

Speed on the G.W.

Recently 160 signal boxes between Plymouth and Paddington were linked up in a chain 227 miles in length, sending each other the code "Line clear for Plym B." Meantime the special train conveying the new American Ambassador thundered along on its way to London. Its load of 350 tons was drawn at a speed of 60 miles an hour, by the G.W.R. giant locomotive "Shooting Star."

To facilitate signalling all the ocean specials leaving Plymouth are coded as "Plyms," the letters A, B, C, etc. being added according to the weight and route of the train. "Plym A" is the fastest schedule and is timed to do the non-stop run of 227 miles in 4 hours 4 minutes. "Plym B" works under a schedule of 4 hours 10 minutes, and sometimes knocks as much as 10 minutes off her handicap, and so beats the fastest schedule by 4 minutes.

On a subsequent occasion to that mentioned above, passengers landed from the Mauretania did the 227 miles journey in 243 minutes, or seven minutes under schedule in spite of three minutes' delay by signals.

We hope to give further details of these trains in an early issue.

* * * *

Lost—a Ring!

The old colour of the L.M.S. Rly. steamship funnels (buff, topped with a ring of red and a black cap) is being changed to buff and black only, the red ring disappearing.

* * * *

Loud Speakers at St. Pancras

Loud speakers are being used at St. Pancras to announce the time and platform of departing trains. Passengers waiting for a train recently were astonished to hear a loud voice saying, "Hurry up for the 3.30 to Leeds, Platform Five."

* * * *

Eggs-traordinary!

Just above the buffer on the front of a railway wagon that arrived at Hull recently was a bird's nest containing several eggs!

* * * *

Hostel for L.M.S. Railwaymen

With a view to giving stranded crews of engines more comfortable quarters when away from home, the L.M.S. have decided to build a new hostel at Camden Town for the benefit of drivers, firemen and guards. The hostel will contain 90 bedrooms, reading, dining and recreation rooms, and will be fitted with central heating. In addition to a modern laundry, a special room will be reserved as a drying room for clothes after long journeys in bad weather.

* * * *

Automatic Signalling Posts

Automatic signalling has saved £12,000 a year in signalmen's wages on the Metropolitan Railway, and enabled a 60% increase in the number of trains. Similar arrangements on the City Railway have enabled eleven boxes to be closed altogether whilst four more need only be opened at certain times.

Alterations at Paddington

The Directors of the G.W.R. have authorised an extensive re-arrangement scheme for Paddington Goods Station, to be carried out at the same time as the renewal of the roof and the columns supporting it. This roof has been in existence since 1868 and the respacing of the columns will enable a greater width of platform to be provided for the introduction of the latest mechanical handling appliances. A considerable reduction in working costs is anticipated as a result of these alterations.

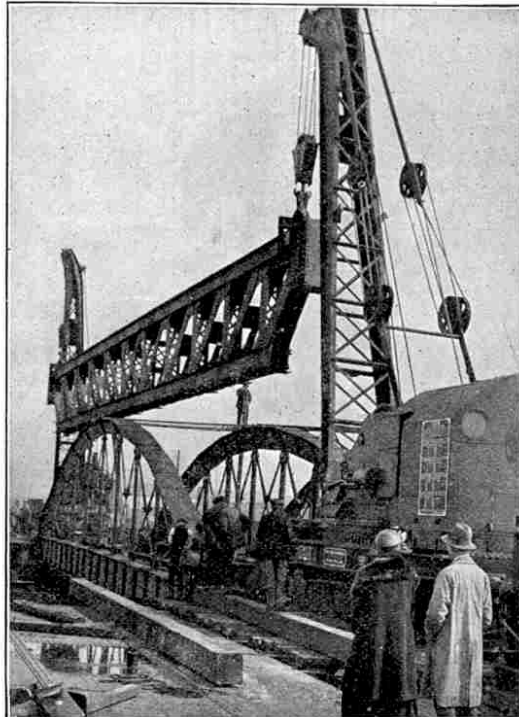
Handling a 53-ton Girder

Photo courtesy]

[G.W. Rly.

Our illustration shows two 36-ton Railway Cranes placing a girder in position on the Viaduct that spans the main channel of the River Usk. The girders are 102 ft. 6 in. in length, 10 ft. 6 in. in depth, 2 ft. 6 in. in width, weigh 53 tons, and support the new "up" line of the G.W. Railway. The new girder is seen, after it has been unloaded from its truck—which is standing on the existing bridge—being lifted over the top of one of the old main girders, 16 ft. 6 in. above rail level.

L.M.S. Locos

This year the L.M.S. proposes to build 220 heavy passenger and goods locos and 15 light 0-4-4 tank locos for local service round Glasgow (Caledonian section).

Crewe, Derby, and St. Rollox (Glasgow) Works are turning out 70 Midland type 0-6-0 superheated heavy goods locos. St. Rollox is also to build five of the 0-4-4 tanks mentioned above, the other 10 being on order with a Manchester firm, which is also building five 4-4-2 tank locos for the London, Tilbury and Southend Section of the old Midland line.

A large number of 0-6-0 goods tank locos of the Midland "1900" class are being placed in service, many coming from a private works at Leeds.

On various parts of the system numbers ranging from 7100 to 7163 have been noted on these locos which, although of Midland design, are strangely being numbered in the L. & N.W. group (5.000-9999).

"Flying Scotsman" Returns to Wembley

The "Flying Scotsman," the world-famous "Pacific," which has travelled more than 100,000 miles in somewhat less than two years of service, has arrived at Wembley again and was jacked broadside over a space of 30 ft. from the railway siding to a standard track in the Palace of Housing and Transport, where she will remain during the Summer. On this occasion she was accompanied by one of the new L.N.E.R. sleeping cars, which embody the latest ideas in luxury travel.

* * * *

Alterations at Crewe

Owing to the great increase in size and weight of modern locomotives, the L.M.S. has decided to considerably alter the locomotive works at Crewe, at a cost of nearly £500,000. High-speed electric cranes will be provided for the old erecting shops, all the steel plant will be remodelled, and the latest types of machinery will be introduced. The scheme will be begun almost immediately, plans already having been passed.

* * * *

New Whistle for Electric Locos

A new type of whistle has been devised for use on electric locomotives. The compressed air type already in use gives quite sufficient warning, but its drawback lies in the fact that in the event of a number of locos being near one another it is difficult to detect which one is whistling, owing to no steam being seen. The new whistle has a small tube adjacent to it and at the same time that the whistle sounds a puff of white "smoke" is discharged through a special fluid being atomised and discharged by compressed air.

* * * *

Three "Garratt" Locos for Chili

Messrs. Beyer, Peacock & Co., of Manchester, have recently received an order from the Nitrate Railways Co. Ltd., for three "Garratt" locomotives of the 2-8-2: 2-8-2 type. The locos will have coupled wheels 3 ft. 6 in. in diameter, the cylinders being a bore and stroke of 21½ in. by 20 in. They are designed to burn oil fuel and

will have a rigid wheelbase of 12 ft. with an overall length of 75 ft. The total weight of each loco will be 170 tons.

The locos are being specially constructed for service in Chili, between Iquique and Cartas, a difficult section 20 miles in length with an average gradient of 1 in 25. Over this route they will haul loads of 360 tons.

The "Garratt" type of loco was fully described and illustrated in the October 1924 number of the "M.M."

* * * *

Non-Stop Train Trials

A series of trial non-stop runs is being held by the L.M.S. over Shap summit with the object of ascertaining the capabilities of different types of locomotives. The experimental train is timed at pre-war speed and recently was drawn by the Crewe-built loco "Kestrel," between Carlisle and Preston.

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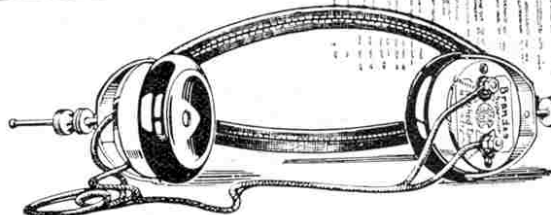
-for Young Bill

The fever of the experimenter has fired young Bill's ambition. In the picturesque vernacular of our American friends he's "cottoned on to the hull bunch"—vacuum tubes, hook-ups, new wave bands, right down to the last binding post. He tunes in the distant stations now with his *Matched Tone Headphones*, and is content. They bring in the faintest signals, their delicate supersensitivity making them unexcelled for long range telephony.

And the *Table-Talker* is just fine. To his credit, Bill refuses to acknowledge the family's praise. "It's not me tinkering about," he says, "the *Table-Talker* always came through as if you were actually in the studio, and with no scratchy notes." Ask your Dealer for Brandes.

Table-Talker
42/-

Matched Tone Headphones
20/-



A One-Million Volt Arc

Wonderful Electrical Experiments With High Voltages

AN event of great historical interest in the progress of electrical engineering in this country took place a few weeks ago at the works of Messrs. Ferranti Ltd., Hollinwood, Lancashire, when for the first time in Great Britain a pressure of one million volts (R.M.S.) above earth was obtained.

Our illustration gives an excellent impression of the experiment. Three pressure transformers were connected in cascade under the Des-sauer patent, of which Messrs. Ferranti are the sole licensees for the greater part of the British Empire. The primary of the first transformer, not shown in the photograph, was supplied with alternating current at 12,000 volts and gave 333,000 volts on its secondary. This second transformer seen on the left, was insulated from earth, and one end of its primary winding was connected to the 333,000 volt terminal of the first transformer, the other end being connected to a 321,000 volt tapping. In this way the secondary winding of the second transformer raised the pressure to 666,000 volts. Similarly the third transformer, seen in the centre of the photograph, was insulated from earth and supplied from the second transformer, and thus the pressure was raised to one million volts above earth, resulting in a wonderful sustained arc 9 ft. 6 in. in length.

Some Curious Effects

During the experiment a number of curious effects were observed. In the illustration, an arc is seen underneath the third transformer in the centre of the picture. This is due to the transformer not being far enough away from the side of the testing pit, with the result that an arc jumped from the metal sheet on which the transformer stood to the pit side. The glow behind this transformer resulted from a short circuit that occurred in a lamp holder, fixed on a pillar of the building, through high pressure being induced in the wiring.

All the voltage figures given are what are known as "R.M.S." values. These three letters stand for the words "root-mean-square," which are employed to express virtual voltage or current values. No doubt few of our readers are sufficiently far advanced in their electrical studies

to have reached the question of virtual values, and although the matter is complicated and difficult to understand, we will try to explain it in the easiest possible manner.

Alternating Current Waves

A direct or continuous current is one that flows constantly in one direction only, whereas an alternating current,

the completion of one cycle is represented by the distance a—c. The time of duration of one cycle is called its "period." Messrs. Ferranti passed into the first transformer a current of 12,000 volts at 60 periods. This means that the current performed one complete cycle in one-sixtieth of a second.

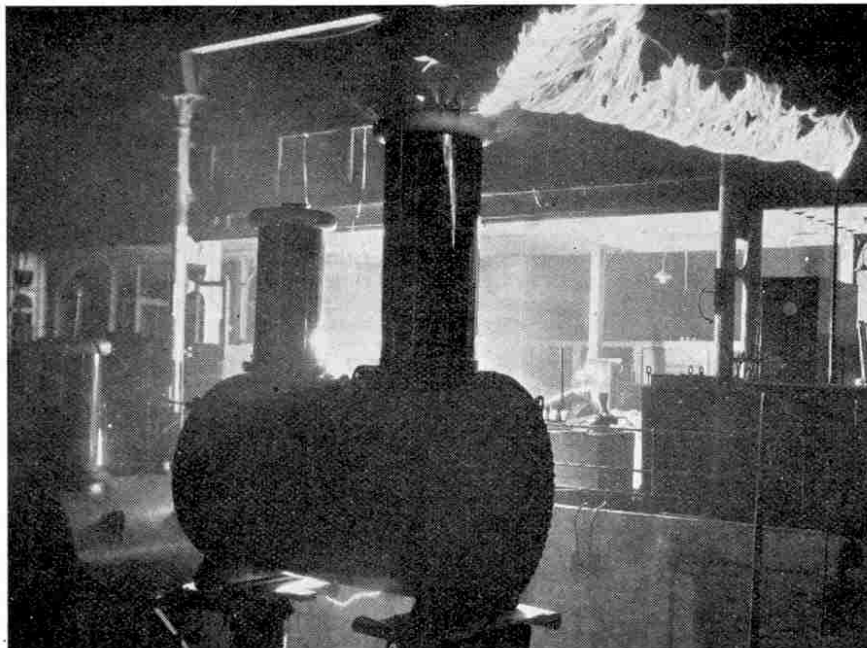
"R.M.S." Values

When a continuous current is passed through a wire it produces a certain heating effect. An alternating current also produces heat in the same way, and if its heating effect is the same as that of a certain continuous current, then the value of that continuous current is the "virtual value" of the alternating current. As our diagram shows, the value of the alternating current is not constant, but rises and falls from zero to maximum and back to zero, and its heating effect at any instant is proportional to the square of the current flowing at that instant. The mean heating effect during one half-period is thus proportional to the mean of the squares of all the varying instantaneous

current values during that time. In order, therefore, to obtain the virtual value of the current, we must find the square root of the mean of the squares of all the instantaneous values. For this reason the virtual value of an alternating current is often called its "root-mean-square" or "R.M.S." value. This value is, of course, lower than the maximum or "peak" value, and the actual peak value of the pressure across the 9 ft. 6 in. arc was 1,400,000 volts.

During the past few years Messrs. Ferranti have made many interesting testing transformers, including one to give 500,000 volts in a single unit.

This experiment illustrates in a striking manner the great practical value of alternating current in that it may be readily transformed to very high pressures. Similarly it may be re-transformed to low pressures when required. It should be remembered that such transformations do not result in any increase or decrease of the total energy of the current. Apart from a very slight loss of energy in the form of heat, a transformer delivers the same number of watts as it receives, but at a different voltage.



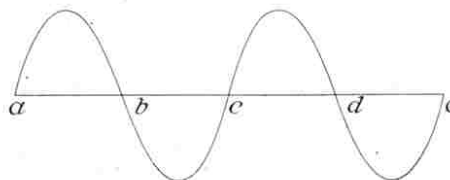
Courtesy of]

A Million-Volt Arc, 9 ft. 6 in. in length

[Messrs. Ferranti Ltd.]

such as was used to produce this great arc, changes its direction at regular intervals of time and attains the same value in each direction. Alternating currents therefore flow in waves. Various wave forms are obtained in practice, according to the construction of the generator and the kind of load it is supplying. The simplest form is the symmetrical wave shown in the accompanying figure.

In this curve the current flows through a set of positive values during the interval of time represented by the distance a—b, and through a corresponding set of negative values during the equal interval represented by the distance b—c. When the current has passed through a complete set of values, positive and negative, we say that it has performed one "cycle." In the diagram the period required for



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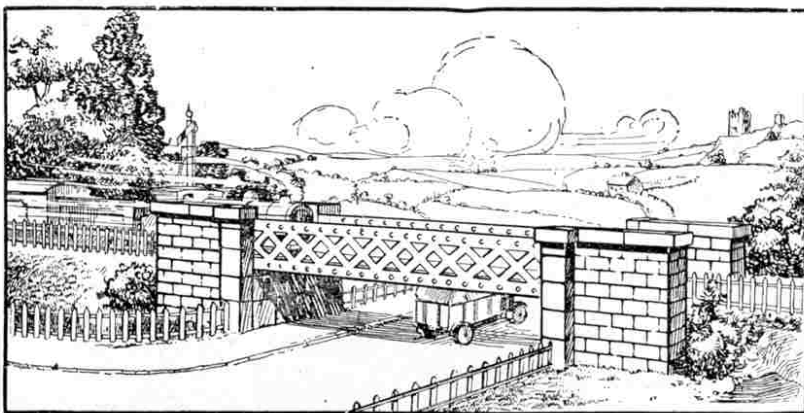
FOR YOUR GARDEN RAILWAY

OF
STONE

If you have not already added these Bricks to your Model Railway, you will be surprised at the extra pleasure a box or two will give you.

SERIES "B."

2/-	Box, O	...	6 Models.
3/3	,, OA	...	12 ,,
5/-	,, A	...	12 ,,
10/-	,, No. 1	18	,,
17/6	,, ,, 3	49	,,
37/6	,, ,, 6	71	,,



The above illustrates a simple type of Girder Bridge constructed with stone blocks and girder and angle strips. The brickwork is built with F's and G's, the piers with E's and F's, and the coping with D's, F's and H's. The metal work used is "Meccano."

Bridges of any style can be constructed to carry the heaviest type of passenger carrying model locomotives. The piers illustrated have been tested to carry weights of over one ton, although the stone work is only one inch in thickness. If desired, structures of this type can be permanently erected in the open, the bricks being cemented with a special preparation.

Bricks and all component parts can now be purchased separately from any of our advertised stockists.



Model from Box OA
Signal Cabin

Lott's Bricks
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SOME LONDON STOCKISTS

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| J. Barker & Co. Ltd. | Hamleys Ltd. (All Branches). |
| Benetfink & Co. Ltd. | Selfridge & Co. Ltd. |
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SOME PROVINCIAL STOCKISTS

"TUDOR BLOCKS"	Bexhill-on-Sea	Barkers' Stores.	Manchester	Lewis's Ltd.
Box 1. 6 Models ... 3/6	Bath	Barley & Son.	Nottingham	Wiles Ltd.
,, 2. 12 ,, ... 7/6	Brighton	J. S. Common & Son.	Newcastle-on-Tyne	Pearson & Pearson.
,, 3. 18 ,, ... 17/6	Cardiff	W. H. Kitch.	,,	Becroft & Son.
GARDEN SETS.	Clacton-on-Sea	Staffords Ltd.	,,	T. G. Allen.
Box 1 contains Trees, Fences,	Canterbury	Stephens' Bazaars.	Plymouth	Alfreds'.
Roofs, Shrubs, Shells,	Derby	H. D. Simmonds.	Taunton	E. G. Browne.
and Golden Sand 4/-	Edinburgh	F. Finn & Sons.	Wolverhampton	W. J. Coles.
Box 2. Larger Size ... 6/-	Glasgow	Midland Drapery Co. Ld.	Walsall	Harris Bradley.
	Huddersfield	Jenner's.	Worthing	W. Sherwood Miller.
	Herne Bay	R. Wylie Hill & Co.	Weymouth	J. H. Ray.
	Leicester	Rushworths Ltd.	Winchester	Wallis's.
	Leeds	Lanes Library.	Belfast	Watson & Sons.
		Robothams Ltd.	Cork	Patterson & Sons.
		The Grand Pygmalion.		E. H. Wollam.



A Model from Box 2
Tudor Blocks

Cash prizes of £1 1 0 and 10/6 are offered monthly for the two best accepted designs of bridges of metal and stone.

Famous bridges, or portions can be copied as practicable. The designs submitted must be drawn or suitably photographed for reproduction and posted to "LOTT'S BRICKS LTD.," WATFORD, marked "BRIDGE COMPETITION," not later than the 20th of each month. Approved designs will be published in the "M.M." five weeks later.

BRIDGE COMPETITION

ENTRY FORM

Class.....

Signature and
Acceptance of
Conditions

Address
(Write Clearly)

WRITE FOR ILLUSTRATED LIST AND NAME OF NEAREST AGENT.

LOTT'S BRICKS LTD., WATFORD, England

Competition Corner

"Where I Should Like To Go For My Summer Holiday"

We have now reached a period of the year when the majority of boys want to be out in the open air every possible minute, and when they have little inclination to stay indoors to write essays. At the same time there is one topic that is of interest to every boy and that is the approaching summer holiday. Probably all boys can raise a considerable amount of enthusiasm in discussing where they would like to go for their summer holiday if they were free to choose, and we want our readers to try their hand at setting down briefly their ideas of this interesting problem.

We do not wish this to be looked upon as an Essay Competition, but as a short talk to us, as it were, on

"Where I should like to go for my Summer Holiday."

Prizes will be awarded to the four competitors who put forward what appear to us to be the most interesting holiday schemes, and in judging the essays we shall attach much greater weight to a good scheme than to accuracy of spelling and other similar matters.

The contest will be divided into class A for those of 14 and over, and class B for those under 14, and the prizes will be Meccano goods to the value of £1/1/- and 10/6 for the first and second in each section respectively.

Essays must be written on one side of the paper only, and the competitor's name, address and age must appear on the back of each sheet used. Closing date 31st July.

Sixth Drawing Competition

For our Drawing Competition this month we intend to tear ourselves away from the fascination of locos and motor vehicles and transfer our attention to Ships. The subject will be "A GREAT PASSENGER LINER."

No subject gives more scope to a boy possessing artistic ability, while at the same time every boy without exception must feel interested in trying his hand at reproducing, on paper, one of the great floating palaces that have made crossing the oceans of the world a thing of everyday routine.

All our readers have access to illustrations of the great ships of the White Star, Cunard, P. & O. and other famous lines, and therefore a reader living inland will be at no disadvantage as compared to one living in a great seaport such as Southampton or Liverpool.

The competition will be divided into two classes, A for those of 16 and over, and B for those under 16. Four prizes are offered—Drawing or Painting Materials (or Meccano products if preferred) to be selected by the winners, to the value of 10/6 and 5/- respectively, for the first and second in each section.

If a competitor wishes his drawing to be returned, he must send a request to this effect along with his entry, at the same time enclosing a stamped envelope of suitable size.

Closing date 31st July (Overseas: 31st October).

For Club Members Only Suggestions for Programmes

As we have stated on previous occasions, we are anxious that 1925 should be a record year for Meccano Clubs and for the Guild generally. During the past winter many clubs have widened the scope of their programmes to include many new and interesting subjects and by so doing have greatly increased, not only their membership, but the spirit of enthusiasm throughout the club. From time to time club members write to us to make suggestions which, in their opinion, would improve club programmes. Some of these

suggestions are impracticable for various reasons, but on the other hand quite a fair proportion are of real value. We believe that many other club members must have ideas of this nature that they have not yet sent us, and in order to impress upon every member that we are anxious to receive suggestions of any kind, we announce this month a competition open to club members only, the subject being "MY THREE SUGGESTIONS FOR IMPROVING CLUB PROGRAMMES."

Prizes—10/6 for the winning entry and a Morocco leather wallet for each of the two next best entries.

All that a competitor has to do is to write down briefly and clearly three ideas that have occurred to him as being likely to increase the interest of a club programme. Each entry must be clearly marked with the competitor's name and address, and also the name of the club of which he is a member. Closing date 30th June (Overseas: 31st October).

Results

March Essay Competition

The most interesting feature about the large number of entries in this competition was the great variety of ambitions shown. As we expected, the majority of competitors expressed a preference for an engineering career of some kind, but the remaining entries covered practically the whole range of professions and trades. In some cases the reasons given for choosing a particular avocation were somewhat quaint, but generally speaking competitors showed that they had thought out the matter carefully and intelligently, and that they were looking forward to the time when they would set out upon their chosen career, full of enthusiasm and determination to succeed. It was particularly encouraging to notice the many instances in which Meccano had pointed out the way to a career.

After considering from all points of view the essays submitted, we decided to award the prizes as follows:—First Prize (Meccano goods value £1/1/-), Charles W. Pear (Hoxton, London, N.1). Second Prize (Meccano goods value 10/6), Norrie Ward (Halifax).

April Puzzle Contest

Our Cross Word Puzzle No. 77 proved a stumbling block to more competitors than we expected, the chief point of difficulty being No. 13 Horizontal.

The awards in this contest are as follows:—First Prize (Meccano Goods value £1/1/-), D. F. Armstrong (Dumfries). Second Prize (Meccano goods value 10/6), Alan Robson (Dudley, Worcester). Third Prize (Meccano goods value 5/-), D. W. Robson (Chesterfield).

Overseas Results

Third Lynx-Eyed Contest

As will be seen from the prize list, this contest attracted competitors ranging from Holland to New Zealand, and provided yet another striking proof of the great popularity of our competitions among boys all over the world. Judging by the high quality of the entries there is very little to choose between our home and our overseas readers in the matter of sharpness of eyes and knowledge of the Manual of Instructions.

The First Prize (Hornby No. 2 Pullman Set) has been awarded to J. J. Smith (Grange, South Australia). There was nothing to choose between the next best, and instead of Second and Third Prizes we are awarding two equal Prizes (Meccano No. 1 Radio Receivers or Headphones or Meccano Goods value 15/-) to J. Byrne (Toowoomba, Queensland, Australia) and M. V. Jaya, (Trichinopoly, South India).

Consolation prizes of Meccano writing-pads or Meccano Complete Manuals are awarded to:—J. de' Conti Manduca, Sliema, Malta; M. T. St. John Pattle, Keetmanshoop, S. W. Africa; A. Abollen, Utrecht, Holland; F. Y. Koot, Rotterdam; Mattei Alessandre, Napoli, Italy; Carel Begemann, Java, Dutch East Indies; A. J. Lewis, K. Lewis and P. Henwood, Takapuna, Auckland, N.Z.; Philip Begemann, Java, Dutch East Indies; Edward Wood, Pretoria, South Africa; Bruce Spooner, Onehunga, Auckland, N.Z.; H. C. A. Van Doorn, Utrecht, Holland; J. C. Rishworth, Tiptur, India; K. Taibhai, Karachi, India; Mario Cavallini, Rome, Italy; Senji M. P. Sammie, Trichinopoly, S. India; Wm. T. Turnbull, Alberta, Canada; Mansour A. Shawky, Cairo, Egypt; Lionel Twentyman Jones, "Alpha," Cape Town, S. Africa; H. V. Reynolds, Georgetown, B.G.; S. M. P. Shotam, Madras, India; A. G. Calder, Gatooma, S. Rhodesia; Nabokumar Singh Dudhoria, Bengal, India.

Second Drawing Competition

This highly popular competition brought in entries from every corner of the British Empire and young artists living hundreds of miles from an important railway line sent us splendidly-executed drawings of a modern locomotive. An interesting fact was that most of the competitors chose British locomotives in preference to the more complicated and often ungainly machines built abroad.

The chief features of the drawings submitted were careful treatment of details and skilful light-and-shade effects, but a weakness was evident in obtaining correctly the perspective—always a difficulty in subjects of this kind. To draw a modern locomotive viewed from an angle is no easy task, and competitors who were brave enough to forsake the conventional broad-side view came in for particular commendation.

The judging resulted in awards as follows:—Class A, First Prize (Meccano goods value £1/1/-), Joseph de Conti Manduca (Malta); Second Prize (Meccano goods value 10/6), Roy A. Evans (Christchurch, New Zealand). Class B, First Prize (Meccano goods value £1/1/-), N. Greenslade (Wellington, New Zealand); Second Prize (Meccano goods value 10/6), Harold Turner (Hastings, Hawkes Bay, New Zealand).

(Continued on page 295)



The Secretary's Notes

Last month I commented on the fact that practically every Meccano club had found it possible to hold an exhibition of some sort during the past session. Indeed, the up-to-date method of procedure seems to be to wind up the long winter programme with such an event. I have already drawn attention to the valuable publicity that club exhibitions provide, but there are also other advantages to be derived. An exhibition provides an incentive to all members to do their utmost towards enhancing the reputation of their club, and further, what is equally if not more important from the Leader's viewpoint, a good exhibition as a climax to the winter session provides a solution to the programme problem. As the days grow longer and the club approaches the end of a long session of steady work and periodic social evenings, things are apt to become stale. The attendance falls off and the interest of the members in the usual club happenings loses its edge. Thoughtful Leaders recognise this, and in their plans they give prominence to a big end-of-session event, to act as a sort of tonic. The period of preparation is a time of hard work and keen excitement, and when the exhibition is successfully over the session comes to an end amid resolves to do even better next time.

Successful Exhibitions

I want to mention here two recent and exceptionally successful club exhibitions. While it is always splendid for clubs to organise entirely their own event, feeling that it is a real function of their very own, in many cases Leaders will find it an advantage to make their show part of some larger local event. Greater publicity is obtained in this manner, for large numbers of people who would be very unlikely to attend a purely Meccano club display are invariably to be found at the show of a local horticultural or other society, and once the people are on the spot a Meccano exhibit is certain to attract their attention. Recently the 1st Herne Bay Meccano Club had a stand at the annual Spring Show and Trade Fair and during the two days of the show the hall was thronged with people. The Meccano stand was well arranged and the model Transporter Bridge surmounting it awakened great interest and brought crowds to inspect this and the other models and also the Hornby Railway layout. In the model-

Two Recent Examples

building competition all the entries were of such high standard that additional consolation prizes were added so that each competitor received a prize. The judge praised the model-building very highly and a full description of the whole exhibit appeared in the local paper. The 1st Herne Bay Club therefore can look back on the show with feelings of pride, and as one practical outcome they have received many inquiries in regard to membership of the club and of the Guild. I advise every Leader who is keen on enlarging the scope and influence of his club to get in touch, before it is too late, with local societies who hold an annual show, and if it is at all possible to book a stand. The St. Nicholas (Harwich) Meccano Club also have recently held a very successful exhibition. In this case the club undertook the whole of the arrangements and had no outside help of any kind. There were many difficulties to be overcome, but all members rose to the occasion and everything passed off even better than had been hoped.

This month we reproduce a photograph of a group of members of the Harwich St. Nicholas' Meccano Club. This club was formed in October 1924 and affiliated with the Guild in January of this year. The membership is 34 and the average attendance at meetings is 28, which indicates unabated enthusiasm on the part of all members.

In April the Club held their second Exhibition, which was an immediate success. More than 200 people paid for admission, and the general sentiment was one of astonishment at the number and variety of the models on view, and the cleverness of their arrangement. The local press paid the club a very high compliment.

The Leader, Mr. A. S. Hogg, is an enthusiastic model-maker, and combines



Meccano activities with art, for he is a capable painter. His right-hand man is Alfred E. W. Ward, the club secretary, and the enthusiasm and ability of these officials, coupled with the keenness of the members, are the chief factors in the success of the club.

Every progressive club should endeavour to include in its summer programme at least two or three visits to places of interest such as electric power stations, factories, engineering works, etc. It is very necessary however, that such visits should be properly arranged beforehand. In the majority of cases a courteous letter of request from the Leader of the club to the chief official of the place it is proposed to visit will produce a favourable reply. This request should be made two or three weeks beforehand, and particulars should be given regarding the number of members to be included in the party and the day and time on which it would be most convenient to come, subject of course to modification if required. An assurance should also be given that the whole party, down to the youngest member,

Planning

Summer

Visits

will be "on their best behaviour." Visits of this kind are a very great privilege and it should be borne in mind that any mishap or unpleasant incident may spoil the chance of other would-be visitors. At the conclusion of the visit a few words of thanks from the Leader to the guide, with in some cases a small gift, and a letter of thanks to the company or proprietors, are very desirable and should not be omitted.

One of the habits that engineers, whether amateur or professional, should cultivate is that of observing keenly and storing the ideas thus gained. When faced with a mechanical problem it is a great advantage to be able to reproduce from one's mental storehouse an idea that occurred perhaps years before, and which is applicable to the job in hand. There are always opportunities for training of this kind but perhaps the best opportunity of all comes with the summer holidays, when most boys leave for a short time the surroundings with which they are so familiar and find themselves in places where on all sides there is something new, and therefore keenly interesting, to be observed. I should like every club member to make up his mind that during his summer holiday he will store up in his mind something of interest that is new to him. Ideas of this kind often lead to the most surprising results, and even if they do no more than form the basis for new Meccano models, the little time and trouble involved in absorbing the ideas is fully repaid. In addition to this a holiday frequently affords ideas for new papers to be read during the long nights of the winter, and this is especially the case if the observations made during the holiday are afterwards supplemented by reading one or two books dealing with the particular subject, and from which details previously lacking can be filled in.

Summer Holiday Hints

will be "on their best behaviour." Visits of this kind are a very great privilege and it should be borne in mind that any mishap or unpleasant incident may spoil the chance of other would-be visitors. At the conclusion of the visit a few words of thanks from the Leader to the guide, with in some cases a small gift, and a letter of thanks to the company or proprietors, are very desirable and should not be omitted.



CLUB NOTES

1st Herne Bay M.C.—The exhibit at the Spring Show of the local Horticultural Society and District Chamber of Commerce was a great success. In the Model-building Competition such all-round ingenuity was shown that five consolation prizes were added so that each competitor received a prize. The exhibit was extremely popular and has resulted in many inquiries about membership. Club roll: 24. Secretary: W. Russell, 4, Clifton Villas, South Road, Herne Bay, Kent.

Marsh Street (Walthamstow) M.C.—The Church Bazaar in which the club took part proved very successful. The model of a tower with a revolving light, lent by Headquarters, was the centre of attraction. Grouped around it were various Cranes, an Aeroplane, the Meccanograph, Letter Scales, Roundabouts, etc., while around the room was a miniature Railway with Stations, Signals and seven Hornby Locomotives. Nearly 800 people visited the club stall, and of the £500 realised by the Bazaar the club collected £3/4/0. During the exhibition several applications for membership were received. Club roll: 20. Average attendance: 15. Secretary: C. W. Redfern, 34, Church Hill Road, Walthamstow, London, E.17.

Holy Trinity (Blackburn) M.C.—Arrangements have been made to meet every Monday during the summer. At each meeting a collection is made to swell the funds for picnics and rambles, which are to be started this month. Recently a local gentleman gave an interesting lecture on the "Rules of Cricket." A Special Merit Medallion has been awarded to E. Fryer for the best all-round work. Club roll: 28. Average attendance: 19. Secretary: H. Jepson, 11, Pine Street, Blackburn.

Rosyth M.C.—Recent activities include a Model Vehicle Building Competition. Marks were given by the Leader for the best models which ranged from a Motor Lorry to a Locomotive. Lectures were given by the Leader (Mr. G. A. Cook) on "Pulleys" and some of the "World's Famous Bridges." The Summer syllabus includes Cricket, Rambles, Outings, Tracking Expedition and Model-building. Club roll: 10. Secretary: E. T. Hunter, 79, Admiralty Road, Rosyth.

Stationers' School M.C.—Report a very successful term. Among the most interesting events were visits to the G.P.O., London Studios of the British Broadcasting Company, Marconi House, and several large factories. Secretary: R. J. Greenway, 435, Green Lanes, Harringay, London, N.4.

Christ Church (Stratford) M.C.—A recent development is the Club Library to which several useful books have been presented. Members have had a special outing to the Science and Imperial War Museums at S. Kensington, and the next outing is to be a tour round Historic London. The Annual Exhibition is fixed for 4th June and hard preparation is the order of the day. Club roll: 28. Secretary: R. H. Bentley, 81, Abbey Lane, Stratford, London, E.15.

Knutsford Lecture Hall M.C.—Prominent features in the past session have been Model-building, Wireless Talks and Boxing. A Special Merit Medallion has been won by E. Edwards, who joined the club two years ago. The Annual Excursion has been arranged for July. Club roll: 16. Secretary: C. W. Morris, 3, County Terrace, Knutsford.

Victoria Park (Glasgow) M.C.—A successful Exhibition was held in January, and in addition to the usual model-making activities various members and friends have read valuable papers. Club funds show a balance of over £5. An interesting programme has been arranged for the Summer, including visits to many places of interest. When these lines appear in print the club will have visited the s.s. "Cormorin," Port Dundas Electricity Station, a Newspaper Office, and a modern Brick-works. Club roll: 40. Secretary: R. White, 22, George Street, Whiteinch, Glasgow.

Chalmers U.F. Church (Alloa) M.C.—Has a waiting list of would-be members as club accommodation is limited. Rambles and outdoor activities are fixed for the Summer. Club roll: 65. Secretary: W. Henderson, 13, Paton Street, Alloa.

Handsworth (Birmingham) M.C.—Recent activities include Model-building, Lecture by Mr. G. Harrison on "Freak Locomotives," Lantern Lecture by Miss J. Heathley, the President, on the "Tower of London," and a debate on "Meccano v. other Hobbies." Meccano winning by one vote. Club roll: 34. Average attendance: 26. Secretary: N. J. Robertson, 30, Hinstock Road, Handsworth Wood, Birmingham.

Iffracombe M.C.—Excellent work was exhibited in a recent Model-building Contest and there was keen competition for the prizes. Other activities include Lectures and Debates. Club roll: 28. Average attendance: 22. Secretary: W. Webber, 14, Springfield Road, Iffracombe.

Westcliff and District M.C.—It is hoped soon to arrange the summer outing with the St. Mary (Newington Butts) M.C.—A visit will be paid to the Southend Gasworks in the morning, followed in the afternoon by a ramble. Club roll: 2 (including two girls). Average attendance: 19. Secretary: D. S. Cecil, 22, Valkyrie Road, Westcliff-on-Sea.

Accrington M.C.—A Social Evening was recently held on the occasion of a visit by 24 members of the Holy Trinity (Blackburn) M.C. Several novel Competitions have been held, notably one for designing a new poster for the club. R. Rush was adjudged the winner, and for this and other excellent work he has been awarded a Special Merit Medallion. Club roll: 23. Average attendance: 17. Secretary: V. Waterhouse, 45, Ramsbottom Street, Accrington.

St. Mark's (London S.E.) M.C.—Model-building has been the club's chief feature and in a recent competition a prize of Meccano parts to the value of 2/6 was awarded to E. Sadler for the best original model built in the course of an evening. It has been found necessary to increase the subscription to meet the additional club expenses. Club roll: 23. Secretary: G. C. Green, 21, Hafton Road, Catford, London, S.E.6.

Meccano Club Secretaries

No. 3. Stanley A. G. Bone



Stanley A. G. Bone is Secretary of the Holy Trinity (Barnsbury, London, N.1) Meccano Club, which holds the distinction of having been the first Meccano Club formed and the first affiliated. The foundation of the club dates back to 1918 and affiliation was granted in the same year. From its earliest days Holy Trinity has been a most progressive and enterprising club and, under the able Leadership of Mr. Stuart H. Wilson, it affords a striking example of what may be accomplished by enthusiasm and good organisation. The members work in sections, each with its particular officer, and at present there are sections for Model Railway Building, Engineering, Fretwork, Radio, and Motor and Dynamo Construction. Classes in Esperanto form another interesting feature of the club's programme.

Stanley Bone was an original member of the Holy Trinity Club and he became joint Secretary in June 1922. In addition to his Meccano activities he is also a lecturer and writer of considerable ability.

West View (Nottingham) M.C.—Special features in the programme have been Model-building and Lectures on Wireless, Stamp Collecting, Famous Men and the Manufacture of Coal Gas. F. Plank also gave a lecture on "How to construct a Crystal Set." There are now two sections, the House of Meccano and the House of Hornby, and great competitions are carried on in which the members show keen interest. Club roll: 30. Leader: Mr. H. W. R. Cousins, 494, Mansfield Road, Sherwood, Nottingham.

Cheltenham Grammar School M.C.—Continues to flourish and increase in membership in spite of difficulties experienced in the early part of the year through absence of the secretary and illness of masters. Preparations have been made to ensure a successful summer session. It is intended to hold an Exhibition at an early date, to include a Factory, an Aerodrome, a Quarry and Hornby Railway Layout. Club roll: 15. Average attendance: 12. Secretary: E. W. Griffith, "Hadleigh," Noughton Park Road, Cheltenham.

South Australia

Glennelg M.C.—To mark the close of a very successful session Mr. R. Patrick, the Leader, and Mr. Moody invited members to take part in a most enjoyable Social Evening at which many visitors were present. Original models were exhibited and the Leader explained some of them for the benefit of the visitors. At the close of the exhibition supper was served by the ladies. Club roll: 63. Secretary: K. Holmesby, 22, Partridge St., Glennelg, South Australia.

South Africa

Durban M.C.—A very interesting address on "Meccano" was recently given by the Leader, Mr. Patterson, through the Durban Municipal Broadcasting station. This proved so popular that Meccano Lectures will be given every month at the station. Club roll: 15. Secretary: A. Altman, P.O. Box 1941, Durban, Natal.

Simon's Town Meccano and Wireless Club.—The club's first Annual Meeting was held some weeks ago, when the year's progress was reviewed, the evening concluding with a short musical programme given by the members. Club activities have included Model-building, Model Racing, Inventors' evenings, Ambulance work, Lectures, Problem evenings, Gramophone recitals, and Physical Drill. Models were displayed at the War Memorial Exhibition arranged in conjunction with the Observatory M.C., and a 3-valve set for club use is in course of erection. Club roll: 21. Secretary: Mr. Ben Geo. Randall, c/o Municipal Office, Simon's Town, South Africa.

Malta

1st Malta M.C.—Recent activities include a visit to the Malta Tram Works, and a Model-building competition in which a prize was offered for the most correct and smartly built model. During the Summer Session it is hoped to have Outings, Excursions and Sports, Rowing being the chief feature. Club roll: 18. Secretary: A. J. Grech, 173, Prince of Wales Road, Sliema, Malta.

Clubs not yet Affiliated

Selby M.C.—Preparations are going forward to hold a Fancy Dress Carnival, the proceeds to be divided between the Hospital and the club. The cricket team are busy arranging their fixture list. Club roll: 17. Secretary: R. Bainbridge, 24, River View, Cliff Bank, Selby.

Dalton-in-Furness M.C.—Very successful meetings have been held in Corlett's Cafe and recently Mr. D. H. Ray, the Leader, gave an interesting lecture on "Switzerland," where he has spent several months. An outing to the Woods on the Duddon Estuary was arranged and it is hoped shortly to explore the Lake District and see the homes of Wordsworth, Southey and Romney. Club roll: 15. Secretary: L. Corlett, Ulverston Road, Dalton-in-Furness, Lancashire.

Blagdon St. Andrews M.C.—A prize is awarded each session to the member having the best record of attendance. Each member pays a small subscription weekly towards buying a Meccano Outfit for the use of the club. Several rambles and picnics have been arranged. Club roll: 11. Secretary: Kathleen R. Day, Seymour Arms, Blagdon, nr. Bristol.

Ibrox and District (Glasgow) M.C.—Has been divided into three sections—Model Engineering and Railway, Wireless, and Photography. Mr. Lodge, the Leader, has resigned and great efforts are being made to obtain a new Leader. Club roll: 8. Secretary: A. Lyle, 185, Copland Road, Ibrox, Glasgow, S.W.

St. John's (Sevenoaks, Kent) M.C.—Happy evenings are spent in a room kindly lent by the St. John's Church School. Recent activities include Lectures on "Stamp Collecting" and "Wireless." Club roll: 9. Secretary: S. Williams, 20, Greatness Lane, Sevenoaks, Kent.

Ruthin School (N. Wales) M.C.—The first meeting was held in the school and proved a great success. The Headmaster, Mr. Lovegrove, gave an interesting lecture on "Railways," and all present had a very enjoyable evening. Secretary: E. Evans, Ruthin School, Ruthin, N. Wales.

Reading M.C.—A "Contractors" evening was recently held, during which a splendid model of the Reading Bridge was built. On another occasion an "Electrical" evening was spent in wiring up electric bells, lights, etc., and this proved very popular. Further activities include Cycle Runs, Rambles, Sports and Visits to Works. The financial position is sound, members paying sixpence monthly. Club roll: 20. Secretary: H. G. Rogers, 135, Liverpool R.-ad, Reading.

Crediton Grammar School M.C.—The Meccano boys in the school held an Exhibition of Models on Speech Day, and this received much attention. A club has been formed and the membership continues to increase. Club roll: 14. Secretary: J. F. Clarke, The Grammar School, Crediton.

Urmston Grammar School (Manchester) M.C.—A club has been formed successfully, and many more boys have promised to join. Club roll: 12. Secretary: T. L. Linfoot, 92, Railway Road, Urmston, Manchester.

Wangford (Lowestoft) M.C.—Have obtained a Leader and a suitable club room. The present club roll is 7, and it is hoped to increase the membership very soon. The secretary, C. Smith, High Street, Wangford, Lowestoft, Suffolk, would be pleased to hear from any Meccano boy wishing to join the club.



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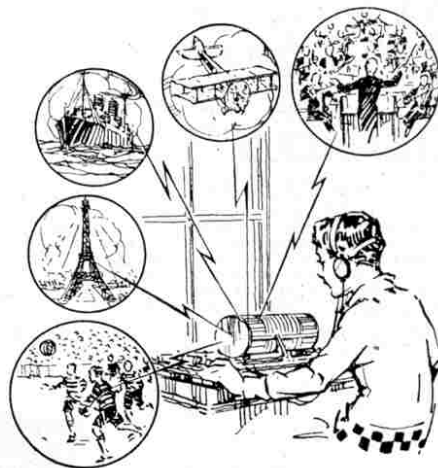
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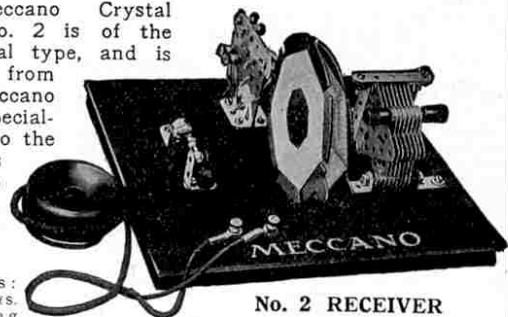


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Word-Building Puzzles

Since my announcement on this page last month that I had decided to abandon Cross Word puzzles, at any rate for the time being, I have had many letters from readers expressing keen satisfaction at my decision. There appears indeed to be a general feeling that the cross word puzzle has had a good long run and that it is time it moved on and made room for something else.

As a substitute for the cross word puzzle I introduced last month the puzzle known as the "Palindrome," or reversible sentence, and offered prizes for the three best specimens sent in. I have received a fair number of entries for this contest, many of them extremely ingenious, but I have also received a number of mild protests from various readers on the ground that the mental effort required to concoct a Palindrome is greater than could reasonably be expected from a boy who is bursting with anxiety to get out of doors to his games at the earliest possible moment!

I mentioned last month that I was very anxious for readers to write and let me know what particular features they like on this page and also what new features they would like to see introduced. During the past fortnight I have received several letters from readers asking for puzzles on the word-building principle. The idea is to have a word given and to form from its various letters as many other words as possible. For instance, take the word "Water." From this word we can without any difficulty make a number of shorter words such as "war," "wart," "ate," "tea," "rate," "wear," "rat," etc.

This kind of puzzle strikes me as being very interesting and also one which has the merit of not being too strenuous for summer days. This month therefore I am introducing a puzzle on these lines and offering prizes for the three best solutions together with solutions of any six other puzzles on the page.

June Puzzle Competition

First Prize: Meccano Goods value £1:1:0
 Second Prize: Meccano Goods value 10/3
 Third Prize: Meccano Goods value 5/-

Every reader who wishes to enter for the June Puzzle competition must send in his solutions to the three sections of the Word-building Puzzle, No. 90, together with the solutions of six other puzzles selected from this page.

Closing date 30th June.

Note to readers—There is no Overseas section in this competition.

Puzzle No. 90.

Word-building Puzzle:—

From the letters forming each of the following three words construct as many other words as possible. Each of the three words must be treated separately, so that there will be three separate sets of solutions. The method is indicated in the introduction in the first column of this page:—

1. Abominable.
2. Reactance.
3. Transcommunication.

Puzzle No. 91.

On a sheet of paper draw a large square, and divide it into 36 smaller equal squares. The problem is to arrange 12 coins in these small squares so that there are only two coins in each row of squares, horizontally, vertically or diagonally.

Puzzle No. 92.

The Postal officials at a certain office were puzzled over a letter containing these words in this position—

Wood
 John.
 Hants

After a while a quick-witted postman solved the mystery. What was his solution?

Puzzle No. 93.

By placing the letter A at the proper points in the following diagram a sentence can be made. The end of a line does not necessarily mean the end of a word.

T H T M
 N S Y S
 T H T M
 R Y N D
 J C K S
 W M N Y
 S M L L
 B G S T
 N R T B
 Z R T M
 N D L Y

Puzzle No. 94.

In a certain room were one grandmother, three mothers, two aunts, four sisters, two brothers, four daughters, two sons, five cousins, three nieces, two nephews, three grand-daughters and two grandsons. How many persons were there in the room?

Puzzle No. 95.

Single acrostic:—

My first in the sea is often seen,
 My second by girls is held in esteem,
 My third a globule of pretty colour,
 My last when bad gives unpleasant odour,
 My whole is a thing in which you move,
 Upon a liquid rough and smooth.

Puzzle No. 96.

The missing words in the following sentences each consist of the letter or letters of the previous missing word plus one extra letter:—"Yes, I think he .. a great man .., and that he will .. to take the .. of Government, helping to revise many Acts of Parliament. For, he will .. of .. in the Statute Book, and, by the .. of faulty clauses he will improve our laws."

Puzzle No. 97.

At a certain wedding everybody and everything had the name of a bird.

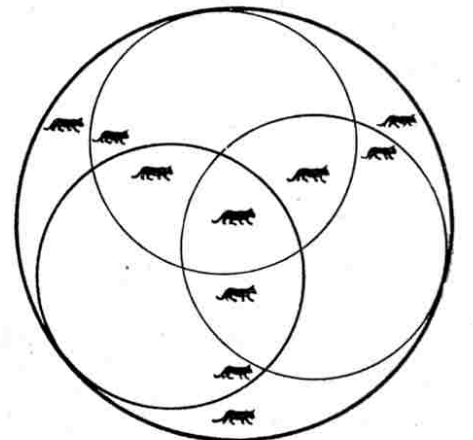
- (1) What was the bride's name?
- (2) What was the bridegroom's name?
- (3) Who was the best man?
- (4) Who signed the register?
- (5) What sort of a ring did the bridegroom wear?
- (6) What did the bride wear round her neck?
- (7) What military rank was represented?
- (8) Who did most of the talking?
- (9) What king was present?
- (10) What did the rowdy guests do?
- (11) What did the guests do when they ate?
- (12) Where did the bride and bridegroom go for their honeymoon?
- (13) What did the bridegroom make with his money?

Answers to Last Month's Puzzles

No. 83. The various arrangements of the volumes were as follows:—

6729	5832	4392	2769
13458	17496	17568	13845
2943	2394	3187	6381
17658	16758	25496	57429

No. 84. The following diagram shows how the three circles were drawn.



No. 85. The number on the engine was 9819.

No. 86. Bill is still living with Jim Smith in this big city.

Puzzle No. 87. Bear.
 Etna.
 Anti.
 Rain.

No. 88. Ragamuffin.

No. 89. The number is 2.

Puzzle No. 98.

In each of the following sentences the second of the two missing words is the first reversed. What are they?

1. At any — a volcano may — smoke.
2. — we have — the war.
3. Load — to exceed one —.
4. Put the — on the — of the stove.
5. The light is very — at — night.
6. He is — to try to — the river.

Puzzle No. 99.

Each of the following jumbles of letters contains a well-known proverb. What are the three proverbs?

1. AEEGGHILLMNNNOOORRSSSTT.
2. AABDEEEFFFFHIIIMNNRRSST.
3. AAADDEEFFIIMNNNOORTTTW.

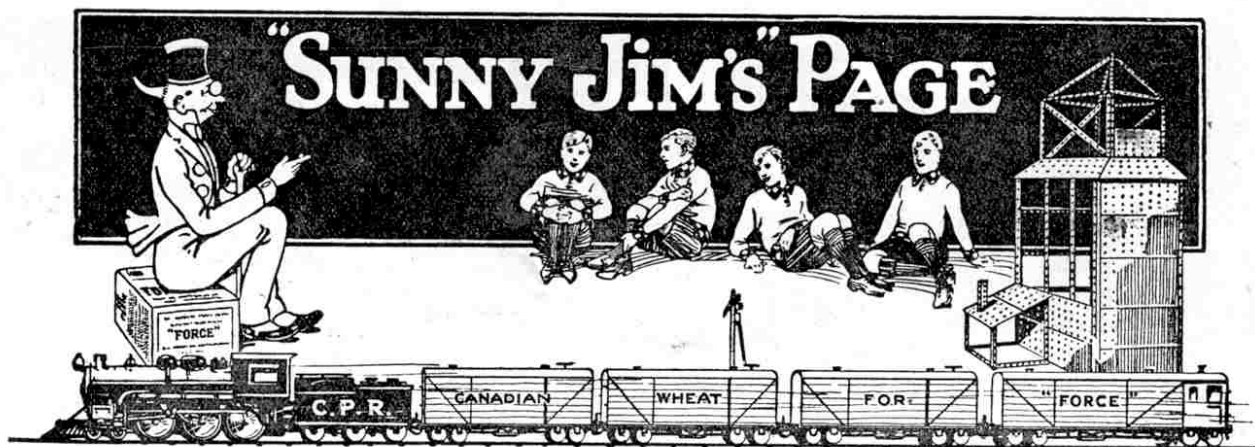
Puzzle No. 100.

Owing to certain alterations that became necessary in an old house, a certain window had to be increased to twice its original size. It was found possible to do this without increasing either the original height or width of the window. How was this possible?

Puzzle No. 101.

What town is indicated by each of the following lines?

- The city that wanders abroad,
- The town that's never behind.
- The town that's so thin that it cannot be seen,
- And the town that is nothing but rind.
- The town that's a savoury bulb,
- The town that's a bark of a tree.
- The town that's needed on board every ship
- And the town where they're all on the spree.
- The town that is always a very bad fit,
- The town that's never too short.
- The town that is used in the fields in the spring,
- And the town that's a game and a sport.



WITH "SUNNY JIM" AT WEMBLEY

What! You didn't know Sunny Jim was at Wembley!

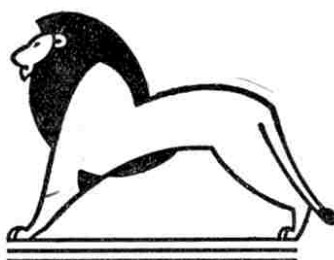
Oh yes he is, and so busy that he has had no time to write his usual "page!" Instead he has asked us to come and see him.

Let us imagine we have arrived at the great gates of the British Empire Exhibition, Wembley. We pay at the turnstile—click—click—clack—and we're inside the grounds. What a crowd of things there is to see. The rattle of a switchback gives us the direction of the Amusements Park. The crowded avenue ahead leads to Australia, New Zealand, Canada, India. Ah! Canada! That's where Sunny Jim is! "FORCE," the flaky whole wheat food he represents, is made in Canada, so naturally we find it among the other exhibits in the wonderful pavilion the Dominion has built.

We walk between clusters of blue and golden electric lamps. On our left is the Palace of Housing and Transport, and on our right the Hall of Industry.

Clang! ting-ting. Look out! An electric rail-o-dock car passes. There are seats vacant. Let's board it.

We ride to the top of the avenue and there, across the boat dotted lake, lies a great edifice glowing yellow in the Summer Sunshine. It is Canada! Too eager to tour the borders of the lake in the rail-o-dock car we leap to the ground and dash across the high arched bridge that links the banks. Up the steps we run between the bronzed lions



"Well, I suppose you've come to see the 'FORCE' exhibit," he says.

"We have," we answer enthusiastically.

"Come along then."

Sunny Jim hurries off, his little coat bobbing in the breeze.

Past yards and yards of Canadian pictures and panoramic models he hurries us, till at last, with a flourish, he halts before a panoramic model on an interesting looking Stand that has counters spread with free tastes of "FORCE."

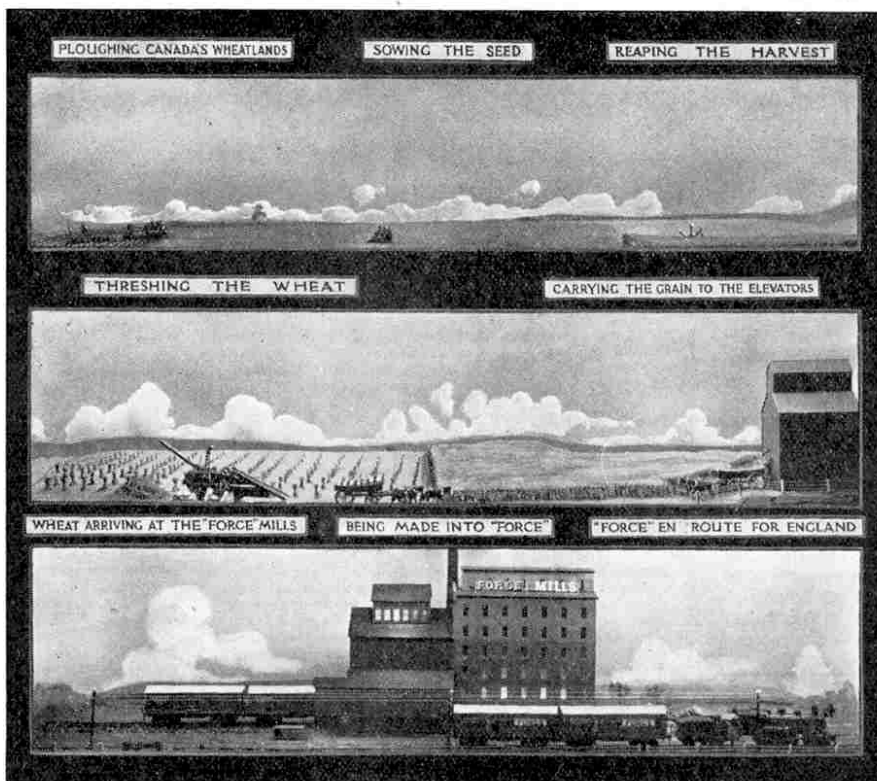
"Here we are," he says—as he mops his forehead with a big coloured handkerchief.

"My! What an interesting model," exclaims the artist in our party. Sure enough it is. It shows the making of "FORCE" from the time the earth is ploughed until the wheat, converted into "FORCE," leaves the mills en route for England. We take a picture of this (it is printed on this page).

After we have regaled ourselves with "FORCE" and fruit we say good-bye to our friend Sunny Jim, and off we go in search of further adventures.

Boys and girls. When you go to Wembley be sure you see Sunny Jim at the "FORCE" Stand in Canada. Ask him to let you taste "FORCE." If mother is

with you she might buy you a packet. "FORCE" is eaten with milk or fruit and needs no cooking at all. If you are going to Blackpool this year, you will find, at the Ideal Homes Exhibition on the South Shore, a working model railway showing the wheat being taken to the "FORCE" mills. Free tastes of "FORCE" can be had here also.



Panoramic Model at the "Force" Stand, Wembley

that guard Canada's doors.

We are now in the main hall of Canada. *There's "Sunny Jim,"* shouts someone. Yes! It really is. How well he looks. Just a little plumper than his pictures. He greets us with a handshake all round.



This Month's Short Story

Little boy,
Cherry stones,
Empty plate,
Awful groans.

Passenger: "This train is very late."
Guard: "Yes sir, the train before is a bit behind and it has often been behind before."

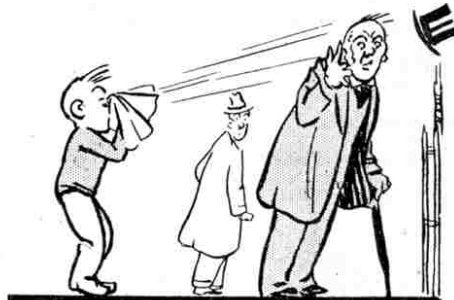
First Boy: "I bet that I was on a faster train than you."

Second Boy: "I bet you wern't."

First Boy: "The train I was on went so fast that the telegraph poles looked like a wooden fence."

Second Boy: "That's nothing. I was on a train going through the country. We passed a field of beetroot, a field of corn, a field of onions and then a pond, and we were going so fast that it looked like vegetable soup!"

DRAUGHTY!



Sam: "I tore my best silk handkerchief yesterday."

Tom: "That must have been an awful blow."

Teacher: "Mike, give me a definition of salt."

Mike: "It is the stuff that makes potatoes taste bad when you boil them and don't put any in."

A small boy wrote in his diary: "Got up at seven. Went to bed at eight." His teacher suggested that it would sound better if he put "Rose at seven." So the boy crossed out his entry and briefly chronicled: "Rose at seven. Set at eight."

A young man took his uncle, aged 85, to see moving pictures for the first time. After the show he asked his uncle how he had enjoyed himself.

"Well," said the old man, "the pictures were alright," but the piano made so much noise I couldn't hear a word they said!"

Wanted—A room by two gentlemen about 30 ft. long and 20 ft. broad.

NOT THERE AT THE TIME



Rastus: "Doesn't that mule ever kick you?"

Sam: "No, sah, but he frequently kicks de place where Ah recently was."

Motorist (Telephoning after smash): "Send assistance at once, I've turned turtle."

Voice (from the other end): "This is a garage. What you want is an aquarium."

Teacher (to junior chemistry class): "What does sea water contain in addition to the sodium chloride I have just mentioned?"

Smart boy: "Fish."

THE STATE OF TRADE

An editor once sent a reporter round to interview various local business men in order to get their views on the state of trade. The reporter was told to make his report as brief as possible, and he handed in the following:—

"Looking up," said the Astronomer.
"Dead," said the Undertaker. "Fine," said the Judge. "Looking better," said the Beauty Doctor. "Fair," said the Tram Conductor. "Hard to beat" said the Drummer. "Looking brighter," said the Bootblack.

An elderly gentleman entering a bus noticed a drunken man in the far corner. "Do you allow drunken men in your bus?" he asked the conductor. "Not as a rule," replied the conductor, "but slip in, quietly!"

Teacher: "Which of our second set of teeth do we get last?"
Bright child: "False ones, teacher."

Q. Why did the rubber tyre?
A. Because it saw the foot brake.

SLIGHT MISUNDERSTANDING



Artist: "I'm going to paint your pretty cottage to-morrow."

Farmer: "That's fine sir. I'll get you a couple of good long ladders!"

Smith: "That college turns out some fine men."

Briggs: "Yes. When did you graduate?"

Smith: "I didn't graduate, they turned me out."

Mother: "Willie, just run across the street and see how old Mrs. Tompkins is this morning."

Willie (returning with a worried expression): "She says it's none of your business how old she is!"

Jim: "Do you know that in all history they've never hanged a man with a wooden leg?"

Jack: "Why not?"

Jim: "Because they have always used a rope!"

LEARNING BY EXPERIENCE

A boy struck a match to see whether his petrol tank was empty. It wasn't!

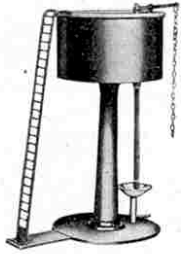
A boy patted a strange dog's head to see whether the animal was affectionate. It wasn't!

A boy touched an electric cable to see if it was charged. It was!

A man named Dodgin was appointed foreman of the gang. The first day he was on duty he came across two men sat in a corner smoking. The men did not know him and one of them said: "Hello, who are you?" "I'm Dodgin the new foreman," he replied. "So are we, sit down and have a smoke," they said!

A very fat woman with her arms full of parcels was struggling to mount the steps of a motor bus. The conductor, a very small man, stood looking on helplessly. The woman reached the second step with an effort and burst out angrily, "If you were half a man you'd help me up."

The small conductor calmly replied: "If you were half a woman I would."



Water Tank
Price 6/6



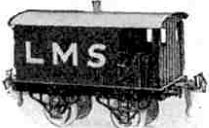
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Cement Wagon
Price 4/-



Milk Traffic Van
Price 4/6



Brake Van
Price 4/-



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Price 2/-



Snow Plough
Price 5/6



Crane Truck
Price 4/6



Rotary Tipping Wagon
Price 4/-



Tunnel
Price 7/6



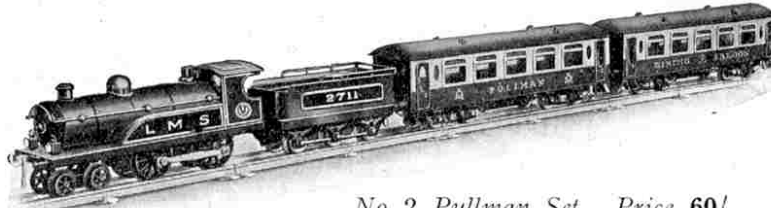
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Price 4/6



Breakdown Van and Crane
Price 7/-

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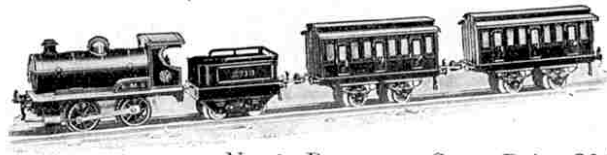


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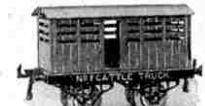
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Price 4/-



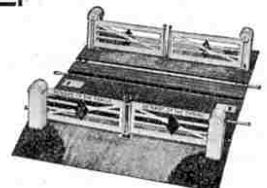
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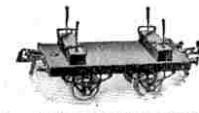
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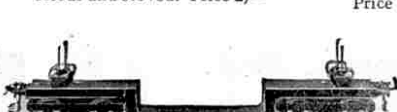
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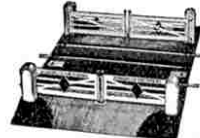
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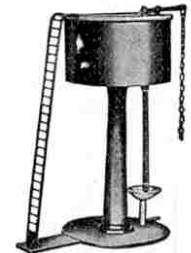
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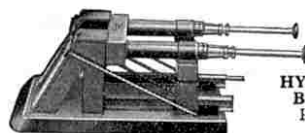
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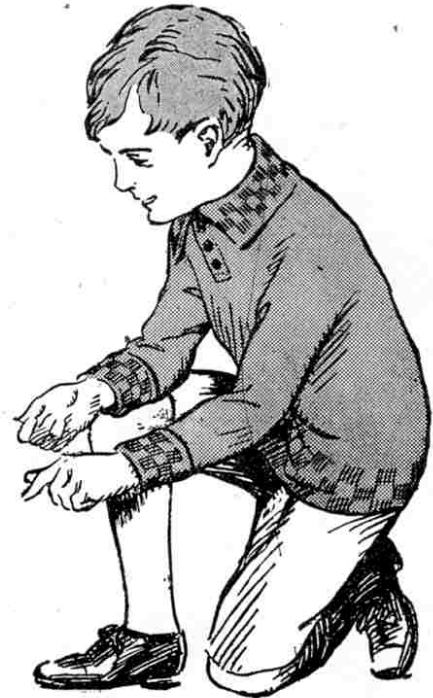
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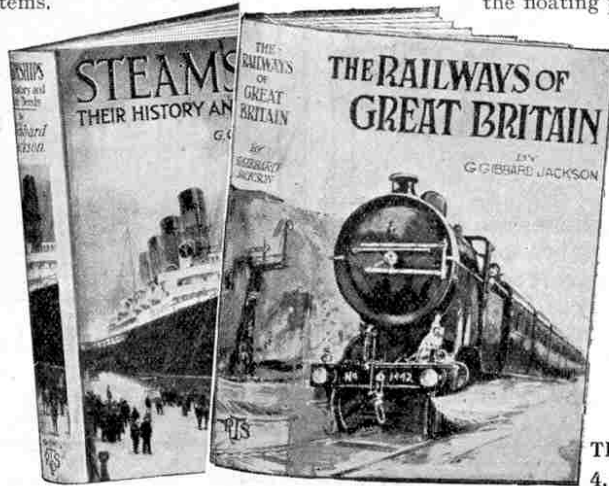
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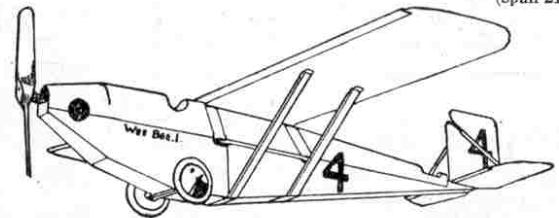
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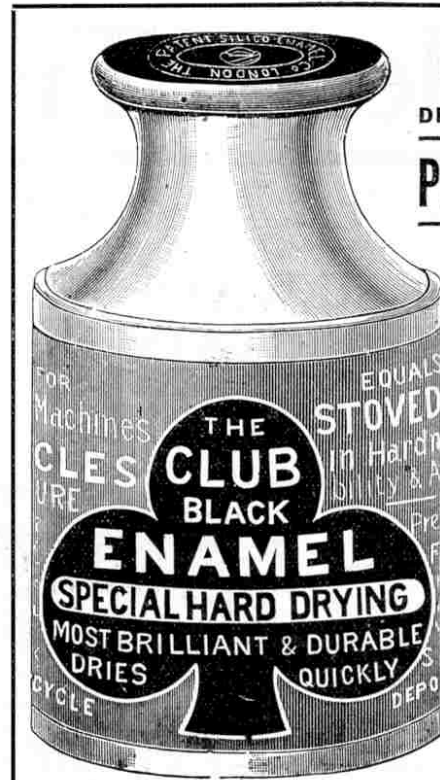
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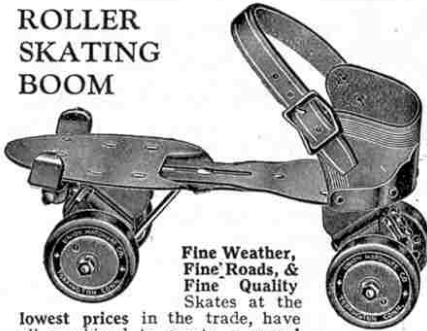
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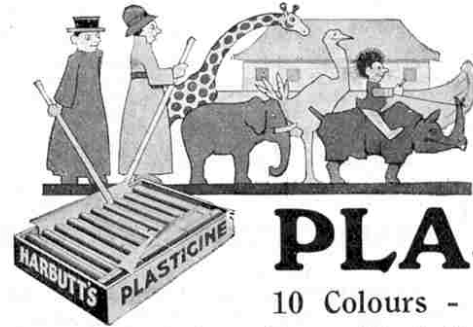
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Long 16"	18"	21"	23"
5/-	6/6	9/6	11/6

RACING YACHTS

Long 18"	21"	23"	26"
19/6	23/-	25/-	27/6

Postage 9d. extra. Price List Free. Money returned if not approved.

Wonderful Bargains in Wireless. List Free.

C. LUCAS

(Hobbies Famous Depot)

35, MANCHESTER STREET,
LIVERPOOL.



MAKE GRAMOPHONES.

Our 64 page Catalogue tells you for 3d. how to do it and what accessories to choose. Motors in 25 sizes, from 9/-; Tone arms, 4/-; Speakers, 2/-; Headphones, 10/6 pair; Cabinets from 9/- Gramophones from 25/6. Carr. paid. **The Regent Fittings Co., D. 78** 120, Old St., London, E.C.1. Established 21 years. Telephone: Clerkenwell 2923.

MODEL SHIPS' FITTINGS

Send 6d. for Scale Drawing of Splendid Ocean Liner and List of Realistic Fittings. **A. Rodway,** 102, Long Street, Birmingham

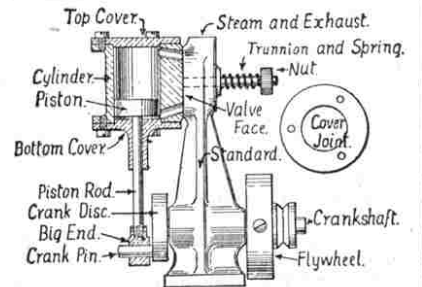


MAKE YOUR OWN ELECTRIC LIGHT

These marvellous Dynamos light brilliantly 4-6 volt Lamps, and are very easy to work. List Free. Send for one now!



GREENS (Dept. N.), 65, Long Acre, London, W.C.2.



"Thank you for sending the S.T. Boiler. The engine, bought at Wembley, was soon coupled up and ran perfectly. My little boy was so pleased to see that it was powerful enough to drive a Meccano Crane."

Thus writes a customer. Above is the drawing sent with the instructions for building and we guarantee the engine will work.

S.T. Engine Parts ... 5/- } Post
Finished Boiler 8/- } Free

Send stamp for list 12M or 6d. for complete 80-page catalogue.

Stuart Turner Ltd.
HENLEY-ON-THAMES



Readers' Sales and Wants



MECCANO MAGAZINE

Registered at G.P.O., London, for transmission by Canadian Magazine Post.

EDITORIAL AND ADVERTISING OFFICES:—
BINNS ROAD, LIVERPOOL.
Telegrams: "Meccano, Liverpool."

Publication Date. 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 3d. per copy. It will be mailed direct from this office, 2/- for six issues and 4/- for twelve issues.

To Contributors. The Editor will consider articles and photographs of general interest; payment will be made for those published. Whilst every care will be taken of those submitted, the Editor does not accept responsibility for any loss or damage. A stamped addressed envelope should be sent where the contribution is to be returned if unacceptable.

Binding Cases. Spring-back Binders to take a number of "M.M.'s" are supplied, covered with imitation leather and lettered in gold, price 3/- each (post free).

Meccano Writing Pads. Fifty sheets of tinted bank paper, each printed with Meccano boy at head, 1/- (post free) large size, and 6d. (post free) smaller size.

Advertisements

Readers' Sales and Wants. Private advertisements (i.e., not trade) are charged 1d. per word, minimum 1/-. Cash with order. Editorial and Advertising matters should not be dealt with on the same sheet of paper.

Small Advertisements. 1/- per line (average seven words to the line), or 10/- per inch (average 12 lines to the inch). Cash with order.

Display. Quotations for space bookings, and latest circulation figures, will be sent on request.

Press Day, etc. Copy must be received not later than 10th of each month for publication in following issue. Half tone blocks up to 100 screen.

Proofs of advertisements will be sent when possible for space bookings of not less than half-an-inch.

Voucher Copies. Sent free to advertisers booking one inch or over. Other advertisers desiring vouchers should add 4d. to their remittance and should order voucher copy at same time.

Remittances. Postal Orders and Cheques should be made payable to Meccano Ltd.

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 3d. per copy, or mailed (post free) direct from Liverpool, 2/- for six issues, or 4/- 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 Price 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.

CANADA: Meccano Ltd., 45, Colborne Street, Toronto.

AUSTRALIA: Messrs. E. G. Page & Co., 52, Clarence Street, Sydney, N.S.W.

NEW ZEALAND: Messrs. Browning Hwensen Ltd., P.O. Box 129, Auckland.

SOUTH AFRICA: Mr. A. E. Harris (P.O. Box 1199), Textile House, Von Brandis St., Johannesburg.

TWO GOOD PEA PISTOLS AT LAST

No. 1. New 15 Shot Pea Repeater, brightly nickelled ... 1/9 post free

No. 2. 25 Shot Pea Repeater, heavy model, black finish ... 2/6 post free

Each Pistol is Guaranteed Perfect.

Instructions, and a supply of ammunition with each one.

Postal Orders or 1½d. stamps accepted.

HERBERTS', 27, Adys Road, Peckham, London, S.E.15.

THE AUTOMATIC PEA REPEATER



The most reliable pistol on the market. Takes 25 shots at one loading, best black finish, each in box with instructions and supply of ammunition, post free 2/6.

R. DILNOT, 125, Chiswick High Rd., London, W.4

If you have anything to sell or wish to buy anything take advantage of the service offered by a small advertisement in these columns.

The "M.M." is read by approximately 100,000 people every month. It circulates in every country where the English language is spoken. If you wish to sell your duplicate stamps, your rabbits, or your tools, or to purchase a loud speaker, a steam engine, a model yacht, or a hundred-and-one other things, you will be able to do so through the columns of the "M.M."

The rates are one penny per word, with a minimum

of 1/- (cash with order).

Your advertisement must be received before the 10th of the month for insertion in the following month's issue.

If a Box Number is used, 4d. should be added to cover the cost of postage of the letters to the advertiser from this office. The letters will be posted one week after the advertisement appears, and a second batch a month after the advertisement appears. They will be sent more frequently if additional postage is included with the advertisement.

READERS' SALES

(Rate: 1d. per word. min. 1/-).

Cigarette Cards 639, 1/- hundred, sets 25, 4½d.—Hollingworth, High Street, Westerham.

Crystal Set, fitted Daventry coil. Complete with phones. Practically new. Cost 35/- . What offers? —Barnard, 31, Tollington Park, N.4.

700 Cigarette Cards, 6d. dozen, 3/6 hundred.—J. S. Rose, "Altire," Bennhill Road, Sutton, Surrey.

Send 6d. for stamps, all different, or 5/- for oddments box, containing many things.—Oldman, "Redholm," Hornchurch.

For Sale. 2 Brownie Camera. Case, portrait attachment. Practically new, 10/-.—M. C. Kemp, White Cottage, Etonwick.

For Sale. First eleven parts Cassell's "Pageant of Nature," also first five parts Hutchinson's "Birds of our Country." What offers.—Bass, 14, St. Albans Crescent, Woodford Green, Essex.

Will sell my fine 1 Valve Wireless Instrument for 32/-, new condition and worth treble.—Waine, Compton, Wolverhampton.

Wanted. Jubilee Stamps only. Every country. Give in exchange Jubilee's or newly issued Holl. Letters need 2½d. postage.—J. Klaversteyn, Harbingen, Holland.

Ensign Camera and Vertical Steam Engine. Particulars:—Lamond, 150, Byres Road, Glasgow.

Meccano Magazines, 22 onwards, 4d. each. Electric Motor, new, 4 to 6 volts, cost 12/- . Sell 6/-.—Stainton, Tettenhall College, Staffordshire.

Wanted. "Meccano Magazines," Feb., June, Sept., Oct., Nov., 1923 numbers.—Green, 14, Liverpool Terrace, Worthing.

New Meccano Model—(Continued from page 275)

Wheel (7) forming the base of the jib.

The cords (19 and 20) are prevented from fouling the uprights as the jib rotates by the guide-pulleys (9).

Brakes are provided in the form of weighted levers (34), applying tension to the cords engaging 1" Pulleys secured to the Rods (18 and 21). This method prevents falling-back of the jib or hoisting-block when the gears are released.

Parts required:

2 of No. 2	3 of No. 16A	1 of No. 48c
6 " " 3	4 " " 17	2 " " 52
2 " " 4	9 " " 18A	2 " " 52A
12 " " 5	5 " " 18B	1 " " 57B
2 " " 6	6 " " 20	50 " " 59
5 " " 7	1 " " 21	1 " " 62
4 " " 7A	2 " " 22	1 " " 63
5 " " 8	15 " " 22A	2 " " 76
2 " " 8B	2 " " 26	1 " " 94
6 " " 9B	3 " " 27A	2 " " 95A
2 " " 9E	2 " " 31	1 " " 95B
3 " " 9F	1 " " 32	2 " " 96
2 " " 12	3 " " 35	2 " " 103
2 " " 13A	79 " " 37	3 " " 126
4 " " 14	88 " " 38	1 " " 133
1 " " 16	2 " " 40	

SMALL ADVERTISEMENTS

(Rate: 1/- per line).

CINEMA FILMS, 100 ft. 1/-, 1,000 ft. 6/-, delivered.—Phillips, 64, Ewart Street, Brighton.

Patents, Trade Marks, Inventions. Advice Handbook and Consultations free.—B. T. King, Regd. Patent Agent, 146a, Qn. Victoria St., London, E.C.4.

Railway Photograph Postcards of Engines and moving trains of all Companies, 2/6 per dozen. Sample and list 4d.—Norman Embley, "Westcliffe," Lytham.

MONEY EASILY EARNED by selling Rubber Stamps, in spare or full time. Particulars Free.—Richfords Ltd., Snowhill, London.

THE WIRELESS INSTITUTE holds examinations and awards certificates and medals to wireless amateurs. Write—Dept. M, 74, Hendford, Yeovil.

MAIL ORDER ADVERTISING, for 7/10 inclusive. Sell your goods to eager provincial buyers through 56 influential newspapers. Prospectus: Central Press, (Series Dept. 55), 190, Strand, London, W.C.2.

REVO

THE NAME FOR PERFECT RADIO.

12 Months' Guarantee

The Phones and Loud Speakers guaranteed for 12 months.

Revo Lightweight Headphones

4,000 Ohms. 19/6 EACH.

REVO LOUD SPEAKERS

25/-, 48/- AND 80/-

Complete with Cord.

Experts say—They are the best Loud Speakers made.

Revo Little Gem Crystal Set, 6/-

Obtainable from any dealer or the manufacturers:
THE CABLE ACCESSORIES CO. LTD.,
TIPTON, STAFFS.
London Depot - - 28, SHOE LANE, E.C.4.

CUT THIS OUT. "Meccano" Pen Coupon, Value 3d.

Send 5 of these coupons with only 2/9 direct to the Fleet Pen Co., Fleet Street, E.C.4. You will receive by return a splendid British 14-ct. Gold Nibbed Fleet Fountain Pen value 10/6 (Fine, Medium, or Broad Nib). If only 1 coupon is sent the price is 3/9. 3d. less for each extra coupon up to 4 (Pocket Clip 4d.) Satisfaction guaranteed. Your own name gilt letters, either pen 1/- extra. Lever Self-Filling Model with Safety Cap, 2/- extra.

RIDE A
FAIRYCYCLE

Regd. Trade Mark

It's Great Fun!

PRICE NOW

49'6

ONLY



The De Luxe Fairycycle

Specification includes 3/8" white ribbed cushion tyres, ball bearing tangent spoke wheels and rim brake.

Price **61'6** only

If only you had a FAIRYCYCLE just think what fun you could have, and what splendid exercise you would get in riding it.

The FAIRYCYCLE is a real Cycle—not a make-believe. It is beautifully constructed, runs with remarkable ease, and is safe because the low riding position makes it easy to control. And it is BRITISH.

BE SURE YOU RIDE A FAIRYCYCLE

The COMET



This natty little racing model is the very thing for the youngsters. It is built for sturdy boys and girls, and will stand any amount of rough wear. The double crank movement makes it very speedy.

As illustrated 27/-
THE METEOR, a larger size 34/6

Look for the
**Triangle
Trade Mark**
on all these
toys



**The PEDAL
FAIRYKAR**

Regd.
Trade
Mark



Baby will love this Pedal Fairykar. There is nothing to beat it. It is beautifully painted a bright red with nickel-plated handle bar and stem, rubber pedals, etc. A splendid health-giving toy.

No. 4 as illustrated 15/-
No. 5 larger size with spider wheels 22/6

OBTAINABLE FROM ALL GOOD TOYSHOPS

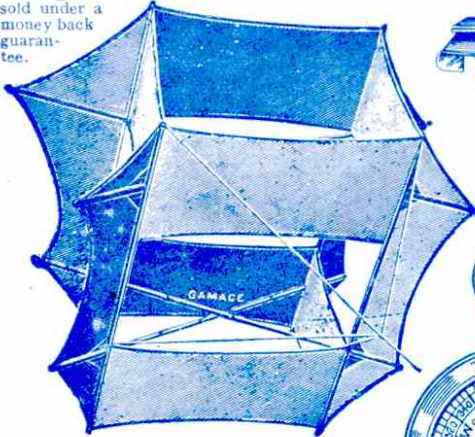
Sole Manufacturers:

LINES BROS. LTD., 9, FORE STREET, LONDON, E.C.2

All These Things and More at GAMAGES

In the splendid showrooms in Holborn you can see the result of fifty years' study of what boys and young men want. Just what you need is there, waiting for you. If you cannot call, order by post direct from this announcement.

All our goods are sold under a money back guarantee.



Quadroplane Kite

Similar to illustration but with one stretcher in centre.

This is the man's kite, the kite which has taken the prizes for high flying. The very thing for fellows between the ages of 13 and 18.

Show off your skill in kite flying when you take it out, and take plenty of cord.

No. 1 Model, 29" high, costs ... **3/6**

Other Models:

No.	2	3	4
Height	32"	35"	38"
Price	4/6	5/11	7/6

Postage 6d. extra.



GET THIS RACING LAUNCH The famous "Miss America"

Unsinkable. Built of selected timber and highly enamelled, 30" long, 4" beam. Special speedy oscillating type engine, polished brass, built to last. Capable of 4,000-5,000 revolutions per minute. Power unit may be removed to drive stationary models indoors. Will run for 20 minutes and cover a mile on the water. Post free. **12/6**
Packed in strong box ...

JUST THE KNIFE YOU NEED



COMPASSES

Magnetic, watch pocket size. Best nickelled hunter cases, luminous floating dials. **5/6**
Price ...



The Boy's Own Knife

Fitted with two blades, Hoof Pick, Leather Borer, Corkscrew, and Shackle complete with chain, is yours for **5/-** Post 2d.

This is just the "handy" type of knife that the Scout really needs. Everything is there, packed away neatly into the haft of an ordinary knife.



CRICKET!!

Here again and by now you have found out what you want.

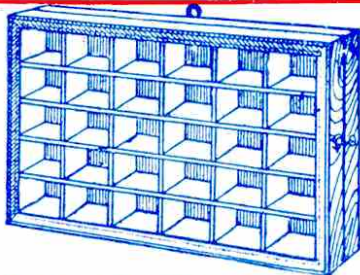
Before you decide on anything write for our Summer Sports Catalogue, which shows everything that Summer sportsmen need—it will pay you.

We list a few lines, any of which are first class match lines.

CRICKET BATS, size 4	10/6
CRICKET BALLS	8/6
28" CRICKET STUMPS, per set	4/-
BATTING PADS	6/6
BATTING GLOVES	4/6
CRICKET SHIRTS	4/6
CRICKET FLANNELS (WHITES)	12/6

EVERYTHING FOR THE YOUNG NATURALIST

The lines we show will help you with such well-known sections as Butterfly collecting, but everything that is necessary to any branch will be found inside our Naturalists' Catalogue, a copy of which will come Post Free if you mention "Meccano Magazine."

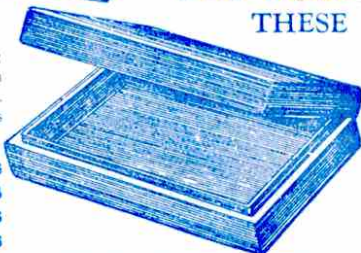


EGG CASES

Just the thing for showing off your specimens. With partitions, glass framed top. Polished imitation partitions in mahogany.

18" x 18"	64	12/6
18" x 14"	48	10/6
16" x 12"	35	9/6
16" x 10"	28	8/6
14" x 10"	24	7/6
13" x 9"	24	5/6
10" x 8"	20	4/6

Polished mahogany or old English oak to order only. Prices on application.



STORE BOXES

Will keep spare specimens till you either display or exchange them with other collectors. Corked and papered, with camphor cells.

17 1/2" x 12"	10/-	16" x 11"	8/6
14" x 10"	7/3	13" x 9"	5/6
10" x 8"	4/6	8" x 6"	3/9
Pocket Size, 6" x 4"			2/6

YOU NEED THESE

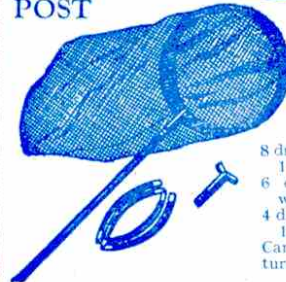
THE AQUARIUM For Your Specimens

Best London make and finish. With Cover.

14" x 10" x 10"	25/-
12" x 7" x 7 1/2"	10/6
14" x 8" x 9"	21/-
10" x 6" x 6 1/2"	7/6



ORDER BY POST



BUTTERFLY CABINETS

Stained deal, drawers with sliding glass tops. Corked and papered.
8 drawers, 18" high, 22" wide, 11" deep ... **66/-**
6 drawers, 15" high, 16 1/2" wide, 9" deep ... **36/-**
4 drawers, 13" high, 12" wide, 8" deep **27/6**
Carriage extra. Crates (returnable), charged 2/6.

THE NET FOR THE ENTHUSIAST

Plain Cane Ring, with square brass fork, good net and cane handle ... **3/11 & 4/11**
Pocket Nets, Folding Cane Ring, travelling joints, with square brass fork, folds in three sections, with net and cane handle ... **5/11**

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

City Branch: **BENETFINKS, CHEAPSIDE, E.C.2.**

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