

DEMOLITION OF THE FAÇADE OF THE OLD B. & P. R.R. TERMINAL, BOSTON.

BY WILLIAM L. HILL.

When fire recently destroyed a considerable portion of the old Boston & Providence Railroad terminal at Park Square, in Boston—long ago abandoned for railway purposes, and of late used for indoor recreation enterprises—it was determined by those owning the property to remove what was left of the structure. Most of it has been, or will be, razed by the ordinary hand methods, but on account of the shape and size of the great arch, such methods would be hazardous to those employed in the task, and it was decided to bring it down with dynamite.

Accordingly on April 6th, in mid-forenoon, workmen placed in each of the twenty holes drilled in the southerly pier of the arch a stick of 75 per cent dynamite, about 20 pounds in all. These sticks were connected with an electric circuit and the wires strung along the ground to a point several hundred yards away.

To reduce the detonation, and save many windows—for Park Square is almost in the heart of the city—timbers 12 feet long were piled about the base of the pier. Around the timbers an iron chain was drawn, and canvas was wrapped about the chain and timbers.

The explosion was not very loud, to the disgust of the great crowds that were kept at a safe distance by details of police. The entire arch settled, almost slowly, it seemed to the spectators, to the ground, so disintegrated that its removal is an easy task.

The arch was 65 feet high, of 70 feet span, and 3 feet thick. The building was erected in 1872.

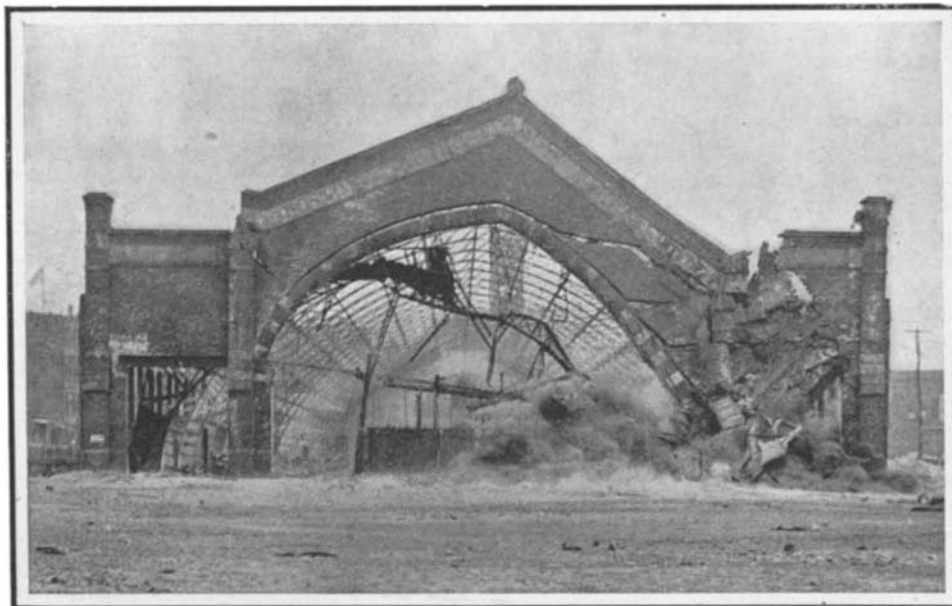
To the Inventor of Electric Railway Appliances.

A word to the inventor or the would-be inventor of electric railway apparatus may not be amiss. Their number is probably greater than in any other line of work, due partly to the substantial reward that is offered to those who are successful, partly to the fact that the deficiencies of much of the apparatus in use at present are very evident and partly because statistics show that trolley cars are used by a much larger proportion of the population of this country than any other electrical invention. To almost anyone who is familiar with street railway apparatus, there appear numerous ways in which the device and methods in use in electric railway service could either be improved or be substituted by others, with the result that the cost of maintenance would be lessened, the safety of passengers would be increased, or operation would be facilitated in some other way.

These facts cause many who are not familiar with electric railway operation or the requirements of electric railway apparatus to attempt the rôle of inventors. Such people are greatly handicapped by a lack of knowledge of the actual requirements; on the other hand, they have the advantage of looking at the question from the outside and with a free and untrammelled mind which is rarely possessed by those confined to one line of work. Their limited knowledge of operating conditions, however, usually causes them to waste the greater portion of their efforts by attempting to develop something which is impracticable or whose adoption after being perfected would probably introduce more difficulties than its use would avoid. On the other hand, the fact that they are not constantly thinking about one line of work often enables these outsiders to develop a really much needed article.

There is one device which is as alluring and which is seemingly as impossible to reach as the pot of gold at the end of the rainbow and the average inventor should regard it with caution. This is a self-replacing trolley wheel or a trolley wheel that will not jump the wire. The patent records will show that device after device, all supposed to be improvements on the present trolley, have been patented only to lie dor-

mant. While employed in the shop of a large railway system the writer remembers that it was out of the ordinary if more than two or three weeks went by without some new trolley or trolley harp being offered for trial. The master mechanic of the railway system was one of those broad-minded men who are always willing to investigate and give any new piece of apparatus a trial if it shows possibilities of success or if such trial will rid the inventor's mind of delusions. But he regarded several of these trolley devices as too dangerous to overhead construction to be



Photograph taken the instant after explosion of twenty pounds of dynamite in right abutment.

permitted on a car, even on trial. Of all the devices submitted not one was suitable and the road, like practically all other direct-current roads in the country, is to-day using the simple trolley wheel and harp.

Those who have devised apparatus which they consider great improvements often complain because the railway companies do not give them proper encouragement by allowing the apparatus to be tried or by offering facilities for its development. They do not realize to what trouble and expense the roads would be subjected if they offered encouragement to the many half-hatched schemes submitted. The writer is reminded of one or two instances which are typical. Permission was obtained by some alleged inventors to try a scheme of motor control without loss in resistances and the facilities of the shop were put at their disposal.

Under their directions all the controller reverse fin-

dollars had to be expended and those responsible for the scheme either did not have the money or did not have enough faith in their idea to risk parting with this amount.

On another occasion after repeated solicitation a man from a small town of about one thousand people, through which an interurban line ran, was given permission to install an automatic track switch on condition that the company would not be inconvenienced or the street torn up. After the delivery of about two wagon loads of various materials, constituting the parts of one switch, and which included some timbers about ten or twelve inches square and a dozen feet long, the management decided to call a halt, and the inventor (?) considered that he had not received fair treatment from the railway company.

Before bothering a railway company the inventor should feel certain that his device is a practical one and that he has gotten it in as advanced a state as possible, until some of its defects are made evident by trial. But he should not assume that he can make repeated trials to the inconvenience of an accommodating railway company in order to perfect the apparatus. Every breakdown causes the master mechanic, the superintendent of track or of overhead or whoever permits the trial, to lose confidence in both the apparatus and the inventor. Breakdown of experimental apparatus due to a single weak point has often caused the condemnation of an otherwise good article.

In developing an idea the inventor should keep simplicity uppermost in his mind. Simplicity carries with it the idea of being easily understood and of something not likely to get out of order. It must be remembered, too, that the apparatus will fall into the hands of men who are not as skilled and as careful as watchmakers and should consequently be built in such a manner that it will stand more than a reasonable amount of abuse. Street railway apparatus and appliances are in fact subjected to about as hard a treatment as any machinery devised, and it is the lack of proper design and construction to withstand such treatment that causes many new devices to be thrown out.

But if the path of the inventor of street railway apparatus is a rather thorny one, the reward is proportionately great. The electric railway fraternity is always ready to adopt a piece of apparatus that proves itself of worth and it is willing to pay well for it.

The writer remembers one casting that sold for about \$9 which to all appearance could not have cost more than 50 cents. On much other apparatus the difference between the cost price and the price at which railways are willing to purchase is almost as great.—John Hobbs, in Street Railway Journal.

Formaldehyde in Milk.

Shrewsbury and Knapp describe, in the Analyst, a rapid method of detecting and estimating formaldehyde in milk. Sixteen volumes of a normal solution of nitric acid, or 6 volumes of pure nitric acid are added to 1,000 volumes of concentrated hydrochloric acid. Two volumes of the mixed acids are heated with one volume of the suspected milk to 122 deg. F. for ten minutes over a water bath, with constant agitation, and suddenly cooled to about 60 deg. F. The presence of formaldehyde is instantly revealed by a violet coloration, and the quantity of formaldehyde can be

estimated by comparing the tint with a series of standard tints produced by mixtures containing known proportions of formaldehyde. The test is most sensitive when the proportion is from 2 to 60 parts of formaldehyde to 10 million parts of milk. If the proportion is greater than this the suspected milk should be diluted with a measured quantity of pure milk.

The greater portion of surveys on the Hudson Bay Railway has been completed. On February 1st, 365 out of a total of 465 miles had been finished.



The station after the façade was thrown down.

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gers in the storeroom were mounted on long boards and a car was also brought over the pit and the fields removed from the motors. In addition quite an amount of wire was cut into small pieces. After several days of inactivity orders were received to replace the fields in the car, the so-called inventors left the shop and the incident was closed. It afterward developed that the new "invention" consisted in weakening the fields by shunting them or by winding them in sections. Operations came to a stop because a point was reached where about one hundred and fifty