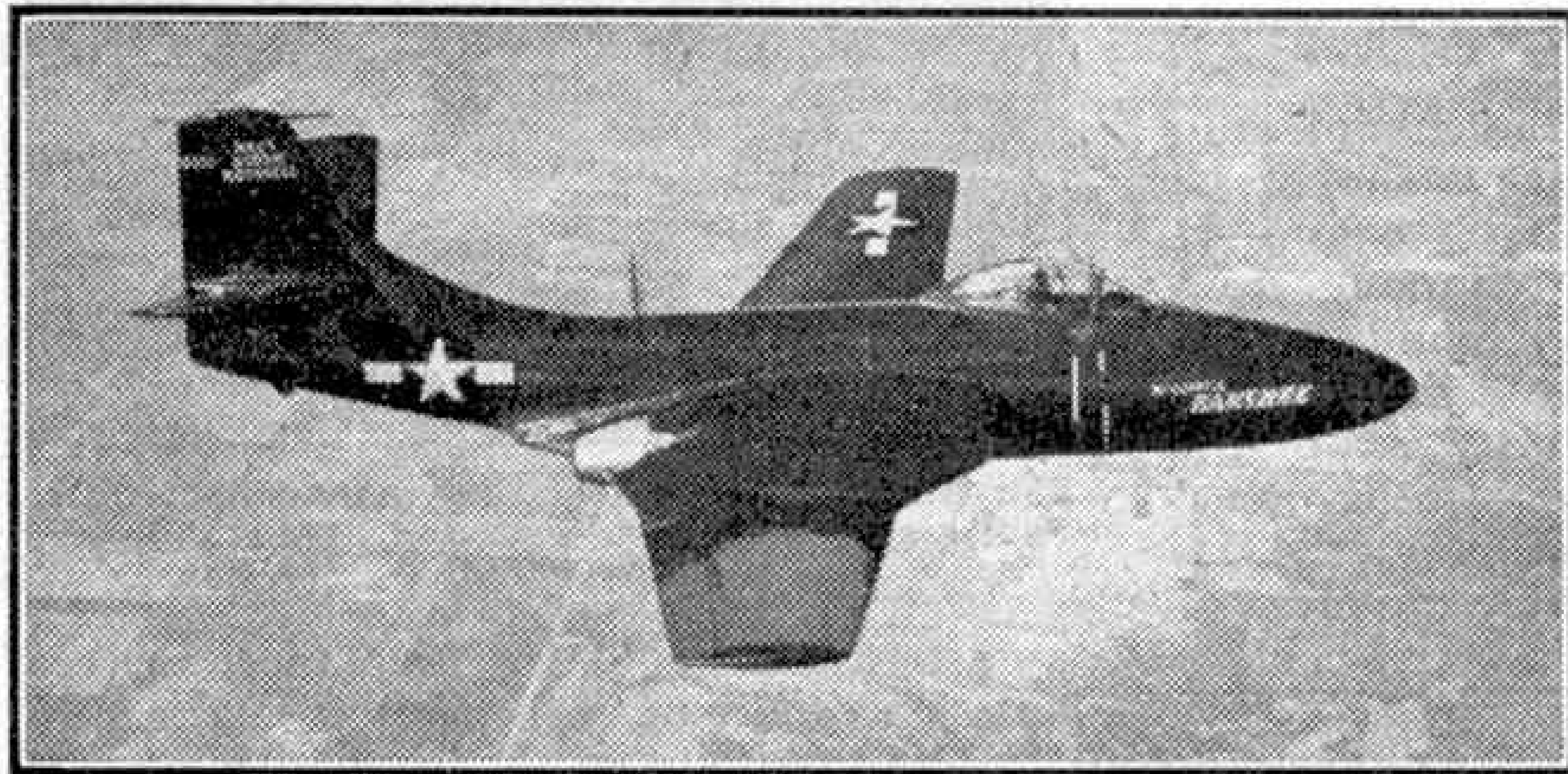
A Pond in May. Photograph by E. E. Steele, Fiskerton.

Air News

By John W. R. Taylor

New American Jet Fighter

America's first twin-jet naval fighter, the McDonnell "Phantom," described in the October 1946 "Air News," has been superseded by the XF2D-1 "Banshee," a faster, deadlier fighter designed by the same company. The new machine is illustrated on this page. It is very similar to the "Phantom" in general layout, which is hardly surprising as the latter's



McDonnell "Banshee," the U.S. Navy's most powerful all-jet carrier-based fighter. Photograph by courtesy of McDonnell Aircraft Corporation, U.S.A.

unorthodox wing-root engine installation has proved highly efficient in service. The most important improvements incorporated in the "Banshee" are the fitting of two of the new Westinghouse 24C "Yankee" engines, which develop about twice the power of the "Phantom's" 19B "Yankees," and the use of new and thinner high-speed aerofoil sections for the wing and tail unit. These changes give the "Banshee" a top speed of over 600 m.p.h. and a rate-of-climb of over 9,000 ft. per min.

In addition about twice as much fuel is carried by the new machine, its surface finish is even smoother than that of the "Phantom," larger guns are fitted, and many other things such as pilot's visibility and maintenance features have been improved. A particularly interesting feature is that the nose wheel of the tricycle undercarriage can be made to retract partially while the aircraft is on the ground, enabling it to "kneel" down on to a small nose trolley with its tail high in the air. In this way a great saving in stowage space aboard ship is effected, as when these aircraft are parked one behind the other, the nose of the rear machine can be tucked under the tail of the front one, and so on. Also, engine runs can be made without fear of anyone walking into the hot exhaust gases.

The "Banshee" has a wing span of 41 ft. and weighs over 14,000 lb. It carries full naval equipment including catapult hooks and arrester gear, and with its wings folded has a width of only 18 ft.

More Air Survey News

The first indication that the Air Survey Company have resumed operations after the war comes in the announcement that their field team was sent to Syria in July to survey the upper reaches of the Euphrates River. This pioneer company was formed in 1923 as a subsidiary of the Fairey Aviation Company, and before the war carried out many important surveys in Britain and the Middle and Far East.

Air Survey Ltd. are now under the direction of Group Captain F. C. V. Laws, who was in charge of the photographic side of the Air Ministry in both world wars. They own a fleet of more than 20 aircraft, ranging in size from "Austers" upward. Faireys recently acquired the small firm of Aerographics Ltd., who are engaged in map-making—a necessary complement to air survey work.

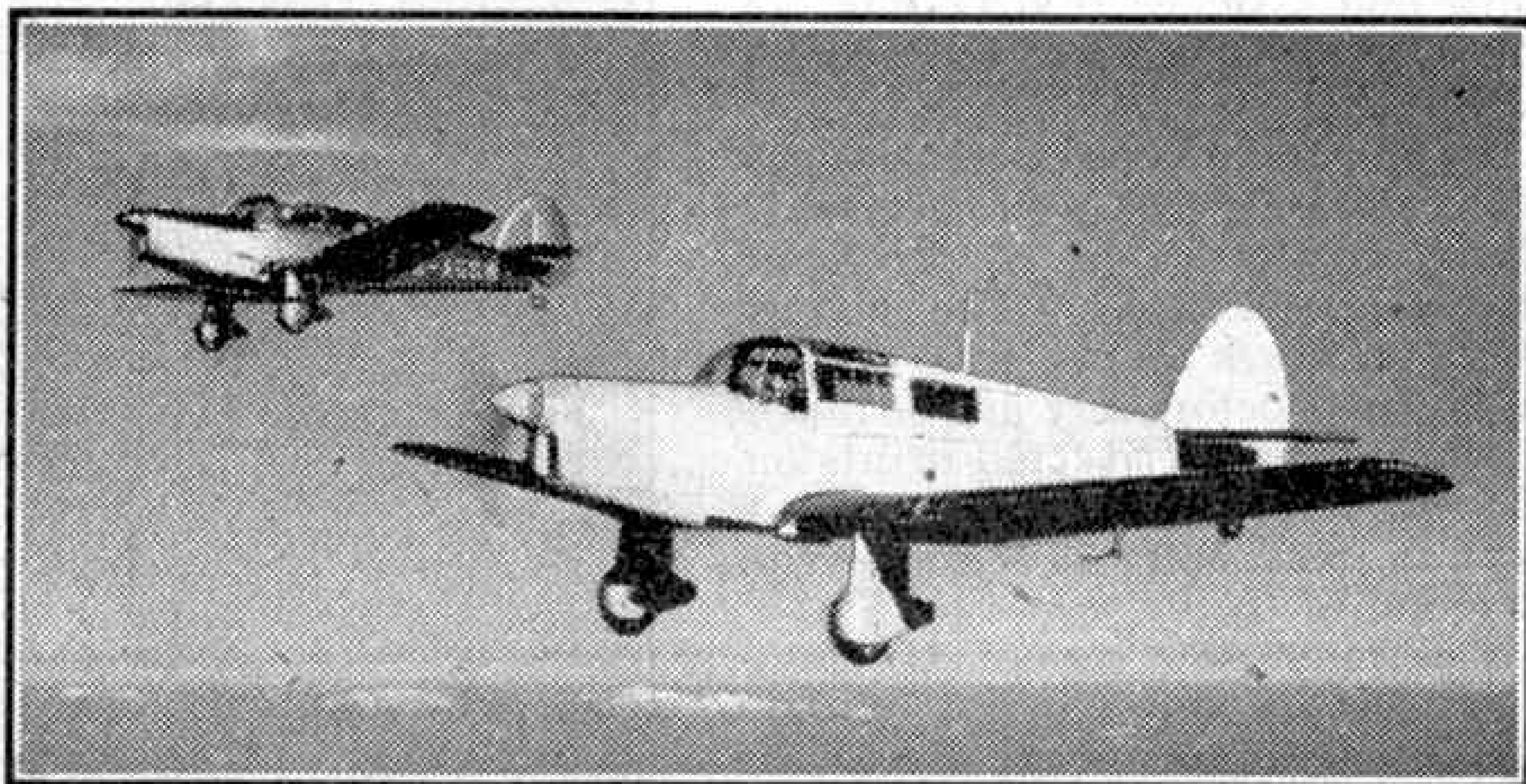
The "Proctor" V

In the seven years before the war Percival "Gull" light planes, flown by such outstanding pilots as Jean Batten, Amy Mollison, C. W. A. Scott and Alex Henshaw, set up more records than aircraft built by any other company of comparable size. During the war the basic type was developed as the "Proctor" and gained an excellent reputation as the standard Fleet Air Arm and R.A.F. wireless training and communications machine. Now the civil "Proctor" V is carrying on the same fine traditions. Already large numbers have been flown to

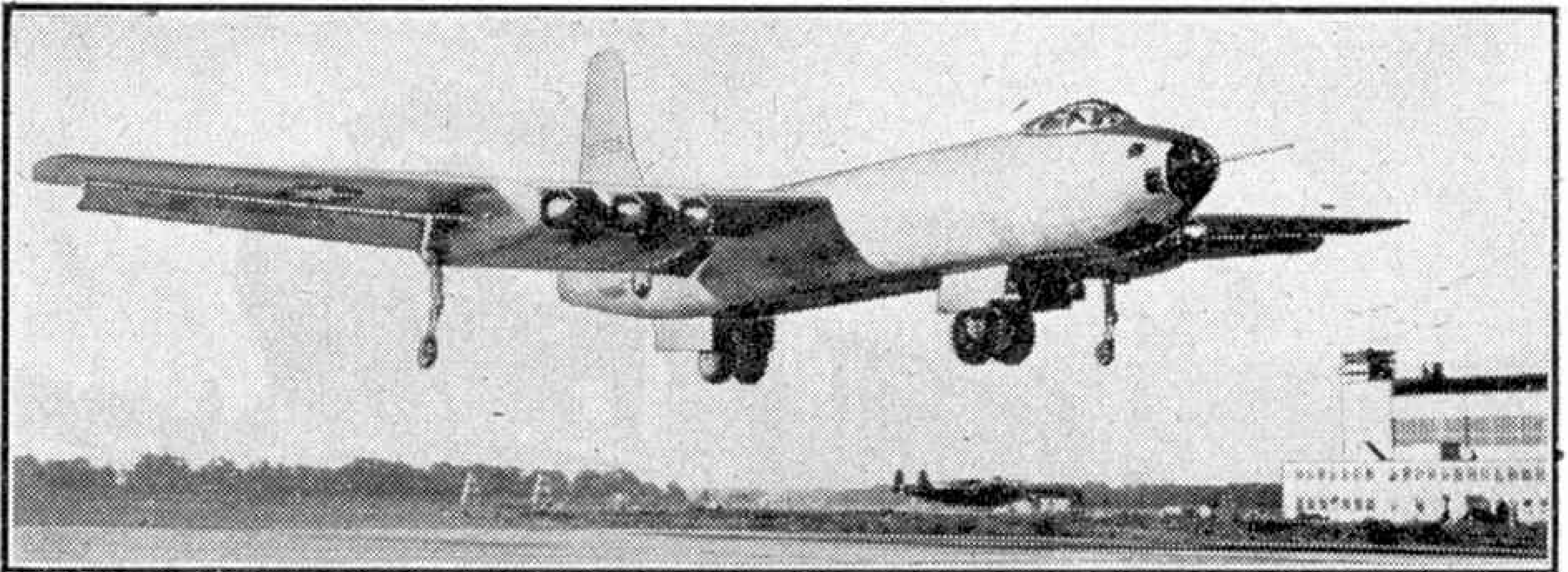
purchasers all over the world—one was actually flown by James Mollison across the South Atlantic to Brazil, so bringing in many valuable dollars.

The "Proctor" V, shown on this page, is a low wing, four-seater cabin monoplane of wooden construction. The leading edges of the wings, fuselage and tail plane are plywood covered, the remainder of the airframe fabric covered. With a de Havilland "Gipsy Queen" II engine, giving 208 h.p. for take-off, the "Proctor" V has an economical cruising speed of 140 m.p.h. Two 20-gall. petrol tanks are usually fitted, one in each outer wing, giving a range of 500 miles. In addition two 10-gall. tanks can be carried in the centre-section to increase the range.

The Royal Australian Air Force have ordered three Bristol 'Freighters,' which will cost about £50,000 each.



Percival "Proctor" Vs in the air. Photograph by courtesy of Percival Aircraft Ltd.



Martin XB-48 bomber, the only six-jet aircraft at present flying. Photograph by courtesy of the Glenn L. Martin Company, U.S.A.

Two New Martin Bombers

Two fine new jet bombers have been built by the Glenn L. Martin Company, of Baltimore, U.S.A. The first is the XP4M-1, a patrol bomber designed for the U.S. Navy and using a combination of jet and piston engines. In this aircraft two 3,000 h.p. Pratt and Whitney "Wasp Majors" and two 4,000 lb. thrust Allison J-35 jet engines are arranged in pairs in only two nacelles, one under each wing, so that the XP4M-1 looks at first glance to be an orthodox twin-engined aircraft. But its performance gives convincing proof of the hidden power of the jet engine in the rear of each nacelle, as in spite of a loaded weight of over 36 tons it has a top speed of 398 m.p.h. On its "Wasp Majors" alone, the XP4M-1 will cruise for 2,540 miles with six tons of mines or two large torpedoes. It is equipped with all the latest radar devices for detecting enemy ships and for "homing"; it is armed with six .50 in. machine-guns and two 20 mm. cannon in a tail turret.

The other new Martin bomber is the six-jet XB-48 built for the U.S.A.F. It is the only six-jet aircraft at present flying, and its General Electric J-35 engines give a total thrust of 24,000 lb.—more than that of two giant American railway engines. The XB-48, which has a wing span of 108 ft. 4 in., carries a crew of three and a bomb load of up to 10 tons. It has a top speed of over 480 m.p.h. and a tactical radius of some 800 miles.

Its most interesting feature is the new "bicycle type" undercarriage. There is not sufficient room in the modern thin wing for the large landing wheels needed by such a heavy machine. Martins therefore have developed a special undercarriage in which two pairs of main wheels are placed in tandem under the fuselage, into which they retract, while small wheels are provided out-board of each group of engines to "balance" the aircraft on the ground. These are thin enough to retract into the wings.

B.E.A. Notes

B.E.A. now have sufficient "Vikings" in service for operation on some of their internal routes, including those linking London with Glasgow and Prestwick and some Glasgow-Belfast services. In addition they have opened the first British post-war air service between Scotland and the Continent, from Glasgow to

Copenhagen. This 3½-hr. run is being operated thrice weekly in each direction. "Vikings" have also replaced "Dakotas" on the routes to Paris and Berlin.

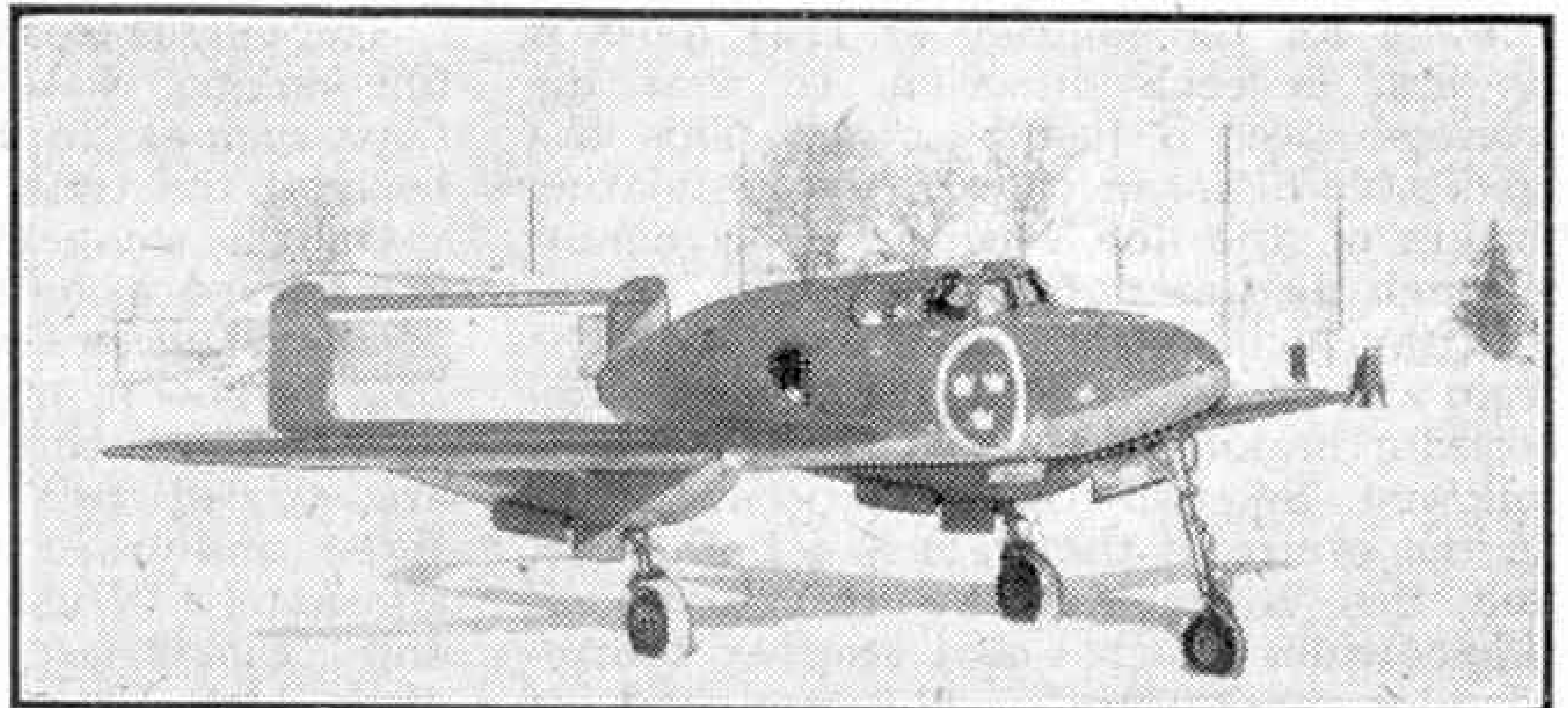
A valuable facility for travellers on B.E.A.'s internal services is that passengers holding return halves of B.E.A. internal air tickets can exchange these for first-class single-surface tickets. Similarly surface passengers holding normal return halves can exchange them for air tickets on payment of the appropriate supplement. This agreement covers all routes flown by B.E.A. in England and Scotland apart from services to the Orkneys and Shetlands.

A new departure is the first B.E.A. night-mail freighter service, which operates five times a week from Northolt to Brussels and Prague. At present C-47 "Dakotas" are used. They leave Northolt at 0055 hrs. and Prague at 0705 hrs. The return journey is also made via Brussels, arrival at Northolt being scheduled for 1,344 hrs.

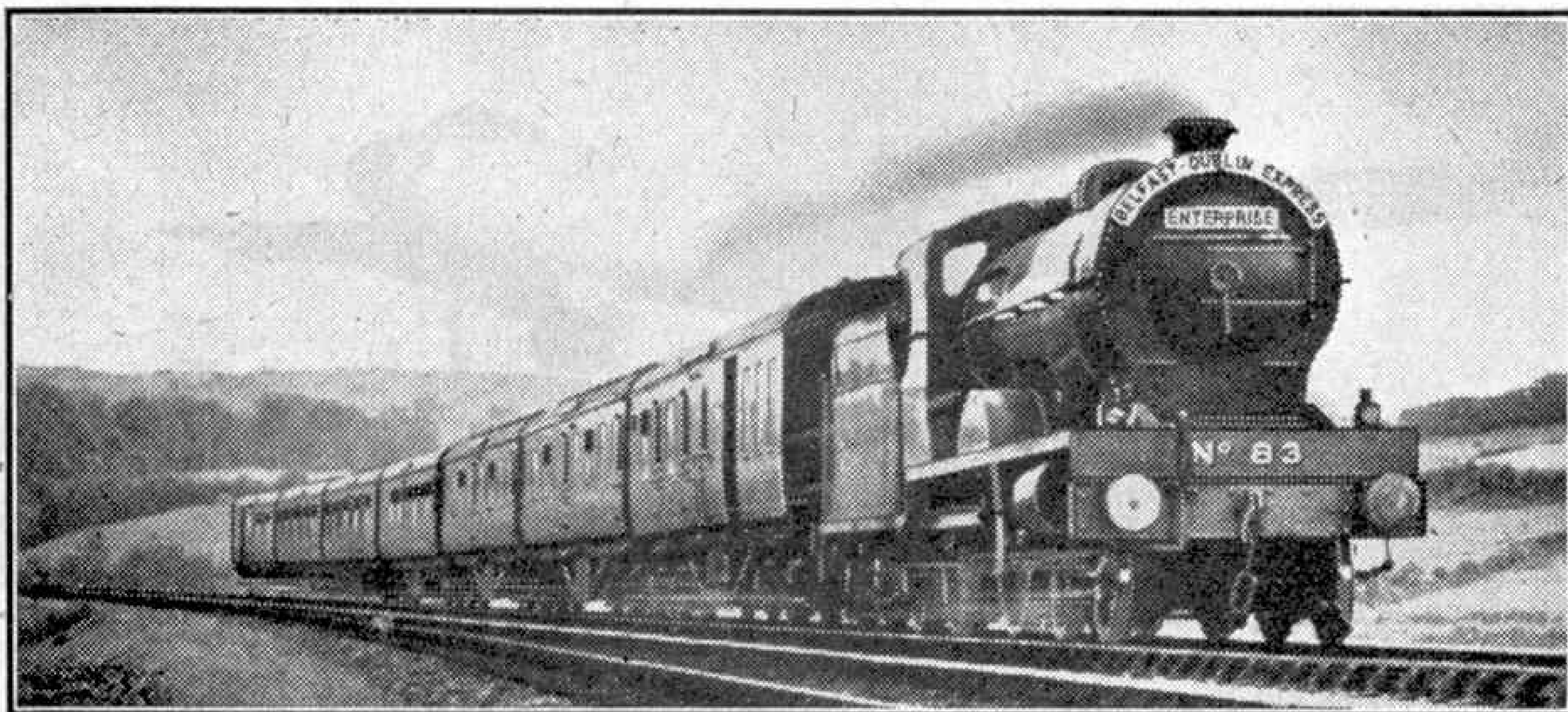
First Swedish Jet Fighters

Several squadrons of the Swedish Air Force are equipped with J-21A twin-boomed "pusher" fighters. The J-21A is a neat little aircraft with a span of 38 ft. 7 in. and is powered by a 1,475 h.p. Daimler-Benz engine, built under license. It has a top speed of 416 m.p.h. and is armed with a 22 mm. cannon and two 13 mm. machine-guns in its nose.

Now, following extensive service trials in Sweden of the D.H. "Vampire" and its "Goblin" jet engine, the SAAB Company have experimentally fitted a "Goblin" II in a J-21A airframe, the result being the J-21R jet fighter shown on this page. It has a top speed of over 500 m.p.h. and has handled very well on its test flights.



The SAAB 21-R single-seat jet fighter. Photograph by courtesy of Svenska Aeroplan A.B.



A striking view of "Enterprise," the new non-stop express of the G.N.R.(I) running between Belfast and Dublin. Photograph by courtesy of the Great Northern Railway (Ireland).

The G.N.R.(I) "Enterprise" Express

A NOTABLE achievement recently on the part of the Great Northern Railway (Ireland) has been the introduction of the first regular non-stop express service between Belfast and Dublin. The new train also provides the first instance of a non-stop run of over 100 miles in Ireland and it is very suitably named "Enterprise."

The G.N.R. is literally an international main line, for it provides the main link between the capital cities of Northern Ireland and Eire. In the ordinary way main line trains make stops at Goraghwood and Dundalk for Customs examination, but on the new service this is carried out at the terminal stations.

The "Enterprise" leaves Belfast at 10.30 a.m. and returns from Dublin at 5.30 p.m. the same evening. The time allowed for the journey of 112½ miles is 2¼ hrs. in each direction, so that the average speed is just 50 m.p.h. This is a creditable figure in view of the undulating nature of the line, with its long climbs through the Carlingford Mountains.

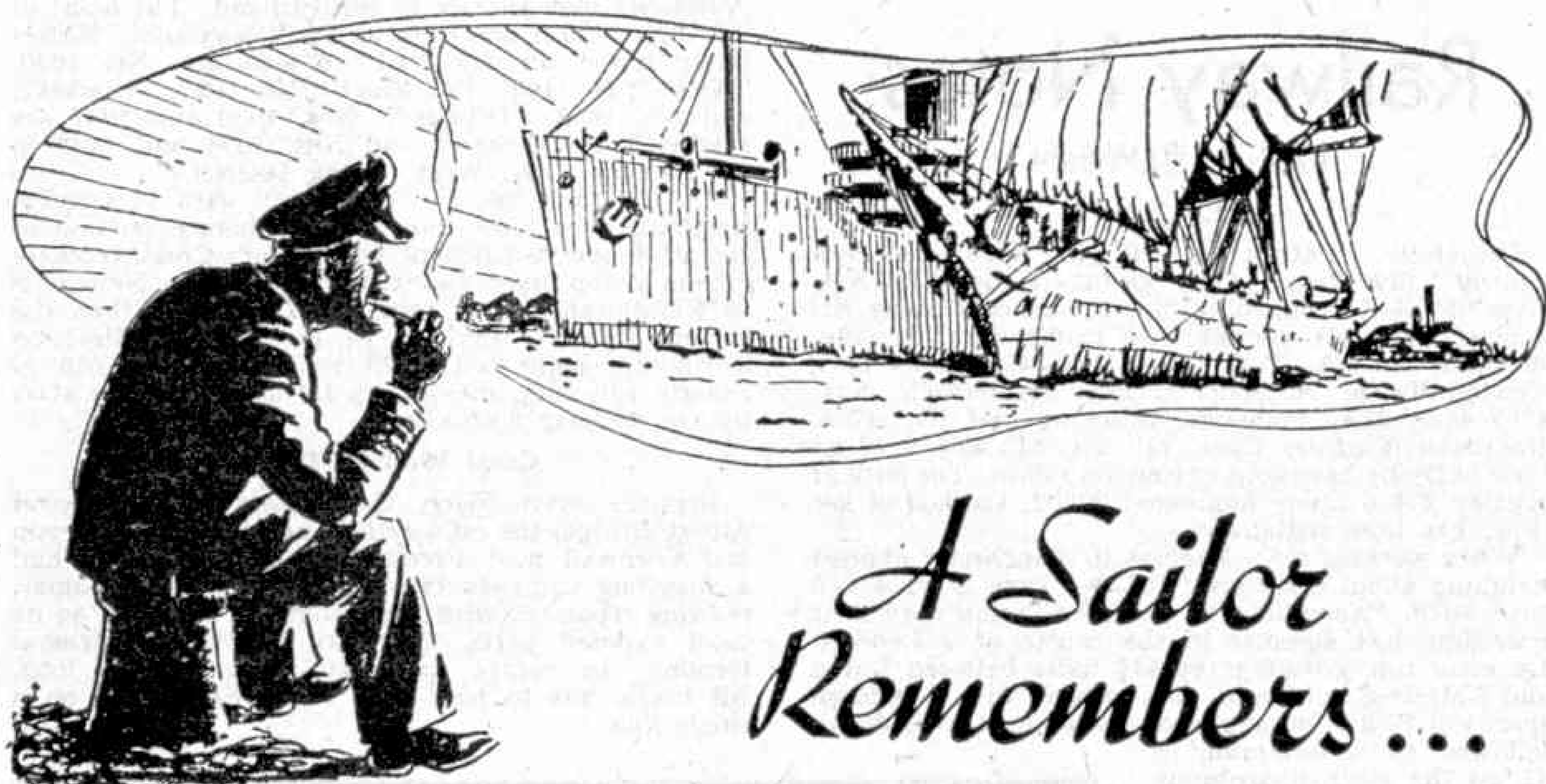
A seven-coach formation makes up the train and on the south-bound run a centre-corridor brake-third next to the engine is followed by two centre-corridor thirds. In the centre of the train is a buffet car, and this is followed by two first-class side-corridor coaches and another centre-corridor brake-third. The omission of second-class accommodation is another innovation on the G.N.R.

The two first-class vehicles are of a new design and represent the latest products of the G.N.R. Dundalk Works. They have six passenger compartments separated by a transverse passage into two "blocks" of three compartments each. In addition to the end doors, there are centre doors opening into the transverse passage, making the movement of passengers easier than with end doors only.

These first-class cars weigh 32½ tons each and as the third-class vehicles in the train weigh 28 tons each and the buffet car is a 30-ton vehicle, the total "tare" or empty weight is 207 tons. The additional width afforded by the Irish standard gauge of 5 ft. 3 in. makes possible a generously proportioned vehicle, the body width of these 60 ft. cars being 9 ft. 6 in. at the waist rail.

The engine normally used is one of the fine-looking 4-4-0 compounds of "V" Class such as No. 83 "Eagle" shown at the head of the train on this page.

On the smoke-box front of the engine is a curved name board bearing the words "Belfast-Dublin Express," with a horizontal board below it on which is the train's title "Enterprise." Name and destination boards are carried by the coaches. The first three and the last three are lettered alternately "Dublin and Belfast Express" and "Enterprise." The centre vehicle is distinguished by its title "Buffet Car," and the names on the front of the engine are repeated on the back of the train.



A Sailor Remembers ...

A Strange Encounter

By Capt. E. Minett

LIFE on board a "windjammer" was for the most part somewhat lonely and monotonous—cut off as you were from the outside world for weeks, sometimes for months, on end. Once clear of the shipping "lanes," to sight another vessel was rare. Occasionally a smudge of smoke on the distant horizon indicated the presence of some unknown steamer, or the faint outline of the upper sails of some other unfortunate "windbag" were sighted.

In the year 1910, when I first went to sea, wireless was not in general use on board vessels as it is to-day, in fact it was only passenger ships that were so equipped. If you had the good fortune to pass close by another vessel you would exchange signals by the International Code flags. When the pilot left you, that was your last contact with the outside world.

In the days of sail a passage of 120 days or so was quite common to, or from, Australia or the west coast of South America. If I remember rightly, on my first voyage we were 102 days on the passage from Barry Dock to a woebegone place named Mejillones in Chili, and after lying for three months at anchor off this barren coast were some 97 days on the homeward passage to Hamburg. The life was hard and the food scarce and often of poor quality. The apprentices were berthed in a deck house called the "half deck," situated in the "waist" of the ship, the worst and wettest place in bad weather.

As I have said, to sight another vessel

at all was a rare occurrence; but to pass close enough to signal, especially should the other ship be a steamer fitted with wireless, was an "event." Which reminds me of a true incident.

On my first voyage, we were somewhere about 10 degrees south of the equator on the Atlantic side when the thin wisp of smoke from a steamer was observed right astern. It was soon seen that the stranger was on a course similar to our own. We were doing about four knots I suppose, in the light S.E. trade winds, and it was not long before the masts and funnel of the steamer appeared over the horizon. Soon it became clear that she was a passenger liner, and very shortly her funnel markings could be distinguished—those of the "Nelson Line." There was some excitement on board as it became increasingly evident that the stranger meant to "speak us." Up went our "Red Duster," the Red Ensign, also our code number, L.M.H.G., which when decoded meant "*Engelhorn*" of Liverpool. The steamer by now was drawing close to our stern and her name "*Highland Rover*" was plainly read on her bow.

She stopped her engines as she came up on our port side and a resplendent figure in white duck uniform was seen, megaphone in hand, leaning over the starboard side of her bridge. "Have you an apprentice named Windus on board?" Our old Mate, grabbing the megaphone, answered in the affirmative, and so (Continued on page 448)

Railway Notes

By R. A. H. Weight

L.M.S. News

Un-rebuilt "Patriot" 4-6-0 No. 5505 has been named *"The Royal Army Ordnance Corps."* New class "5" 4-6-0 mixed traffic engines continuing the long series lately coming into traffic are No. 4780, shedded at 25A, Wakefield; Nos. 4781-2 at 26A, Newton Heath; No. 4792 at 28A, Motherwell; Nos. 4793-4 at 27A, Polmadie, Glasgow; and No. 4795, Kingmoor (Carlisle). Class "4" 2-6-4Ts Nos. 2279-83 built at Derby have gone to Newton Heath. The ancient Kirtley 2-4-0 lately numbered 20002, the last of her type, has been withdrawn.

When working a St. Pancras to Manchester express weighing about 385 tons, "Jubilee" type 3-cyl. 4-6-0 No. 5628 *"Somaliland"* provided some excellent travelling last summer in the course of a London-Leicester run, covering the 41½ miles between Luton and Kettering in 39 min. pass to pass, with maximum speeds of 79 and 80 m.p.h. on the descent to Bedford, followed by a minimum of 41 up the steep Sharnbrook Bank. A sister engine, No. 5601 *"British Guiana,"* with a slightly heavier train on the more easily graded Western main line, logged by the writer, only once touched 60 m.p.h., rising momentarily to 61½, on a Rugby-Euston run. Although present timings are fairly liberal, higher speeds than that are often attained in places.

Observation of main line working at the interesting junction station of Rugby on a September Saturday showed the principal express haulage to be shared by 4-6-2s mostly without streamlining, 4-6-0 "Royal Scots," rebuilt or not, "Jubilee" and "Patriot" locomotives, with representatives of the class "5" 6 ft. 4-6-0 and Midland compound 4-4-0 types on certain through relief or semi-fast trains. The new style black paint for locomotives with straw-coloured lettering is more in evidence, but if only the engines could be red and kept clean how much more imposing they would look! There were loads up to 16 bogie coaches. There are many class "8F" 2-8-0 freight engines now at work on L.M.S. lines that were built, and temporarily used, by the L.N.E.R. and G.W. companies.

An interesting conversion recently carried out in L.M.S. shops has enabled fifty 50-ton ex-W.D. "Warwell" wagons, built for the conveyance of heavy armoured fighting vehicles, to be used for the conveyance of steel rails required at various sites in connection with permanent way renewal work. Four bolsters have been added to provide the necessary support for long steel rails, together with a platform along which the loading staff can walk. The capacity of the altered vehicles is about 30 tons; they are 47 ft. long over buffers.

L.N.E.R. Locomotive Developments

Rebuilt "A1" 4-6-2 No. 113 *"Great Northern"* is at the time of writing on trial in Scotland, working various main line trains from Haymarket Shed, Edinburgh. It is understood that a series of streamlined "Pacifics" similar in general design to *"Great*

Northern" may shortly be put in hand. The name of A2/3 No. 523 is now confirmed as *"Sun Castle."* Names lately noted on new "B1" 4-6-0s are: No. 1030, *"Nyala"*; No. 1031, *"Reedbuck"*; No. 1032, *"Stembok"*; and No. 1033, *"Dibatag."* Nos. 1030 and 1032 are stationed at Stockton, and Nos. 1031 and 1033 in the Ardsley, G.N. West Riding District.

"A3 Pacific" No. 57 *"Ormonde,"* with 11 coaches weighing about 375 tons on an advance portion of the afternoon "Scotsman" from King's Cross, recently ran non-stop over the 124½ miles from Newcastle to Edinburgh in 145 min., or 7 min. less than the present quickest timing. In the opposite direction a similar engine with 475 tons made the run in exactly 150 min., making up for a slightly late start by the *"Flying Scotsman."*

Great Western Tidings

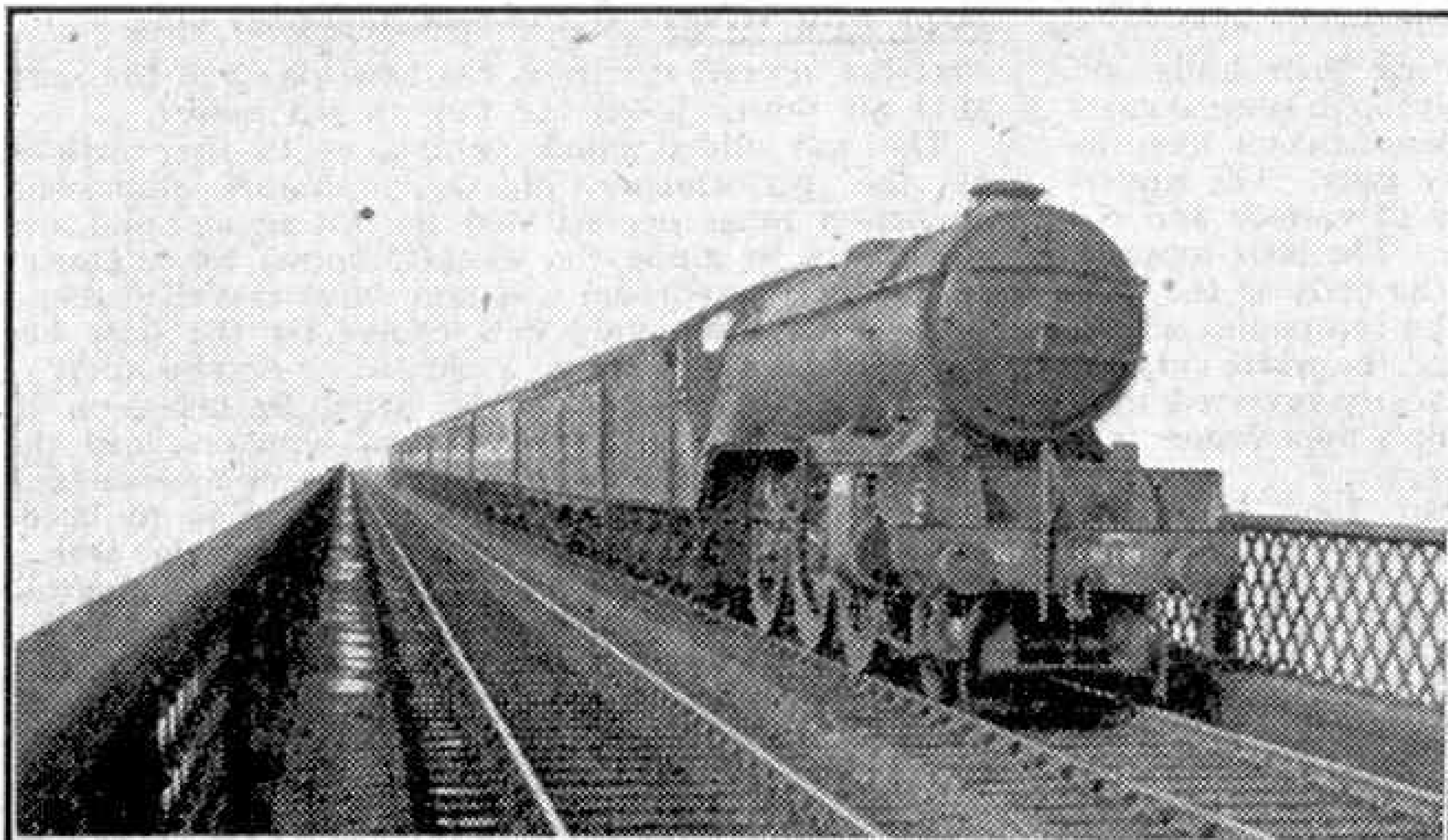
Brunel's masterpiece, the famous Saltash Royal Albert Bridge, the railway link between South Devon and Cornwall near Plymouth, which is nearly half a mile long and rises 180 ft. above the River Tamar, is being repainted with three coats, at any rate on its most exposed parts. The two big tubular trusses forming the centre spans are each 455 ft. long. All traffic has to pass over this great bridge on a single line.



The up "Flying Scotsman" passing Doncaster, headed by "A3" No. 79 "Bayardo." Photograph by Eric Oldham.

As on other lines, the state of maintenance as well as the cleanliness of many locomotives leaves much to be desired in these difficult times, but there are more green engines, also new or reconditioned coaches finished in the latest style. The 94xx large 0-6-0 pannier tanks are seen a good deal on empty coach trains to and from Paddington. They have tapered boilers, as on the 22xx 0-6-0 tender locomotives, with superheater, and the heating surface and grate area are considerably greater than those of the 8750 class, of which they are a modification. The pannier tanks with a capacity of 1,300 gal. are the largest so far fitted to a G.W. 0-6-0T. The coal bunker also is increased in size. The wheel diameter of 4 ft. 7½ in., boiler pressure at 200 lb. per sq. in., and cylinders 17½ in. diameter with 24 in. stroke are the same as on previous 0-6-0T classes of recent date.

On a busy day in September when there was much back-to-school travel we noted the following locomotives on principal trains at Paddington between 1.0 and 2.0 p.m. "County" No. 1010 on Weymouth arrival; "Castles" No. 5050 on 1.30 West of England departure, 1st part, No. 5063 on the 1.45 to Worcester and Hereford; No. 5020, very clean, on the 1.55 South Wales, and No. 7002 of the newest series on the S. Wales arrival at 1.30. "Saint" No. 2950 *"Taplow Court"* took the 2nd part of the 1.30 for



Crossing the Tay Bridge, on the L.N.E.R., the longest in Britain. The train is an Aberdeen express hauled by "V2" 2-6-2 No. 819. Photograph by H. C. Casserley.

Taunton, and then No. 6849, a "Grange" 4-6-0 of Banbury, headed the 2nd portion of the 1.45 for Oxford.

"Hall" 4-6-0 "Saint Bride's Hall," formerly No. 4972 and now No. 3904, oil fired, is the first G.W.R. locomotive fitted with electric lighting and as pilot engine double-headed the 1.18 Bristol train as far as Swindon. Space will not permit all names being quoted.

"King" No. 6006 then gave a good steady run with the 12-coach 2.10 p.m. express for the north-west, reaching Birmingham barely 3 min. late, although suffering fully 8 min. delays due to track repair work.

New engines completed during July-August were: 2-6-2T Nos. 4154-8, and 0-6-0T Nos. 6752-6. Conversions to oil burning were 2-8-0s Nos. 2834, 2845, 2853, 3813, 3820 and 3831. The first three are re-numbered 4808-10, while the latter three become 4855-7 respectively. Nameplates have been affixed as follows: No. 1003 "County of Wilts"; No. 6919, "Tylney Hall," and No. 6958, "Oxburgh Hall." "Castle" 100 A1 "Lloyd's," is oil fired.

"Battle of Britain" Classes, S.R.

News of the first naming ceremonies of "Battle of Britain" 4-6-2 locomotives reached us just too late for inclusion in last month's notes. The first series covers engines built as the last batch of 20 "West Countries," starting with 21C 151 "Winston Churchill." Nos. 168-70 are completing at Brighton at the time of writing. It is intended that the "Battle of Britain" classes shall consist of 40 locomotives; a further batch of 20 is to be constructed, bearing names of eminent Commanders, Aerodromes which bore the brunt of the Battle, and numbers of the actual R.A.F. squadrons engaged. 21C 164 "Fighter Command," with impressive nameplate and R.A.F. badge in red, white and blue, also including the words "Battle of Britain Class," was first seen hauling the Ramsgate-Folkestone-Charing Cross express on 12th September last. Other numbers and names will be reported when definitely known and visible.

New standard features on these light "Pacifics" are increased tank capacity in tenders, slightly altered smoke deflectors, square

outer corners of cab cut away more to a V shape and shaker grates.

Irish Railway News

A new 2½-hr. non-stop express with the name "Enterprise" has been instituted by the Great Northern between Belfast and Dublin worked by 4-4-0 compound locomotives. An article describing the new train, with an illustration, appears on page 444, of this issue.

A fine new diesel railcar has been put into service on the steeply graded and sharply-curved Sligo, Leitrim and Northern Counties Railway. It provides 59 seats and was built by Messrs. Walker Bros., Wigan.

Owing to shortage of coal supplies, oil firing of locomotives has been developed to a considerable

extent in Eire, experimental difficulties being overcome gradually as more equipment became available. A reader informs us that an oil wagon was fitted up at the C.I.E. Inchicore Works that could be run in trains, immediately behind the engine tender, from which oil could be pumped into the tender tank automatically.

Brevities

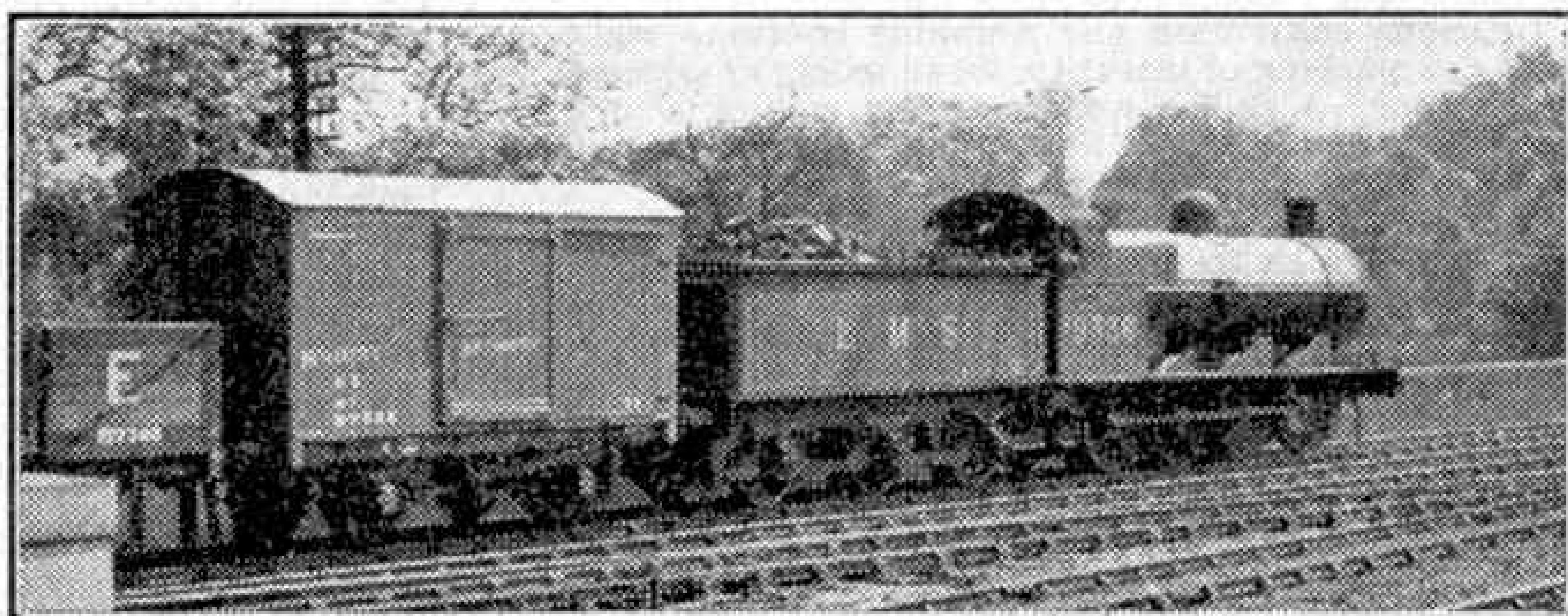
The L.M.S. and L.N.E.R. announce that the joint locomotive testing station at Rugby, upon which work had to be suspended at the outbreak of war, is to be brought into operation as soon as the special buildings and machinery can be completed for use.

Seat reservations were resumed on certain long distance trains in Britain upon the introduction of winter time-tables on 6th October. Services are still restricted and are much the same as during last spring.

On the L.N.E.R. the "Yorkshire Pullman" and "East Anglian" expresses are restored; the up morning and down evening expresses between Sheffield and London (Marylebone) are named "The Master Cutler."

The L.N.E.R. Manchester-Sheffield electrification scheme, which has been in abeyance, is now to be carried through. The Minister of Transport has authorised resumption of work costing about £6,000,000, which will take about four years to complete and save 100,000 tons of coal per annum.

Both sections of the Railway Museum at York have been re-opened, close to the main L.N.E.R. station and are well worth a visit. A famous "D17" 4-4-0, No. 1621, of the former North Eastern Railway has been re-conditioned and repainted in its original N.E.R. livery, and added to the locomotive collection.



Re-built superheated L.N.W.R. type 0-8-0 freight locomotive No. 9336. The withdrawal of this engine is announced. Photograph by H. C. Casserley.

The Decoration of Ships—(Continued from page 428)

Steamers also gave up decorating their hulls and painted them in a single colour, although some owners use their paint as a mark of identification like the Union Castle Company's lavender grey. The upper-works gave a greater opportunity of variety and the funnels an almost unlimited scope. The boot-topping, the strip between the water and the body of the hull, is limited to a few colours, but the companies which, for the sake of economy, abandoned the white cutting-in line between it and the hull mostly reverted to it as the added smartness to the ship's appearance was well worth the additional outlay.

When the Hamburg American Line built the "*Imperator*" (later "*Berengaria*"), as the biggest ship in the world in 1912, they surmounted her straight stem by a very awkward Imperial eagle. The experiment was not happy, for it very soon lost its wings and head and people naturally thought that this was due to bad seamanship coming alongside a pier rather than to the force of the seas. In the recent experiments by Scandinavian shipowners the figurehead, as it might reasonably be called, is let into the ship's bow in deep relief and, in the Olsen racket "*Black Prince*" and one or two other ships, it has been very strikingly effective. Other ships have had their stems decorated with coats of arms and even straight lines with quite pleasing results, showing what can be done with a comparatively small effort. As pride of ship is one of the things most needed for improving the morale of the young British sailor, the question of restoring decoration is certainly one which is worth serious consideration.

A Strange Encounter—(Continued from page 445)

it was that brothers met in that wide expanse of water which is called the South Atlantic Ocean. One, the elder, captain of a passenger-liner, outward bound to the River Plate; the other an apprentice on an old "windjammer." Passengers on board the "*Highland Rover*" lined the rails while the brothers exchanged greetings.

As the liner gathered headway, after bidding us farewell and promising to report us on her arrival in Monte Video, our Mate, grabbing the megaphone from Apprentice Windus, enquired in the rich brogue of his native Ireland: "And phwat won the Grand National at all?"

New Trees and New Jobs—(Continued from page 431)

wire fencing; otherwise they would ruin thousands of trees by eating the bark.

Once the trees are established in their permanent sites there is not so much constant work to be done on them, but they are visited now and again, and straggly side branches removed. Thinning is carried out from time to time on a small scale, and "weeding," or removal of undergrowth, also is necessary. After some 15 years a more rigorous thinning removes all the stunted and over-crowded trees, and carried on at intervals this yields useful small timber like stakes, pit-props and wood for cheap boxes.

Judicious cultivation and thinning continue right up to the reaching of maturity, when felling of selected trees begins. A skilled woodsman, by making a nick in the base of the tree before felling, can make a tree fall within a foot of any chosen spot.

That, in brief, is the outline of the work of the forester, although there is much more in it than that. He has to control pests and forest fires, keep woodland rides mown and clear, lay tracks and do much else that is necessary for good silviculture.

Does the work appeal to you? There is plenty of scope, both general and specialised, and the only qualifications are patience and stamina, a love of the country and wild life and open air, a reasonable but not advanced education, and above all a real willingness to work hard at this exacting but most rewarding work. Training is necessary, of course, but the fellow who works well is bound to get on.

Ships with Wings—(Continued from page 436)

that the aircraft carrier is the new queen of the seas, that air power holds the key to sea power.

The war added much equipment to the carriers, as the performance of their aircraft improved. Increased range necessitated the fitting of radio and radar sets to guide the aircraft home, for a carrier is a mobile aerodrome and may have travelled many miles on a completely new course by the time her squadrons return from a strike. "Accelerators"—special catapults—had to be fitted to her deck to assist heavily-loaded fighters and bombers into the air. Other radar was needed to detect approaching enemy raiders, so were batteries of guns to shoot them down. The carrier emerged from the war a tremendously powerful, costly, complex floating airfield. Having achieved much in battle, she had become a powerful weapon to ensure the peace. The "*Swordfish*," "*Seafires*," "*Avengers*," "*Fireflies*" and "*Barracudas*" that won the war at sea have given way to a new generation of naval aircraft. The jet fighter is here to stay, but piston-engined aircraft still form the spearhead of the carrier's striking force. Typical of the Royal Navy's fine equipment are the "*Illustrious*," victor of Taranto, and the Hawker "*Sea Fury*" fighter, shown in the illustrations to this article.

The future of these ships with wings is uncertain. Quite apart from the effects of the atomic bomb on naval strategy, it is possible that the carrier of the future may be a small highly-maneuvrable vessel, just big enough to carry and catapult off a number of undercarriageless fighters. But whatever the future may bring, British ingenuity and British courage will continue to ensure that Britannia rules the skies.

POWER POTENTIAL

(E. RANKINE GRAY. 25/-)

"*Power Potential*" is a locomotive book of quite an unusual kind. It is literally an album containing a series of reproductions of shaded pencil drawings constituting studies of locomotives at rest. These have been carried out by an anonymous artist whose sure touch and expert knowledge have enabled him to include with detailed accuracy each feature of the photographs on which the drawings are based.

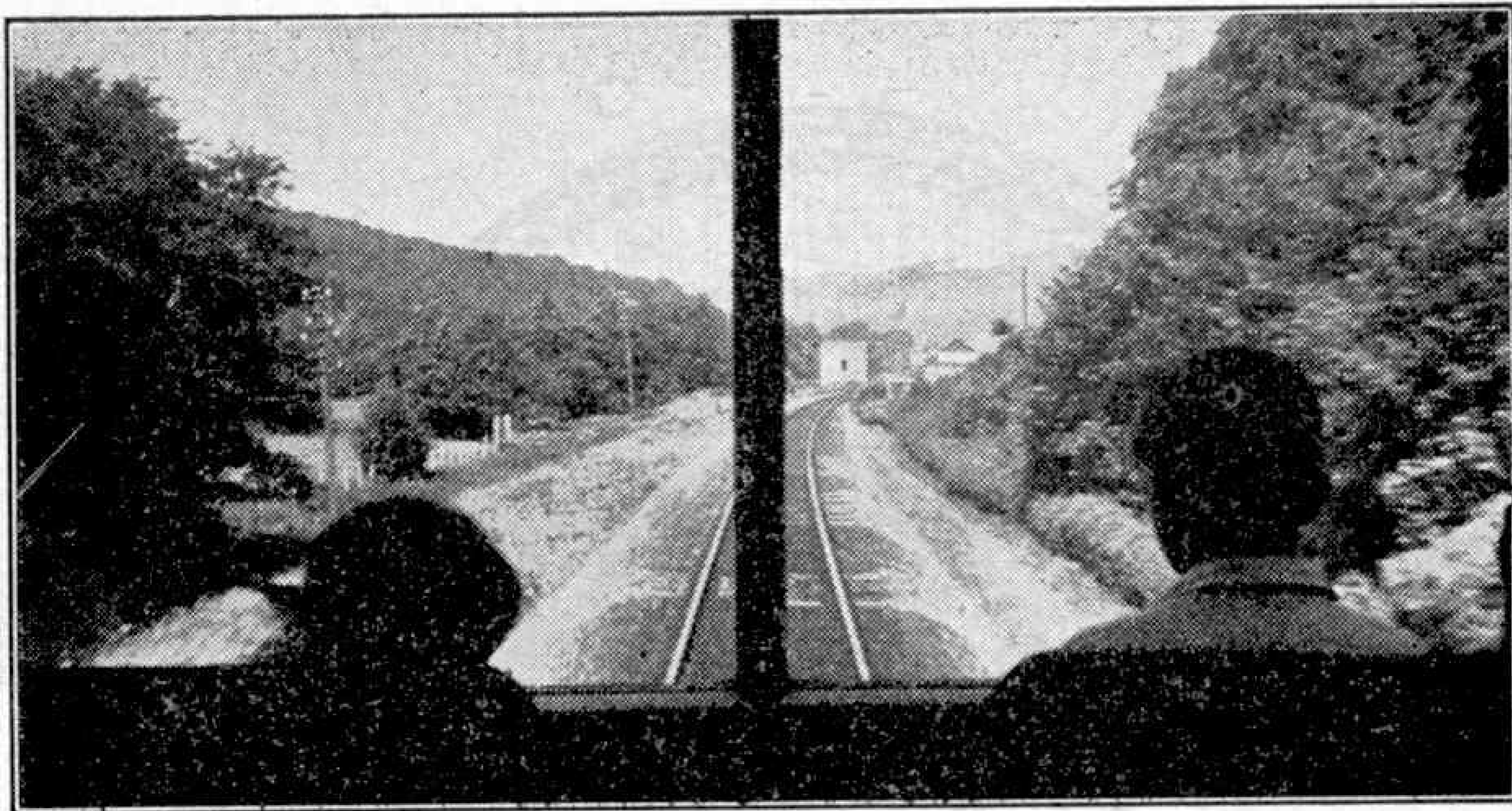
The book is the first realisation of a scheme known as "*Project X*" which aims at presenting every six months an album of 12 full-page locomotive studies similar to this first volume. Each volume is to be limited to 1,000 numbered copies, so they will have a special appeal for the serious collector.

The book is attractively bound in boards in loose-leaf form so that the individual drawings will lie flat while they are examined. The subjects are well varied. In the present volume they are confined to passenger and mixed traffic types; later publications are to deal with goods and tank engines. Among such present-day giants as a L.M.S. Class 7 4-6-2 and an S.R. "Merchant Navy" it is pleasing to see an example of the traditional British inside-cylinder 4-4-0 in the shape of a Derby "2P." Again, one of the slim yet still powerful 4-6-0s of the earlier G.W.R. 4-cylinder series, No. 4031 "*Queen Mary*," is included in its original form. Notes on the different engines are given on the pages between the drawings.

Each copy is sold under a guarantee that there will be no reprinting and each forms a collector's item. The book is obtainable from the Publisher, E. Rankine Gray, 691, Christchurch Road, Boscombe, Bournemouth, 25/- post free.

OUR OCTOBER COVER

It is regretted that through inadvertence, the source of our October cover "*In the Cab*" was not acknowledged. This was based on a photograph of a footplate scene on one of the numerous Class 5 4-6-0 locomotives of the L.M.S., to whom we are indebted for permission to make use of it.



The view through the rear windows of the "Devon Belle" observation car. This striking photograph shows the single line between Barnstaple and Yeoford.

A Trip on the "Devon Belle"

By "Shed Superintendent"

IT was a fine August day. The country was looking lovely, and the novelty of seeing the Southern route from Ilfracombe to Waterloo from an Observation Car for the first time could be enjoyed to the full.

West Country Class engine No. 21C 117 "Ilfracombe" had a load of 10 Pullmans for the run to Exeter, and 91 minutes are allowed for the 54 miles from Ilfracombe to Exeter St. David's. Most of this section is single-line. The Observation Car rode very steadily, and the track spun out astern, looking for all the world as if we had been laying it behind us, like a cable-ship on land!

At Exeter St. David's we paused for four minutes and the banking engine was attached for the half-mile climb at 1 in 37 up to Exeter Central. An E.I.R. Class 0-6-2 tank, No. 2135, nosed its way up to the rear buffers, exchanged the usual crow whistles with the leading engine, and then gave us a wonderful display of fireworks as it pushed us through the tunnel under the streets of Exeter. The little engine could be seen in action through the rear windows of the car.

At Exeter Central we joined four more Pullmans which had left Plymouth at 11.30 a.m., and a "Merchant Navy" class engine, No. 21C 3 "Royal Mail" took charge for the next stage of the journey to Wilton, 85½ miles, for which 110 minutes are allowed, with a gross load of about 580 tons.

The usual practice on the S.R. West of England trains, as readers know, is to change engines at Salisbury. This enables the engines and crews to return to their home depots the same day, without the inconvenience of "lodging," and it also solves the problem of the absence of any water-troughs on this route. But to stop at Salisbury Station with the "Devon Belle" would be inconvenient on account of the reserved accommodation; so the change of engines is made at Wilton, 2½ miles on the Exeter side of Salisbury. The "Devon Belle" is the first passenger train for 41 years to run through Salisbury

where it is restricted to 10 m.p.h.

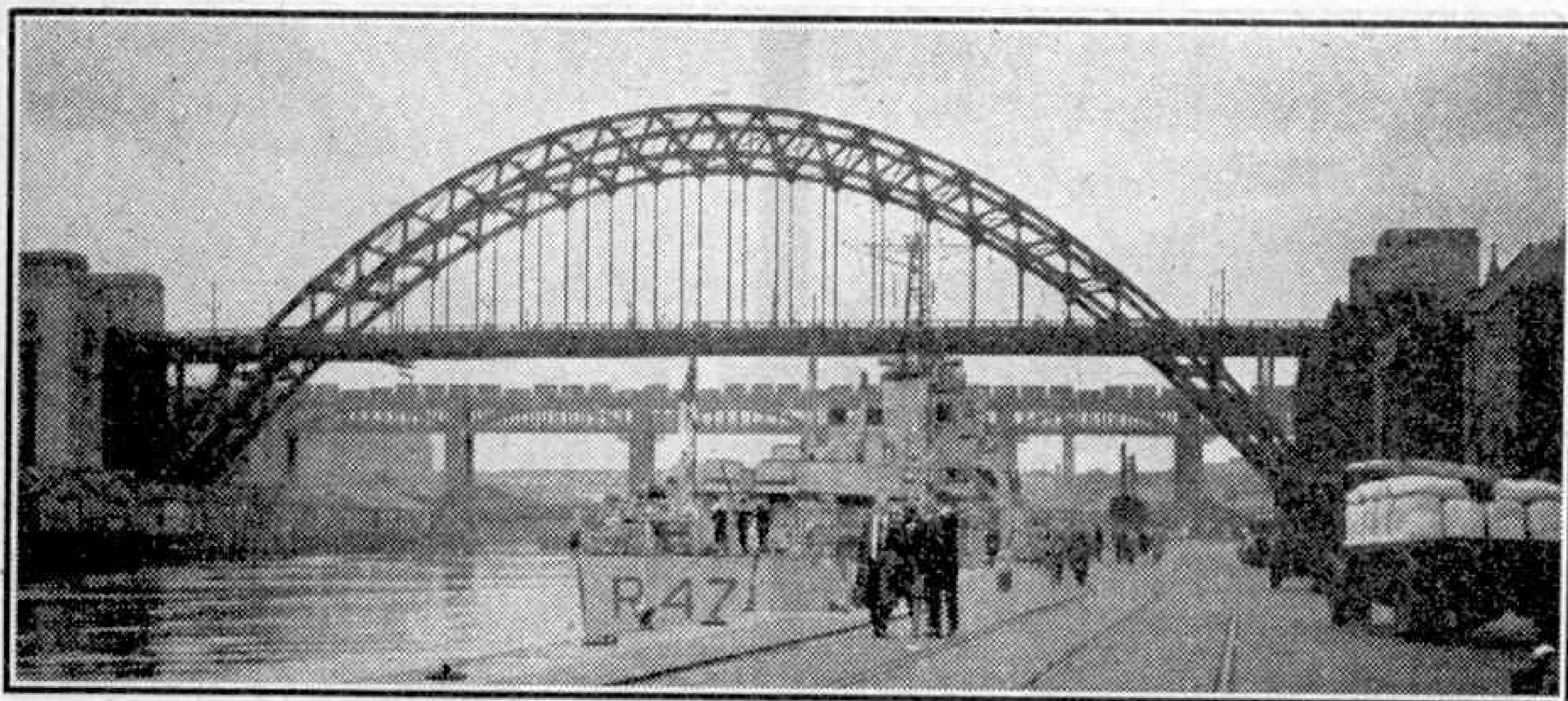
To return to our Observation Car: the line from Exeter to Salisbury has been described as one of the most difficult main lines in this country, and one of the most exciting, as it consists of a succession of rises and falls. The alignment permits the drivers to attain high speeds downhill in order to make a run at the gradients. At times our trail of smoke indicated that the fireman was having a busy time, especially on the 1 in 80 climb to Honiton Tunnel, but for the most part all the details of the route could be clearly seen. Porters at wayside stations stared after us as we swept by. Everywhere people had come to the lineside to catch a glimpse of the new train.

Honiton Tunnel closed in upon us with a rush and in the dim light the archway of the western end grew smaller and smaller. It seemed as though we were watching a cinema screen. Someone said "I suppose they always make tunnels straight, so that the driver can see the end!" The speaker was soon corrected on this point!

The down "Belle" passed us near Crewkerne and for a brief moment the occupants of the two Observation Cars could wave to one another, but only for a second, as both trains drew away at a combined speed of something like 150 m.p.h.

At Wilton, "Merchant Navy" engine No. 21C 11 "General Steam Navigation" took over for the final 86 miles to Waterloo, allowed 101 minutes. The fourteen Pullmans did not prove easy to start, but we were soon climbing up through the chalk cuttings at Porton and Newton Tony, leaving the spire of Salisbury Cathedral standing majestically in the valley. Near Basingstoke it was announced over the internal loud speaker system that tea was being served, and we left the Observation Car in the possession of a party of youngsters who were obviously determined to enjoy their unusual vantage point to the last inch of the journey.

The "Devon Belle" ceased to run at the end of October.



Newcastle's four bridges across the Tyne seen from the Town Quay. Photograph by P. Conolly.

Of General Interest

Newcastle's Bridges

The photograph reproduced on this page, taken from the Town Quay at Newcastle, shows the four adjacent bridges crossing the Tyne between Newcastle and Gateshead, the latter on the left bank. The Tyne Bridge in the foreground is the most recent; it was opened in 1928 and was reputed the "try-out" for the similar but much larger Sydney Harbour Bridge. Next comes the swing bridge. Robert Stephenson's high level bridge is third; this has a lower deck for road traffic. The last bridge in the view is the King Edward Bridge.

At the quayside is one of the Royal Navy's latest vessels, H.M.S. "Gabbard," a "Battle" class destroyer, built on the Tyne by Swan Hunter and Wigham Richardson Ltd. and first commissioned on 21st May 1946. At the time when the photograph was taken she was being made ready to receive visitors.

P. CONNOLLY.

Cutting the Fuel Bill

From time to time efforts have been made to use direct sunlight for heating purposes, usually by means of extensive installations of mirrors designed to concentrate the Sun's rays on small boilers or pipes containing water or some other liquid. A large plant of this kind was erected in Egypt, and an American astronomer once devised a similar system on a small scale in which oil heated by the Sun was circulated round an oven in which the family cooking was done.

The problem of using Sun heat is one that continues to attract inventors, and a very ingenious new scheme for applying it to heat houses has been suggested. On the sloping roof of the building to be heated in this way a series of glass panels are laid. These overlap in much the same way as the slates of a house, and the lowest pane in each section is coated with paint that absorbs heat. The assembly is enclosed within a glass trap. Sunlight falling on the unit penetrates as far as the painted glass. This becomes hot and radiates heat, which cannot escape because the system is enclosed. Cold air from the building enters the unit through an opening at the lower end of the unit. This becomes warm and rises, to make its way out of the unit through another opening into the building. The continual circulation that takes place when the Sun is shining raises the

temperature within the building.

The idea behind the unit is to employ it to supplement heating by coal or oil, and it is claimed that with it fuel bills can in certain instances be reduced by half.

A New Drying and Heating Lamp

An interesting step forward in the use of infra-red rays for drying and baking was shown for the first time at the British Industries Fair this year. It is a Mazda lamp with the lower half of the inside surface silvered. The silvering forms an internal reflector that concentrates the infra-red rays into a beam, instead of leaving them to spread out in all directions from the bulb. The bulb itself is made of special shape in order to give efficient beam reflection, and its crown is satin frosted.

One interesting result of the introduction of the new lamp is that the external reflectors formerly used can be omitted. This means that the bulbs can be packed more closely together, and the heat concentration therefore intensified.

A Labour-Saving Warehouse

Another interesting idea that comes from the United States is a circular warehouse designed with the idea of reducing the labour of moving the goods handled in it. The warehouse has been planned for a mail order business. It is to be built round a circular open space, and is divided into 16 sectors. A railway runs round the outside of the building, and branch tracks from it pass into each of the sectors, where loading platforms are provided. There are also loading platforms at the inner faces of the sectors, and a tunnel under the building allows trains to reach the tracks that run alongside each of these. Switching arrangements allow goods wagons bringing in material or empties for loading with outgoing parcels to be taken to any of the loading faces provided, and all goods handled have to be moved only along the sector to which they are taken.

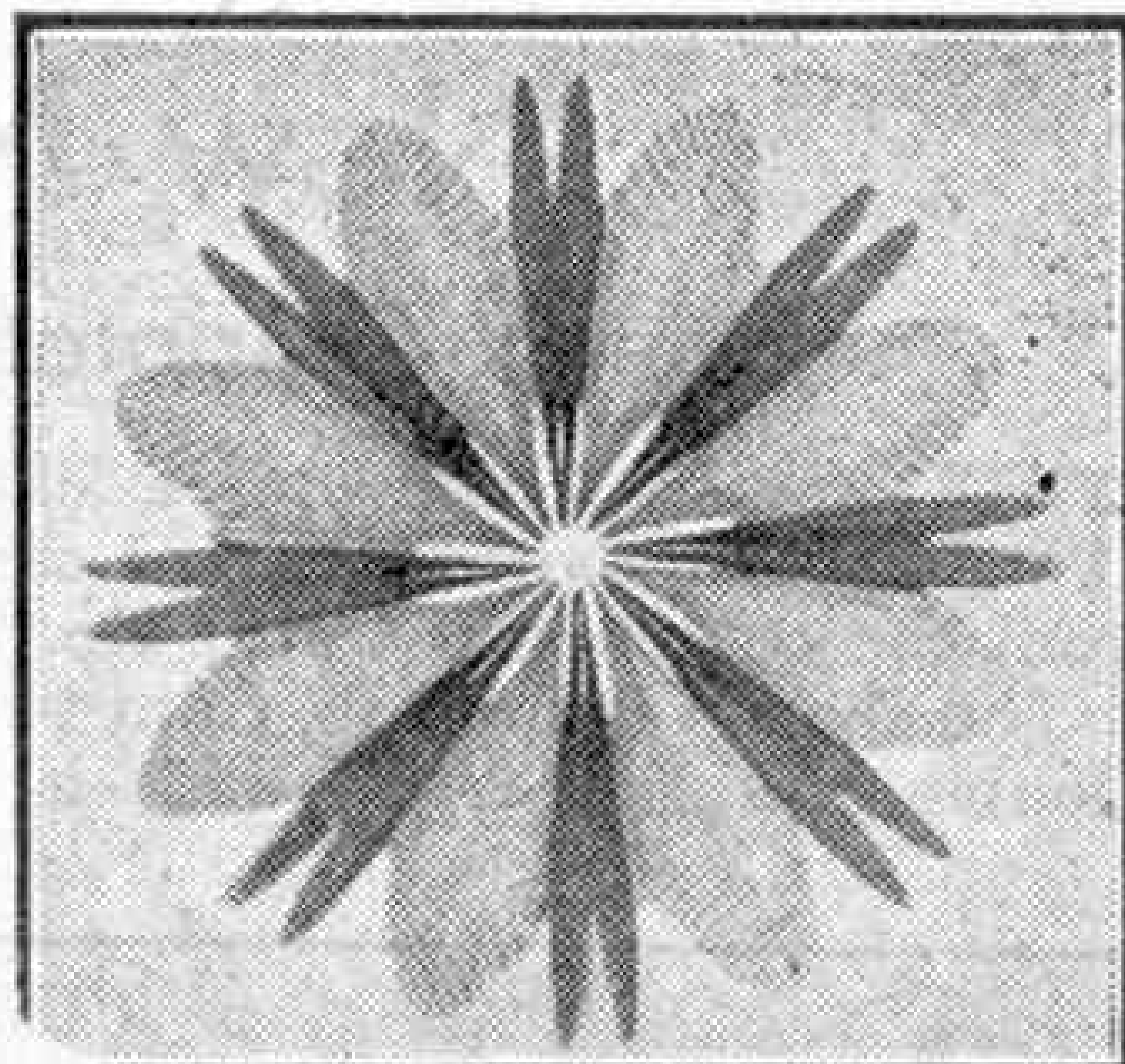
This simple but well-thought out scheme is expected to cut out about three quarters of the floor movement within the building that would be necessary in a warehouse of similar extent planned and constructed on the lines to which we are accustomed. The scheme of course must be applied on a large scale to be successful, and the warehouse planned will cover 1,000,000 sq. ft.

A Fascinating Designing Machine

Liverpool Man's Fine Model

READERS who have built Meccanographs, of which several different types have appeared in the "M.M.," will be interested in the fine model shown on this page. It was built by Mr. E. Armitage, Liverpool, who has spent the leisure time of many years experimenting in the construction of designing machines. The writer has seen this machine actually at

stage for experimental purposes, Mr. Armitage used in it a few home-



One of the fascinating patterns produced on the designing machine shown in Fig. 1.

made parts, some of which he suggests as additions to the Meccano range. He has now succeeded in building an almost identical machine using standard Meccano parts entirely, and details of this may be available for publication in the "M.M." in due course.

One of the main features of the machine illustrated here is the epicyclic drive to the crown head marked 1. This mechanism, working in conjunction with neatly arranged change gears, is largely responsible for the wide variety in the beautiful designs the machine produces. Another excellent feature is the construction of the pen arm, which is excellently planned and pivoted. In operation the machine is very steady and smooth.

Mr. Armitage's model is a fine achievement and a credit to his ingenuity and knowledge of engineering principles.

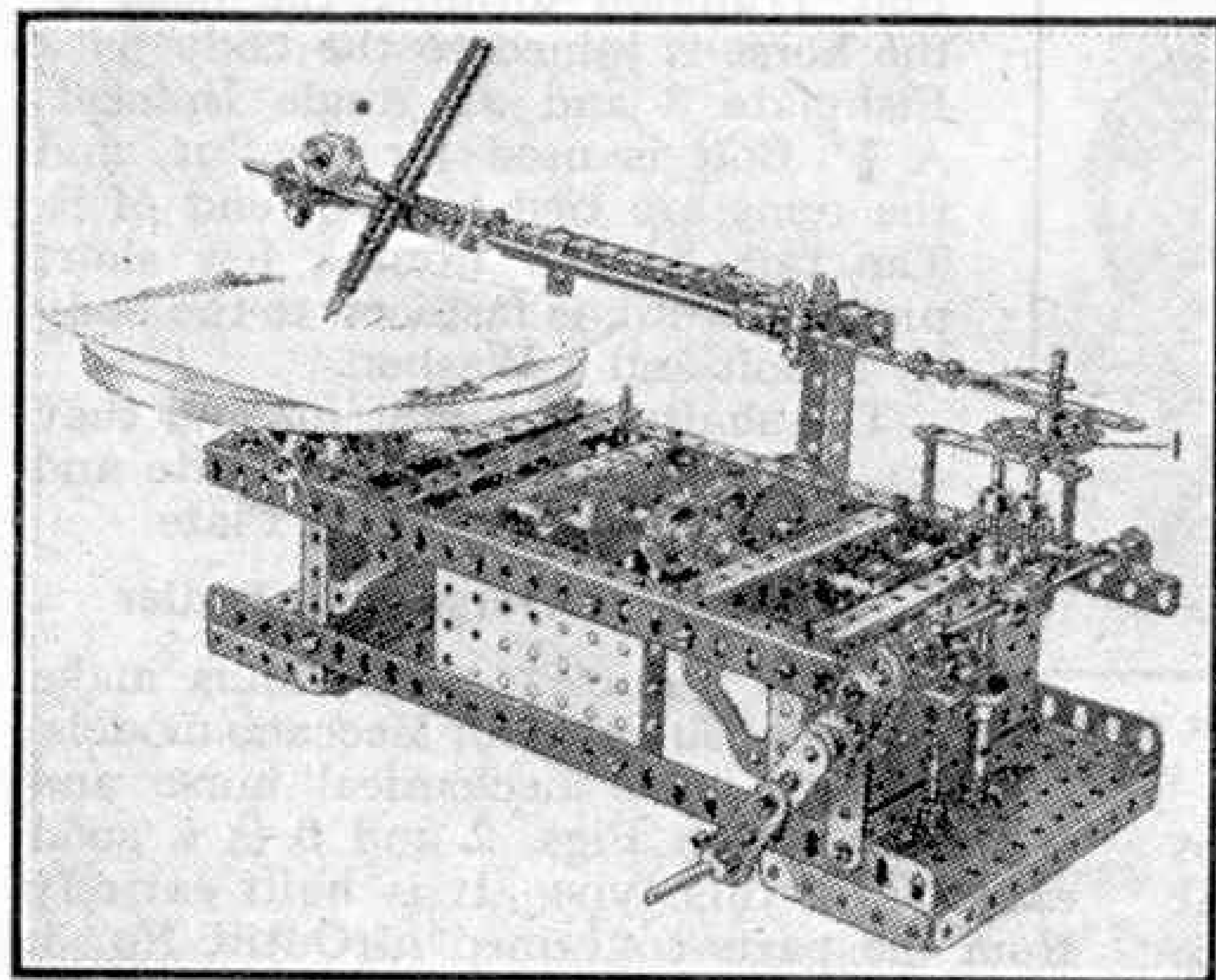
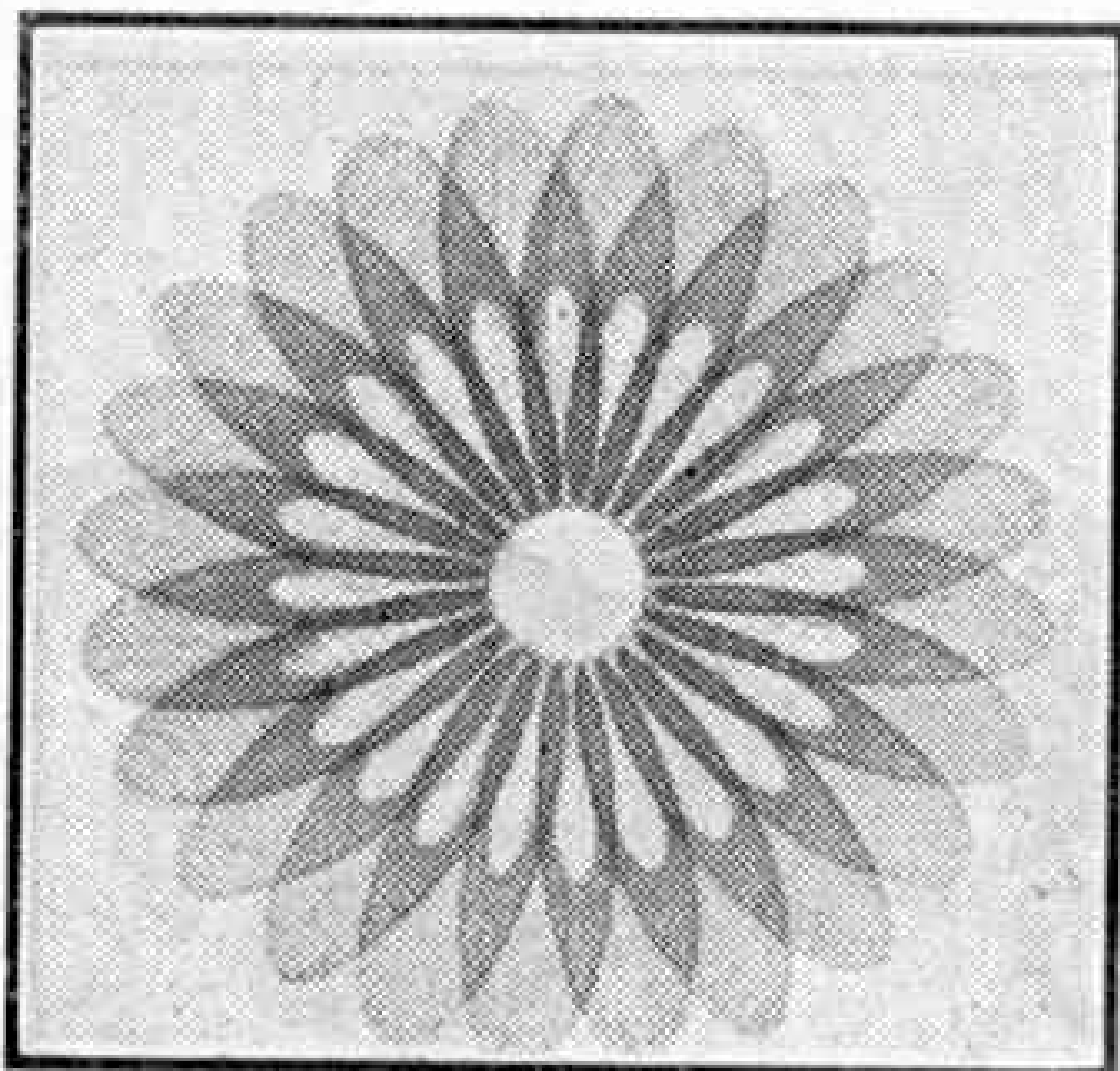


Fig. 1. A general view of Mr. E. Armitage's designing machine with which hundreds of intricate and beautiful symmetrical patterns can be produced.

work, and was most impressed with the amazing delicacy and lace-like beauty of the designs it produces. Two of these beautiful patterns are illustrated on this

page but unfortunately some of their extreme fineness in drawing has been lost in the reproduction.

As the machine was developed stage by



Another beautiful design produced by the machine.

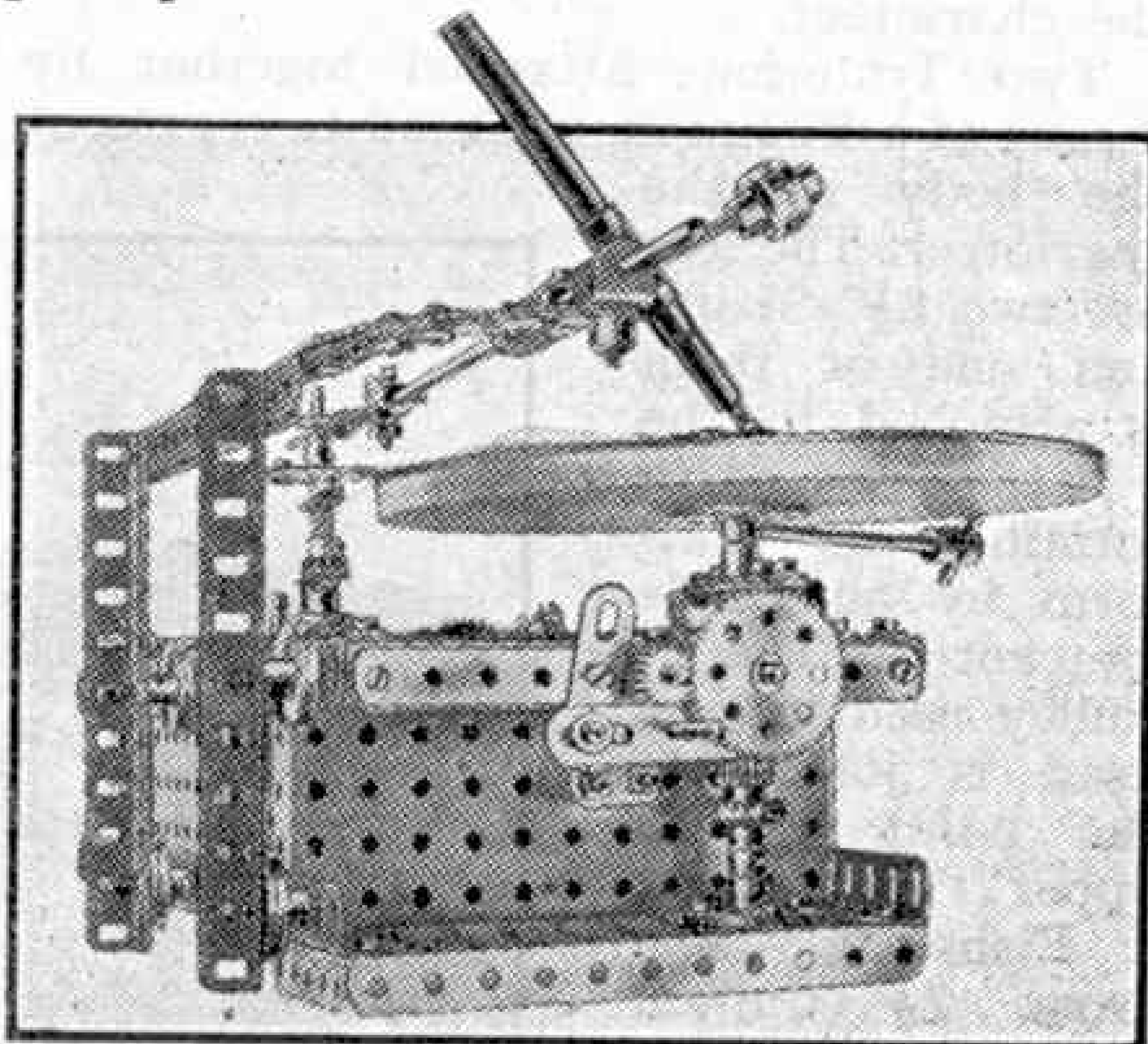


Fig. 2. An end view of the designing machine showing part of the drive to the rotating table.

New Meccano Models

Roman Charioteer—Mechanical Horse and Trailer

THE amusing model of a chariot and charioteer shown in Fig. 1 can be built from the contents of Outfit No. 2.

The chariot is built up from two $2\frac{1}{2}" \times \frac{1}{2}"$ Double Angle Strips and a $5\frac{1}{2}" \times 1\frac{1}{2}"$

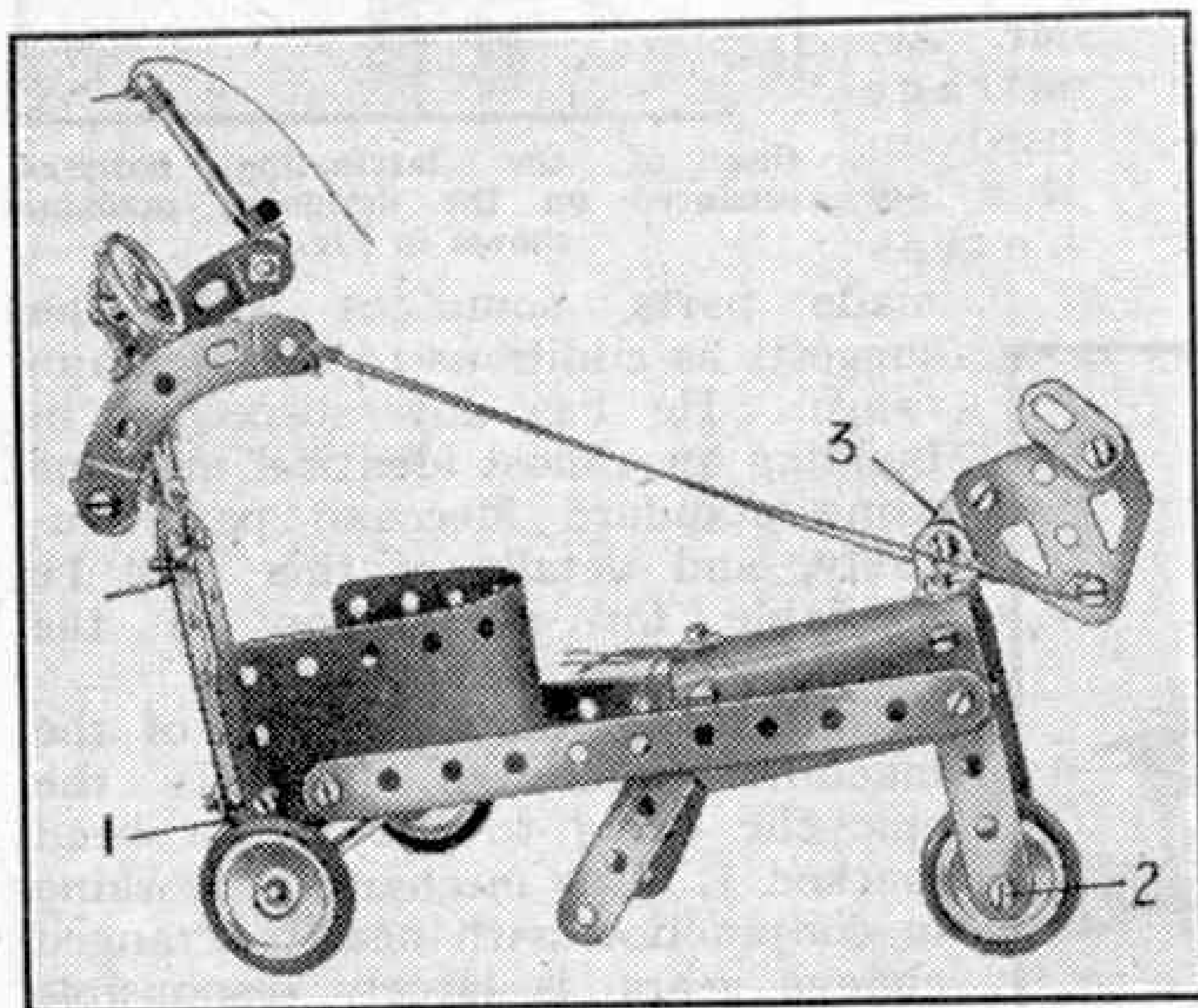


Fig. 1. This Roman chariot and driver makes a fine subject for Outfit No. 2.

Flexible Plate. The Double Angle Strips are bolted together on each side of a Flat Trunnion, and the ends of the top Strip are attached to the end holes in the Flexible Plate. The ends of the lower strips are used to support the rear axle, which is a $3\frac{1}{2}"$ Rod. The tapered portion of the Trunnion is used as a platform for the charioteer.

Two Trunnions attached together by means of a Fishplate are used to represent the body of the charioteer. The legs are two $2\frac{1}{2}"$ Strips, and one of them is attached to the Flat Trunnion forming the platform by an Angle Bracket 1. The 1" Pulley used for the head is joined to the point of the upper Trunnion by a Fishplate. The arms, $2\frac{1}{2}"$ Curved Strips, are connected to the body

by Angle Brackets and positioned as shown in the illustration.

The 2" Rod used for the whip is held in place by Spring Clips placed one on each side of the Angle Bracket supporting the Rod.

A U-Section Curved Plate forms the body of the horse and its fore and hind legs are $2\frac{1}{2}"$ Strips. A 1" Pulley is supported by a $\frac{3}{8}"$ Bolt 2 passed through the $2\frac{1}{2}"$ Strip and locked in the boss of the Pulley. The Flat Trunnion forming the head of the horse is joined to the body by a Fishplate 3 and an Angle Bracket. A $\frac{3}{8}"$ Bolt is used for the bit, and the reins are tied to each end of it. The tail, formed from a few short pieces of Cord, is fastened to the body by a Bolt and a Washer.

The shafts are $5\frac{1}{2}"$ Strips and they are bolted to the Flexible Plate and the front of the U-Section Plate.

Mechanical Horse and Trailer

Motor vehicles of all kinds make excellent subjects for Meccano models, and the fine mechanical horse and trailer shown in Figs. 2 and 3 is a good example of this type. It is built entirely from the parts contained in Outfit No. 3.

The chassis of the motor unit is made from two $5\frac{1}{2}"$ Strips, which are joined at the front by a $2\frac{1}{2}" \times 2\frac{1}{2}"$ Flexible Plate and at the rear by the Trunnion 1. The Double Angle Strip 2 is attached to the chassis by Angle Brackets, and it supports the $2\frac{1}{2}" \times 2\frac{1}{2}"$ Flexible Plate and the $1\frac{1}{8}"$ radius Curved Plate forming the sides

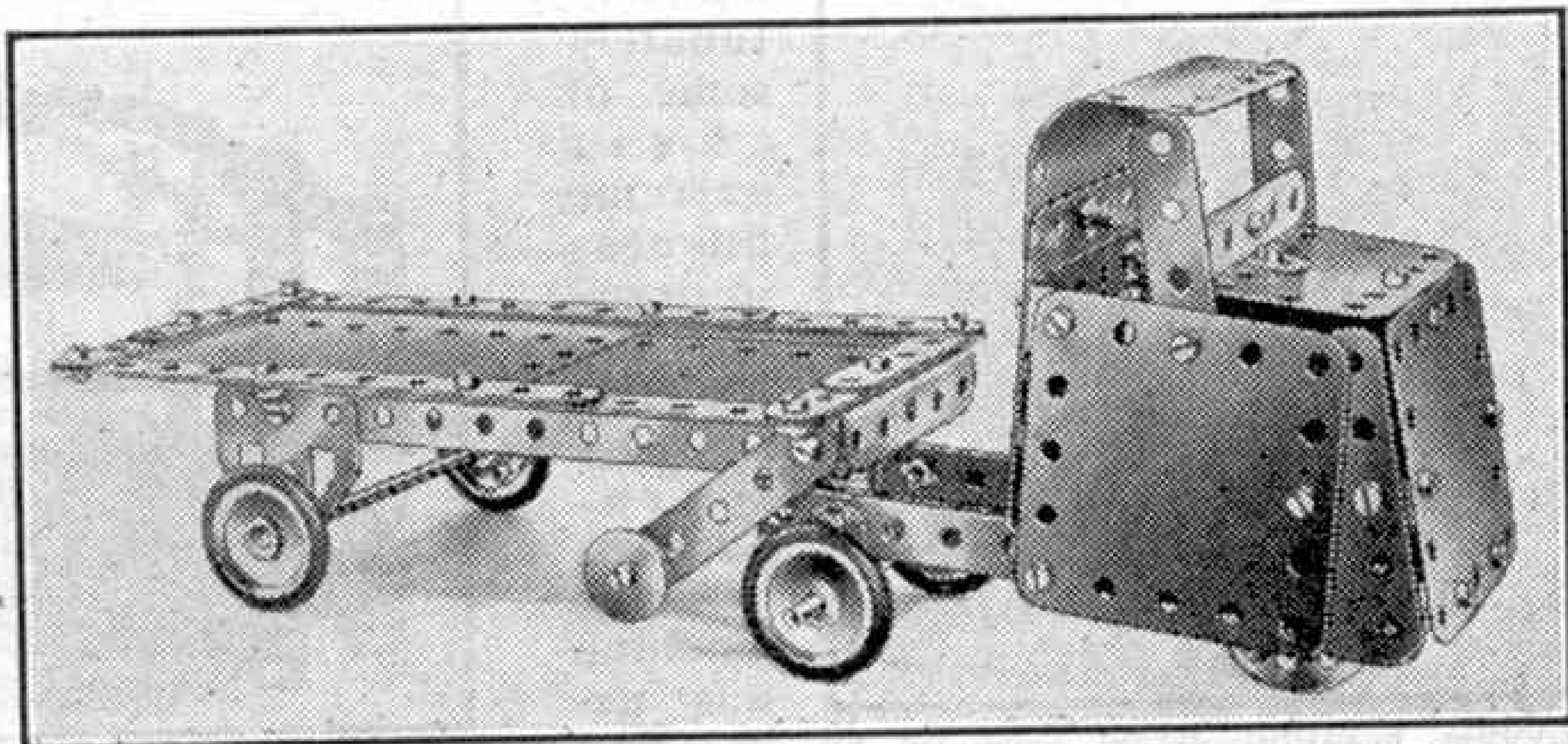


Fig. 2. A mechanical horse and trailer that can be built from Outfit No. 3.

of the cab. These Plates are extended by the Semi-Circular Plates 3, which are joined to the front of the model by Double Brackets. The back and roof of the cab consist of a $1\frac{1}{8}$ " radius Curved Plate and a U-Section Curved Plate attached to the sides by a Double Angle Strip. The front and rear axles are supported in Fishplates bolted to the chassis side-members.

The chassis of the trailer is formed by a Flanged Plate, and the axle is mounted in Flat Trunnions bolted to the sides. The loading platform is built up from two $5\frac{1}{2}" \times 2\frac{1}{2}"$ and two $4\frac{1}{2}" \times 2\frac{1}{2}"$ Flexible Plates, which are overlapped as shown in the illustration and strengthened by four $5\frac{1}{2}"$ and four $2\frac{1}{2}"$ Strips. It is bolted to the Flanged Plate at the front and attached

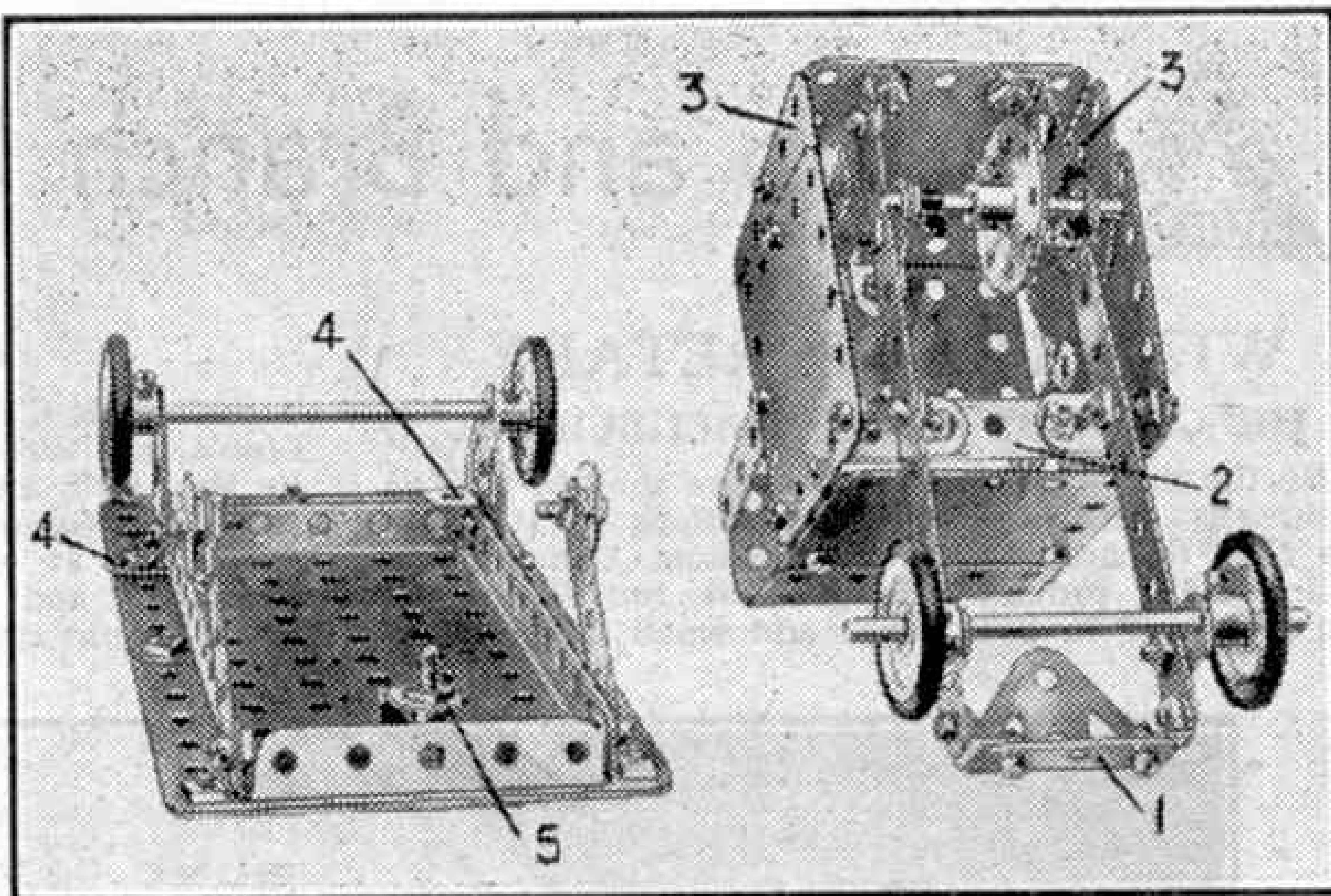


Fig. 3. Underneath views of the mechanical horse and trailer.

at the rear by the Reversed Angle Brackets 4.

The trailer is connected to the motor unit by a $\frac{3}{8}"$ Bolt held in a Stepped Bent Strip 5. The shank of the Bolt fits into the end hole of the Trunnion 1.

Grand "Winter" Model-Building Competition

This month we announce the first of the main winter season model-building competitions. It is a contest that is open to every owner of a Meccano Outfit, no matter what size, and we hope to receive a record entry.

Models may be of any kind whatever, and of any size, but they must be built from Meccano parts. Cranes, motor vehicles, ships, machines of all types and aircraft, are some of the subjects suitable for models.

The conditions of this competition should give full scope to every model-builder, whatever type of model he is specially interested in, and whatever the size of his Outfit. It must be borne in mind that it is not necessary to submit large models; entries are judged on their realism and on the skill with which parts are used. Owners of small Outfits therefore should not hesitate to enter.

The actual model must not be sent. A photograph, or if this is not possible, a reasonably good sketch, together with brief details of the model's main features, are all that is required.

The competition will be divided into two sections. A, for competitors of all ages living in the British Isles. B, for competitors of all ages living Overseas. Section

A will close for entries on 31st December, but Section B will remain open until 31st March 1948.

The following prizes will be awarded in each Section of the Contest. First, £2/2/-; Second, £1/1/-; Third, 10/6. There will be also a number of consolation awards and Certificates of Merit.

Competitors must write their name, address and age on the back of each photograph or drawing sent in, and envelopes must be addressed "Winter Model-Building Contest, Meccano Ltd., Binns Road, Liverpool 13."

RESULTS OF THE No. 1 OUTFIT MODEL-BUILDING CONTEST (Home Section)

1st Prize, Cheque for £2/2/-: W. Dickinson, Plean; 2nd, Cheque for £1/1/-: R. J. Millington, Wolverhampton; 3rd, Postal Order for 10/6: J. Heywood, Macclesfield.

Consolation Prizes of 5/-: S. J. Dane, Barnstone; C. E. Wrayford, Bovey Tracey, Devon; P. J. Skellern, Greenford; A. Davison, Birmingham; W. R. Bennett, Port Talbot.

W. Dickinson's model was a representation of a fireside companion set, comprising poker, tongs, shovel and brush.



Club and Branch News



WITH THE SECRETARY

THE GREATEST FUN IN MODEL-BUILDING

By the time these notes appear we shall be well on with the model-building operations that form the chief feature of the indoor season. Competitions undoubtedly provide the greatest fun in model-building, and in both large and small Clubs every

CLUB NOTES

BOSTON M.C.—A Party was held to celebrate the Club's 2nd Birthday. A splendid tea was prepared by Mrs. Luff, after which there was a Treasure Hunt and other Games. A Model Speedway is providing good fun at meetings. Excellent model-building continues, and operations on the Club's Hornby Train Layout are realistic and enjoyable. Club roll: 13.



A busy scene at the headquarters of the Waterloo and Cowplain (Portsmouth) M.C. Mr. A. A. Foster, President, is on the left and Mr. A. T. Nicholson, Leader, on the right, with T. Hilliard, Secretary, in front. This Club was affiliated in July of this year, and already has some excellent model-building to its credit. Boxing and games complete an excellent programme.

possible variety of contest should be organised. Care should be taken to place all entrants in these on a fair basis, particularly as far as ages are concerned. Where these vary widely it is best to arrange contests in age groups. This scheme will present no difficulty in those Clubs in which Senior and Junior sections are organised, and in others similar arrangements can readily be made as required.

In one form of contest models of a given type, such as cranes, motor cars or ships, are to be built; in others special restrictions, such as the limitation of the kind and number of parts to be employed, are imposed; and in yet others there are no restrictions at all, entrants being free to build any kind of model they choose. All are good, and in another attractive kind of contest the reproduction of special simple models or mechanisms from memory can be recommended. Entrants are allowed to look at the model or mechanism set for a limited period, depending on its size and complexity, after which it is removed and they are called upon to reproduce it as nearly as possible. Model-building of this kind helps to develop powers of observation. Small prizes should be awarded in these contests.

Secretary: P. E. Luff, 103, Woodville Road, Boston.

HOLLAND

MAASTRICHT M.C.—The August Camp, in country 60 miles north of Maastricht, was very successful. Indoor meetings have now begun with an overhaul of parts and motors, and a giant dragline has been built. Models have been prepared for the Club's Exhibition. Club roll: 25. **Secretary:** H. J. Felix, Cannerweg 172, Maastricht, Holland.

NEW ZEALAND

HAMILTON M.C.—Satisfactory progress is being made. A Club Outfit has been obtained and excellent models have been built. Refreshments help to make meetings enjoyable. Club roll: 12. **Secretary:** G. S. Nolan, 79, Ohaupo Road, Hamilton, New Zealand.

BRANCH NEWS

CAER URFA (SOUTH SHIELDS)—The outdoor layout is now being transferred to the Club Room and erected in accordance with prepared plans. Operation schemes are being worked out. **Secretary:** G. Burrows, 113, Quarry Lane, Cleadon, South Shields.

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.

THE DENVER SLUICE

The Fen Country of Norfolk, Lincolnshire, and Cambridgeshire is to-day very different from what it was in its natural state, before the area was drained.

The first large scale attempt to reclaim the region was made in the reign of Charles I by the great



Whitby Falls, in Western Australia. Photograph by R. W. Smith, Perth, Western Australia.

Dutch engineer Cornelius Vermuyden, who constructed the Old Bedford River, an artificial canal 30 miles long from Earith to Denver. Later, during Cromwellian times, he constructed the New Bedford River parallel to the old one. A great sluice was built at Denver to keep back the tides rushing up from the Wash, and for the first time the Bedford Level was thoroughly drained.

Vermuyden's sluice was destroyed by a great storm in 1713, and in 1750 was replaced by the present sluice, which is shown in the accompanying photograph. The structure is very massive and in times of flood is capable of discharging waters from 800,000 acres of land. Sir John Rennie, who designed the old Waterloo Bridge and London Bridge, was associated with the building of the present Denver Sluice.

A. W. BULL (Beeston, Notts.).

AUSTRALIAN SERPENTINE

Having finished work one Saturday afternoon my friend and I rode forth on our bicycles to make a weekend tour of the Darling Range to the south-east of Perth. We pushed all afternoon through orchard and vineyard country, and after passing through Armadale we struck South. By dusk we were at Whitby Falls, where we spent the night. These interesting falls are shown in the upper illustration on this page.

During the night thick cloud rolled up from the south-west, and a heavy dew fell. The morning dawned fine and clear, however, and we were soon on our way once more. By mid-morning we had reached Serpentine Falls, the greatest in the Darling Range. There the Serpentine River splits into two and rushes down between the hills. Climbing to the summit of the range, we could see Perth on our right, 35 miles away, while in the distance was the blue haze of the sea.

After descending we spent a few happy hours swimming, then slipped into our clothes and commenced the homeward journey. It was decided to return by a different route so that we could see more of the countryside. The way back was made harder by strong winds, but we were soon passing Armadale, and gained speed as we turned towards Perth and home.

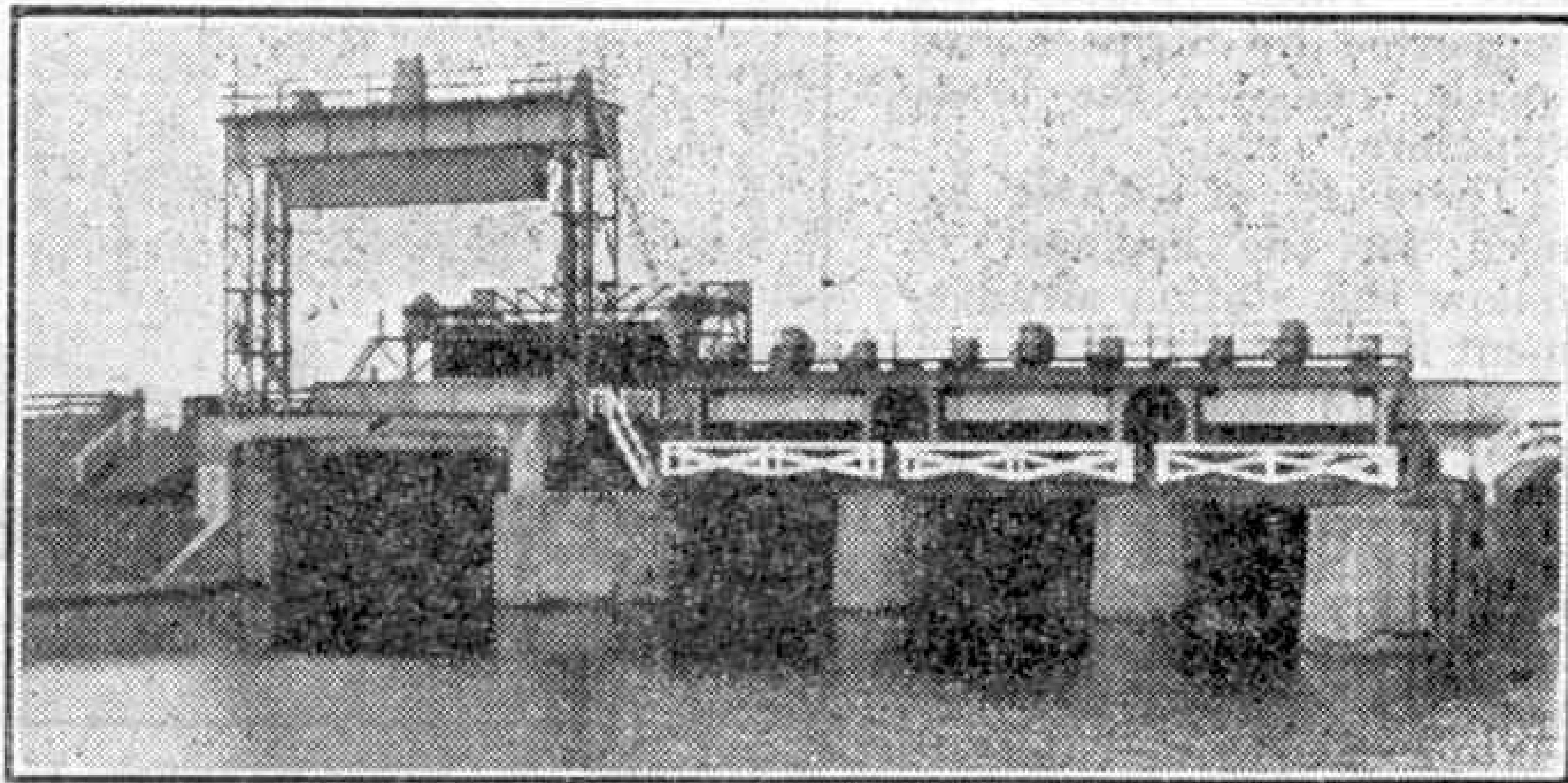
R. W. SMITH (Perth, Western Australia).

CURIOUS AUSTRALIAN HOMES

At Mount Browne, in New South Wales, is a home built many years ago by an old gold prospector that is constructed of more than 9,000 empty bottles. A similar home was built in Stepney, South Australia. This is 80 years old, and in it wine bottles have been used, nearly all of which have been imported. At the time of its construction visiting ships presented the owner with numerous bottles.

In parts of Central and North-Western Australia grow huge "bottle" trees that provide drinking water from their roots for cattle on overland routes. The trees are peculiarly shaped, somewhat like a scent bottle. On the way to Wyndham is one that has been made into a "home" for prisoners! It is 30 ft. high and 45 ft. wide. Its interior has been hollowed out, a door added, and a hole made at the top of the trunk as an "air vent."

K. ALLEN (Sydney).



The sluice at Denver, Norfolk. Photograph by A. W. Bull, Beeston, Notts.

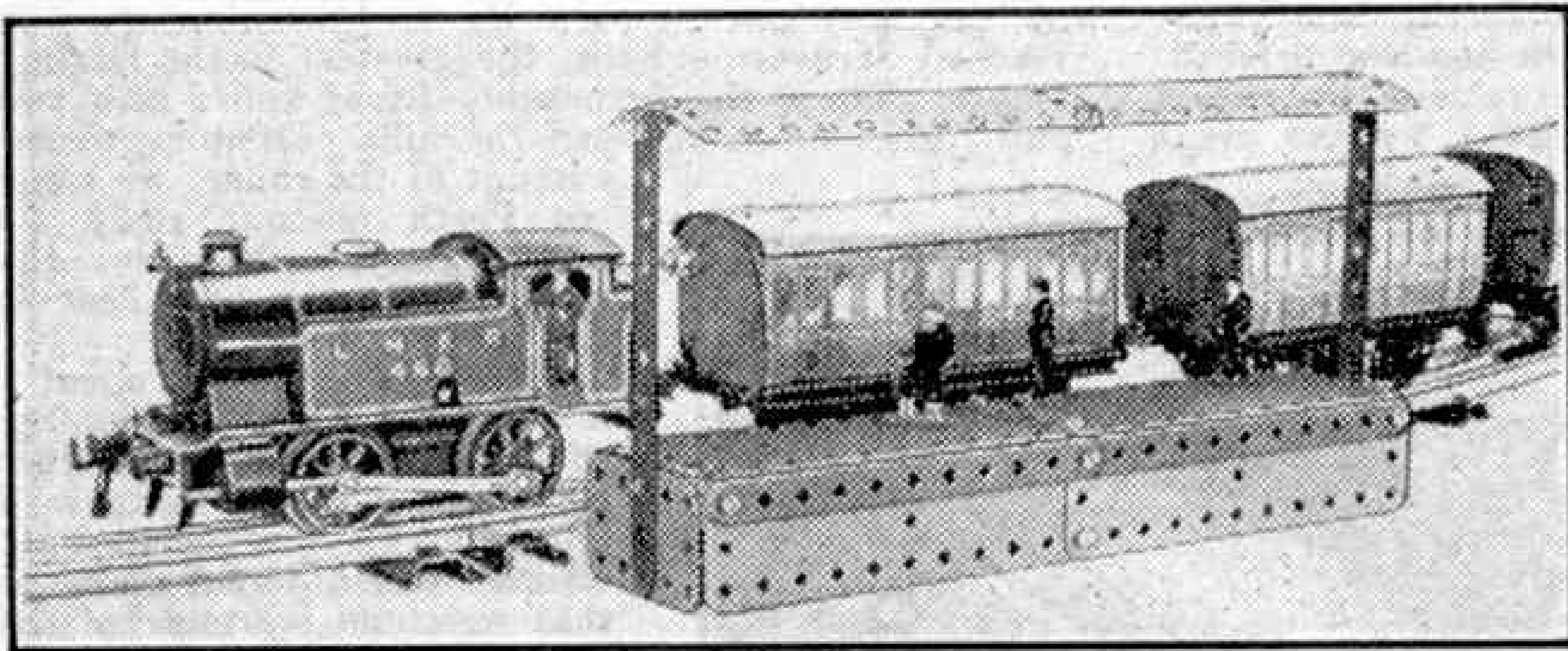
More Fun With Your Hornby Trains

IN the early development of our Hornby Railway described last month, we had reached the stage of arranging a simple station alongside the track and of getting our engine with its train to start off from

as this would mean only a very short run between stops. We can experiment again, however, as described last month, with the winding of our engine so that the train can be run from one station and

after a number of circuits, stop at the other one. Then for one or two circuits stops may be made at one station only, and so on. Almost endless variations of this scheme are possible.

At this point too we can take some interest in the purpose of the miniature headlamps and tail lamps such as are provided in our Hornby No. 101 Tank



A Hornby passenger train arriving at a station built from Meccano Parts.

the station and to come to a stop there after making a number of circuits of the track. This month we carry our working schemes a little further.

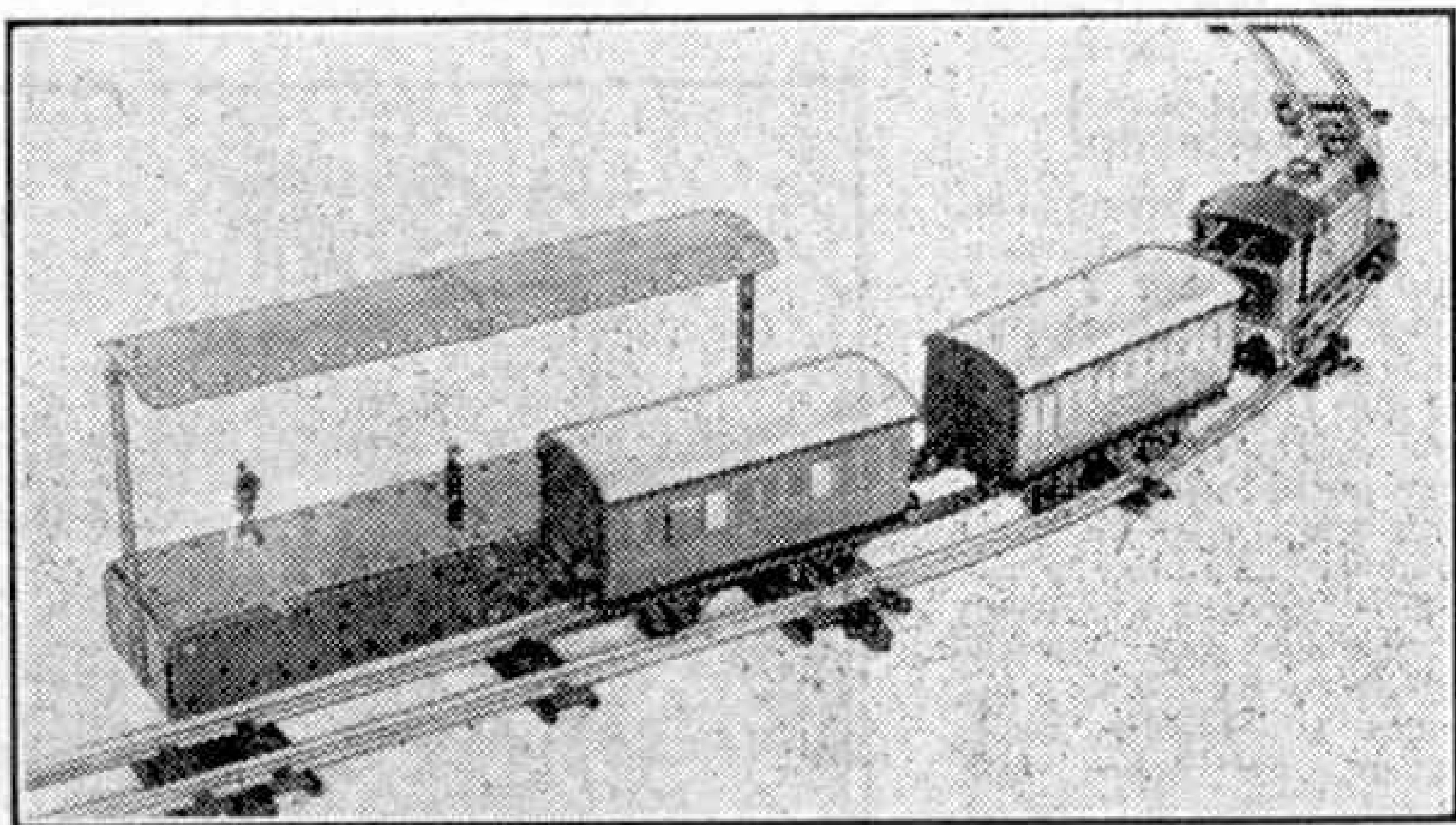
The next thing we shall want will be an alternative stopping place. To provide some variation from the cardboard-box station that we arranged last month we may decide to use Meccano Parts in the construction of a further station. A suggested type of simple platform with an awning to provide some shelter for the "passengers" is shown here. Flexible Plates are used, stiffened along the platform edges by means of Strips bolted on. The sides, ends and top of the platform are joined by Angle Brackets. The awning also consists of Flexible Plates, slightly curved as shown, to avoid too flat an appearance. These Plates are supported by Strips bolted to the ends of the lower structure.

There is of course no need for the beginner to follow this station arrangement in every detail.

We now have two stopping places on our circuit of track and our train service can be made more interesting as a result. It is unlikely that we shall wish the train to stop at each station every time it makes a circuit of the track,

Passenger Train set. The position in which the engine headlamps are displayed is an indication of the class of train that the engine is hauling. In the upper illustration the single headlamp in front of the chimney denotes a stopping passenger train. For reverse running the lamp is placed on the top bracket on the engine bunker.

At the other end of the train the use of the tail lamp is important as this lamp indicates that the train is complete. We should therefore not forget the tail lamp that is shown in the rear of the Guard's Brake Van in the lower illustration. Changing the lamps over according to the direction in which the engine and train is running is a small but fascinating item in the working of the layout.



A two-coach train leaving the station. The Guard's Brake Van correctly displays the tail lamp.

Secondary Trains On Hornby Layouts

MANY Hornby Railway owners concentrate their attention on the running of express trains. There is much to be said for this practice. Many of the real trains are named, or at least they carry destination boards; the rolling stock is invariably of corridor or special types and the engines frequently are of the largest and best-known classes. Provided we have the equipment, therefore, there is plenty of interest in devising and operating a working programme that includes crack trains of this kind. Articles in the "M.M." have frequently included suggestions on these lines.

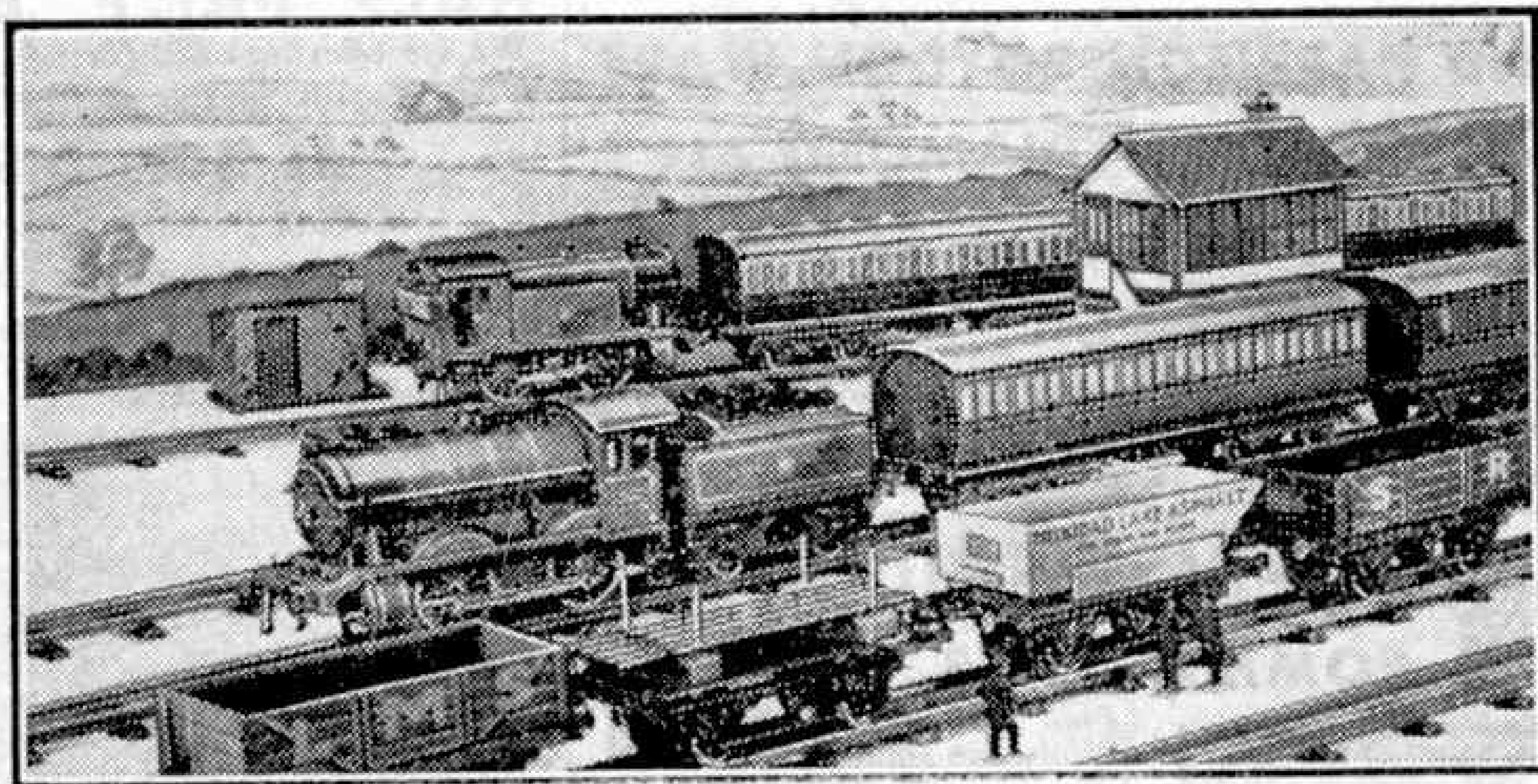
On the other hand a great deal of ordinary day-to-day business of the railways is carried out by more ordinary services. These are the stopping trains that do so much of what is usually called "roadside" work. Owing to the variety of their duties and the types of vehicles used they are of special interest to the Hornby railway owner. At times the best main line corridor stock may appear on

such trains, particularly if they have anything of a long-distance character about them. Frequently however they consist of compartment stock. The ordinary Hornby Coaches such as the No. 2 vehicles shown in the accompanying illustration are good examples; on smaller layouts the four-wheeled No. 1 Coaches also are very suitable. At times coaches of different kinds may be used together and we can do the same thing in miniature. It may look odd, but it is realistic; and those with a miscellaneous collection of stock, such as is often the case nowadays, will be glad of the opportunity.

Many different kinds of engines also appear on these trains, so that if we have several Hornby locomotives in service we can use each one of them in turn. The

ideal type for a main line train of this character is the No. 1 Special tender engine, which makes a splendid general-purpose locomotive. Trains on shorter runs can be handled by the corresponding tank engine. Each of these types appears in our illustration.

These are the trains that are often used for the conveyance of odd vehicles for some particular traffic between stations. It is therefore quite in order for our train to make a prolonged stop at a wayside station in order to attach a van that is to be taken down the line. The odd milk van or tank wagon, an ordinary goods van or possibly a ventilated or a livestock vehicle conveyed in this way can each be represented by the Hornby railway owner



Main line and branch line stopping trains on a Hornby layout. Both engines are G.W.R. but the tender engine is hauling L.M.S. rolling stock.

who is fortunate enough to possess some of the varied vehicles of these types formerly available.

A vehicle run in this way can be attached "inside the engine," that is immediately behind the tender; alternatively it can be coupled at the tail end of the train. The exact nature of the layout and the position of the sidings will have some influence on its place in the train. Which-ever scheme is used, the presence of a goods van in a passenger train formation gives an interesting air to the proceedings.

Another possibility is the conveyance of a through coach over that part of its journey included in our own layout. For this purpose a Hornby No. 2 Corridor Coach displaying actual or imaginary names on its destination boards can be used.

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Stamp Collecting

The World's Most Valuable Stamp

By F. Riley, B.Sc.

IN our Empire tour we last stayed for a time in the Antarctic regions. Now we go northward from the Falkland Islands along the east coast of South America, a voyage of more than 5,000 miles, to the three Guianas, a great tract of land that is divided between the British, the Dutch and the French. Of the three Guianas the British colony is the largest, and is the only British-owned land on the mainland of South America. It is about as large as Great Britain, but has only some 306,000 people in it, of whom 53,400 live in the capital, Georgetown.

As would be expected of a country so near the Equator, which runs only a few miles south of British Guiana, the climate is warm, but healthy in the interior, and the conditions favour the luxuriant growth of vegetation with a continuous succession of tropical fruits and flowers. Wild life too is abundant, and in particular the bird, insect and fish life of the country is indescribably rich. Gold, diamonds and bauxite are mined in the country, which is crossed by great mountain

ranges and rivers. There are mighty waterfalls too. The best known of these is the Kaieteur, which has a sheer drop of 741 ft. and a total height five times that of Niagara.

The Dutch appear to have settled in the Guianas first, and they were followed by Spaniards, English and French, all of whom fought each other with varying fortunes. What is

now British Guiana was acquired in 1803 and formally ceded by the Dutch 11 years later.

When we turn to the stamps of this interesting country we are faced first with a classic in the most valuable of all stamps, the 1c. of 1856. The first stamps of the country, issued in 1850, bore only the words "British Guiana" and "12 Cents," and were initialled by the postmaster or Post Office clerks before they were issued. These are very scarce indeed, and highly priced, but they are far surpassed by the 1856 stamp, one of an issue printed in British Guiana to meet a temporary deficiency in supplies. To-day only one specimen remains. This was found among

some old family letters by a schoolboy in 1873, who sold it for 6/-. The stamp was clipped at the corners and badly rubbed, but in 1922 it was bought for over £7,000 by an American millionaire. Since then it has again been sold, to an unknown collector, and the price is reported to have been about £10,000.

As early as 1852 there appeared the first design with the well-known ship device, which in various forms and with certain changes continued as late as 1921. This ship in fact became characteristic of the stamps of British Guiana, although a pictorial issue came as early as 1898, when two designs showing respectively Mount Roraima, the highest peak in the country, and the Kaieteur Falls were issued. It made its last appearance in the issues that were current from 1913 to 1931, which had the same design for all values, with variations from time to time in shade and colour. On this the head of the sovereign appeared for the first time, with the ship in a circle below it.

Then came the first of the modern pictorials, celebrating the centenary of the union of the three

counties into which the country was divided until 1831. These were named Demerara, Essequibo and Berbice, after the principal rivers that drained them. There were five stamps in the issue. On one of them, the 4c. value, the Kaieteur Falls re-appeared, a design that was repeated in the \$1 value. The public buildings of Georgetown were shown on the 6c. value, which also gave the

names of the three original counties, as did the 1c. value, featuring ploughing operations in a rice field. The remaining 2c. value pictured an Indian shooting fish with a bow and arrow. All four designs showed the two dates 1831 and 1931.

It was not long before a further pictorial set appeared, for in 1934 there was another issue, this time of 13 values. Three of these repeat designs of the 1931 issue, re-drawn and without the centenary dates, but the others were new and all of them helped to give some idea of life in British Guiana. Among their subjects are logs shooting over falls, a road through the forests, sugar canes piled in punts or barges, gigantic Victoria Regia lilies, botanical gardens and alluvial gold mining, while our old friend Mount Roraima also re-appeared. The colours vary from the green of the 1c., the red-brown of the 2c. and the scarlet of the 3c., to the purple, black and bright violet of the three highest values, 72c., 96c. and \$1 respectively, so that it can fairly be claimed that this fine pictorial set is colourful.

The Silver Jubilee and Coronation issues followed the usual lines of British Colonial stamp celebrations of these two events, and they were succeeded in 1938 by yet another attractive pictorial set. In this designs from the 1934 set were repeated, with a portrait of King George VI, and the map stamp illustrated here was added.





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Stamp Gossip and Notes on New Issues

By F. E. Metcalfe

WITHOUT a doubt the most widely collected group of stamps is our own Commonwealth issues of the present reign. Their popularity is to a great extent due to the fact that they are pictorials—there are other factors as well, of course—and proof of this is to be seen in what recently happened over the new "Life Insurance" set of New Zealand.



Perhaps the duller set in the catalogue is the one which has just been superseded. Special postage stamps for the official use of the New Zealand Government Life Insurance Department were issued as long ago as 1891, but their appearance was all against them, and it is probable that more of the new "Lighthouses" have already been sold than of all the rest of the previous issue together.

Australia has brought out one or two very nice commemorative sets

recently, and as there are always plenty to go round, and they are of a fairly low face value, everybody is happy except the poor dealer, who finds a large proportion of them so badly centered that he often has difficulty in disposing of them. The latest set to appear consists of three values, 2½d., 3½d. and 5½d. The stamps are line engraved and issued to commemorate the sesquicentenary of the City of Newcastle, in New South Wales. Quite appropriately coal is the motif of the top value.

For some time collectors have been expecting new sets for Malta and Gold Coast, but there is now definite news that not only is Bahamas to have a new commemorative set, but Trinidad also; the latter will be a replacement of the present issue, not a commemorative set. If the new stamps are as attractive as the old ones collectors will be satisfied.

There has been talk for some time that as the West Indian colonies may change their currencies from sterling to dollars, they will naturally have to change their stamps as well, which means a big hole in their pockets, perhaps at a time when they won't have quite so much spare cash as they would like. There is one certainty, however. Money spent on these new colonial stamps while they are current is only one way of saving, for these stamps are always worth their face value at the least.

Talking of colonial stamps, attention may be given to some of the air stamps issued for some of the Netherlands colonies. Curacao is a case in point. We are illustrating one of these, which is a good example of the modern designs favoured by the country in question. They are quite attractive, but unfortunately far too many of them are



being issued and collectors get tired in time.

A stamp of particular interest to many readers is the French "Jamboree" emission, which of course came out to commemorate the holding of the great Boy Scout reunion in France. Readers will re-



member that Holland produced a stamp with a similar motif some years ago, but this French effort is far superior in every way. There is no doubt about it that while the French authorities bring out all these new stamps almost exclusively for sale to collectors, they do try to give collectors something for their money. They are very proud of their stamps, and it is said that when the Germans were nearing Paris in the last war, the greatest care was taken to see that the printing presses were got to safety.

It speaks well for our own colonial stamps that they are able to more than hold their own in collectors' affections against such competition as many of these European countries are putting up. Our own Post Office is evidently against pictorial stamps. Fortunately other ideas prevail for the colonies, but the announcement that Antigua, Montserrat, St.

Kitts and Virgin Islands are to have 10/- and £1 stamps is too much of a good thing, for the face value alone amounts to £6. It is to be hoped that they do not come out all together.

It seems strange to associate Iceland with air mails, though of course this island has had an air service for quite a time. The recent set of five stamps is a very handsome one indeed, and we will try and find room next month to illustrate one.

Bundi, one of the Indian native states, has recently issued a set of stamps, up to 1r. As stamps have

come out lately from various native states of India, some collectors seem to be taking more interest in these issues and more than one has asked the writer's opinion about them. Generally speaking they cannot be considered investment items, though some of the older ones would cost many pounds to buy, but it must be remembered that these stamps are prepared for postal use, they are often printed on locally made paper and designed and printed in the states themselves, and are always, in their quaintness, very interesting. Quite a nice collection can be got together for a small sum, and any reader who fancies collecting them should go ahead. In the end he will become quite fascinated with what he gets together.

Interesting railway stamps have been issued by Denmark and Switzerland, countries in which the first railways came into existence 100 years ago. The Danish set comprises three stamps, one of which depicts the first locomotive to run in Denmark, a British product. There are four from Switzerland, all superbly printed. We hope to illustrate stamps of these issues in next month's "M.M."

And now for this month's tip. Most readers will know the Burma set which came out last year in changed colours. Well the 3½a. was off sale long before dealers started to stock up, and they hold many sets short of this value. It will be a nice stamp in time.



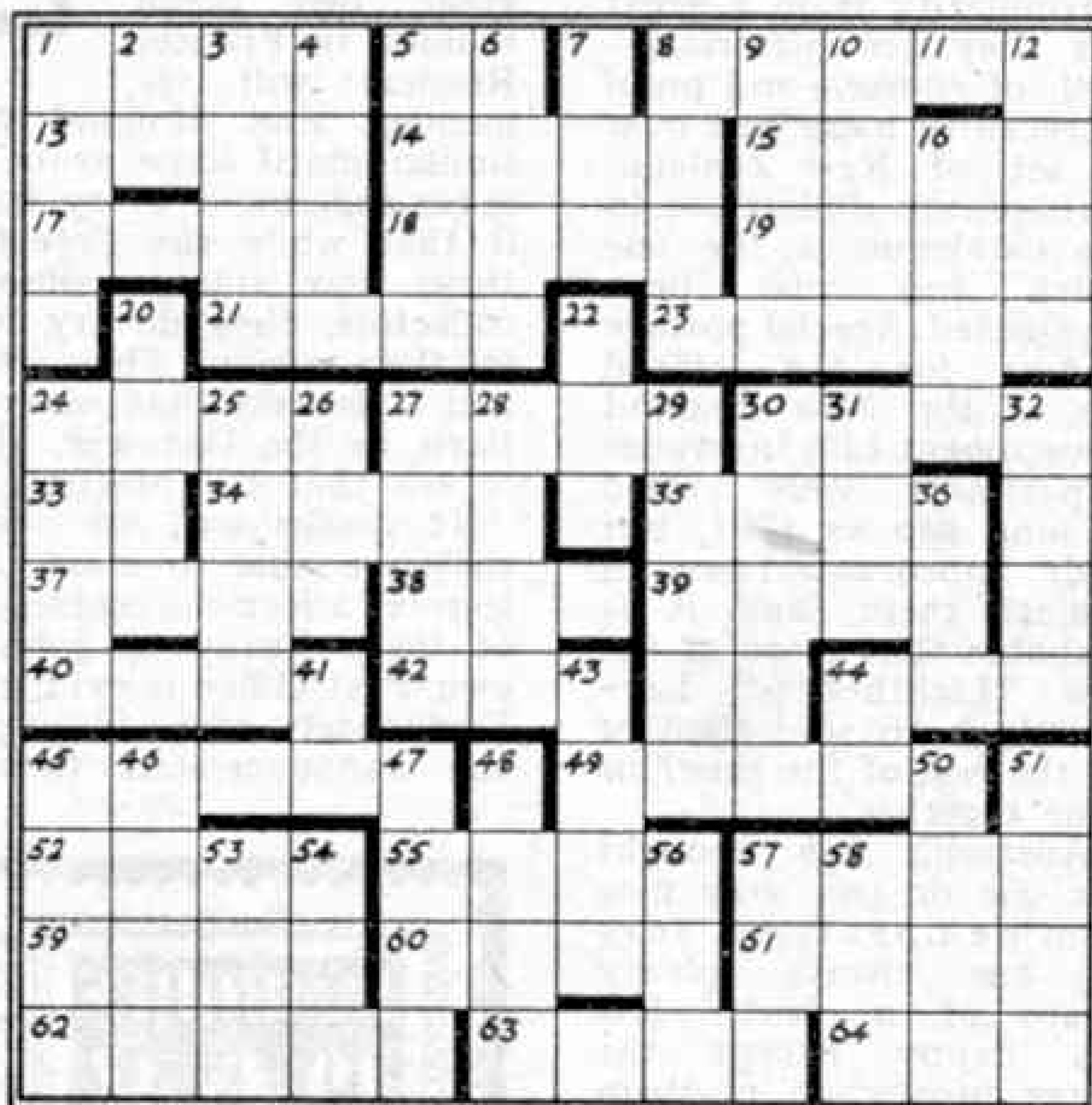
Competitions! Open To All Readers

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

CLUES ACROSS

1. Light cavalryman. 5. Stinging plant. 8. This one does not chase the hare. 13. Prepare the way. 14. The first 4-cylinder "Star." 15. Capital of Canada. 17. Not from Rheims. 18. Lake famous in song. 19. "Frewin Hall." 21. Rearrange "Mcw Warm." 23. Prince, but not a Prince. 24. Famous Cunard-White Star liner. 27. Popular for snacks. 30. Cannot be ridden. 33. Mixed up gives Woodginn. 34. London River. 35. Reversed Scott character. 37. Signed Magna Carta. 38. Another Hunt. In the Z class? 39. "Whirlwind" engine. 40. London Abbey. 42. Knight of Round Table. 44. Partner of the Countess. 45. Another name for Mercury. 49. Japanese emblem. 52. A Cornish river. 55. Sea bird. 57. On Thameside. 59. Cheshire earl. 60. Very famous Admiral. 61. Channel Island. 62. The number has been turned here. 63. Dickens character. 64. Historic Breton town.

Locomotive Cross-Number Puzzle



CLUES DOWN

1. City famous for its aircraft manufacture. 2. I.O.W. town. 3. "Doldowlod Hall." 4. An Arrow, but not gold. 5. Night's best singer? 6. Famous

bomber, now obsolete. 7. A Southern Knight. 8. A former "Mikado." 9. L.N.E.R. Compound "Atlantic." 10. "Natal" 12. Another Hall. 16. A Crewe-built 0-8-0. 20. A challenging aircraft. 22. Famous "Spitfire" engine. 24. For which the Victoria Cross is awarded. 25. Designer of the "Royal George." 26. Three-quarters of the Royal Army Service Corps. 27. A famous hall in London. 28. Was "Novelty." 29. "Ben's" surname begins with V. 30. A London rail terminus. 31. Wizard. 32. A burner. 36. Devonshire School. 41. Part of France. 43. Two fish in one name? 44. An island and is worn. 45. Fruit of Pershore. 46. G.W.R. lady from Cornwall. 47. Bird that swims, but does not fly. 48. "Jane's" Tramway Hall. 50. Shot too high. 51. An Exe Castle. 53. Follows "Sir Gareth." 54. A well-lighted School? 56. True-blooded Britisher. 57. Hunt in the Dales. 58. School in Salop.

This month we present another of our popular Locomotive "Cross Number" puzzles. This resembles an ordinary crossword puzzle, but the clues lead to locomotive numbers instead of words.

To give an example, the solution to clue 1 across is "Hussar," the name of L.M.S. locomotive numbered 6154. It is this number which is used to fill in the four squares. An important point to note is that in this puzzle the numbers used for L.N.E.R. engines are those employed before the recent renumbering.

The competition, which is the work of our reader

L. M. R. Bray, London N.W.2, will be divided into two sections, for Home and Overseas readers respectively, and in each section there will be prizes to the value of 21/-, 15/- and 10/6, together with a number of consolation prizes. In the event of a tie the judges will take neatness and originality into consideration.

Envelopes containing entries should be addressed to "November Locomotive Puzzle, Meccano Magazine, Binns Road, Liverpool 13." The closing date in the Home Section is 31st December 1947, and that for Overseas is 30th June 1948.

Draw Your Favourite Locomotive

In our second contest this month we again give readers opportunities of displaying their skill in drawing. For our subject we have chosen locomotives, and entrants are asked to submit a drawing of the locomotive they like best. There is no restriction on the choice of locomotive, which may be steam, electric, diesel or diesel-electric. The judges will make their decisions on the merits of the drawing, not on the type of locomotive selected.

Colour may be used if desired to set off a good drawing, but it must be borne in mind that bright colours will not compensate for bad drawing.

There will be the usual two sections, for Home and Overseas readers respectively, and in each the best entries will be awarded prizes of 21/-, 15/- and 10/6 in order of merit. Other good entries deserving of recognition will be awarded Consolation Prizes.

The name and address of the competitor must be written on the back of each sheet of his entry, which should be forwarded in an envelope or wrapper

addressed "November Drawing Contest, Meccano Magazine, Binns Road, Liverpool 13." Closing dates Home, 31st December; Overseas, 30th June 1948.

November Photographic Contest

This month's photographic contest is the 11th of our 1947 series, and in it, as usual, prizes are offered for the best photographs of any kind submitted. There are two conditions—1, that the photograph must have been taken by the competitor, and 2, that on the back of the print must be stated exactly what the photograph represents. A fancy title may be added if desired.

Entries will be divided into two sections, A for readers aged 16 and over, and B for those under 16. They should be addressed "November Photographic Contest, Meccano Magazine, Binns Road, Liverpool 13." There will be separate sections for Overseas readers, and in each section prizes of 21/-, 15/- and 10/6 will be awarded. Closing dates: Home Section, 29th November; Overseas Section, 31st May 1948.

Fireside Fun

"You seem to think I'm just a miserable idiot."
"Oh, no. You're cheerful enough."

"You haven't done your geography homework, Brown! How is that?"

"Well, sir, father says the world is changing every day, so I thought I would wait for it to settle down again."



"Did you see a small boy ring the bell and run away constable?"

"It wasn't a small boy, sir!"

"I say, Bill, do you know anything that still has some when the whole is taken away?"

"Of course not. That's impossible."

"No, it isn't. Try it with wholesome."

"I wonder why sailors wear loose-fitting clothes."

"Oh, it's to allow for shrinkage if they fall overboard."

THIS MONTH'S HOWLER

Lords and commons are where cricket is played.



"There Madam! What better proof is required that they're pure wool. Look at the moths!"

BRAIN TEASERS TRICKY COUNTING

A man in a train wished to know how fast he was travelling, and set out to do it by the well-known method, counting telegraph poles. He looked at his watch and counted one as the first telegraph pole on a long stretch of line was passed. Exactly half a minute later he counted 12. If the telegraph poles were 60 yds. apart, how fast was the train going?

T. K. C.

TWO WAY CODING

Here is a rather teasing code puzzle. The code itself is very simple, and as a clue it may be said that it works in two directions. What is the well-known proverb represented by the following:

B TSJUBI HM SHNF TBWDR OHMD?

P. J. C.

ANOTHER MATCH AFFAIR

Readers who tried the match puzzle in our September issue will find this one a little easier. Place eight matches in a row and then move four of them in turn to give four pairs, passing each match moved over two other matches.



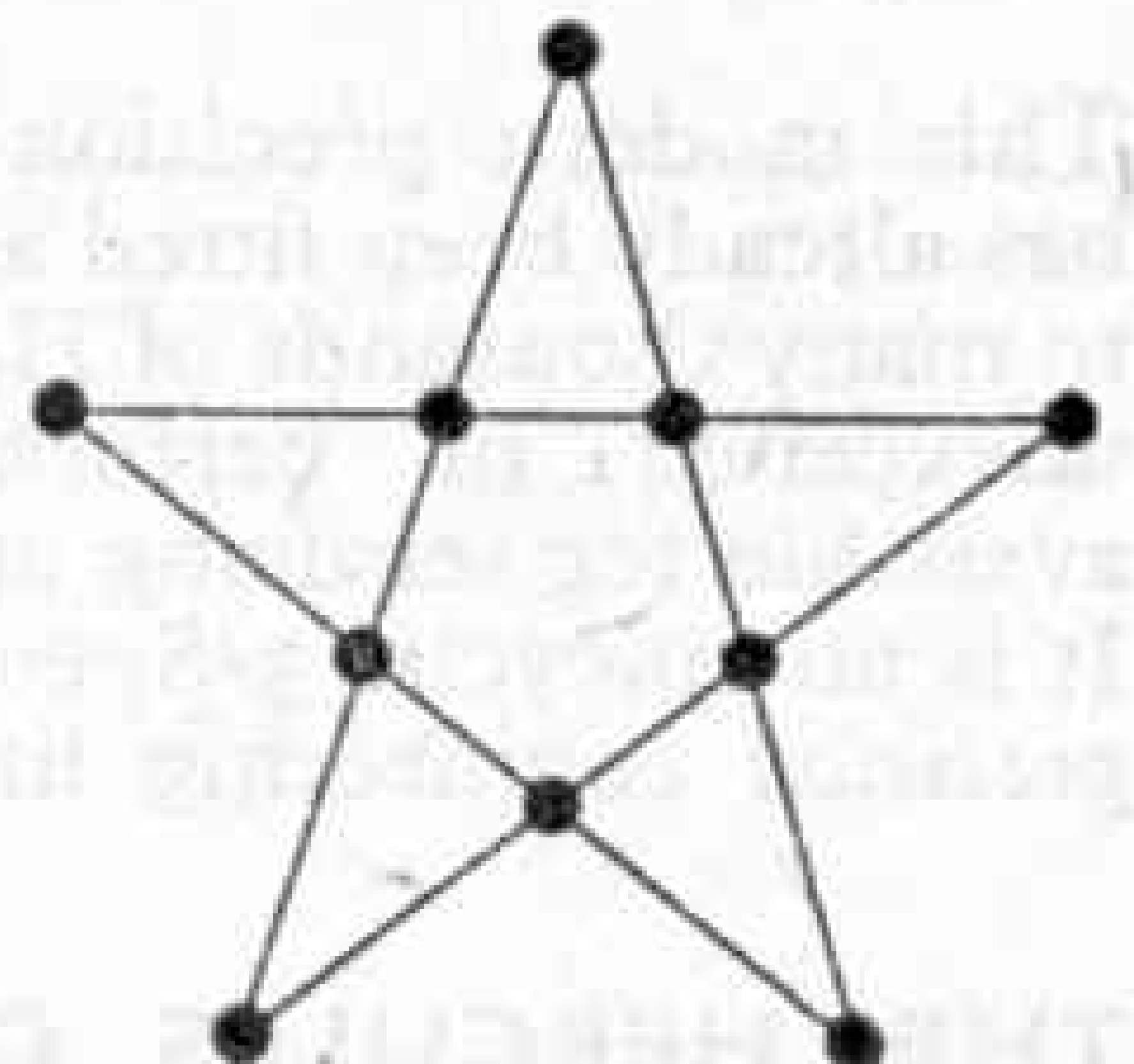
"You won't learn to play golf watching me."
"We don't want to learn, Sir. We're going fishing when you dig up some more worms."

SOLUTIONS TO LAST MONTH'S PUZZLES

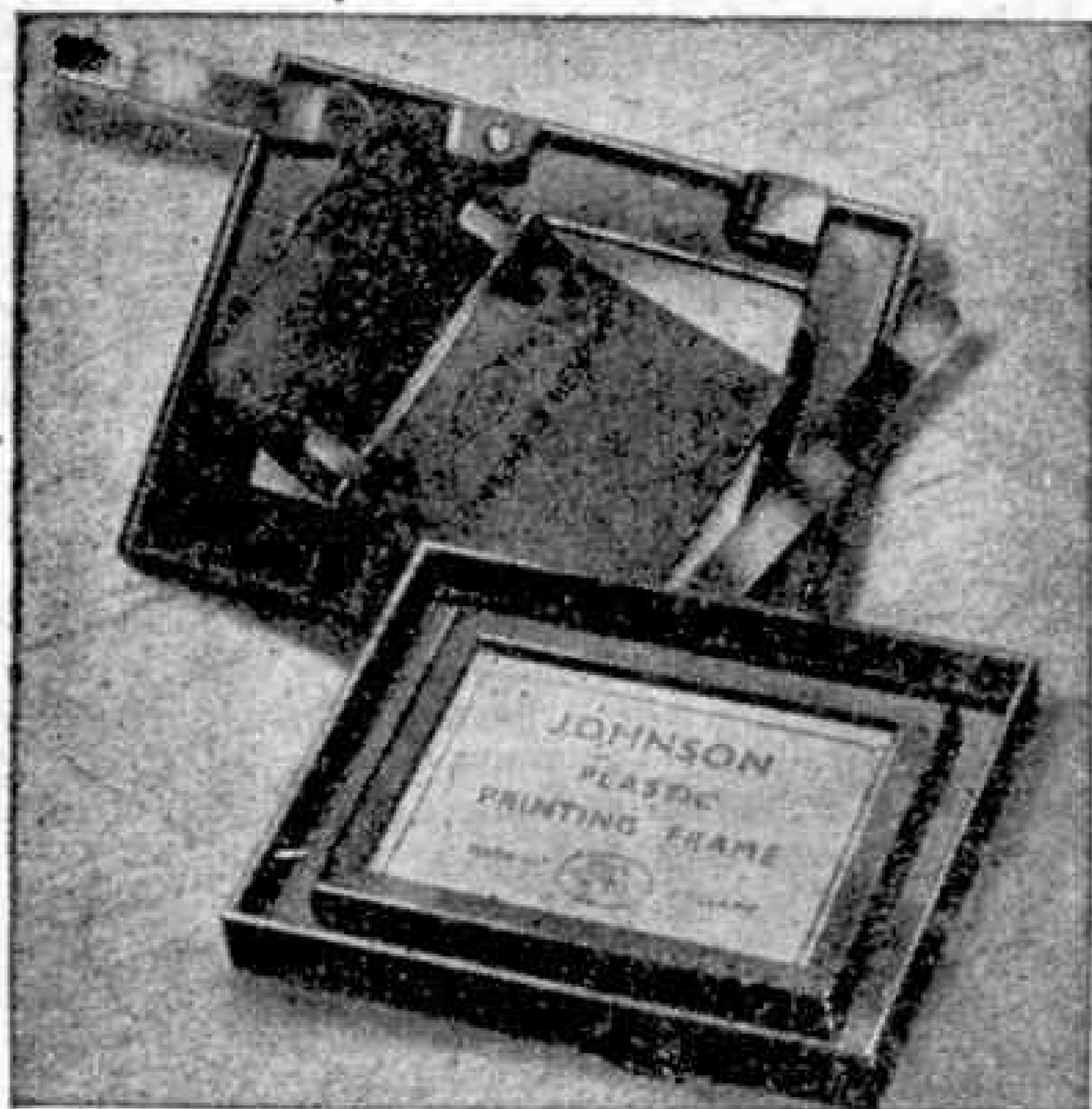
The six words required in our one way crossword puzzle of last month are Lately, Basket, Palate, Vacate, Batter and Saturn. The word formed in the 5th column is Letter.

The accompanying diagram shows how to arrange 10 coins in five rows of four each. Each of the 10 coins appears in two rows.

There are 12 ways in which a total score of 40 may be made by shooting at the target described in our third puzzle last month. The simplest is by scoring five shots in the ring counting 8. The others can be made up from this by additions and corresponding subtractions to keep the total correct. The highest number of bulls in the set of five scores is two.



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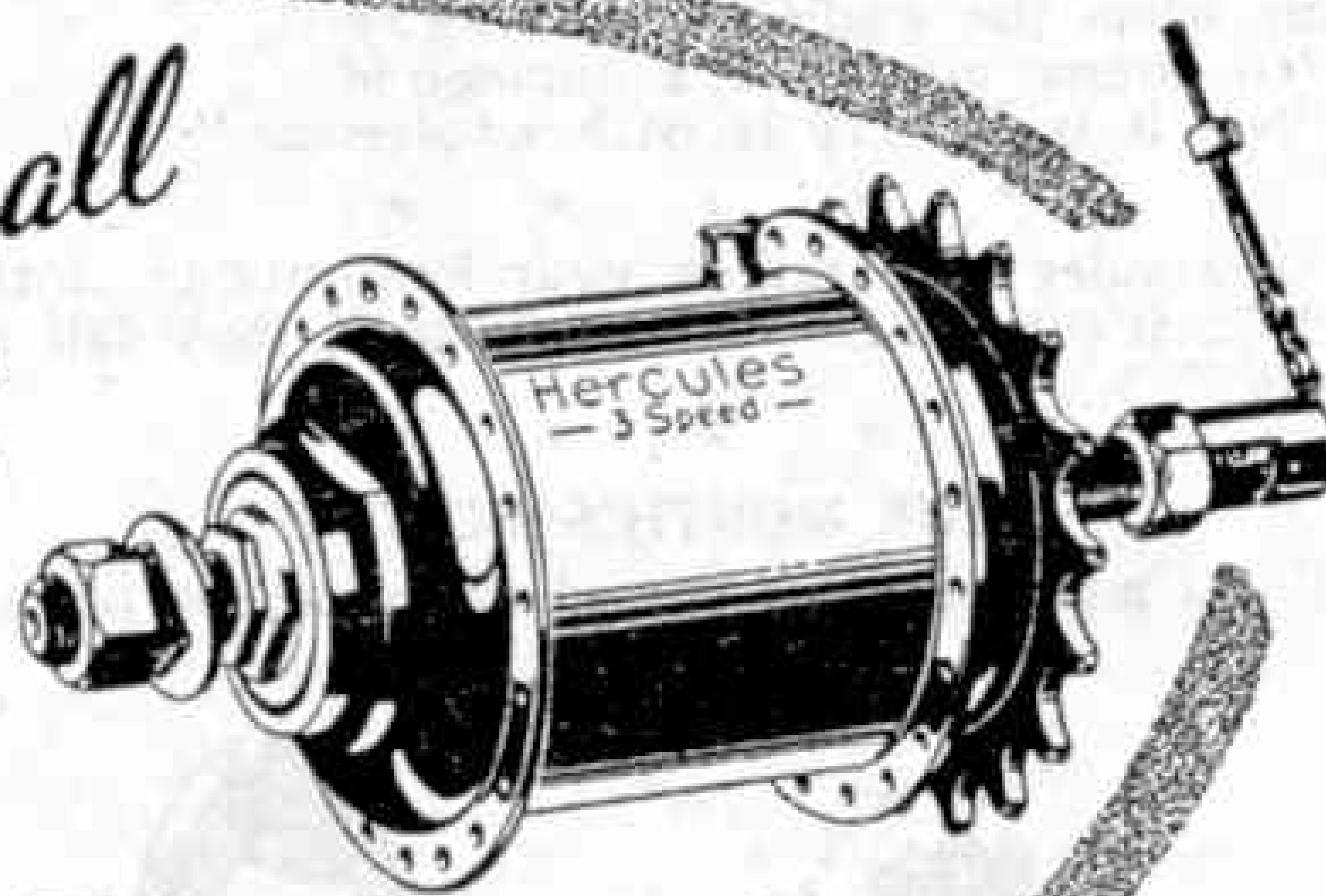
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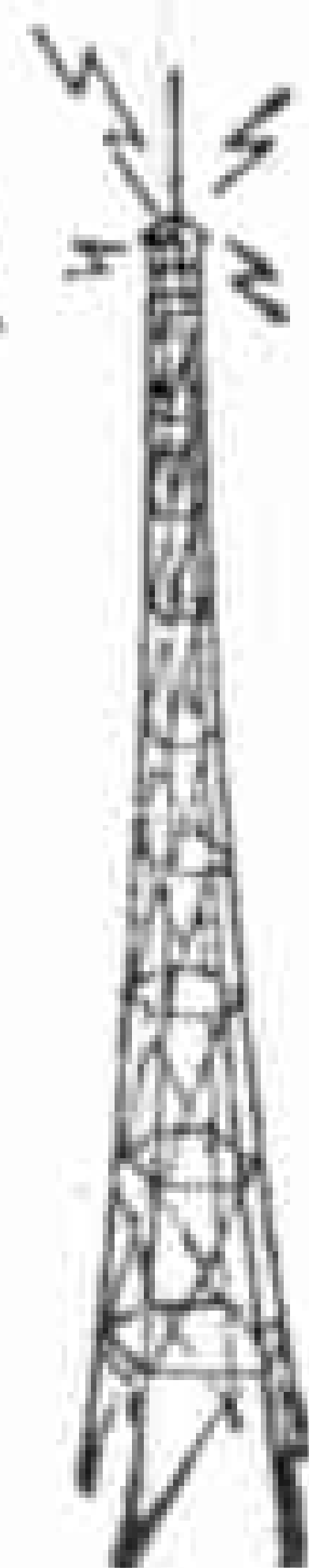
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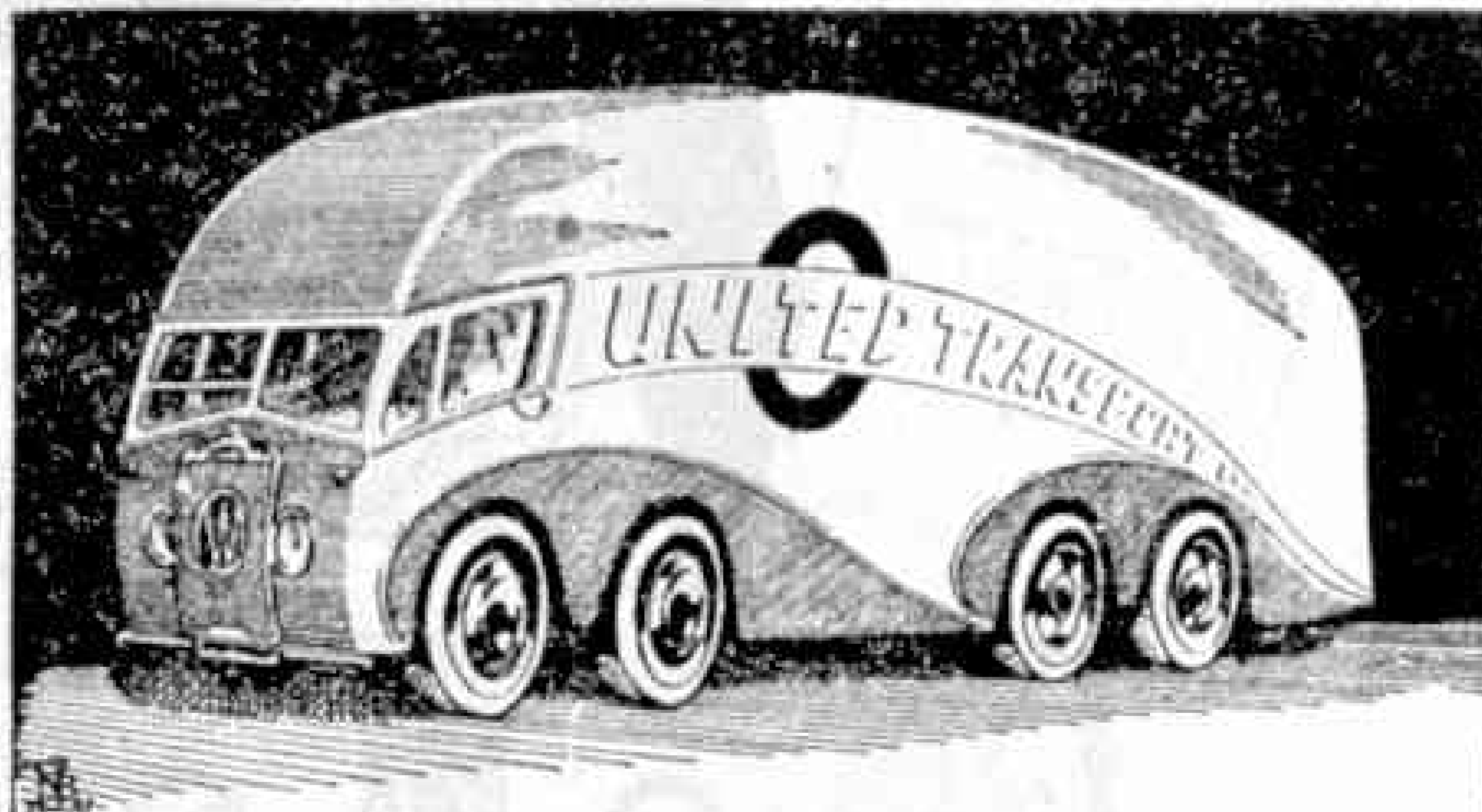
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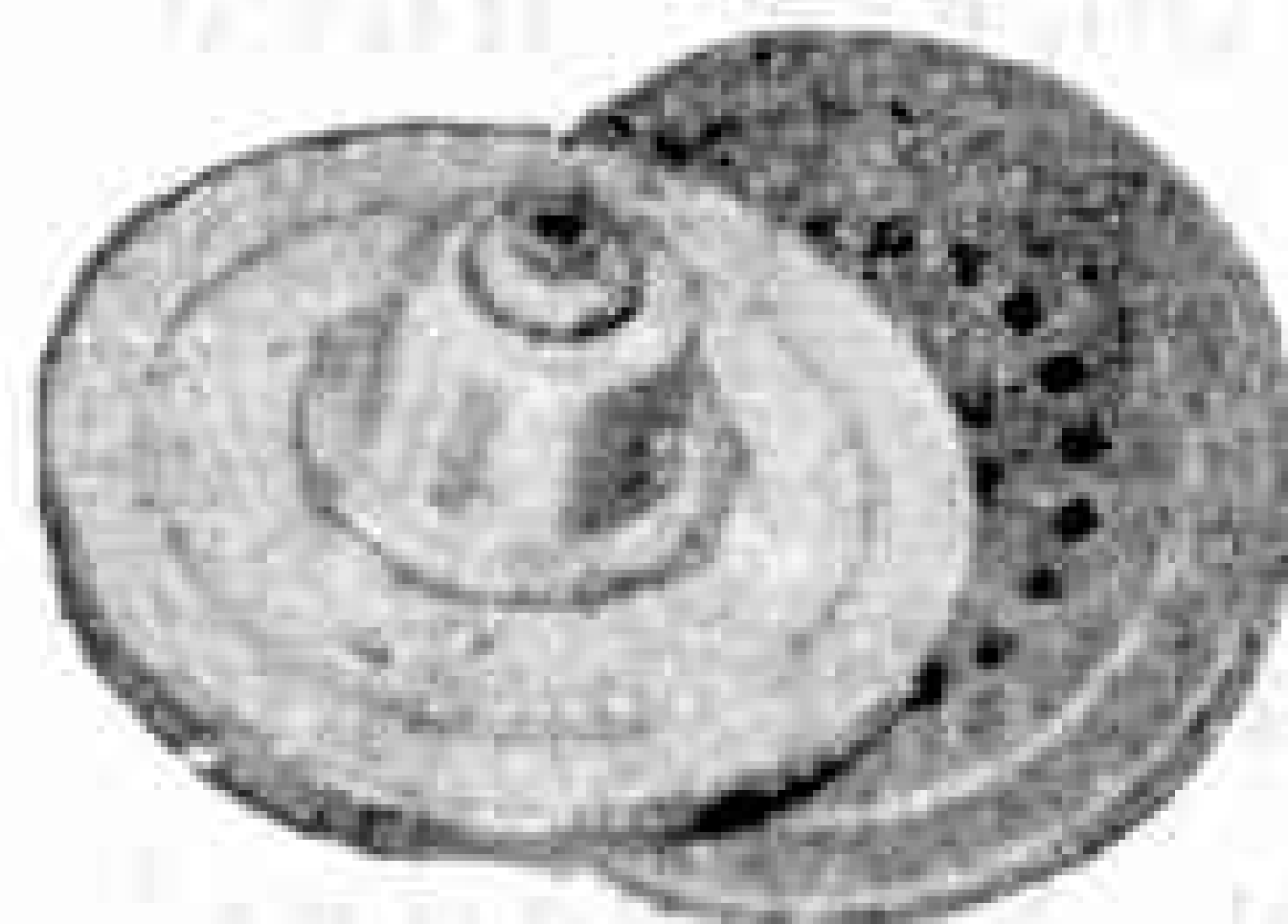
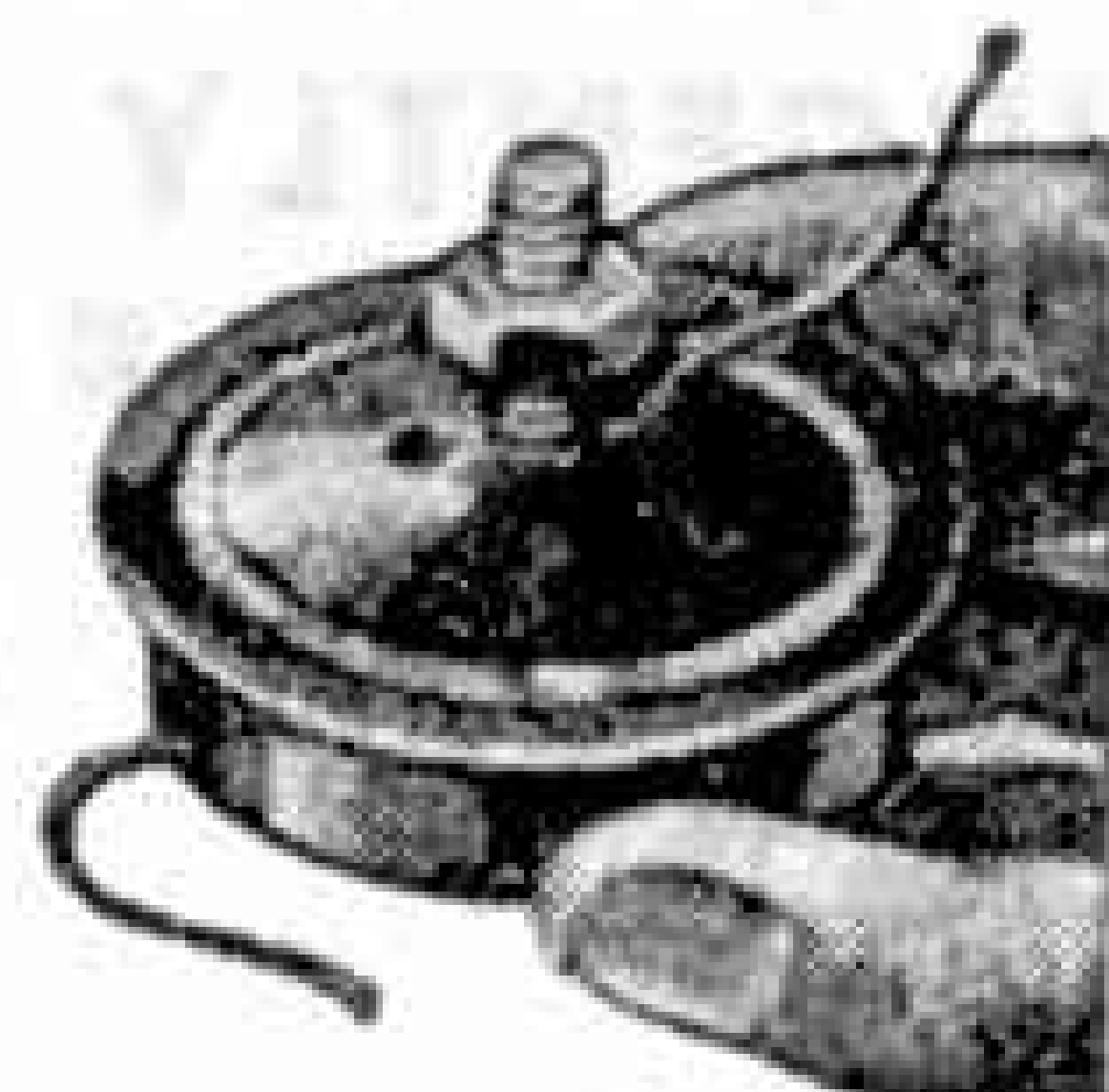
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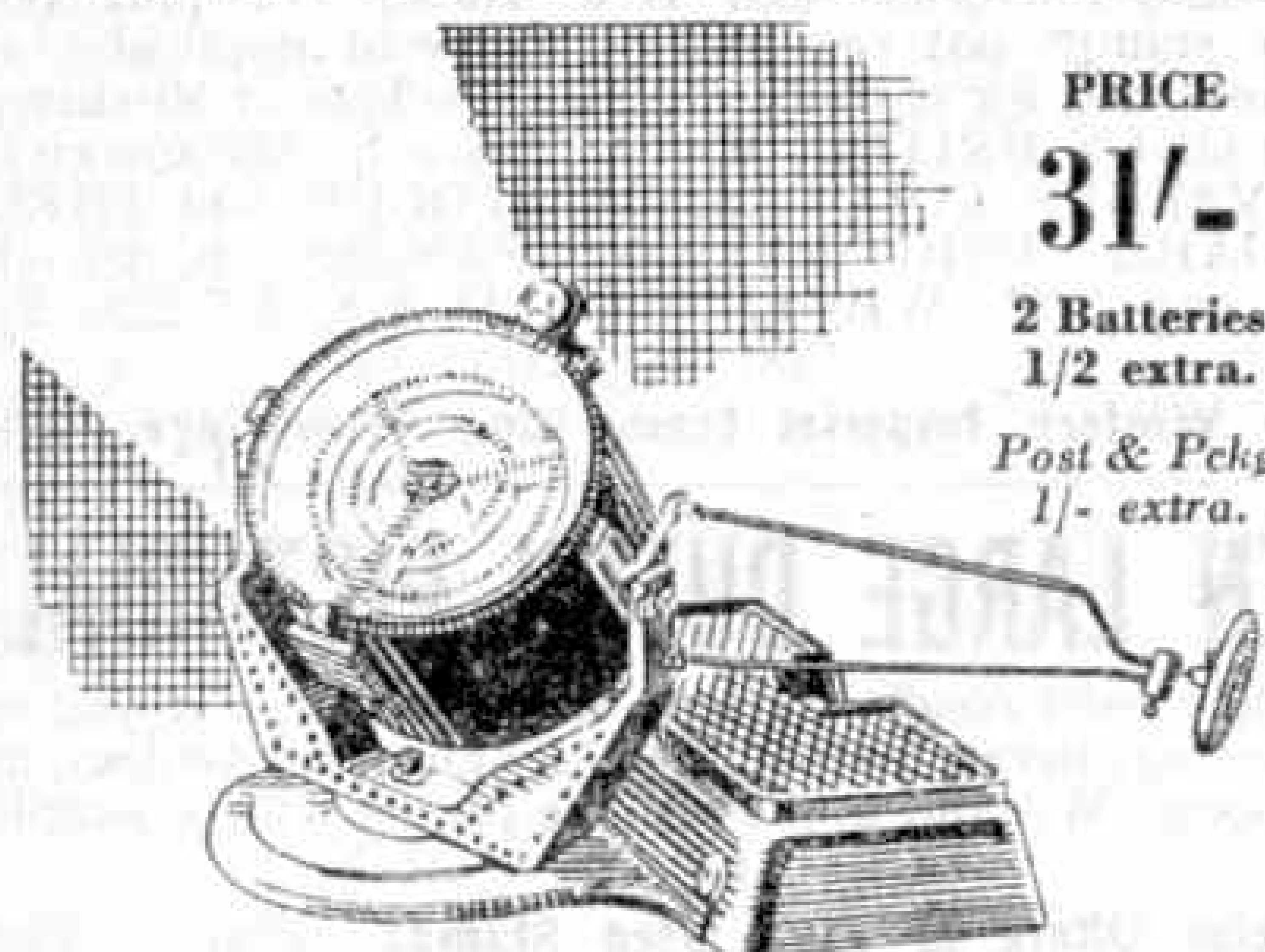
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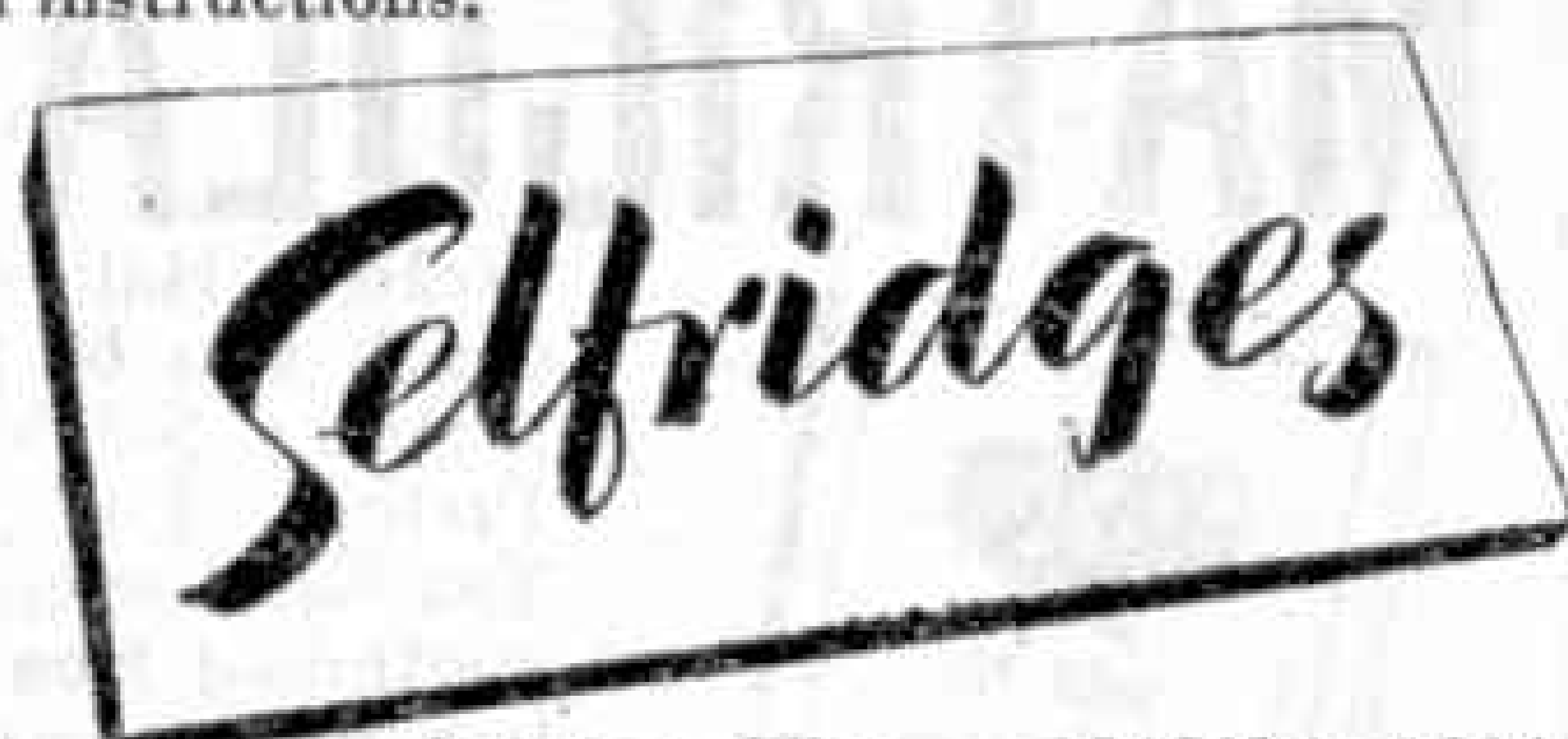
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47 various "Meccano Magazines," 1937–1941; 17 various "Railway Wonders of the World"; Parts 18–46, and 23 various "The Navy," 1941–1943; what offers?—Comben, 10, Redcotts, Wimborne, Dorset.

"Meccano Magazines," January 1942 to December 1946 inclusive; new condition; offers to—Sutherland, 47, Turnbull Street, West Hartlepool, Durham.

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"Meccano Magazines," March 1941–December 1944, inclusive; good condition; what offers?—K. A. Hurt, "Cranmoor" Highfields, North Wingfield, Chesterfield.

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"Meccano Magazines," 1943 and 1944; complete good condition; offers by letter.—Dennis H. Fox, 11, Marston Road, Knowle, Bristol 4.

"Meccano Magazines," October 1938–July 1946; and "Modern Wonders," 1938–1941 (150); good condition; few missing; offers? Cigarette Cards; Hornby Electric Train Set; Construction Kits, etc.; S.A.E. for list.—32, Waxlands, Halesowen, Worcs.

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Any type 00 Gauge Locomotive; state price.—Yarr, Dromart House, Lower Ballinderry, Co. Antrim, N. Ireland.

Hornby Dublo Electric Railway: Rails, Rolling Stock and Accessories, Controls, etc.; in good condition.—Harvey Stewart, "Lismore" Sollershoth West, Letchworth.

"Meccano Magazines," January to June 1943, 1945 and 1946. Apply—D. A. Lilwall, Tyn-y-Borth, Tal-y-Cafn, Denbighshire.

Few photographs of the following places: Baghdad, Rutbah, Basra, Shaibah, Port Said, Suez Canal, Aden, Gibraltar; details to—D. Tomkinson, "Glendower," Rope Lane, Nr. Crewe.

Dublo Tank Engine (Clockwork) with Rails, Trucks, etc.—Offord, 133, London Road, Stockton Heath, Warrington.

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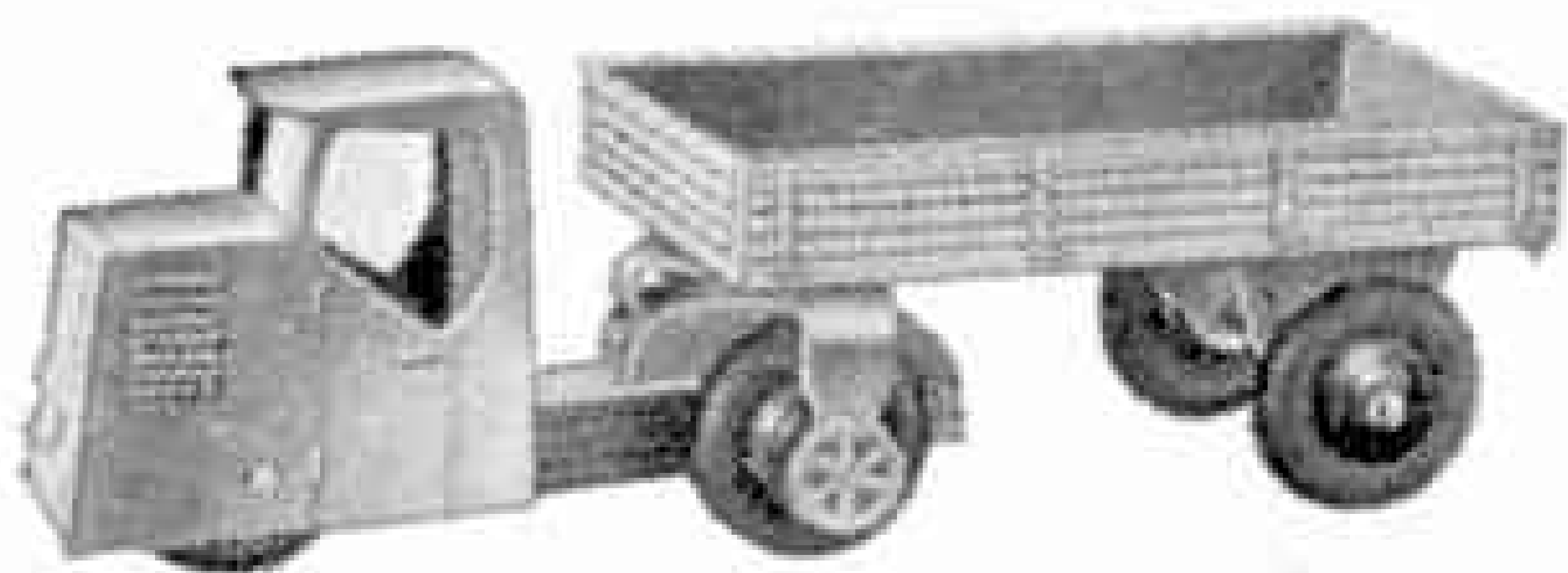
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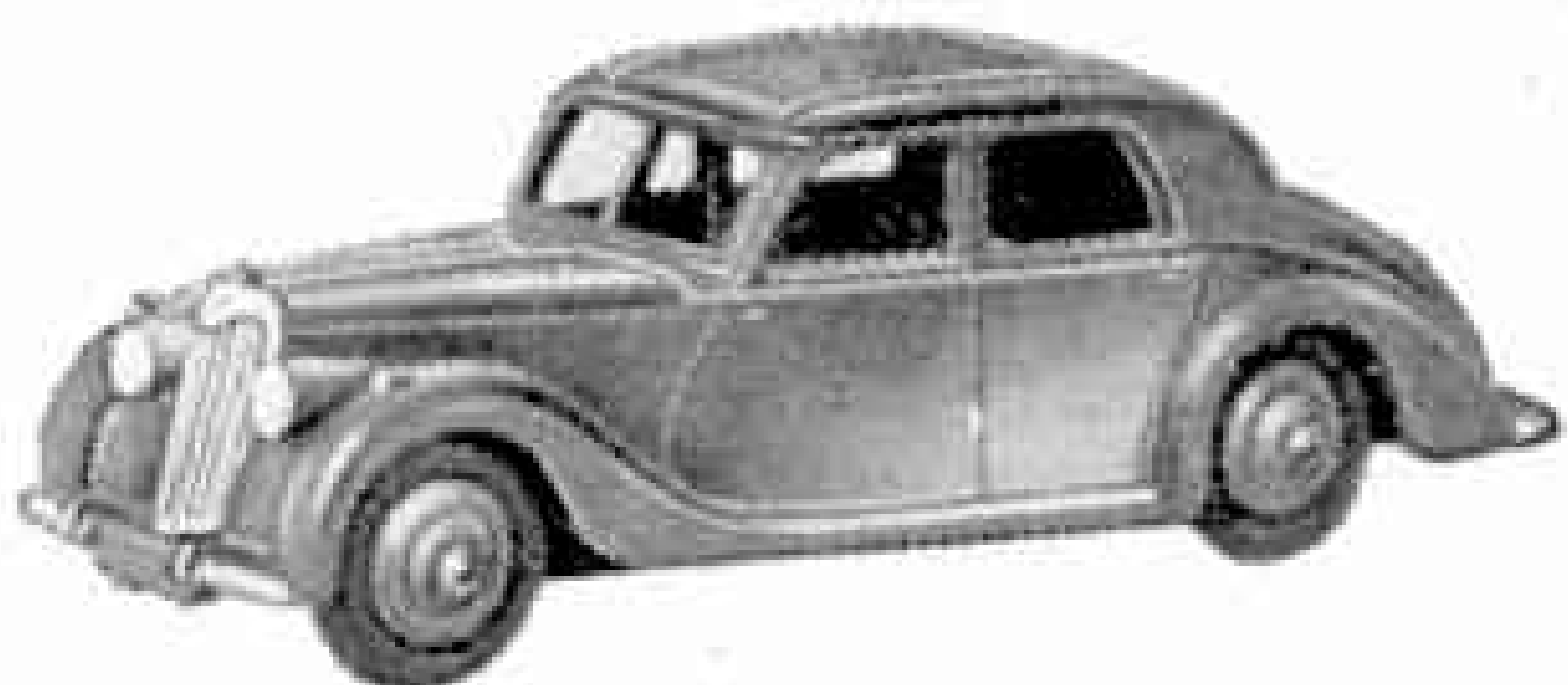
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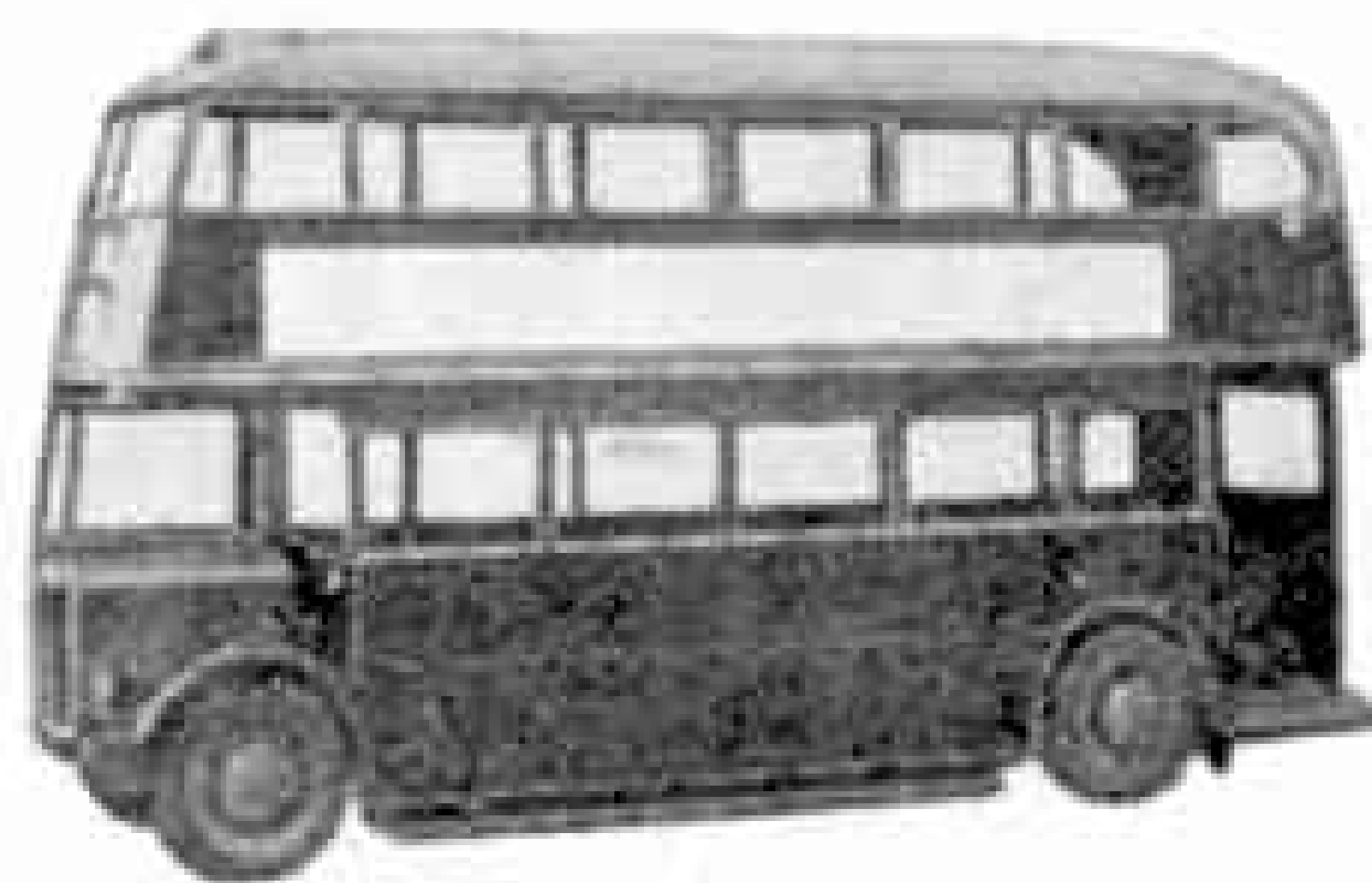
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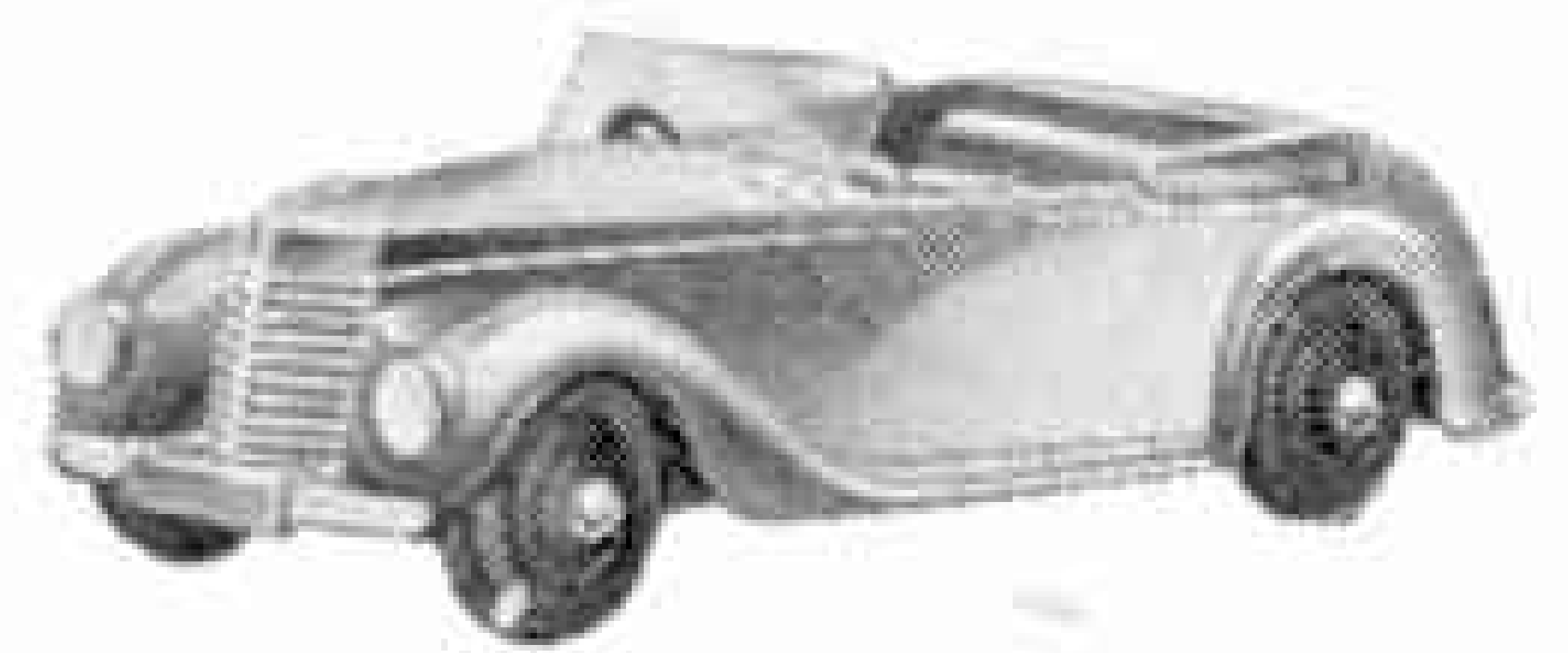
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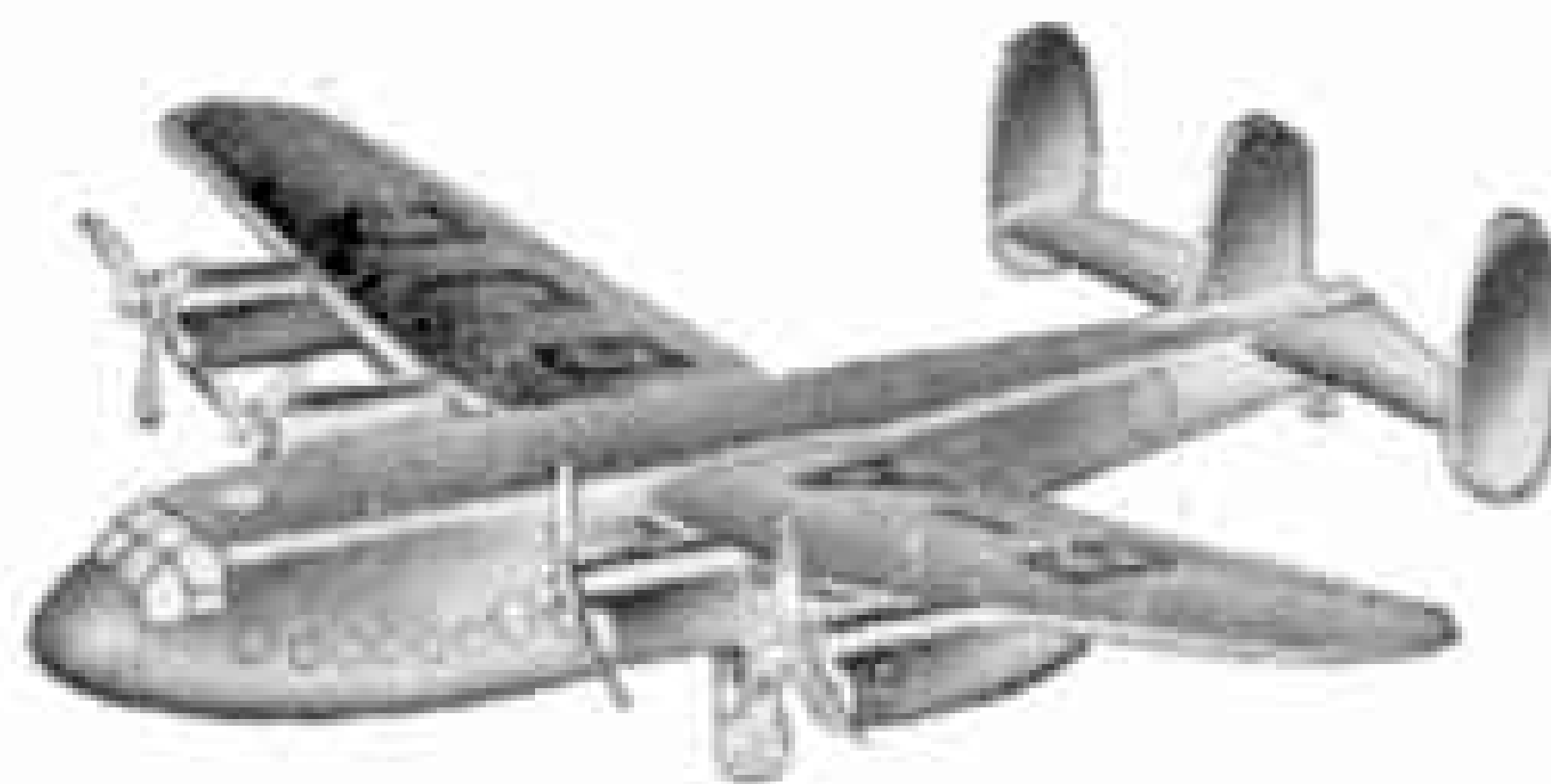
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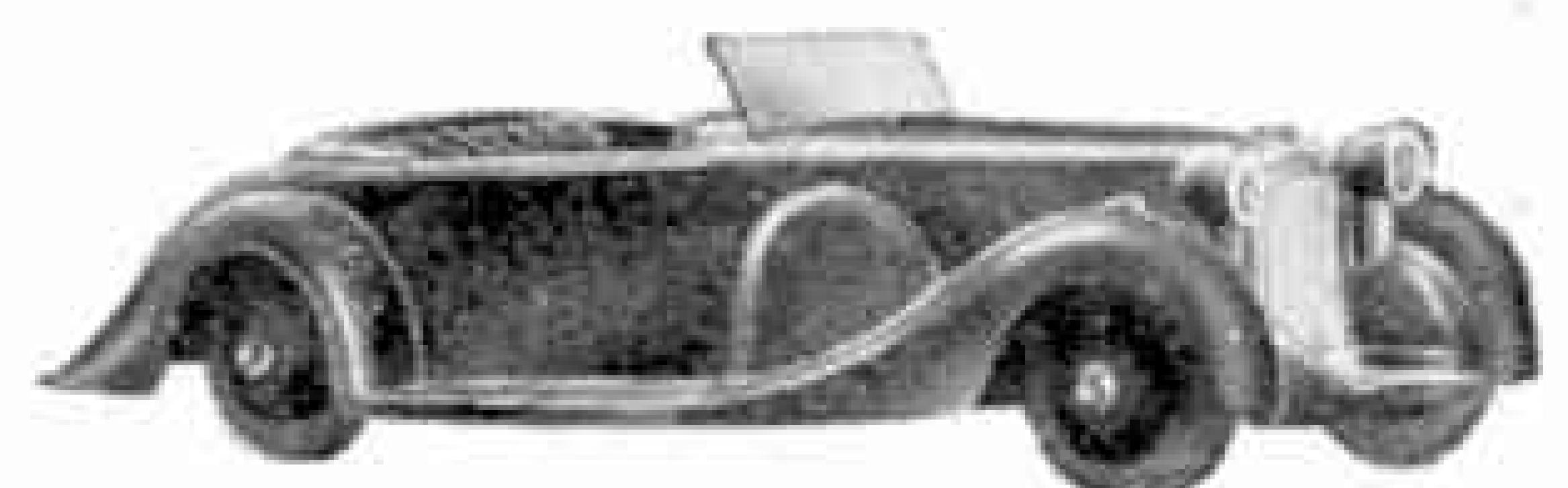
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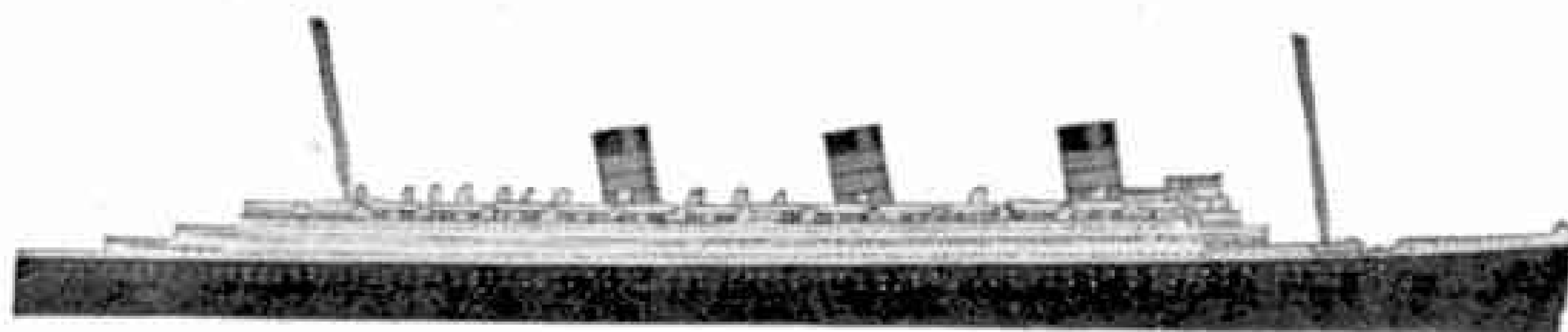
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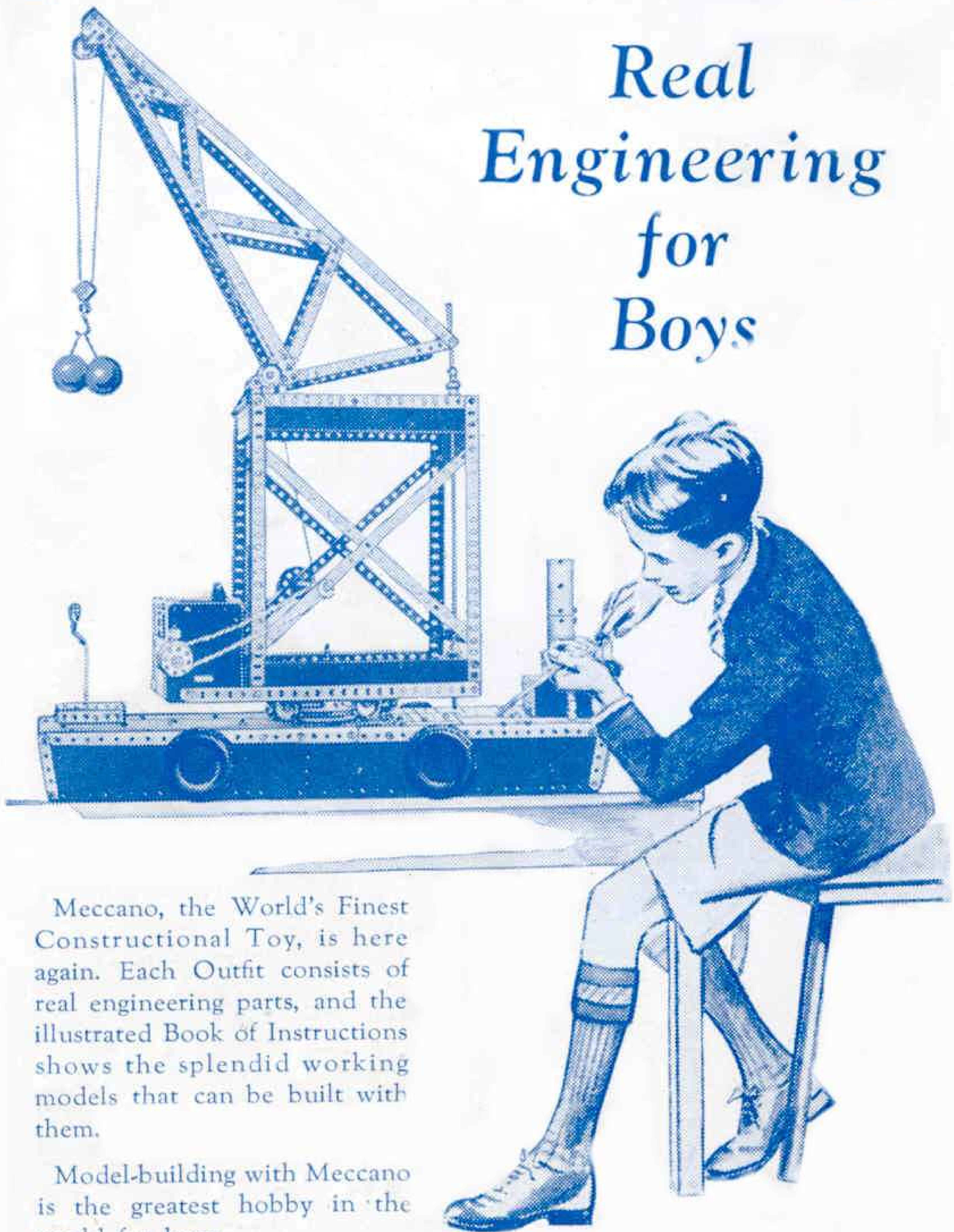
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