

III. UNITED STATES, BERMUDA AND THE WEST INDIES

HAVING fully explored the Niagara Falls we again board our aeroplane and fly north-west for nearly 400 miles. At length we reach the town of Sault Sainte Marie, the canal locks of which are pictured on the 8c. value of the 1901 issue illustrated on this page.

From Sault Sainte Marie to Washington

Sault Sainte Marie is situated in the State of Michigan at the point where Lake Superior flows into Lake Huron, and opposite the Canadian town of the same name. In 1668 Jacques Marquette founded the first permanent colony in Michigan at this point, and to-day the town of Sault Sainte Marie has a population of rather over 12,000. The river between the two lakes is about a mile in width at this point and has a fall of about 20 ft. in three-quarters of a mile. In 1855 the original canal (5,700 ft. in length) was built by the State, but since that time it has been widened and deepened and several large locks have been added.



Our aeroplanes now turn towards the Atlantic, and after a flight of about six hundred miles over vast stretches of farming land similar to that shown in the 2c. of the 1898 issue, we arrive at Washington to see the Capitol and the Lincoln Memorial. Both these are pictured on stamps of the current issue, the former on the 2 dollar and the latter on the 1 dollar value. The Capitol, the seat of the United States Government, stands on rather higher ground than its surroundings, and commands a splendid view of the city. It has a dome similar to that of St. Paul's Cathedral. The Lincoln Memorial is a massive building (it took ten years to build) but owing to its perfect proportions, it does not at once impress one with its size. The thirty-six columns surrounding the outside of the building represent the number of states in the Union at the time of Lincoln's assassination. Within the building there is a Memorial Hall and a huge statue of the great President.

A Great Floating Dock

At New York we join our liner again and set sail. As we leave the magnificent harbour we see the wonderful Statue of Liberty, presented to the United States by France in commemoration of the Declaration of Independence, and pictured on the 15c. value of the current issue. One does not usually associate a statue with engineering, but the construction of this massive work was a great engineering feat, in being an early example of ferro-concrete construction.

Bidding farewell to the States, we make our way to the island of Bermuda, where is located the famous floating dock. The floating dock arrived at the island from the Tyne in 1902 and is depicted (not very successfully we may say) on certain values



of Bermuda issued 1902-1910. The 1902 dock superseded another floating dock that had been at the island since 1869, but which could not accommodate the larger modern battleships. Accordingly the new dock was built and towed to Bermuda, where it is an important factor in the defence of the Atlantic. In three-and-a-half hours it can lift a vessel weighing up to 15,000 tons!

A Stamp that Nearly Caused a War

Our next port of call is at Hayti, where we visit Port au Prince, the capital. There are many splendid view stamps of this town included in the 1906 issue. The 3c. shows the Market Hall; the 8c. the entrance to the Catholic College; the 10c. the Catholic Monastery and Church; the 15c. the Government Offices, and the 1 piastre the Palace of the President. Hayti has been a negro republic since 1804, when an insurrection freed it from France.

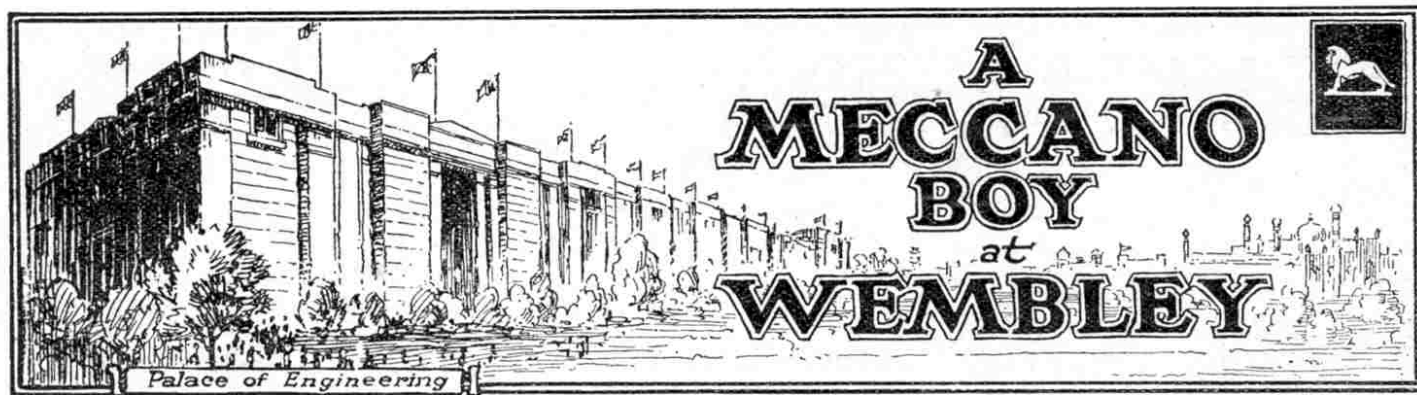
As our liner will probably spend a few days in "coaling" at Port au Prince we shall have time to fly over to Gonaives, a town of 18,000 inhabitants on the western coast of the island. There we see the Independence Palace (1906, 7c.). After leaving Gonaives we turn inland and arrive at Sans Souci, near Millot, where are the ruins of the magnificent palace of Sans Souci, and the fortress of La Ferriere (1906, 4c.), built by King Henri Christophe.

The Republic of Dominica occupies the eastern portion of the same island, and here we see the fortress at Santo Domingo (1902 issue, 50c.). In passing we may mention the "map" stamp of the Dominican Republic (1900 issue, all values). When compared with a map of the island it will be seen that the issuing country has given itself a much greater portion of the island than it owns. In fact, it made itself look so important that it is said that the issue of this stamp nearly caused a war between the two republics!

A Handsome Stamp

Continuing eastward for about 500 miles, we arrive at Pointe-à-Pitre, Guadeloupe (1905 issue, Franc values). This is the chief port and most important town in the island, and lies at the mouth of the Rivière Salée. Guadeloupe is a French colony and consists of two islands, Grande-Terre, on which Pointe-à-Pitre stands, and Basse-Terre, a very beautiful island with high mountains, amongst which are to be found Mount Houlémont (1905 issue, 1c. to 15c.) and La Soufrière (20c. to 75c.). The latter is the highest mountain in the island, rising 4,900 ft. above the sea. It is a volcano, but although it destroyed several towns in 1843 its hot springs and vapour are the only signs of volcanic activity to-day.

(Continued on page 357)



(Continued)

IN the Government Building there are three large rooms devoted to exhibits by the Navy, Army and Air Force. In the first room there are numerous glass cases in which are shown perfect little models of British ships at various periods. As I looked at the models of the ships that fought the Spanish Armada, I thought how clean-cut and business-like our ships are to-day as compared with the wonderfully-carved, elegantly-painted ships of the Elizabethan period.

The "Mystery Ship"

In the centre of this room are two splendid models of present-day men-of-war. Every detail is perfect—the wireless aerials; the rails ready to be folded up when the ship goes into action; ventilators; tiny ladders and doors; perfect guns—all are exact in proportion and finish, down to the smallest detail. Another case shows a model of one of our "mystery ships"—a peaceful, defenceless trader on the one hand and, when its true nature is revealed, shown in its true colours as a fighting ship ready for action.

The Air Force exhibit includes a splendid full-sized aeroplane engine working away in a glass case! The centre of the room is occupied by a model showing war-ships, with aeroplane-carrying ships lying near their base, where the ammunition sheds and hangars are located. By pressing little switches arranged around the frame-work of the model, miniature electric bulbs light up and show more clearly the position of the special features of the model.

Letters from the "Iron Duke"

Another model called "Somewhere in France"—one of the War Office exhibits—shows a section of the battle-front. There are miniature trenches, barbed wire, gun emplacements, dug-outs, and even tanks, all of which give a very clear idea of what the "real thing" must have been like. It was topping to be able to press a switch marked "Concealed Observation Post" and then to see a shattered tree light up from the inside and reveal itself as a tower with a ladder and a platform at the top, or to press the "Disabled Tank" button and find a deep ditch and a few bushes hiding a tank shattered and disabled by shell fire.

There are also several suits of armour, cannon and weapons of all periods, and tableaux of famous battles such as Hastings,

Aboukir, and many others. Letters written by the Duke of Wellington on the battlefield are also shown, together with such interesting objects as the insignia and orders actually worn by Florence Nightingale. It was wonderful to think that here, right beside me, were papers and orders touched and used by people of whom I have so often read.



Photograph by]

[Master H. Green, Davenry

The Burmese Pavilion

I next went to see the performance at the Admiralty Theatre, where the bombardment of Zeebrugge is shown. My word, it was "some show." First of all a gentleman appeared before the curtain and told the story of the attack on Zeebrugge. He made us all so excited that he had to wait several times until the clapping and cheering had died down!

A Deed of Great Daring

When the show was ready to commence I could scarcely sit still for excitement! There, in front of our eyes—taking the whole width of the stage—was a perfect model of the harbour of Zeebrugge, with

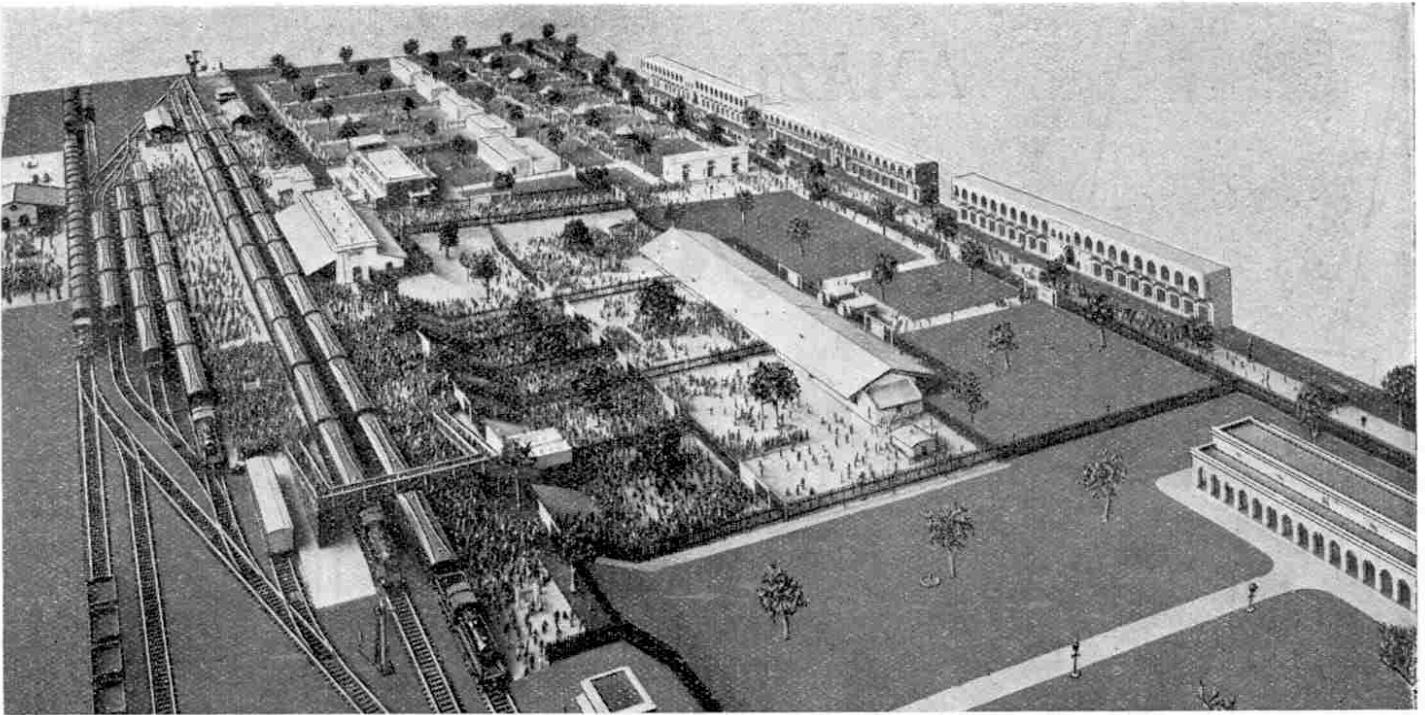
the "Mole," as the famous breakwater is named, guarding the entrance to the Bruges Canal.

Then, amidst great excitement, the show commenced. The scene is laid at sunset when several German destroyers and submarines return to harbour. After darkness has fallen there is a noisy bombardment of Zeebrugge by British ships far out at sea. Shells burst on the land far behind the Great Mole. British motor launches creep along the coast putting up a smoke-screen, under cover of which the "Vindictive" comes up alongside the Mole. Owing to the strong wind and tide she cannot land her men for the attack, but the brave little "Daffodil" (which in peace-time is a ferry-steamer on the Mersey) sees her difficulty and pushes the "Vindictive" in to the Mole with her bows, keeping her there whilst the men are landed. The "Iris" (another Mersey ferryboat) gets alongside the Mole and bombards the German seaplane station. Just as the fighting on the Mole becomes fiercest, and shells from the battleships are bursting all around, the Submarine CIII, laden with explosives, makes for the shore end of the Mole. Here she dives and her brave crew blow her up, making their escape in a small boat. Communication with the land is thus broken and the Germans on the Mole are cut off from assistance from land.

"The Mission Accomplished"

The real object of the expedition was, of course, not so much to destroy the Mole as to block up the entrance to the Bruges Canal. Immediately the viaduct is destroyed the three block ships sail up, and as the "Thetis" is so badly hit she cannot reach the entrance to the canal, she is run ashore—a blazing wreck. She continues to carry on her duty, however, and signals the two other ships, which, through her guidance, are able to safely enter the canal, where their crews sink them.

The entrance to the canal now being completely blocked, the work of rescuing the crews is carried out by motor boats manned by officers and men of the R.N.R. and R.N.V.R. Time after time these little motor-boats return—for the order had gone out that not a single sailor was to be left to the mercy of the enemy—until all the living, and as many of the dead as possible, are brought back. Meantime, the storming party on the Mole return to



The Wonderful Model in the Indian Pavilion

This model, exhibited by the Oudh and Rohil Khand Railway, was described in our last issue. It shows a typical wayside station, the platforms crowded with passengers. As most of the passengers are unable to read or write, a very ingenious system has been devised. Upon stating their destination and paying their fare, the passengers are given tickets of different colours according to their destination. Near to the platforms are large compounds or enclosures, at each of which a flag of distinctive colour is flown. The passengers enter the compound that has a flag agreeing in colour with their ticket, and thus all the passengers for a particular town are in their correct compound. It is then an easy matter for the gates of any particular compound to be opened when the train for their destination comes in.

the "Vindictive," the recall having been sounded on the "Daffodil" siren, and then the gallant little ship, riddled with shell-holes, edges away, and allows the "Vindictive" to leave with the victors. Instead of a thrilling tale appearing in our press next day, the Admiralty merely told us that an attack had been carried out on Zeebrugge and that the attackers had "returned with the mission accomplished!"

Exhibits from the East

After seeing this thrilling display, I left the Government Building and visited Burma. The carving of the wooden roof and towers of this building is wonderful, the three towers being hung with gilded bells that "tinkle" in the wind. I was surprised to learn that it was modelled in Burma—as was also a shrine with its marble Buddha—being worked in Rangoon and shipped to Wembley in huge packing cases.

In this building is a wonderful display of valuable stones; beautiful ivory carvings; work in mother-of-pearl and lacquer; silver and bronze figures; furniture wonderfully and delicately made; and an exhibit of 60 varieties of timber. Two live Burmese elephants are stationed in the grounds, and a native theatrical party, with wonderful little Burmese dancing girls, give regular performances to the accompaniment of weird native music.

"Pearls of Great Price"

Next I passed to Ceylon, the pavilion of which is fashioned on the model of a Temple at Kandy. This building is a store-house of beauty. Many wonderful jewels are on view—mostly rubies and sapphires—and I was told that some of

the single stones are valued at £20,000! One exhibit, a pearl necklace with each pearl a different colour, required 30 years to collect!

Then there was a splendid display of rubber from Ceylon. I had no idea rubber could be used in so many forms—there were mats, bathing caps, lampshades, cushion covers, wonderfully-coloured cigarette cases and even paper—all made from rubber. Next I encountered a strong spicy smell, which I found came from a room devoted to spices—pepper, nutmegs, mace, cloves, cinnamon, etc. I could fill pages in a description of the things I saw—native industries, cloth-weaving and dyeing, and baskets woven with delightfully-coloured designs—elephant heads, buffalo and spotted deer and many other trophies of the chase.

Hong Kong and Malta

Hong Kong was my next destination. I found it to be a long native street with a Chinese restaurant, with real Chinese food, Chinese waiters and Chinese music—which sounded great from outside! The native shops in Hong Kong are quaint affairs quite open to the street, and you just step up and walk about, admiring and purchasing the goods if you wish. This was one of the quaintest corners I had struck, and I was just longing to sample the Chinese food—"Birds' Nest Soup," Stewed Sharks' Fins and other delicacies—served at the restaurant, but I knew I would have to hurry on.

Malta, my next port of call, contains exhibits which go back 30 centuries before the Christian era, but as this sounded too much like ancient history I did not stay long there! I was more interested in the pictures of the galleys that forced the Dardanelles in 1656 and in the armour, weapons and trophies shown.

Our Dominions

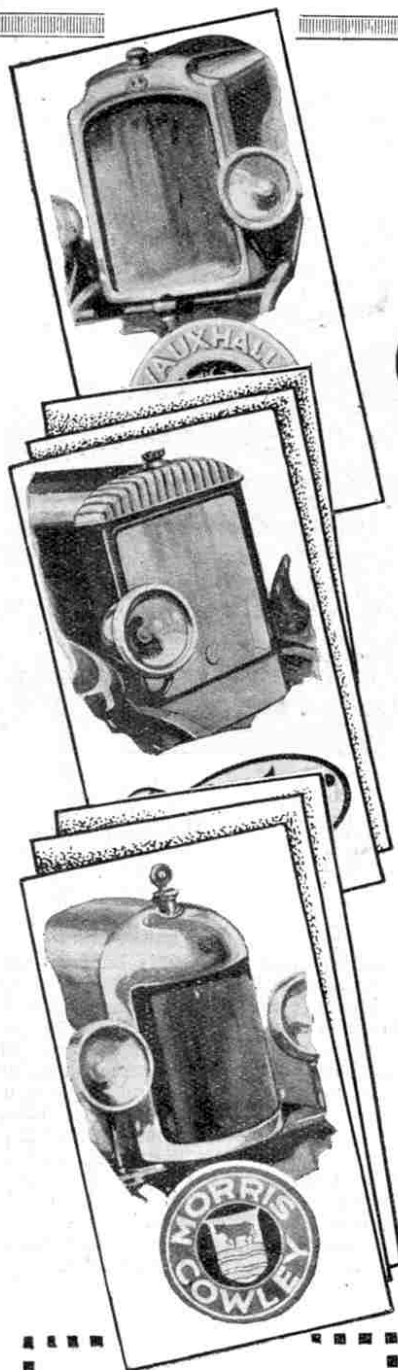
South Africa's pavilion is built on the lines of an old Dutch House, with stoep and loggia complete. Above the main entrance is a statue of Jan van Riebeeck, who sailed to Table Bay in the days of Queen Elizabeth. An interesting exhibit here is a railway saloon and restaurant car in which meals are served. Then there is a complete plant for washing, cutting and polishing diamonds, and a most realistic display of stuffed animals in their natural surroundings. Wool, hides and skins are important exhibits, and a free cinema with films depicting South African life is very popular.

The Prince of Wales in Butter

Canada's wonderful building covers nearly 6 acres of ground. Round the walls are panoramic pictures—constructed entirely of grain of different colours—below which are wonderful tableaux of the country, with running water, and working models of electric trains. We are told that within the next twelve years Canada will be growing one billion bushels of wheat per annum! But Canada yields not only wheat, but also mineral wealth—gold, silver, nickel, copper, and asbestos—and the section devoted to minerals is unique. Ores and rocks are set out, and wonderful scenes are built into the walls.

One of the most amazing exhibits I ever saw was in this building. It was a life-sized statue of the Prince of Wales standing by his horse, modelled entirely in butter! In the background is the Prince's ranch with flowers and shrubs and trees all complete. The two life-sized figures are perfect in every detail. The case containing the statue is kept cool by a special refrigerating plant, which maintains the temperature inside the case below zero.

(To be concluded)



The TRIUMPH

will be packed tight with bright and breezy stories. A cheery crowd of TRIUMPH heroes will thrill and entertain you week by week in exciting and breathless exploits of adventure, baffling mystery—enthralling stories of football and of side-splitting fun.

Be wise, lads, and order your copy NOW. You will enjoy every line of it, and so will your pals.

AMAZING GIFT OF *Cigarette Pictures*

TWO COLOURED CARDS

FREE EACH WEEK

The finest set of cigarette pictures ever produced! Every week, THE TRIUMPH, the wonderful new adventure paper, includes two beautifully printed cigarette cards in full colours representing different makes of motor cars and their trade-marks. A complete list of index marks for the whole of the British Isles will be given on the back of the cards, so once you have the set complete, you will be able to recognize any type of car at a glance, and also tell where it has come from. Start YOUR collection NOW! No boy should miss this wonderful chance. There will be 32 COLOURED CARDS in the set, and there will be no other way of collecting them except through THE TRIUMPH.

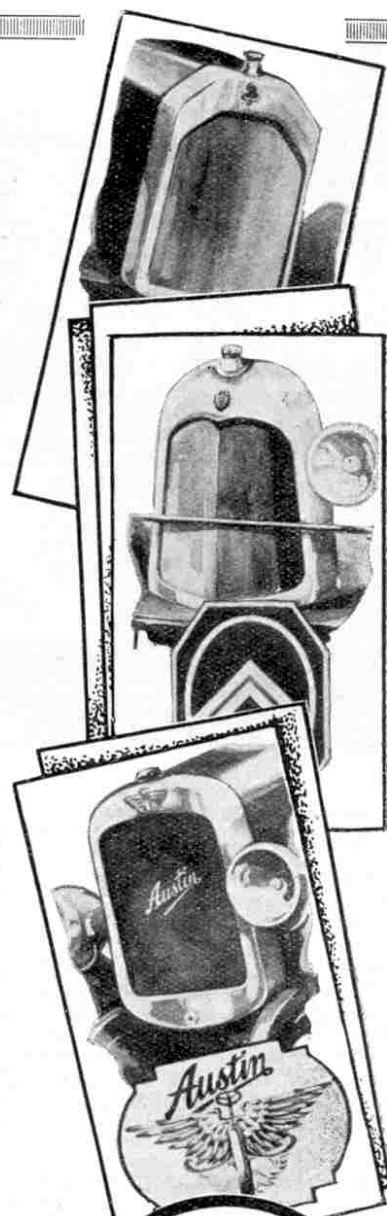
FREE ALBUMS

are also being offered by THE TRIUMPH. With your cigarette pictures mounted in one of these, you will have a set of which you will be justly proud. All your friends will envy you!

Remember you can only obtain this wonderful series of cards in

The TRIUMPH

THE NEW ADVENTURE STORY PAPER FOR BOYS—2^D. EVERY TUESDAY



BUY
a copy of
this Great
New Paper
TO-DAY

New Coaler Lifts 10-ton Wagon and Coals Two Locos in Two Minutes

SHOULD any reader of the "M.M." pass through Crewe on the London, Midland, and Scottish Railway, he should keep a sharp look out for the very interesting automatic loader illustrated on this page. It stands by the south Steam Sheds, on the left of the main line going northwards. With good fortune it may be seen at work coaling a locomotive.

This wonderful new coaling appliance has introduced the maximum efficiency and economy into the coaling of locomotives.

Coaling Locos by Hand

The ordinary method of coaling locomotives has long been regarded as unsatisfactory, especially at such centres as Crewe, which is one of the busiest railway depots in the world. This method, which originated about the time of the famous "Rocket," consists of handling the coal by means of shovels and baskets. About twenty minutes are required to coal an engine in this manner, and the work is by no means pleasant for the workmen.

Coaling by hand in this way requires a large number of men. It is so slow in operation that often the time gained by expresses is lost when their locos have to wait their turn at the coaling depots.

Coaling Locos in Two Minutes

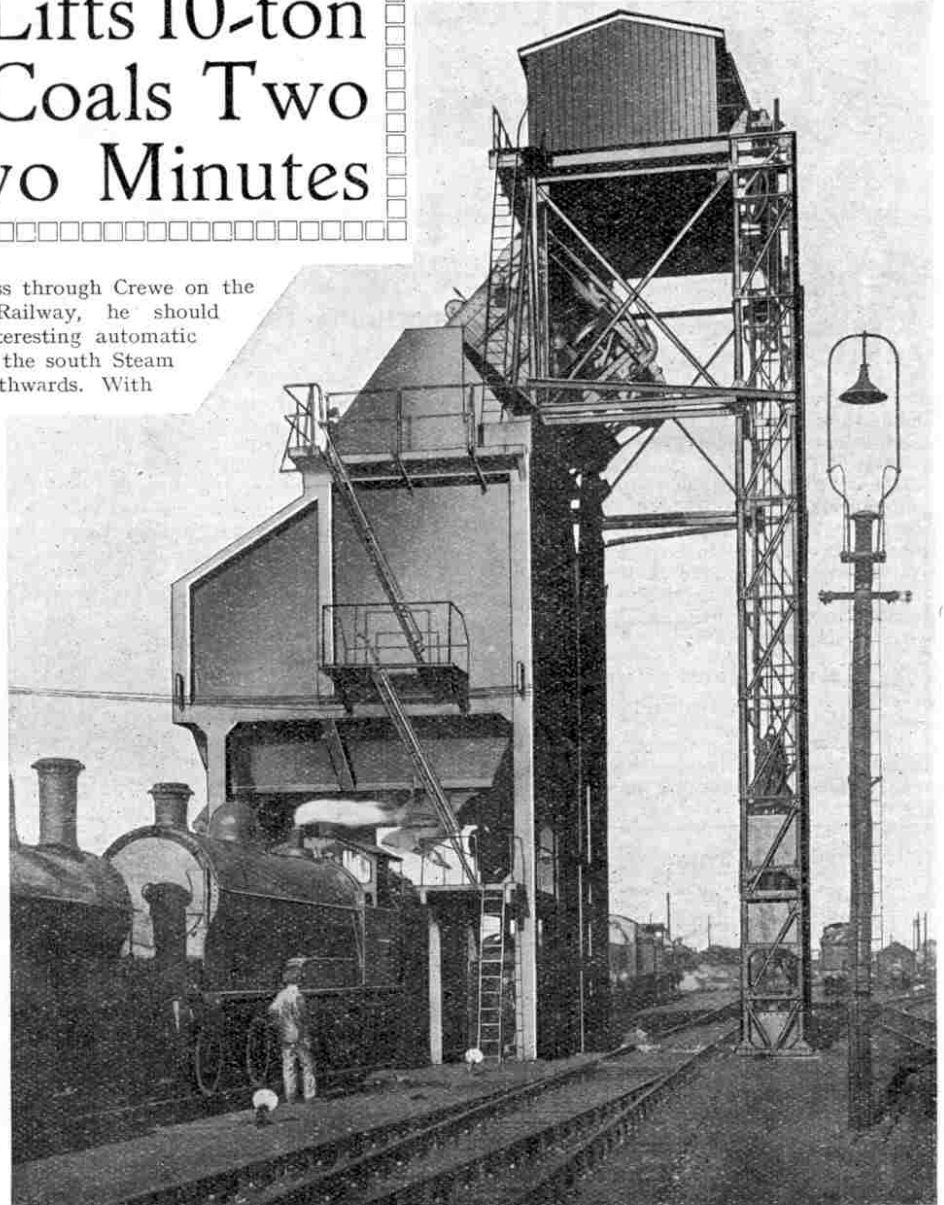
Many attempts have been made to eliminate this clumsy and out-of-date method, and the appliance shown in our illustration is one of the most practical. This new coaling plant enables the operation of coaling to be carried out with considerably greater efficiency than was possible with the old method.

The towering structure is built alongside a storage bunker of re-inforced concrete, and is one of the largest mechanical devices in use to secure economy in railway working. The whole operation of taking the coal from the wagon, placing it in the store, and feeding it out again through a measure-chamber to the locomotive beneath, is completed in under two minutes. The plant contains six chutes by which the requisite quantities of coal are delivered, according to the type of locomotive to be coaled. It is quite practicable to coal on two lines at the same time.

Coaling with such a plant as this not only effects an immediate saving of nine-tenths of the actual coaling time, but the delay occasioned to locos waiting to be coaled is eliminated, and thus less time is lost in standing. Moreover, the army of coal trimmers necessary with the older method of hand-coaling, are relieved of their unpleasant and dirty labour and are enabled to work elsewhere to better advantage.

Bodily Lifting a 10-Ton Wagon

As shown in our illustration, the steel tower, with the winch-house overhead and the reinforced concrete bunker, is



Photograph by courtesy]

[Messrs. The Mitchell Conveyor & Transporter Co. Ltd.]

The above illustration shows a 10-ton Wagon being tipped into the New Coaling Appliance at a height of 32 ft. from the ground

placed at the side of the third rail track on which runs the train of coal wagons. When the train arrives from the colliery, each wagon is detached and run to the coaling appliance, on the cradle of which is laid a portion of the standard rail track. When the electrical control is brought into operation, the cradle and wagon are raised vertically to a height of 32 ft. Balance weights equalise the dead-weight of the cradle, wagon, and load, and effect the maximum economy in consumption of power.

When fully elevated, the cradle engages with trunnion pins and commences to rotate in the direction of the bunker mouth, which—as will be seen from the illustration—is enclosed by a wind-screen. The distance travelled by the wagon in rotating is sufficient to tip the coal smoothly

and easily into the bunker, which is capable of holding the contents of twenty-five 10-ton wagons. The capacity of the bunker is sufficient to coal all the locomotives at Crewe during a normal twelve-hour working day.

One Man Control

An automatic device effectually secures the wagon in its place in the cradle whilst it is being elevated to the bunker and returned to the ground. After discharge, the wagon returns to its normal position, and the cradle descends to the rail level. Here the empty wagon is disengaged and run-off, allowing the next full wagon to take its place in the cradle.

The whole operation of raising, tipping and lowering the wagon is controlled by one man, by means of a simple switch



CHOOSE YOUR OWN CHRISTMAS PRESENT

An opportunity for "M.M." readers

It is a wonderful sensation to sit down and study illustrations and descriptions, and select your own Christmas present. Try it! The Special Christmas Number of the "M.M." will contain advertisers' announcements of all kinds of splendid toys, books, and all manner of articles for giving pleasure to boys at Christmas. We are going to make at least one boy happy by giving him the very thing he wants, from amongst the articles advertised in our columns.

Let us know what you want—
On a Postcard

Obtain a copy of the Christmas number of the *Meccano Magazine*, which will be ready on 1st December, look at all the articles

advertised and then decide which you would like the postman to hand to you on Christmas morning. Write the name of it on the top of your postcard, marking it No. 1. Then write the name of the article that you would like second best and mark it No. 2. Do this with six articles altogether, write your name and address at the bottom in very plain letters, and send the postcard to "Christmas Presents, *Meccano Magazine*, Binns Road, Liverpool."

To the boy whose list corresponds most nearly in order of merit with the total voting we will post the article that heads his list, to reach him on Christmas morning.

"Christmas Presents" postcards must reach us not later than 20th December.

Miniature Railway System—

(Continued from page 337)

rail plan is more interesting than perhaps it appears, and if two separate trains are used many hours of fun and excitement may be obtained. The pieces required are:—Large radius—24 Curves (A2), 30 Straights (B1), Acute-angle Crossing (CA), Right-hand Points (PR2) and Left-hand Points (PL2). Small radius—11 Curves (A1), 12 Straights (B1), 4 Quarter Straights (B½), Acute-angle Crossing (CA), Right-hand Points (PR1) and Left-hand Points (PL1).

Fig. 11 shows a formation making use of the Double Symmetrical Points. This layout is useful for introducing some of the interesting accessories of the Hornby system. The splendidly-designed "Windsor" Station, for instance, may be placed outside the straight side of one of the ovals, a Brake Rail being substituted for one of the ordinary Straight Rails so as to bring the train to a standstill in the Station when so desired. The Station itself may be made to look very much more realistic by the use of some of the new Miniature Platform Accessories. The general effect of the layout is also greatly improved by the addition of the Footbridge or the Lattice Girder Bridge and the Tunnel.

The pieces required for constructing this layout are:—Large radius—20 Curves (A2), 15 Straights (B1), Double Symmetrical Points, right (DSR2) and Double Symmetrical Points, left (DSL2). Small Radius—8 Curves (A1), 12 Straights (B1), Double Symmetrical Points, right (DSR1) and Double Symmetrical Points, left (DSL1).

(To be continued)

A Narrow-Gauge Railway

Railways of all kinds are interesting, but there is something particularly fascinating about narrow gauge lines and their sturdy little locomotives, which haul with the greatest ease loads that appear far too big for them. A noteworthy example of a 15-inch gauge line is the Ravenglass and Eskdale Railway in West Cumberland, which not only carries a steady stream of passengers but also hauls coal, food, and other stores to the villages through which the line passes, besides conveying His Majesty's mails. In short, this infant line is thoroughly capable of earning its own living, and it has attained the dignity of having the times of its trains recorded in "Bradshaw." The story of the line is told in an interesting manner by Mr. Henry Greenly, A.L.L.O.C.E., in a booklet entitled "The Ravenglass and Eskdale Narrow Gauge Railway." This booklet may be had for sevenpence, post free, from the company's office at Ravenglass, Cumberland, and it is well worth the attention of all our readers who are interested in railway matters.

A Miniature Cycle

The miniature cycle appears to have come to stay, and already it has reached great constructional perfection. The "Smithfield Nibs" cycle produced by Messrs. Lintines, of Birmingham, an excellent example of this type of machine, is built on the lines of an ordinary full-sized bicycle, its frame being constructed of heavy gauge welded steel tubing. The wheels are genuine Westwood, and specially resilient cushion tyres are fitted. The bicycle also has ball-bearing rubber pedals, free wheel, raised handle bars with front pull-up brake, and mudguards. The plating and enamelling are of the best quality and the general appearance of the machine is very smart. Further particulars will be found in our advertisement pages.

For Your Xmas Party

It is often said that "seeing is believing," but we are strongly inclined to doubt the accuracy of this statement after looking through the catalogue of the Midland Magic Co., of 42, Stanley Road, Earlsdon, Coventry. Certainly anyone who masters even a tenth part of the tricks and illusions described in this catalogue will be able to mystify his friends to his heart's content. The tricks range from simple card tricks to a remarkable packet of tea that apparently travels from one paper bag to another and then suddenly transforms itself into an afternoon tea-set! Aspiring magicians would do well to write for this interesting catalogue, which will be sent for 2d. post free to all readers mentioning the "M.M."

How Air Traffic is Controlled—

(Continued from page 345)

one indicating a point of the compass. Each light is connected with one of a circle of contact studs beneath a wind vane. At the base of the vertical axis of the wind vane is a contact arm that moves over the studs, each of which occupies the same position in the circle as its corresponding lamp in the lamp circle. Each of the lamps is of a different colour, according to which point of the compass it represents, and the airman can tell, from the colour of the lamp that happens to be lit, which way the wind is blowing.

The aeroplanes themselves have red and green lights on their wing tips, the electric current for the lights and for the wireless apparatus being supplied by a wind-driven dynamo on the machine.

In order that the machines may land safely at night, brilliant searchlights and flares are used to illuminate the ground, and altogether the arrangements made for the safety of the pilots and their passengers are very complete.

H. ATKINS (Leatherhead).

Lives of Famous Engineers—

(Continued from page 325)

only emotion he felt was a strong desire to go to sleep!

Telford's First Bridge

Telford's duties as county surveyor included the building and repairing of bridges, and in this work his early experience at Langholm proved of the greatest value to him. He always maintained that in order to be a thorough judge of work a man must himself have been practically engaged in it, and he often expressed his satisfaction that he had been obliged to begin his career by working with his own hands. The first bridge designed and built under his supervision was a stone bridge across the Severn at Montford, four miles west of Shrewsbury. This consisted of four elliptical arches, one of 58 ft. span and two of 55 ft. each. The work was executed in red sandstone and the bridge proved a very serviceable part of the high road from Shrewsbury into North Wales.

This bridge was completed in 1792, and in the same year Telford prepared the design and superintended the construction of the new Parish Church of St. Mary Magdalen at Bridgenorth. He completed this church to the satisfaction of all concerned, but he felt that his knowledge of the best forms of church and other architecture was insufficient, and he therefore made a journey to London and many of the principal towns of the south and west of England, examining carefully the finest buildings in each.

NEXT MONTH:—

TELFORD AS CANAL-ENGINEER

DRAGLINE CONTEST

A large number of excellent entries have been received, and we hope to announce the result of this contest in our next issue. We shall illustrate some of the winning models.



FROM OUR READERS

This page is reserved for articles from our readers. Contributions not exceeding 500 words in length are invited on any subject of general interest. These should be written neatly on one side of the paper only, and they may be accompanied by photographs

or sketches for use as illustrations. Articles that are published will be paid for at our usual rates. Statements contained in articles submitted for this page are accepted as being sent in good faith, but the Editor takes no responsibility for their accuracy.

Facing the Microphone

A Sheffield Reader's Broadcasting Experience

My sister and I recently had the very interesting experience of broadcasting to the children from the Sheffield relay station. First of all we had tea with the various Aunties and Uncles, after which, just before 5.30, a general move was made to the studio. Here Uncle Herbert and his helpers held a conference, whilst we gazed with awe at an object rather like a large lathe chuck—the Microphone. Suddenly the door opened and Uncle Jim, the engineer, looked in to say that all was ready. These words seemed to charge the atmosphere with electricity, and the tension was not relieved until Uncle Herbert sent out his cheery "Hello, children!" into hundreds of homes. He told his young unseen audience of our visit, and of his intention to let us broadcast.

The various items of the programme were run off smoothly one after another until at last my sister's turn came. She was lifted on to a chair, and there she delivered a recitation which the small studio audience voted to be very good indeed. After Big Ben had sent his chimes booming out into the ether, my turn came. I was fixed in position and sent forth my song, after which it was my turn to be congratulated. For the rest of the evening we listened with delight to the various musical items.

At last, like all good things, the programme came to an end, and it was with rather reluctant steps that my sister and I set out on our mile walk home, where we found that our little performances had been heard on our home wireless receiver.



"Microphone" and his sister who broadcast from Sheffield recently

"MICROPHONE."

A Country Cottage Holiday

We had taken for three months an Anglesey cottage perched on high ground and giving a splendid view of the Menai Straits. In due course the opening day of the holidays arrived, but although it began fairly well, it developed into something that did not in the least resemble the sunshiney railway poster weather.

The journey as far as Bangor was made by train, crossing the Conway Tubular Bridge, and the views of the sea were fine. At Bangor, however, it began to rain. Outside the station we found waiting for us a bus which, to say the least, was peculiar. Its windows had long been broken, and the roof leaked in the middle and a stream of water descended with steady persistence. Notwithstanding the ominous appearance of the bus—I really longed for some Meccano to mend it with—a cheery set of holiday-makers soon filled the watery chariot. Some of the passengers displayed most surprising ingenuity in keeping out the rain, but we were all glad to reach Beaumaris and change into a drier wagonette which took us to Llandoed. The scenery on the way was very nice but distinctly damp-looking, and by the time we had climbed in pouring rain the steep hill that led to our cottage we were past caring whether there was any scenery or not!

The rain passed away, however, and we found the island very beautiful. We greatly enjoyed our daily quarter-mile walk down the hill with empty cans to fetch our water supplies, but the

return journey, with full cans which got heavier every minute, did not seem to arouse quite as much enthusiasm!

For three weeks we never saw a railway, and did not want to see one anyhow, and on the whole our cottage holiday was one of the most delightful we have ever spent. WALTER FREEMAN (Bridgend).

How Air Traffic is Controlled

We are all familiar with the white-gloved policemen who stand at the busiest crossings in large towns to control and direct the various streams of traffic in such a manner that confusion is avoided and the danger of collision reduced to the absolute minimum. It is equally important that the air traffic at a great aerodrome such as Croydon should be controlled, otherwise very serious collisions might happen.

For the most part aircraft are directed by wireless, the wave-length used being 900 metres. The wireless traffic-controller at Croydon has to be a good linguist, for this aerodrome is the junction for the

Continental air lines, which include French, German, Belgian and Danish aircraft. The pilots give their positions at intervals by wireless, and these are marked on a map so that the progress of all the air liners flying on the various routes is always accurately known. Incidentally these maps are also used to work out positions of fog-bound machines from the wireless direction-finders.

In-coming and out-going machines are directed in a very interesting manner. The traffic-controller stands on an observation tower consisting of a great white cone of concrete, round the top of which

is a ring of flood-lights illuminating the cone and rendering it very conspicuous. The controller uses a powerful hand searchlight of 70,000 candle-power which throws a beam of light so intense and concentrated that it can be seen plainly in full daylight. With it the controller signals in Morse.

In the daytime the direction of the wind is indicated for landing purposes by a curious cone-shaped flag like a butterfly net. At night the wind's direction is indicated in a very ingenious manner. There is a dial of electric lights, each

(Continued on page 344)

HORNBY TANK LOCOS



HORNBY No. 1 TANK LOCO

Strong and durable loco capable of any amount of hard work; richly enamelled and highly finished; fitted with reversing gear, brake and governor.

Gauge 0, in colours to represent L.M.S. or L.N.E.R. Companies' Locos 12/6



HORNBY No. 2 TANK LOCO

Powerful model embodying all the characteristics of the Hornby series. It is 11½" in length and is fitted at both ends with a four-wheeled bogey. Beautifully finished in colours; lettered L.M.S. or L.N.E.R., with reversing gear, brake and governor. Suitable for 2 ft. radius rails only. Price ... 30/-

FROM ALL MECCANO DEALERS

THE NEW PHOTOGRAPHER

FULLY ILLUSTRATED. 2P

EVERY MONDAY

The Up-to-date Weekly Journal for all Photographers

Interesting Articles
Helpful Criticisms
The Best Pictures

Graded Competitions to suit All Workers

We Teach Photography

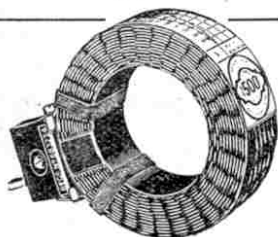
Write for a Free Specimen Copy to—

The New Photographer Ltd.,

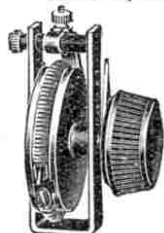
Distribution Department,

41, North John Street, LIVERPOOL.

The efficiency of your radio set —depends upon its components



IGRANIC Honeycomb Coil
The qualities of ideal inductance are found to perfection in these coils—20 sizes to cover wavelength ranges of 100 to 25,000 metres. Prices vary with sizes



IGRANIC Filament Rheostat
A splendid instrument for filament control under all conditions. Prices: Plain 4/6; Vernier, 7/-



All the care which you devote to the building of your set is so much waste of time and of money if you use components which merely serve the purpose but fail to give the results for which you aim. Be guided by the makers who build the finest "made-up" sets the world produces—and build your set of the same components which they use—you will find they invariably use



IGRANIC Radio Devices include: Variometers, Vario-couplers, Bi-plug Coilholders, Tri-plug Coilholders, Battery Potentiometers, Vernier Friction Pencils, etc., etc. All carry a six months' guarantee.

They are obtainable of all reputable dealers.

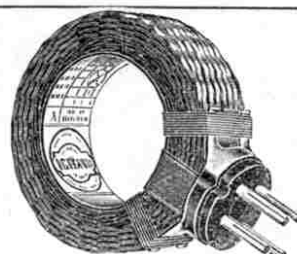
Write us for List Z.254

IGRANIC ELECTRIC CO. LTD.
149, Queen Victoria Street, London

Works: Elstow Road, BEDFORD

Glasgow: 50, Wellington St.
Manchester: 30, Cross St.
Birmingham: 73-74, Exchange Buildings.

Bradford: 18, Woodview Terrace.
Newcastle: 90, Pilgrim St.
Cardiff: Western Mail Bldgs.



IGRANIC H. F. Transformer
For extremely efficient high-frequency coupling these transformers are ideal. Prices: 8/- 9/6 11/- 12/6



IGRANIC L. F. Transformer
Noted for distortionless reproduction of speech and music. Prices: Shrouded, 21/-; Open, 20/-



Competition Corner

THIRD COMPETITION

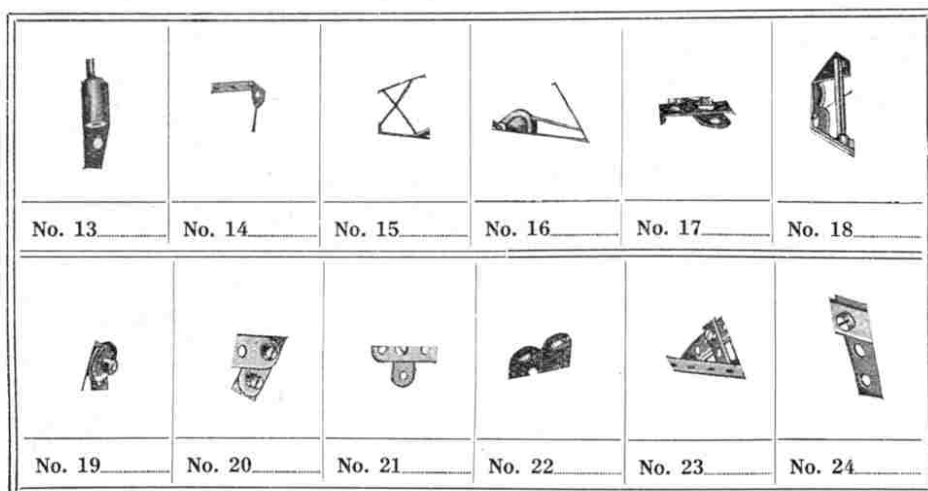
For Lynx-Eyed Readers

FIRST PRIZE: Hornby No. 2 Pullman Set. SECOND PRIZE: Meccano No. 1 Radio Receiver.

THIRD PRIZE: Pair Meccano Headphones.

CONSOLATION PRIZES: 12 Meccano Writing Pads;
12 Meccano New Complete Manuals (1924).

SECOND SET*



*It should be clearly understood that competitors will not be required to tear out the pages containing the Puzzle Pictures. The dotted lines are provided for the competitors' convenience only. All entries must be sent on post-cards.

INSTRUCTIONS FOR COMPETITORS:

This month we publish the second set of Puzzle Pictures in the Third Competition for Lynx-Eyed Readers. Every part illustrated has been taken from a model in the 0-3 Manual (Nos. 23 or 24), and though some of them will certainly be difficult to place, Meccano boys are well known for their perseverance and powers of observation.

As in the last contest of this character, there will be three sets of 12 pictures published, making 36 in all, and competitors are required to attempt all three sets to qualify for a prize. The final set will be published in the Christmas number, when directions for sending in the entries will also be given. No entries are to be sent in until the last set has appeared.

A full list of the splendid prizes offered in this contest is given above, and the First Prize will be awarded to the competitor who sends in an entry containing the correct numbers of all the models from which the pictures have been taken. In the event of two or more competitors sending in correct entries, neatness of writing will be considered and the prizes awarded in order of merit. If no competitor succeeds in correctly numbering all the pictures, the prize-winners will be those whose entries are most nearly correct.

New readers may obtain copies of the October "M.M." containing the first set of Puzzle Pictures on application to the Editor, at the price of 3d. each, post free.

New Essay Competition

In connection with the series of articles on "How to Run a Miniature Railway System" that commenced in last month's issue, we are announcing this month a new Essay Competition, the subject being

"HOW I WOULD PLAN A HORNBY RAILWAY."

This Competition offers a splendid opportunity to all readers who are interested in miniature railways. The idea is this. Imagine you have at your disposal the whole range of Hornby Locomotives, Wagons, Rails, Points and Crossings, Bridges, Signals, etc. Then plan the most interesting and railway-like layout you can think of and decide how you would operate it—how many trains you would run, what your signalling arrangements would be, how you would carry out shunting operations, and so on. Having made up your mind on all these points, just write out a clear and straightforward description of your scheme, illustrating it by sketches wherever possible.

The competition will be divided into two sections—(A) for those of 16 and over, and (B) for those under 16, and there will be two prizes in each section. Section (A)—First Prize: Meccano goods to the value of £2 2s. 0d., to be selected by the winner from our catalogue. Second Prize: Meccano goods to the value of £1 1s. 0d. Section (B)—First Prize: Meccano goods to the value of £1 1s. 0d. Second Prize: Meccano goods to the value of 10s. 6d.

Essays must not exceed 1,000 words in length and must be neatly written on one side of the paper only, with the competitor's name, address and age on the back of each sheet. Closing date: 30th November. There will be an Overseas section of this competition. The closing date is 28th February, 1925, with special prizes, the value of which will be determined by the number of Overseas entries.

Result of Ninth Photographic Contest

Judging by the number of entries in this competition, Meccano boys have been well represented at the Wembley Exhibition. Photographs were received from all parts of the country and many of them were surprisingly successful snaps. Owing to the many high structures and their prevailing white colouring the Exhibition is far from being an ideal subject for the amateur photographer, but the high standard of the entries shows that Meccano boys can be experts in hobbies other than model-building. The Amusement Park was perhaps the most "snapped" part of the Exhibition, and many good photos of "Jack and Jill," the "Safety Racer," the "Switchback" and the "Witching Waves" were received. The Lake and the Palace of Industry were also favourites, a particularly fine night exposure of the former being submitted showing the many fairy lights.

The Competition was divided into two sections—(A) for readers of 14 years of age and under, (B) for readers over 14. In section A the winner of the first prize of Meccano goods to the value of £1 1s. 0d. is H. Tsumura, of Hampstead, London. Pairs of Meccano Double Headphones have been awarded to D. Schofield, of Lincoln and B. Elenor, of York, second and third prize-winners respectively.

The first prize in section B (Meccano goods to the value of £1 1s. 0d.) has been won by E. Muir, of Birkenhead, and the second and third prize-winners are F. Dore, of Northwich, and Derrick H. Webb, of King's Lynn, to whom Meccano Crystal Radio Sets have been despatched.

Result of Wembley Essay Competition

When choosing the subject for the Wembley Essay contest some months ago I endeavoured to forecast which section of the Exhibition would prove the most popular with Meccano boys. Apparently my final choice of the Palace of Engineering was correct, for one reader commenced his description of the Palace with the words "most superb, truly realistic, really magnificent and superlatively exquisite"—all in one sentence! Many other entrants were equally enthusiastic, though perhaps not quite so expressive, and there are certainly many budding authors among readers of the "M.M." The 1,000 word limit gave competitors plenty of scope to describe the exhibits which most appealed to them, and it was a difficult task to decide who was to receive the cheque for one guinea. Frederick W. Morgan, of Calne, Wilts., was finally chosen as the winner of the contest, and we congratulate him on his very clever essay. Four film-pack cameras were also offered as consolation prizes, and these have been awarded to George Rodwell, of Halifax, A. G. Mockford, of Hailsham, M. Kaye, of Morecambe, and Miss Diana Meek, of London, who all submitted splendid essays.

Result of Cycle Essay Contest

Memories of summer days and long light evenings, were revived again in reading through the many entries received in our second Cycle Essay Contest. The subject was "My Most Enjoyable Cycle Outing," and every entrant seems to have been blessed with ideal weather throughout his journey, only one competitor admitting that it poured with rain all day!

The best essay received was that submitted by Walter Freeman, of Bridgend, Glamorgan, who described a day's tour with a friend in the Vale of Glamorgan.

The prize offered in this contest was a supply of puncture-sealing solution, to be chosen from an advertiser in the "M.M." The winner has therefore been forwarded a tin of Fibermatic Puncture Seal, and we trust that in future he will be able to continue his country rides undisturbed by such mundane troubles, as punctures.

The Meccano Guild

A Fellowship of Meccano Boys

EVERY Meccano boy should be a member of the Meccano Guild, the primary object of which is to bring together Meccano boys all over the world and to help them to get the very best out of life. The Meccano Guild is an organisation for boys, started at the request of boys, and conducted as far as possible by boys. All who have studied its objects must agree that the Guild cannot fail to have a profound effect for good on the lives of its members. By joining the Guild a Meccano boy becomes a member of a great brotherhood of world-wide extent.

HOW THE GUILD COMMENCED

More than a million boys in Great Britain derive their greatest indoor pleasure from Meccano. Before the Guild was formed, hundreds of these Meccano boys wrote to us every week. They told us how they wished they could be put into communication with other Meccano boys and how they longed to be able to meet them. They asked if arrangements could be made so that their wishes might become an accomplished fact.

We responded to their repeated and increasingly numerous appeals, and as a result the Meccano Guild came into being. The Headquarters of the Guild are at the Head Office of the Meccano Works in Liverpool. At the head—guiding and controlling, and taking a personal interest in this great movement—is the President, Mr. Frank Hornby, Inventor of Meccano and Managing Director of Meccano Limited.



BADGE OF
MEMBERSHIP

MECCANO CLUBS

Meccano Clubs are founded and established by enthusiastic Meccano boys under the guidance of the Guild Secretary at Headquarters. At the present time there are over 100 active clubs in various towns and villages in this country, as well as many clubs Overseas and in foreign countries. Each club has its Leader, Secretary, Treasurer and other Officials, all of whom, with the exception of the Leader, are boys. If the nearest club to you is too far away for you to join, or if you are unable to join for any other reason, consider the possibility of forming a new club in your own district.

A special booklet explaining how a Meccano Club is started and conducted is being published shortly, and this will help you to form your own club. A copy will be sent free as soon as the booklet is ready, and your name will be listed for this purpose if you apply to Headquarters.

OBJECTS

OF THE

MECCANO GUILD

1. To make every boy's life brighter and happier.
2. To foster clean-mindedness, truthfulness, ambition and initiative in boys.
3. To encourage boys in the pursuit of their studies and hobbies, and especially in the development of their knowledge of mechanical and engineering principles.



SPECIAL MERIT MEDALLION
(About half actual size)



RECRUITING
MEDALLION

THE GUILD RECRUITING CAMPAIGN

Every Meccano boy should become a member of the Guild and do his utmost to help to make the objects of the Guild widely known. With this end in view, a special medallion (illustrated on this page) is presented to each member of the Guild who obtains three new recruits. As a mark of further merit the medallion is engraved with the name of the recipient and with the words "Special Award" when six more members are recruited. Full particulars of the Recruiting Campaign, together with a supply of application forms, will be sent on request.

THE CORRESPONDENCE CLUB

Members of the Guild are able to join the Correspondence Club, by which they are placed in communication with other Guild members in some other part of the country or abroad. To those boys who are interested in foreign languages the Correspondence Club presents a splendid opportunity of obtaining a correspondent in the particular country in the language of which they are interested. They are able to write to a Meccano boy in his native language, and as he would probably reply in English, the correspondence will be of mutual benefit. Stamp collectors also find the Club of value, as they are enabled to exchange stamps with their correspondents. Full particulars and enrolment form will be sent on application.

AFFILIATION WITH THE GUILD

When a Meccano Club has been successfully launched and good progress is being made, affiliation with the Guild is granted. A beautiful club certificate, suitable for framing and hanging in the club-room, is presented, and the club becomes entitled to such privileges as the loan of interesting lectures and club membership cards. Members are also eligible for the Merit Medallion (illustrated on this page) which is awarded to members who display special ability in connection with club work.

HOW TO BECOME A MEMBER

Membership of the Guild is open to every boy possessing a Meccano Outfit, or Hornby Train Set, who satisfactorily fills in the prescribed application form. The only conditions are that members promise to observe the objects of the Guild and to wear their badges on all possible occasions.

The price of the Guild membership badge is 7d. (post free) and stamps for this amount should be sent along with the form of application. The Guild badge is beautifully enamelled in blue and white and is made for wearing in the lapel of the coat. Any boy wearing the Guild badge is at once recognised by other Meccano boys as being a member of the Guild and one who has undertaken to live a clean, truthful, and upright life.

In addition to the badge, each member receives a membership certificate, measuring 7" x 9½". This certificate is printed in orange and sepia and is a smaller edition of the large club certificate.

Write to the Secretary of the Meccano Guild, Binns Road, Liverpool, asking for an application form and full particulars. Then fill in the form and return it to Headquarters, when you will be enrolled and your badge and certificate will be sent to you. Write to-day, and put M.O. after your name for reference.



THE MECCANO GUILD
CERTIFICATE



The Secretary's Notes

By the time these Notes are published a large number of Meccano Clubs will have commenced preparations for their annual Exhibition, Social or Concert. Activities of this character should be included in every club syllabus, for they are the best possible means of making the club well known in the district and of increasing the number of members. The end of the present month, or the first week in December, have always proved the most suitable times of the year for holding these Exhibitions. Members then have sufficient time in which to build their models and arrange side-shows and competitions, while if a concert-party is being formed there is sufficient opportunity for the necessary rehearsals. The date and time of the event, if it is to be open to the general public, should be made known in the district by advertisements in the local newspaper and in Meccano dealers' windows. If club funds permit, the programme should be printed and included in the cost of admission, which should always be kept as low as possible. It is important, too, to remember the question of Entertainment Tax.

Exhibitions and Concerts

Since the opening of the First Winter Session, Meccano Clubs in London and the suburbs have been having a very busy time. On a recent evening I was able to meet the Leaders and Secretaries of London Clubs, when we had an enjoyable chat on the prospects and problems of the various clubs. I was greatly impressed by the enthusiasm shown by the London Clubs, and although some of them have decided advantages over clubs in the provinces, they encounter many difficulties that are peculiar to London alone. For instance, in such a large area the members often have to come a considerable distance to the meetings. Then again, London Clubs cannot organise out-door activities because of the difficulty of finding playing fields. There are many other problems, too, with which the Leaders of the London Clubs are faced, but they grapple successfully with their difficulties and the result is an increased enthusiasm for Meccano and club work. At the Leaders' Meeting several interesting suggestions were made, and these I hope to deal with from time to time on this page as opportunity arises. Not the least interesting was one from Mr. Grosvenor, that Esperanto should be introduced into the Correspondence Club. I shall have something further to say on this matter in the near future.

Our London Clubs

Meccano Clubs in London and the suburbs have been having a very busy time. On a recent evening I was able to meet the Leaders and Secretaries of London Clubs, when we had an enjoyable chat on the prospects and problems of the various clubs. I was greatly impressed by the enthusiasm shown by the London Clubs, and although some of them have decided advantages over clubs in the provinces, they encounter many difficulties that are peculiar to London alone. For instance, in such a large area the members often have to come a considerable distance to the meetings. Then again, London Clubs cannot organise out-door activities because of the difficulty of finding playing fields. There are many other problems, too, with which the Leaders of the London Clubs are faced, but they grapple successfully with their difficulties and the result is an increased enthusiasm for Meccano and club work. At the Leaders' Meeting several interesting suggestions were made, and these I hope to deal with from time to time on this page as opportunity arises. Not the least interesting was one from Mr. Grosvenor, that Esperanto should be introduced into the Correspondence Club. I shall have something further to say on this matter in the near future.

A South African Club's Progress

Meccano Cycling Sections have long proved popular branches of club activities both at home and abroad. One of the first Overseas clubs to form a Cyclists' Section was the Malvern (Johannesburg) Meccano Club of South Africa, whose team of riders is shown in the accompanying photograph. The occasion was the Second Annual Sports held by the club, and a 15-miles cycle race was one of the chief events of the day. In spite of the fact that it rained heavily throughout the race the members put up an excellent performance, the winner completing the course in very good time.

Mr. Sykes, the Club Leader, believes that public displays and meetings of this character are of the greatest value to



Meccano clubs in making their existence more widely known and in securing new members. This has certainly been the case with the Malvern Club, which, started in January 1920 and affiliated in December 1921, now has an active membership of 34, while numerous new applications have been made since the opening of the present session. We congratulate our South African friends on the progress of their well-established club and also on the very creditable performance of their cyclist members.

Last month the Sixth Annual Exhibition of the Holy Trinity Club was held at Islington and lasted for two days. This proved a great success, and the striking display of models and Hornby trains attracted a large number of Guild members. Then the St. Mary's Club, the world's largest Meccano Club, are holding their Exhibition on the 19th of this month, and a good display is assured. While in London I took the opportunity of looking-in at St. Mary's, and on club night found the club hard at work preparing for their Exhibition. The club is fortunate in having splendid accommodation and a recently-commenced Fretwork Section, although at present only small, has some very enthusiastic members. The section shows great promise, especially in the making of saleable articles for Exhibitions and the like. This is a point that might well be considered by other clubs, for club funds often may be augmented by the sale of fretwork novelties—a scheme not practicable, of course, in Meccano model-building!

Exhibitions Past and Future

I often receive letters from Meccano boys in the Colonies and in foreign countries who wish to join the Guild, but do not know how to send the necessary remittance for their badge. They usually think that foreign or Colonial stamps are of no value in England, but this is not the case, and remittance may always be made by postage stamps or money orders. Meccano boys in South Africa, Australia and New Zealand wishing

For Overseas Readers

to join the Guild should apply to the Meccano agents in those countries for an application form and full particulars. The form should then be filled in and posted to these Headquarters in Liverpool with the necessary remittance. In Canada badges and forms may be obtained direct from our Canadian office. The full names and addresses of these agencies are given in column 3 on page 368. Readers in India and foreign countries should write for information and forms direct to the Guild Secretary, Binns Road, Liverpool, England.

It has now been decided that in future members abroad will be required to pay postage on their badges. The price of the badge remains at 7d. as hitherto, to which must be added 5d. for registered postage, making 1/- in all. Orders for badges received at Headquarters before the 31st December will be executed at 7d. (post free) as before.

Price of Badge Abroad

London Guild Exhibition

An Exhibition by the St. Mary's (Newington Butts) Meccano Club has been arranged for Wednesday, 19th November. It will be held at St. Mary's Schools, Newington Butts, London, S.E.11, commencing at 7.30 p.m. Admission will be by ticket, which may be obtained (free of charge), together with full particulars, from the Leader, Mr. G. Treves, 207, Newington Butts, S.E.11, or from the Secretary, Mr. C. A. E. Curle, 37, Pullen's Flats, Peacock Street, S.E.11. We hope that all Meccano boys in London will take this opportunity of visiting the world's largest Meccano Club where they will be assured of a cordial welcome.



CLUB NOTES

Blackpool M.C.—The first meeting was held at the end of September, when the various club officers were elected by vote. A new rule by which all club members must be enrolled in the Meccano Guild was also introduced, approved and passed by the Committee. The club programme for the present session includes papers by a number of members, model-building evenings and a lecture on the Isle of Man by the Club Leader. Club roll: 24. *Secretary*: Master J. Fraser, 10, Clifton Street, Watson's Lane, South Shore, Blackpool, Lancs.

Luton M.C.—Activities are now in full swing and it is proposed to organise a Cycling Club and Football Team in the near future. An interesting syllabus has been arranged and wireless evenings will be one of the features of the session, which closes on 17th December with a social evening. Club roll: 26. *Secretary*: Master L. Goldsmith, 69, Tennyson Road, Luton, Beds.

Barnetby (St. Barnabas) M.C.—Owing to the departure of Mr. Percival for Africa, Mr. Watson has kindly agreed to accept the position of Club Leader. The present session recently commenced with an enjoyable social. Woodwork and Botany have been included in the programme, and preparations are now being made for a Grand Exhibition to be held at Christmas time. This exhibition, the *Secretary* modestly states, will be "something like Wembley!" Club roll: 29. *Secretary*: Master R. H. Ward, Laurel Villas, Victoria Road, Barnetby, Lincs.

Victoria (Glasgow) M.C.—Recommended activities in the middle of September last and the attendance and general enthusiasm of members indicate another successful session. Unfortunately, Master Ian Kerr, the popular Club *Secretary*, has had to resign his duties on account of school work, but will nevertheless attend club meetings as often as possible. Model-building, lectures and debates figure in the club programme, and a social or exhibition may possibly be held towards the end of the year. Club roll: 47. *Secretary*: Master Thomas Calderwood, 63, George Street, Whiteinch, Glasgow.

Boston Model-Making M.C.—The club is now settled in its new hall, which is a great improvement on the old meeting-place. A Whist Drive and Dance was held on the 14th of last month and a report of this will be published later. It is hoped to instal a three-valve wireless set in the near future, as all the members are keenly interested in radio. Engineering lectures illustrated by cinematograph films and speed competitions in Meccano model-building will be held during the course of the session, and it is intended to make the club "one of the very best going." Club roll: 30. *Secretary*: Master R. Robinson, 30, Woodville Road, Boston, Lincs.

Redruth M.C.—Has held meetings throughout the summer months and commenced the new session early last month. It is proposed to have Model Building, Meccano Competitions and Lectures on alternative evenings, and an Exhibition is being planned for Christmas. Members are keen on securing Recruiting Medallions, and several new recruits to the club are expected very shortly. Club roll: 36. *Secretary*: Master L. Trenberth, Tunnel Stores, Redruth, Cornwall.

St. Mary's (Newington Butts) M.C.—There was a very good attendance at the re-opening of the club in September and several new members joined the Fretwork Section. Two club nights are held each week owing to the large membership, and several novel competitions have been arranged for the present session. These include the building of "Models of Engineering Apparatus seen at Wembley"; "Articles in connection with current club lectures"; "Inventors' Competitions" in which members are to construct original models, prizes being awarded for the best efforts; "Models from the Meccano Manual built from memory"; and "Improvements on Manual models." At present the club is busily engaged in making preparations for its coming exhibition, full particulars of which appear on page 349. Club roll: 103. *Secretary*: Mr. C. Curle, 37, Pullen's Buildings, Peacock Street, London, S.E.11.

South Africa

Simonstown Meccano and Wireless Club.—Meetings are now held fortnightly and many new recruits continue to join on club nights. The club Wireless room will shortly be finished and members are keenly anticipating the event. The programme arranged for the next three months, features lectures on "Mining," "Diving" and "Locomotives," which will be given by local gentlemen, and outings to neighbouring places of interest have also been arranged. Club roll: 24. *Secretary*: Mr. B. G. Randall, Municipal Office, Simonstown, S. Africa.

Malvern M.C.—The report for the past session shows a membership of 31, with an average attendance of 85%. The club has been divided into three sections:—Rambles, Rovers, and Rangers. Marks are given for club work, etc., and the section holding the highest number of marks holds the Club Shield for the session. An Honorary Members' Club for boys who cannot attend on club nights is proving very successful. Honorary members pay half subscription fees and are allowed to take part in any sports, etc., of the club. A 15-mile cycle race was held recently and provided an exciting finish. Club roll: 31. *Secretary*: Master C. Gunnell, 177, St. Frusquin Street, Malvern, Johannesburg, South Africa.

India

Calcutta M.C.—The Club Leader, who was recently indisposed, is now fit again and directing club activities. These include model-building contests and preparations for a Variety Entertainment to be held at Christmas. The funds obtained will be devoted to the purchase of a wireless set for club use. The club-room has recently been decorated with Meccano posters and streamers and now presents a very cheerful and attractive appearance. Club roll: 32. *Secretary*: Master A. N. Roy Chowdhry, 35, Beadon Street, Calcutta, India.

Australia

Footscray M.C.—One evening each month is devoted to business discussions and the arrangement of the following month's programme. A recent important occasion was the opening of a Club Bank account with a first deposit of £2 15s. 0d. A games night is held every quarter when members play for the club championship in draughts, chess and cards, and this is an exceedingly popular event. Wireless is a recent addition to club activities and new circuits and apparatus are tested on radio evenings. Members recently succeeded in exchanging signals over a quarter of a mile distance and further experiments are being made. A club banquet was held at the close of the last session, when Mr. Harry Roach, the energetic Club *Secretary*, and his brother tendered their resignations on account of their pending departure from the district. Mr. Roach's valuable services will be greatly missed by the club and all members wished the two brothers every success in the future. *Secretary*: Master Richard Hartwell, Leeds Street, Footscray, Victoria, Australia.

Clubs not yet Affiliated

Windsor M.C.—A gentleman has now kindly offered to take over the Leadership, and Club Sports held recently were greatly enjoyed. Present membership: 12. Guild members wishing to join should communicate with the *Secretary*: Master K. Greenwood, 83, Victor Road, Windsor.

Rosyth M.C.—Will very shortly be affiliated with the Guild, as good progress continues to be made. Members recently enjoyed an outing to Aberdour, a seaside resort some few miles distant. The Winter Session is now in full swing, and Meccano boys near Rosyth are invited to obtain full particulars of the club from the *Secretary*: Master Edward Hunter, 79, Admiralty Road, Rosyth, Scotland.

Keynsham M.C.—Has now succeeded in finding a club-room owing to the kindness of a local gentleman in offering the use of a room in his house. Several enjoyable meetings have already been held and members are keen on model-building and fretwork. Recent lectures by the Club Leader included talks on "How an Aeroplane is Made" and "The Working of a Motor-cycle Engine." Application for affiliation with the Guild will be made very shortly as there is every indication of a successful club being established. Club roll: 12. *Leader*: Mr. R. Lea, 2, The Avenue, Keynsham, Somerset.

Children's (Delhi) M.C.—Many new members have recently joined, both adults and children, and club nights are invariably well attended. A well-printed and edited club magazine, "The Children's News" is published monthly and has a considerable circulation outside the club circle. The new session recently commenced and model-building, lectures, outdoor games and scouting comprise the chief activities of the club. *Secretary*: Master R. Raman, Children's Meccano Club, Charkhe Walan, D-11, India.

Proposed Clubs

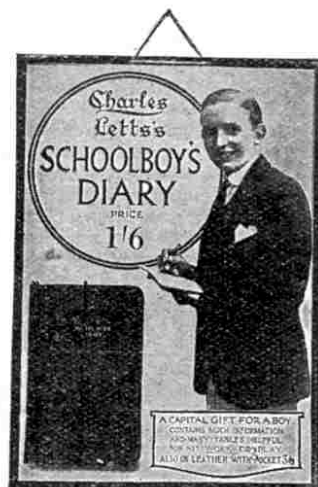
Dulwich M.C.—Master Henry Briant, of 140, Dunstan Road, East Dulwich, London, S.E.22, is endeavouring to form a club, and would be very pleased to hear from any Meccano boy who would like to join. An adult Club Leader and a suitable club-room are also needed.

Liverpool M.C.—Efforts are being made to found a club in Liverpool, and those boys interested are asked to write to-day to Master G. Alexander, of 14, Falkner Street, Liverpool. There is every possibility of this club succeeding if Meccano boys in Liverpool will co-operate and arrange a meeting.

Sheffield M.C.—It is hoped to shortly establish a Meccano Club in this city, and the search for a Club Leader and room are occupying the attention of the organisers. New members should get into touch with Master A. Pether, 116, Hill Street, Sheffield.

The Ideal Present

Charles Letts's SCHOOLBOY'S DIARY for 1925



This invaluable book contains, in addition to a complete Diary, a mine of helpful and necessary information, beautiful pictures, special pages for recording sports results, pocket money, time tables, marks, notes, matches and scores, etc.

A delight and a boon to any schoolboy, and a present which will last a whole year.

How many times are you asked
WHAT DO YOU WANT
FOR CHRISTMAS?

The answer, of course, is

Charles Letts's
SCHOOLBOY'S DIARY.

Price:

In leather cloth and pencil,
ONE SHILLING AND SIXPENCE;

In fine quality leather with pockets and pencil,
THREE SHILLINGS.

Size 5½ × 3½ inches.

OF ALL

Stationers and Booksellers.

How to Run a Meccano Club

by the
Guild Secretary

(Continued)

Club Leaders should be on their guard against allowing the winter programme of their club to become too serious and strenuous. For instance, it is not wise to arrange the programme for each club night so that the whole time is fully occupied with work. It is far better to aim at finishing work a little while before the time for closing, devoting the remaining period to some kind of game. It does not matter very much what the game is, so long as it is a good one and played in the right spirit, and the effect will be to make every member of the club leave in a thoroughly good humour as the result of a few minutes of light-hearted fun.

Football Clubs

Another important point is the establishment of a Football Club. Provided a Meccano Club has sufficient members there should be little difficulty about this, as most boys are naturally keen on the game. The only trouble that is likely to arise is in regard to arranging sufficient matches. Probably the best way of dealing with this problem is to insert a small advertisement in the local paper, stating the strength of the club and inviting fixtures with other local clubs. The Secretary of the local Y.M.C.A. also can be of great service, and as a rule he is not only able but willing to put a Meccano Football Club in communication with other clubs.

It has been suggested on several occasions that a Meccano Football League should be instituted and a Challenge Cup offered to the winning team. While this suggestion is one that we hope to be able to adopt at some time in the future, there are several difficulties in the way at present, chief of these being the question of distance. In the majority of cases the Meccano Clubs are so far apart that the journey for the visiting team would be far too long and expensive an undertaking. As new clubs are being formed almost every month, however, this obstacle will eventually be overcome, and then it will be possible to establish a Meccano Football League. In the meantime every opportunity should be taken of arranging inter-club matches in districts where there are several clubs within easy distance of one another.

Club Funds

This is an all-important question that requires serious consideration, and it is regrettable that it has been the cause of the breaking-up of several clubs, entirely as the result of bad financial management. The Club Leader should be asked to act as treasurer, and in this capacity to take complete control of the expenditure. Members' weekly subscriptions may prove insufficient to pay expenses, but it is sincerely hoped that clubs will not resort to charity. Without exception, Meccano Clubs—when well managed—have always paid their way very handsomely. In addition to providing for their own needs they have often helped with great success at bazaars and sales of work in aid of the funds of some religious or charitable organisation. A club can earn quite a respectable income if all its members pull

together and are under the guidance of a keen and reliable Leader.

It has been proved many times that a good Concert or Exhibition, provided it is well organised, will produce ample club funds. First of all experience should be gained through one or two small Concerts, and then a more ambitious Concert and

Meccano Club Leaders

No. 17. Mr. G. TREVES



As Leader of the largest Meccano Club in the world, it must afford Mr. Treves considerable interest to look back on the early days of the St. Mary's (Newington Butts) Meccano Club. In December 1920 he first became interested in the formation of a club, and it is typical of his ability and energy that two months later the club was affiliated with the Guild, its title at that time being the St. Mary-with-St. Gabriel Meccano Club. The membership in April 1921 was 47, and since then the club has continued to grow and prosper.

In July 1923 it was decided to alter the club's name to the St. Mary's (Newington Butts) Meccano Club, and owing to the steadily increasing membership, Photographic, Fretwork and Radio sections were organised. In May of this year, with a roll of 103 members, the club became the largest in the world, and has successfully kept this position up to the present, though closely followed by a leading South African Club. The club has always taken a prominent part in Guild activities in London, has assisted in four very successful Annual Exhibitions and was also well represented at recent Guild Rallies.

A club magazine, "The St. Mary's Meccano Monthly," was started in March 1922 and was at first duplicated, but is now excellently printed and edited by Mr. Treves.

The record of the St. Mary's (Newington Butts) M.C. which, starting with only nine members, is now the premier Guild Club, presents a striking example of what can be accomplished by unflagging enthusiasm allied with genuine ability. Guild members the world over will join Headquarters in heartily congratulating Mr. Treves on a very fine achievement and in wishing him every success in the future.

Demonstration may be organised. In large towns it is frequently a good thing for two or more clubs to take part in a combined Concert, and in this case the funds raised must be divided equally among the clubs concerned. Concerts are generally most successful if they are held during the winter months.

Small Concerts or Exhibitions may be held in the club-room, parents and friends being invited to attend. If thought

desirable, a small charge for admission may be made for the benefit of the club funds. Prizes may be awarded for the best models and, if possible, the results should be announced in the local papers. Additional funds may be raised by running various side-shows, such as different kinds of Building Competitions, Guessing Competitions, Automatic Working Models and the ever-popular Meccanograph design-making.

Concerts at Ends of Sessions

A combined effort should be made by club officials and members to promote a successful Concert on as large a scale as possible at the end of each winter session, and the Club Leader can give very valuable advice in the selection of the items and in organising the event generally and making it run smoothly. It is of the greatest importance, however, to ensure that the programme is entirely composed of really good items. If possible, a larger room than the ordinary club-room should be obtained for such a Concert, and the event should be sufficiently advertised in the local papers.

Often a local shopkeeper is very glad to have exhibition models loaned to him or built specially for display in his windows, and in return for this assistance he may offer to present a prize for some club competition. Boys undoubtedly appreciate and are encouraged by the display of their efforts in this way.

Encouraging Visitors

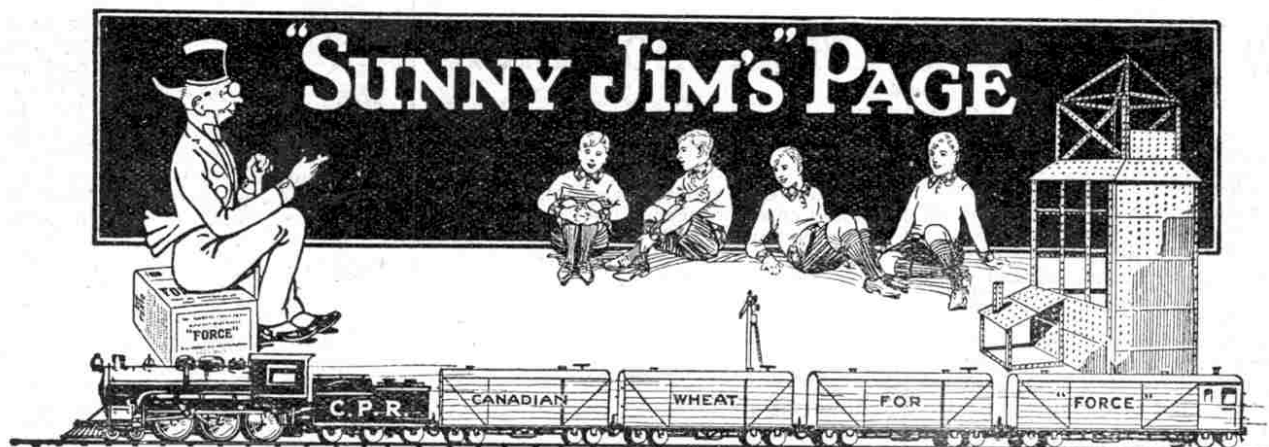
Both Exhibitions and Concerts serve the valuable purpose of gaining the interest of parents and friends in the doings of the club. Visitors to the club should be encouraged, for they will quickly realise that the boys are worthily occupied and that influences are at work which must bring out the best in a boy's nature and exert a beneficial effect on his character. Visitors learn to approve of the objects of the Meccano Guild, and by encouraging the boys to more active participation in Guild work they help to ensure the success of the Club Leader's efforts. For these reasons it is very desirable that the work and aims of the club should be brought under outside observation as much as possible.

Guild Correspondence Club

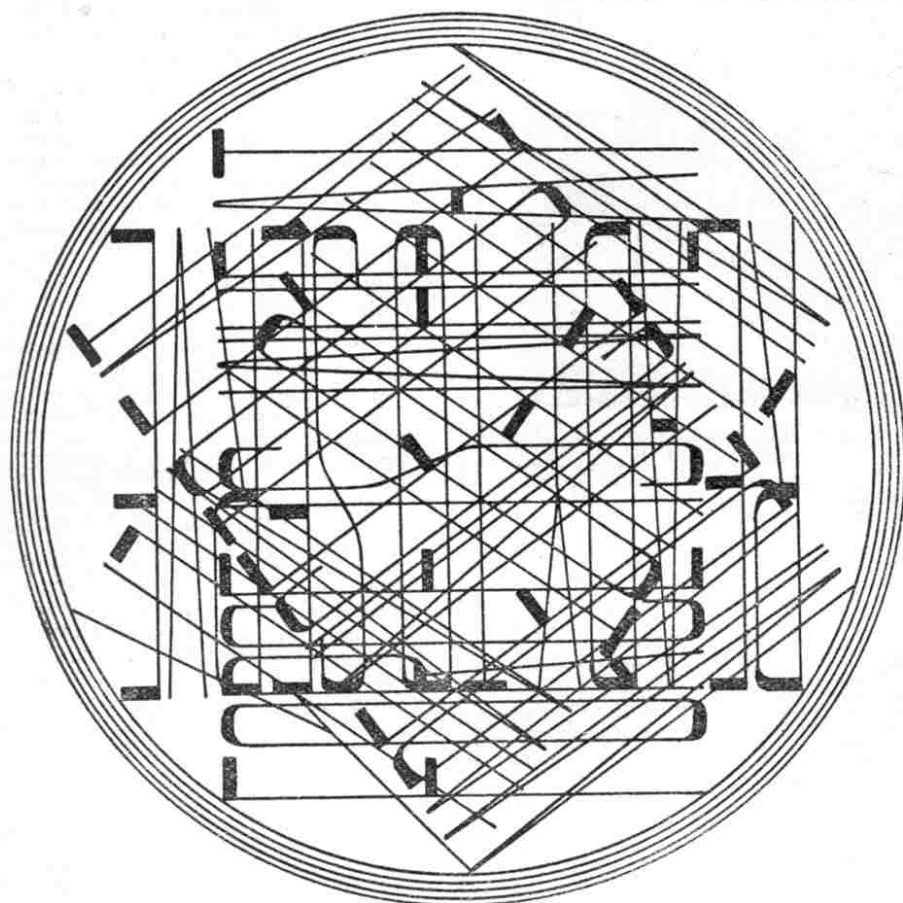
All members of the Meccano Guild belong to a world-wide brotherhood of boys, all thinking the same kind of thoughts, sharing the same pleasures and thrilled by the same ambitions. They all naturally want to know what kind of lives other boys live, and they are anxious to tell other boys about their own schemes and ambitions and all the things in which they delight. To meet this recognised need the Guild Correspondence Club was started in September 1920 and since then it has prospered exceedingly. Many hundreds of friendships have sprung up all over the world as the result of the Correspondence Club's activities, and these are friendships of the type that endures, for they are based on a common interest. Correspondents are found in any country abroad and the correspondence may be in English or in a foreign language as desired. There is no charge at all for entrance into the Correspondence Club, and Guild members who are interested should write to the Guild Secretary asking for full particulars and a form of application.

(To be continued)

"SUNNY JIM'S" PAGE



CAN YOU SOLVE THIS?



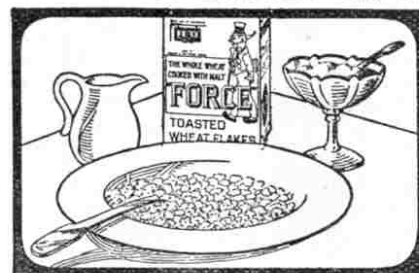
Here's a puzzle for you. There's quite a lot of interesting news inside that circle. It's easy to read once you know how. Turn the page about any way you like and look at it from any position you like. When you have deciphered the message write it on the back of a post-card and send it to me. I'll send you in exchange a generous sample packet of "FORCE," the famous malted and toasted wheat-flake food, together with a beautifully coloured nine-page recipe booklet and calendar, so made that it can be hung on the wall for reference. This booklet shows how you can have "FORCE" every day of the week, yet

never on two days alike. You will be able to choose the kind of breakfast you like best and then ask for it to be served for you—nobody will mind your choosing your own breakfast this way, because "FORCE" is served in an instant without any trouble at all.

Your friends will like to join in this hunt for the hidden message. Let them have a try! I will send to all who send me solutions parcels similar to that which I have promised you. They have only to write their solutions on post-cards and send them to me with their names and addresses. See how many of your friends can solve the puzzle!

"FORCE" BUILDS BRAINS AS WELL AS MUSCLES

When at school have there ever been times when you have found it difficult to concentrate on the lesson, in spite of your desire not to be inattentive? You will



most likely have to answer "yes" to that question.

WHY?

It is not because you are lazy. Many a boy has been wrongly accused of being lazy when the real trouble is in his digestive apparatus. What has that to do with mind wandering or "wool gathering" as some people call it?

It has this to do with it:—

Brainwork demands a rich supply of blood in the brain. Digestion demands a rich supply of blood in the stomach. Hard digestion takes some of the blood that should be helping you to think. "FORCE" eliminates hard digestion because "FORCE" is wonderfully easy to digest yet it supplies the maximum amount of nourishment. "FORCE" does even more than give you unrestricted power to concentrate on your work, it enriches the blood because it is whole wheat.

That is another and important reason why you should include "FORCE" in your daily diet. Mother can buy "FORCE" from the grocer's at 9½d. a packet. A packet contains many nourishing and delicious meals. All there is to do is to add hot milk, or fruit, and you have a plate of the most tempting food imaginable. Start to-day and eat "FORCE" regularly.

Sunny Jim

Dept. Mc.3, 197, Gt. Portland St., London, W.1.

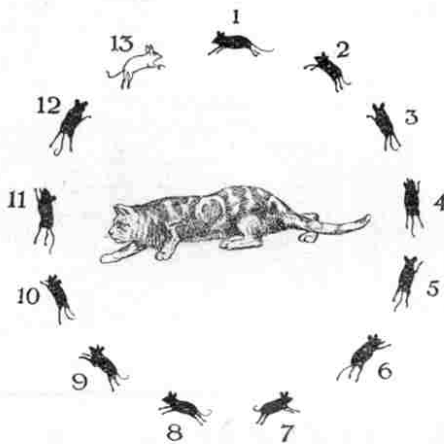


This Month's Short Story

Little boy—
Pair skates.
Broken ice—
Heaven's Gates.

* * * *

Puzzle No. 39.



The above diagram shows a cat with thirteen mice (twelve of which are black and the thirteenth white) arranged in circular order around her. She kills them one by one, starting to count at a certain mouse and counting to the thirteenth mouse each time. She kills the thirteenth and proceeds each time to count from the next living one, and the puzzle is to find from which mouse she must start to count in order that she may kill the white mouse last.

(Contributed by James McManus, Bridge-End, Derry, to whom the monthly prize of 5/- has been awarded).

* * * *

Puzzle No. 40.

Arrange the following letters so as to form four words:—

An R and an N and W, U, A,
You mix with four T's in the right sort
of way;

Three S's, two O's and two H's and E's,
The answer encompasses all land and
seas.

* * * *

Q. Why is an emaciated man like an
extracted tooth?

A. One is tooth-in and the other
tooth-out.

* * * *

Q. Mrs. Biggar had a baby. Which was the bigger,
Mrs. Biggar or the baby?

A. The baby, because it was a little Biggar!

Q. Which was the bigger, Mr. Biggar or the baby?

A. Mr. Biggar was father Biggar!

Q. Mr. Biggar died; was the baby then bigger than
Mrs. Biggar?

A. No, for the baby was fatherless.

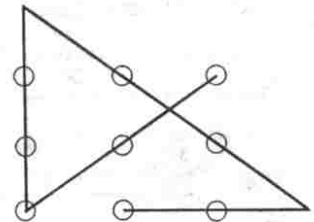
Answers to Last Month's Puzzles

No. 34. Missing names of Meccano parts:—

Dick was only a *STRIP* of a lad, and he thought his *BOSS* was an *ECCENTRIC* old *CRANK*. Dick's wage scarcely enabled him to buy sufficient *GRUB*, let alone his favourite *NUTS*. Even a *WORM* will turn, however, and presently Dick became convinced that he could *SCREW* out of the old *BUFFER* an increase in wage. Without any beating about the *BUSH*, he *SET* his *TEETH* and *BRACED* himself for the attempt. He took no chances, however. There was some risk that his employer would *COLLAR* and *PINION* him, and therefore Dick held himself ready to *PIVOT* round on his *PINS*, *SPRING* through the door and *BOLT* for his life.

No. 35.

The rings are joined as shown below:



* * * *

No. 36.

With the metal paper-weight the grocer weighed two lots of tea—total weight 13 ozs. Then he placed in the scoop of his scales half-a-pint of distilled water, weight 10 ozs., and took 3 ozs. from the 13 ozs. of tea already weighed. He laid these aside and emptied the 10 ozs. of water out of the scales and then weighed a further 3 ozs. with the 3 ozs. he had previously laid by. These three lots of tea combined formed exactly 16 ozs., i.e., the 1 lb. of tea for which the customer had asked.

HELP!



"What's all that noise gwine on ovah at you' house last night?" asked an old coloured woman of another. "Sounded like a lot of catamounts done broke loose." "Dat? Why dat was nothin' only de gen'man from the furniture store collectin' his easy payments."

* * * *

Q. What seven letters did Old Mother Hubbard use when she looked into the cupboard.

A. OICURMT

JUDGING from my correspondence, "missing word" puzzles are very popular with my readers, and the puzzle published last month, dealing with names of Meccano parts, has aroused general interest. This puzzle is undoubtedly a difficult one and the many readers who have tried their hands at solving it will be interested to see the correct solution given elsewhere on this page.

A very ingenious puzzle of this kind is sent in by Louis L. King, of Shillelagh, Co. Wicklow, Ireland, to whom 2/6 has been sent. The problem is to fill in the various blanks in the following little story with names of well-known motor cars. The number of asterisks denotes the number of letters in each missing word:—

Puzzle No. 37.

Tom and I had a little argument and he spoke quite ***** to me. The trouble began about a man called ***** ***** was written all over him, and although he had been a bit of a ***** he was not a bad sort. He was a good ***** and even if he were not a ***** his ***** was high. Tom, however, did not like him. One evening while Tom was on holiday in ***** he was crossing a stream at the ***** when he met this man. Tom was not ***** enough to ***** him, and he had to stay and chat for a while. The only thing that made him feel resigned was the weather, for scarcely had the last ***** departed when the ***** rose, and occasionally a ***** flashed.

* * * *

Puzzle No. 38.

The name of a beast, a bird, a reptile or an insect is hidden in each of the following sentences. The letters forming the name run consecutively in the correct order:—

- This system upsets everything.
- The big nuts are not always the best.
- I went to the hotel and booked a room.
- He fell with a crash against the wall.
- A switch below the overmantel operated the mechanism.
- Strong national feeling was aroused.
- His prestige rose greatly through this action.
- There is always an almanac on David's desk.
- I said to the keeper: "Is that bear mad, ill or angry?"

* * * *

A visitor being shown through the Law Courts said to his friend: "My word! the judge has a tough crowd to deal with this morning."

"Sh-h-h!" said the friend, "those are the solicitors!"

Boys! *HERE ARE THE* IDEAL BOOKS for CHRISTMAS

A Son of the Dogger

By WALTER WOOD.
A rattling story of adventure
on the wild North Sea.

3/6 NET

The Two Captains of Tuxford

By FRANK ELIAS.
A rattling school yarn, telling
how a "rot" was overcome
after many difficulties and
misunderstandings.

3/6 NET

Steamships

Their History and
Their Deeds.

By G. GIBBARD
JACKSON.

With 37 illustrations.
A wonderful book telling
of the history of the
steamship from its
beginning in 1791 down
to the modern marvels.

5/- NET

Published at

4, BOUVERIE ST., LONDON, E.C. 4.



Under the Serpent's Fang

By J. CLAVERDON WOOD
An exciting tale of adventure
in New Guinea in the last
century.

5/- NET

In the Land of Shame

By MAJOR CHARLES
GILSON.

An enthralling story of
Central Africa, told in Major
Gilson's inimitable style.

5/- NET

The Silver Shoe

By MAJOR
CHARLES GILSON.

A thrilling account of
a secret society, and
the strange doings of
Chung-li and certain
other Chinese of in-
famous repute.

3/6 NET

Of all Booksellers, etc.

NELSON BOOKS for BOYS

*Two Books by the Editor of the
"Meccano Magazine."*

Engineering for Boys. Illustrated. 6/- net.

"A mine of information for the boy who intends to become an engineer."—
Yorkshire Observer.

The Romance and Reality of Radio. 3/6 net.

Illustrated. The History, Theory and Practice of Wireless Telegraphy
and Telephony.

All About Our British Railways. 6/- net.

By G. G. JACKSON. Numerous illustrations.

The Wrinkle Book. Fully illustrated. 7/6 net.

By ARCHIBALD WILLIAMS. 10,000 Hints on 1,000 Subjects.

The Mechanic's Friend. 5/- net.

By ARCHIBALD WILLIAMS. Hints, Data, Recipes, Instructions, etc.,
useful to mechanics, amateur and professional.

The Boy's Guide. 7/6 net.

By ARCHIBALD WILLIAMS. An encyclopædia for boys. Sports,
pastimes, hobbies, and handicrafts. 728 illustrations.

Railways. 7/6 net.

By GEORGE S. DICKSON, with 12 plates in colour and numerous text
illustrations.

The Real Adventure Series. 6/- net.

*Books for Boys of All Ages.
Full of Thrilling Adventures.*

The Conquest of the Poles. By ALFRED JUDD.

The story of modern Polar exploration. 16 plates, 2 maps.

In Search of Gold. By W. DINGWALL FORDYCE.

The romantic story of Gold from the earliest times. With 16 illustrations
by A. S. FORREST.

New Illustrated Story Books.

Around the World in Ten Days. 5/- net.

An Aviation Story.

By CHELSEA CURTIS FRASER.

In Quest of Peril. By ALFRED JUDD. 5/- net.

An Adventure Story.

His Highness. By GUNBY HADATH. 5/- net.

A School Story.

For a Younger Brother.

The Wonders of Speed.

Motors, Aeroplanes, Hydroplanes, Battleships, etc. With 16 plates in
colour and numerous line drawings. Quarto.

Pictorial Cloth Binding 7/6 net. Pictorial Boards 6/- net.

Write for a copy of the New Illustrated Catalogue.

THOMAS NELSON & SONS, LTD. (Incorporating T. C. & E. C. JACK LTD.)

35 and 36, Paternoster Row, LONDON, E.C.4, and Parkside Works, EDINBURGH.

MODEL RAILWAYS

Hornby Trains, Passenger and Goods, Tank Locomotives and a full range of Hornby Accessories, from a Breakdown Crane to a Telegraph Pole, always in stock. Model Railway enthusiasts are invited to visit our Demonstration Track. Each Locomotive is thoroughly tested before despatch.

THE BEST BICYCLES

We are also agents for Raleigh All-Steel. Prices from £7 12 6. Humber: Prices from £6 17 6. Write for particulars of our EASY TERMS.

Arundel Cycle & Sports Stores

58, Church Rd., Upper Norwood, S.E. 19.

'Phone Syd. 2482.

NO PUNCTURE TUBE

Fit Fibermetic-treated tubes on your bicycle and you will never be let down on the road by punctures. Instantly stops all air leaks up to 1/8th inch. Entirely non-injurious to rubber, does not choke up valves.



Best quality cycle inner tube treated with Fibermetic Instant - Puncture Stop sent (post free) for ... 4/-
You can treat your own tubes for 3/6 per pair. Fibermetic—the Permanent Puncture Seal—is sold in tins, 1 lb. 3/6, 2 lb. 7/-

New Inner Tube sent if claims not fulfilled. Trade Enquiries Invited.

The FIBRINE SALES LTD.,
19, Villiers Street, Strand, London, W.C.2.

GRAVES



10/-
NOW

WORLD'S BEST CYCLE.

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

HANS RENOLD CHAIN;
CLINCHER A-WON TYRES;
DUNLOP WESTWOOD RIMS;
BOWDEN BRAKES; B.S.A.
FREE WHEEL; BRAMPTON'S
HUBS; REYNOLD'S STEEL
TUBES; WILLIAMS' CHAIN
WHEEL; SPIRAL SPRING
SADDLE. PRICE £7 10 0
(Ladies' Model same price)

Delivered carriage paid to approved orders for 10/- with order. Balance 10/- monthly if satisfied. Money back in full if disappointed. **CATALOGUE Post Free** Complete range of Models J. G. Graves Ltd. Sheffield.

BIG FREE BARGAINS BOOK

128 pages. Profusely illustrated. Absolutely Free. Bargains for everybody—Home Wants, Personal Needs, Toys for Children. Everything direct from factories at HALF usual prices. Lever Watches, 3/3; Clocks, 1/9; Penknives, 6d.; Safety Razors, 5d.; Air Guns, 3/11; Gramophones, Wireless and Sewing Machines on Easy Payments. Sensational offers in Cutlery, Household Utensils and Tools. Don't delay. Get the Book TO-DAY.

MOORHOUSE LTD. (Room 43),
PADIHAM, BURNLEY.

No More Punctures



Stop tinkering with tyre levers, messy solutions and patches. Send a P.C. for this booklet which tells how to end puncture mending for ever. It's

Free

to Meccano Readers.

Address:
JACKSON'S IMPERVO
SALES LTD.,
(Dept. 31a) 48, Dover St., LONDON, W.1



IX. CYCLE LAMPS

THE present dark nights have once more revived the old question among cyclists as to which is the most satisfactory type of light for night riding. Each type possesses certain advantages which every cyclist should study before making a definite choice, as he is then able to judge which will best suit his particular requirements. For purposes of comparison, bicycle lamps may be classed under three headings, Electric, Oil and Acetylene, and of these the oil lamp is by far the most popular.

Oil Lamps and Their Defects

These old cycling friends, which succeeded the early candle lamps, have many points of recommendation, for they have a long burning capacity, the fuel is not expensive, and when carefully looked after they give a very efficient light. The principle on which they work is simple, and yet because it is not properly understood many users are unable to trace and rectify common troubles.

In every type of oil lamp the cotton wick, which should always be of correct width, is suspended in a reservoir of oil and the oil is drawn up the wick by capillary attraction. The series of small holes in the top of the lamp provide an outlet for the fumes, and fresh oxygen is taken in from the perforations in the base of the lamp. In time these ventilation holes may become clogged with mud or dirt and the imprisoned gases prevent the ingress of oxygen. The flame of the lamp then quickly becomes "unhealthy," and the slightest jolt of the machine or gust of wind will at once extinguish it.

Other causes of lamp failure may be the use of an unsuitable oil or a clogged wick. Lubricating oil cannot be used for lamps. Instead, special burning oil of good quality should be used. The wick should be changed reasonably often to prevent the capillary passages becoming choked with the consequent "charring" of the wick.

Electric Lights

A variety of electric cycle lamps are now made but the majority are only variations

of two distinct types, in which the current is either generated as you ride or stored in a battery.

The great advantage of electric battery lamps is that they are very clean to use and may be switched on at any moment without the necessity of dismounting and—perhaps—striking innumerable matches. The electric battery, which is similar to that used in a flashlight battery, may be either carried behind the lamp itself or attached to the cycle frame and connected to the bulb by a length of flex.

The illuminating powers of electric cycle lamps, of course, are infinitely less than those of acetylene lamps, and they are

satisfactory only if used for short periods, as the battery is then able to recuperate in the intervals. This type of lamp is therefore far more suitable for town use than on long country journeys.

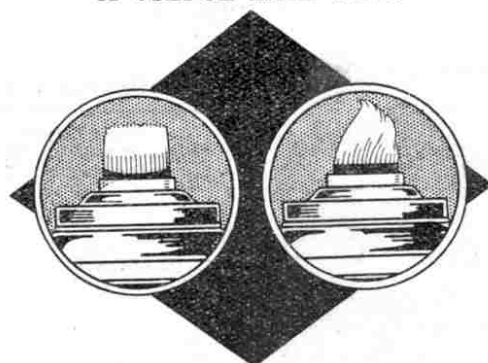
In another kind of electric cycle lamp, which is also used by some motorcyclists, the current is generated by means of a small dynamo connected to the front wheel. The light is, of course,

extinguished when the machine stops, but it is not dependent on the erratic behaviour of a battery, which is liable to run down at a critical moment.

Acetylene Lamps

For the rider who requires a very powerful light, however, the acetylene lamp is by far the best. These lamps burn acetylene gas, which is generated by water dripping on to calcium carbide, obtained either from a separate generator or from a generator combined with the lamp. In the former case, the generator may be fixed to a suitable part of the frame and the gas conveyed to the burner by means of a length of rubber tubing. There is no danger of explosion with these lamps, as provision is made for the escape of superfluous gas through the upper compartment, or water reservoir. Acetylene lamps cost more in fuel and require more attention than oil lamps, but these disadvantages are more than equalised by the steady and powerful light that they give.

A USEFUL LAMP HINT



A wick trimmed level produces a pointed and smoky flame. Trim it concave, and a steady, level flame is the result.

Stamps for Sale

(See also page 338)

FREE. 17 Unused Pictorial Ukraine to applicants for approvals.—Harland, Dean Road, Scarborough.

NYASSA PACKET FREE with Approvals, 1d. and 1d. each.—Bodman, 6, Alderman Road, Ipswich.

Advanced Stamp Exchange Club. Few more members wanted.—Sec., 23, Hampton Pk., Redland, Bristol.

IRISH STAMPS. 100 mixed obsolete and current, bargain, 1/4.—Lawe, Park Avenue, Old Trafford.

WATCHES FREE. Write for Stamp Approvals and obtain full particulars.—Moorgate Trading Co. (Dept. 4), Moorgate Chambers, London, E.C.2.

100 Varieties, 1/2; Foreign and Colonial, 66 to 80 per cent, under catalogue; 1d. blacks; approval.—Rev. Bell, Loughguile, Co. Antrim.

ALL BUYERS from my approvals will receive **FREE** Gifts. Send for selection now. You will not be disappointed.—Negus, Bury, Huntingdon.

GENUINE BARGAINS. Selling off. 100 Foreign Colonial Stamps all different, 1/2 Postal Order. 250 2/2. Worth 10/-.—Scott, 154, Wellesley Road, Ilford.

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

FREE! 100 Different to those sending postage and asking to see Approval Sheets.—C. Florick, 179, Asylum Road, London, S.E.15.

About 400 Foreign and Colonial sent on approval. Select 50 for 1/—.—Woodruff, 9, Burgoyne Road, Harringay, N.4.

BRITISH COLONIALS FREE. 12 different, including set 1d.—1/- to all approval applicants sending postage.—Gaze, Didsbury, Manchester.

60 DIFFERENT STAMPS FREE to applicants for approvals. All 1/4 each. 60 for 1/3.—Cox, 135, Cambridge Road, Seven Kings.

Approvals—Mainly Colonials; liberal discount; sent to reliable collectors.—Stamford, 9, Richmond Hill, Blackburn.

SPECIAL CLEARANCE of old approval sheets. 7 Cochins free to applicants for a selection.—S. Huckle, 53, Birkenhead Avenue, Kingston-on-Thames.

FREE! 50 Genuine Foreign Stamps, including set Azerbaijan, sent to all who write for my cheap Approval Sheets.—C. F. Blake, "Hillcrest," 120, Holland Road, Willesden, N.W.10.

BRITISH COLONIALS (all different), 100, 8d.; 150, 1/2; 200, 2/6; 250, 3/9; 500, 12/-. **Selections on approval from 1d. each.**—Berry, 269, Coldharbour Lane, Brixton, London, S.W.

STAMPS. Large number mint and used British Colonials, also Persian and other foreign at bargain prices. Selections choice copies, priced separately, on approval.—Collector, 31, Kensington Gardens, Bath.

250 STAMPS, 51d. Alexandria, Dahomey, Montserrat, etc. 100 Neupeu, 6d; 100 Austria-Hungary 6d.; 50 Colonials. 6d.—White, 98, Bushey Hill Road, Peckham.

75 STAMPS, 41d. Caymans, Angola, Grenada, Nigeria, Mozambique, etc. 500 assorted stamps, 9d. 40 United States, 9d.; 10 Philippines, 5d.; 10 Siam, 6d.—Brooks, 43, Edmund Street, Camberwell, Eng.

MARVELOUS VALUE! Packets catalogued over £2, for 1/6; 15 different Irish, high values, 1/3; approvals 50 a 1/-. Free gifts for postage.—Chas. Lock (Dept. M.), 5, Groundwell Road, Swindon, Wilts.

FREE 2 UNUSED WEMBLEY to all purchasers over 1/6. 100 diff. Stamps, 4d.; 300, 1/2; 40 French Cois., 6d. "Everyland" Album, 1/9; "Victory," 2/9; 1000 Mounts, 6d.; All post free.—R. Edmondson, Queen Street, Morecambe.

BRITISH COLONIALS.—125 different, catalogued 25/-, excellent condition, including sets Iraq, Ireland, Jamaica, Malay, Mauritius, Ceylon, Straits, Trinidad, Tobago, Newfoundland, for 3/-.—Palmer, 105, Sefton Park Road, Bristol.

8 CHINA "SHIP" 1c. to 10c. Free to approval applicants. Having changed address, old sheets marked down. Send P.C. to-day. Set of 5 1911 Persia, 1 ch. to 6 ch. post free 3d.—R. A. Clipston, 11, Cromwell Avenue, Bromley, Kent.

ANYTHING TO SELL?

This Space is set to 1/2 inch s.c. and costs 5/- per month. This sum is the 64th of £16, the price of a whole page advertisement. 55,000 copies of the Dec. number were issued and distributed all over the world. You therefore reach this exclusive public at the rate of one penny a thousand.

LATEST ISSUES. LOWEST PRICES.

110 different, including Ascension, Jamaica 3d. Pictorial, Nauru Pictorial, Persia, Bulgaria, Sudan, Barbados, Cuba, free 3d. if approvals desired, without 6d. 10 different Iceland, 5d.—Morris & Co. Stamp Dealers, Bletchley.

FREE. HUNGARY PACKET FREE. Splendid Set Hungary (Pictorials, Cat. over 1/6). Very Old Set Austria. Irish Free State. Set Old German (including Pictorial). Japan. Czechoslovakia. Poland, etc. This Valuable Collection Free to all asking to see my approvals.—Paterson, 19, Dorset Avenue, Rusholme, Manchester.

FREE!

12 China-Japan and 25 British Colonials, including W Africa, Newfoundland, Travancore, Jamaica, Queensland. To applicants for my famous approvals, enclosing 11d. postage. 250 Unused Stamps, 1/3.—**FLEMING, St. Winifreds, Christleton Road, Chester.**

WEMBLEY STAMPS

All for 1/—.—**UNUSED WEMBLEY STAMPS**, 50 diff. stamps (cat. over 4/6), a Watermark Detector and Perforation Gauge, and 100 Mounts, to all sending 1/- and 11d. postage.—J. Pickering, Market Place, Holt, Norfolk, England.

MARGOSCHIS BROS., 25, Lower Temple St., BIRMINGHAM.

Makers of Stamp Packets for 40 years, offer you:

300 Stamps, all different for 1/-; 500 for 2/-; 1,000 for 6/-; 2,000 for 25/-; 50 different French Colonials, 1/-; 100 do., 2/3; 200 do., 5/6; 50 Bulgaria, 1/3; 50 Bavaria 1/3; 20 Greek, 6d.; 50 Indian States, 1/6; 30 Norway 6d.; 50 Roumania, 1/6; 55 Russia, 1/3; 24 Ukraine, 6d.; 60 Czechoslovakia, 1/6. Every stamp in every packet is different. Marvellous value.

MARGOSCHIS BROS. (Dept. M), 25, Lower Temple Street, BIRMINGHAM.

NO NEW EUROPE

FREE. 25 BRITISH COLONIALS and 10 S. American, including W Africa, Newfoundland, Travancore, Jamaica, Queensland. To applicants for my famous approvals, enclosing 11d. postage. 250 Unused Stamps, 1/3.—**FLEMING, St. Winifreds, Christleton Road, Chester.**

"THE PHILATELIC MAGAZINE," 46, Victoria St., London, S.W.1. Best stamp newspaper. Order from your newsagent. 3d. fortnightly, or send 4d. for specimen and bonus form worth 2/6. Album catalogue free.

BRITISH COLONIALS, 200 different, 3/9; 500, 15/-; 1000, 55/-; or a selection sent on approval at 1/4 each. Colonial Mixture including high values, 3/- per 1000.—Theobald, 54, Antill Road, London, N.15.

FREE PICTORIALS FREE

To all applicants for my bargain Approvals I am presenting absolutely **FREE** a Monster Pictorial Packet containing New Issues, Airpost, etc.

Write to-day and you will be delighted. Every 5th applicant also receives packet Mounts.

L. G. JONES,

61, West Street, Bourne, Lincs.

WILL YOU ACCEPT

A NICE COLLECTION. 150 DIFFERENT CATALOGUED UP TO 10/- EACH.

These are quite free to buyers of 2/- or more from my cheap approvals. No charge for postage or packing. Please send 6d. deposit and deduct from your purchase.

D. ENTWISTLE, 7, John Street, Sale, Cheshire.

SOMETHING FOR NOTHING

All applicants for my better-class approvals, sending postage, may select one of the following: **All Mint:**—Set of War Charity Stamps—British Colonial, face 3d. and cat. 1/-.—Packet of 50 different.

A customer writes, "I may say that I have done business with many stamp dealers, but never have I been so satisfied as I have been with the selections you have sent me." If you wish to be in the running, write now, stating countries interested in. I make a speciality of British Colonials. List of albums, accessories and special offers free on request.

P. A. Westbrook, St. Benet's, Westgate-on-Sea.

MORE BARGAINS!!!

(Continued from last month). 30 Argentine, 9d.; 12 Barbados, 7d.; 50 Bavaria, 7d.; 20 Chili, 7d.; 10 Cochins (Large), 5d.; 30 Denmark, 5d.; 65 France, 9d.; 100 Germany, 61d.; 50 Hungary, 31d.; 40 Italy (Cat. 3/10), 7d.; 10 Jamaica, 31d.; 20 Peru, 1/3; 25 Roumania, 5d.; 20 Siam, 1/1; 40 Sweden, 61d.; 30 Swiss, 6d.; 19 Travancore, 51d.; 50 Wurttemberg, 1/-.—Postage extra. All different. Good condition, and money refunded if not satisfied. Write for List N31. The Western Imperial Stamp Co., 46, Drynham Road, Trowbridge, Wilts., Eng.

BRITISH INDIA. 1/2a to 3 rupees.

Set of 10 Indian stamps, in use during 3 reigns (1/2a to 3 rupees), various issues, **GIVEN FREE** of charge to applicants for approval sheets. (Special discount to Agents). If 2d. postage is enclosed either a set of **PICTORIAL ASCENSION ISLAND** (new issue) or Mesopotamia or 1,000 **STAMP MOUNTS** also given **FREE**, or the 3 sets and stamp mounts for 6d. postal order.

TURNER, 88, East Hill, London, S.W.18.

INCMPARABLE STAMP PACKET

contains about 1,000 mixed stamps, 20 British Colonials, 20 mint stamps and set 10 Philippines, post free 1/3.—Bickers, Lordwood Avenue, Southampton.

UNUSED STAMPS AT FACE VALUE. Advertiser has a quantity of unused stamps which have been received in payment from our Colonies and several foreign countries. Assorted lots will be sent for face value and postage. Send 1/11, 2/71/2 or 5/11 and stamps to value will be sent by return. When required, special countries will be sent, but this cannot be guaranteed. Enquiries invited.—Box No. 102, Meccano Magazine.

Free Set of Poland

Splendid Set of 7 unused Polish Stamps free.

Send 2d. for postage and packing to

A. F. Langton, 37, Allison Road, Harringay, London, N.8.

Look out for my special Xmas offer next month.

Round the World

The pages of the "M.M." offer you a world-wide market. For a small charge of 10/- per column inch (21 inches wide), your advertisement is brought to the notice of thousands of potential customers each month. An advertisement in the "Meccano Magazine" will be read by over 100,000 readers in all parts of the world.

Rates and Specimen Pages on request.

Advertisement Manager,

"Meccano Magazine"

BINNS ROAD

LIVERPOOL

FREE TO MECCANO READERS

A specimen copy of "THE STAMP COLLECTOR," the popular and helpful monthly journal. This old-established magazine, now in its 28th year, is a great favourite in the five parts of the Globe. It contains the most comprehensive chronicle of newly-issued stamps and the advertisements of all leading dealers. **JUST SEND NAME AND ADDRESS** on a post card and you will get a copy. **DO IT NOW.**

MARGOSCHIS BROS. (Dept. M), 25, Lower Temple Street, BIRMINGHAM.

How Wireless Valves are Made

(Continued from page 333)

at too high a temperature or in some cases through too high a voltage having been used on the anode. The effect has been that the thorium on the surface of the filament has been used up more quickly than it was being produced, hence the loss of emission. In these cases matters may be readjusted by running the filament at its normal voltage for about half-an-hour with no high tension on the anode, when the emission becomes as strong as formerly.

When the ageing process of dull-emitters has been completed, the valves are passed through some stringent tests. In one the total emission is measured, and in another a very delicate test is applied to ensure that the vacuum is of a very high order. This test ensures that there is no more than a certain minimum of pressure of gas in the valve. Finally, every valve is tested on a receiving apparatus, under actual operating conditions. The valves that have been passed as perfect are cleaned and etched and then packed ready for sale.

Some Useful Details

Dull-emitters mark a great advance in valves for Radio reception, for they make it possible to draw the necessary filament current supply from a dry battery, such as is used in ordinary circuits. Working on three volts, the actual consumption of the B.T.H. B5 valve is only 0.06 amperes. This means that the power consumed is 0.18 watt, as compared with three watts frequently required by valves of the "R" type. By using dull-emitter valves, therefore, it is possible to work a four-valve receiver on less than half the current required by a single R valve.

Dull-emitters work admirably, either as H.F. or L.F. amplifiers or detectors. In the latter case, B.T.H. valves should be used with a current of not more than 40 volts on the anode. Good results have been obtained even with 20 volts. The grid leak should be of from two to five megohms. Used as an amplifier the anode potential may be increased up to 80 volts, but when over 40 volts are used a negative grid bias voltage is recommended. This should be of a value of about -3 volts when 60 volts are used on the anode, and of -6 volts when 60 to 80 volts are used.

(The End)

New Meccano Parts

We have pleasure in announcing the undermentioned new parts, supplies of which are now available.



No. 27b. Gear Wheel, $3\frac{1}{2}$ ", 133 teeth each 1/6
103k. Flat Girder, $7\frac{1}{2}$ " ... half dozen 1/3



144. Dog Clutch ... complete 6d.

Would You Risk It?

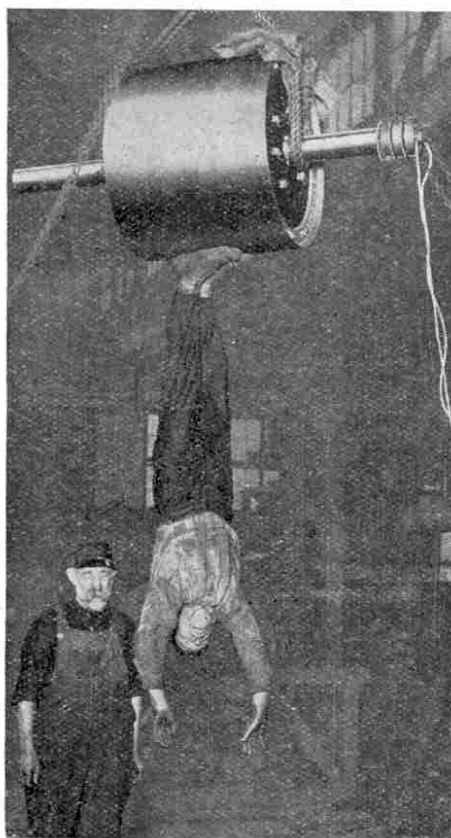


Photo courtesy] [Messrs. Ding's Magna-ic Separator Co.

This man is suspended from a magnetic pulley by its attraction for the nails in his boots! (See article Magnets in Industry, page 322)

Metal Casting at Home

We hear that the ingenious moulds for metal-casting at home advertised in our columns by Messrs. A. Rodways (102, Long Street, Birmingham) are increasing in popularity. Many new moulds have been added to those available last season, and a boy would indeed be hard to please who could not find something to interest him among the varied collection. The new large-sized moulds of various wild animals are particularly good and there is a wide range of soldiers on foot and on horseback, hunters, Red Indians, etc. Using old lead pipe or scrap, perfect castings can be turned out with these moulds with very little trouble, failure being almost impossible.

A Useful Coat

The great difficulty in choosing a winter overcoat is that one never knows what the weather is going to be like. One day it may be wet and bitterly cold and next day fine and warm. Messrs. Curzon Bros. Ltd. (33, New Bridge Street, Ludgate Circus, London, E.C.4.) have dealt with this problem in their well-known "Cobedene" Trench Coats by providing a detachable wool fleecy lining. The coat itself is guaranteed to be absolutely waterproof, and the lining may be used or removed according to the weather, so that the garment, besides being smart in appearance, is one of all-round utility. The coats are made in various sizes to suit either boys or men, and further particulars will be found in our advertising pages.

Useful to Model-Builders

A catalogue of interest and value to every boy interested in electricity or model-building is issued by Mr. A. W. North, of 47, Parchment Street, Winchester. The list contains almost every conceivable accessory that could be required for experimenting, and any article not listed will be obtained within three days. Enquiries are invited, and a copy of the list will be sent post free to any reader mentioning this Magazine.

A Stamp Tour Round the World

(Continued from page 339)

On our way southward from Guadeloupe to Martinique we pass the British island of Dominica, which must not be confused with the Republic of the same name. All Dominican stamps issued from 1903-1922 (except the high values) show the island as seen from the sea. These stamps are of very handsome design, which design has appeared in many forms. The first issue (1903) was on paper watermarked with a Crown and the initials CC. This issue remained in use until 1907, when the stamps were printed on paper watermarked multiple Crown CA. In 1908 there was another re-issue in the regulation colours of the Universal Postal Union. Previously all values except the $\frac{1}{2}$ d. had been in two colours. In 1908, however, they appeared in single colours (except the 2/- value) and the $\frac{1}{2}$ d. appeared in blue-green instead of green. During the War there were various surcharges and overprints, and in 1921 several values appeared on the new paper with the script watermark. Dominica was discovered by Columbus on a Sunday in 1493 and accordingly was named by him Dominica, from the Latin *Dies Dominica*.

NEXT MONTH:—

THROUGH THE PANAMA CANAL.

Storage Boxes

for
Meccano
Parts

These boxes, which are very suitable for holding Meccano parts, are made in polished oak, fitted with partitions, and hinged lids. They fasten with lock and key, and are provided with two drawers also with locks and keys.

The dimensions of the boxes are 17" x 15" depth 9 $\frac{1}{2}$ ", and the price is each 70/-, carriage forward.

We have only six of these boxes in stock and we advise those of our readers who are interested to take immediate advantage of this opportunity of securing a strong and serviceable box for storage of their Accessory Parts.

MECCANO LTD.

LIVERPOOL

BOND'S LATEST MODEL FIRE PAILS for Model Railway Stations.



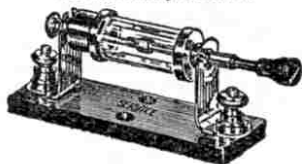
BOND'S LTD., 254, Euston Road, N.W.

Use a SERVICE Detector

and get the maximum amount
of satisfaction.

Crystal replaced in a few seconds,
NO SOLDER BEING REQUIRED.

Not affected by vibration.



Patented Micrometer Adjustment
(Prov. Pat. No. 15224/24).

Glass enclosed and dustproof. Spring
for holding crystal in place. Highly
polished nickel-plated or gold lacquered
finish. Undoubtedly finest value
obtainable.

Obtainable at all Wireless Stores.

Price 2/6. For Panel Mounting 2/-.

SERVICE RADIO CO. LTD.,
67, Church Street, Stoke Newington.
LONDON, N.16.

STAMMERING

Cured or No Charge. Particulars Free.
FRANK A. HUGHES.
7, Southampton Row, London, W.C.1.

VARIABLE CONDENSERS

Complete sets of boxed parts, including ebonite
dial, panel screws, diagram, etc.

.001 m.f.	... 8/9	.0002 m.f.	... 5/6
.0005 "	... 7/-	.0001 "	... 5/-
.0003 "	... 6/-	.00005 "	... 4/9

Intermediate Capacities at proportionate rates.
With knob and ivoryine scale 6d. less per set. Post Free.
LEEDHAM, Dept. C, Belton, Uppingham, Rutland.

BLUSHING SELF-CONSCIOUSNESS,
SHYNESS. Simple 7-day
Permanent Home Cure for either
sex. No Auto-suggestion, drill, etc. Send only
1d. stamp. Mention Meccano Magazine.
M. G. DEAN, 12, All Saints Rd., ST. ANNES-ON-SEA



YOU
can build a £40 Gramophone
with our Scale Drawings
and Fittings for 40/-.
Our Large Illustrated
Catalogue of Gramophones,
Motors and Tonearms, etc.,
will interest you. Post
Free 2d.

Harmony Gramophone Co.,
366, York Rd., London, S.W.1

STAMMERERS

or their parents, should write for my 36-page booklet.
Sent free to those seeking genuine cure.

Lee Wareing, Dale Avenue, Bisham, Blackpool.

HOBBIES' FAMOUS DEPÔT

35, Manchester Street,
LIVERPOOL.

Three Things Well Done :
Fretwork
Meccano
Wireless

A FEW WIRELESS LINES :

Bare Copper Aerial ... 1/8 & 2/2
Headphones ... from 10/-
All best makes in stock.

Cabinets, all shapes ... from 3/9
Lamp Batteries ... per doz. 4/6
Price List Free. Postage extra.

Money returned for goods not approved.

Don't forget the address :
35, MANCHESTER ST., LIVERPOOL.

BULL-MONTIL CYCLE Electric Light Set

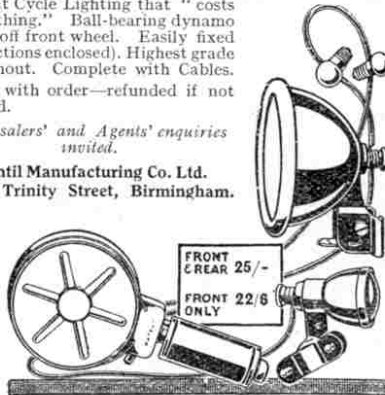
The World's BEST Lighting Set.

Brilliant Cycle Lighting that "costs
you nothing." Ball-bearing dynamo
driven off front wheel. Easily fixed
(instructions enclosed). Highest grade
throughout. Complete with Cables.

Cash with order—refunded if not
satisfied.

Wholesalers' and Agents' enquiries
invited.

Montil Manufacturing Co. Ltd.
Lower Trinity Street, Birmingham.



THE JOKE OF THE YEAR! "THE POPPING OPTIC"

Consists of a rubber eye, fitted into a monocle,
with rubber tube and bulb, which, when pressed,
causes the eye to swell in an alarming manner,
causing endless amusement to your friends.
Delivery by return. Postal Orders or 1d.
stamps accepted. Price 1/6 Post Free. Foreign
and Colonial Postage 3d. extra.

Herberts, 27, Adys Road, Peckham, London, S.E.15

AUTOMATIC PEA PISTOL

Loads 15 shots, re-
peating action, nicely
finished; each in box
with instructions, and
supply of ammunition. No. 1. Black
model with nickelled trigger, 1/3
post free. No. 2. Brightly nickelled
throughout, 1/9 post free. No. 3.
25-shot all black model, 2/6 post free.

J. Bishop & Co., 12, Argyll Pl., Regent St., London, W.1.



No Fumbling for Switches !

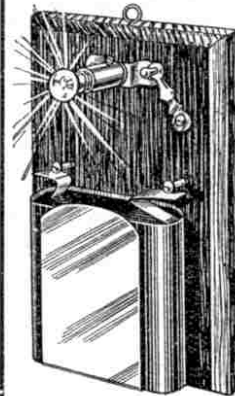
THE "BEAM" LIGHTING SET

is fitted with special

LUMINOUS SWITCH, which can be

seen at the other
end of the room.

It is also fitted with
extra strong battery
(which lasts for
months) and power-
ful bulb; the whole is
mounted on a highly
polished wooden
base. Very useful
for a portable light,
or for Bedrooms,
Halls, and Cup-
boards. Only 2/6
post free, or with
Spare Refill 3/3 post
free. Send now for
one.



A. W. NORTH,

(Dept. 6),

47, PARCHMENT ST., WINCHESTER

Trade enquiries invited.

THE AUTOMATIC PEA REPEATER



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

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

BOYS' PRINTING OUTFITS, with type holder, ink,
ink pad, and tweezers.

No. 1	137 Capitals and Small Letters	... 9d.
No. 2	278 " " " "	... 1/6
No. 3	478 " " " "	... 3/-

BOYS' CONJURING CABINETS, 8 tricks ... 2/6

"	"	"	10	"	... 3/-
"	"	"	13	"	... 3/9
"	"	"	15	"	... 5/-
"	"	"	19	"	... 6/6

All Post Free. Postal Orders or 1d. Stamps accepted.
HERBERTS, 27, Adys Road, Peckham, London, S.E.15.

SKIDS FOOTBALL: RESULT

BLUE BELLS 3 Goals. RED ROVERS 1 Goal.

"With superior placing and more skilful angle
shooting the Blues deserved their win."

Order your team to-day. It is a game of real skill.

A chum and a table are all you require.

Team set (11 a side) 2/6, Skids Bowls 2/6.

Also Skids Cricket, 3/6, post paid. Foreign
postage 1/- extra. Of dealers, or from

Skids Games (M. Dept.), 61, Cathedral St., Glasgow

BINDING CASES FOR THE "M.M."

Spring-back binders for Meccano Magazines with
strong stiff backs, covered with imitation leather,
tastefully tooled. Each takes a large number of
copies and keeps them neat and clean. In black,
lettered gold. Price 3/- each, post free.

MECCANO LIMITED, LIVERPOOL.

"WHERE TO SEEK FOR SCIENTIFIC FACTS."

By A. B. EASON, M.A., A.M.I.C.E., A.M.I.E.E.

A very useful work of reference, cr. 8vo., 48pp.

1/2 post free.

S. RENTELL & CO. LTD.

36, MAIDEN LANE, LONDON, W.C.2

Specialists in books for the City and Guilds Exams.

Ask for catalogues.