SEEKING AN INVENTION TO PREVENT RAILROAD COLLISIONS

Inter-State Commerce Commission Makes Tests on Staten Island of Young Texan's Device, One of Twenty Selected for Official Investigation.

IN addition to its efforts toward railroad rate regulation and other matters of great National importance the Inter-State Commerce Commission has been busying itself for several years in an endeavor to find a safely device that will eliminate accidents on railroads, or at least lessen their frequency. Everybody knows of the appalling loss of life caused in the United States each year by such mishaps, and when it is taken into consideration that the commission, should it find a device that meets with its approval, may compel all American railroads to install it on their lines, regardless of cost, the great importance of the investigations of inventions now in progress at once becomes apparent.

These investigations began four years ago, when Congress voted $50,000 for the purpose. When the money was obtained experts were hired by the commission and the information spread broadcast that any and all inventors of safety devices were at liberty to submit their inventions.

Of course there was an avalanche—a grand rush of eager young geniuses to the spot. They submitted plans of every description, ranging from those that seemed to possess real merit to the wildest and most impossible dreams that ever rioted through a human brain.

The total number of inventions submitted was 185. Every one of them, no matter how extravagant, was looked into by the commission's experts. Flaws were picked out which made device after device impracticable—one by one the fruits of hours and days and years of sleepless toil were discarded. At last barely twenty survived.

These were put aside for further consideration and further weeding out. Then rejecting various schemes, until at last he hit on exactly what he was after. Then he had a model made for him, and with it made numberless further experiments to see whether his invention fully realized his dreams.

It did. At once Texas seemed too remote from the centres of the world's activity to young Lacroix. He decided to try his fortune as an inventor here in New York. In 1905 he arrived from the Far West, his diagram and other technical data inside his gripsack, unbounded confidence and ambition inside himself. He took up his residence over in Brooklyn and devoted himself right away with renewed earnestness to the cause of his invention.

He began to visit the offices of railroad companies, to tell there about what he had invented. At some he met with encouragement, at others only rebuffs were his portion. But he never faltered.

Finally, in the Fall of 1909, the Erie Railroad Company became so interested in his device as to install it on a ten-mile length of track between Nutley and West Nutley, N. J.

A number of tests were then made of it in the presence of high railroad officials and others. The result was that the Erie installed the system on twelve miles of its Newark branch, between Newark and South Paterson.

When the Inter-State Commerce Commission decided to investigate the system the line of the Staten Island Rapid Transit Railroad between Grassmere and Dongan Hills was chosen as the scene of the tests. They began Feb. 1 last and closed a little over a week ago.

These tests were of the most exhaustive kind. To begin with, they numbered about 700. The device was examined from every conceivable point of view and under all sorts of conditions as regarded weather and other factors that would be vital in determining its efficiency when in actual use on a railroad. Part of the time there were three experts on the job. And it may be readily guessed that one of those present at every single one of the 700 tests, following all that happened with an eager eye, was young Mr. Lacroix, inventor.

Finally, when the tests came to an end, the experts went away to make a full report to the Inter-State Commerce Commission, and now the inventor's position is very much like that of a schoolboy or college student who has just emerged from the examination that will determine once for all whether he is to be promoted.

"Have I passed the exam?"—"Have I fluked?"—that is what young Mr. Lacroix is asking himself at every hour of the night and day. The vital thing in the device is the "third rail." Here it is in detail:

In the cab of a locomotive is installed a dynamo, the armature of which is driven by a turbine, which derives power from the boiler of the engine. In the circuit of the armature coil is an electric lamp which constantly glows so long as the track ahead of the engine is clear of other trains.

In the armature circuit is an ammeter to record the time that the current through the armature coil stops, and in the coil is a magnet that controls the application of the brakes and a whistle.

In the normally complete circuit of the field coils of the dynamo is a contact shoe adapted to engage with a third rail.

The rails of the track are divided into insulated blocks. Extending along the track are conductors forming a normally incomplete circuit, with terminals in each block provided with a switch. The latter closes the terminals by a rheostat in a circuit that includes the opposite rails of the block and battery.

Should the circuit through the rheostat be interrupted in any way—for instance, by a train on the rails forming part of the rheostat circuit—the rheostat would be de-energized and the switch would open the terminals, thus breaking the combined track and field circuit of the dynamo. Consequently, the generation of current in the armature coil would cease, the signal light in the locomotive cab would go out, the whistle would blow, and the train would come to a quick stop by the application of the brakes, caused by the magnet in the coil.

Its inventor believes that, in addition to preventing both head-on and rear-end collisions on railroads, it will also largely do away with accidents due to carelessness of track men, overfatigue of those engine drivers who have been running their trains by semaphore while day lasts and by signal lights at night—lights often obscured by snow and ice. It will warn oncoming engineers of the presence ahead of them of freight trains unable to get on to sidings in time to clear the way, also of broken rails, engines having no business on the main line, and all sorts of similar contingencies.

The tests, it is maintained, have brought out the fact that the device works excellently, no matter what the weather conditions may be.

Another claim made for the invention of the young Texan is that, even should a train equipped with it pass the third rail after the danger signal is displayed in the cab of the engine, the brakes will continue to be set until the train comes to a full stop, although the energy of the magnet has been restored. The instant the danger signal is displayed nothing can interfere with the stopping of the train, not even the engineer himself, whether the contact shoe is on or off the third rail.

Regarding the telephone feature of the device, the inventor asserts that telephones may be installed in the cab of the engine, or in any or all of the cars on a train, and used by any one on board, no matter whether the train is in motion or standing still. On the Newark Branch of the Erie Road, where the Lacroix device is already in operation, it provides simply for the use of the telephone by the engineer while the train is not moving. If used while the train is in motion the danger signal will not operate; the inventor avers, however, that the device may be so constructed as to provide both for telephonic communication and safeguarding of life and rolling stock.

For telephoning, power is obtained from the third rail, and communication established either with the nearest station or the train dispatcher. In fact, the engineer or any one else on the train, passenger or employe, might reach in any emergency any point, or be reached from it over the regular telephone lines and this new third-rail extension. In very serious emergencies the telephone, it is claimed, can be removed from the locomotive cab and communication be established by means of the third rail itself.

The former tests on the Erie were made in the presence of about twenty railroad men representing the Erie, Pennsylvania, New York Central, Central of New Jersey, Long Island, Delaware, Lackawanna & Western, Baltimore & Ohio, and Staten Island Rapid Transit Railroads, likewise the Interborough Company.

For these dignitaries the test did not mean being mere spectators on the side lines. They were actually passengers on a special train, which ran straight toward another train, started something like a mile away.

This other train was headed straight for the special train. Both traveled at the rate of thirty miles an hour. Nothing stood between the invited guests and a smashing collision except the Lacroix safety device.

If it should fail to work—

But it did not fail.

As THE TIMES reporter who was on the special described it, "When the fast-approaching trains got within half a mile of each other the air brakes were set automatically, not with a suddenness which brought the trains to a quick halt, but with the same gradually increasing force which a skillful engineer would employ in bringing his train to a halt.

"Both trains slowly stopped, quite far enough from each other to avoid the slightest chance of mishap. Yet, in neither of the locomotives did the engineer move a hand toward throttle lever or airbrake control. Everything was done automatically.

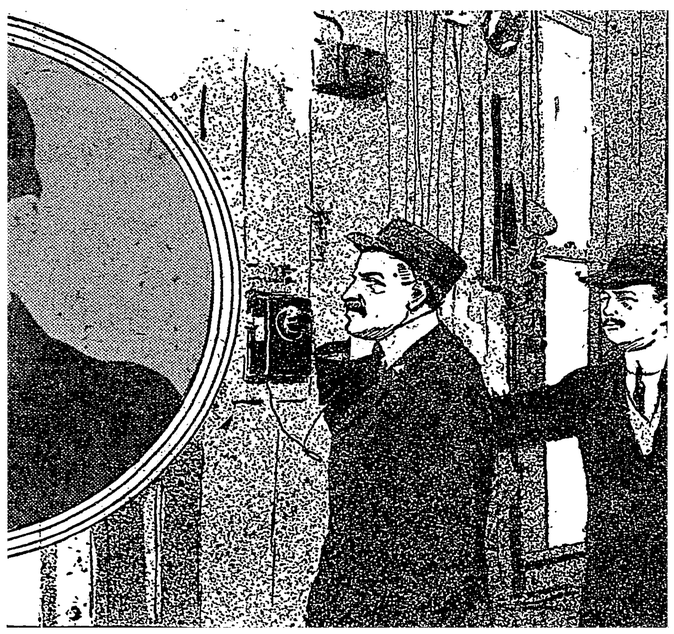
"The test was repeated six times, at various speeds and over various distances, and not once did the automatic device fail to work. At the close of the tests the railroad men declared that the device had fulfilled their greatest expectations."

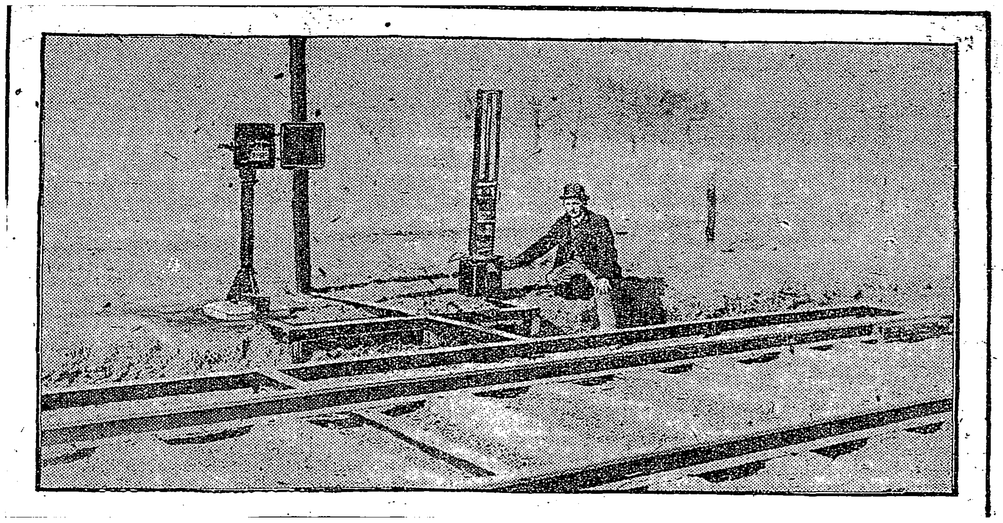
On that occasion the efficiency of the appliance as a telephone apparatus also was demonstrated. Telephonic communication was established during the run of the special between the office of Oliver Harriman, at 111 Broadway, and his brother James, who was a passenger on the train. Stock quotations were read to James Harriman while the special was traveling at the rate of thirty miles an hour. Conversations were also held by reporters on the train with New York newspaper offices.

The recent Staten Island tests were in charge of Chief Inspector Burt and Assistant Chief Inspector Maywood, employed by the Inter-State Commerce Commission, both of whom spent several weeks all told making their examination preparatory to formulating a report on it for the commission.

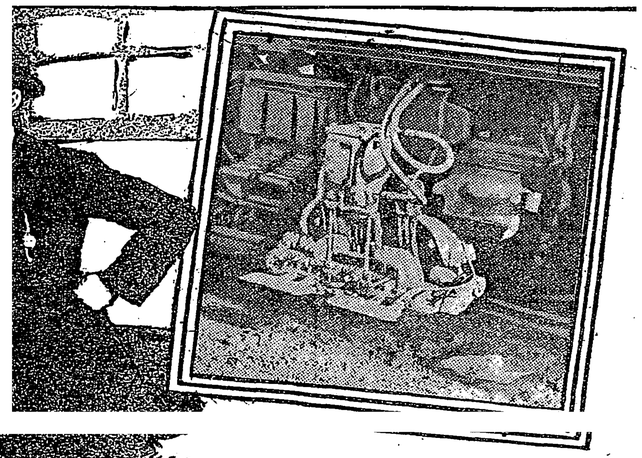
Among those who were present at various times during the Staten Island tests were W. H. Vanderbilt, Jr., W. K. Vanderbilt, Jr., James L. Harriman, Borden Harriman, Seward Webb, Creighton Webb, Benjamin Blum and a number of experts in various branches of railroad work.

Frederick Lacroix.

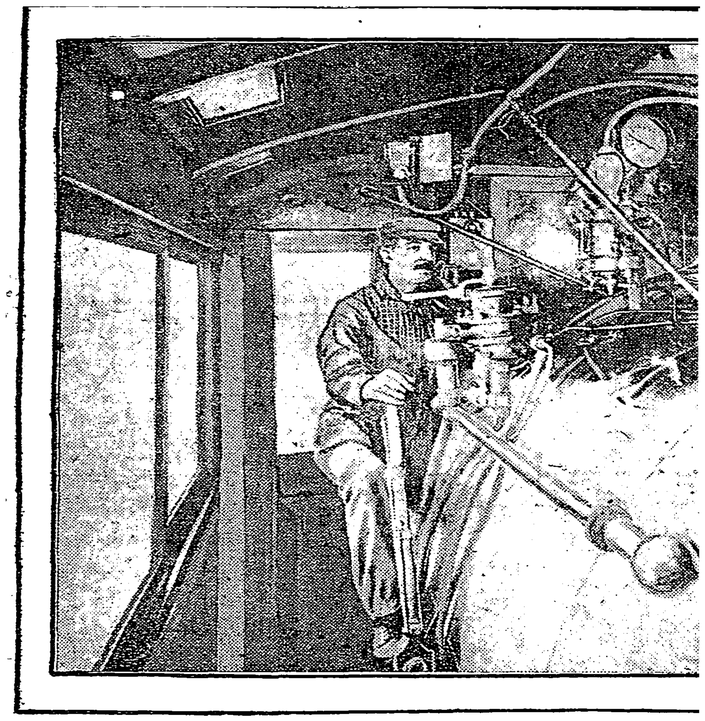




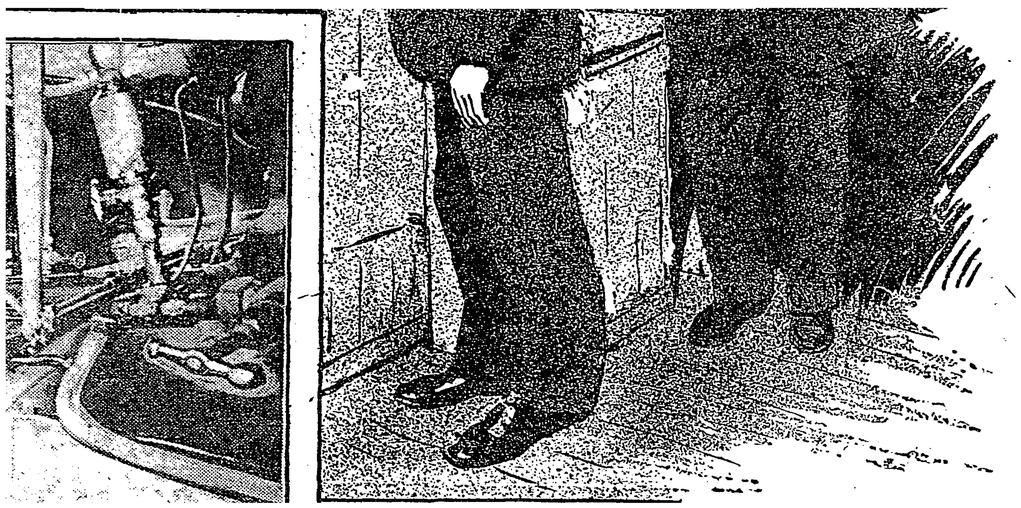
The Device on the Track.



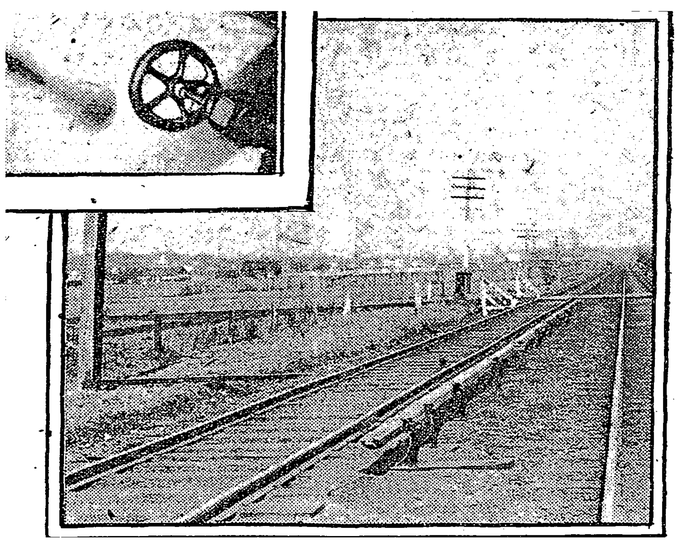
The Attachment to Connect with the Third Rail.



In the Engine Cab, Showing the Telephone.



Phoning to a Moving Train.



The Third Rail Used in the Invention.

exhaustive practical tests of the few survivors were instituted by the commission's examiners.

The latest and one of the most searching of these tests, which came to a close but a few days ago on Staten Island, after lasting over two months, has served to bring forward as an aspirant for the honors of successful inventorship a youth only twenty-six years of age.

Nine years ago, when a mere schoolboy out in San Antonio, Texas, he got it into his head that he could invent something that would prevent railroad accidents and, incidentally, provide telephonic communication to and from trains in motion.

Even before that he had tinkered with inventions and produced some ingenious devices. But none of them ever completely absorbed his thoughts as did this new idea.

The youth's name is Frederick Lacroix. No sooner had his idea firmly established itself in his inventive brain than he set to work making experiments, adopting and

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