

STEEL HORIZONS®

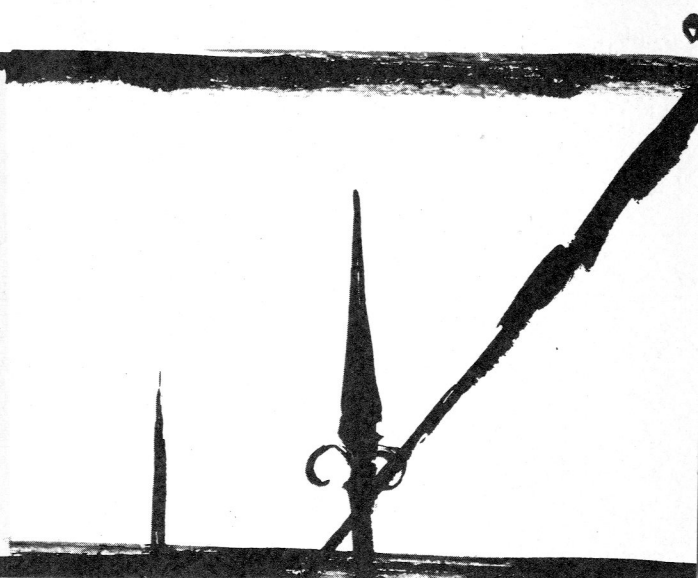
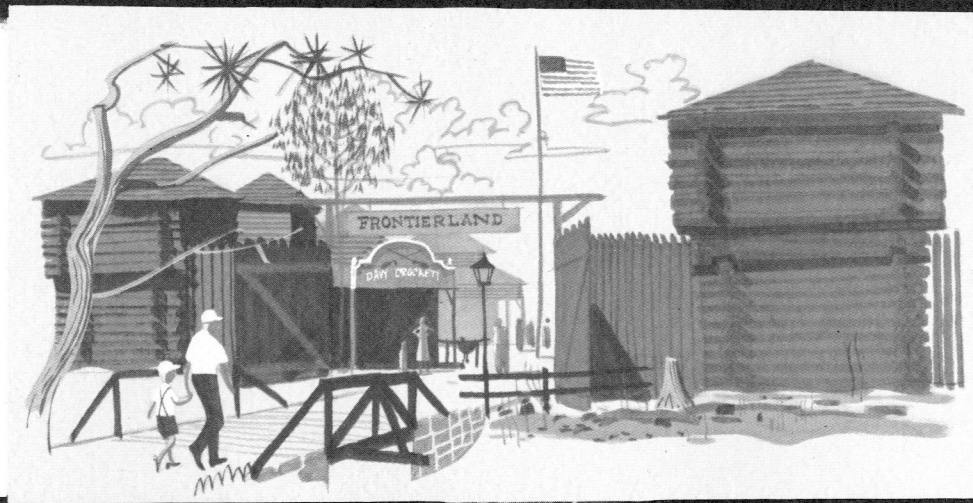
ALLEGHENY LUDLUM STEEL CORPORATION

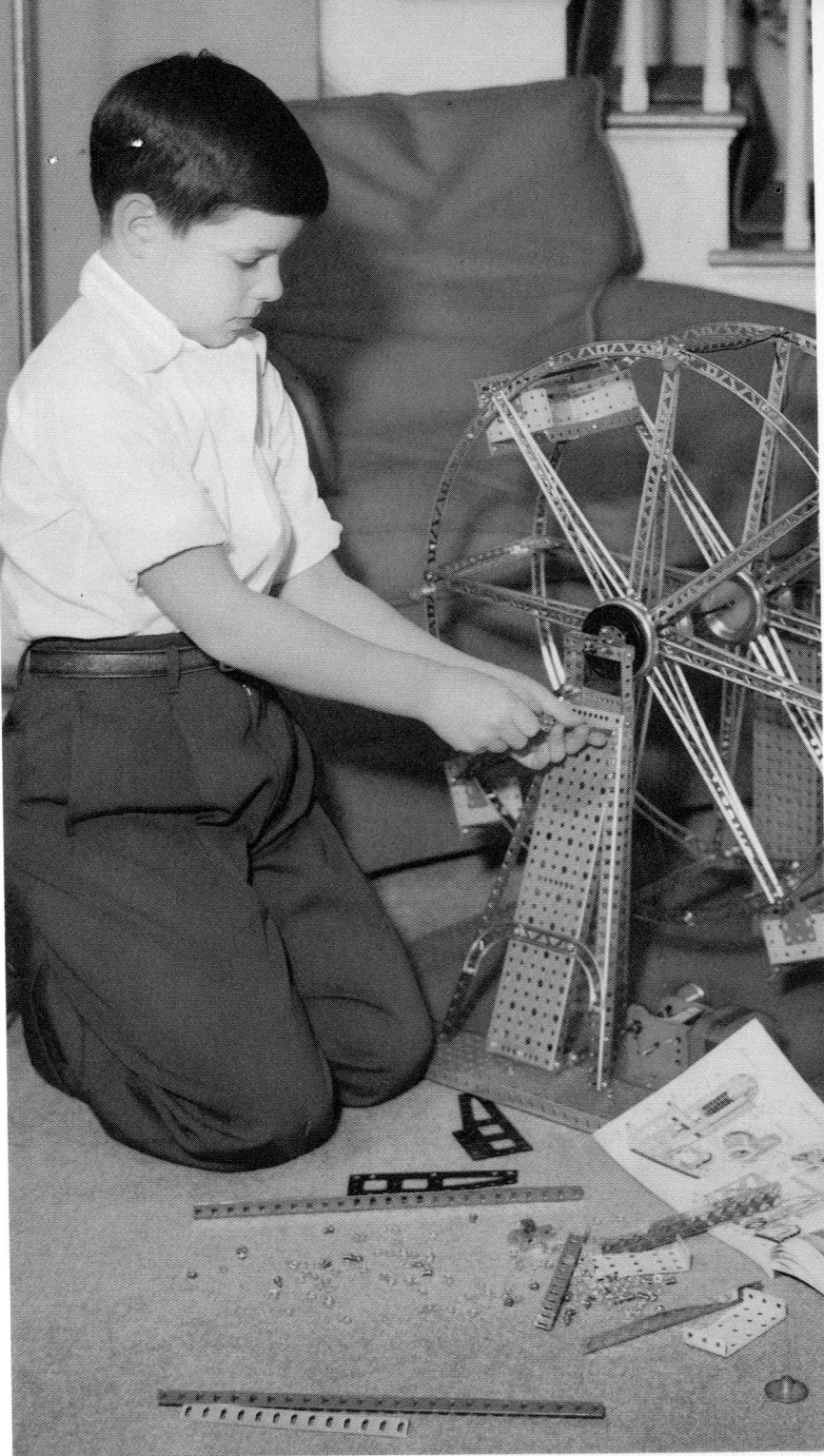
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IN 1909, an old wagon shed outside New Haven, Connecticut, housed a brand-new, struggling business, The Mysto Manufacturing Company. Sole owner of the enterprise which was to expand until it eventually became one of the world's largest toy producers was Alfred C. Gilbert, just graduated from the Yale School of Medicine.

The Mysto Manufacturing Company, which made magic tricks for professional magicians—Gilbert designed and invented the tricks himself—was both the result and the forerunner of a varied experience as toy manufacturer, Olympic pole-vaulting champion, magician, architect and author.

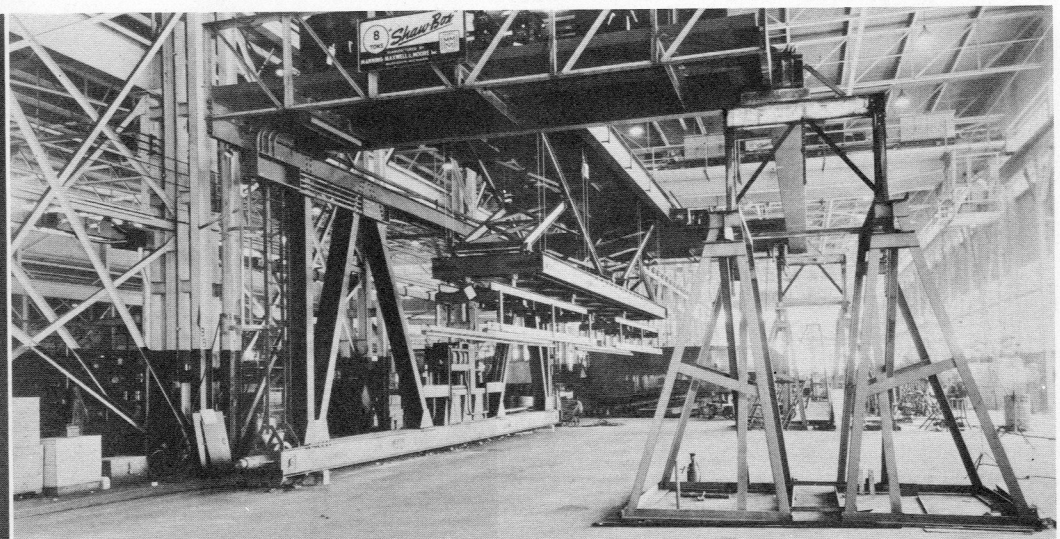
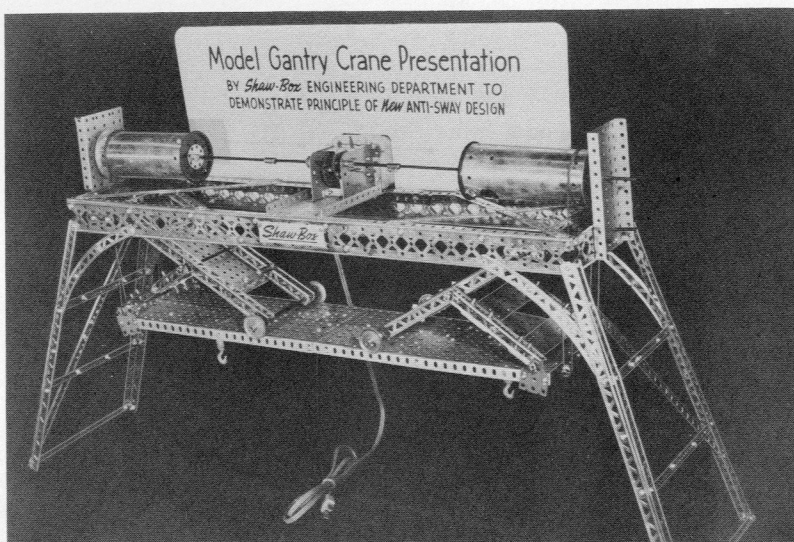
In his senior year at Yale, in 1908, Gilbert shelved his plans to become a physical education instructor. He had given magic demonstrations

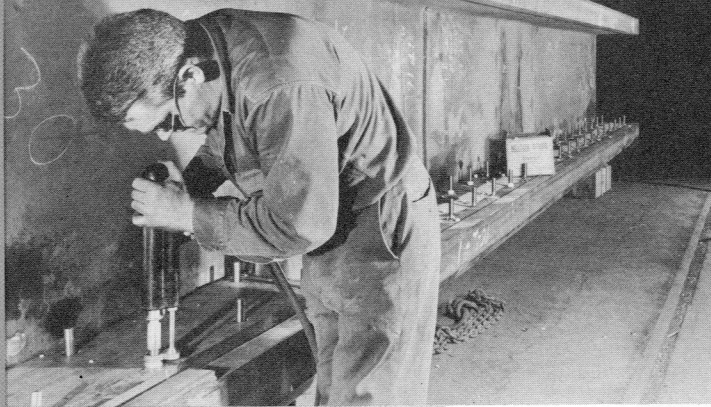
The Business Built on Fun

in his childhood and supplemented his income while at college with his magician's sets. He decided to capitalize on the knowledge.

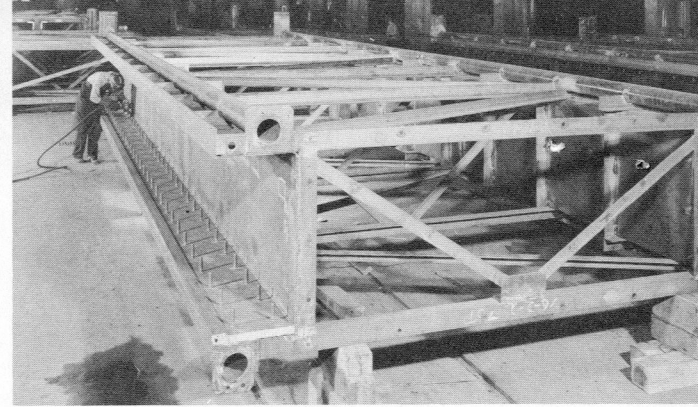
The early years of Mysto were slowly and steadily successful, but by 1912 Gilbert was on the lookout for another product. The magic business appeared to be approaching a decline. One afternoon Gilbert sat in a train returning from New York and thought that he would like to make something that would appeal to a boy. Something, also, that could be sold without first giving special techniques to salesmen, a necessary procedure with his magic tricks.

At the time the New Haven was in the process of converting from steam to electricity, Gilbert watched with interest the erection of the electrification towers along the right-of-way. Deciding that a building set designed on the same principle as real steel girder construction might prove popular, he and his wife spent that evening cutting miniature girders out of cardboard. The next day Gilbert took them to a metalsmith who made him a sample set out of sheet steel

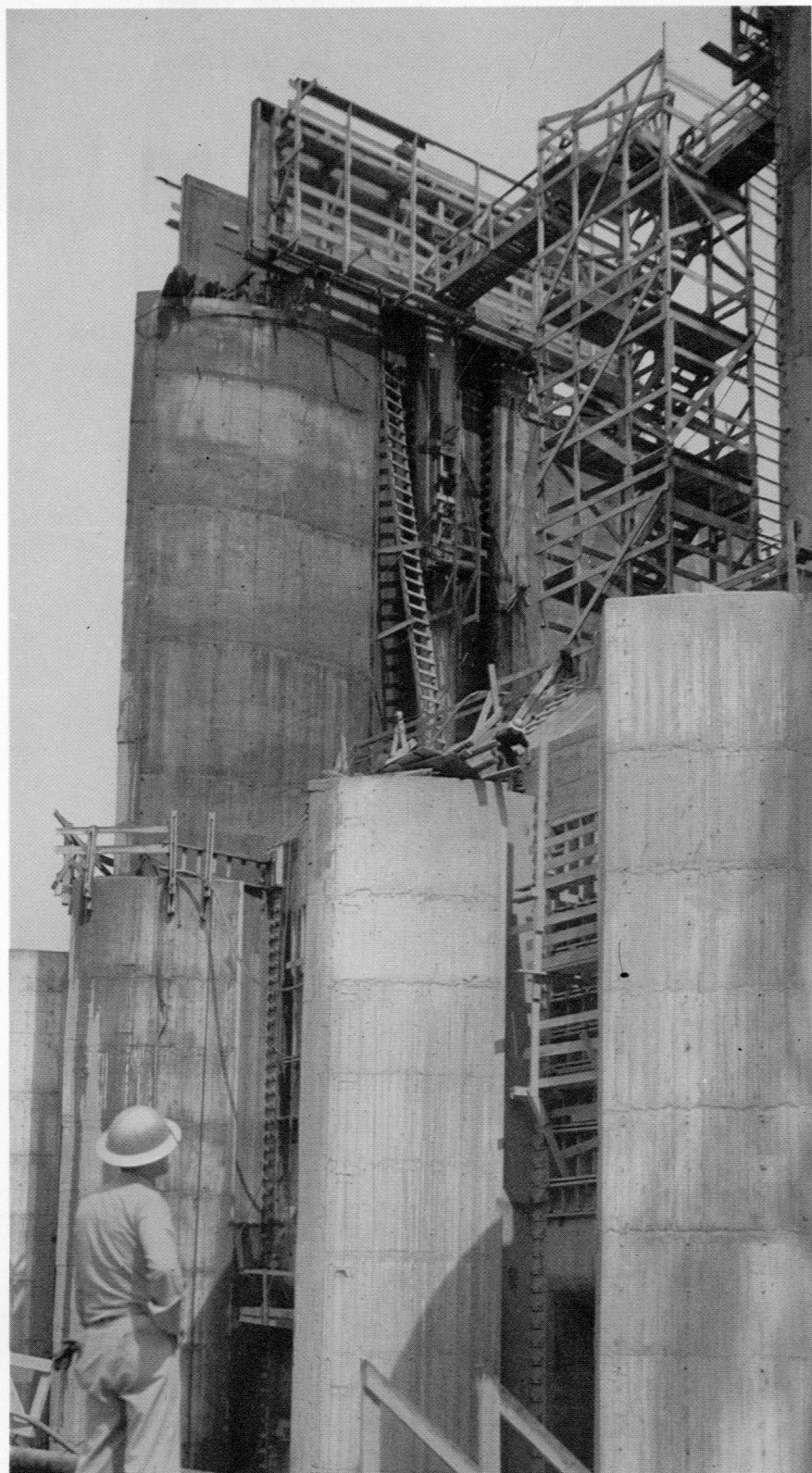




Almost 20,000 Nelson granular flux filled studs were end-welded to gate channels. Fiber templates were used to locate precisely the Nelson stud welding gun used for welding these $\frac{7}{8}$ -inch-diameter studs.

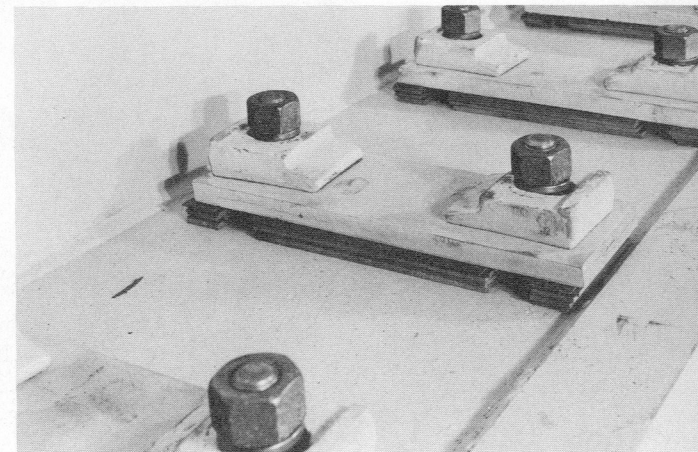


This is a 30-foot section of one of the vertical towers. The Nelson stainless steel studs will secure rails on which gates will be raised or lowered to control the flow of water past turbogenerators.



A section of the Long Sault Dam, showing gate towers

This closeup shows shims, base plates and standard rail clips that are held in place by Nelson stainless steel studs.



to accommodate throughbolts, which would have required nuts at both ends and could have worked loose in the future.

Since the strength of the mild hot rolled steel of the gate channels is less than that of the stainless stud, ALCO engineers worked out a unique approach to permit developing the full strength of the stainless steel studs. Small "buttons" of stainless steel were hand-welded to the stud locations. This procedure spread the loading over a wider area and provided a balance between stud strength and plate strength. Results were completely satisfactory from every point of view.

Fiber templates were used both for chalk-marking the areas for the buttons and for precisely locating the Nelson heavy-duty NS-9 stud-welding gun.

On the inboard side of the gate channels, where the water pressure will be greatest, $\frac{7}{8}$ -inch-diameter studs, $3\frac{1}{4}$ inches long, were end-welded in two rows, on 12-inch centers. These studs secure rails weighing 175 pounds to the yard. On the outboard side of the channels, $\frac{5}{8}$ -inch-diameter studs, $1\frac{1}{4}$ inches long, were used on 12-inch centers; these studs secure smaller rails weighing 40 pounds to the yard.

The Massena intake will have twelve towers, each with three large sections measuring approximately 30 feet high. In addition, approximately 476 smaller sections of varying lengths are being fabricated by ALCO. With the gates open, the American portion of the Barnhart Island power station will develop 940,000 kilowatts. The Canadian half of the work will develop the same power.

A steelworker tightens a nut around a Nelson stud high over the base of the Long Sault Dam.



and, armed with these, the inventor started out looking for orders. He didn't have to look far. Within a few years Erector was one of the most famous toys in the world, and has helped train two generations of American boys in the basic principles of engineering.

Erector has proved helpful to grown-ups, too. The sectional Bailey Bridge of fame during World War II was originally worked out with Erector parts; and many modern engineers and architects build prototypes of projected structures with its help. Recently, Gilbert's engineering department was called upon to make the preliminary model of a proposed new oil rig.

The A. C. Gilbert Company, outgrowth of those early beginnings, has been in the appliance business since 1914, starting with Polar Cub electric fans in that year. This diversification came about because of the seasonal nature of the toy business, which had its effects on both employment and inventories, particularly of the electric motors which were at hand. The first home desk or table fan in the world was a Polar Cub, according to Gilbert. It sold for \$5, a remarkable price in those days, when fans cost several times that much. Polar Cub fans sold throughout the world, and were America's first low-priced line.

GRADUALLY other appliances were added to the list of "off-season" products: mixers, hair dryers, vibrators, coffee-makers, toasters and many others. Some have been discontinued. Still in production, however, are the Whirlbeater (a small portable mixer), Vitalators, vibrators, hair dryers, a large stand-type massager and two cooking appliances: an electric Dutch oven and an electric griddle.

In the early '40's Gilbert expanded again, taking over the manufacture of American Flyer electric trains. The original designs were completely revamped to make the miniatures perfect scale models, developed from blueprints of the actual trains. A complete line of stations, buildings and other accessories permits reproductions of the greatest realism.



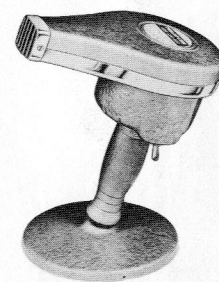
For a relaxing massage after a long day of shopping, hanging laundry and picking up after the small fry, the Polar Cub A80 Vibrator is nicely balanced for easy holding.

A. C. Gilbert's use of special steels is considerable, of course. In a year, for example, Gilbert makes enough two-rail track (S Gauge) to extend 1,368 miles, or roughly from New York to New Orleans. Allegheny Ludlum stainless steel is most extensively used in the Whirlbeater; and Allegheny Ludlum supplies nearly all the laminations for the motors used in all Gilbert products.

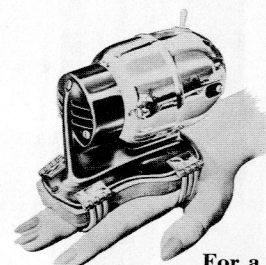
Thinking back on the business ventures which have led to his present position as chairman of the board of an industry known throughout the world, and particularly the world of youth, Mr. Gilbert says, "I have never worked at anything to make money unless it was fun, too. As a matter of fact, the fun always came first."

That attitude is apparent, in the enthusiasm and ingenuity which result in each new Gilbert development.

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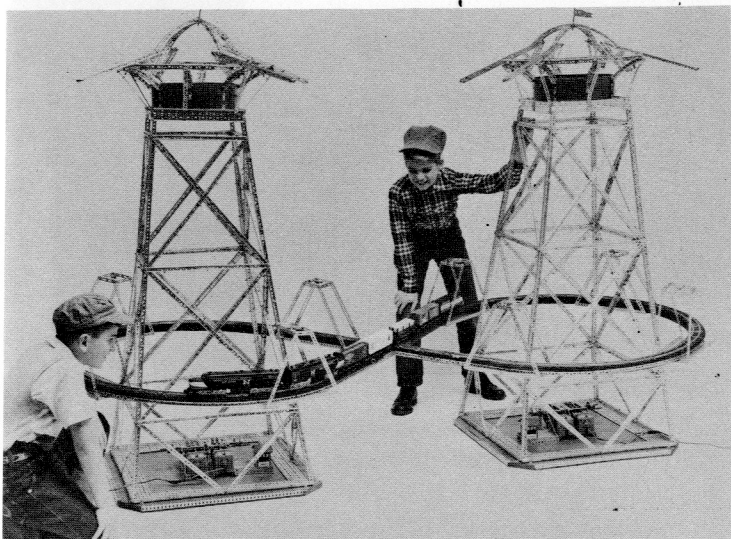
The Polar Cub Hair Dryer has dual switches—on and off, hot and cold—and stand.



For a real Swedish massage, the Golden Glo Vitalator #12, is ideal.



The lightweight Gilbert Whirlbeater with stainless shaft is geared for today's modern living.



This handsome Gilbert Electric Cooker is a first in slow, moist Dutch oven electric cooking. It is completely immersible when the plug is removed, and can be washed easily.