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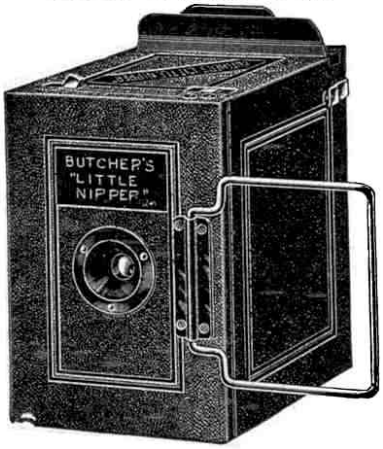

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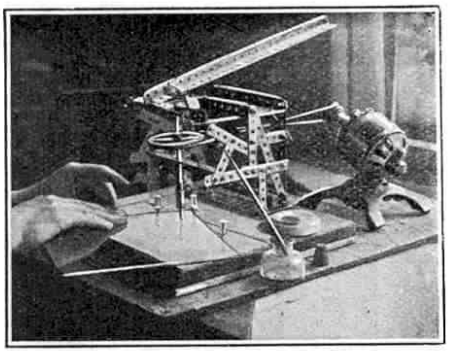
A Meccano Glass Drill

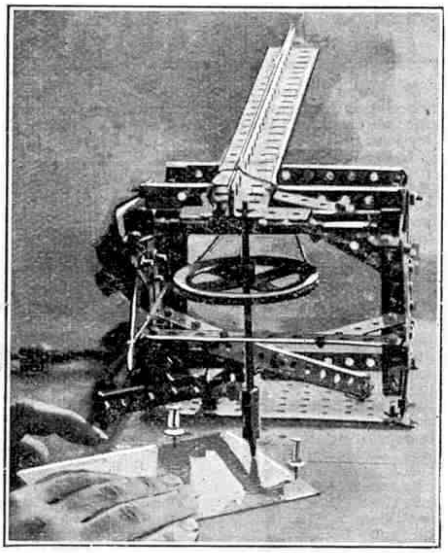
By Dr. E. Bade



As every handyman knows, drilling a hole in glass, particularly when near the edges, is a very tricky and difficult task. With the aid of this Meccano drilling machine, however, which exerts a uniform pressure all round, it will be found that glass can be cut quite as easily as metal.

The model is made in the form of an inverted "L" and a vertical shaft with a flanged 3" wheel is set up as in the illustration. The shaft is fitted with a coupling or chuck for holding the brass tube at the end, with which the drilling is done. The upper end of the shaft is pressed down by the weight of a hinged piece. A lever, consisting of a 3" perforated strip is attached to the lower bearing of the spindle so that the drill may be easily lifted off the glass.

To drive the drill, the pulley wheel on the machine is connected up by a cord belt to a Meccano or similar make of electric motor. When the spindle is revolving at a uniform rate, insert the glass to be drilled underneath it, and, by means of the small lever, lower the drill on to the glass, when it will commence to bore out a neat hole.



Photos courtesy] Popular Science

The glass should be held as steadily as possible and secured by means of several drawing pins. To prevent splitting, the glass must be continually moistened with turpentine and a little coarse carborundum placed under the drilling tube. If plenty of these are applied, the drill will be found to penetrate a piece of window glass in the space of a very few minutes.

OUR MAIL BAG

In this column the Editor replies to letters from his readers, from whom he is always pleased to hear. He receives hundreds of letters each day, but only those that deal with matters of general interest can be dealt with here.

Correspondents will help the Editor if they will write neatly in ink and on one side of the paper only.

Lester Raskowski (Berlin, Winconsin, U.S.A.).—Congratulations, Lester! Your paper, "Junior High News," is quite a nice bit of journalism. We have no criticism to make from an editorial standpoint, but think that a better grade of paper would improve it somewhat. On the whole, it is a very brightly written little paper. Your drawings also are good. Why not make a few in ink for reproduction in the "*M.M.*"?

E. B. Cullin (Wootton).—To publish the "*M.M.*" weekly is certainly as you say a "bright idea," but we shall have to wait a little while for this. A Nature Section would evidently be acceptable to a large number of our readers, and we shall seriously consider such a feature shortly.

J. House (Bradford).—Although you are in the Infirmary, suffering from appendicitis, you can make an opportunity and give thought to complimenting us on the "*M.M.*" and sending us a contribution for our pages! We admire your spirit, John, and you have our best wishes for a speedy and complete recovery.

E. B. MacCarthy (Tonbridge).—We are glad you enjoy our "Fireside Fun" page, but do not approve of your keeping awake at nights thinking out new tongue twisters. "Good blood, bad blood" is not a bad one, and we got into difficulties right away in trying to repeat it a dozen times!

M. Wong (Shanghai).—There are many Meccano boys in China, and for their benefit we publish a Manual in Chinese, which helps them a great deal. We do not often hear from them, no doubt because they cannot write in English, and your letter is very welcome. We are sending you the catalogues you ask for, under separate cover.

W. E. Lee (Worcester).—If you are too old for Meccano, you must be very old indeed, William! Fathers from 50 to 70 years of age are using it regularly. If you study the matter a little more closely we are quite sure that you will see new beauties and possibilities in the hobby, and—take a tip from us—don't part with your Outfit!

A. Ferruccio (Turin).—We are very interested in your accounts of the subjects that you are studying. These certainly cover a very wide field, and we hope that you will meet with success in your forthcoming examination. We hope, too, that you will be successful in forming a Meccano Club. We are posting a selection of booklets that will help you.

F. Pienaar (Germiston, Transvaal).—You may depend upon our posting the "*M.M.*" to you regularly. We should not like to "shut you off completely from your thousands of friends," as you express it. We thank you for your friendly remarks.

S. Slingsby (Blackpool).—We shall certainly devote space to a Nature column before very long, but we are afraid Astronomy will have to wait awhile until we have a little more space available. Thanks for your eulogistic poetry.

K. Mandala (Ceylon).—

"The poor benighted Hindoo,
He does the best he kindoo,
From first to last
He keeps his caste,
And for pants—why he makes his skindoo!"

We accept your assurance that you composed this yourself, but we certainly seemed to remember having heard something like it before. We are always glad to receive your letters.

R. J. Peace (Halifax).—Thanks for cutting from "*The Motor*," in which Meccano is mentioned. Your suggestion that we "double our staff and work over time" in order to issue the "*M.M.*" oftener convinces us that you scarcely live up to your name! We do not know what the future may bring, Robert, but for the present we assure you that twelve issues a year are a sufficient task!

V. Halpe (Maradana).—"Where can a man buy a cap for his knee, or a key for the locks of his hair? Who travels the bridge of his nose? When he slates the roof of his mouth, can he use the nails of his toes? Who plays the drum of his ears? Can the crook of his elbow be sent to jail? How does he sharpen his shoulder blade?" We just don't know, V. H., and it's a good thing for you that you live so far away that we can't come over to tell you what we think of you for worrying us like this!

Novel Model-Building Competition

£5 for the Best Model of a Dragline

IN our April issue we described the heaviest Dragline in the world, and we announced that Messrs. Ruston & Hornsby Ltd., the makers of the great machine, have offered a prize for the best Meccano model of their Dragline. The prize is a cheque for £5, with second and third prizes added by Meccano Limited of Meccano products to the value of Three Guineas and Two Guineas respectively, to be chosen by the winner from the current Meccano catalogue.

Draglines at Panama

Draglines are excavators something after the design of steam navvies, which were described and illustrated in a recent issue of the "*M.M.*" A Dragline obtains its name from the fact that the bucket is dragged towards the machine on a flexible rope, instead of being mounted on an arm that pivots on a jib as in a steam navvy.

Draglines excavate below the level on which they stand and work towards themselves, travelling backwards when they have excavated all the material within reach. They are used principally for drainage work where the ground is too wet to allow a steam navvy to stand. Draglines were extensively used in the construction of certain parts of the Panama Canal, and in conjunction with steam navvies they accomplished the work of thousands of labourers at a fraction of the cost.

A Monster Excavator

The heaviest Dragline in the world is that known as the Ruston & Hornsby No. 250. It weighs over 300 tons when fully equipped and in working order, and the bucket has a capacity of eight cubic yards. The jib is 120 ft. in length, and a cutting power of 30 tons is exerted on the bucket teeth. The coal bunker of this giant has a capacity of four tons and is filled by a special hoist. The main engines are upwards of 400 h.p., and separate engines of 200 h.p. are fitted for the slewing motion.

We have already illustrated this machine in its entirety and in detail, and this month we are able to give a further view, which clearly shows the method of mounting the jib, and other interesting details.

Photograph courtesy] [*Messrs. Ruston & Hornsby Ltd.*

The Ruston 250 Dragline

Suggestions for Competitors

We hope that a large number of our readers will enter for this competition. Those who intend doing so will note that the jib and the engine platform rotate on the base by means of a wheel-race, which may be seen in the accompanying illustration. The base itself is mounted on flanged wheels which run on rails. These wheels are driven by sprocket chain from gear wheels centrally mounted immediately under the platform. The gear wheels themselves may be driven by axle rods, deriving their power—through bevel gearing—from a vertical shaft, gearing directly to the engine on the platform above.

Those who do not wish to make their model so intricate as to embody this driving mechanism may very well dispose of the driving shaft and chains and simply fix their model to a base mounted on wheels. The wheel-race, on which the platform and jib pivot, might even be eliminated if desired, such modifications as these being quite at the discretion of the model-builder.

Competition Conditions

There is no age limit, and any size of Meccano Outfit may be used. Entrants should state their age and the number of Outfit used, however, as this will be taken into consideration in making the awards. The competition will close on September 30 next. Actual models should not be submitted, but drawings or photographs may be sent together with a description of the special features of the model entered, and on these the awards will be made. We shall illustrate a Meccano model of this 250 Dragline when announcing the results of this competition in our November issue.

BRIGHT IDEAS

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 pleased to hear from any Meccano boy who has an idea which he considers will be useful in the Meccano system.

E. W. Goodman (Dulwich, S.E.).—Sorry we overlooked replying to your idea for a 1 × 1½ double angle strip. We have made a note of it and it will come up for review shortly.

L. Nash (Uxbridge).—We have quite a number of new accessories in view for the Hornby trains. They will be announced as they become ready for the market.

R. Ball (Rainford).—The split coupling you suggest for a big end joint seems to us at first glance to be a rather awkward and expensive piece to manufacture. We shall look into it, however.

Percy R. Newnham (Birmingham).—We incline to the opinion that your suggestion is prompted by some excessive strain, imposed on the wheels of your particular models. We have never had the experience of grub screws failing to hold, even under stress. Your suggested wheels with lengthened cones to permit of two grub screws would add very materially to their cost.

H. V. Small (London, W.C.).—A reversed crank may be made from existing parts, i.e., two cranks bolted together.

N. Carter (Purley).—(1) A 2½" diameter flanged wheel may be formed by bolting the flanged disc to the face plate. (2) We are experimenting with channel sections.

L. Brown (Liverpool). — The Meccano system is continually being improved by the addition of new parts. A new parts list has been sent to you, as requested.

W. O'Brien (Dublin). — The Hornby Tank Loco is 11½" in length, and is fitted at both ends with a special bogey. By the way, the name of this loco has now changed and henceforth it will be known as No. 2 Tank Loco.

J. Johnson (Tunbridge Wells).—A strong application of your screwdriver and spanner to the nut and bolt securing the girder will give you a firm fastening.

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

The Editor of the "*M.M.*" according to Master Eric Mitchells, of Stockton-on-Tees, one of the prize winners in our recent competition

John Candler (Tulse Hill, S.W.).—The objection to a sleeve piece to fit over the Meccano rod is that it would not fit the standard-sized holes throughout the Meccano system.

F. A. Berardt (W. Dulwich, S.E.).—We rather think that the governor on your Hornby engine has become defective. It should control the speed of the engine to ensure it keeping to the track without load.

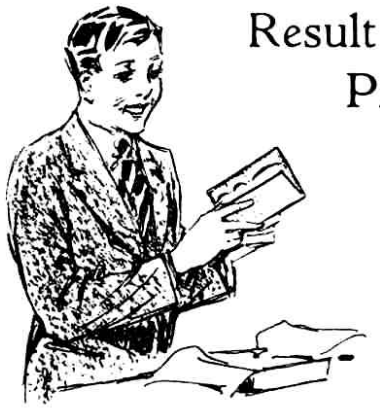
J. Maiden (Windermere). — The adaptability of Meccano is such that very good representations of cylinders and pistons may be constructed from it. To introduce cylinders and pistons, as you suggest, would only be duplication, and moreover they would not serve a general purpose.

J. Cleaver (Wigan). — The couplings on the Hornby Trains are made sufficiently long to permit of free action of the carriage on the narrow radius curves, otherwise the buffers would foul each other.

P. H. Doherty (Streatham Hill, S.W.).—As the formation you suggest is so infrequently employed there would be no object in introducing it when it can be obtained from existing parts.

When is your birthday?

Result of Birthday-Present Scheme



LAST year we announced in these columns a unique birthday-present scheme, under which handsome pocket wallets, in real Morocco leather, were promised to those whose birthdays fell on the same date as that of the inventor of Meccano.

Every Meccano Outfit and every Train Set sold after the date of the announcement has contained a special form, giving full particulars of the scheme. On this form Mr. Hornby—the inventor of Meccano and Managing Director of Meccano Limited—pointed out that Meccano has been in existence for over twenty years, and its career has been one of uninterrupted success. Ever since its early days, when it was known as "Mechanics Made Easy," the hobby has flourished and grown rapidly. In 1908 its name was changed to Meccano, and at the same time the business was established as Meccano Limited. It is thus sixteen years since the present Company was formed—and these have been sixteen years of unbroken success and progress.

"In the course of my work," said Mr. Hornby, "I have met many thousands of happy Meccano boys, and I wish that during this notable year in the history of my firm I could meet all the others to chat over with them old Meccano experiences. What a gigantic and unique gathering it would be, for there are millions of Meccano boys of all ages and of all nationalities. Such a gathering is, of course, quite impossible, but I have thought of a way of celebrating Meccano Limited's sixteenth birthday that will, I hope, bring joy to the hearts of thousands of Meccano boys. I have decided to give a handsome birthday present to those boys who comply with the conditions printed on the special forms included in each Outfit, and whose birthday falls on the same date as my own."

Many thousands of forms have been sent in from all parts of this country and many thousands more from Overseas. These have all been classified and to those lucky boys whose birthday falls on

MAY 2

a handsome Morocco wallet has been despatched. Mr. Hornby wishes these boys "Many happy returns of the day," and hopes that the little birthday gift will serve as a pleasant reminder of the happy date for many years.

Stamp Collecting—(*cont. from page* 157)

After a little practice it is easy to tell the difference, and if you are collecting the stamps of a country in detail you should distinguish between these two styles of perforation.

Measuring Perforations

The size of a perforation is denoted by the number of holes in every two centimetres of the stamp's length. Thus, if your catalogue says that a certain stamp is "Perf. 16," it means that there are 16 holes in every two centimetres. This method of measuring perforations was invented in 1866 by a Frenchman, Dr. Legrand, and this is probably why the metric system is used instead of the English inch.

To save you the trouble of measuring the two centimetres along the side of every stamp you wish to measure and then counting the number of holes, we reproduce here a Perforation Gauge by which the size of any perforation may be found at once (Fig. 1). To use the gauge, take the stamp you wish to measure and slide it up and down the gauge until you find a row where the black dots exactly fit the perforation of the stamp. The number at the end of this row of dots will tell you what size this is. After a little practice you will be able to tell the sizes very quickly and you will even be able to guess them fairly accurately.

Sometimes the sides of a stamp are perforated differently from those at the top and bottom. Such a stamp is said to have a compound perforation and the top and bottom size is always given first. Thus, "Perf. 14 × 15" means that the top and bottom of the stamp are perforated 14 and the sides 15. It is by making use of this rule that we are able to distinguish between "Perf. 14 × 15" and "Perf. 15 × 14."

NEXT MONTH:—

ROULETTING

Lives of Famous Engineers—(*cont. from p.* 149)

the engineers swimming with a rope in his mouth. This accident so upset the contractor who had undertaken the construction of the tunnel that he took to his bed and died shortly afterwards.

Fighting the Water

The problem of dealing with this water was so great that Robert Stephenson sent for his father, who advised pumping out the water from the top by powerful steam engines erected over each shaft. Robert agreed with this, and although other engineers said the scheme was impracticable, the directors ordered the engines to be constructed without delay. Additional shafts were sunk, the engines were erected, and pumping went on continuously for eight months, about 2000 gallons of water per minute being raised from an average depth of 120 ft. The workmen, protected by the pumps, which cleared a space for operations, proceeded with the construction of the tunnel at a number of different points, and eventually the work was completed.

The difficulties encountered at Kilsby added greatly to the cost of the line. The original estimate for constructing the tunnel was £99,000, but it actually cost nearly £300,000, or more than £100 per yard!

Finn and His Companions
by Standish O'Grady
(*Pub. by The Educational Company of Ireland Ltd. Price* 1/3 *net*).

Stories of St. Patrick and the early heroes of Ireland seem to have a peculiar fascination of their own, and this little book is no exception. It tells how St. Patrick is visited by ten warriors of wondrous size and strength, and noble in bearing. The tales these warriors tell, set down as they were told to St. Patrick, are stories of daring deeds performed by the wonderful Finn and his heroic soldiers, and of Ossian, his incomparable son, the warrior and poet. We are told how Finn leapt the dreaded chasm that no man had ever dared to cross, and thereby won the hand of the daughter of the King of Rushy Ciarrai; of how he went hunting with Arthur, King of the Britons, who grew covetous of Finn's wonderful hounds and stole them, thereby rousing Finn's anger. These and a dozen other adventures of Finn and his wonderful companions are told. Fights with strong men and with dragons, trials and hardships endured for the sake of right and justice—all are recounted with such realism that we share the hazards of the battle and the joys of the chase. The book seems to end all too soon, and we hope the author will give us some further stories on the fascinating history and mythology of ancient Ireland.

Junior Mechanics and Electricity
(*Percival Marshall. Price* 3*d. Monthly*).

Full instructions for building scale-model aeroplanes, steamers, tool-grinder and a small model steam-engine and boiler (in which, incidentally, Meccano rods, wheels and bolts prove particularly useful), are only four of the many fine articles in No. 165 of this useful publication. Model railway enthusiasts are particularly favoured in this issue, for, in addition to a design for a model "Atlantic" or "Pacific" loco, there are also articles on easily-made electric signals, model railway accessories, and replies to model railway owners' queries. Wireless, too, is a popular and important feature, while the wonderful story of that famous astronomer, Sir William Herschel and his telescopes will appeal to every Meccano boy, both young and old.

For Model Builders

For over thirty-six years Messrs. Bond's Ltd. (254, Euston Road, London, N.W.1) have been famous for engineering models, and at the present time the name is familiar to the majority of model builders. To fully appreciate the wonderful assortment of models and parts in stock a personal visit is, of course, required, but for the model builder who lives at a distance from London, the firm's new Price List will prove a satisfactory substitute. Numerous photographs, sketches and diagrams illustrate a wide variety of accessories for model railways, and pages devoted to steam and paraffin engines will at once appeal to all boys. Useful information to model builders is also contained in this excellent little booklet, which will be sent (post free) for 4d.

Competition Corner

SECOND COMPETITION

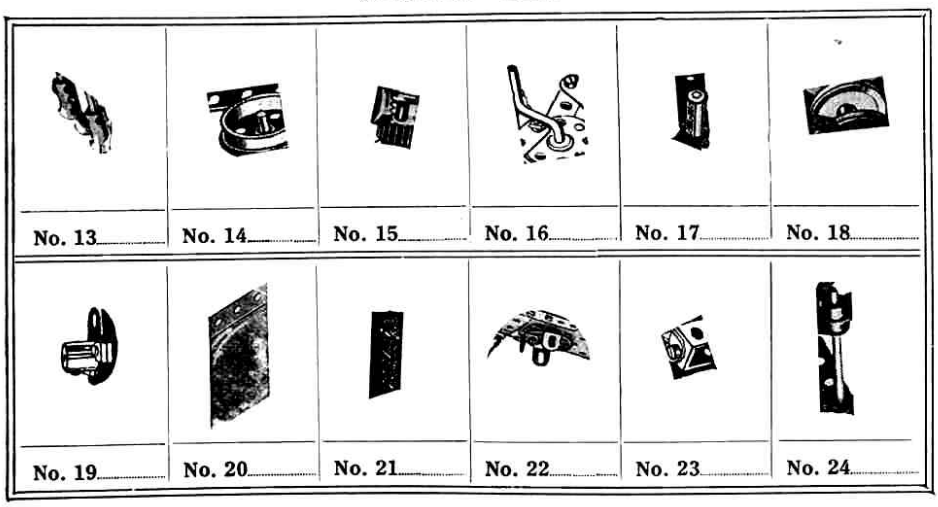
For Lynx-Eyed Readers

FIRST PRIZE: Hornby No. 2 Tank Loco. SECOND PRIZE: Meccano No. 1 Radio Receiver.

THIRD PRIZE: Pair Meccano Double Headphones.

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

SECOND SET



INSTRUCTIONS FOR COMPETITORS:

Above is given the second set of puzzle pictures in this fascinating competition for model builders with sharp eyes and good memories. Each of these twelve pictures has been taken from the Complete Manual of Instructions (No. 23) and represents a part of some Meccano model in the Manual. As each picture is identified the number of the model should be written in the space beneath, to serve as a reference when sending in the final solutions.

There will be three sets of pictures published, as in the last contest of this character, and competitors are required to solve all three sets to qualify for a prize. A Complete Manual of Instructions is necessary to enable readers to solve these puzzle pictures, as many of the models depicted are not featured in the smaller manuals.

Competitors who are experienced model builders will, of course, start with a considerable advantage, as they will more easily recognise parts of models that they have built themselves. Some of the pictures, however, are very "tricky," and even the most expert model builder will have to search very closely before filling in some of the numbers.

Some splendid prizes are being offered in this contest and a full list of these appears above. If no competitor succeeds in numbering all the models correctly, the First Prize will be given to the reader whose results are nearest correct. The other prizes will then be awarded in order of merit. If more than one competitor ties for any prize, the prize will be awarded to the neatest entry.

It should be clearly understood that entrants in this competition are not required to tear out the pages containing the puzzle pictures. When the three sets have appeared, solutions should be written on a post card and the latest date for sending in entries will be announced in the next issue of the "*M.M.*" No entries are to be sent in until the third and last set of puzzle pictures has appeared.

Eighth Photo Competition

Many Meccano photographers are only waiting for the fine weather to take up their fascinating hobby again. In order to encourage these enthusiasts we announce our Eighth Photographic Competition, the subject of which is

"A SUMMER SCENE"

The subject chosen offers a wide scope and may include views of town or country, holiday snaps, picnic parties or outings, seaside studies, etc. Prints may be mounted or unmounted and printed by daylight or gaslight process, which ever is found to give the best results.

To ensure every competitor having an equal chance the contest will be divided into two sections:—(A) Competitors under 14 years of age, and (B) Competitors of 14 years of age or over.

An important condition of the competition is that every entrant must write his name, address, and age on the back of the photograph submitted, and also state by whom the photo was developed and printed. In the event of a tie for a prize, photographs which have been developed and printed by the competitor will naturally receive preference.

There will be four prizes offered in this contest:—Meccano goods to the value of 10/6 and 5/- as first and second prizes respectively in each section. The closing date for readers in the United Kingdom is July 31, and for readers Overseas, October 31. Entries should be marked "Photo Contest" in the top left-hand corner of the envelope.

A New Essay Contest

As announced in this month's Editorial (page 145), cash prizes are being offered for the two best essays on "My Impressions of the Palace of Engineering at the British Empire Exhibition."

The first prize will be a cheque for One Guinea, and there will be other prizes of film-pack Cameras (taking pictures 3¼" × 2¼"), for the next four essays, in order of merit.

Essays must not exceed 1,000 words, and should be written on one side of the paper only. Competitors should write their names on the back of each sheet, and state their ages, which will be taken into consideration in making the awards. Closing date September 30 next.

Result of Auto-Scooter Competition

The subject in this essay contest — "Why I should like an Auto-Scooter"—seems to have been a very popular theme. Hundreds of readers entered and gave their reasons for wanting one of these splendid toys. A large number of competitors said that they specially wanted a Scooter on which to do errands for their mothers, one boy frankly admitting that "it is very annoying to be called away from a game to run an errand, but I wouldn't mind if I had an Auto-Scooter to do it on!"

The best essay was received from Master George Rodwell, of Halifax, and the First Prize of a Model-de-Luxe Auto-Scooter has been awarded to him. The Second Prize, a Popular Model Auto-Scooter, has been won by Master Henry Havinden, of Poplar, London. The organisers of this competition were the New Auto-Scooter Co., of Chestergate, Stockport.

Result of First Puzzle Contest

Puzzle Competitions are apparently very popular with readers of the "*M.M.*" and there are few readers who did not puzzle their heads over our knotty problems. It is interesting to find that the majority of competitors found Algebra useful in solving some of the puzzles; no doubt many realised for the first time the advantage of having a knowledge of this much-abused subject! A few competitors, evidently unfamiliar with Algebra, left some blanks on their entries or remarked that a solution was "Impossible!" "Can't be Done!" and "Give it Up!" No competitor succeeded in solving all the sixteen puzzles, but three sent in correct solutions to 14 problems. The three prizes have therefore been divided between these three readers, who will each receive Meccano goods to the value of £1 4s. 6d. The names of the successful entrants are Masters Anderson (Kilmarnock); M. S. Y. Fowler (Teddington); and W. Selby (Bath); and we congratulate them on their outstanding success in a difficult contest.

FOR

OVERSEAS READERS

Result of Essay Competition

Entries from Overseas for the "What I intend to be and Why" essay competition were very numerous and equal in merit to the essays received from readers in this country. The winner of the Overseas section is Master N. Barker, of Fraser Town, Bangalore, South India, who gave some very good reasons for his choice of an engineering career. The prize of Meccano goods to the value of £1 1s. 0d. has been awarded to him, and film-pack cameras have been sent to Masters Ralph Garcia, of San Juan, Trinidad, B.W.I., and Reggie Stone, of Jeppe, Johannesburg, South Africa, the respective winners of second and third prizes.

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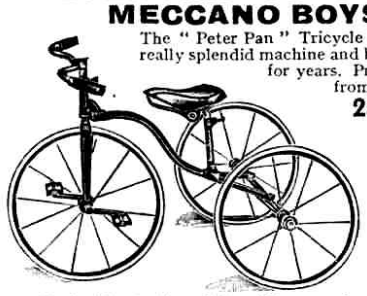

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The Cyclist's Tool-Kit

by "ROVER"

UNLIKE many other pastimes, cycling is at once a hobby and an exercise, and proves itself of equal value either for pleasure or for business. Many thousands of people depend on their machines to take them to and from their work every day, and an occasion such as the recent London transport strike brings into the streets an amazing number of machines of all sorts and conditions.

Running Repairs

But whether a bicycle is to be used for business or pleasure, the most confident and care-free owner is the one who is not only a good rider, but who also understands his machine and is capable of dealing with any trouble that may arise. Many cyclists may and do possess the first qualification, but if a puncture or minor accident occurs their only thought is of the whereabouts of the nearest cycle shop. To the really keen cyclist, the one who is proud of his hobby and takes an intelligent interest in his machine, an accident is "all in the day's run." Short of a buckled wheel or broken frame, such a rider is quite competent to undertake repairs on the spot. Realising that accidents are bound to happen even to the most cautious rider, his tool-bag is regularly overhauled, and when an emergency arises he can rely on not being stranded for want of the right implement.

Tools to Carry

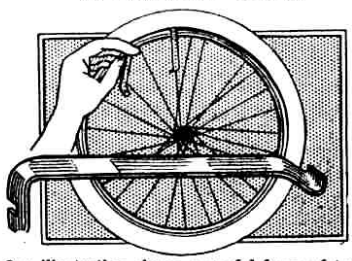
To the new owner of a cycle the question of what to carry in his tool-bag is often perplexing. Few makers equip their machines with a full set of tools, and the young cyclist, unless he has been advised by an experienced rider, is too often inclined to "let it slide," until a long walk home one day reminds him that the bag behind his machine is intended for something more than carrying a packet of sandwiches!

The following list of tools is one that long experience on the road in all kinds of weather has shown to be essential to the average rider, whether the machine is to be used for business or pleasure :—

2 Tyre Levers.	Adjustable Spanner.
Flat Spanner.	Puncture Repair Outfit.
Oilcan.	Spare Wick or Burner.

These should be wrapped up in an oily piece of rag or felt and neatly stowed away in the tool-bag. The oily rag serves both to keep the tools from becoming rusty and to prevent any annoying rattle.

A USEFUL TOOL



Our illustration shows a useful form of tyre lever that hooks round a spoke and facilitates the removing of the tyre

How to Use Them

The flat spanner is for turning the wheel cones when necessary, and care should be taken that the right size is obtained, as the adjustable spanner cannot be substituted. This latter tool serves a variety of purposes, from adjusting the saddle and handlebars to unshipping a wheel. Any good make of repair outfit may be carried, and the contents will not be found to vary very greatly. As described in these columns last month, the essentials of a repair outfit are a tube of rubber solution, sand paper, an assortment of rubber patches for inner and outer tubes, and some French chalk. A spare wick for an oil-lamp is an important item, and may often make all the difference between walking and riding several miles on a dark night. In a case where an acetylene lamp is used, a spare burner should be substituted for the wick.

Extras

The six articles described above should be in every cyclist's tool kit, and provided he is familiar with their use he will be quite capable of satisfactorily dealing with any ordinary trouble that may occur on the road. There are, however, various other items, or "extras," which some cyclists prefer to carry, although these are not necessities and are seldom required in the ordinary course of events. Under this heading is included a piece of valve tubing to replace the one in use should the rubber perish and begin to leak; a screw-driver; a spare nut for the chain bolt; and finally, a piece of flexible wire. This latter item may seem somewhat superfluous, but it is amazing how handy it will prove, from cleaning out a clogged-up oil-hole to making a temporary washer.

In conclusion, it should always be remembered that though the equipment and upkeep of a tool-kit may sometimes be a nuisance, it is well worth the trouble, for you may be sure that when you do want your tools you'll want then badly.

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FITTED TO YOUR BICYCLE TELLS YOU :—
How far you have been ;
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NEXT MONTH :—
Forming a Cycling Club

The Secretary's Notes

As Secretary of a brotherhood of boys with over 35,000 members, I receive many letters every day on all sorts of subjects.

A Mixed Mail Bag

Besides club reports, these contain news of new clubs, newspaper cuttings of concerts and exhibitions, and requests for information about the Guild. There are jolly letters from Guild members abroad, or postcard views of foreign lands, which are always interesting. All these letters are very welcome—even those few with complaints—for they serve to keep me in touch with the Guild and its many activities throughout the world. I am always pleased to hear from Guild members wherever they may be situated, and everyone who writes to me receives a reply. In fact my mail is so heavy that a special staff is necessary to deal with it.

I often receive valuable hints on running a club from Club Leaders and Secretaries. Such letters are particularly useful, for I

How Clubs Commence

am able to pass on this information through these columns. Often I receive letters from a "lone member" either in England or abroad, and we soon become regular correspondents and fast friends. To those who so desire I am able to send lists of Guild members living in their districts, and this often enables "lone members" to found a new Meccano Club and exchange their "loneness" for the jolly companionship of club night. The majority of our most successful clubs have been commenced through the enthusiasm and perseverance of one keen Meccano boy. Now, "lone members," write to me to-day for a list of Guild members living in your district, and see if it is not possible to found your own Meccano Club.

Judging from reports recently received, the clubs which have decided to continue their activities during the summer are

Guild Photographs Wanted

thoroughly enjoying themselves. I hear of a Rambling Club's successful meeting, a Nature Study Section in full swing, and several announcements of the finding of suitable fields for cricket. Though these accounts are very welcome and interesting, I have not, so far this year, received any photographs of clubs taken outdoors, so that my readers will have to picture in their minds the cheery faces of the Rambling Club's members and the little tin boxes of the Nature Study Section! It will, however, be interesting to see which Club sends in the first photograph of the Summer Session and, if clear enough for reproduction, I shall publish it on this page in an early number. I should also like to take this opportunity of reminding club members that I am always glad to receive photographs of any of their exhibitions, sports, or meetings, for publication on this page. Photos should be as clear and distinct in detail as possible, gaslight prints giving the best results, and should be accompanied by a brief description of the event which they depict.

I hear that next month "Rover," the cycling expert, is contributing an article on "How to Form a Meccano Cycling

Meccano Cycling Clubs

Club." This should prove of particular interest and help to any club which is considering the formation of a Cycling Section. The Guild President is very keen on Meccano boys spending as much as possible of their time outdoors during the summer months, and there is no better means of doing this than cycling. For those clubs which, for various reasons, are unable to run a Cycling Section, I am always ready to make alternative suggestions and to assist the Leaders to carry them out.

I should like to draw the attention of Club Secretaries to the valuable information contained in our "Club Notes"

Interesting Guild News

columns every month. I am afraid that many readers skim through the names of clubs, and if they do not find their own club mentioned they turn over the page and have a try at one of the tongue-twisters on the "Fireside Fun" page! Nevertheless, "Club Notes" is one of the most interesting features in the "*M.M.*," representing as it does the activities and achievements of Meccano clubs the world over. It may contain a note of a visit to a gold mine in South Africa; of a week's camping in Australia or New Zealand; of an Exhibition in Holland, or news of club events near at home. These reports are sent in regularly by enthusiastic and capable Club Secretaries and, apart from their own natural interest, the column contains many hints and ideas on outings, lectures and club organisation that might often be adopted with advantage. "Club Notes" should be read by every member of the Guild who takes an active interest in his club and is anxious for its progress.

A Car Load of Happiness

WHENEVER Club members arrange outdoor excursions or picnics in the summer, they invariably manage to have a very good time, and the jolly group of boys shown in the accompanying illustration is no exception to the rule. The photograph is of the Southall (London) M.C., and was taken on the occasion of the Club's visit to Burnham Beeches, some fine woods near London. Such a place is ideal for rambles or picnics and the Southall boys thoroughly enjoyed their day's camping-out. They also enjoyed the fun of riding there and back in their own "car," which, though not fitted with the revolving seats of the Meccano Limousine, was nevertheless quite comfortable!

A jolly group of members of the Southall Meccano Club

Mr. E. C. Carpenter, the enthusiastic Leader of the Southall Club, was responsible for the original idea and arrangements of the trip, which might be very advantageously included in the programme of other London clubs this year.

Special Merit Medallions

FURTHER AWARDS.

Further recent awards of Special Merit Medallions for good work in connection with their Meccano Club have been made to the following members:—

W. Clowe	Observatory (S.A.) M.C.
S. Gerrard	Chard M.C.
D. Rhodes	Leckhampton M.C.
L. Robertson	Holy Trinity (London) M.C.
A. Taylor	Knutsford M.C.

Correspondents Wanted

One of my correspondents in Belgium has asked me to put him into touch with a boy either in England or America who applies Meccano to the principal theories of mathematics and mechanics. I shall be glad to hear from any boy likely to suit my Belgian correspondent. Also, members who wish to be placed in touch with boys interested in the following subjects should communicate with me:—Poultry-Farming, Gardening, Sketching, Conjuring, Cycling, Journalism, Music and Books.

CLUB NOTES

Leckhampton M.C.—This enthusiastic club recently played a football match against the Leckhampton Scouts which resulted in a draw. More members are needed for the coming Session and enquiries from Meccano Boys in that district are invited. *Secretary*: Master B. Rhodes, Cotswold View, Charlton Lane, Leckhampton, Cheltenham.

St. Mark's (London, S.E.13) M.C.—This Club has been organised in connection with the local Church and under the Leadership of the Rev. Noel Mellish. Meetings are held in the Parish Hall every Friday evening from 7 p.m. until 8.45 p.m. At present the Club programme consists of model building and lectures. At the recent Sale of Work held in connection with the Club an Exhibition of models was held and proved a great success. *Secretary*: Master L. Jones, 39, Wellmeadow Road, Hither Green, Lewisham, S.E.13.

Grimsby Central M.C.—The Second Winter Session closed at the end of April, and members are now enjoying summer activities. New members will be welcomed, and full particulars of membership may be obtained from the *Secretary*: Master S. Oliver, 102, Hainton Avenue, Grimsby.

Adelaide (South Australia) M.C.—Although most of the members live several miles from the club-room, all are enthusiastic Meccano boys and there is invariably a full attendance on club nights. The membership now stands at 14, but it is hoped to increase this in the near future. *Secretary*: Master Ted Cornish, 100, Walkerville Terrace, Walkerville, South Australia.

Elizabeth College (House) M.C.—Owing to the prior claim of the school sports, the theatrical performance to be given by the members has been postponed until the next term. The first number of the Magazine "*Meccanotes*," issued by this club, has recently been printed and costs 6d., though it is hoped shortly to be able to reduce the price to 2d. Full particulars may be obtained from the *Secretary*: Master H. Griffith, Elizabeth College M.C., Guernsey.

Norwich Enterprize M.C.—Indoor games, model-building and physical drill are regular items on the programme, and members are looking forward to a record Summer Session. *Secretary*: Master C. R. Agar, 73, Vincent Road, Norwich.

Glenelg M.C.—Was recently affiliated to the Guild and continues to make splendid progress, the membership having been almost doubled. The club is shortly to be divided into a junior and senior section. *Secretary*: Master R. Squire, 41, Osmond Road, St. Leonards, Glenelg, Australia.

Southall M.C.—Owing to the old room being no longer available, this club is shortly taking up temporary quarters in the home of their vice-president, Mr. Haigh. It is hoped to find a new club room in the near future, but meanwhile the members are managing to "carry on" and are as keen as ever. *Leader*: Mr. E. C. Carpenter, 56, Hammond Road, Southall, E.

Meads (Eastbourne) M.C.—A very enjoyable concert was recently given by this club. The programme, which was neatly duplicated in two colours, consisted of pianoforte solos, songs, recitations, and two sketches, including the Meccano play "*Nonsense Nana*." A social was also held shortly after, which, like most Meccano club socials, was unanimously voted a great success. *Secretary*: Master F. Coombe, Fire Station, 44, Meads Street, Eastbourne.

Redruth M.C.—Though only recently organised, this club is showing every sign of becoming an important branch of the Guild. At present there are 16 members. A lantern lecture on humorous subjects was thoroughly enjoyed. *Secretary*: Master Leonard Trenberth, Tunnel Stores, Redruth.

Clubs not yet Affiliated

Oxton M.C.—A suitable club-room has now been secured and al ocal gentleman having agreed to act as Leader, it is hoped to affiliate this club in the near future. Sections for Nature Study, Stamps, Radio and Outdoor Games, have been organised, and an enjoyable Summer Session is anticipated. *Secretary*: Master R. K. Holden, 13, Alton Road, Oxton, Birkenhead.

Birkenhead M.C.—A series of Country Rambles which will include Nature Study and Photography have been arranged by the Leader for the Summer Session. The club meets every Wednesday at 7 p.m., and any Meccano boy who is interested should write to the *Secretary*: Master Clifford Harrison, 9, Clifford Street, Birkenhead.

Penarth M.C.—Is fortunate in possessing a comfortable Club Room, while a Gramophone and Wireless Set have been placed at the disposal of members. Radio is a popular club hobby and each member possesses a wireless set. A Magazine is regularly published, and any boy interested in the club is invited to write to the Secretary for full particulars. It is hoped to secure a Club Leader in the near future. *Secretary*: Master M. Hallett, 64, Westbourne Road, Penarth, Glam.

How to Run a Meccano Club

by the
Guild Secretary

Last month I promised to give a suggested syllabus that would serve as a guide for new Clubs. This syllabus, which is printed on this page, is merely a suggestion for a programme for two pleasant sessions, and is, of course, subject to any modification the Club Leader may care to make.

Wide Scope of Clubs

In making up your syllabus it is important to remember that the activities of a Meccano Club are by no means confined to Meccano. Meccano is simply the common ground on which the members of the Club meet, and evenings are made considerably more enjoyable by the introduction of other subjects and hobbies, such as Fretwork, Stamp Collecting, Nature Study, and—in season—Cricket and Football Clubs. Then again, such things as a Savings Bank and Library may be arranged in connection with the Club.

Those Clubs that have musical talent among their members may often arrange to have musical evenings with a view to practising for a Club Concert. Many of our most successful Clubs finish up the session with a Concert and Exhibition. Some clubs have concert parties that take part in organised entertainments to raise funds for local charities, such as hospitals, and quite a considerable amount of money has been raised from time to time in this way. Not only is there the satisfaction of knowing that you have done something to help a deserving cause, but also there is a good deal of enjoyment and fun to be derived from the rehearsals and the performance itself.

All these "side-lines" further the interests of the members and help them to enjoy the Meccano evenings all the more.

Membership Cards

Special cards are supplied to affiliated clubs by Headquarters, and on the inside space is left for the insertion of the programme for the winter sessions. These spaces are filled in by the members after the programme has been arranged. If it is not drawn up at the general meeting, the Secretary would do well to display a printed or neatly-written copy of the programme on the Club notice-board, so that all the members may fill up their membership cards at the commencement of the session.

Suggested Syllabus

Oct. 1—Business Meeting and Short Address by Club Leader. Model Building (if time permits).
" 8—Lecture by Mr. Robinson, Manager of the Electricity Works.
" 15—Model Building.
" 22—Business Meeting. Paper on "Bridges" by Master J. Smith. Questions and Discussion.
" 29—Model Building.
Nov. 5—Visit of Guild Secretary from Headquarters.
" 12—Meccano Lecture: "Lives of Inventors," read by Club Leader, followed by discussion.
" 19—Model Building and Competitions.
" 26—Business Meeting. Lecture: "Steam Locomotives" by Mr. T. Brown, of the G.W.Rly.
Dec. 3—Model Building.
" 10—Adjudication of Models for Exhibition.
" 17—Concert and Exhibition.
Jan. 7—Business Meeting and Model Building.
" 14—Lecture: "Aeroplanes," by Lieut. J. Smith, R.A.F.
" 21—Model Building and Competitions.
" 28—Meccano Lecture: "The Story of our Ships," read by Club Leader, followed by discussion.
Feb. 4—Model Building.
" 11—Papers by Club Members.
" 25—Study of Special Meccano Model. Paper by Leader. (Model loaned by Headquarters).
Mar. 3—Model Building.
" 10—Competitions.
" 17—Paper on "Photography" by Master T. Browne; followed by Business Meeting to discuss arrangements for Concert and Exhibition.
" 24—Adjudication of Models for Exhibition.
" 31—Concert and Exhibition.

The Club Record Book

Every Secretary should keep a Club Record Book in which to enter details of each meeting, and also the name of any member who carries through some special achievement. The number of members present, the winning model of the evening, and the name of the Chairman should be noted, and these "minutes" read over at the beginning of the next meeting, and signed by the Chairman.

Entries need not always be connected with Meccano. For instance, one member may win a scholarship of merit; a second may invent something of considerable importance; or a third may perform some brave deed. Each of these things is worthy of record, and should be entered. The book should not be made "cheap," however, and every entry in it should refer only to something of importance.

Reports should be sent to Headquarters each month, with a summary of the work done, number of members on the roll, etc., at the termination of the session. The Record Book will be found of great assistance in rendering the monthly reports, which should contain a brief account of the Club's activities and notes of any contemplated events. All reports of sufficient general interest will be mentioned in the Club Notes in the "*M.M.*"

Clubs and Publicity

It should be the aim of every Club to become widely known in its particular locality and thus gain more local support. It is a good idea to appoint one of the members Press or Publicity Secretary. His duty will be to send short reports of the Club's activities and notices of meetings to the local newspapers, and to do everything possible to advertise the existence of his Club.

If no Press Secretary is appointed, the Club Secretary should himself make a point of sending in a report to the newspapers regularly each week

Sometimes shop-keepers will display in their windows a notice about the Club, and when this can be arranged, it generally results in an increased membership. The Parish Magazine, too, is an ideal medium for Club notices, which should include the name and address of either the Club Leader or Secretary, for the benefit of intending members.

(*To be continued*)

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7/6	8/3	9/-	9/9

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USED IN ALL LANDS BY

MEN

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

WOMEN

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

CHILDREN

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

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

Booklet of interesting information, free on application to

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

MY remarks on this page last month in connection with tongue-twisters have evidently had a very stimulating effect, for during the past two or three weeks I have received more tongue-twisters than ever. I give below a selection of the more interesting.

* * * *

Master Albert Cull (Bournemouth) has made a determined endeavour to twist my tongue by sending in no less than 13 twisters! These include some very old ones, such as "Peter Piper and the pepper corns," the "Ragged rascal and the rock," and the ever popular "Betty and the bit of bitter butter." One or two are new, however, such as "Sam sells salt sausages," and "A swan swam over a river; swim, swan, swim! The swan swam back again; well swum, swan!"

* * * *

Master D. Lisle (Sefton Park, Liverpool) suggests that I should eat "Flesh of freshly-dried flying fish" with "A box of mixed biscuits" or, if preferred, "With a mixed biscuit box." He concludes his letter by saying "It is a shame, Sam; these are the same, Sam!"

* * * *

Master J. Higgleton (Merthyr Tydvil) has evidently been thinking of the readers who have been trying to twist the Editor's tongue when he evolved the following:—

"A twister of twists once twisted a twist,
And the twist that he twisted was a thrice twisted twist.
In twisting the twist one twist came untwisted
And untwisted the twist that the twister had twisted."

He also mentions that the other day he saw "Three great grey geese in the green fields grazing. Grey were the geese and green was the grazing."

* * * *

Those who are musically inclined will be interested in Master H. Briant's (Dulwich, S.E.22) tongue-twister, which reads:—

"A tutor who tooted a flute
Tried to teach two tooters to toot.
Said the two to the tutor,
'Is it harder to toot or
To tutor two tooters to toot?'"

* * * *

Master Desmond Williams (Ipswich) has made a praiseworthy attempt to twist the Editorial tongue with these "twisters:—

Sunny Sheila surely sells sea-shore shells.

Burly brown bears brutally biting black babies' backs.

Certain cross cooks cooking curry curiously.

This Month's Short Story

Act I. Bull and Two Toreadors.
Act II. Bull and One Toreador.
Act III. Bull.

* * * *

Puzzle No. 23.

Who can fill in the missing word from the last line of this verse?

With seven letters he spells his name;
Three letters he drops, he's just the same;
He drops two more, no change you view;
Nor when he drops another two;
He drops a dozen, he drops a score!
He drops a hundred and eighty more!
He drops a thousand and ninety-six!
The total's extremely hard to fix;
No matter the total that he may name;
Our jolly —— is just the same.

* * * *

"Well, Bloom," a physician asked a young colleague who had just taken rooms, "how's your practice?"

"In the mornings, practically no one comes," was the reply, "and in the afternoons the rush falls off a bit."

* * * *

Puzzle No. 24.

A very popular form of puzzle is that in which missing words are to be supplied where each word must contain all the letters of the previous word. An additional letter is added at each blank and the letters may be rearranged to form different words. Thus "we" may be changed into "wet" the second time and changed to "went" the third time, and so on. Here is a puzzle of this order, contributed by Master W. R. Cox, of Birmingham.

—— do not like —— said the man with the black ——. The —— we have just witnessed was very impressive.

When you —— a man you —— a —— means of identification. There will be a —— against —— when —— of this is realised.

* * * *

Getting a Move on!"

"*Join team immediately. Catch first boat. Jones ill.*" Thus read a telegram received by the reserve member of the village cricket team. Nobly he answered the call by jumping up from his unfinished meal, dashing to his room, seizing his bag, flinging in some things, donning his hat and coat, rushing into the street, and running to the landing-stage.

There was the boat! Could he catch it? Flinging his way through the crowd, he forced a passage to the quayside, turning a deaf ear to the cries around him. The boat was barely a foot away from the landing-stage. He took his courage in both hands, closed his eyes, and giving a tremendous bound, landed on the deck with a crash.

"If I'd been a few seconds later I'd have missed it!" he gasped.

"Missed it!" cried the sailor who helped him up, "Why this boat's just coming in!"

* * * *

Q: What is it that asks no questions, but that you have to answer frequently?
A: A door bell.

Answers to Last Month's Puzzles.

No. 20. Missing newspaper names:—

The *TIMES* were hard; the feet of the *MORNING POST* man sounded on the frozen roadway, and the *STANDARD* rose-trees in the garden were leafless. The *TELEGRAPH* wires formed a perch for half-starved birds, and the *SUN* showed like a *GLOBE* of fire in the sky. To the *SPECTATOR* it seemed a hard, cold *WORLD* and, to tell the *TRUTH*, it was so. A train went by at *EXPRESS* speed, bearing the *WEEKLY DISPATCH* of letters from the country, together with the *MAIL* from a great town. A *GRAPHIC* description of the scene was written in *BLACK AND WHITE* for those who live a *COUNTRY LIFE* and do not hear the *DAILY NEWS*.

(The first correct solution received was from Master C. White, of Weston-super-Mare, to whom the prize of 5/- has been awarded).

* * * *

No. 22. Hidden names of animals:—

(*a*) Chamois. (*b*) Buffalo. (*c*) Heifer. (*d*) Leopard.

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

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

Picture post cards are a great convenience to the traveller who has no time to write long letters home. But accidents will happen and sometimes the card selected says something the sender did not intend.

Some time ago a lady who was travelling in Yorkshire wrote on a card that she was about to post to a friend in Brighton: "*Wish you were here.*"

In due time came the answer: "*Received your card, but what do you mean? You sent me a picture of a cemetery!*"

In another somewhat similar case, a dear old lady, who was travelling through Scotland, chose a card on which was a coloured picture of a handsome new building. She wrote: "*Am detained here unexpectedly for a few days. Will explain later.*"

Great was the alarm of the recipient, however, for she had sent a picture of the new gaol!

* * * *

An English tourist driving through a part of Ireland in a jaunting car passed a man in ragged clothing.

"It must be awful to be in such a state of poverty as that!" exclaimed the Englishman in a sympathetic tone.

"Poverty, yer honor?" said the driver. "It's not poverty that caused him to wear rags. The fact is, that man is so ticklish there is not a tailor in the country that can take his measure!"

Small Advertisements

(For rates see column 3)

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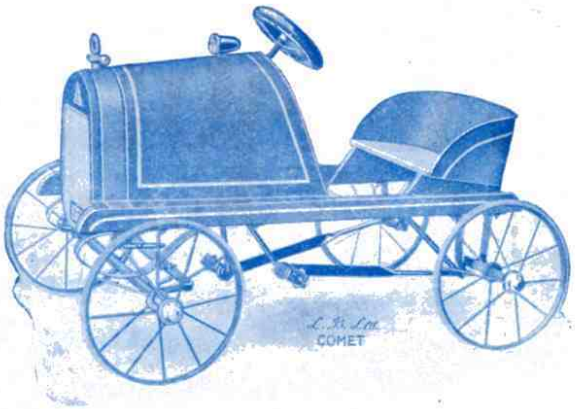

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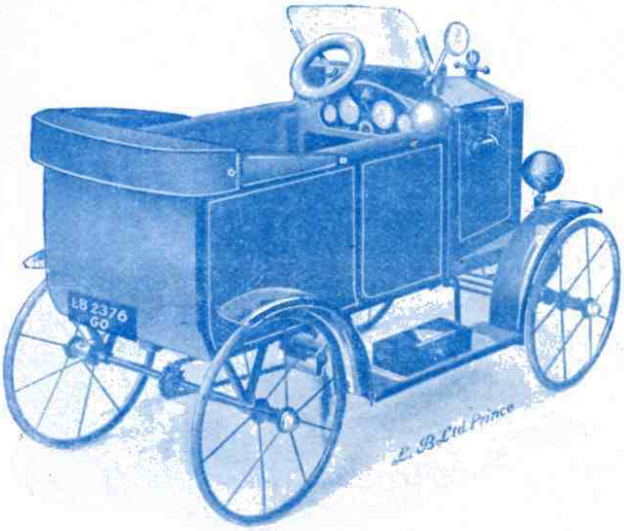

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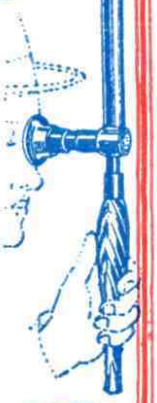

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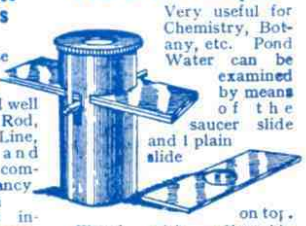

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