

A radio station is shortly to be installed in Vancouver. The cost is expected to be in the neighbourhood of 2,000,000 dollars.

A taxi-cab company in Paris has applied for permission to equip its vehicles with receiving apparatus.

An enterprising Lincoln barber has installed a radio receiver in his saloon for the use of customers.

The control of a steam locomotive by radio was recently accomplished in America.

Messrs. Harland and Wolff Ltd., are building life-boats equipped with wireless installations in the fore-castle. The first of these boats has just been delivered to one of the largest British Steamship Companies.

A message from the Birmingham broadcasting station has been picked up at Ontario, Canada. Birmingham was distinctly heard calling "This is the broadcasting station at Birmingham, England. We are testing for the benefit of continental and American cities, which we hope to pick up our station."

THE
"Revo"
REGD

LITTLE GEM CRYSTAL SET

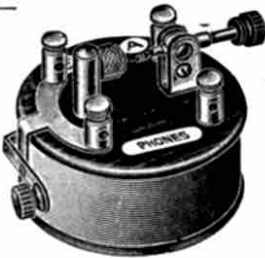
Perfect reception—
it's splendid.

5/6

plus 1/- tax
nett.

Postage extra.

Approved by the
Postmaster
General.



"REVO" LOUD SPEAKER



The Senior
Speaker at the
Junior price,
complete
with cord

£3 15 0

Height overall, 22";
Trumpet, 14" diam.
Satisfaction
Guaranteed.

Obtainable from any dealer
or the manufacturers:

THE CABLE ACCESSORIES CO. LTD.,
TIPTON, STAFFS.

A scheme is under consideration whereby it is proposed to grant a licence to an Indian Company to broadcast. The decision on this matter is anxiously awaited by Radio enthusiasts in India, who have long felt the need for some such organisation.

More than a square mile of land has recently been purchased by the Post Office authorities at Hillmorton, near Rugby. This land is to be used for the erection of the largest wireless station in the world, the construction of which will take several years to complete.

Several railway coaches in this country have had wireless apparatus installed. This has proved an exceedingly popular innovation, and will help considerably to while away the tedium of long journeys.

Bridging the Atlantic—(cont. from p. 129)

and Canada, where the signals had been heard strongly as far inland as Denver* (Colorado), Chicago, and Atlanta (Georgia). Other interesting reports came from various parts of the world, including Lisbon and Algeria, and it was soon evident that Goyder's transmissions had been heard every night he had sent during the tests—i.e., nineteen times in all.

Regular Transatlantic Transmissions

Owing to the activities of the workmen on the new building, Goyder was not able to again connect up his set until February 9. Getting up at 5 o'clock next morning, he almost immediately got into touch with 2BN (Montreal), 3OT (Pittsburgh), 1XAR (Massachusetts), 1BQ (Nova Scotia), and finally his old friend BD1 (Maine University). An exchange of messages was carried on with this station for over an

(Continued in next column)

* Denver is a distance of about 5,000 miles from Mill Hill!

ELEVEN YEARS AGO!

THE WIRELESS WORLD AND RADIO REVIEW

was first published, and since then it has continued to be the Premier Wireless Journal.

Read what the Editor of the "M.M." says about it on page 134, and then send for a free specimen copy. Every Wednesday, 4d.

The Wireless Press Ltd. Dept.
12/13, Henrietta Street, Strand, W.C.2.

Make Your Own WIRELESS SET

Headphones .. 12/6 to 25/-
4,000 ohms Postage 6d.

Aerial Wire Copper, 100 ft., 2/4
Money returned if not approved.

Full List of Parts;
and Crystal Outfits free for stamps.

C. LUCAS,
HOBBIES FAMOUS DEPOT,
35, Manchester St., LIVERPOOL



Kevin Dinneen (Limerick).—We are sure that you will derive as much fun from the Meccano Crystal Set as from the other Meccano products that you already possess. Write us if at any time you are in difficulties.

W. Melville-Arnott (Scotland).—The fact that you have received telephony with a Meccano Crystal Receiver at a distance of 50 miles from the Glasgow Broadcasting Station is certainly an accomplishment. We shall be interested to hear of your further experiences in this connection.

Messrs. Bradley (London) Ltd.—The manufacture of a Meccano Valve Receiving Set will not be proceeded with at the moment.

W. T. Samuels (Birmingham).—We are pleased to know that you are acquiring useful knowledge in connection with Radio. You will find that the Meccano Receivers are of great assistance to you.

William Blackie (Melbourne).—I would like you to let me have some first-hand information about the prevailing conditions governing Radio in Australia. There seem to be considerable restrictions.

T. Browne (Doncaster).—You are too far distant from the nearest broadcasting station (Manchester) to receive telephony with a Crystal Receiver.

Wm. Duckworth (Blackburn).—Instruction Leaflets for the Meccano No. 2 Crystal Receiver are still available, price 4d., post free.

William Epy (Saskatchewan).—Our Depot at 11, Colborne Street, Toronto, will always be very pleased to answer any enquiry you may direct to them.

E. J. Neame (London, W.).—A special constructor's licence is issued for those who construct their own Radio Receiving Sets from Meccano or other parts. I trust you will spend many happy hours with your apparatus when it is completed.

V. Govett (London, W.2).—The Meccano Receiving Sets are No. 1 Radio Receiver (Non-Constructional), No. 2 Radio Receiver (Constructional). Presumably it is the latter to which you refer, and instructions for building this have already been forwarded to you.

J. Fogarty (South Dunedin).—The Meccano Depot, 379, Kent Street, Sydney, will always be pleased to give you any information you may require in regard to the Meccano Receiving Sets.

Jack MacDonald (Dumfries).—I much regret that it is impossible to supply you with an earth wire separately, but you could obtain the necessary wire for this purpose from any electrician. The Meccano Aerial is only listed in its complete state.

hour, and Goyder gave him messages for several other amateurs whose signals he had received. This work was done with one Mullard O250c. Valve.

Wonderful Progress

We wonder how many of our readers can appreciate how pleased Mr. Goyder felt when he established communication with America, thus linking up the Old and New Worlds with invisible bonds. It was a very great achievement, and we gladly take this opportunity, on behalf of Meccano boys all over the world, of congratulating him on his achievement. It is indeed a wonderful and rapid advance from the time when Marconi first endeavoured to send messages over a few yards distance. At the present day a schoolboy is able to exchange messages with friends several thousands of miles across the Atlantic!

We are indebted to Mr. C. W. Goyder (who, by the way, is an old reader of the "M.M."), for the photograph reproduced on page 129. He tells us that in the near future he intends to take up telephony in addition to telegraphy, although this will necessitate several additions and alterations to the apparatus. In the meantime, radio enthusiasts who are able to read Morse should listen for the call sign 2SZ between broadcasting hours and send their reports of reception to Mr. Goyder at Mill Hill.

ELECTRICITY

*A series of Splendid Articles
Specially written for Meccano Boys*

III. REAL AND ARTIFICIAL LIGHTNING

IN our previous articles we have shown how charges of electricity may be produced on rods of glass or sealing-wax by rubbing them with silk or flannel. If we try to produce a charge on a metal rod in the same way, however, we get no result at all. The reason for this is that glass and sealing-wax do not allow electricity to pass along them. The part of the rod we rub becomes charged, and the charge remains there because it cannot spread to the rest of the rod.

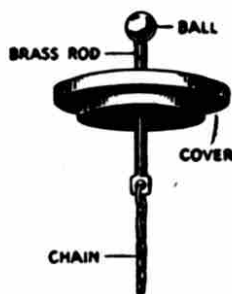


Fig. 12. Lid of a Leyden Jar

Conductors and Non-Conductors

On the other hand, metals allow electricity to pass very easily. Therefore when we rub a metal rod, electricity is produced but immediately spreads over the whole rod and escapes through the hand. Substances which allow electricity to pass easily are called "conductors," and those that strongly resist its passage are called "non-conductors." Metals, acids and the human body are three conductors; cotton, linen and paper are partial conductors; and air, resin, silk, glass, sealing-wax and gutta-percha are some of the non-conductors. It may be mentioned in passing that none of these substances is perfect in either respect, for all non-conductors have a certain amount of conducting power, while all conductors resist the passage of electricity to some extent.

Making use now of our knowledge of conductors and non-conductors, let us fasten a handle of glass or sealing-wax to a metal rod. If we take hold of this handle and rub the rod again, we find that it becomes charged just as our glass rod did. The electricity spreads over the metal rod as before, but it cannot reach our hand because of the non-conducting handle. In this experi-

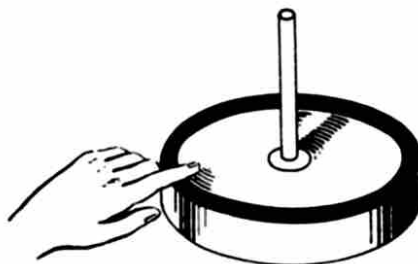


Fig. 11. The Electrophorus

ment the metal rod is similar to an island, for it is a conductor completely surrounded by non-conductors (air and glass or air and sealing-wax as the case may be). A conductor guarded in this way is said to be "insulated," from the Latin word *insula*, meaning "an island." Similarly, non-conductors are called "insulators."

An Interesting Device

The quantity of electricity produced by rubbing glass or sealing-wax rods is very small. Considerably stronger charges may be produced by means of an "electrophorus," an easily-made appliance, devised in 1775 by Alessandro Volta, an Italian professor of physics. Obtain the metal

lid of a round tin—the larger the better—and fill it with melted sealing-wax. Out of sheet tin, zinc, or copper, cut a disc of slightly smaller diameter than the tin lid. If no sheet metal is at hand, the disc may be cut out of thin wood and covered with tinfoil. An insulating handle of sealing-wax or glass must now be fixed to the centre of the disc, and the electrophorus is complete.

To use the apparatus, the cake of sealing-wax in the tin lid is charged with negative electricity by rubbing it with a

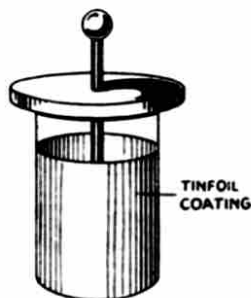


Fig. 13. The Complete Leyden Jar

piece of warm flannel. The metal disc is then placed upon the sealing-wax, touched for an instant with the finger (Fig. 11) and lifted away by means of its handle. The disc now has a charge of positive electricity, which is so strong that if the knuckles of the other hand are brought near to its edge, a spark passes between disc and knuckles. The disc may be charged many times in this way for the original charge on the sealing-wax is not used up in the process. Leakage gradually takes place, however, and after a time the sealing-wax has to be re-charged by rubbing.

In the electrophorus the cake of sealing-wax is charged by rubbing, but the metal disc is charged by "influence," or "induction." To put the matter in the simplest way, the negative charge on the sealing-wax so influences the disc as to attract a positive charge to its under side, and repel a negative charge to its upper side. When the disc is touched, the negative charge on its upper side escapes through the hand and body to earth, but the positive charge on the under side is so strongly held by the attraction of the negative charge on the sealing wax that it



Benjamin Franklin (1706—1790)

has to remain. When the disc is lifted, the positive charge is free to spread itself over both sides, but the insulating handle prevents it from escaping.

The Jumping Frogs

Many very interesting experiments may be performed with the electrophorus, but we have only space to mention one, which always causes great amusement. Cut out of tissue paper a number of small frogs (Fig. 14), moisten them slightly, and place them on the disc of the electrophorus. Touch the disc with the finger and lift it by the insulating handle, when the frogs will immediately jump off the disc on to the table (Fig. 15). (The experiment will not succeed if the frogs are too wet).

The Wimshurst Machine

An electric machine must be employed when very large quantities of static electricity are required. The first electrical machines were simply mechanical arrangements for rubbing glass cylinders against specially prepared cushions and were therefore called "friction machines." These early machines were very unreliable, especially in wet weather, and they are now superseded by machines which depend upon influence. This is the principle we have just mentioned in connection with the electrophorus, and in fact an influence machine is really a mechanically operated electrophorus. In the machine now in most general use, the Wimshurst, shown in Fig. 16, the glass or ebonite plates are made to rotate rapidly by turning the handle. The discharging rods then become very highly charged, and if they are close enough together crackling sparks will pass between them.

The Wimshurst machine gives us an abundant supply of electricity, and now arises the question of storing up some of this electricity.

The Leyden Jar

In 1745, a certain Bishop of Pomerania succeeded in collecting electricity from his primitive electric machine, in a bottle partly filled with water, and at the same time received a shock that startled him! This experiment was repeated soon afterwards by Professor Muschenbrock, of Leyden, with similar results, and the scared professor said he would not take a second shock for the Kingdom of France! By these experiments it was shown that electricity could be collected and stored up, and the bottle came to be known as the "Leyden Jar."

As now used, the Leyden jar does not contain water, but is coated with tinfoil inside and outside, up to about two-thirds of its height (Fig. 13). It has a wooden lid, through which passes a brass rod with a brass knob at its upper end, and terminating below in a piece of brass chain long enough to touch the foil lining (Fig. 12).

The jar is charged by holding it in one hand with its knob presented to the discharging ball of a Wimshurst machine. It may then be placed on the table, and if dry and clean will retain its charge for a considerable time. If the inner and outer coatings of the jar are connected by a piece of metal, the electricity stored up will be discharged in the form of a spark.

Leyden jars are often fitted to a Wimshurst machine, in such a way that they may be connected or disconnected as

desired. are connected, they accumulate a considerable amount of electricity before a spark takes place, so that the sparks occur at intervals, thicker and more violent. In Leyden jars shown at AA.



Fig. 14
Paper Frog

When they are connected, cumulate considerable electricity discharge place, so sparks longer but are more Fig. 16 the jars are

Franklin and the Lightning

The similarity between lightning and the detonating sparks from an electric machine is very noticeable, and indeed the sparks are artificial lightning in miniature. Many early observers had suspected the connection between such sparks and lightning, but it was left to Benjamin Franklin to settle the matter. Franklin, who was born at Boston, U.S.A. in 1706,

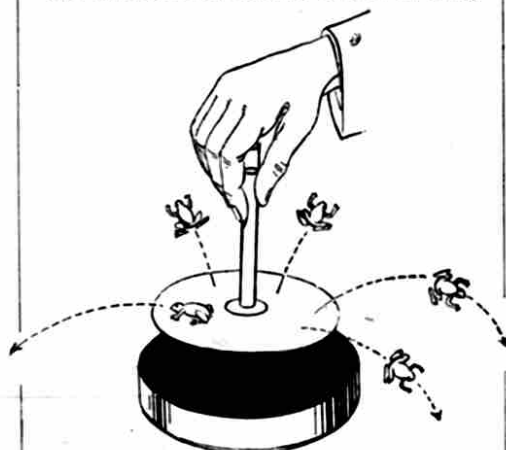


Fig. 15. The Jumping Frogs

became convinced that electricity and lightning were the same, and he resolved to test his theory. For this purpose he used a kite with a pointed wire at its top, and a key, insulated by a piece of silk ribbon, tied to the lower end of the flying string. He flew his kite one day in June 1752, during a severe thunderstorm, and found, to his intense delight, that when he brought his knuckle near the key a little spark passed, just such a spark as

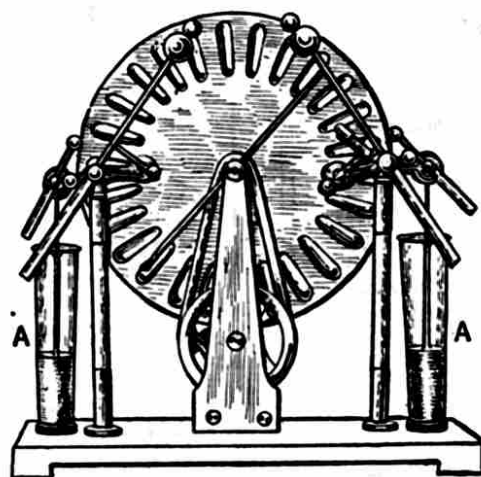


Fig. 16. Wimshurst Machine*

*Reproduced (by permission of Messrs. T. C. & E. C. Jack Ltd.) from *The Romance and Reality of Radio*.

he had obtained so often in experiments with his electrical machine. To make matters quite certain, he charged a Leyden jar from the key, and performed a number of experiments with it that proved beyond doubt that electricity and lightning were one and the same.

Lightning is a tremendous electric spark passing between two clouds, or between a cloud and the earth. Clouds are generally charged with electricity to some extent, and when opposite charges become sufficiently strong the electricity leaps across the intervening air-space. The flash may be from one to ten miles in length. The thunder which accompanies the lightning is probably caused by the heating and sudden expansion of the air in the track of the discharge, producing a partial vacuum into which the surrounding air rushes with great violence.

Forms of Lightning

Lightning flashes take various forms, of which forked or zig-zag lightning, and sheet lightning are the most common. The zig-zag form is caused by the discharge taking the path of least resistance through the air, and sheet lightning is probably the reflection of a flash occurring at a distance. The so-called "summer lightning," seen on the horizon at night, is the reflection of a storm too far away for the thunder to be heard. There is also another form of lightning, the rare globular or ball-lightning, in which the discharge appears as a ball of light that moves slowly along and then bursts with a sudden explosion. Yet another uncommon form is multiple lightning, which consists of a number of parallel discharges appearing like a ribbon.

The Safest Place in a Storm

Every time a severe thunderstorm occurs we hear arguments as to which is the safest place. It is impossible to say that any place is absolutely secure against lightning, but generally speaking it is safer to be indoors than out in the open. If one is caught in a storm while out in open fields, the safest plan is to lie down, in spite of the rain. Umbrellas should never be used in a storm, as they are decidedly dangerous. Isolated trees, especially oaks, are very liable to be struck, and it is foolish to shelter under them. A fairly thick wood, on the contrary, forms a comparatively safe refuge. Animals are much more liable to be struck than human beings, and a shed containing cows or horses should be avoided.

Death by lightning is instantaneous, and for this reason quite painless. Our nerves cannot transmit sensations to the brain at a greater speed than about a hundred feet a second, and therefore lightning destroys life before any pain can be felt. Sometimes markings resembling branches are found on the bodies of persons killed by lightning, and often these are taken to be reproductions of trees. This is not the case, however, and the markings are merely a peculiar effect of the current on the body.

NEXT MONTH:—
CURRENT ELECTRICITY
Primary Cells and Accumulators

MODEL BUILDERS

Junior Mechanics (Monthly 4d.)
The Model Engineer (Weekly 5d.)

are the papers for you. They contain well-illustrated and practical articles on the construction of model locomotives and railways, steam, gas and oil engines, steam and electric launches, sailing yachts, etc. Wireless Telephony, workshop practice, and other matters of interest.

A free specimen copy of either of the above will be sent, post free, along with a list of interesting books, on request.

See the particulars given on this page.

PERCIVAL MARSHALL & CO.,
 68M, Farringdon Street, LONDON, E.C. 4.

A POSTAL ORDER FOR 3/4

brings you by return the

Practical Electrician's Pocket Book

containing over 570 pages of real interest and value to all interested in electricity and engineering. Diagrams, sketches, and tables are simply and clearly explained. "An admirably compiled Pocket-Book" is the opinion of the Editor of the "M.M." Send for your copy to-day to the Publisher:

Rentell & Co. Ltd., 36, Maiden Lane, Strand, London.

RAILWAY PICTURE STAMPS

SEVENTY-TWO—ALL DIFFERENT
 ONE SHILLING

F. Moores Railway Photographs

3, AMEN CORNER, LONDON, E.C. 4.


Wireless World and Radio Review
 (Wireless Press, London. Price 4d. Weekly).

An interesting review of the present position of the development of Television and survey of the great difficulties yet to be overcome is one of the most striking features of No. 243 of this well-known publication. Other noteworthy articles describe the construction of a Four-Valve Experimental Receiver and a Self-contained Portable Single-valve Set. The diagrams in both these articles are excellently done. In answers to readers' problems and other regular features this paper fully maintains its interesting and valuable character.

The Model Engineer

(Percival Marshall. Price 5d. Weekly).

As its name implies, the "Model Engineer" makes a special appeal to all who are interested in the construction and use of models. Published by Percival Marshall & Co., whose technical books are well known to readers of the "M.M.,"

it invariably contains a number of features which are of real interest to model builders. In a recent issue there are articles on a model fusilage glider, an adjustable tool-post and a four-valve receiver, replies to wireless enquiries, practical letters from readers, and many other interesting items.

London & North Eastern 4-6-2

(Pub. by the Locomotive Publishing Co. Ltd.)

Price 1/6 net.

Exceedingly well printed on art paper and measuring 2 ft. 4 in. by 1 ft. 5 in., this chart of an express loco should be in the possession of every boy interested in railways or locos. It represents a 4-6-2 three-cylinder express locomotive of the "Pacific" type owned by the London & North Eastern Railway, with the outer casing of the engine removed to show the internal workings. A numbered list makes easy the identification of the different parts, and the chart forms an ideal decoration for bedroom or club room.

Underground Railways—(cont. from page 119)

of the power house. The snowball fell on one of the generators, melted, and caused a short circuit. There was a blinding flash, and the fuses were blown. Immediately the whole of the Tube trains came to a standstill, all lights went out, the moving staircases ceased to work, and the lifts remained stuck between station and roadway. It was half-an-hour before the current was restored, and the Tube resumed its normal conditions.

It is astonishing to think that such a vast organisation could be held up for half-an-hour by a handful of snow.

Some Interesting Figures

The railways comprising the Underground Group are the London Electric Railway (Piccadilly Tube, Bakerloo Tube, Hampstead Tube), the Central London Railway, the City and South London Railway, and the Metropolitan District Railway. The vast and ceaseless activity of these railways is shown by the fact that the total number of passengers they carry averages 350 millions a year. Every car on the railways carries an average of 250,000 passengers a year, and the average number of passengers using each lift is 1,750,000 a year.

When one considers these figures, it is easy to realise the vital importance of the underground railways to London, and more particularly so during an emergency, such as the recent strike, when no buses or trams are available.

We are indebted to the management of the London Underground Railways for permission to reproduce the photographs accompanying this article and the instalment that was printed last month.—EDITOR.

BOYS!
A SUBMARINE THAT REALLY DIVES
**A Splendid BRITISH-MADE MODEL SUBMARINE**

Fitted with clockwork motor and supplied with full instructions for working and for the repair of motor, etc., when necessary. Finished perfectly and in correct Admiralty grey.

The boat is approximately 14 inches long and 5 inches high; after diving it will rise to the surface of its own accord. The planes and keel are adjustable to regulate depth of diving.

Made to last and never need be scrapped. It is English not German.

The first 500 we will supply at the special price of 10/- EACH. POST FREE. Trade supplied.

SPECIAL NOTICE. We have about 20 only of our Model Aeroplanes left. Aluminium and silk, 3 cylinder valveless motor, worked by compressed air. Length 3 feet 9 inches, wing span 4 feet 2 inches. Will fly 220 yards at least. Complete with pump. Carriage Paid £1 15s. 0d.

ROSE BROS. ELECTRICAL CO. LTD.,

25, Milton Street LONDON, E.C. 2

**The BRITISH
 EMPIRE EXHIBITION**
 WEMBLEY LONDON

APRIL TO
 OCTOBER
 1924



We
 shall
 be there!

The most fascinating Stand
 in the whole of the Exhibition
 to readers of Meccano will be

Stand 203

Avenue 1

in the Palace of Engineering.

All kinds of model engines (some of them made to work by pressing a button), dynamos, etc., are shown, and we shall be pleased to answer any number of questions.

A country house lighting plant is in full operation lighting the stand.

If you cannot come at once, send now for a fully illustrated 72 pp. catalogue—6d. post free.

Stuart Turner Ltd.

ENGINEERS,

HENLEY-ON-THAMES.

Take
Snaps
like this!



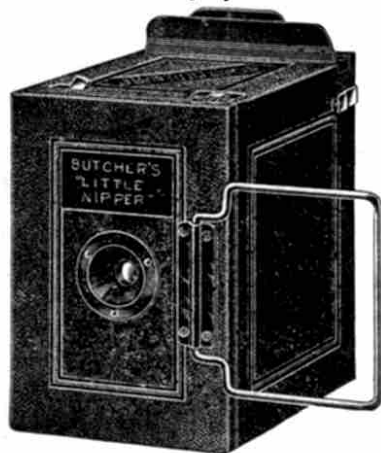
By a Little Nipper Club Member

WITH A

LITTLE NIPPER

PRICE **5/6** COMPLETE

PLATES:—6d. per packet of Six.



Every Boy and Girl who buys a LITTLE NIPPER gets FREE:—Membership of "The Little Nipper Club." "The Little Nipper Times," Monthly. Advice and Prize Competitions in which all have an equal chance.

OF ALL CHEMISTS AND PHOTO DEALERS.

Write for Leaflet MLN—it's free.

W. BUTCHER & SONS LTD.,
Camera House, Farringdon Avenue,
LONDON, E.C. 4.



BRIGHT IDEAS

In these columns we deal with ideas for new parts, new models, and new methods of making Meccano model-building attractive. We also deal with Hornby Train suggestions, and are always pleased to hear from any Meccano boy who has an idea which he considers will be useful to the system or to other boys.

J. H. Wilson (Dowlais, Glam.).—A spring coupling would be unsatisfactory, because the moment the slightest strain was applied the coils would at once give. At the best only a very jerky movement would be obtained. We introduced a complete universal joint last year.

P. Roberts (Prestatyn).—We think existing Meccano parts could be adapted to the two shapes you suggest. The feature of the Meccano system is its adaptability.

C. Thompson (Bristol).—We consider the present sprocket chain is quite strong enough for all normal purposes. If it were to be made of thicker material to give extra strength, as you suggest, it would not engage correctly with the teeth of the sprocket wheels.

J. Miller (Johannesburg).—The clockwork movement in the Hornby engine is not suitable for driving Meccano models.

Eric Warner (Swakopmund, B.S.W.A.).—In actual practice your suggested three-corner strip would serve only as a corner bracing piece. Several elements already in the Meccano system already fulfil this function. (2) At the moment we cannot see any useful purpose in the small diameter semicircular strip or in the double angle-strip with elongated holes. Perhaps you could suggest a use for this piece.

J. Candler (Tulse Hill, S.W.).—We appreciate the need of some means of attachment between a strip and a rod. We are going into the matter.

R. Maddock (Walsall).—Perhaps some day we may make longer strips to correspond with the long girders.

R. Leech (Rhyll).—A number of new Hornby train accessories is being added to the series this year. Amongst these are included a Snow Plough, Signal Cabin, Junction Signals and Tunnel.

O. Tomlinson (Glasgow).—The No. 00 Outfit was introduced last year. It is specially adapted to the use of very young boys, and is a very popular commencing Outfit.

H. E. Davies (Fortier, Manitoba).—We are afraid that boat hulls in conjunction with Meccano are impracticable. (2) A three inch gear wheel is obtained by fastening four rack segments to a face plate. (3) Helical gears are receiving our close consideration.

H. Chesters (Crewe).—(1) We shall probably have something to announce shortly in regard to a sliding movement. (2) Leaf springs may be constructed from our standard strip, and this type of spring is illustrated in the Chassis Leaflet.

R. Jones (Bristol).—We do not propose manufacturing steam models just yet. The matter of electric trains is under close consideration.

D. Bryce (Manchester).—Although a double crank shaft has not yet shown itself to be of any great use up to the present, we are keeping the idea in mind.

C. Alligan (Douglas, I.O.M.).—We are continually adding to our list of train accessories. The coal wagon you mention is already on the market.

Mayhew (Brighton).—Although the use of curved braced girders would be confined more or less to bridges, we shall consider their introduction.

I. Kirton (Towyn).—The matter of a big and connection has already been dealt with in these columns. We think your suggestion would be too costly to manufacture.

H. Pettifor (Blackheath, S.E.).—Up to the present we have not received a demand from our many Meccano friends for the introduction of signal arms. Should such a demand ever materialise we shall certainly give it consideration.

J. Sherlock (Crewe).—Your suggested eccentric would be somewhat costly to produce. Would not our triple-throw eccentric serve the purpose?

Milton (Grantham).—Bent strips are included with each Outfit and make possible the construction of the models within the scope of the Outfits. Elaboration of models must, of course, be catered for by the addition of separate parts.

W. B. Allan (Lancaster).—The use of a 12½" x ½" double angle strip are not yet very apparent and unless it should serve a fairly general purpose we could not introduce it. We are continually adding to the accessories for Hornby trains, and no doubt a mail bag apparatus will be added in due course.

L. Tuff (York).—(1) Cams have several times been suggested, but we do not see their uses in the Meccano system. (2) The curved strips lend themselves to the making of a complete circle. First of all outline your circle, leaving the bolts loose. When the circle is complete, tighten the bolts. There is a certain amount of play in the bolt holes which will account for the terminals of your circle not being in a true line.

V. Thompson (Woodhall Spa).—We find that cord and sprocket chains fill all the necessary requirements in power transmission. There would be no object in furnishing a variety of means all filling the same purpose.

F. Hibbert (Ashton-u-Lyne).—Although a flange in the clockwork motor commands itself, we are afraid its near proximity to the driving spindle would interfere with its satisfactory working.

W. J. Nuttall (Liverpool).—What special advantages has the form of standard you suggest?

Leon Nash (Uxbridge).—A 2" pulley wheel gives an excellent representation of an auto steering wheel.

"The Editor of the 'M.M.' as I imagine him."



The Editor of the "M.M.," according to Master R. Waterston (Newcastle-on-Tyne), and, below, Master N. Shacklock, of Manchester.



Both these drawings won prizes in our recent Drawing Competition.

Painting Contest

A recent competition in the "M.M." showed that there are hundreds of talented artists among our readers, and we observe that our enterprising advertisers, Messrs. Lines Bros. Ltd., of London, have been quick to take advantage of this fact. This firm announces a new painting competition with cash prizes amounting to £8/10/-. The competition is quite simple and should appeal to all our readers who are keen on painting and drawing. Full particulars will be found on the inside back cover of this issue.

A New Cannon

An entirely new type of toy cannon, which requires no caps or powder, is being marketed by Messrs. Hanwells Toys (Northampton). This cannon is a solid, well made article and fires a projectile by exploding a match-head in the breech. The noise of the report and the smoke of the discharge are very realistic and the projectile travels a considerable distance. Any amount of fun may be obtained from this ingenious toy, for which we predict a considerable popularity (see page 144).

Stamps for Sale

1000 BRITISH COLONIALS including Dollar, Rupee and Shilling Values, 3/-, Post Free. M. Theobald, 54, Anson Road, London, N.15.

CATALOGUES IGNORED. Huge collection dispersed. Approvals Penny each. Send two stamps. Priddy, 74, Field Road, Forest Gate, Essex.

STAMP COLLECTORS! Be sure you get *The Philatelic Magazine*, the fortnightly stamp newspaper, 3d. from any newsagent, or 4d. post free from Publisher, 63, Windsor House, Westminster, S.W.1.

STAMPS. 60 different free to applicants for approvals; all 1d. each. Send postage.—Cox, 135, Cambridge Road, Seven Kings.

ASSORTED Mixture Foreign 1/3 per 1,000. Popular approvals; any 4 stamps 1d. Any 50, 1/-.—Gall, 37, Avenue, Durham.

JUNIOR PHILATELIC SOCIETY. The new members' list is now open and first subscription closes to September 1925. Write for particulars, J.P.S. blue book and sample copy of "The Stamp Lover" FREE. Mrs. H. P. Terry, 22, Kempehall Road, London, S.W.16.

FREE! 25 Roumanian to these sending postage and asking to see Approval Sheets.—C. Florisch, 179, Asylum Road, London, S.E.15.

FREE. 50 Stamps, all different, to approval applicants for my famous sheets, all 1d. each.—Scott, 154, Walsley Road, Ilford.

FREE Packet to all applicants for my Approvals. Bargains for all. Send now for a selection.—C. Negus, Bury, Huntingdon.

1000 Stamp Mounts Free to appro. applicants.—S. Huckle, 53, Birkenhead Ave., Kingston-on-Thames.

NONE FREE—NONE AS CHEAP!! Farthing Stamp Approvals; about 1000 sent.—J. V. Wyk, 439, City Road, Old Trafford.

FREE. 20 Unused Liechtenstein, 6 Hungary, to appro. applicants.—Harland, 47, Dean Rd., Scarborough.

EUCADOR TRIANGLE FREE, with approvals, 1d. and 1d. each. Bodman, 6, Alderman Road, Ipswich.

5/- FREE. Packet of scarce surcharged Fiume provisionals, Ant-eater, mint items, old issues, free to applicants for approvals. Also slip worth 5/- Free.—L. Nethery, 32, Anfield Road, Liverpool.

STAMPS FREE Applicants for approvals sending postage receive either A COMPLETE SHEET OF 100 unused or 26 different unused, Peace, War, Air Post, etc. 60 page List profusely illustrated, 1d. only. M. C. WATKINS, Stamp Importer, BARNET.

BEGINNER'S OUTFIT.
A SPECIAL OFFER TO MECCANO READERS.
Victory Album and 200 different Stamps ... 3/6
Stamp Collector's Diary ... 1/-
1 pair Stamp Tweezers ... 1/-
1 Pkt. Stamp Mounts, Perforation Gauge, Duplicate Book ... 1/-
"Guide to Stamp Collecting," by C. C. Lambert 1/-
Specimen of Stamp Collecting and Special bonus offer ... 3d.
The above Complete Beginner's Parcel now offered at the special price of 6/-, post free.
Similar Outfit, but with cheaper album, 5/- post free.
Any item may be had separately. Add postage.
Address The Publisher, 89M, Farringdon Street, London, E.C.4.

THE BIGGEST FIRM CAN SEND YOU THE BEST APPROVALS

Write to **STANLEY GIBBONS LTD.** for one of their fine up-to-date Approval Sheets, stating which countries interest you. Ask also for our 1924 ILLUSTRATED LISTS OF ALBUMS, PACKETS, AND SETS, which are full of bargains, and are sent free on request.

STANLEY GIBBONS LTD.,
391, Strand, London, W.C.2.

FREE!

TRIANGULARS
(Block of four)

This tremendous advertising offer contains all the following:—50 diff. stamps (25 mint) from Wurtemberg, Poland, the interesting pre-war bird issue Hungary, unused imperf. Russia, British Cels., etc. A very interesting collection of stamps. Also pkt. peelable hinges, and the unique new philatelic accessory. A combination pocket folder and mathematically correct perforation gauge. Finally the beautiful BLOCK OF FOUR TRIANGULAR STAMPS. The whole lot sent absolutely free to all genuine approval applicants.

SEND POSTCARD ONLY to:—**LISBURN & TOWNSEND, 201a, LONDON ROAD, LIVERPOOL.** (Collections Purchased).

N NORRISCO BARGAINS B

50 different GREEK (Oct. 10/-)
only 1s. 6d. Postage extra.
This is an exceedingly fine set including many stamps of striking beauty (Revolutionary, Charity, Occupation, and Olympic Games issues, etc.), and should be missed by no one who appreciates a real bargain.
MONEY BACK ALWAYS IF DISSATISFIED.

Other splendid Long Set offers:—
40 Brazil, fine lot ... 1/- 75 Jugo-Slavia (cat. 3/3
75 Chili (cat. 24/-) 6/9 23/- ...
50 Fiume (cat. 3) 6/- 44 Liechtenstein, mostly mint ... 1/-
200 Germany, very cheap ... 1/6 30 Luxemburg, nice set 1/6
50 Turkish War Stamps 3/3

FULL LISTS FREE.
Collections of Countries at 1/2 to 1/2 Catalogue value.
NORRIS & CO. (Dept. M.M.), LEABROOKS, ALFRETON, Derbyshire, England.

"SHIP" PACKET FREE!

15 interesting SHIP Stamps including FIUME (TRIANGULAR), Egypt (Nile Boats), U.S.A. (Liner) Brit. Guiana (Brig), MAURITIUS, JAMAICA (Contingent Embarking), etc. This packet is FREE if you ask for APPROVAL SHEETS and enclose postage.

FELIX SYKES, Stamp Importer, NEW BARNET.

NO NEW EUROPE RUBBISH

FREE! 26 BRITISH COLONIALS, including West African, Tasmanian, Newfoundland, Jamaica, British Guiana, to applicants for approval selection. Ask to see my famous 1d. stamps.

FLEMING, Queen's Pk., CHESTER

FREE PACKET OF STAMPS, STAMP MOUNTS AND PERFORATION GAUGE.

Free to all genuine applicants for my famous approvals.
4 Sets of Stamps, all unused, for 1/-, Postage extra;
5 Venezuela, 8 Western Russian Army, 6 Azerbaidjan, 6 Hungarian Peace; 24 Stamps in all. Catalogued price about 4/9. A grand bargain.

D. STALEY, Chapel Street, CODNOR, Derbyshire.

£1 Packet of Stamps for 1/3

Including 2 Nicaragua, cat. 10/-,
Norway 1910, cat. 1/-; Russia 1889, cat. 2/6;
Abyssinia, cat. 1/-; Salvador, cat. 6d.; Mozambique, cat. 1/-; Transvaal, 2/6 unused. Postage 1d. Half-packet 8d. Postage extra. Ask for approvals.
Free. Abyssinia cat. 1/- to approval applicants enclosing 1d. postage.

C. Lewis, 26, Lichfield Road, Cricklewood, London.

MINT BRITISH EMPIRE

ANTIGUA, 1d. dull rose, obsolete script ... 3d.
BARBUDA, 1d. dull green, script ... 1d.
FEDERATED MALAY STATES, scripts, 3c. grey, 2d.; 3c. green ... 1 1/2d.
NEW ZEALAND, Map, 1d. carmine ... 2d.
NIGERIA, scripts, 1d. scarlet, 2d.; 3d. violet 4 1/2d.
POSTAGE EXTRA. ASK FOR MY PRICE LIST.
ALEC KRISTICH (N.R.P. 279), 82, Marchmont Street, Russell Square, London, W.C.1.

50 French Cols. 9d.	50 Portugal Col. 9d.
100 U.S.A. ... 1/-	40 Belgium 1/-
150 Germany 1/-	50 Railway 1/-
150 Austria ... 1/-	50 Poster ... 1/-
150 Hungary 1/-	50 Entire Cards 1/-
50 Czech-Slov. 1/-	50 War Envs. 1/-
50 Roumania 1/-	300 Postage ... 1/-
50 Sweden ... 1/-	600 Postage ... 5/-
40 Italy ... 9d.	500 Revenue 5/-
40 Bavaria 9d.	1000 Revenue 17/6

Postage Extra.

Fine selections ready in separate countries.

J. Russell, Chetwynd, Shanklin Drive, Westcliff-on-Sea.

Stamp Collector's Outfit



Telegrams, "Meccano, Liverpool."
Telephone, 701 Old Swan (6 lines).

EDITORIAL AND ADVERTISING OFFICES:—
BINNS ROAD, LIVERPOOL.

The "M.M." is published on the 1st of each month and may be ordered from any Meccano dealer, or from any bookstall or newsagent, price 2d. per copy. It will be mailed direct from this office 1/6 for six issues and 3/- for twelve issues (post free).

Small advertisements are inserted in these columns at 1/- per line (average seven words to the line), or 10/- per inch (average 12 lines to the inch). Cash with order.

Obtaining the "M.M." Overseas

Readers Overseas and in foreign countries may order the *Meccano Magazine* from regular Meccano dealers, or direct from this office. The "M.M." is sold Overseas at 2d. per copy, or mailed (post free) direct from Liverpool, 1/6 for six issues, or 3/- for twelve issues.

IMPORTANT.

Overseas readers are reminded that the prices shown throughout the "M.M." are those relating to the home market. Current Overseas Prices Lists of Meccano Products will be mailed free on request to any of the undermentioned agencies. Prices of other goods advertised may be obtained direct from the firms concerned.

CANADA: Meccano Ltd., 45, Colborne Street, Toronto.
AUSTRALIA: Messrs. E. G. Page & Co., 379, Kent Street, Sydney.
NEW ZEALAND: Messrs. Browning Ifferson Ltd., P.O. Box 129, Auckland.
SOUTH AFRICA: Mr. A. E. Harris, P.O. Box 1190, Johannesburg.

THE "DIAMOND" PACKET
contains 1000 UNSORTED STAMPS from Convents abroad. 1/3 post free. 2 pkts., 2/5; 3 pkts., 3/6; 4 pkts., 4/6; 5 pkts., 5/6.
Nerush, Importer (Dept. E), 2-22, Cathcart Hill London, N.19.

225 DIFFERENT REVOLUTION WAR AND PEACE STAMPS FREE

This packet is printed and priced to sell at 10/- and contains many "hard to get" sets, high-class pictorials, and odd values, catalogued from 1d. to 7/6 each. Given free to all requesting approval books and sending 4d. to cover cost of postage, packing, etc. (abroad 9d.).

R. WILKINSON,
Provincial Buildings, COLWYN BAY.

BEGINNER'S STAMP ALBUM

to hold 1,000 Stamps, and a Packet of 200 Stamps,
Post Free 1/4 P.O.

T. CLEMENT, Philatelic Market,
3, Bell Street, Wolverhampton.

FREE! "ERITREA" PACKET
Containing 100 Selected Varieties, including Eritrea Cayman Is., Persia, Montenegro, Jugo-Slavia, Grenada, Poland, Barbados, Airpost, Venezuela, Alexandria, Kenya and Uganda, etc., etc.
Send 2d. for post and packing, and ask to see my Bargain Approvals, and above Packet will be sent Free. If approvals not required, the price is 1/3.
PHILIP J. DYKE, 122, Gladstone Rd., S.W.19

MINT COLONIALS
117,000 For Sale, values to 10/-. List Free.
Headlines, B. Guiana 1c. on 1 dollar, 2 dollars, Cayman, Ceylon, Dominica, G.E.A. and S.A., Falkland, Gibraltar, Jamaica, Montserrat, Trinidad, St. Vincent, Mauritius, values to 1/-, and other parts (mostly mint).
N. T. HILLIER, The Stamp Mart, Hornmenden.

THIANGULARS FREE!!

(Block of four)
The interesting pre-war bird issue Hungary, and the unique new philatelic accessory. A combination pocket folder and mathematically correct perforation gauge. Finally the beautiful BLOCK OF FOUR TRIANGULAR STAMPS. The whole lot sent absolutely free to all genuine approval applicants.

SEND POSTCARD ONLY to:—**LISBURN & TOWNSEND, 201a, LONDON ROAD, LIVERPOOL.** (Collections Purchased).



IN one of our previous issues we gave details of how to detect watermarks and also described some common watermarks. This month we are to consider a few more interesting examples of entirely different designs.

The watermark is a sure guide to the date of issue of a stamp. For instance, some stamps are identical in design, colour, paper, and perforation, but may differ in their watermark. The detection of the watermark in such a case enables the stamp at once to be classed in the correct issue, and because of the fact that it may be more scarce in one issue than in another, its value may be considerably increased.

An Interesting Country

Let us take, for example, the early stamps of Queensland. These important stamps have received considerable attention recently from experts, and the full list of the stamps of this interesting country in Gibbons' latest catalogue has been compiled as a result of their studies. Some collectors do not attempt to classify their stamps in so detailed a manner as that set out in Gibbons' catalogue. This may be alright for the beginner, but as soon as stamp collecting is taken up seriously a collector realises that he must discriminate in many cases if his collection is to be a representative one. It is certainly very awe-inspiring to look through the pages of such a catalogue as Messrs. Gibbons'—especially in regard to a thoroughly-studied country such as Queensland—but after all, these long lists of stamps are really quite simple and straightforward. It is only necessary for us to read through them once or twice from beginning to end, and make comparisons with any stamps available, and we lose our sense of awe and come to regard them in their true light.

Queensland Varieties

For example, there are 127 varieties of the first type of Queensland stamps listed by Gibbons, including all the different values from 1d. to £1. Let us see for a moment what causes all these varieties. The first thing we notice is that there are six kinds of watermark. Of these, stamps watermarked with a large star are found either imperforate or perforated. Those with a small star have nine different sizes of perforation, those watermarked "Queensland—Postage Stamps" in script throughout the sheet have two; those with a small broad-pointed star have three. The stamps with the fifth type of watermark, a crown over and joined to "Q," have four sizes of



Fig. 1
Queensland

perforation; those watermarked Crown over "Q" (Fig. 1) have one size of perforation. There are also two values, 6d. and 1/-, with no watermark.

Some of these stamps are worth no more than 2/-, others are priced £120, but there are some so rare as to have no price quotation at all—that is, they are "priceless," or worth what they will fetch.

Identifying Your Stamps

Now, if a collector does not differentiate between different kinds of watermarks, and different sizes of perforation, how is he to know the true value of his stamps? This surely is not a matter for specialists only, but for every one who collects stamps. To know the way about a stamp catalogue is as important to the stamp collector as an accurate knowledge of a time table is to the traveller.

In allocating a stamp of this first type of Queensland to its place in your album, it is best to decide first of all which watermark it possesses; notice its face value, and lastly, if there are shades of this particular stamp, decide to which shade your specimen belongs. If you work in this order with all lengthy lists, the most complicated issues of stamps will soon be easily identified and you will feel like the warriors of old—that you have "conquered" a new country.

Spanish Watermarks

Spain has been rather sparing of watermarks during the seventy-four years of stamp-issuing. The stamps were on

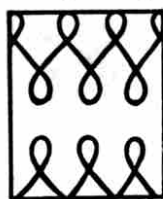


Fig. 2
Spain (1855)

plain paper until the issue of April 1855, when a very curious watermark was used. This watermark is best described as a series of "loops" (Fig. 2). In the following January, the same stamps appeared on paper having a watermark of crossed lines, very similar to the

present German watermark—which, incidentally, one stamp journal still persists in describing as "chicken-wire!" After the withdrawal of this issue, plain paper again was used until 1876, when a watermark of a castle was introduced (Fig. 3). This set is the only one of Spain that has not been printed at the Government Printing Works in Madrid. Apparently the Spanish Government had decided to see what a foreign firm could do in the way of stamp-printing, and Messrs. Bradbury, Wilkinson & Co. Ltd., of London, accordingly engraved and printed this series. The portrait on the stamps is of King Alfonso XII., whom it shows full face. There are two varieties of most values, distinguished by various small differences. The Government resumed printing its own stamps on the issue of the next set, which, as is the case with all that have followed it, had no watermark.

The Argentine Republic

Between the years 1892 and 1895 the Argentine Republic used an unusual watermark. The paper was manufactured

locally without a watermark, and afterwards run between rollers which impressed upon the paper a so-called "watermark," showing a sixteen-rayed sun, with eyes, nose, and mouth (Fig. 4). Watermarks of this kind are known as "impressed watermarks," and although they resemble true watermarks



Fig. 4
Argentine

very closely, the "watermark" may be seen as a distinct indentation if the face of a stamp is observed from an acute angle.

In 1896 the same stamps were printed on paper made in Germany with a real watermark of the same design as before. You will be able to identify either of the two kinds of watermark by measuring the diameter of the sun. In the first, impressed watermark issue, the sun is 4½ millimetres in diameter, whereas in the true watermark issue the diameter is 6 millimetres. Your school geometry ruler is sure to have a millimetre scale on it which you will find very useful in measuring your stamps. Both the above issues of Argentine show portraits of Rivadavia, Belgrano and General San Martin, and were engraved and printed in Buenos Ayres by the South American Bank Note Company. The second set is the rarer, although neither is very high priced.

RECENT ISSUES

SPAIN.

A fourth portrait of King Alfonso now appears on Spanish stamps. The complete set is not yet in circulation, but the values so far issued consist of the 5, 10, 20, 25 and 40c. The normal colour of the 10c. is green, but a few were issued in 1922 in carmine, and this is believed to have been an error. This stamp, owing to the small number of specimens printed is sure to increase in value as the dealers' stocks become exhausted, and at the present price of 7d. is well worth buying.



GERMAN REPUBLIC.

The flood of new issues for the German Republic continues with unchecked speed.

There were two picture stamps recently issued, the one illustrated and another value 10,000 marks, showing Cologne Cathedral.

That pictured here bears a view of the Wartburg, near Eisenach, one of the most important German mountain castles, specially celebrated through St. Elizabeth of Hungary. Luther lived at this castle for ten months.



**NEXT MONTH:—
PERFORATIONS**

Competition Corner

SECOND COMPETITION

For Lynx-Eyed Readers

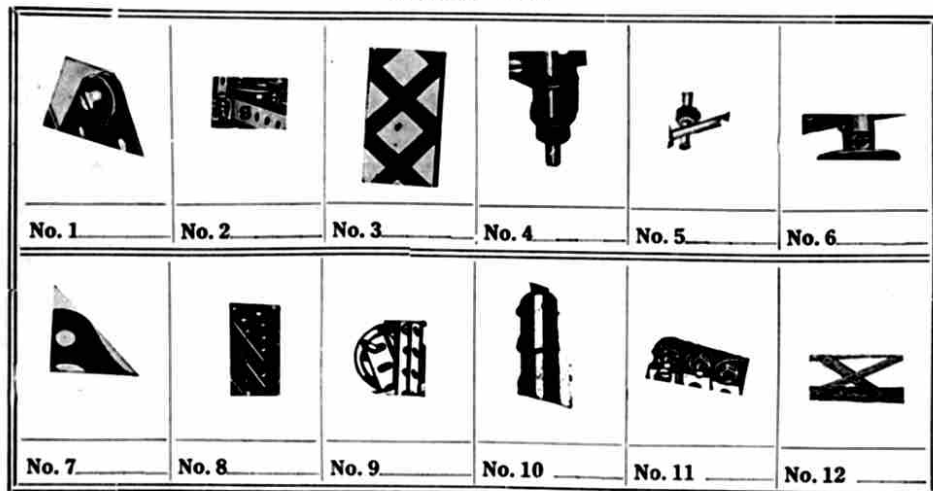
FIRST PRIZE: Hornby No. 2 Tank Loco.

SECOND PRIZE: Meccano No. 1 Radio Receiver.

THIRD PRIZE: Pair Meccano Double Headphones.

CONSOLATION PRIZES: 12 Meccano Writing Pads; 12 Meccano Complete Manuals.

FIRST SET



The great success of our last Puzzle Picture Competition for Lynx-Eyed readers decides us to arrange another of the same kind, but this time the identification of the pictures is going to be made a good deal more difficult! Our readers are far too sharp to be "caught-out" with anything but the most difficult problems, especially where Meccano is concerned, and so we intend to make this second contest a "real teaser!"

There will be three sets of pictures in this new series, and the first set appears above. Two more sets will appear in the next two issues of the "M.M." Each picture is taken from some model in the latest Complete Manual (No. 23). When the picture is identified, the number of the model should be written in the space beneath. Readers possessing an O-3 Manual only, should obtain a copy of the Complete Manual if they wish to compete, as many of the models are not featured in the smaller Manual. Competitors are required to solve all three sets to qualify for a prize, but no entries are to be sent in until the last set has appeared.

If you are an enthusiastic model builder, you will have little difficulty in identifying these pictures. If no competitor succeeds in numbering all the models correctly, the First Prize will be given to the reader whose results are nearest correct. The other prizes will then be awarded in order of merit. If more than one competitor ties for any prize, the prize will be awarded to the nearest entry.

Essay Competition for Cyclists

Last month we announced an Essay Competition for Cyclists, the subject being "The Ideal Bicycle." Competitors should describe the kind of bicycle they would best like to own; whether three speed, two speed or single speed; dropped handle bars; with or without chain case, etc. Essays should not exceed 500 words and should be posted before May 30, addressed "Cycling," c/o Meccano Magazine, Binns Road, Liverpool. The prize will be a Veeder "Regular" Cyclometer.

As we know that most of our readers wish to keep their copies of the "M.M." intact, it should be clearly understood that competitors are not required to tear out the pages containing the Puzzle Pictures. Solutions will be written on a postcard as in the last contest; the space and number beneath each picture is provided for the convenience of competitors only.

Essay Competition

As announced in our last issue the subject of this competition is:—"MY FAVOURITE MODEL AND WHY I LIKE IT." Essays should not exceed 500 words and should be written on one side of the paper only. The competitor's name and age should appear on the back of each sheet, as it is possible that odd sheets may get astray if they do not bear the author's name.

The competition will be divided into two sections:—
(A) Under 12 years of age.
(B) 12 years of age and over.

A prize of a film-pack camera (taking pictures 3½" x 2½") will be awarded in each section. The closing date is May 30 in the United Kingdom (Overseas: August 30.)

Competitors will please remember that the task of judging the entries is rendered easier if the essays are neatly and clearly written.

Result of Stamp Essay Contest

When a boy is invited to write about his hobbies his only difficulty, apparently, is to confine himself to 500 words! Every entry in our second Contest for Stamp Collectors was so interesting that had not the judges themselves been keen philatelists before this competition, the glowing essays would certainly have tempted them to take up the hobby!

The subject of this Essay was "MY FAVOURITE STAMPS AND WHY I LIKE THEM" and the competitors' selections were very wide and varied. A few years

ago the wonderful picture stamps of Labuan and Borneo were the most popular with young collectors, but now-a-days it would seem that these old favourites must give place to the scenic views of Jamaica and the larger stamps of the U.S.A.

The best essay received was one on the stamps of the French Colonies, i.e., Gaboon, Côte d'Ivoire, Mauritania, French Sudan and Somalis. This was written by MASTER D. F. HASLEWOOD, of Acomb, York, who has chosen 10/6 worth of stamps from our advertisers, Messrs. Norris & Co., as his prize. Special mention must be made of the following: MASTERS D. J. HOPKIN, of Bristol, W. G. DOWNEY, of Southend-on-Sea, and G. WHEELAN, of Glasgow, who sent in very good essays indeed.

Result of Lynx-Eyed Competition

About a year ago we published a competition in which readers were required to classify the errors in a sketch of a loco. This Competition proved how very sharp and enthusiastic Meccano boys really are, but we scarcely expected such a huge number of entries as we have received for our recent Puzzle Picture Contest. "Sharp-Eyed" competitors have apparently told all their "Lynx-Eyed" friends about the former contest, with the result that from the day the last set was published, we have been deluged with entries at the rate of hundreds per day. Every entry has been carefully checked and we are now able to publish the names of the winners:—

FIRST PRIZE (Hornby No. 2 Passenger Set)
MASTER BERNARD J. J. BANNER, of Forest Town, Mansfield, Notts.

SECOND PRIZE (Zulu Goods Set)
MASTER N. F. BECKETT, of Bromley, Kent.

THIRD PRIZE (Meccano Electric Motor)
MASTER DOUGLAS SMITH, of Wellington, Salop.

12 CONSOLATION PRIZES of Meccano Writing Pads, to the following competitors:—Masters T. A. H. Adkins (Elland), Denis Bates (Liverpool), Vernon Coslett (Cirencester), Verna Davey (Otley), Norman Douglas (Inverness), Teddy Hunt (Hull), W. J. Kiddis (Morley), Edgar Norris (Bolton), Donald Reid (Southport), Ronald Rhymes (South Devon), James Sharp (Birmingham), George Shalley (Birmingham).

12 CONSOLATION PRIZES of Complete Manuals of Instruction:—Masters Philip Bourne (Birmingham), S. H. Judson (London, N.W.5), J. H. Kettle (Loughborough), Stanley Perks (Birmingham), V. F. Ross (Dundee), D. B. Rubie (Lemsfield), H. D. L. Simpson (Sedburgh), Raymond Tree (Plymouth), Eric Watson (Blackburn), Leslie Welland (Thames Ditton), George Williams (London, S.W.15), G. I. Woolsey (Scarborough).

Those readers who were unsuccessful in this Competition will be interested to see that we are publishing a further series of Puzzle Pictures in which more splendid prizes will be awarded.

FOR OVERSEAS READERS

Essay Competition for Stamp Collectors

Our last essay contest (the result of which is announced elsewhere on this page) clearly showed that there are many thousands of keen stamp collectors among our readers, and as announced last month, we have decided to hold an essay competition for Overseas readers on the same subject—"My Favourite Stamps and Why I Like Them." Some special set, or stamps of a certain colony or even stamps of a country should be chosen and described, and the reasons for your choice given. The essay must not exceed 500 words and is to be written neatly on one side of the paper only. Envelopes containing the entries should be marked "Stamp Contest" in the top left hand corner and sent to the Editor of the "M.M.," Binns Road, Liverpool.

The first prize will be stamps to the value of 10/6, to be chosen by the winner himself from any firm advertising in the pages of the "M.M." Make your choice when you send in your essay, and give full particulars of the stamps required, so that the prize may be sent direct to you in the event of your success. Closing date for Overseas Readers: June 30, 1924.

GRAVES

WORLD'S BEST CYCLE

The highest point of
All British engineering
conscience. Warranted 10 yrs.

HAVE REMOVED CHAINS
CLUTCHES & WORN TYRES;
SHOULDER WESTWOOD RIMS;
BOWDEN BRAKES; R.S.A.
FREE WHEEL; BRAMPTON'S
HUBS; REYNOLDS'S STEEL
TYRES; WILLIAMS' CHAIN
WHEEL; SPECIAL SPEED
SADDLE. PRICE £7 10 0
(Ladies' Model same price)

Delivered, savings paid to
approved order for 10/- with order.
Balance 10/- monthly if settled.
Money back in full if dissatisfied.
CATALOGUE Post Free
Complete range of Models
J. G. Graves Ltd. Sheffield.

10/-
NOW

**2/6 A WEEK
OR CASH
£4-15**

Save pounds and get a superb
British-made **JUNO** sent
on approval, carriage paid.
Guaranteed by our 46 years'
reputation. Money refunded
if dissatisfied. Lists FREE.
Write NOW! (Dept. G2),
Metropolitan Machine Co., Ltd.,
168 & 248, Bishopsgate, London, E.C.

JUNO



Great Value!

BOYS! TELL DAD
About "The Captain."

Tell him to write for
the Two Beautiful Big
Books, 168 pages—
Over 1,400 illustrations.
FREE! FREE! FREE!
Bicycles from 95/- Cash.
Models delivered on first
payment of 9/- down.
All Carriage Paid. Life-
long Guarantee. Sat-
isfaction or money re-
turned.

H-FITZPATRICK
102 CAPTAIN WHEELS
BURNLEY.

From 9/-

ARE YOU A "PETER PAN" BOY?

If not, you are missing heaps of fun for there
are splendid times to be had on a
"Peter Pan" Tricycle. The "Peter
Pan" is a beautifully finished and
durable machine
and only costs
from 25/-



Ask your dealer to show you one or write to:—
THE PETER PAN MANUFACTURING CO.,
Stewart Street, Wolverhampton.

164 PAGES of BARGAINS

Drop a Post Card TO-DAY for our
WONDERFUL FREE BOOK!

164 pages, profusely illustrated. Crammed with
truly staggering offers. Cycles from £3/17/6.
Easy Payments, 2/3 weekly. Tyres at 30%
guaranteed saving from 2/11. Cycle Chains 2/3.
Accessories in thousands—amazingly cheap.
Full satisfaction guaranteed or money refunded.
Don't buy until you see this invaluable volume.
It's ABSOLUTELY FREE. Write for it NOW to

MOORHOUSE LTD
Dept. 60, PADIHAM, BURNLEY



FROM
77/6

Mending a Puncture

by "ROVER"

OF the many things that annoy the cyclist—such as bad roads, squeaky saddles, skidding, and lamps that won't light—pride of place must certainly be given to the ever-dreaded puncture. A puncture is exasperating when it occurs while we are riding along a charming country road on a fine summer day, but it is a really maddening experience on a cold dark night, when we are miles from anywhere and the rain is coming down in torrents.

"Be Prepared!"

When a puncture occurs it seems to be quite the general thing for the cyclist to first express his frank opinion of tyres in general and of his punctured tyre in particular, and then to commence to repair the damage—that is, provided he has not forgotten his repair outfit! If he has forgotten it, then he will have to "foot it" to the nearest bicycle shop. During the walk he will find plenty of time to meditate on the famous motto of the Boy Scouts!

The experienced cyclist never starts out on a long run without a complete tool kit, which always should include a puncture repair outfit. The contents of all repair outfits are usually very similar, and consist essentially of a tube of rubber solution, an assortment of rubber patches for inner and outer tubes, sand-paper, and some French chalk.

Finding the Puncture

The first step in repairing a puncture is to take off the lamp and then turn the machine upside-down. If you forget to remove the lamp you will find, when you want to light it, that all the oil has run out, and you may easily be stranded in this way. When the machine has been turned upside-down, the next step is to release one side of the outer cover so as to get at the punctured inner tube. First slack-off the holding-down nut of the valve—that is, the nut that bears on the rim—and then free one side of the outer cover with tyre-levers, which should be in the tool kit. By careful manipulation of the loosened outer cover the whole of the inner tube may be gradually slipped out, with the exception of the valve portion,

which remains owing to the valve being still in the rim.

The next thing is to ascertain the position of the puncture. If a bucket of water is obtainable, pump up the inner tube and insert it in the water, section by section, until rising air bubbles denote the location of the puncture. If there is no water at hand, the tube should be pumped up and carefully examined, as it is sometimes possible to find the puncture by the sound of the escaping air alone. When the puncture is finally located, examine the cover to see if the nail or thorn that caused the damage is still in the cover. If so, extract it, or it will cause another puncture as soon as you return the tube into position.

Repairing Operations

Then dry the tube, clean up the portion round the puncture with the sand-paper, and smear a little of the solution around the puncture. Choose a repair patch of suitable size, moisten it with the solution, and expose it to the air for a few moments until it becomes quite sticky. It is important to use the smallest possible quantity of solution, working it in with the finger into both the inner tube and the repair patch. When the solution has become "tacky," as it is called, place the patch over the puncture, and it should at once adhere to the tube. Press down all round the edges, and after dusting over with French chalk to cover any surplus rubber solution, leave the patch to dry, allowing about five minutes before gently pumping up the tube and testing.

If no leak is detected, the inner tube may be deflated and placed in position, and the outer cover replaced by means of the tyre levers. Make sure that the valve is in place and secure before finally pumping up the tyre preparatory to remounting.

Self-Sealing Solutions

It is an old saying that "prevention is better than cure," and many cyclists prefer to prevent punctures rather than mend them. This may be done very effectively by using one of the "self-sealing" solutions now on the market. These solutions are poured into the inner tube, where they remain as long as the tube lasts. They automatically seal up all punctures so quickly that the tyre never deflates, and the cyclist does not know that he has had a puncture. The Editor of the "M.M." will be pleased to send particulars of these solutions, names of makers of reliable puncture repair outfits, and advice on cycling matters generally to readers. Envelopes should be marked "Rover," and the questions clearly and briefly stated. Matters of general interest will be replied to on this page from time to time.

NEXT MONTH:

TOOL KITS:

What they should contain

Buy your Kiddie a Cherub Cyclette

Built throughout on same lines as our adult models. Fitted with strong mudguards, rustless tangent spokes, nickel plated hubs, proper adjustment for handle bar and seat pillar, built up seat pillar, and lamp bracket. Made in two sizes with 14 in. and 16 in. wheels. Send for list and name of nearest agent.

RIGBY BROS.,
Cycle Manufacturers,
Robert Street Works,
Cheetham, MANCHESTER



RETAIL PRICES
from £3-15-0
If fitted with Pneumatic
Tyres 25/- Extra.



The Secretary's Notes

With the advent of cricket and tennis this month, many clubs will commence their Summer Session. Judging from the programmes and reports I have received from Club Leaders and Secretaries, this outdoor Session will prove every bit as enjoyable as the Sessions spent in the club-room. Scouts, Naturalists, Photographers, Cyclists, Cricketers and Swimmers are busy preparing for their own particular hobby, and in the larger clubs special sections are being formed for these outdoor activities. For "lone members" of the Guild, the summer months offer great opportunities for spreading the Guild movement among other boys. By wearing their badges every day and taking care to have a supply of application forms ready, new recruits may be enrolled and a Recruiting Medallion won. By getting their friends together and organising Cricket or Rambling Clubs, all will become better acquainted, and when the winter months come "lone members" will be able to consider with their new friends the question of starting a club and initiating themselves into the joys of club night.

Outdoor Sessions

For members who have not yet won a recruiting medal, or for those who wish to have their names engraved on the one already in their possession, the summer months offer a golden opportunity. New friends are made on the cricket fields, and during the holidays. Once these boys hear of the fine times enjoyed by Club members, they will be anxious to join the Guild. The next few months will give members ample time and opportunity to "rope-in" that one recruit that I have asked them to secure. Many boys have already sent in the name of their new member, and to each of these I have written personally. I wish to take this opportunity, however, of again thanking these members for their prompt response to my suggestion, as mentioned in these Notes last month. I am ready to send Application Forms and Leaflets describing the Guild and its activities, post free on application.

Secretaries of unaffiliated clubs should also make a new endeavour to find Leaders and club rooms during the next few months. By vigorously making enquiries among their friends, they may hear of someone who will be willing to under-

Recruiting Award

take the responsible duties of Leadership. An interview is by far the most satisfactory arrangement, though when this cannot be arranged, I am always very glad to write and explain matters, if given the name and address of the proposed Leader. Sometimes the local Scoutmaster will be able to help, for some of the largest and most enthusiastic Meccano Clubs in this country are run in conjunction with Scout troops.

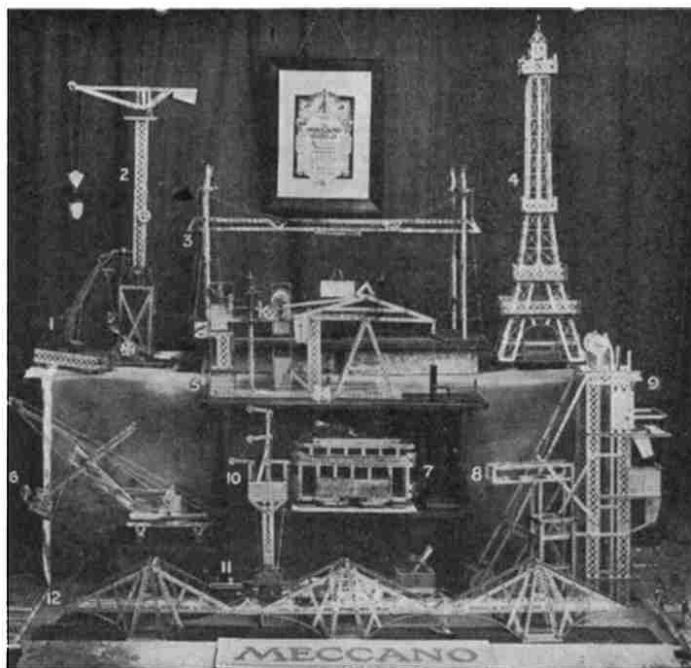
The summer months are ideal for fostering the Guild spirit, for above all, the Meccano boy is a sportsman, and he proves it to others by his actions and behaviour both at work and at play. A few years ago a big Meccano club organised its first cricket team and all the members were very keen cricketers. Skipped by the Club Leader, they had a very busy and enjoyable session playing other local teams. Towards the end of the season the Club Leader received a note from the Headmaster of a large school, inviting the club team to come over and play his school. The reason he gave for the invitation was that he had heard from the masters and cricket-captains of several other schools "that the Meccano boys were all thorough sportsmen." This, of course, was a very great compliment to the club, and it showed

It is pleasing to learn that on the occasion of a recent War Memorial Exhibition held at Observatory (a suburb of Cape-town) the assistance of two of our South Africa Meccano Clubs was invited. These were the Observatory and the Simon's Town Clubs. The former club has the distinction of being the largest Meccano Club in the world, and the latter club, though only recently affiliated, has already made splendid progress.

Our illustration shows the models built by the club members displayed at the Exhibition, (1 and 2) Different types of cranes. (3) Transporter Bridge. (4) Eiffel Tower. (5) Cornish Pump. (6) Steam Shovel. (7) Tram Car. (8) Tower Wagon. (9) Mine-Head Gear. (10) Signal Gantry. (11) Hornby Train and (12) Forth Bridge. It is interesting to note that No. 5, the Cornish Pump, was a prize-winning model in the £250 Prize Competition held last year, while No. 6, the

Exhibition of Models

BY A SOUTH AFRICAN MECCANO CLUB



Steam Shovel, was also awarded a Certificate of Merit in the same contest.

The excellent taste shown both in the grouping of the Models and the position of the framed Club Certificate makes this exhibit one of the best we have seen for some time.

We are pleased to take this opportunity, on behalf of all Guild members, of congratulating our two enthusiastic Overseas Clubs on their display and on the interest it aroused.

that the team were all true Meccano boys and worthy members of the Guild. Every Meccano Club will not receive compliments like this during the coming session, but they can all deserve them—which, after all, is what really matters!

It should be the aim of every Club to become widely known in its particular locality and thus gain more local support. It is not a bad idea to appoint one of the members Press or Publicity Secretary. His duty will be to send short reports of the Club's activities and notices of meetings to the local newspapers and to do everything possible to advertise the existence of his Club. The Parish Magazine, too, is an ideal medium for Club notices, which should include the name and address of either the Club Leader or Secretary, for the benefit of intending members. If no Press Secretary is appointed, the Club Secretary should himself make a point of sending in his report to the newspapers regularly each week and in good time for publication. Promptness and accuracy are necessary when dealing with newspapers, and if care is not exercised in these matters the Editor may quite naturally think the Club is not enthusiastic and may consequently decide not to insert further announcements.

Guild Spirit

Clubs and Publicity



CLUB NOTES

Luton M.C.—Several members are interested in Wireless and have been busily engaged in making Crystal Receivers. An interesting wireless evening was held some time ago. The Session closed on the 26th of last month with a social evening, which everyone present thoroughly enjoyed. **Secretary:** Master W. Humby, 11, Napier Road, Luton, Beds.

Liscard High School M.C.—Recently celebrated the fifth year of its existence, when thirty new members were enrolled. The club is divided into three sections, namely Engineering, Scientific and Miscellaneous. Outings, including visits to the Bidston Observatory and two football matches, have been greatly enjoyed by all sections. **Secretary:** Master B. Warburton, 11, Brisbane Avenue, New Brighton.

Parkstone Congregational M.C.—Chiefly owing to the increase in membership, it was recently decided to divide this club into two sections, Junior and Senior. An Assistant Secretary has therefore been appointed to the Junior Section. The new arrangement will no doubt be found a great improvement. **Secretary:** Master Stuart Bridge, "Newton Glen," Sandbanks Road, Parkstone Road, Dorset.

Etherhall M.C.—Master H. Dewhurst, who, in his capacity as Secretary has done a great deal of valuable work for this club, has, unfortunately, been compelled to resign on account of his health. Master L. Hansfield has now taken over the duties and reports that new members continue to join at every meeting. A recent lecture on "Mechanical Principles" was followed by a debate. **Secretary:** Master L. Hansfield, 7, Spring Street, Nelson, Lancs.

Leckhampton M.C.—Continues to make steady progress and reports a slight increase in membership. A football team was recently formed, and it is also hoped to secure the use of a cricket ground for the summer months. A model-building contest is held every month, while other evenings are devoted to indoor sports and games. **Secretary:** Master B. Rhodes, Cotswood View, Charlton Lane, Leckhampton, Cheltenham.

House (Guernsey) M.C.—At a recent meeting it was decided to issue a Club Magazine to be known as "Meccanotes." A model-building competition was held during the past session and several very ingenious models were exhibited. **Secretary:** Master H. Griffiths, Elizabeth College, Guernsey, Channel Islands.

Bromley C.C. M.C.—Has passed an enjoyable and successful session, and reports a slight increase in membership. In recent model-building contests it was found that the most popular models with members were "buses and lorries with special springing and steering. A combined delivery-shute and pit-head gear worked by weights only, was exhibited at a club evening and earned considerable praise for its young constructor. **Secretary:** Master C. G. Swan, Bromley County Council School for Boys, Hayes Lane, Bromley, Kent.

Footscray M.C.—Has recently joined forces with the local Scout Troop and is sharing the new Hall with them. This makes an increase in membership possible, and twenty new recruits have been enrolled. Ammunition, rope, woollen and glass works have been visited at various times. Enthusiasm is a marked feature of this progressive Colonial club. **Secretary:** Mr. H. L. Roach, 48, Sterling Street, Footscray, Victoria, Australia.

Leamington M.C.—The programme for the past session included several interesting lectures and papers, including "How to Re-enamel a Bicycle," "Model Railways," "Ins and Outs of Wireless," and a lantern lecture entitled "The Romance of the Daily Mail." A speed and accuracy contest was also held, while considerable amusement was caused one evening by every boy being called on to either deliver a lecture or make an impromptu speech. **Secretary:** Master A. R. Mannall, 12, Lansdowne Circus, Leamington Spa.

Garstang and District M.C.—This club has been passing through a somewhat critical period lately, but fortunately, owing to the exertions of the Secretary and some of the more enthusiastic members, the future now looks more promising. New members are cordially invited to write for full particulars, as it is desired to increase the club membership. **Secretary:** Master Lionel A. Nutley, Church Street, Garstang.

Club Recently Affiliated

St. Mark's M.C.—A new and larger club room was secured some time ago, in which the first event held was a Motor Derby. Other activities made possible by the increased space include, Boxing, Tennis, Foils and Ping-Pong. The members will carry-on during the summer months as the Albion Rambling Club. **Secretary:** Master L. Jones, 39, Wellmeadow Road, Hither Green, Lewisham.

How to Run a Meccano Club

by the
Guild Secretary

Affiliation with the Guild

When your Meccano Club is thoroughly established and has an adult Leader and a Club-room, and when meetings are being held regularly, application may be made for affiliation with the Guild. An affiliated Club is able to avail itself of certain privileges, such as the loan of Meccano lectures, short stories, and suitable plays for Club nights; the loan of working Meccano models for instruction, lantern slides (when available), and Meccano posters and printed matter for exhibitions. Individual members of an affiliated Club are eligible for the Special Merit Medallions awarded for service to the Guild.

Applications for affiliation to the Guild should in every case be made by the Club Leader, who should give the following particulars if there has been no previous correspondence to enable them to be extracted:—Name and address of Club and Leader; number of members on the roll; short report and balance sheet.

These particulars are placed before the President of the Guild and, subject to his approval, affiliation is granted. A certificate, beautifully printed in colours and measuring 23" x 18", is then despatched to the Club. This certificate is signed by the President, and is very suitable for framing and hanging in the Club-room.

The Four Sessions

The year is divided into four sessions. The winter session dates from October 2, the second winter session January 1, the spring session April 1, and the summer session July 1. Formerly, the Guild recognised only the two winter sessions, but lately there has been an increasing demand

that a summer session should be arranged, so that the members may keep together and enjoy each other's company during the fine days of summer.

Wise Leaders always endeavour to arrange rambles, cycle-runs and cricket-matches during the summer months. Our President, Mr. Hornby, is particularly keen on outdoor sports, and desires to encourage

all Meccano boys in this direction as much as possible. It seems only reasonable, therefore, that the Guild should have summer sessions, and that these should be as important and as enjoyable as those of winter.

The Club Programme

It is well to arrange a programme at the beginning of each session, and this programme should be adhered to as closely as possible. The programme may be arranged by the Leader and Secretary, or better still, at a general meeting held at the commencement of the session. It is difficult to please everyone, and the subjects should be those desired by the majority of members. The summer sessions are not difficult to arrange, but the winter sessions provide a little more difficulty. There are so many subjects and there is so much to do on Club nights that sometimes the programme may be satisfactorily arranged only by taking a vote.

Considerable care should be taken in drawing up the programme, because upon it may depend the success of the Club. The work of the session should be made as attractive and as interesting as possible, so that members will really want to come on Club nights, attracted by the interesting subjects. Next month I hope to give a suggested syllabus which may serve as a guide for new clubs.

Meccano Club Leaders

No. 13. Mr. RUDOLPH SAMUEL

The Liscard High School Meccano Club is fortunate in having Mr. Rudolph Samuel as Leader, for he has long been interested in boys and their hobbies. Before taking



over the Leadership, Mr. Samuel was for some years Scoutmaster of a local troop, and was therefore well-equipped with the experience thus gained. Membership of the Club is limited to pupils of the Liscard High School, but under Mr. Samuel's able Leadership, the club has grown from a few boys interested in the Meccano hobby, to its present membership of nearly 40. It is now in its fifth year of existence, and the present Leader has been in office since 1922.

The Club's activities are continued during the summer months, when cycling tours are regularly arranged by the Leader. Several interesting visits have been paid to local factories, including the Meccano works. In the winter, knotting, splicing, first aid, and football are popular, in addition to model building evenings and lectures, on which the members are very keen.

Clubs not yet Affiliated

Bombay M.C.—Is endeavouring to persuade a local gentleman to take over the position of Club Leader, when affiliation with the Guild will be granted. Members are all enthusiastic and several very enjoyable meetings have recently been held. **Secretary:** Master P. Daver, Bhiwandi House, Gwalia Tank Road, Bombay.

Ilfracombe M.C.—Has recently come under the guidance of a Club Leader, and will shortly be affiliated. A successful social was held some time ago, when each member brought a friend. Some original models were exhibited. New members are heartily welcomed and full particulars may be obtained from the **Secretary:** Master W. Webber, 14, Springfield Road, Ilfracombe.

JAEGER

(Pure Wool)

The New "Meccano" Jersey

By Arrangement with Meccano Ltd.

24"	26"	28"	30" Chest
7/6	8/3	9/-	9/9

Navy/Saxe
Light Fawn/Brown

Mid Grey/White
French Grey/Mole

Obtainable *ONLY* from Jaeger Depots and Agencies

There's a Jaeger Shop
in every Town.
Address on Application.



JAEGER

Head Retail Depot: 352/54, OXFORD STREET, LONDON, W. 1.

Wholesale and Shipping: 95, MILTON STREET, LONDON, E.C.2.

SECCOTINE

THE WORLD'S WONDER-WORKING ADHESIVE.

— USED IN ALL LANDS BY —

MEN

Seccotine is supplied to the Admiralty. It is used by makers of aeroplanes and in the foremost engineering works for pattern making. It is used by yacht builders:—when the spinnaker boom of Shamrock III. was broken in the accident of 1903, the repairs were effected with Seccotine. It is used by carpenters and model makers, by motor builders for oil joints; for museum work; for making and repairing of musical instruments, billiard cues, golf clubs, &c.; for the affixing of rubber tyres to rims of racing cycles, and for all manner of making and mending.

WOMEN

use Seccotine to save sewing in making fancy articles, in affixing cords, ribbons, and embroideries to cushion covers and textile surfaces generally; in patching clothes, curtains, and window blinds; in fastening rings to lace curtains; in mending shoes, trimming hats, mounting photographs, and in repairing the thousand and one household breakages. It is used in art manufactures of all kinds. In weak solution Seccotine is used to restore ostrich and other feathers, and to give springy feeling and new appearance to dresses, blouses, veils, and all light garments of silk, lace, or muslin.

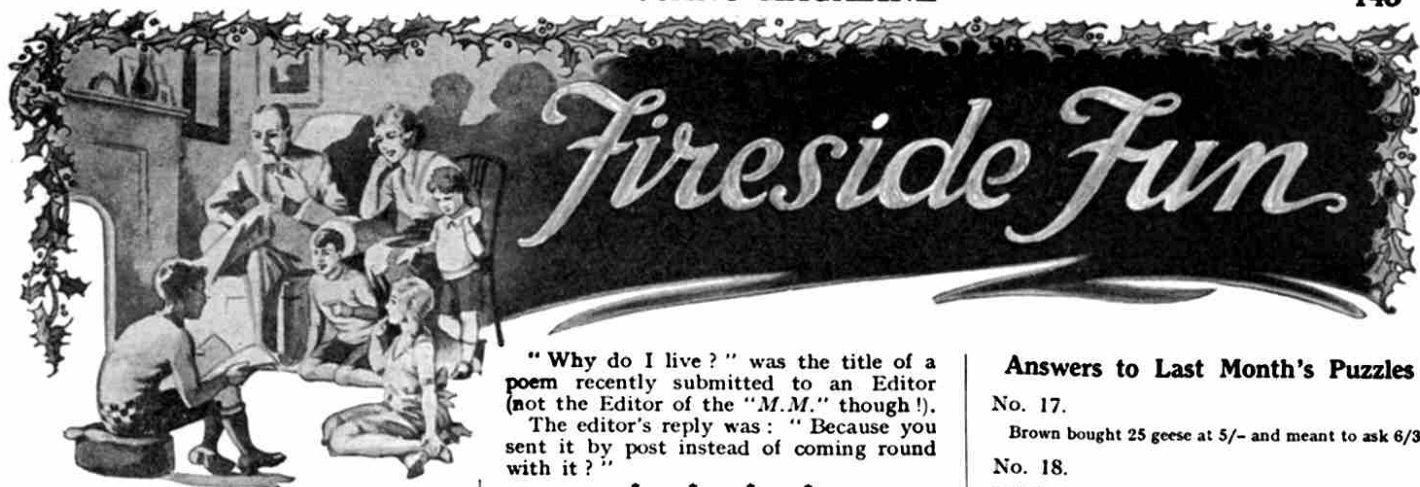
CHILDREN

use Seccotine to mend broken toys and to make for themselves new ones. The Children's Seccotine Box (1/6) is a great educator. The series contains models of church, school, and houses of varying size and style, the whole forming a model village. By the use of these model boxes hand and eye are trained to work together, and the ingenuity of the little worker has full scope in the utilisation of all sorts of waste material on the models—the gelatine of crackers for glass, the wood of burnt matches for door posts and window frames, sand for rough casting, moss for wall climbers, powdered brick, &c.

FIRMAS (Heat Seccotine) should be used if the repaired articles are required to hold liquids, hot or cold.

Booklet of interesting information, free on application to

M'CAW, STEVENSON & ORR, LIMITED, THE LINENHALL WORKS, BELFAST,
329, High Holborn, LONDON, W.C.1; and at BIRMINGHAM and GLASGOW.



DURING the past few weeks the Editor's tongue has been kept busy endeavouring to avoid the pitfalls prepared for it by ingenious compilers of tongue-twisters! Since the last tongue-twisters were published on this page we have received hundreds of letters from readers who evidently take a keen delight in evolving tongue-twisters, which they hope will tie any tongue into a hopeless knot! Many of these tongue-twisters are original, but others are of quite a respectable age. There are, for instance, dozens of sentences regarding a certain ancient person named "Peter Piper," but even his popularity has been exceeded by a young lady named Betty, whose life's aim seems to have been to buy some bitter butter! Then Sister Susie, who was very popular a few years ago, appears to have commenced sewing shirts for soldiers again, and many other well-known twisters have been resurrected in the hope that they would confuse the Editorial tongue—but so far they have not succeeded!

There is no doubt that tongue-twisters are very popular with our readers, and we are printing some more this month, and shall follow them with further selections in our future issues. In the meantime, if any reader is able to quickly say the following twisters a dozen times without taking more than one deep breath, his best plan will be to endeavour to get father, or some friend, to try his luck!

She stood on the step welcoming him in.

A saucer full of Worcestershire Sauce, sir.
(These two tongue-twisters are contributed by Master D. R. Brown, Sidcup, Kent).

There was an old woman who was a thistle sifter.
She had a sieve of sifted thistles, a sieve of unsifted thistles and a sieve of thistles to sift and so she certainly was a thistle sifter.
(Contributed by Master A. L. Cruickshank, Aberdeen).

A pretty crop of poppies in a copper coffee pot.
(Contributed by Master R. Bigg, Salisbury).

Lady (watching workman): "Are you copper-bottoming 'em, my man?"
Workman: "No, mum, I'm aluminiuming 'em, mum!"
(Contributed by Master R. Lant, Burnley).

Dick: "I see they are able to make engine-wheels out of paper now."
Jim: "Is that so? I suppose they use them for stationery engines!"

"Why do I live?" was the title of a poem recently submitted to an Editor (not the Editor of the "M.M." though!). The editor's reply was: "Because you sent it by post instead of coming round with it?"



Dobson: "The finest thing you can eat—an apple. 'An apple a day keeps the doctor away.'"

Hobson: "That's right, old chap, and an onion a week keeps everybody away!"

Puzzle No. 19.

There are sixty-four squares on a draught board. On the first square you place one farthing, on the second two, third four, fourth eight, and so on. Keep doubling the last amount with each successive square. How much would it come to?

(Answer Next Month.)

We offer a prize of 5/- for the best puzzle submitted each month, and prizes of 2/6 each for any other puzzles printed.

Puzzles should be expressed as clearly as possible and the answers should be given in each case. Diagrams should be clearly drawn and letters should be addressed "Puzzles," Meccano Magazine, Binn's Road, Liverpool.

This Month's Short Story.

Man. Bus.
Run. Fuss.
Wrong bus.
Man cuss.

"Father," said Dick, "you know that field, where the wild beast show is being held? Well, I saw a lion and a lamb lying side by side in the open field this morning."

"Nonsense, Dick!"

"I tell you I did," persisted Dick, edging away, "but it was a dandelion!"



An Irishman was handling dynamite in a quarry. He let a stick drop, and the whole box went up, taking him with it. The quarry boss came around later and said to another Irishman: "Where is Mike?" "He's gone," replied Pat. "When will he be back?" asked the boss. "Well," replied Pat, "if he comes back as fast as he went, he'll be back yesterday."

Answers to Last Month's Puzzles

No. 17.

Brown bought 25 geese at 5/- and meant to ask 6/3.

No. 18.

A Suller sat in his ulster grey,
Watching the moonbeams' lustre play
On a keg that in the bushes lay.
And the leaves with their rustle took up the song:—
"Thou luresst the brave; Thou rulest the strong,
To thee doth result of great battles belong,
John Barleycorn, my king."

The puzzle competition that we recently organised has brought a large number of entries, and it will take some time to classify them. We hope, however, to announce the result in our next issue.

An excellent form of puzzle has been submitted by Master Sheddon, of Cathcart, Glasgow. The puzzle is to fill in the blanks with names of well-known newspapers, magazines or periodicals. Our monthly award of 5/- has been paid to the sender of this puzzle, and 5/- will be paid for the first correct solution received by the Editor of the "M.M." Solutions should be written on post cards and competitors are only required to give a list of the missing names. If you cannot guess all the names, send in your solution with as many answers as possible.

Puzzle No. 20.

The ^{Answer} were hard; the feet of the man sounded on the frozen roadway, and the rose-trees in the garden were leafless. The fires formed a perch for half-starved birds, and the showed like a of fire in the sky. To the it seemed a hard, cold and, to tell the, it was so. A train went by at speed, bearing the of letters from the country together with the from a great town. A description of the scene was written in for those who live a and do not hear the.

(Answer Next Month).

Another good form of puzzle is that of hidden names, and the following four examples have been submitted by Master R. F. Lawson, Welling, Kent. The names of four animals are hidden in these four examples, the letters running one after the other in their correct order.

Puzzle No. 21.

- Poor wretch! A moisture filled his eye.
- Do not rebuff a lonely boy.
- Said he "If ere I sink and die."
- Your smile, O padre, will be joy.

(Answers Next Month).

PRIZES for PAINTING

Can you paint? Make an outline tracing of this picture of the girl and boy, on their Fairycycles, colour it in what you think to be the most attractive way, and post it to us with your name and address, age, and a covering letter from your parents stating that you are the possessor of a Fairycycle.

To those boys or girls under the age of 12 who own Fairycycles and who send in the three best paintings, we shall award the following cash prizes:

First Prize - £5
Second Prize £2 10s.
Third Prize - £1

Just think what you could do with this money! How many weeks' pocket money does it represent? Think of all the toys and games you would be able to buy at once, without having to wait for your birthday, or until you have saved up the money.

Or if you are going to the wonderful Exhibition at Wembley this money would enable you to enjoy the thrilling side shows—such as the scenic railway the switchback and the water chute—to your heart's content.

Entries must reach us not later than June 10th.

The decision of Lines Bros. will be final.

Names and addresses of the winners will be published in the July issue of the *Meccano Magazine*.

Mark your envelopes "Fairycycle Competition," and send them to Lines Bros. Ltd., 9 Fore Street, London, E.C.

The FAIRYCYCLE

THE CHILDREN'S BICYCLE

Patent No. 169294

Regd. Design 677489

As illustrated, only

59/6 each

at all good Toyshops
and Stores

As Advertised in the DAILY MAIL and DAILY MIRROR.

Note the Low Centre of Gravity, this makes it safe for the Kiddies.

Insist on these:—Cone Bearing Steering Head, Brake, Freewheel, Adjustable Chain by means of Pedal Bracket (you know how all chains stretch), Reinforced Seat Pillar, Ball-Bearing Rubber Pedals, Mudguards—Back and Front, Highly plated Fittings.

If you demand the **FAIRYCYCLE** (Regd. Trade Mark), you will get it, but look for the Triangle Trade Mark and the word FAIRYCYCLE on frame.

"Be particular in this." Insist on seeing the celebrated Trade Mark on the Fairycycle and on all your toys. It is a guarantee of Quality and Value and of British Manufacture.

Also Supplied on Pneumatic Tyred Tangent Spoke B.B. Wheels.



Wholesale only from

LINES BROS. LTD., 9, Fore St., London, E.C.

TOY DEALERS! Why not put this page in your Window?

Scouts! Come to Gamages!

No matter what it is, if it's for Scouts, Gamages have it. Write for our Illustrated Scout Catalogue—every page crammed with bargains of interest to Wolf Cub, Scout and Rover alike. POST FREE ON REQUEST.

May, 1924

Camp out this Summer!

There's no finer hobby out! But be sure your Kit is reliable. Come to Gamages. Tents, Cooking Utensils, all Campers' Clothing, Knives—everything. You'll find them all illustrated in our Special Catalogue for Scouts and Campers—Write for a copy. POST FREE ON REQUEST.

Enter Summer!

And with it comes the need of New Kit for your Summer Sports!

This is where Gamages help you! No matter what your Sport, just come along to Holborn and take a look round Gamages!... You'll declare it to be an afternoon well spent, and what's more, you'll see all those things you've been wanting for so long but have been unable to get elsewhere—Come along TO-DAY!

CRICKET!

Gamages have already done a huge 1924 trade with those wise clubs who buy early. Don't leave it too late to get YOUR Kit. Send your order NOW.

GAMAGES CRICKET BALLS!

"YORKER SOMPO"
Full size Match Ball
Price 2/6 Post 4d.

The "Eclipse" Compo Match Ball
Price 2/- Post 4d.

Youths' Selected "Yorkshire DRIVERS." Double Rubber and Cane Handles. Selected Blades.
No. 4 Price 10/6
No. 5 " 11/6
No. 6 " 12/6
Harrow, " 17/6
Post 6d. and 9d.

BOYS' SELECTED ALL-CANE HANDLE BATS.

No. 3 Price 5/11
No. 4 " 6/3
No. 5 " 6/8
No. 6 " 7/8
Postage 6d.



The "Special Crown." A splendid Match Ball of leather, as illustrated. Youths' Size, each 11/6
Men's Size, each 12/6
Many other splendid Balls in stock.

Summer SPORTS Clothing

FLANNELS

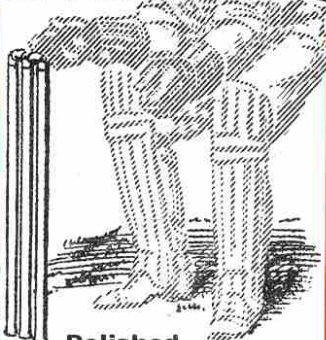
To fit boys 10-16 yrs.
Side Straps Pair 9/11

CRICKET SHIRTS
Sizes 11½ to 14½ neck.
White Union, each 5/11

CRICKET TAPS
BLAZERS
Striped All-Wool Flannel. Boys up to 12 years each 14/6
and 1/-

CLUB TIES
To match Blazers as above. Prices each 1/8 and 1/-

CLUB BELTS
These are also made to match Blazers. each 1/-



Polished ASH STUMPS

Boys' and Youths' Polished Ash Stumps.

18" long per set 1/9
22" long per set 2/6
26" long per set 3/6
20" long per set 2/-
24" long per set 3/-
28" long per set 4/-
Carriage extra.

All your CRICKET Needs

LEG GUARDS
Strong White Drill, 14".
per pair 6/6

CLUB BAGS
Khaki, Strong Canvas.
36" x 12" x 8". Price 12/6

BATTING GLOVES
Feather-Weight, Tan Cape, Hair Stuffed. Youths' pair 4/6

WICKET KEEPING GLOVES
Tan Cape. Very strong. Rough Palm. Youths' pair 8/11

CRICKET BAT OIL
In Tins. Pint Tin 1/9
7oz. Tin 8d.

TENNIS!

You cannot possibly better Gamages for your Tennis needs. Quality is higher, Prices lower, and there is a larger selection from which to choose.

THE BEST BALL FOR YOU!



Gamages "REFEREE" Tennis Ball. A good medium-priced ball, very suitable for Junior Clubs. Covered with good strong cloth, cemented and sewn.

Price per dozen balls in box, Postage 9d., One of the best balls at the price on the market. 12/6

Just the 'School' Tennis Racquet. Racquet for you Boys! A very strong & serviceable Racquet, strung red and white with double centre mains, hollow wedge, and silk-bound shoulders.

Price post 6d. 12/6
The finest racquet obtainable at the price.

The Best

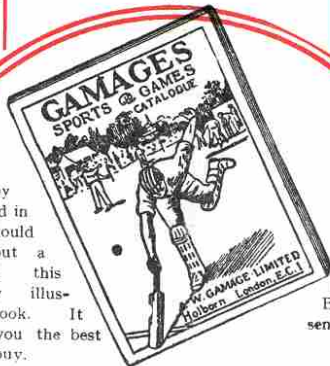
Cricket Boots

For Boys are the celebrated A.W.G. Uppers stout white canvas, stout 3" butt leather soles. Splendid wearing. Boys' sizes, 2, 3, 4 and 5 Pair 15/9

Men's Sizes, pr. 16/9
Cheaper Qual. Men's, 14/9
Boys' 12/9, Post 6d.



Cricket Spikes fixed free of charge.



No boy interested in Sports should be without a copy of this beautifully illustrated book. It shows you the best kit to buy.

Just drop us a card—that's all! And this 50-page Sports Book will be sent post free.

GAMAGES 1924 SUMMER SPORTS CATALOGUE

No matter what your Sport, this splendid book gives details of every Summer Sport and Pastime under the sun. Send right away. POST FREE ON REQUEST.

Complete ANGLER'S OUTFIT



Fishing's splendid fun and a fine hobby. Start this year with this complete guinea outfit. Each box contains 8 ft. 3 in. joint rod, rings and reel fittings, reel, lines, floats, gut casts, ledger, 7 hooks to gut, plummet, split shot, disgorger, haversack, worm bag, bait, and book on "How to Begin." Price complete, Post Free 21/-

The "Shurfut" Tennis Shoe

A speciality of Gamages. Light and comfortable, and will give good wear. A very reliable shoe for Tennis, Boating, etc., etc. Uppers of good quality white canvas, white rubber soles and goloshed. Very easy and of smart appearance.

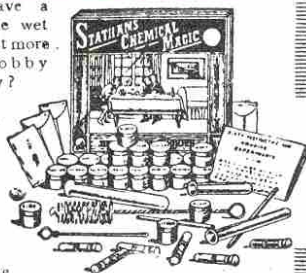
Boys' sizes, 2, 3, 4 and 5 per pair 4/11
Men's sizes, 6 to 11. Price per pair 5/11
Postage 6d.



Get a pair of these to-day

CHEMISTRY!

You must have a hobby for the wet evenings. What more interesting hobby than Chemistry? You can get a Chemistry Set at Gamages at prices up to 105/-. Neat box of chemicals, with instructions, etc., complete for performing 50 experiments.



Price Post 6d. 3/3

For performing a larger number of experiments, etc. (as illustration) Post 6d. Price 5/6

PHOTOGRAPHY!



Films ... each 1/2
Canvas Case .. 2/6
Special Brilliant View Finder .. 2/-

Start Photography this Summer with a "Sportie Carbine"—just the Camera for Boys. For Roll Films V.P. Size (1½" x 2½"). Beautifully made, covered antique grey leatherette. Time and Instantaneous Shutter. Easy to load, direct vision view finder. Complete in box with instructions. Price 8/6
Post Free.

A. W. GAMAGE LTD., HOLBORN, LONDON, E.C.1.

Cheapside House, BENETFINKS

PUBLISHED BY MECCANO LTD., BINNS ROAD, LIVERPOOL.
Printed by Stambidge & Co. Ltd., Abholm Street, Leeds.