

### GOVERNMENT LIFE-SAVING STATION AND THE FERRIS WHEEL.

BY THE ST. LOUIS CORRESPONDENT OF THE SCIENTIFIC AMERICAN.

One of the popular centers of attraction at the fair is a considerable lake of water which the United States government has selected for its most interesting exhibit of the United States Life-Saving Service. The point of view of our illustration is the far end of the lake from the life-saving building, the latter a modest structure consisting of a central tower surmounted by the Stars and Stripes, with a one-story boat house and launching ways to the left of it and a two-story portion to the right for the accommodation of the life-saving crew and their apparatus. Rising from the center of the lake is a mast and yardarm representing the same portions of a stranded ship, which are used in giving exhibitions of life-saving by means of the life buoy. To the left of the lake is seen the tracks of the In-

ashore. Another and equally interesting exhibit is that when the life-saving crew pull out into the middle of the lake and proceed to upset the life-boat, pulling it over upon themselves and causing it to turn over three or four times in succession, the crew in every case passing under the boat and coming up safely, to climb in again on the other side as she rights herself.

The famous Ferris Wheel, shown to such picturesque advantage above the clump of trees that cluster at its foot, is the same structure that attracted so much attention at the great Chicago Fair in 1893. It has been in practically continuous use ever since. At the time that the Louisiana Exposition was planned it was hoped that some mammoth structure corresponding in size and novelty to the Ferris Wheel would be produced as an attraction of the fair. Nothing, however, was forthcoming, and accordingly arrangements were made to bring the Ferris Wheel to the fair and give

to its full capacity. The axle on which it turns is a solid steel forging, 32 inches in diameter and 45 feet long. The solid bronze bearings upon which it turns are each 6 feet long and contain nearly two tons of metal. The wheel is run by a double-reversing engine, with cylinders 30 x 48 inches, capable of developing 200 horse-power.

#### Prof. Pickering's Reported Lunar Changes.

Prof. William H. Pickering, now temporarily located at the Lowe Observatory, Echo Mountain, California, reports that on the night of July 31, 1904, a bright, hazy object 2 sec. in diameter was noticed upon the floor of the lunar crater Plato. Observations made July 21, 22, 23, 26, 27, and 28 had shown nothing unusual at this point. August 2, in place of the bright object a black elliptical shadow was seen. It resembled



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UNITED STATES LIFE-SAVING EXHIBIT WITH FERRIS WHEEL IN BACKGROUND. THE LIFE-SAVING CREW ARE OVERTURNING THE LIFEBOAT TO DEMONSTRATE ITS SELF-RIGHTING ABILITY.

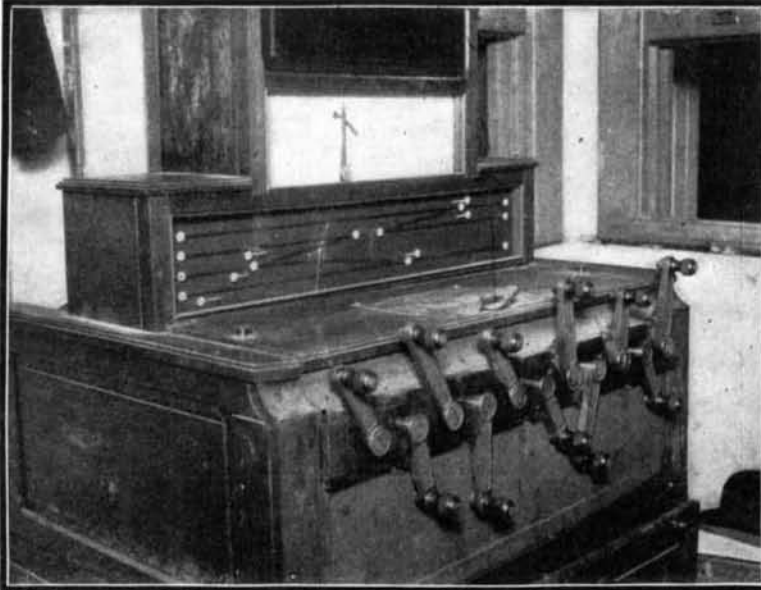
tramural Railroad with one of the Intramural trains rounding the curve and about to pass behind the life-saving building. To the right is the large grand stand which has been erected for the use of the public.

There is not in all the fair grounds a more popular exhibit than this, and the large crowds shown in our illustration may be witnessed every day at the fair at the hour of exhibition. The drill includes exhibitions of practically all the more important apparatus used by the life-saving corps. A boat with its full crew aboard is launched down the runway, pulls out to the mast, and lands a couple of sailors who climb to the foretop. The boat returns, a line is shot out by means of the gun, falls across the yard-arm, and is made fast to the mast. A heavier cable is drawn out over the life-line, made fast and hauled taut by the crew ashore. Then the breeches buoy is pulled out over the cable and the ship-wrecked sailors brought

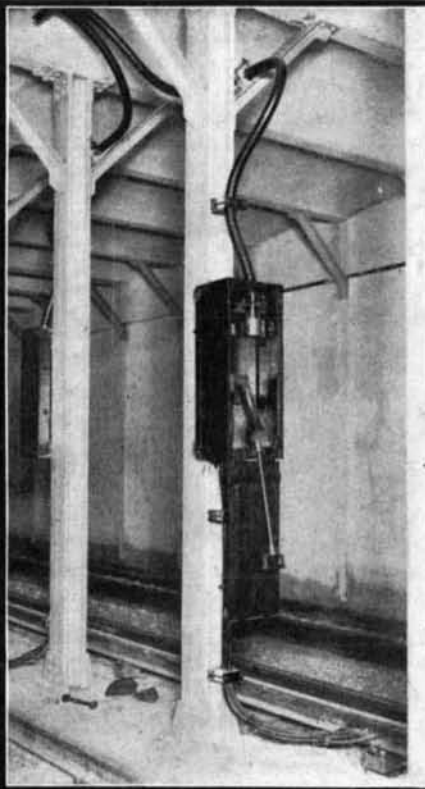
to a central location. The problem of moving the wheel from the north side of Chicago, where it had been in service since the Chicago World's Fair, to St. Louis was no small one in itself, for there was 4,200 tons of material, including the 70-ton axle, the engines, boilers, derricks and falsework that had to be transported. It took 175 freight cars to move this material.

A brief résumé of the dimensions, and some description of the great wheel, may be interesting. It is built upon the bicycle-wheel principle with great tension spokes 2 1/2-1 1/2 inches in diameter, and it consists of two wheels braced together. Between the outer rims of these wheels the 11-ton cars are suspended on pins 6 1/2 inches in diameter and 6 feet long. The cars are 13 feet wide, 26 feet long, 9 feet high and will carry 60 persons each. There are 36 of them in all, so that the total capacity of the wheel is 2,160 persons, and on several occasions in its history the wheel has been filled

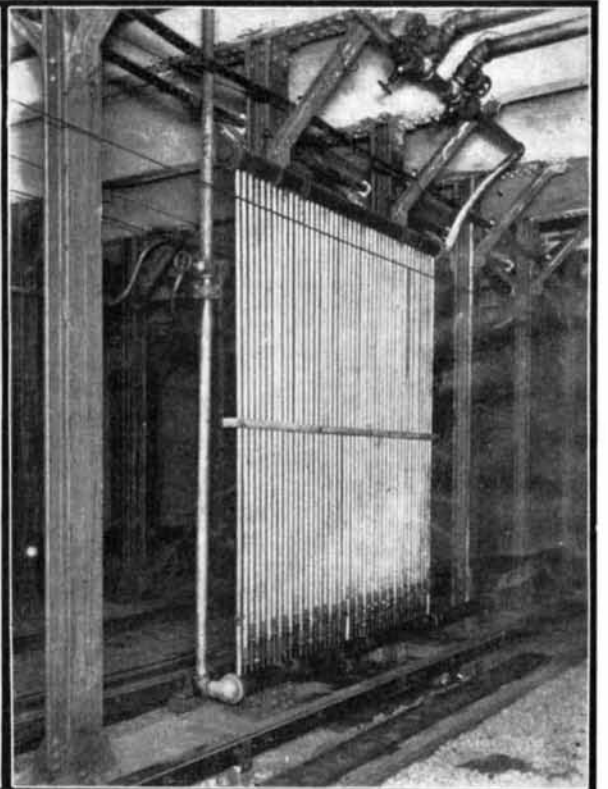
a crater and measured about two miles in diameter. To the northeast and north extended a large, white area. This was confirmed upon August 3. The object coincides approximately in position with craterlet No. 3, Harvard Annals, XXXII., Plate X. A telegram dated August 22 confirms the reality of a conspicuous change in this region since last month. It states that the existence of the new craterlet is confirmed, that its diameter is three miles, and that the bright area had shifted obviously since August 3. Several other objects not previously mapped have been observed while examining Plato. They consist of two craterlets and a dark spot between two rifts on the southern border of the crater floor, a large craterlet on the northeastern border, and another one 2 sec. southeast of craterlet No. 68. The white area formerly so conspicuous surrounding craterlet No. 54 has now nearly disappeared.



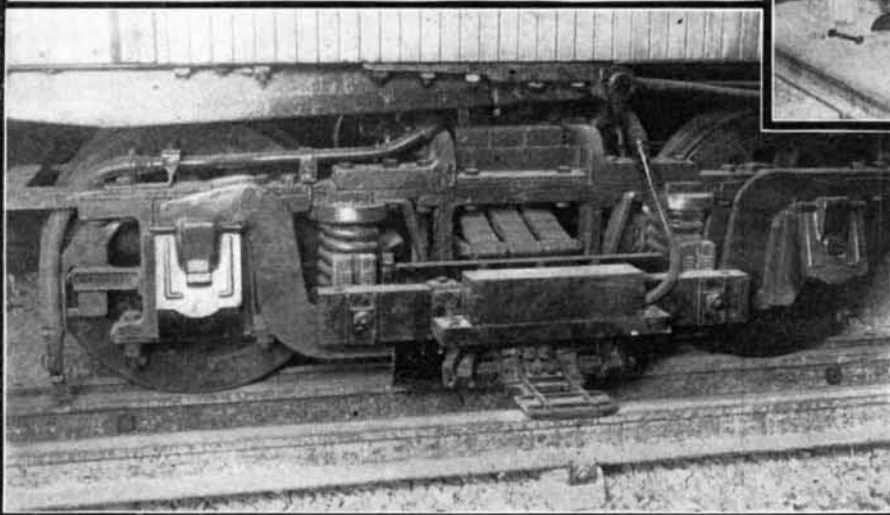
Controlling Box with Models for Showing to Operator Positions of Signals and Switches.



Emergency Cut-out Switch.



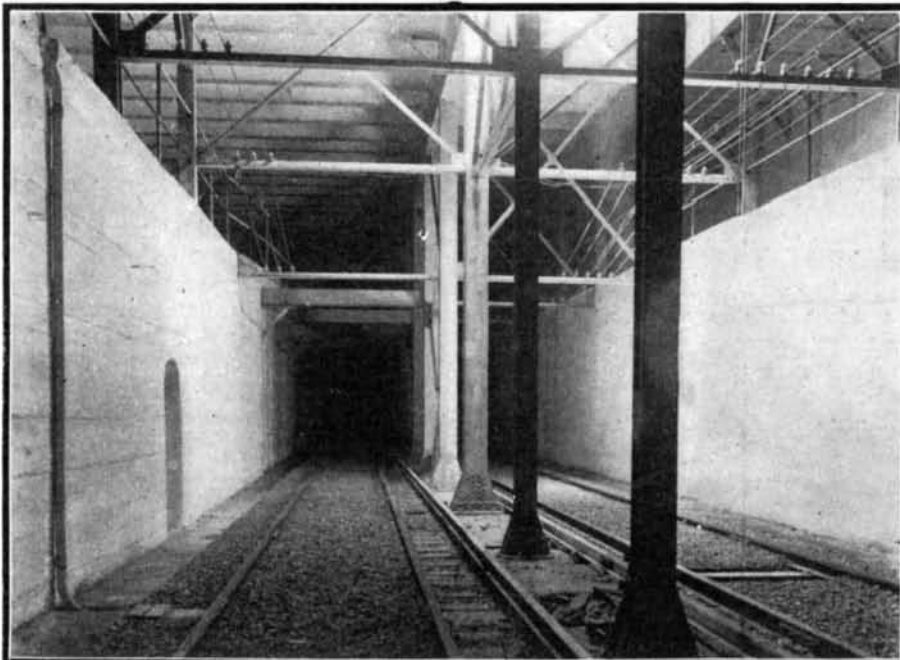
Nest of Pipes for Cooling Air Used in Switch and Signal System.



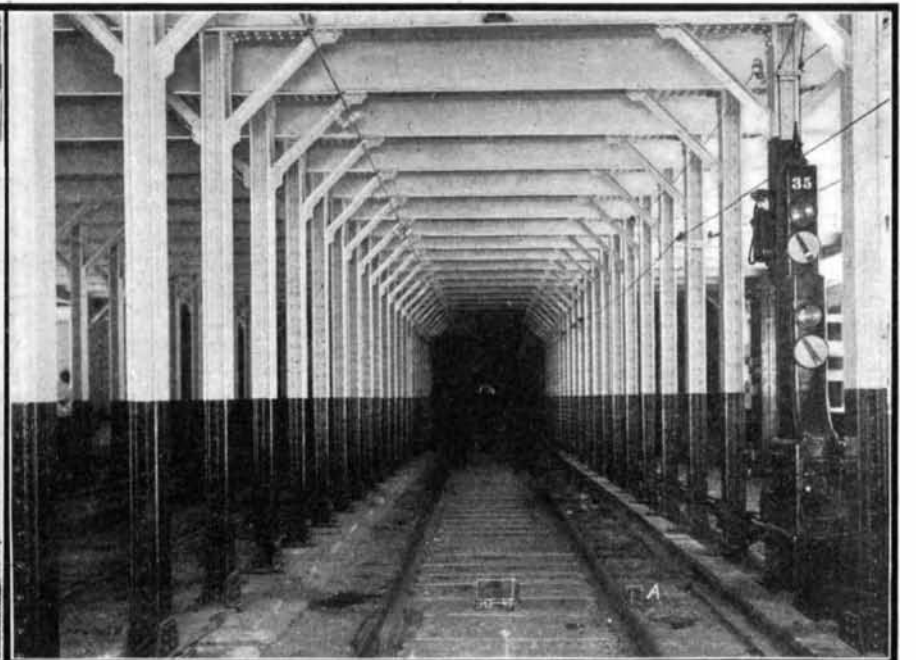
Truck of Motor-Car Showing Third Rail and Contact Shoe.



Section of Third Rail with Covering Board in Place



Tracks at 104th Street Junction.



Automatic Stop A.

