



# MECCANO

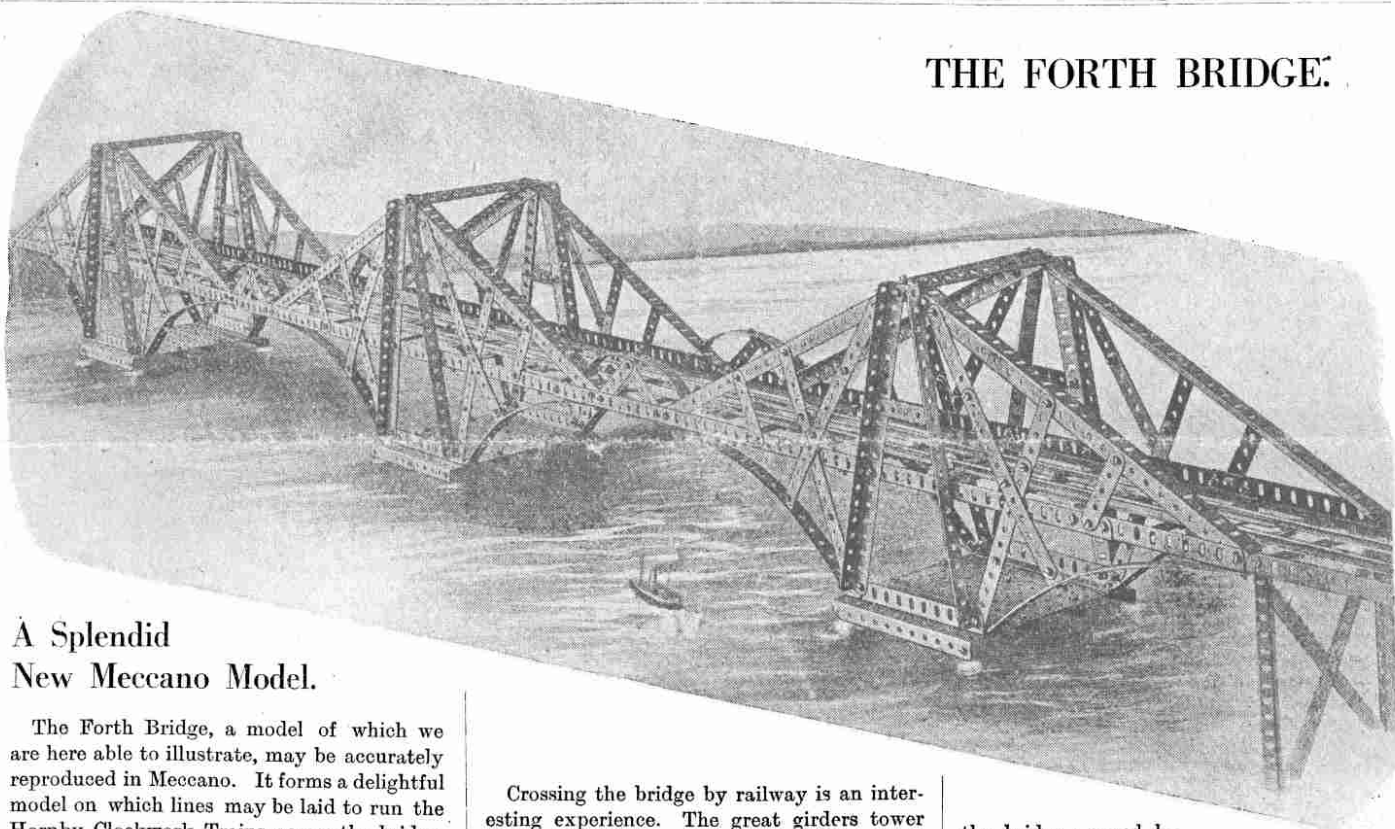
## MAGAZINE

PRICE

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TO HELP MECCANO BOYS TO HAVE MORE  
FUN THAN OTHER BOYS.

### THE FORTH BRIDGE.



#### A Splendid New Meccano Model.

The Forth Bridge, a model of which we are here able to illustrate, may be accurately reproduced in Meccano. It forms a delightful model on which lines may be laid to run the Hornby Clockwork Trains across the bridge. It is easy to build by means of the full instructions contained in the new No. 3 Manual. We feel sure that all Meccano boys will be interested in the following details of this famous bridge.

The Forth Bridge has been described as being one of the greatest achievements in the history of engineering. The bridge spans the Firth of Forth and carries the main line from Edinburgh to the North of Scotland.

It is constructed on the cantilever principle and rests upon three groups of supports or columns of masonry, standing firmly on the river bed. The engineers had to bear in mind that they must allow for the free passage of shipping on the waters of the Forth, which carries a vast amount of traffic, and so the railway track is 150ft. above the river, thus allowing sufficient space for even the largest ships to pass freely beneath.

Crossing the bridge by railway is an interesting experience. The great girders tower high above, and with a hollow rumbling roar and a continual clanking, the train runs across the bridge. Far beneath one sees the waters of the Forth, perhaps with a line of warships putting to sea from Rosyth. The river is here over a mile in width, necessitating three cantilevers, each with two arms 680ft. in length. The two suspended girders are 350ft. long.

In this bridge all the members that have to stand compression are tubular; those in tension are lattice-work girders. The tubes are built of plates riveted together, the largest being 12ft. in diameter, in the manufacture of which over 40,000,000 steel plates, requiring  $6\frac{1}{2}$  million rivets, were used. The bridge contains over 50,000 tons of steel. The work of building the bridge was commenced in 1883 and continued uninterrupted for seven years, some 4,000 workmen being employed. It was finally completed, and

the bridge opened by the Prince of Wales, on March 8, 1890, to the accompaniment of the music of a gale which whistled through the steel-work.

Sir Benjamin Baker, the engineer, stated that the bridge is so strong that a battleship could be hung on the end of each cantilever arm without causing the ties at the top of the piers to part. The bridge is painted once every three years, and as there are 145 acres of surface to cover, this is no light task.

We know that when heated, metal expands, and due allowance is made for this expansion in railway lines as well as in other metal structures. In the case of the Forth Bridge the total contraction and expansion allowed for, due to changes in the atmosphere, is between 6ft. and 7ft.

## Editorial.

### Xmas and New Year.

My office is decorated with Christmas and New Year cards received from Meccano boys in all parts of the world. I wish to take this opportunity of thanking my young friends for these remembrances and to send to all my readers my sincere good wishes for the year we are now commencing. It is a great pleasure to me to hear from my readers at any time, but more particularly do I value their expressions of good will at Christmas and the New Year.

### The Great £250 Competition.

These are busy times for the inhabitants of Meccanoland, and their attention is chiefly centred on the grand model-building competition, in which £250 worth of prizes are awarded. Every boy interested in Meccano has ideas for new models and movements, and it is to encourage them to send us these ideas that we hold this competition. We wish to make these ideas known to hundreds of thousands of other Meccano boys and thus increase their already absorbing interest in Meccano. Full particulars of the Competition are given on page 7.

### "Dick's Visit to Meccanoland."

The demand for this little book has been very great, but there are still thousands of readers of the *Meccano Magazine* who have not yet had an opportunity of reading this fascinating little story. It has recently been reprinted with an increased number of illustrations and will interest all Meccano boys who are unable to visit the Meccano works. It is the story of Dick's interview with Mr. Hornby, and will be sent post free on application.

### The Hornby Trains.

Many thousands of homes in Meccanoland have been brightened this Christmas time by the new Hornby trains, and many miles are covered every day by these charming trains, as they fly round their tracks at express speed. Neither thought nor expense have been spared in their design and manufacture. In action, they are delightful to watch, while by means of the Hornby points shunting operations may be carried out in a most realistic manner.

### Articles Wanted.

I am always pleased to consider paragraphs or short articles from readers of the *Meccano Magazine* and when of sufficient general interest to pay for them and to print them in these columns. Such contributions should be neatly written on one side of the paper only and need not necessarily be confined to Meccano or even engineering subjects.

### Clear Photographs Wanted.

From time to time photographs are submitted from my readers, featuring models or local engineering structures of interest. Unfortunately many of the photographs sent in, though interesting enough, are of very poor quality and indistinct. Because photographs lose a great deal of sharpness by reproduction, it is necessary for the originals to be clear and sharp, otherwise they cannot be reproduced satisfactorily. As previously mentioned, I shall be pleased to pay 2s. 6d. for any photographs which I may use. It would add to the interest if a short paragraph of descriptive matter accompanied these photographs.

## Life Story of Meccano.

BY FRANK HORNBY.

(Continued.)

Encouraged by the example of the American Model Builder, other manufacturers commenced to place imitations of Meccano on the market, and soon these came along in a regular flood under all manner of names and disguises. The competition was fierce and keen, each manufacturer straining every nerve to capture a business which he knew would grow enormously. The national Magazines and all the boys' periodicals were flooded with advertisements, and propaganda literature of all kinds was issued in great quantities. Prices were cut both to the trade and to the public, but throughout the whole period I maintained my original prices and conditions, knowing that the methods adopted by my competitors would lead to disaster.

Although I pursued the case against the American Model Builder in the American Courts, in co-operation with our Attorneys, as strongly as possible, and endeavoured to secure an immediate injunction restraining our competitors from selling imitation goods, the flood of imitations continued, most of them of a cheap and unsatisfactory character. My case became so complicated and entailed so much research work that a few years elapsed before we could get to close grips. Even when we did commence to give our evidence, and to lay the facts before the Court, much time was wasted on details and there were long and protracted delays. The case commenced in 1912 and the final Writ of Injunction is dated 31 March, 1921.

Since the conclusion of the case against the American Model Builder, which was tried before the United States Circuit Court of Appeals, I have had the Briefs, and Transcripts of Record of the evidence and all documents connected with the proceedings, collected together and bound. They are too voluminous to be included in one book, and they are, therefore, made up into four large volumes looking like so many family Bibles! The case was considered of the utmost importance in America, and was closely followed by the entire legal profession. The final judgment was both sweeping and emphatic, and in my opinion it stands as the finest possible tribute to the originality and sterling qualities of the Meccano system. It states that the makers of the American Model Builder had been knowingly guilty of unfair competition, and it restrained them from copying and imitating any Meccano advertisements or other printed matter; from imitating Meccano boxes or copying and counterfeiting any of the Meccano Company's products. It decrees that all American Model Builder Outfits, all Accessory Parts and Manuals of Instructions be delivered up, and that costs and damages are to be paid to the Meccano Company.

In delivering his opinion, the late Hon. H. C. Hollister, U.S. District Judge, spoke of Meccano as a "Toy of great utility and educational value, stimulating the imagination, appealing to a boy's creative faculties, that not only gives enjoyment, but is highly instructive." He goes on to say that the American Model Builder is in his opinion not only a fraud on the public, but also a fraud on Meccano Ltd. He further said that "The Meccano Manual is not unlike a key by which the really wonderful treasures contained in the various parts of the outfits may be unlocked." I do not think that a clearer or more equitable judgment was ever delivered in any court. The case was gone into minutely and exhaustively, and throughout

the whole proceedings, often wearisome and tedious, the most painstaking efforts were made by the judges to arrive at the truth in what proved to be a protracted and complicated case. Although I was a stranger and a foreigner in the country, and the proceedings were against a firm of American nationality, a spirit of utmost fairness characterised the entire proceedings, and left me with a high opinion of many sides of American law procedure.

The decision in this case naturally had its effect upon the many other imitators that had sprung up in America, following the example of the American Model Builder, and one by one they dropped out and disappeared from the market. Meccano is now recognised in America as the only constructional toy which is true to engineering principles, and it is making steady and gratifying progress in the affections of boys in that country. We have gone through a very strenuous time, but we are now reaping the reward of our perseverance and determination to uphold the rights of Meccano.

(To be continued.)

## Suggestions by Meccano Boys.

*These columns are reserved for dealing with suggestions sent in by Meccano users for new parts, new models, and new ways of making Meccano model-building attractive. We are always glad to hear from any Meccano boy who has an idea which he considers will be useful to the Meccano system.*

JEAN PELLETIER (Autun).—We shall give consideration to your suggestion for a circular strip. We cannot quite see what advantage would be gained by fitting a collar to our existing eye piece; perhaps you will write us again on this matter.

F. O. THOMAS (Birmingham).—There would be little advantage in issuing bevel gears in the ratio of 2 to 1. We list 4½" perforated strips.

RALPH E. BROWN (West Bromwich).—We now perforate the large gear wheel with two holes so that it may be secured to the base of the jib of a crane for swinging it or rotating a bridge, etc. We cannot at the moment see what advantage there would be in perforating it with holes all round. Perhaps you will be able to furnish us with further suggestions.

W. R. McLAUGHLIN (Valparaiso).—Your suggestion for a simple form of clutch has several elements to commend it, and we shall give it our consideration.

E. H. WISE (Grantham).—We have not yet contemplated the manufacture of a steam locomotive, but when we do we shall consider your suggestion for a loose driving wheel to be used for driving other models.

J. COOK.—Your suggestion to vaseline the bearings and gear wheels for smoother running is worth mentioning for the benefit of all other Meccano users. No harm will result to the parts.

E. CYRIL CLEMENTS (Dudley).—The stanchion you suggest to be used as railings would be somewhat expensive if any large number were required, but we may be able to devise a simpler arrangement.

REV. HAROLD FRYER (Bassett).—We think your description of mechanism for operating a crane possesses merit, and we would suggest your entering it in our Grand Competition. A good photograph and description would be sufficient for us to judge of its merits.

We appreciate your remarks re our Hornby trains. These trains are manufactured in vast quantities and are adapted to be run on the lines, points and crossings we provide, each one being tested before leaving our works. It would not be possible for us to take into consideration the suitability of other manufacturers' lines, over which we have no control.

S. H. WILSON (Barnsbury).—We shall give consideration to your suggestion for the number of teeth to be marked on each gear wheel; also the issue of Hornby train couplings separately. We shall also go into the matter of introducing 2" x 1" double angle strips.

EDWARD MCPHEE (Brideton).—If we were to make our crank handles 7½" in length they would be too long for most of our models. If a longer handle is required than that we issue, it may be lengthened by connecting a piece of rod with a coupling.

EDWARD W. SAWYER (Folkestone).—The pieces you suggest would be very expensive to manufacture, and you do not mention to what purposes they could be applied.

MARCEL GRUNSTEIN (Paris).—It would not be practical to flatten our rod for the purpose you mention. We are, however, experimenting on a contrivance for effecting the purpose you suggest, and we will announce the result later. Your other suggestions will receive our consideration.



H. J. WILSON (Streatham Hill).—We doubt whether there would be much, if any, advantage in supplying square or hexagon headed bolts in place of slotted. The cost of manufacture would be very considerably increased.

MAX HAMILTON (Warkworth, New Zealand).—We shall consider your suggestion to offer a frame for the Guild Certificate as one of the prizes in our Competition. We have a depot in Auckland through which Meccano is distributed in New Zealand so that all interested Meccano boys are looked after.

N. F. ASTBURY (Longton).—We can only see one use at present for your suggested shorter crank, and we make it our general practice to introduce only those parts which have an interchangeable purpose. We would like you to give us some further uses of this part.

RAYMOND JOHNSON (Eccles).—Any garage or electrician would recharge your accumulator. We cannot quite see the application of your suggested strip twisted at right angles. Perhaps you will explain more fully its uses.

A. B. GROVENOR (Norwich).—We propose later on to issue a larger gear wheel than our No. 27a. It would not be practicable to make a pinion of only 12 teeth as a Meccano part, for the bush would be too small to accommodate our rod. We are experimenting with a more simple form of handle than the one you suggest.

Your suggestion for an eye bolt will have our consideration, also the suggested improvement to the existing crank. We cannot see what advantage would be gained by having the end holes of the bell crank elongated. Your suggested sleeve has merit and we shall consider it.

T. C. WHITELAW (Wolverley).—We would like to know what uses a shorter cranked rod would serve. With regard to the curved section, we think a sleeve might serve your purpose better.

DANIEL J. MURPHY (Walthamstow).—It is interesting to know that you obtained a strong clockwork out of a clock and that it drove your Meccano models successfully. We are afraid your idea may fire the ambitions of other boys to the detriment of their clocks at home!

EUGENE M. DUTTON (Ealing).—We are pleased to have your suggestion for an improved gear box to the Meccano Chassis. Why not take a photograph and enter it in our Competition?

FRED PRICE (Ashton-on-Mersey).—We think our present rack strip would serve all the purposes of the flat rack, and would be much cheaper to manufacture. We do not think any advantage would be gained by introducing a twisted gear.

ERIC R. SMITH (Edinburgh).—We think your suggestion to index the models in our Manuals a good one, and we shall consider it.

R. RANX (London).—We think you would find our general lines more suitable for your purpose.

DONOVAN WAKEFIELD (Gosport).—We are considering the introduction of a turntable for Hornby Trains and this will be announced in the *Meccano Magazine*, when ready. The wheel you suggest could be made by fastening a threaded pin to a bush wheel.

W. H. LLOYD (Birmingham).—A base plate may be made any size by connecting flat perforated plates with girders. An improvement in any of our existing models would merit a prize.

W. A. CLUTSON (Bristol).—We can understand the use of a ball to be used at the end of a crane chain or cord, but we cannot see the purpose of putting a slot to take a strip or a threaded hole in it. This would be an expensive part to manufacture, and we doubt whether the use to which it could be put would justify it.

We have not thought it desirable to introduce a twisted gear up to the present. For a right angle drive we use bevel gears giving an equal ratio. We shall give consideration to the  $2\frac{1}{2}$ " strip with the three centre holes slotted. We think that a  $7\frac{1}{2}$ " strip would be so rarely used that two strips overlapped would serve the purpose for which it might be required.

RONALD CROSLAND (Streatham).—We would like you to send us one or two examples of the purposes to which you would apply your suggested twisted angle bracket.

H. WELLS (Clapham).—We can see from your descriptive drawings the advantages of a clamp for fastening cranes and other models to a table and shall give it consideration. We are of the opinion that our strip coupling would serve all the purposes you suggest with the exception of joining two rods at variable angles for which we cannot see the purpose. Perhaps you will give us a few examples of its application. Your suggested "double rod" or rod with a sleeve would be expensive to make and the application limited. Not only this, but special wheels would have to be made if your idea were adopted. Wide Pulley Wheels have merit and we shall give them consideration. Curved angle girders. There are many ways of performing the functions you suggest with our existing parts. Definite curves would have limited scope. Metal Cog Cover. We do not think there would be any justification for this as the danger of accident is practically nil.

We shall give consideration to your suggested rack strip.

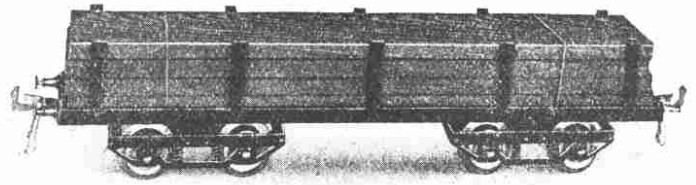
ROY DAVIES (Tongwynlais).—We cannot see any advantage in issuing a sleeve bearing combined with two trunnions. You might give us some examples of its use. Our present coupling is capable of connecting rods at right angles. The necessary size of the boss prevents our making sprocket wheels less than  $\frac{1}{2}$ ".

## The Hornby Timber Wagon.

The Hornby Timber Wagon is a new addition to the No. 2 Hornby Train System. It measures 13 inches long and is beautifully enamelled in colours. It resembles the Hornby Train in that it is built of standardised parts. It may be taken to pieces and re-built, and any damaged part may be renewed at any time.

One or two of these timber wagons, added to the No. 2 Goods Set form a very realistic picture as they travel along.

Gauge 0 suitable only for No. 2 set, complete with load of timber. Price each .. 7/6



### SUGGESTIONS—continued.

T. A. GATLEY (Peel Green).—We do not recommend dry batteries for driving our 4-volt motor. At least three would be required to give the necessary amperage, and they discharge so quickly that they are more expensive in the end than an accumulator.

A. C. RANDLE (Ilford).—In overlapping strips, fewer nuts and bolts are required than if butted together and connected by a smaller strip. A  $1\frac{1}{2}$ " angle bracket could be used to connect two angle girders at right angles.

C. I. SALT (Lincoln).—Thicker bearing strips may be made by bolting several together. A square shaft would not be a good proposition for use with Meccano parts. It would practically mean a new standardization, as a great many other parts would necessarily have to be made to go with it, and for the purpose you require it we think other arrangements may be more practicable. We shall consider your other suggestions.

B. K. BILLIMORIA (Kandy, Ceylon).—We sympathise with you in your difficulty in obtaining Meccano parts in Kandy. If you cannot obtain them locally the only alternative is to write us direct.

PHILIP GREGORY (Birmingham).—We are considering the introduction of an improved crank connection, and when this is ready it will be announced in the *Meccano Magazine*.

JOHN J. SKINNER (Blackheath).—We illustrate a number of special models in our new No. 3 Manual.

W. G. SYMONS (Streatham).—We include in our list reversed angle brackets. Your other suggestions will have our consideration.

MORTON RODGER (Invercargill N.Z.).—Two strips at right angles may be fastened together by using a simple bell crank, or by bracing them crosswise with a 3" strip. We would like you to give us some further particulars as to the uses to which a  $1\frac{1}{2}$ " or  $1\frac{3}{4}$ " pulley wheel having a threaded boss would be put.

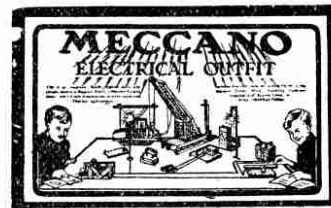
ERIC WHITEHEAD (Stoke-on-Trent).—Your little idea, Eric, "to manufacture bicycles of all sizes" would necessitate the erection of a special factory!

JOHN SACKETT (Hove).—Your suggestion for a flanged plate  $2\frac{1}{2}$ " x  $2\frac{1}{2}$ " will have our consideration. We list a  $3\frac{1}{2}$ " rack strip and have under consideration the use of a flange to our clockwork motor.

LESLIE GREENHANK (Skelton Grove).—We shall consider your suggestion for the introduction of timber dogs.

## Electrical Accessory Outfits.

The application of electricity to the Meccano system adds a further and wonderful charm and enables fascinating electrical experiments to be carried out. Used in conjunction with any of the regular Outfits from No. 0 to No. 6 the Meccano Electrical Outfits enable the user to construct such models as Electric Railway, Morse and Tapper Keys, Buzzer, Electric Lamps, Motor Starter, etc.



X1. ELECTRICAL ACCESSORY OUTFIT (containing electrical parts, but without motor or accumulator) Price .. 12/6

X2. ELECTRICAL ACCESSORY OUTFIT (containing electric motor, 4-volt accumulator and electrical parts) Price .. 50/-

## Interesting Paragraphs.

John Bright, the celebrated politician, in the House of Commons, said: "Who are the greatest men of the present age? They are not your warriors—nor your statesmen—they are your engineers."

Recently, while the British steamer *Malame Beatley* was lying at her discharging berth at Rouen docks, a floating crane moored alongside fell over. The jib of the crane dropped on to the steamer, damaging her bulwark, stanchions and rails. An enquiry will be held as to why the crane collapsed.

The flag which floats at the top of the tower of the House of Lords is large enough to provide standing room for 1,500 people. The flagstaff itself is so thick that two men can only just meet their hands round it. The crowns at the corner of the tower weigh one ton each.

The first direct press messages have been sent between England and Australia. Such messages were considered impossible by the Imperial Conference, but the impossible has been done.

Germany is surrendering to Britain the world's largest dry dock as punishment for the sinking of the German Fleet at Scapa Flow. It will probably be located at Southampton.

The world's largest and most powerful searchlight is situated in the U.S.A. It is a high-intensity anti-aircraft 60in. fortress-type searchlight, for use in coast defence. Its arc throws a light beam of 1,200,000,000 candle power with a brightness 500 per cent. greater than any previously available light.

A twin double-leaf trunnion bascule bridge is to be built over the south channel of the Mystic River at Boston, U.S.A. Its span will be 118ft. between the trunnions and the bridge when complete will carry an electric railway, a 25ft. roadway and a  $5\frac{1}{2}$ ft. path for pedestrians. The bascule form of bridge is one of the oldest types known, and the Tower bridge at London is built on this principle.

A 15 year old cabin boy recently invented a novel fly trap for use in his Captain's cabin. It is formed of a series of slats on an endless belt. These are smeared with honey and syrup to attract the flies. The belt slowly revolves by clockwork and disappears into a box, the flies being automatically scraped off into a cage.

The largest sailing vessel afloat, is the French barque, *La France*. It has recently reached London from New Zealand, after a voyage of just over three months.

## Meccano Guild Notes

By the SECRETARY.

**New Year's Greetings.** To all those Guild members who have sent me Christmas and New Year Greetings I offer my sincere thanks. I hope that every member of the Guild will accept my sincere wishes for the coming year, that they may have a happy time and that success may attend all their efforts.

**New Clubs.** Elsewhere in these columns I mention that four new Clubs have recently affiliated, and it is a pleasure for me to welcome these Clubs to the Guild. It is a significant fact that three of these clubs are situated outside the United Kingdom. Guild Members in the Dominions are not so fortunate as members in this country, for very often Club meetings can only be held under adverse conditions. They have one feature in common with English boys, however, and that is their tremendous enthusiasm for the Meccano Guild and its objects. I hope that before long we shall be able to announce the affiliation of many other Clubs in the Dominions.

**Our New Session.** By the time this Magazine is in the hands of Guild members the new session will have commenced. Reports which are now coming to hand of the last session show that it has been unprecedented in its success. May the coming session even surpass it in this respect. Judging from the programmes already received the Clubs have arranged many interesting evenings that will provide a considerable amount of happiness for their members.

**The Inter-Club Competition.** I wish to bring to the notice of all Club Leaders and Secretaries the Inter-Club Model-building Competition which is to be held again this year. The competition was very successful last year, and is held with a view of encouraging a spirit of friendly rivalry between the various Clubs. The cash prizes make a valuable addition to Club funds. The closing date is 31st March next and full particulars of the competition will be sent on application.

**Recruiting Campaign.** I specially wish to draw the attention of Club members to the Recruiting Campaign which is the subject of a separate announcement. As loyal Guild members know, the Guild gives a beautiful Recruiting Medallion to those members who obtain three new recruits.

**Two Club Booklets.** The two booklets "Notes for Club Leaders" and "Suggestions for Club Secretaries" have been revised, and supplies of the new edition will be available by the time this magazine is issued. Any member of the Guild who is contemplating forming a Meccano Club in his district is invited to apply to me for further information.

## The Meccano Guild Rally.

SUCCESSFUL GATHERING AT HOLY TRINITY MECCANO CLUB.

On the 26th November a Guild Rally was held in the Parochial Hall of the Holy Trinity Church, Barnsbury, London, N.1. The occasion was a Rally of all the London Clubs, and to it had also been invited parents, friends and non-members. On the night in question London was enveloped in one of its notorious fogs, but in spite of this the gathering was large and very enthusiastic.

The following Clubs were represented:—St. Mary with St. Gabriel, Newington Butts, Herne Hill, Stationers, Crouch End, Askean, New Cross Gate, St. Paul's, Hammersmith, Carshalton and District, and New Malden, Surrey.

The meeting commenced at 7 o'clock, the Vicar, Rev. S. C. Rees-Jones being in the chair. He opened the Rally by an address dealing with the objects of the Meccano Guild, and expressing his admiration of the work which the Guild was doing, urged those boys who were not already members to join without delay. He said that he was very justly proud of the Holy Trinity Meccano Club, which had had a very successful history, and mentioned that the Rally marked the close of a particularly enjoyable session. He pointed out that the great interest taken by Meccano Ltd. in the Guild and in Club life was evidenced by the fact that the Guild Secretary had travelled all the way from Liverpool to address the meeting.

The Leader, Mr. Stuart H. Wilson, then followed with a few words of welcome to the members of the London Clubs, who had come from such long distances despite the fog, and gave a short history of the work and progress of the Holy Trinity Meccano Club.

### THE GUILD SECRETARY.

The Guild Secretary then gave a Lantern Lecture illustrated with over 100 slides, describing the work of the Guild. He showed how during the past two years this movement had grown to such an extent that its present membership reached over 25,000. Slides were shown of different Meccano Clubs, of which he stated over 100 exist in this country alone. Photographs of Clubs in the Dominions and in foreign countries drew loud applause. The awarding of Special Merit and Recruiting Medallions was explained, and slides shown in illustration.

After outlining the great scope and future of the Guild, the lecturer proceeded to give some account of the history of Meccano. He dealt first with Mr. Hornby's original invention and showed photographs of early models, mentioning that in its earlier days Meccano was known as "Mechanics Made Easy." The staff then comprised only Mr. Hornby himself and one girl, the premises being located in James Street and consisting of only one room, which served as office, warehouse and workshop. Later the business grew to such an extent that Mr. Hornby took an empty garage in West Derby Road, and this was turned into a workshop. Slides were shown of these early premises and of some of the machines contained in this first workshop, and it was demonstrated how Meccano models had improved as the scope of the system increased.

This early history of Meccano was followed by an account of the present factory at Liverpool, which it was mentioned covered an area of some five acres and employed over 1,500 hands. Photographs were shown illustrating many of the numerous departments necessary in the manufacture of Meccano parts, and included the Press Shop, Die Stamping and Gear Cutting Machines, the Automatic Machine Shop and the Tool Making Shop. Other process rooms included the Barrelling or Cleansing Department, the Electroplating Section, and finally the Stores and large Packing Rooms. The lecturer described how the business grew to its present gigantic proportions, with associated companies and branches established at Paris and New York, also depots in London, Sydney (Australia), Auckland (New Zealand), South Africa, Canada, Brussels, Genoa, Barcelona, Buenos Aires, and elsewhere. Specimens of the Manuals printed in different languages were then shown, it being mentioned that the Manual now existed in no less than 16 different languages.

An account was also given of the Hornby Clockwork Trains, which the lecturer claimed to be the finest trains upon the market. He mentioned that every Hornby Train could be taken to pieces and rebuilt, and if any parts became lost or damaged they could be replaced, the train being built on the Meccano system of interchangeable parts. Slides were shown illustrating the manufacture of the trains, the Stamping and Spraying Departments, the Motor Assembling Department, and Testing Departments and Packing Rooms. Finally, when a photograph of Mr. Hornby was thrown upon the screen, there was vociferous applause, lasting for several minutes.

The Secretary's lecture was followed by some 20 slides dealing with outings and models made by the Holy Trinity Club, including the model which won the second prize in the inter-club model building competition. Slides were shown of the exterior of the Meccano works taken on the occasion of the visit of the Leader and Secretary last summer. We are able to reproduce here a photograph recently taken of the Holy Trinity Meccano Club.

Two flashlight photographs of the Rally were taken: one of the Rally itself, and the other of the Guild Secretary, Club Leaders and Secretaries on the platform.



THE HOLY TRINITY MECCANO CLUB.

form. Notes of the Rally were taken by reporters, whose tables were illuminated by electric lights made with Meccano Electrical parts.

## A Play-Writing Competition.

Many of our Meccano Clubs end their sessions by giving Exhibitions and Concerts, and often perform some sketch or little play. The audience at such an entertainment would appreciate more particularly a play which has some reference, or is based upon, Meccano, the chief hobby of the Club members. In these circumstances we have decided to hold a Competition, so that any readers who have an ability for play-writing may have an opportunity of exercising their talents. Cash prizes to the value of £5 will be awarded for the best plays submitted, with other awards for plays showing special merit. Entries should be received not later than May 30.

The play should be written or typed on one side of the paper only, and should be of such length that it will, when acted, occupy about half an hour. There may be more than one scene if necessary, but it should be remembered that as the successful plays will probably be performed by Club members, the scenery and costumes available will be somewhat limited. The scene and plot may be laid anywhere, although the play should in some way turn or bear upon, Meccano. Before the play opens some description should be given of where the scene is laid, the characters appearing in the play, and additional notes to assist the actors to accurately interpret the author's ideas, and produce the play satisfactorily.

### OUTLINE OF "Nonsense Nana."

To give some idea of how interesting a play may be written, it may be mentioned that a lady in India has written such a play entitled "Nonsense Nana." In it there are three characters, Dick, his brother Robert, and Nana, the old nurse. Their parents are away in India and they are left in charge of Nana. The play is in two acts, in the first of which the boys are playing in their nurse's room, Robert being busy with Meccano. The telephone rings, and Dick having answered it returns breathlessly to tell them there has been an accident at the local mine and his Uncle wants him to cycle into the village at once for a doctor and ambulance. He rushes off into the snow and darkness of the night to fulfil his mission. Robert, returning to his Meccano finds he has left some necessary parts in the attic so takes his model up there to finish. Left alone, Nana reproaches herself for having let Dick go on such a night, when suddenly a terrible moan is heard. Nana remembers the old family legend, that "the 'Grey Maid' moans three times before the death of the Heir." Terrified she listens—again it comes, and yet again. "Tis the 'Grey Maid'!", she shrieks, "and Master Dick's the heir. He shouldn't have gone—he'll be killed, he'll be killed!" Robert hearing her cries rushes down, but she refuses to be comforted.

In Act 2, on Dick's safe return from his ride, Robert tells him of the moaning of the "Grey Maid," and as he is telling the story a sudden thought strikes him, and he rushes off to return a few seconds later proudly displaying the finished model—a fog-horn which he has completed with the aid of an old motor-horn found in the attic. He proceeds to give a demonstration of how beautifully it works—congratulating himself on the "ripping noise it makes." Nana, as the truth dawns upon her, collapses with relief, whilst the boys laugh heartily at her "Grey Maid"!



## Club Notes.

**MEADS M.C.**—Closed on December 17 after a very successful session. Several new schemes are in hand for next session, and the Club members are promised an enjoyable time. *Secretary:* Master F. Moore, Chesterfield Cottage, Chesterfield Road, Meads, Eastbourne.

**CRYPT GRAMMAR SCHOOL M.C.**—Despite many drawbacks a fine programme has been carried out, including competitions, model-building evenings and lectures—all greatly enjoyed by the members. The Club Leader hopes that the next session will be even more successful. *Secretary:* Mr. E. A. Millar, Crypt Grammar School, Gloucester.

**MIRFIELD M.C.**—Monthly competitions are a special feature of this Club, and sometimes an evening is spent in the local Y.M.C.A. gymnasium. This alternative meets with considerable approval from the members, all of whom are keen and enthusiastic. The Secretary has recently been awarded a Special Merit Medallion. *Secretary:* Master L. Browning, 152, Bentinck Street, Doncaster.

**MEXBORO' M.C.** now has a membership of 82, is one of the largest and most flourishing in the Guild, and even more members are still being enrolled. The Club Leader writes:—"The only time I see a long face is when I say 'Now boys it has turned 8 o'clock, and time to go home!'" The Club Savings Bank is very popular, and many of the members have over 10s. in it. Master S. A. Skelton—the builder of a very fine model in a recent exhibition—has been granted a Special Merit Medallion for special administrative work on the recommendation of the Club Leader. *Club Leader:* Mr. H. May, 17, High Street, Mexboro'.

**ST. DAVID'S (TONYREFAIL) M.C.**—At a recent meeting a lecture was given on "Marconi" by the Club Leader, Mr. F. Morse, and on another occasion. Master W. Woolcock delivered a lecture on "The Electric Bell." It is regretted that Master J. Davies, the former Secretary, has had to resign, but Master Woolcock has taken the position. A Meccanograph model was loaned to the Club for 10th January. *Secretary:* Master W. Woolcock, 14, High Street, Tonyrefail.

**CITY OF NORWICH SCHOOL M.C.**—Has made very rapid progress. Master Fuddenhams, a member of the above Club, won the first prize in a model-building competition organised by a local firm of Meccano dealers. The session closed with the Club's annual competition, which was very successful. *Secretary:* Master J. Long, 19, Newmarket Road, Norwich.

**SOUTHVILLE (Bristol) M.C.**—During the past session a lecture was given by Master S. Evans on "Meccano Parts and their Uses" and was much enjoyed by all the members. Discussion on various models is very popular among the Club members, and these together with the usual programme have made a very successful session. *Secretary:* Master S. Dembrey, 142, East Street, Bedminster, Bristol.

**DUDLEY M.C.**—Opened on 6th October with a programme consisting of model-building and drawing evenings, lectures, etc. The members spent an enjoyable session. *Secretary:* Master L. Grosvenor, 30, St. John's Street, Kate's Hill, Dudley.

**KING STREET (Luton) M.C.**—Continues to make good progress and the Meccano lecture "Lives of Inventors," sent from Headquarters, was much enjoyed. *Secretary:* Master W. Humby, Luton.

**HOLY TRINITY (Barnsbury, N.1) M.C.**—At the Exhibition held recently a profit of £38. 0d. was made, of which all the members and officials of the Club are justly proud. The Guild Rally was also very successful and an account of this appears elsewhere in this Magazine. The Club Magazine continues to improve with every issue. A lecture on "The Microscope" was given by the Patron of the Club, the Rev. S. C. Rees-Jones, and Master D. E. Stretton hopes to give a series of articles in the Club Magazine on "Astronomy" in the near future. *Secretary:* Master D. E. Stretton, 25, Thornhill Houses, Thornhill Road, Barnsbury, London, N.1.

**BLOEMFONTEIN (SOUTH AFRICA) M.C.**—Has just concluded a successful session. The Cricket Club, established during the session, has proved very popular. A novel feature is a small Silver Cup to be won by one of the members. At the beginning of the session each member is given 100 marks; if he is late or does things he should not do, he loses marks. The boy who has the most marks at the end of the session wins the cup. This scheme is arousing great enthusiasm as each member is anxious to win the trophy. It is hoped to hold a Bazaar at the beginning of next session. *Secretary:* Master F. Lupton, 4, Loop Street, Bloemfontein, O. F. S.

**NEW MALDEN M.C.**—The winter session commenced on 3rd October, and since that date many happy evenings have been spent by the members. Interesting lectures have been given, and the members' interest continues to grow. An exhibition was held on 14th and 17th December with great success, and a model of the Meccano Motor Chassis was loaned from Headquarters on this occasion. Masters S. B. Evans and D. Forshaw are the winners of the Special Merit Medallions for this Club. *Secretary:* Master S. B. Evans, 22, Howard Road, New Malden, Surrey.

**SMALL HEATH MECCANO CLUB.**—Continues to make good progress. The average attendance is 40 and new members are still being enrolled. The session closed with a successful concert and exhibition. *Secretary:* Master W. Edge, 131, Whitehall Road, Small Heath, Birmingham.

**CIRENCESTER GRAMMAR SCHOOL M.C.**—A very interesting programme was enjoyed last session, and as usual the Club meetings were well supported. The Meccano lecture "Lives of Inventors" proved very popular, and the members look forward to receiving the lecture "The World's Greatest Bridges" sometime next session. Although it is the usual rule to award only one Medallion to each Club for lectures an exception has been made in the case of this Club for there were quite a number of excellent papers delivered by the various members. Masters P. Richards and N. Gobeys were the winners of the Special Merit Medallions. *Secretary:* Master N. Gobeys, "Clovelly," Victoria Road, Cirencester.

**CHURCH OF CHRIST SUNDAY SCHOOL (OLDHAM) M.C.**—Any Meccano boy living near Oldham who has not already joined a Club should communicate with Mr. F. Durose, Highfield, Nr. Oldham, the Club Leader of the above mentioned Club. The programme for the last session included model-building evenings, lectures, etc., and was much enjoyed by all the members. *Secretary:* Mr. Chapman, 284, Lee Street, Oldham.

**HILDENBOROUGH M.C.**—Interesting lectures on "The Microscope," "The Davy Safety Lamp" and "The South of France" were delivered during the session, and the Leader hopes to be able to arrange for a personal friend of his to give another on "Walking Tours" very shortly. On the occasion of an enjoyable ramble through the woods, the various kinds of trees were pointed out to the members. *Secretary:* Master W. Bassett, Laburnham Cottage, Hildenborough, Kent.

**SOUTH KIRKBY M.C.** is one of the oldest Meccano Clubs in the Guild, and the members are as keen as ever. The Meccano Lecture "Lives of Inventors" was received with much approval. A very successful session has been held. *Secretary:* Master J. Williamson, School House, South Kirkby.

**ST. ANNES (Leicester) M.C.**—Recently held a Bazaar and Exhibition of Meccano Models. Meetings have had an average attendance of 24 boys, showing a great improvement over last year. Models illustrating methods of transport were made a subject for special study this session. The members have also built the model of the Meccanograph. *Secretary:* Master H. R. Smith, 8, Sunnycroft Road, Leicester.

**RUABON M.C.**—A local Exhibition held recently, included an excellent display of Meccano Models, constructed by the members of the Club. The local press described the Exhibition as being "A credit to the Leader and members of the Club." *Secretary:* Mr. A. H. Squire, Bryn End, Ruabon.

**ASKEAN (New Cross S.E.14) M.C.**—Programme included an interesting debate "Will Electricity supersede Steam Power?" An evening was arranged for five minute speeches, given by the members. *Secretary:* Master M. G. Capon, 50, Chestnut Road, West Norwood, S.E.27.

**LISCARD HIGH SCHOOL M.C.**—A very interesting programme was drawn up for the winter session. A football team has been formed, and the Club are considering the production of a Club Magazine. Lectures have been arranged, and an interesting feature is a Chess and Draughts Tournament. This runs through the session, games being played at successive meetings, and a prize being given to the winner. *Secretary:* Master B. Warburton, 11, Brisbane Avenue, New Brighton.

**KING STREET (Luton) M.C.**—An Exhibition and Social was held in December. Mr. S. Burgoyne, the enthusiastic Club Leader, arranged that at the end of each model-building evening, a short discussion on interesting "Current Events" should be held—a splendid idea. The programme for the session—which made a special feature of Lectures—was an interesting one, and all the members have had a busy session. *Secretary:* Master W. Humby, 74, Adelaide Street, Luton, Beds.

**CRYPT GRAMMAR SCHOOL (Gloucester) M.C.**—An interesting session was held and included a visit to the local power station. Lectures, competitions and model-building evenings were included in the programme. *Secretary:* Mr. E. A. Miller, Crypt Grammar School, Gloucester.

**TONBRIDGE M.C.**—In an exceedingly successful Exhibition of models held recently at Semadeni's Cafe, Tonbridge, a large number of models built were on view. The Exhibition was opened by Councillor Donald Clark, and so great was the number of visitors that the Club Leader, Mr. T. J. Wickham found it necessary to arrange for a further inspection of the Exhibition models on a subsequent evening. A competition was held in connection with the Exhibition and the first prizes in their respective sections were won by Masters S. Bull (Aeroplane), Newman (Gramophone), Wallen (Char-a-banc) and Pratt (Punching Machine). *Secretary:* Mr. Johnson, St. Mary's Road, Tonbridge.

**LEAMINGTON M.C.** held a very successful Bazaar in the Town Hall at the beginning of the session in aid of the St. Mary's Funds. In addition the Session included a number of interesting subjects such as lectures on "Bees," "The Advantages of Motor Transport," "Switzerland" (which was illustrated by coloured lantern slides), "Spiders," etc.; a Debate on "Will Light Cars supersede Motor Bicycles and Sidecars"; Model Building Evenings, etc. The Club boasts a troupe of "Nigger Minstrels" which does excellent and entertaining work. *Secretary:* Master G. M. Hare, 36, Willes Road, Leamington.

## Clubs recently Affiliated.

**FAIRWAY (Bexhill) M.C.**—Although only recently affiliated, and having many difficulties to contend with, this Club has made very satisfactory progress. Any boys in Bexhill who are keen Meccano boys should get into touch with the Secretary of this Club without delay, for by so doing, they will undoubtedly spend many happy evenings in company with other Meccano boys. *Secretary:* Master W. G. Bradbrook-Chissell, 1, Wickham Avenue, Bexhill.

**WELTEVREDEN M.C.**—Is the first Club in the Dutch East Indies to be affiliated with the Guild. Judging from the enthusiastic tone of the correspondence received from the Secretary and Club Leader, the Club will rapidly develop into one of the strongest in the Guild. *Secretary:* Master R. E. Pilet, Raden Salehlaan, 54, Weltevreden, Java, Dutch East Indies.

**BUTE (South Australia) M.C.**—Although the "Bute Meccano Club" has been in existence for some little time it is only recently that it has become affiliated with the Guild. A very successful and interesting competition was held in October and the members are all hard at work to make their Club a success. *Secretary:* Master F. Barnes, Bute, South Australia.

**MALVERN (South Africa) M.C.**—This is another colonial Club which has been recently affiliated, and one which it is anticipated will do good work in connection with the Guild in the near future. *Secretary:* Master E. Sykes, c/o T. Henderson, P. O. Cleveland, Transvaal, South Africa.

## Clubs not yet Affiliated.

**BALHAM (London) M.C.**—Club is being organised in Balham, London, and any Meccano boys in that district who are interested should immediately get into communication with Master A. Chantlain, 19, Martindale Road, Balham, London, S.W.12, who is the Secretary.

**OBSERVATORY (South Africa) M.C.** has been started in Cape Town and will become affiliated with the Guild very shortly. The Club had a big tent at a local Fair held there recently, and the Meccano models attracted much attention. An interesting programme has been arranged, and the Club is looking forward to an interesting session. *Secretary:* Master T. Bulling, 55, Arnold Street, Observatory, Cape Town, South Africa.

**FIRST HALIFAX M.C.**—This Club has just been organised and hopes to become affiliated with the Guild when the membership increases. Any boy living in Halifax is given a cordial invitation to join, and should communicate with the Secretary. *Secretary:* Master E. Littlefair, 4, Clare Street, Halifax.

## A New Zealand Meccano Club.



TE AROHA MECCANO CLUB.

The above is a photograph of a successful Club established in 1920 at Te Aroha in New Zealand and I am sure our readers will agree that the members make as pleasing and as manly a group of Meccano boys as one could wish to see. The Club's motto is "Play the game, and if you fail try again." Owing to the difficulty in obtaining an adult Club Leader in Te Aroha, Master Ronald Hedge (the boy on the left of the two seated, in the above photograph) was temporarily filling the post. It is with great regret that I have to announce that this Guild member died on 27th October last, from meningitis. "We have lost our best member" writes Master Elga Hinton, the Secretary. "He was our faithful Leader and had done good work for the Guild." I am sure that the sympathy of every Club and of every Guild member will be extended to the Te Aroha Meccano Club in its sad loss.

# The Largest Crane in the World.

350-ton Crane at Philadelphia Navy Yard.

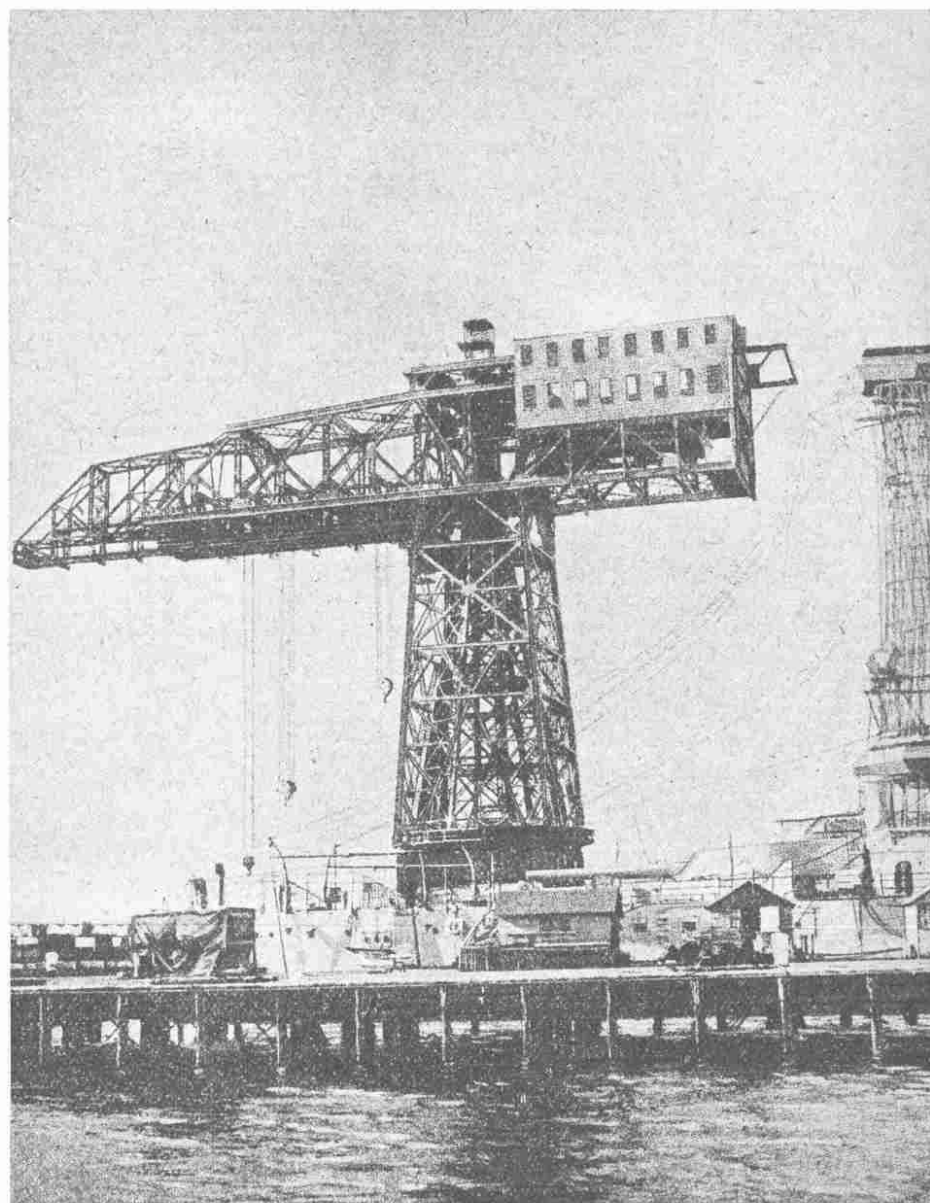
Boys who are interested in engineering are always fascinated in watching cranes at work, and we feel sure that all our readers would wish that they could see the world's largest crane lifting and swinging 350-ton loads with ease. For the majority of us this is not possible, as this monster crane is situated at Philadelphia, U.S.A., and is the property of the United States Navy. By the courtesy of *The Scientific American* we are enabled to reproduce the accompanying photograph, which well illustrates this wonderful structure, while the McMyler Inter State Co., the designers and builders of the crane, have been good enough to give us some particulars regarding its construction. We feel sure that a large number of our readers will be particularly interested in reproducing this crane in miniature by means of Meccano.

Although the crane has been installed only recently, its future seems somewhat uncertain, in the light of what is transpiring at the Washington Conference. The reason for the building of this enormous crane is the increased size of the elements entering into the construction of the modern dreadnought, for the crane is primarily intended to assist in the construction and repair of battleships. The great size of the crane was prompted by the desire to handle such elements as a whole, rather than have to dis-assemble them in order to make it possible to transport them and lift them into position in a dreadnought. Previous to the installation of this crane, for instance, the gun turrets were transferred to a dreadnought dis-assembled and were erected in position on board ship. By means of this great crane they may now be erected on the dock-side and placed on board as a complete unit. Thus considerable time is saved and the whole work facilitated.

The League Island crane, which cost over £200,000, stands on a pier extending out towards the Delaware and is thus able to operate over two docks. The structure contains some 2,000 tons of steel and 1,000 tons of machinery. Its height to the top of the observation tower is 250ft., and an electric passenger lift is provided to reach the upper part of the structure. No photograph can give any true idea of the tremendous size of this crane, beside which a battleship is completely dwarfed. The immensity of the great frame-work of steel can only be adequately understood when one stands beneath it, or climbs the steps of the central stairway to the platform 200ft. above.

The crane is of the hammer-head type, the total weight with load (about 4,000 tons) being carried on an elaborate pile foundation, driven well down in the gravel below and supported laterally. On this foundation there stands the massive four-legged structure called the stationary portal, the four legs of which support a system of steel girders, distributing and equalising the load.

This portal forms the main structure and upon it is mounted an octagonal tower, tapering to a point at the top. The top of the tower supports a roller bearing of special design, which carries the revolving cantilever truss. In order that the cantilever truss will remain stable for all unbalanced moments a structural frame or skirt is attached to the centre of the truss. It is built around the octagonal tower and is supported for hori-



THE LARGEST CRANE IN THE WORLD.

zontal reactions, and near the base of the octagonal tower on top of the portal, by means of a chain of rollers bearing against the circular path attached near the base of the octagonal tower.

The crane is fitted with three hoists as follows:—Two main hoists of 175 gross tons capacity each, which may be operated singly or jointly. When operated jointly an equaliser beam is used, and is hooked into each main hoist. The centre of this equaliser beam contains a steel forged hook which has a working capacity of 350 gross tons. This weight of load can be handled at any radius up to 115ft.—the maximum radius for the main hoists. The height of the hoist above the top of the pier is 190ft.

The building and erecting of this crane required 20 months from the date of signing of the contract, a special derrick being constructed for the purpose of its erection. In order that both the rear and front cantilevers could be erected with the same derrick, the revolving mechanism of the crane was first installed and was made ready for operation simultaneously with the construction of the cantilevers. In order to

keep the load as nearly balanced as possible the crane was revolved after a certain portion of the rear cantilever was installed to allow of a certain portion of the front cantilever being installed, the operation being reversed several times.

## The World's Greatest Bridge.

Plans have recently been completed for the construction of a bridge from New York City to New Jersey, which when completed will be the largest bridge in the world. The bridge will be of the suspension type, and will span the Hudson river. It is to have two towers, and from one anchorage to the other the chains will measure 3,240ft., central span. The shore spans will each be 1,710ft. making a total, roughly of 6,650ft., or practically a mile and a half. The central span is over five times the length of the suspension bridge across the Menai Straits. The construction of this bridge will indeed be a great engineering feat, and one which will be followed by our readers with great interest.



## The Late Sir Arthur Pearson

It is with deep regret that we have to record the death of Sir Arthur Pearson, Bart., G.B.E., who has been accidentally drowned in his bath.



THE LATE SIR ARTHUR PEARSON, BART., G.B.E.

Arthur Pearson, who was born in Wokeley (near Wells), on February 24, 1866, was sent to a Preparatory School at Wimbledon when 10 years of age. Four years later he entered Winchester College where he attained a splendid reputation in both cricket and football and carried off a number of prizes for general athletics, for he was very fond of sports.

In 1884—two years after leaving school—he was interested to read the announcement of a competition to be run by a popular weekly paper which offered a situation with a salary of £100 a year to the reader who secured the highest marks for answering ten questions each week. The competition ran over two months and aroused considerable interest—there were 4,000 entries. It was a keen test of general knowledge, the questions being extremely searching and requiring careful thought and long investigation. At this time Pearson was living in the village of Drayton Parslow, in Bucks., and he thought nothing of cycling 60 miles to Bedford and back, often three times a week, in order to consult the necessary books in the only available library. When the results were announced it was found that Pearson had won the prize with 414 marks, the runner-up having only 362.

In September, 1884, young Pearson came to London to take his first post at a salary of £100 per annum in the office of Sir George Newnes, the organiser of the competition. In six months the Managership of the office became vacant, and Mr. Newnes—as he then was—was exceedingly surprised to receive an application for the responsible post from young Pearson, who was then only 19. Pearson succeeded in persuading him that he could fulfil the duties and was appointed.

In 1889 Pearson became the first Manager of the *Review of Reviews* and later commenced business on his own account founding *Pearson's Weekly*, *Home Notes* and many other publications. Thus at 20 years of age he found himself Managing Director of a Limited Liability Company with a capital of £400,000.

About 1900 Mr. Pearson had some trouble with his eyes and a distinguished specialist informed him that he was in danger of losing his sight. Operation followed during subsequent years, but all was without avail, and in spite of every care he became totally blind.

Although Mr. Pearson had a remarkable career in his early days the true strength of his character and his tremendous powers of organization did not become fully manifest until he was visited by this great affliction. In 1913 he joined the Council of the National Institute for the Blind and shortly afterwards was elected its Honorary Treasurer. On the 19th March, 1914, the new building—built from the funds Mr. Pearson had raised—was formally opened by H.M. the King. In the same year Mr. Pearson was elected President of the Institute, the highest honour it was in the power of the Committee to bestow. At the outbreak of the war the Prince of Wales requested him to undertake a great appeal for the National Relief Fund and, largely due to his energy, in the short space of a few months over £5,000,000 was placed at the disposal of the Committee.

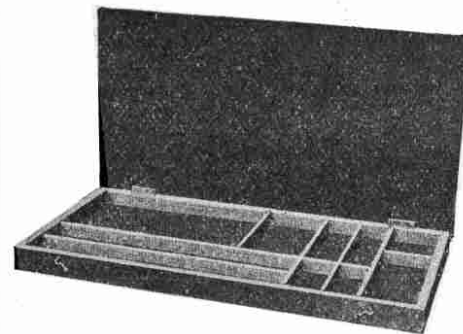
Sir Arthur Pearson was created a Baronet in 1916 in recognition of the great work he had done in the establishment of St. Dunstan's Hostel for Blinded Soldiers and Sailors, and the following year he had the additional honour of Grand Commander of the British Empire conferred upon him.

Sir Arthur had many interests throughout the whole of his life, and one of his greatest hobbies was the Fresh Air Fund, which he founded in 1891. His object was to give the poor children of the slums a day or a fortnight in the sweet air of the country. It is difficult for us to realise what this means to children who spend the whole year cooped up in surroundings where fresh air never enters, where food is the exception rather than the rule, and where a kind word is a rarity. The Fresh Air Fund took the children into the open and having provided good wholesome food and games for their amusement, brought them back at night tired and happy, with memories that they would cherish for months, or even years.

Sir Arthur Pearson was a splendid example of perseverance and cheerfulness in adversity, and his life well shows what can be done even though working under the greatest of all handicaps, that of blindness.

We are glad to pay tribute in the pages of *The Meccano Magazine* to the memory of this great and gifted man. Much of his life was devoted to making the lives of children brighter and healthier, and we entertain no shadow of doubt that the success which crowned all his efforts in this direction brought him the most intense happiness.

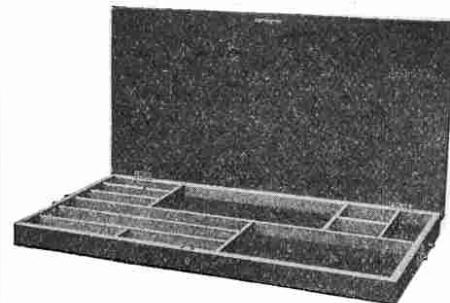
## Storage Boxes.



Box No. 1.

We have in stock a limited number of empty boxes suitable for holding Meccano parts. The boxes are in two sizes, and are stained and polished imitation walnut. They are fitted with partitions and lined with green baize. The lids are hinged, and in the smaller size are fastened by two outside hooks, the larger size having a lock and key.

We illustrate the two types, and as our stock is only small we advise those of our readers who are interested to take immediate advantage of this opportunity.



Box No. 2.

The box measurements are as follows:—

- No. 1, 20 $\frac{1}{4}$ "  $\times$  10 $\frac{1}{2}$ ", depth 1 $\frac{1}{4}$ ", price 7/6, postage 1/3.
- No. 2, 24 $\frac{1}{4}$ "  $\times$  12 $\frac{1}{4}$ ", depth 1 $\frac{1}{4}$ ", price 12/6, postage 1/3.

## ARE YOU ENTERING THE

# Meccano Prize Competition—£250 in Prizes.

All Meccano boys should enter the big Meccano Prize Competition. There will be hundreds of prizes awarded including nine cash prizes to the value of £100, and Meccano Outfits to the value of not less than £150. As was the case last year, the Competition will be divided into three sections:—

1. For boys under 10 years of age.
2. For boys between 10 and 14 years of age; and
3. For boys over 14 years of age.

In addition to the prizes mentioned above, the Meccano Guild is again offering three special prizes of £5 each in cash for the member of the Guild who gains the best prize in his section. There are no restrictions nor entrance fees. Any Meccano boy may enter, and the competitor who sends in a simple model made with a No. 0 Outfit stands just as good a chance of winning a prize as does a competitor who sends in a complicated model made with a No. 6 Outfit.

It is important to note that the Competition will close on the 15th April, 1922, for entries from the United Kingdom, and on the 31st May, 1922, for entries from the Colonies.

# MECCANO



## Our Mail Bag.

The Editor has a little talk in this column with his readers. Whether he has space to reply to them all here or not, he is always glad to hear from them. He receives hundreds of letters each day and only those which deal with matters which are likely to interest other Meccano boys can be dealt with here.

Correspondents will help the Editor if they will write on one side of the paper only.

T. BATTY (Kilburn, N.W.6).—Thank you for your letter. I am pleased to know that you intend keeping up your interest in Meccano. Your verses are very good but I regret I am not able to devote the space to print them. I have, however, added them to my collection.

"DICKIE" JONES (Cheltenham).—I feel that the only way in which I can pass on your good wishes ("to anybody and anything to do with Meccano") to those hundreds of thousands of people who have "to do with Meccano," is to print them in this column! The correct pronunciation is "Meck-Ar no." I hope you spent a merry Christmas with your joy wheel, and am interested to hear of your plans for the future.

G. DALZIEL (Glasgow).—I hope that you were successful in constructing the loom, which is indeed a very fine model: you will be able to equip all your friends with ties and hat-bands when the model is finished! I hope that although you are shortly leaving school your interest in Meccano will still continue.

I. M. H. ETHERINGTON (Southend).—Yes, Ivor, the study of secret codes, or "cryptography" as it is called, is a fascinating subject for study. In this connection you will probably be interested to know that an article on this subject explaining the mysteries of cypher-making appears in this month's "Boys Own Paper" and I feel sure that you will find this of considerable interest. I look forward to reading the book which you intend writing on this subject when you grow up. I wish you every happiness and success at Mill Hill next Summer.

"DINKIE" JONES (Cleeve Hill).—  
"Meccano is the nicest thing  
That ever we have had;  
When we're sad it makes us sing  
Now we are all Meccano mad."

Very good, Dinkie! Let me hear from you again. I trust you have been able to build your overhead crane during the holidays.

D. L. F. BARBER (Witham).—"Thank you so much for your nice letters. They are always nice when they come from Meccanoland." We endeavour to make everything worth sending out whether it be a production of our factories or a letter to our readers and I am pleased to hear that we succeed in our efforts.

A. DAWSON (Eccles).—Your suggestion for issuing leaflets of instruction for the building of models which appear on the front pages of the M.M. has been noted. Such leaflets have already been issued in the case of the Chassis and the Loom. I reciprocate your good wishes for the New Year.

J. WILKINSON (Birtley).—The Guild Secretary is indeed pleased to know that you have been happier since you joined the Guild. He is endeavouring to find you a correspondent in France, and hopes that you will have a happy connection with him when you receive his name and address.

D. P. OATES (Morecambe).—I agree with you that the latest Meccano chassis is "an absolutely fine model, to say the least." I am interested to know you have recently gone to live at Morecambe, as I was motoring in that district a short time ago.

R. JOHNSON (Eccles).—I am pleased you think the Meccano Magazine becomes more and more interesting every time it is published. I would like to publish it more often, but there are a great many difficulties to be overcome before this can take place. However, I have the matter constantly before me and hope to be able to do something in this connection at a later date. I note your suggestion for a booklet on "Dick's Trip Round the Meccano Works," which I shall bear in mind.

V. E. SCAPLEHORN (Howard's Heath).—I am pleased to hear that you enjoy reading the M.M. I hope to continue the instructive articles which I have recently introduced and have a large number of fine photographs awaiting their turn to be included in our pages.

T. H. ROBINSON (Bridlington).—Congratulations on winning a "highly commended" certificate for a Meccano model at Sheffield open to all the boys of 13 schools. As you were the youngest to enter, and won third place with a model of a Gipsy Encampment, you have done splendidly.

T. KENDALL (Southampton).—I commend your suggestion for making models of the cranes and engineering structures which are now being illustrated in the M.M. I have no doubt that many other Meccano boys will be following your excellent example.

A. TRUS (Hockley).—I am interested to read of your efforts to start a Meccano Club. It was certainly a good idea to have your instruction book bound with

leather. The verse you send is interesting, but scarcely good enough for publication in these columns. Try again, Albert!

R. H. WHITING (Bedford).—I am interested to know you consider the M.M. simply "splendiferous" although I myself have not so far looked upon it in that light! I trust that the Christmas pudding was the better for your attentions, and that your anticipations in regard to your Christmas presents were fully realised.

T. GRAHAM (Leeds).—No Tom, I am afraid that I cannot commend your suggestion to use the Mechanical Navy for mixing mince-meat at the Festive Season! I am afraid that the work would not proceed with sufficient speed to satisfy those in charge of the complicated processes involved!

R. O. CHALLIS (Leigh-on-Sea).—I note your desire for the Meccano Magazine to be published more often, and that you suggest that if I cannot get enough to fill it I could use larger type! I am afraid our readers would not agree to this, Robert, and in any case the trouble is not so much how to fill the pages as to decide what to leave out! However, I look forward to the time when the Meccano Magazine will be the biggest and brightest of boys' papers.

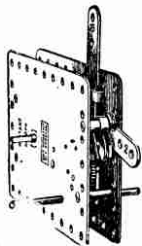
L. C. EDWARDS (Hull).—Yes, Laurence, we hope to continue to publish photographs of cranes and other engineering achievements of interest. We have several other good things in store for readers of the M.M.

R. E. BROWN (West Bromwich).—I note you think it would be an improvement if the accessory parts were renumbered. Many difficulties arise, however, making this impossible, at any rate for the present, chiefly owing to the new parts which are always being introduced.

H. E. UNDERWOOD (Geneva).—I am always pleased to hear from you. It must have been exceedingly interesting to be able to be present at a session of the League of Nations, for which you were able to obtain a ticket for the Visitors' Gallery. I note that you read the M.M. during a rather dry speech!

## Meccano Motors.

All boys should add a motor to their Outfits, for it greatly increases the fun of the hobby and enables models to be operated in a realistic way.

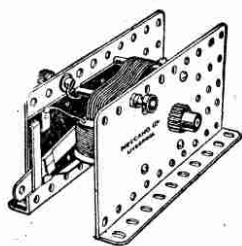


### Clockwork

Motor. — This is a splendid piece of mechanism, simple, powerful, reliable and free from danger. It is fitted with starting, stopping and reversing levers, and greater lifting power may be obtained by extra gearing made from Meccano parts.

It is easy to understand, and all its movements are fully explained in the instructions which accompany it.

Price each .. 12/6



### Electric Motor.

—The use of electricity exercises a great fascination for any intelligent boy, and this motor provides him with the means of running all his models by electricity. It is well designed, simple, strong and free from danger, and suitably

geared it has a lifting-power of more than 30lbs. It takes 4-volts and may be run either by an accumulator or direct from the main. Where the main current is alternating a suitable transformer may be used, but where a direct current is employed the motor may be run direct from the main by means of the Meccano Charging Board, details of which were given in No. 21 of the Meccano Magazine. (An illustrated leaflet entitled "The Meccano Charging Board and How to Make It"—post free, 3d.—gives full details of this useful accessory.) The Electric Motor is provided with a reversing lever, starting and stopping mechanism. No more powerful or satisfactory toy electric motor has ever been designed.

Price each .. 17/6

## Meccano Inventor's Accessory Outfits.



By adding either or both of the Inventor's Accessory Outfits the possessor of any of the main Meccano Outfits is enabled to construct a very large number of further models, thereby deriving considerable extra enjoyment. The Inventor's Outfits contain a selected assortment of valuable parts which have been added to the Meccano system from time to time.

ACCESSORY OUTFIT "A" containing four large 3" pulley wheels, new gear wheels, washers, sprocket wheels and chain (for giving a positive drive), and braced girders. Price .. 10/-

ACCESSORY OUTFIT "B" contains a magnificent assortment of new parts including bevel gears, 1" gear wheels, flat and triangular plates, octagonal and strip couplings, screwed rods, curved and rack strips, hinges and buffers and couplings for constructing trains. Every boy who is interested in engineering subjects will find this Outfit of the greatest service to him, not only providing him with new movements, but also considerably extending the scope of his experiments. Price .. 25/-

## The Meccano Manuals.



There are three Meccano Manuals of Instruction, Book No. 1 is the regular Manual which is included with the main Meccano Outfits and contains instructions for making 323 fine models. Price 2/6 (postage 3d. extra). Book No. 2 illustrates a large number of fine models and describes a series of simple scientific experiments. Price 1/3 (postage 2½d. extra).

The new Manual No. 3 contains illustrations and instructions for building a large number of entirely new and imposing models of great beauty. These include such interesting models as the Theodolite, Signal Gantry, Level-Crossing Gates, Revolving and Hydraulic Cranes, Coal Cutter, Lathe, Dredger, Planing Machine, Travelling Gantry, Wire-covering Machine, and Twin Elliptic Harmonograph.

The Manual is illustrated by an entirely new process, by which the component parts of every model may be clearly seen. The price is 1/3 (postage 1½d. extra).

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