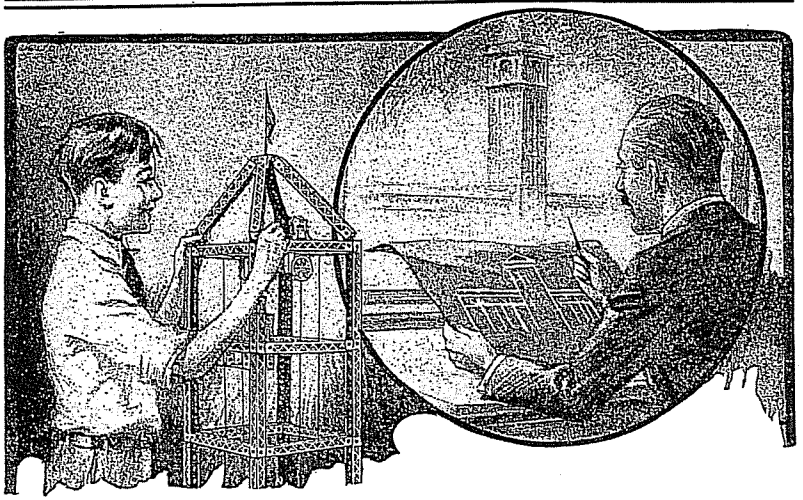


ERECTOR

THE TOY LIKE STRUCTURAL STEEL

Erector has been on the market for so long and so many boys already have it that I'll bet lots of you fellows know as much about it as I do. Why, say, isn't it corking great stuff to build bridges, towers, elevators, and all sorts of structural steel buildings with. Honestly, it even surprises me sometimes when I'm working on a model to see how quickly and easily it puts together, and the number of things I can build with it.

That's the beauty of having a toy that is correct in construction, and Erector surely is. It is structural steel in miniature, just like the big steel that goes into drawbridges, traveling cranes, skyscrapers, battleships and almost everything you can think of. Boys, it is genuine—and that means you can do something real with it. That's why so many boys immediately think of Erector when they want a steel construction toy. They like the real four-sided girders, the steel-angle irons, shaftings, wheels, pinions, pulleys, nuts and the many parts that come only in Erector.

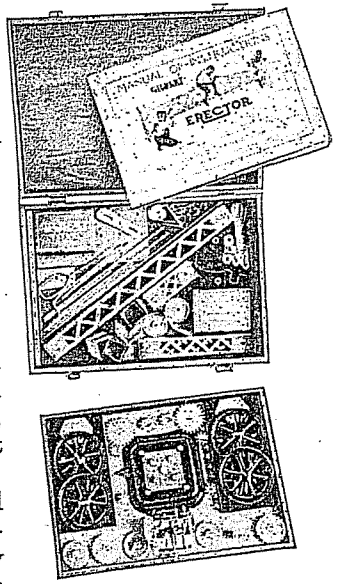
In fact there's hardly a boy in America who hasn't heard of Erector and knows that the models he can build with it are just like the real thing that workmen build.

I've watched Erector grow from nothing until it is to-day the best known toy in the world, and I know that if you haven't already an outfit that you don't know the fun you are missing.

A. C. Gilbert
President

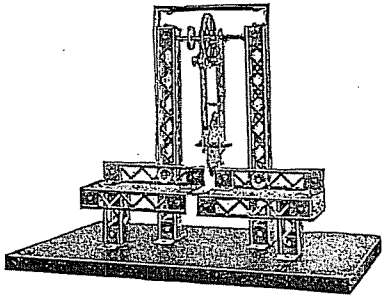
THE BIG

No. 6 Erector

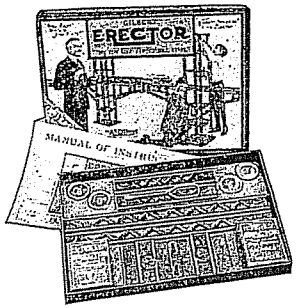


Here's the famous No. 6 Erector. I call it the famous No. 6 because it is a popular choice among boys. Contains just the right number of parts for building crackerjack models. There's special gears, gear-sides, plates, standard Erector girders, angle irons, shaftings, etc. Each piece is structural steel in miniature just like the steel that goes into draw bridges, cranes, skyscrapers, battleships and almost anything you can think of.

You will like the real four-sided girders, the steel angle irons, shaftings, wheels, pulleys, nuts and many other parts that come only in the Erector. Included is a motor to provide motive power for your car, elevator, or derrick models. It will make your model natural-looking—make it move in real fashion. This motor will do that for you, and when you want to run your models the other way, there's a reverse base for just that purpose. There's no end of the pleasure you can get from this set. This is play—real play. Because this is so, Erector sets appeal to boys everywhere. They are something boys everywhere are glad to own and eager to talk about. This set is put up in a stained hardwood cabinet arranged to hold the parts conveniently and compactly. Price, **$10.00.** (In Canada, **$15.00**).

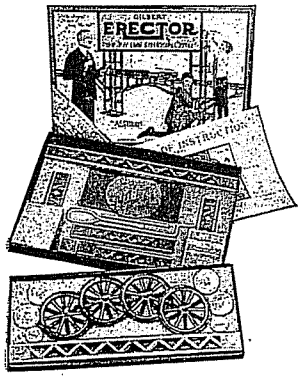


ERECTOR No. 1



Just the outfit for a young boy who is beginning with Erector. The parts included are the same mechanically correct girders, angle irons, pulleys, etc., in all Erector outfits. Then, too, there's a big book of instructions giving complete directions for building many interesting models. Packed in the distinctive Gilbert Toy sealed carton, size 12¼ x 8¾ x 1¼ inches.

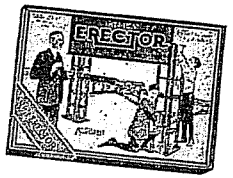
Price, $2.00 (in Canada, $3.00).



ERECTOR No. 2

A slightly larger Erector outfit than No. 1, containing in addition to the parts in No. 1 the Erector base plate, shaftings, and complete set of bright red wheels for building wagons, trucks, etc. The big book of instructions shows some models that you'll like. Packed in the original Gilbert Toy sealed carton with tray size 12¼ x 8¾ x 1¼ inches.

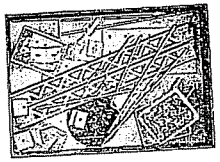
Price, $3.50 (in Canada, $5.25).

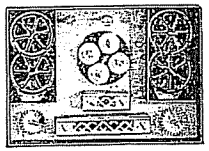


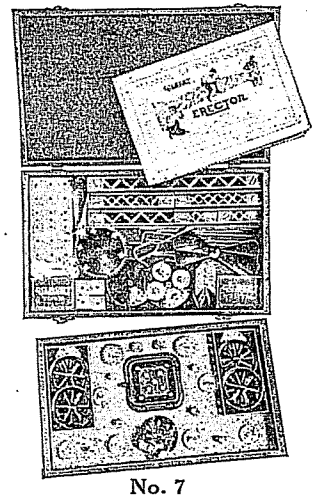
ERECTOR No. 3

Here's an Erector Set that you'll enjoy. This one includes the standard Erector gears and pulleys, besides a liberal assortment of girders, shaftings, angle irons, base plate, bolts, nuts, screws, etc. With this outfit you can build any number of unique and modern models. The book of instruction included gives complete directions and shows pictures of many. Packed in a Gilbert Toy sealed carton, size 12⅜ x 8¾ x 2 inches.

Price, $5.50 (in Canada, $8.25).



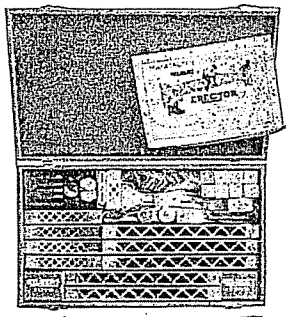


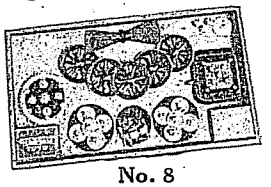


No. 7

Erector No. 7

Quite a complete set for the boy who is old enough to make difficult models. It contains many parts for building most of the models shown in the book of instructions which comes with the outfit. There is included a motor and a reverse base to operate the crane, derrick or elevator that you make. The fact that you use motive power in your work adds to the reality of it. All the parts of the standard Erector equipment packed in hardwood cabinet 12¼ x 20¼ x 3½ inches. Weight approximately 18 lbs. Price $15.00. (In Canada, $22.50).





No. 8

Erector No. 8

An advanced set containing a sufficient number of parts to do most any kind of building. You can build some wonderful models with this outfit, such as locomotives and things requiring care and study. You will not be limited in your work; you can build some very big models requiring a whole lot of girders, angle irons, shaftings, nuts, bolts, etc. Of course, the powerful Erector motor is included, together with reverse base and control switch. Packed in hardwood cabinet size, 12¼ x 20¾ x 4¾ inches. Weight approximately 32 pounds. Price, $25.00. (In Canada, $37.50).

No. 10

Erector No. 10

The largest and most complete Erector set made. You can be sure that with the assortment of parts in this outfit you will have no trouble in setting up models of the most difficult machines. There's the crackerjack Erector motor, reverse base, control switch, girders, angle irons, shaftings, nuts, bolts and everything you could wish. Packed in hardwood cabinet with trays to hold the different pieces in the right place, size 12 x 20 x 3½ inches. Price, $35.00. (In Canada, $52.50).

Hydraulic and Pneumatic Engineering

Hydraulic engineering is the engineering which deals with water and other liquids.

Pneumatic engineering is the engineering which deals with air and other gases.

Boys, have you running water in your homes? If so, do you know how it gets there?

If you live in a city, your running water is supplied in one of three ways: first, it is pumped into a standpipe or reservoir; second, it is brought from a distant lake or stream at a higher level; or third, it is pumped directly into the city mains.

If the town is situated near a hill, the usual practice is to build a large cement-lined reservoir on the hill and to pump the water into this instead of into a standpipe. In either case the water runs by gravity through the mains and submains to the houses, hydrants, etc.

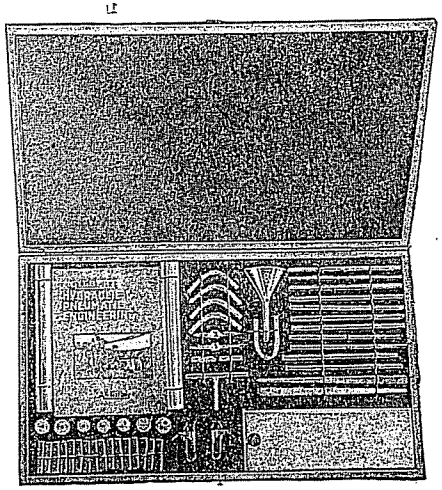
If the city is very large, the usual practice is to bring the water from a lake or stream at a higher level. New York is supplied with water in this way. If the city is very large, and if an elevated lake or stream cannot be found within a reasonable distance, the usual practice is to pump the water directly into the city mains, from the nearest river or lake.

In all cases the greatest care is taken to see that the water is pure. The land bordering the elevated lake or stream is kept free from all sources of contamination, and in addition the water is filtered. If the water is pumped from a lake, the intake pipe is run out into the lake for a long distance to get the purest water, and in addition the water is filtered. If the water is pumped from a river near the city, it is taken in above the city and is filtered.

Boys, that's just a few of the things you will learn about with a Gilbert Hydraulic and Pneumatic Engineering Outfit. You'll find out how elevators run, how big ships are raised from the bottom of the ocean, and many other fascinating facts. Best of all you will get a knowledge of a lot of things that most boys do not understand.

GILBERT Hydraulic and Pneumatic Engineering

No. 6501



Real fun—that is what this set will provide for you. Think what it means to you to be able to construct models of water systems—to make trench guns with which you and your chum can have a real battle! Learn how ships that have been sunk are raised—interesting facts about the submarine, the depth bomb, and torpedo. There are many fascinating experiments that you can do to illustrate a great many scientific facts which explain the important inventions so well known today.

A Gilbert Hydraulic and Pneumatic Outfit will please you in every way because it is an equipment you can use as often as you like and never grow tired of it. After you have read the book of instructions that comes with each set you can use your apparatus to make models of big construction work, build a miniature water supply system of your own, and in many ways get a good knowledge of the big problems engineers have had to solve. You will soon be in a position to tell your boy friends accurately the importance of this branch of engineering. They will listen eagerly to the facts you can tell them and will want to join in the fun that you get from your set. All the necessary apparatus for preparing many interesting experiments is included in this outfit. Comes packed in a stained hardwood cabinet, 18¾ x 10⅞ x 2⅞ inches. Weight approximately 4 pounds. Price, **$15.00** (in Canada, **$22.50**).

MAGNETISM

Sometime during the first hundred years A. D., wide-awake men and boys living around Magnesia, which is a town in Asia Minor, found pieces of hard, black stone which would pull or attract iron to them or would be pulled or attracted to the iron itself. Probably the first man to discover this found little pieces of this black stone clinging to the iron tip of his traveling staff, which all the wayfarers used in those days. This peculiar black stone is found in several places in the world, and is a kind of iron ore.

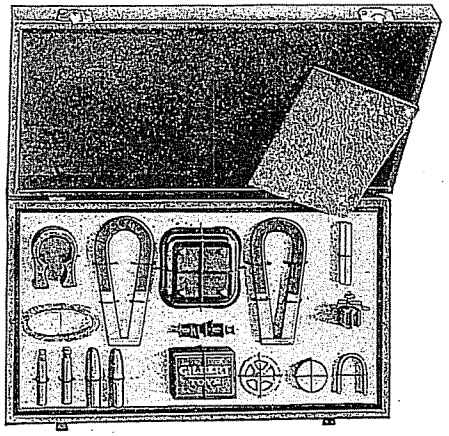
A long time afterward, some unknown man discovered that if you hung one of these black stones on a thread, or made a raft of cork or wood and laid the stone floating in a basin of water, a wonderful thing happened. The stone turned and pointed nearly north and south! The Chinese found this out perhaps sooner than the Europeans, and put this peculiar quality to work as the earliest form of compasses on their sailing vessels. Before this time, men had to depend entirely upon the sun and stars, and if a fog came up or a night was cloudy, they lost their way and were often wrecked.

Men familiar with minerals have given this iron ore the name of "magnetite," which, you see, sounds very much like "magnet." Sailors who used these stones for guidance over the seas called them "lodestones," which in those days meant the same as "leading stone."

Did you know that the simple compass is one of the first magnets discovered? Men have found various other magnets after long years of search and have gradually learned how to use them. Today ships not only are guided through the fog, but are also lighted by electric lights, signals sent across the ocean, elevators run, bread baked, and numberless other things done by the help of magnets.

Gilbert Magnetic Fun and Facts

No. 6505



Did it ever seem strange to you that a compass always points to the North? Do you know why it does —what it is that attracts the fine needle point of the compass? Very few boys do. The boys who do not are the boys who have never heard of magnetism and do not realize what a tremendous effect it has on our everyday life.

Gilbert Magnetic Fun and Facts is an outfit that you will find intensely interesting. It explains in a very easy way all about the compass and many other things besides. It shows you how to build a simple magnetic motor, a corking little electric shocker, a magnetic tight rope walker, magnetic jack straws, a magnetic navy and any number of electrical tricks with which you can surprise your friends. You'll like this outfit and the big book which comes with it telling you many things about electricity and magnetism you never dreamed of.

The boy who knows about different kinds of engineering—electrical, chemical, structural, etc., the kind that are covered by Gilbert Toys—is the type of a boy who will be a leader among his fellow boy friends. He is the boy whom the rest of the boys look up to and they only do it because they appreciate that he has a knowledge of different things which they don't understand.

Gilbert Magnetic Fun and Facts will give you a pile of information on magnetism and a whole lot of fun at the same time. It comes packed in a stained hardwood cabinet, 18¾ x 10⅞ x 2⅞ inches. Weight approximately 5 pounds. Price **$12.50.** (Canada, **$18.75**).

LIGHT

AND WHAT IT MEANS TO US

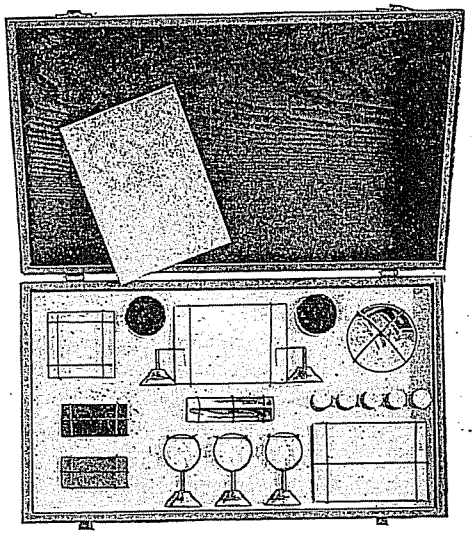
What would the world be without light? If you stopped to think about this you would soon realize that without light there would be no life at all. There would be very little vegetation and without this we could not live. The greatest illuminating body that we know of is the sun. This is the source of light on which we depend entirely. Perhaps you have been curious to know how light reaches us and what makes it possible for it to travel over so great a distance. There are any number of questions you can ask about the light we get from the sun, from the candle, from the lamp or even the electric lamp which is used so commonly to-day.

Have you at some time or another been in a dark room and noticed a small ray of light enter through a hole or crack of some kind? There are a great many important facts to write about that ray of light. From these we are able to understand why it is that eye glasses improve the sight, why the microscope helps us to see the tiniest particles. Then we can explain how the moving picture machine can operate giving pleasure as it does to so many people who go to the movie theatres. Do you remember when in bathing near the shore you put your head under water, the objects in the water seemed different to you than they would if you were on land? There is a reason for all these changes and you should know what causes them.

It's easy, and it's interesting, too. There will be as much fun in doing this as there was when you took a magnifying glass and burned a hole in a piece of paper, or when you held a mirror in the sun and reflected the rays so that they shone wherever you wanted them to. At the same time that you enjoy your play you get a good knowledge of light, what it is, what can be done with it and why we could not live without it.

Gilbert Light Experiments

No. 6515



What is light? Where does it come from? Where does it go to? What does it mean to us? Those are the questions that would stump you if you had to answer them. You probably don't know because you've never thought much about it, but you, as well as every other boy, should understand more about light. You should know how it affects our every day life.

With an outfit of Gilbert Light Experiments you can have some wonderful fun. So many things that are entirely different from the things you have been satisfied with until now. There's a big book on light with every outfit telling interesting facts about the sun and the suns rays, and how to make use of them. Then, too, it tells you how to give shadow shows, give an exhibition of freakish images that will amuse your friends.

While you are playing with this outfit, you will learn about the telescope, opera glasses, microscope, moving picture machine, and many other important instruments. You will learn too, why eyeglasses improve the sight and why a lens produces an upright image or an inverted one. There's a pile of fun in every one of these outfits for a boy. It is complete with lens, prisms, mirrors, and all necessary equipment. Packed in stained hardwood cabinet, size 18¾ x 10⅞ x 2⅞ inches. Weight approximately 4 lbs. Price, **$15.00** (Canada **$22.50**).

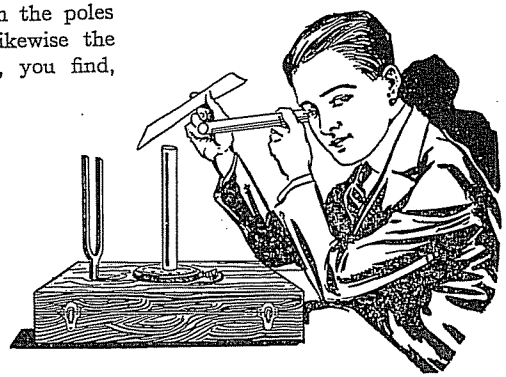
SOUND

Many hundred years ago there lived a great scientist, known as Galileo. He was born in Pisa, Italy, in the year of 1564, and was destined to be one of the greatest philosophers and inventors that the world has ever known.

As a boy he was bent upon a scientific career. He took up his study at the University of Pisa. On a certain afternoon when he was still a young boy he had occasion to visit the great Cathedral of Pisa. While he was there he saw the watchman lighting a lamp that hung from the ceiling of the cathedral. In order to light the lamp it was necessary for him to draw it down toward him, and when finished lighting it, he let go of the lamp and it swung back and forth. This attracted the attention of Galileo and, having a scientific trend of mind, he became interested in the movements of the lamp. At first the lamp swung in a long arc back and forth and then, as you all know, its motion grew less and less. But what you probably do not know, and the thing that struck him as intensely interesting, was that these "to and fro" movements or oscillations, whether the lamp was swinging wide or short, were always made in exactly the same time.

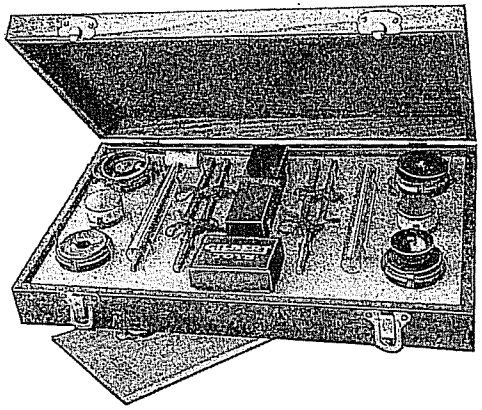
He went home and reasoned it out. He made a piece of apparatus that was similar to the lamp—that is, with a thread and weight attached to it, he made what is now called a pendulum. He was thereby able to duplicate the swinging motion of the lamp and measure it accurately. In this way he discovered the laws of "to and fro" motion—that is, of the pendulum and its vibration.

What is the effect of the wind upon the trees? Do we not find that they are swaying backward and forward? The telegraph wires that hang on the poles are swinging to and fro, likewise the waves of the sea. In fact, you find, if you experiment with a Gilbert Sound Outfit that all of these motions that we see about us and the sounds that come to our ears and the waves that carry the telephone messages and the telegraph and wireless messages, are all results of this "to and fro" motion.



Doesn't that interest you?

Gilbert Sound Experiments



No. 6520

Do you know that hearing is just feeling with the ear? That in reality, the thing we call sound, which we think of as a noise or as a musical note, is just an impression on the be brain? Very few boys know this, and if you would like to be one of the few that do, you surely want an outfit of Gilbert Sound Experiments.

With one of these outfits you can find out just what sound is—how it is produced—why some pianos sound better than others—why a violin produces a musical tone, and many other things, including a number of startling table rapping tricks with which you can astonish your friends. The outfit contains tuning forks and sound box, receivers, mallet, etc., and big book on sound telling how to perform many fascinating experiments with the apparatus in the set, and also shows you how to do many startling tricks with apparatus you have in your own home. This is one of the most intensely interesting scientific toys of today and every boy should have one. Packed in stained hardwood cabinet 18¾ x 10⅞ x 2⅞ inches. Price, **$10.00** (Canada, **$15.00.**)

CIVIL ENGINEERING
(SURVEYING)

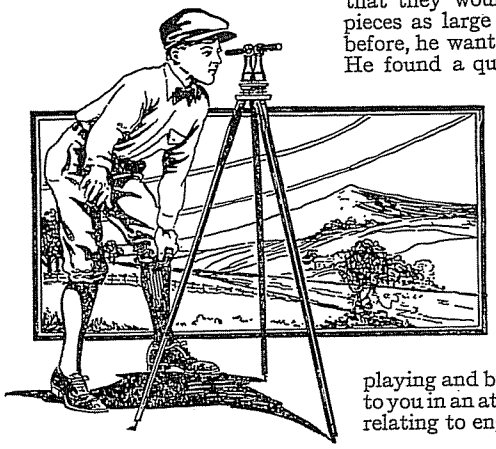
Do you know, boys, that some of our greatest men and most of our great civil engineers who have designed bridges, tunnels, railroads, etc., first learned to survey and make maps? George Washington was a surveyor. He made a very good map of his father's farm in Virginia. Abraham Lincoln was another who learned to survey.

John A. Roebling, designer of the Brooklyn Suspension Bridge, surveyed the line of the Pennsylvania Railroad over the Allegheny Mountains. He was the first man to manufacture wire and wire cables in America, and great factories in Trenton still bear his name.

He designed a number of bridges to carry water pipes across rivers, and in 1851 began the famous Niagara Suspension Bridge, the first railroad suspension bridge in this country. In 1868 he designed the Brooklyn Bridge. While superintending the building of some of the first stonework his foot was crushed, and he died of the injury.

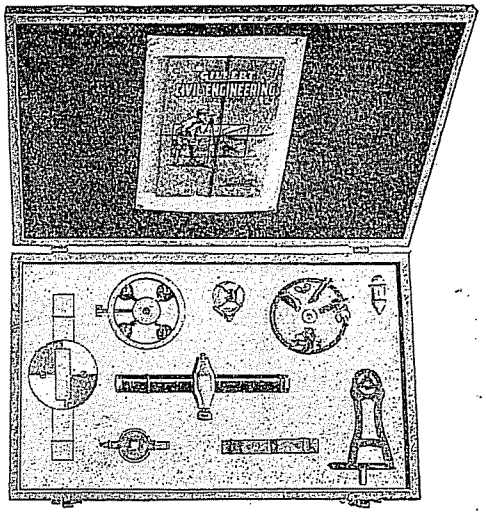
His son, W. A. Roebling, returned from Europe, where he had been studying methods of putting in foundations under compressed air, to take charge of the work. In 1871 he was prostrated with a caisson disease caused by working in compressed air. Determined to finish the work, he hired a house from the windows of which he could see the bridge, and retained full charge until the bridge was completed in 1883.

Captain James B Eads is another of our noted civil engineers. In 1867 he was engaged in building an immense steel arch bridge across the Mississippi at St. Louis. At that time there were no testing machines large enough to crush the most important steel members he was to use in his bridge. He had figured that they would stand the strain, but as no pieces as large as these had ever been used before, he wanted to be safe rather than sorry. He found a quarry which had firm walls of rock, just about wide enough to take one of the steel members. He put it in horizontally with a hydraulic jack at one end, and stressed the steel beam until it gave way. By the pressure on the dial of the jack he knew how many pounds his beam would stand. The bridge was completed in 1874 and is still standing.



You can learn what surveying is and how to do it by playing and by following the directions given to you in an attractive book in which all words relating to engineering have been simplified.

Gilbert Civil Engineering
(Surveying)
No. 6525



You are very much interested when you are playing baseball or tennis to see that all rules of the games are obeyed. Why not be just as interested about the layout of the baseball field or tennis court?

With the Gilbert Civil Engineering set you will be able to lay out your playing field accurately. With your own instruments you can measure distances exactly, make a map of your backyard, putting in the trees, fences, sheds, etc. You can use your apparatus anywhere—at the camp, perhaps, where it is necessary to get information about the land on which the camp will be located. Find out what the grade of your street is. Learn to lay pipes for drainage. Do many things that the civil engineer does when he is completing a great piece of construction work. All this you do while you are playing.

With an outfit of this kind you are doing something real—something every boy wants to do. The fun you get isn't limited in any way. After you have used your set making surveys you put on paper all information about distances, etc. Then at night when you have a spare moment you can make a complete map. With the set comes a fully illustrated book on surveying from which you can obtain a knowledge of how to use your equipment, how to survey, and of the work great engineers have done. You will be able to talk to your boy friends about surveying in a way that will show them you understand it. The outfit contains all parts necessary for building your own transit—is packed in a stained hardwood cabinet, size, 20 x 12 x 3¾ inches, and weighs approximately 7½ lbs. Price, **$25.00** (in Canada, **$37.50.**)

HAVE A WEATHER BUREAU OF YOUR OWN

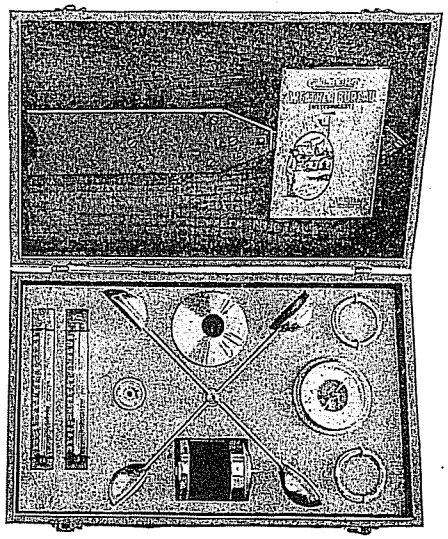
In the minds of most people a very silly idea prevails about the weather and the weather man. It is the general idea that the weather knows no laws—that it is lawless and reckless, fickle and changeable; that the weather man is sort of a conjurer, and by some mysterious gift he is able to prophesy things that most people know nothing about. Nothing could be further from the truth. The study of the weather is a science, like electricity, chemistry, or medicine; there is nothing mysterious about it at all.

As a matter of fact, the weather man is a scientist, and by means of his instruments which indicate definite things to him, he comes to certain conclusions. He is not a prophet; he does not prophesy, he forecasts. He has a weather bureau station which is maintained by the Government. There are over a hundred of these stations located in various cities throughout the United States, and they are very interesting places. They are usually located on the top floor of one of the tallest buildings in the city, with apparatus on the roof, some of it electrically connected in the room below, with wonderful machines which make records all day long on special charts.

If you are interested in having a weather bureau station of your own, I can tell you now that it will be one of the most interesting things you ever had in your life. You will have a knowledge of a subject on which most people are quite ignorant, and if you are a boy you will stand for leadership among boys for knowing about things that to most people are mysterious and magical.

A weather station about your home will give you a source of pleasure and fun and an insight into a science that is intensely interesting, easy to understand, fascinating, and worth while knowing. Read the descriptions of the Gilbert Weather Bureau Outfits on the following pages.

Look over the pictures of the outfits. You'll find them entirely different from any toy you have ever seen.



No. 6531

Gilbert Weather Bureau

No. 6531

When you see curious-shaped clouds overhead do you know them by name and can you tell what they indicate? People talk about the weather more than anything else, yet they do not seem to be able to speak with authority about it. Winds, changes in temperature, humidity, have a powerful influence in life and they should be understood by everyone. For you and every learner a Gilbert Weather Bureau Set will be a valuable help. It's a new kind of play—made so a real boy can get the most fun in an unusual way. From instruments you set up on your own home you can take readings, and from these make forecasts of the weather. There is a book in each set which tells you how to set up your Weather Bureau Station. It explains the various devices used by the U. S. Weather Bureau to record rainfall, sunshine and wind velocity. In a very simple manner you learn the cause of tornadoes, of floods, the formation of snow, frost, dew and hail.

Once you have read the book and made observations with your Set you will see how necessary it is to the farmer to have reports of the weather, to the shipper of perishable goods to know what the temperature will be in certain points and to the big steamships to receive notice of storms at sea. A Gilbert Weather Bureau Set is what you need to make your playing worth while. No. 6531 contains anemometer for measuring the velocity of the wind, thermometers, barometers and all equipment for operating them. The Set is packed n a stained hardwood cabinet, 20x12x3¼ inches. Weight approximately 7 lbs. Price, **$27.50** (Canada **$41.25**).