The MECCANOENGINEER

A Magazine for Meccano Boys

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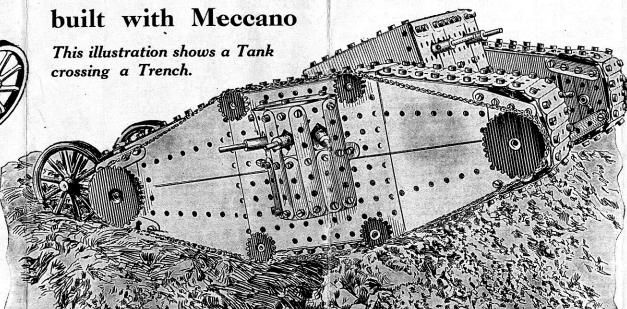
Model of Field Gun

Model of Big Battle Tank

THE MAGIC OF **MECCANO**

The same parts which make the Tank will make the Gun or the Motorcycle or the Flying Machine. You can make anything with Meccano.

There are 50,000 toys possible to the boy who has a Meccano Outfit-And yet it is all so easy, no study is necessary even to make the biggest models, way bigger than any boy. The fun begins as soon as you open the box and you can have a new toy every day. Is this not magic? Order your Meccano right away and let the fun begin at once. It is too good to miss a single day.

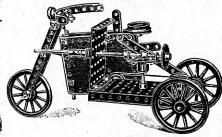


Who has not heard of the wonderful Tanks. Those Machines which crawl over trenches and shell holes, knock down trees and houses, and climb right over them.

The Tanks were one of the big surprises of the Great War. They were first used in the Battle of the Somme, and it was said that the soldiers when they saw them for the first time could hardly fight for laughing. It was the soldiers who first called them "Tanks", they are of course great gasoline propelled tractors, heavily armored so

This wonderful Meccano model, illustrated above, was designed and built by a French boy who lives within sound of the enemy's guns, who must often have seen the real Tanks which he copied in his model. American boys who live in the big cities will soon have the opportunity of seeing the big army tanks, and we are sure they will want to build this fine model. It is made entirely of Meccano parts and can easily be built from the illustration given.

Armored Motor Cycle



THE SUPREMACY OF MECCANO

is proved by the fact that other steel construction toys use Meccano parts - they cannot do without them. What a tribute to Meccano! But the best parts are patented and are to be found only in Meccano.

This is why it is so important when purchasing to insist on having the genuine Meccano. Say the name over to yourself-Meccano-Meccano-Meccano and see that the name is on the box. If you dont get the genuine Meccano you will certainly be disappointed.



The writer of this letter, for many years an enthusiastic Meccano builder, has obeyed his country's call to arms. We call him the fighting Meccano boy, for he is just as keen at his new work, as he was over Meccano. Another proof that Meccano boys make good .- The Editor.

Dear Mr. Meccanoman:

You will no doubt remember me as the boy who was so fond of building Aircraft of all kinds and trying out new ideas on them. I have been building many years with Meccano, and am still very fond of it, and even yet quite a Meccano "Boy".

At present I am "somewhere" in training, and actually working with these same kinds of machines, of which I so often made models in my play. I am training to be an Aviator.

Of course I have always known the great benefit Meccano is to any boy, both in play and earnest. The fun of it all is great, to make your own toys and then play with them, put them to work, make them do things, is the manliest of all games for the boy of any age. But I liked to work out my own ideas best and I was always trying to invent new things. This certainly helped quite a bit with my education.

It was fun for me to watch all the new fellows who came to camp to learn. All the various mechanisms seemed to be so strange to them and they were at first almost afraid to touch them. A Meccano boy knew of course all about the Gears and what they were for.

One of my earliest tasks was to study Machine gunnery. As you no doubt know, all the fighting in the air is done with Machine guns, which fire at the rate of 500 rounds per minute. This requires a finely adjusted mechanism, working perfectly all the time. . It is necessary therefore for the airman to know every



little part and just what it should do, and to know it all perfectly, for he may have to adjust it in the air and in the dark and even in battle.

Some day his life may depend on knowing all about those parts and making an adjustment as easy as falling off a log. If he could not do this and his gun jammed, he would be at the mercy of his opponent.

The Machine gun I had to study was operated by gas, and air cooled and the magazine containing the cartridges was like a circular tin with notches, and a cartridge dropped into the cartridge chamber each time the magazine was turned one notch.

No doubt it will interest Meccano boys to know that this operation is performed by three pawls, just like the Meccano pawl included in their Outfits. One part fits in a notch of the magazine and turns it, another slips into the notch ahead and prevents the magazine from going too far, while a third fits into a notch behind and prevents the magazine from rebounding. The movement spoken of is very similar to the brake made with the Meccano pawl and pinion. The point of the pawl fits into the pinion and prevents it from rotating. It was a simple enough movement for boys with Meccano to understand, but the other fellows had some difficulty in mastering it.

There were several old Meccano boys in camp. I was quite startled to meet a fellow one morning wearing a red knitted sweater with the name Meccano right across the front, in letters 2 to 3 inches high. He reminded me very much of the boy whom you often use in your Meccano advertisements. He is often pictured wearing a sweater. One could see at once that he had been an ardent Meccano enthusiast. Probably he had been a member of some Meccano Club, I thought, the members of which had designed the sweater as a uniform. I have not had time to ask him about it yet, but the whole camp has nicknamed him Meccano. He doesn't seem to mind, however, but appears quite proud of the distinction.

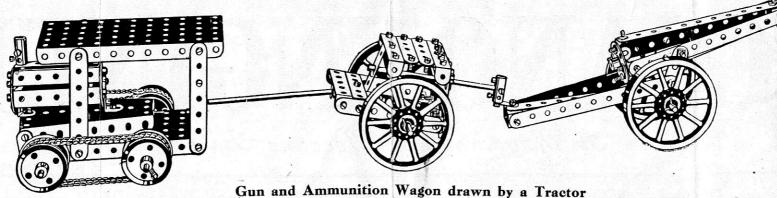
I hope to write you more of my experiences later, but I was anxious to let you know in this letter just how very useful Meccano has been to me. I find my lessons in gunnery and motor construction as easy as A B C, because I have built and played with just such mechanism in the building of my Meccano models.

I hope you will find room for this letter in the Meccano Engineer, as I would like other Meccano boys to know how Meccano "Engineering for Boys" can help a fellow.

Yours very truly

A Meccano Aviator.

The use of Tractors instead of horses is one of the many features of this war



Boys! Be up-to-date. You can build all sorts of toys with Meccano.

PREPAREDNESS

for MECCANO Boys

Up-to-the-Minute Models

Now that men and women everywhere are turning their minds to preparedness and rehearsing every phase of the war, it is well that boys should realize that there is lots of fun for them too.

In Germany, as soon as war was declared, there was quite a change in the toys and games of the children there. Large quantities of papier maché helmets, cuirassier breast plates, wooden cannon, artillery wagons and such war like stores were in demand. All the boys of the country seemed to be mobilized and one met them in toy uniforms everywhere. Little groups of children paraded the streets with a flag-bearer at their head. They constructed Field Forts and Trenches, manned them with toy guns and conducted many a campaign.

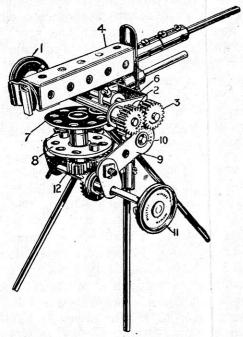
In Holland the schools and even the government have been helping this movement. In many of the parks there were model trenches and gun pits, and children were invited to inspect them. They were conducted through the communication trenches and bomb proof shelters etc., by sentries who explained everything to the youngsters. Sometimes mimic fights were arranged. A scrap of paper with a pencil scribble would be slipped through the letter box of a boys house.

To Mr. Lieutenant Gus,

This is to declare war on you and to invite you to battle.

Yours as ever,

Charles.



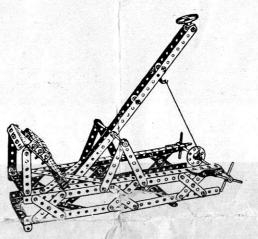
Model of Maxim Gun, with Raising, Lowering and Aiming Mechanism.

Every Meccano boy will want to build this very interesting model, it will give him hours of fun to try out the gears and see just how they work. Perhaps also some bright boy will be able to suggest a worth-while improvement in this model.

Now the American boy has a more intelligent kind of play. The mobilization of the great machine and steel industry of this country shows him the way, and Meccano provides him with material for his experiments.

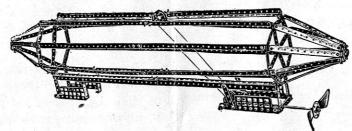
The model shown here of Tractor Gun and Carriage is a good example of what we mean. Tractors are being very largely used in the great war and the boy can with heaps of fun and considerable instruction construct, improve and work many different types of Tractors.

Quite a lot has been done with guns which require no explosives, they are modern developments of the Catapult and the Bow and Arrow, they are mechanical contrivances for throwing bombs, etc., and are known as Trench Catapults and Bomb Throwers, etc. See models No. 222 and No. 216 in the new Manual. The Meccano boy will be able to build these and no doubt many other forms and improvements will occur to the lad with an inventive mind.



Trench Catapult or Bomb Thrower.

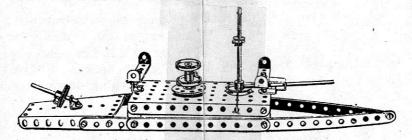
No preparedness play would be complete without some study of air ship designs and Flying Machines generally; you will find a model of a Zeppelin on page 67 of the Meccano Manual. There are also designs of Flying Machines such as No. 117 which is a Monoplane.



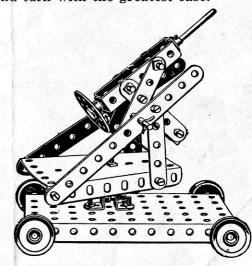
MECCANO Model of Zeppelin.

Meccano is just the thing for experiments in designing all kinds of aircraft. There are one dozen different kinds of Flying Machines, which the boy can make and improve on. Speaking of Zeppelins there are quite a variety of these, some like the above which the soldiers have nicknamed "Sausages" and others which are more the form of a cigar. The position of the gondola, as the cage where the passengers are accommodated is called, varies in the different styles. Meccano kuilders will have lots of fun in making models of the different types.

Battleship-Type of Submarine Chaser

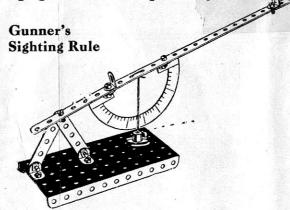


While speaking of guns do not forget the anti-aircraft class. A gun to be able to fire at a machine high in the air must shoot at a higher angle than ordinary cannon. It must be capable of quick movement, must swing and turn with the greatest ease.



ANTI-AIRCRAFT GUN
Gun raises and lowers for aiming; swings
around on carriage; carriage rolls on wheels.
Made from Meccano Outfit No. 00.

All gunners must understand the distance rule, and this is a model simple to make and any boy can learn some simple method of using it. One good way is to pace 100, 200 or 500 yards pointing the rule at an object at the distances named, such as a man, noting the angle through which the pointer swings. In this way distances can be marked off on the scale and with a little practice distance judging will be made quite easy.



Models of Armored Trains and Armored Motor Cars, great Dock Cranes and other machines and war like engines can be constructed in any number. So good is Meccano for all experimenting with machinery etc., for the above and kindred purposes, that Government designers and inventors use it regularly for making their models.

Special Notice.

2.00.00

Six cents brings you the next three issues of this interesting boys' newspaper, postpaid.

The next number of the Meccano Engineer will be issued in March. Subscriptions are now due. You have surely had sufficient copies sent you free to show how good the paper is, so don't forget to send us your subscription to make sure of getting a copy. The Meccano Engineer will be full of interest for the live wire Meccano boy and the illustrations and descriptions of models will make it worth while to every one.

Subscribe today! Send your six cents in stamps to: Subscription Dept., Meccano Engineer, Building 10, Bush Terminal, Brooklyn, N. Y.

The International Society of Meccano Engineers.

The membership of this Society is growing day by day and the boys who by their good work have been successful in obtaining their Engineer degree are very proudly wearing the sign of their

There are still lots of boys however who have not yet joined and we take the opportunity in this issue to explain exactly what they have to do. We want to make it quite clear to every reader that you do not have to study in order to win the degrees offered by the Meccano College. All you have to do is to build, as we believe that more is learned by practical work than from books.

There are three degrees open to all.

Membership-To become a member a boy writes in to us sending name and address in order that we may enroll him in the books of the Society as a member. We will provide him with a few copies of the Meccano Magazine as often as published, so that he will get acquainted with it and hear what other boys are doing. For six months he must continue to use a building Outfit and do all he can by talking about the Society to increase its membership.

A Senior Engineer wears the bar over the button.



A Junior Engineer wears the button

Junior Engineer Degree-A member who has been building at least 6 months may qualify for the degree of Meccano Junior Engineer. obtain this degree you must write us a letter giving,

First, full name and address.

Secondly, date on which you were registered as a member of the Society.

Thirdly, state what you know about Meccano and what you have done with it.

The degree is an award for real genuine merit and will not be granted unless a member shows some real knowledge of toy engineering.

This is why the degree is so greatly prized by those who win it.

During the six months period of building members will have learned something of the history of Meccano and its inventor, the names and uses of the Meccano parts. They will have learned the importance of the Meccano system which provides for strips and girders with standardized holes 1/2 inch apart. It will thus be easy to write a letter telling us all you know and it would be well to add a list of the models that you have built and any you may have invented. As soon as you have been awarded the Engineer degree you will get a beautiful blue enamel button and a letter certifying that you have been admitted to rank in the Society.

Be sure to write clearly and use one side of the paper only.

Senior Engineer Degree-After you have obtained the first degree and have worn your button for 6 months and continued to use your building Outfit you have the possibility of obtaining a further honor called the "Senior Engineer Degree." You obtain a second certificate and a silver bar with the word "Senior" on it. The latter is to be worn above the blue enamel button. have been designed to match. The illustration shows exactly how they go together.

To obtain the second degree send full name and address, date on which you obtained the Junior Degree and what you have done to earn the higher rank. In regard to the latter a Senior Engineer is supposed to know something of the scientific value of Meccano, how different kinds of girders are built and to be able to recite the Meccano standard details. The standard details

are given at the end of the Manual and the scientific value of Meccano was illustrated in the March-April issue of the Meccano Engineer.

All applications for degrees should be addressed to the Board of Examiners, International Society of Meccano Engineers, Building 10, Bush Terminal, Brooklyn, N. Y.

What Shall I Buy?

Some Advice to the Boy Who Wants Meccano.

Every subscriber will receive a Meccano Pricelist with this issue of the Engineer. This will enable every one to make their selection in good time and to know the proper prices. All are cautioned against accepting goods offered at lower prices. If people attempt to coax you to buy in this way there is sure to be something the matter with the merchandise. It will either be out of date, or not complete.

Every live boy chooses his own present.

We are writing this article to help our readers to make their choice for the coming holidays. Whether the boy buys for himself, or his parents do the shopping and the paying, we are certain that every live boy does the choosing. Parents are only too glad to consider the boy's wishes and to listen to his arguments if well and intelligently put. On this account we are appending a table of reasons why he should have Meccano, and just in what way it is the best.

Every boy who is interested in Meccano. and what boy is not, ought to understand these arguments and have them ready on the tip of his tongue. We give the above mentioned reasons here and recommend every boy to learn them.

Insist on Meccano for the holidays because:-

- —Meccano building is true engineering.
- -No other toy will make such fascinating models.
- -Meccano models operate like real machinery.
- -You don't need to study, the fun begins when you open the box.
- -There is no limit to the number of models you can construct, each set is complete, nothing more to buy.
- -You can win a big cash prize.

Warning. But be sure you get Meccano, there are always those who try to make a little extra profit out of you by selling you some cheaper or an imitation line or perhaps some old stock. When a toy is a big success like Meccano, there are always some dishonest enough not to give you the genuine Meccano. So say the name over to yourself, Meccano, Meccano, Meccano. Then tell Mother and Dad why nothing else will give you as much fun.

These stirring times call upon us to spend less

A great wave of economy is sweeping this country and every one is seeking to cut out what is useless or what is unnecessary. Your parents are bound to be thinking along these lines and wondering what is the most economical present to buy you. This is just where Meccano wins, there is nothing more economical, and nothing more necessary to a real live boy. We may have to eat less, clothes will probably be made to last longer, dolls and balls could be done without, but there are some things for the boy who is to be a real man, that no parent dare cut out. Who would economize on schools or books or training, and Meccano is school and books and recreation all in one. To a parent who has the boy's present welfare and future success in mind, Meccano is the best spent money possible. No sacrifice is too great to see that the boy has this wonderful manual training and absorbing hobby-Meccano.

THE X OUTFITS ARE THE BIG VALUE IN MECCANO SETS.

Each one contains a Meccano Electric Motor at only a slight increase of price. Of course there are Meccano Outfits from \$1 upwards so that you can actually buy the set which fits your pocket book. To give you an idea of the value you get when you insist on the genuine Meccano we are going to tell you about the No. 1X set which costs you only \$4.50. This Outfit contains in addition to a good selection of Meccano parts, strips, flanged plates, braced girders, pulley wheels, nuts and bolts, etc., etc., the powerful Meccano Electric Motor. This wonderful motor will drive any Meccano model, it runs on batteries or house current, with a transformer, at small

The Outfit contains a manual of instructions and all necessary tools. It enables you to build a big selection of fine working models. With this Outfit you can build:

> Foot Cycle Baggage Carts Railroad Carts Sleighs Swings Windmills Cable Railways Telpher Span Tib Crane Monoplane Railroad Bridge Potato Reaper Derrick Morse Key Round-about Drilling Machine Churn Potter's Wheel Torpedo Boat

See-saw Forge Bellows Ore Crusher Lathe Candy Puller Beam Scales Stamping Mill Machine Gun Anti-aircraft Gun Power Hammer Roulette Wheel Spinning Top Gong Dock Drill Motor Truck Railroad Signal Hoisting Block Dial Press Drop Stamp and scores of other interesting models.

Every other Meccano Outfit is good value for the money and you will just buy the best you can afford. Suppose for instance you have \$12 to spend, you get the fine 3X Outfit and for \$25 the magnificent 5X is yours. The biggest Meccano Outfit No. 6 is, in cloth bound box, \$40. If you are the proud possessor of this Outfit you can make all the regular models in the Meccano manual and you can invent thousands of new ones of your own.

TO THE BOY WHO HAS MECCANO.

Those who have Meccano will want to make this season an opportunity to add to their sets. They will want to buy the appropriate next accessory Outfit, prices of these are given in the above mentioned price list.

There is one accessory Outfit however, which every boy should have and whatever Outfit he possesses it is the next to buy. It is the Inventors Outfit, price, \$3, it contains the latest parts and is just what is wanted to help build that new model.

The Meccano Spring Motor this year is a dandy. It only costs \$3, has a powerful spring and altogether is a wonderful piece of clock work. It is made specially to run Meccano models and will make them work like real machinery.

Among things new in Meccano, we must not forget to call attention to the Builder's Cabinet. This is a strong oak box furnished with lock and key. It will keep the Meccano parts in safety and in order. Inside the lid there is a steel plate which will take the Meccano wheels and gears and hold them in position with a special catch until needed. Every boy who values his Meccano should have one of these cabinets in which to keep his parts.

When buying Meccano see that the trademark "Meccano" appears on the box.

All those who find difficulty in obtaining Meccano goods, should write to us.

We undertake to see that they are properly and promptly supplied. All Meccano sets and parts may be had postpaid on receipt of price if not at your dealers.

MECCAI

Toy Engineering For Boys.

A THOUSAND NEW TOYS In Every Outfit. ALL BOYS WANT IT.

How Fast Does The World Move?

A Word to Parents.



The world moves fast; days and years bring along never ending progress. Inventions and improvements follow each other in quick succession. The years are greedy for great things.

Just think of the wonders which in the space of one man's life have been created. The Bicycle, the Motor Car, the Flying Machine, Telegraphy, the developments of Railways and Cables, Wireless, Electric Light and Traction, Moving Pictures, the Gramophone, the Submarine and Aerial Transport, wonderful Machines, whose work excels that of the deftest fingers. Machines which sew and knit better than our Grandmothers, Looms which embroider and weave the daintiest fabrics, and yet work like lightning. But what an army was necessary to do all this. The world's inventors are not few; the opportunities of doing great things are many.

Inventors are being born every day, but the discovery of genius is not so easy. The world is waiting for them and the cry from the factories is for new ideas and new models of machinery. There are great things to be invented and the men who will do all this are the boys of today.

The boy of today is the great man of tomorrow; what part is your son going to play in this great world building?

Meccano will give him his chance, it has already discovered thousands of inventors for it enables any one with an idea to materialize his discovery. These ideas, children of his brain, he can model, arrange, dis-arrange and re-arrange until he has perfected what the invention calls for. There is nothing so helpful to the ambitious youth as Meccano. Like Aladdin's Lamp it calls into existence what he most desires and will blaze out for him a pathway of fame.

Every parent is anxious enough to give the boy a good start in life and many are the sacrifices made to this end, but many place too much reliance on school and books. They think all that is necessary is to pay the fees of a good school, or be generous in the matter of books. Intelligence, initiative and handicraft are however just as important in the forging of the career of a great man.

This is just where Meccano scores, it is relaxation from school and books. Every set of Meccano is just a great boxful of fun to every boy. A Meccano Outfit contains thousands of toys. At the boy's command a new, different and ingenious plaything springs into being every day.

It is just play—clean, absorbing recreation, and it holds him spellbound and the while he learns, unconsciously but thoroughly, what every growing man must know in this age of mechanism and engineering, how to use a screwdriver and a wrench, orderly methods of work, strength of material, how machines are put together and the various principles involved.

A Meccano Outfit contains engineering elements which will build almost anything, but it is not just a mere assortment of parts, it is a system, which no other toy, not even the various imitations

of Meccano, have ever been able to equal. A system of boy training and man making. The Manual of Instructions which goes with every Outfit interests him in the construction of hundreds of different types of mechanical structures. There is no study needed, the fun begins the moment he opens the box. The models get larger and more interesting as he progresses, and the young builder gets more enthusiastic. Boys never tire of Meccano, and it never wears out.

Parents who know, assure us that to give a boy a set of Meccano is as good as an extra term at high school, and parents who have the future of the boy in mind appreciate this more and more.



We invite our young friends to write us on subjects of interest to Meccano Builders. Such letters, or parts of letters, as the editor considers to be of general interest will be published from time to time.

WOULDN'T MISS A COPY!

Danville.

Dear Sirs:

The Engineer has given me a great deal of pleasure, but I am sorry that I did not pay for it.

I am sending you the six cents subscription

I am sending you the six cents subscription now, as I would not like to miss a single copy.

Yours very truly J. L. P.

HIS SECOND PRIZE.

Have just received the Meccano Outfit which I won in the recent Prize Contest and wish to thank you for same.

This is the second time my name has appeared in the list of Prize Winners and I hope to see it there on future occasions.

With best wishes for the future success of your wonderful invention,

I am yours truly

L. V.

H-Mass.

THINKS MECCANO IS KING OF TOYS.
Dear Sirs:

I am sending a subscription for the good old Meccano Engineer. I like to read it and I read everything in it from beginning to end. I can hardly wait until it comes each time.

Last Friday I had a bad cold and I had to stay in the house over week-end, so I got my Meccano set out and looked in the Manual to see what I could make. I found there a Turn Table Crane made with a No. 5 Outfit. My Meccano is a No. 3X, but I was able to build this Crane with very few alterations. All the fellows wanted to see it and they thought it was the best model they had ever seen.

I intend to get a Spring Motor. I think Meccano is the King of toys.

Yours truly F. C.

HAS HOURS OF PLEASURE Scranton, Pa.

Dear Mr. Meccanoman:

I have worked with Meccano for three years and have found it to be a wonderful toy. I have learned a great deal from my Meccano and also have had hours of pleasure in making Cranes, Railroad Bridges and various other things. I have also interested other boys who live in my neighborhood and we have had lots of fun together. I am 11 years old.

Thanking you for all the fun, I am one of your boys.

J. W.

NEVER TOO OLD FOR MECCANO.
Wilkinsburg,

Dear Sirs:

I am one of your best Meccano boosters, having had Meccano since the first year it was on sale and I am now 15 years old and still take great pleasure in using my Outfit. I started with a No. 2 and now have a No. 5 Meccano, an Inventors Outfit and several dollars worth of parts.

While working for the Carnegie Steel Co. this summer I spent my noon hours in the Mill looking at the different pieces of machinery. In the evenings I built models of them, one an open Hearth Charging Machine took me two weeks to perfect. I attend High School now and am taking a technical course to which Meccano has undoubtedly opened the way for me. All the men I tell about it say it is the best thing they ever heard of for teaching the various mechanical principles, but mother says it is a good thing to keep boys out of trouble if nothing else.

One of my chums got persuaded to try an imitation Outfit but is disappointed because he finds Meccano more complete, he would rather use my set than his own. At present I have a war "Pursuit Aeroplane" which I expect to enter in the next Prize Contest. I intend to complete my Outfit in the very near future by the addition of a No. 5A set.

William W.

MECCANO TURNS GLOOM TO JOY.

To Mr. Frank Hornby, Dear Sir:

I thought I must write you a few lines to let you know how I appreciate Meccano. I am nearly 17 and due to a spinal complaint I am unable to walk, and if it were not for Meccano I would have to spend many miserable hours with nothing to do, especially during the long cold winter months. As it is I can be happy building machines and other models.

By the way I am quite an adept at building automobiles and have one before me as I write, which is run by the Meccano Spring Motor and is controlled entirely from the driver's seat by levers. I have a No. 5 set and the E2 Motor. I have also an Inventors set which I like very much.

With best wishes and kind regards
I am yours truly

yours truly C. W. B.

GLAD HE INSISTED ON MECCANO. Lawrence, Mass.

Dear Sirs:

I can hardly wait until the Meccano Magazine comes, it is so full of interesting things that I have read mine over dozens of times. I am also saving every copy of it and when I grow up I shall always have them to read. I am going to enter the Contest again, although the last time I tried I did not win anything.

The Book about Frank Hornby I have read many times and it made me say to myself, "now don't say you can't". That is why I am writing this letter to ask you for an entry form.

Around my way there are a lot of boys who own——, they played with this a couple of months and then threw it aside. It is not that way with Meccano because I have been building with it for six years this Christmas and will never tire of it.

I go to the Lawrence High School and in class we talk about things that should be used in school for education. One of the boys said they thought it would be a good thing if our class had-----, the teacher said there is another builder which would suit us more perfectly and I said, "yes Meccano"; our teacher said "right".

When I first got my Meccano the girl in the store tried to give my mother a flimsy looking thing, but my mother said, "my boy wants a Meccano and he wont have anything else". I am glad that I insisted on Meccano because it is the best toy in the world.

Yours truly A Meccano Boy.

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