

HT Sun Nov 11, 1934
—From The Daily

Mr. Sprague's Inventions

Many in Electric Field, but His Origination of the Trolley Is Denied

To the New York Herald Tribune:

Your appreciation of the work of Frank J. Sprague in electrical matters does not, in my opinion, pay sufficient attention to what he did in two very important lines. His contribution of the compound-wound motor and the system of control for it to the electric elevator art was fundamental and is in use in every successful elevator system (either in this country or abroad) which is operated by electric motors. Of course, we know many improvements have been made, but the fundamental features devised by Mr. Sprague are still used.

His second accomplishment was his development of the multiple-unit system of traction, by which a railway train of several cars may be operated from any one of several controlling points. The operation of all subway and elevated electrical trains in this country and those in London and elsewhere is effected in that way. The fundamental principle was devised by the late William B. Potter, chief engineer of the General Electric Company's railway department; but Mr. Sprague made a vast number of improvements which are in use today.

Unfortunately, the editorial referred to bases Mr. Sprague's claims for consideration very largely on what is called his origination and development of the "trolley car." In that respect it is inaccurate. I have had many litigations on the subject of the trolley system, and in every one of them, and in others with which I was only indirectly connected, Mr. Sprague's origination of the trolley was set up as a defense. In no case was it sustained by the court. Furthermore, in no one of these cases would Mr. Sprague appear on the witness stand to make that assertion, although frequently importuned so to do.

A second error was in referring to the Richmond road as the "first commercially operative trolley road." That distinction belongs to the trolley-operated road in Montgomery, Ala. The installation of that road was begun in 1886, the latter part of the year, and the apparatus, including the overhead line material, was constructed in Chicago in that winter. A full description of it is contained in Mr. van Depoele's letters-patent No. 495,443, the application for which was filed in the Patent Office on March 12, 1887. The road by record evidence was in full operation for testing purposes in the middle of May, 1887. Mr. Sprague had not then embarked on the Richmond construction, although it was in contemplation.

That road operated continuously until June 30, 1888, when the powerhouse burned down. The trolley cars used thereon are illustrated in letters-patent to which I refer, and I have in my file a photograph of one of them which was operated on the Dexter Avenue and Park Line in Montgomery, the picture taken after the date of the fire. That was long anterior to any of Mr. Sprague's work at Richmond, the road in every respect being a complete success.

September 15, 1887, Mr. Sprague was still working over the trolley problem, and he devised what is called the "Horizontal Roller Trolley A," the design for which was made by J. F. S. Branth, his chief draftsman. This was a trolley which rose and fell, but which did not oscillate laterally, the lateral play being intended to be covered by having a roller thirty inches long on the end of the trolley pole, which was supposed to cover the oscillation in alignment. With this there was intended to be used a curve composed of brass pipe which was shaped to fit the curvature of the track. This device proved impracticable in service, and after the visit of the en-

gineer to Montgomery a grooved wheel on a flexible pole, or pole having two motions, was substituted for it.

This issue of Mr. Sprague's invention of the trolley was tried out at least a dozen times, and some of the best counsel in the country tried to persuade the various courts that it was true. The fact that Mr. Sprague would not go on the stand and swear that he had invented the trolley was a stumblingblock which could not be overcome. The question ought not to be raised now. Mr. van Depoele has been dead for forty years and cannot speak. There are only two or three people who know the facts first hand.

Whatever claims to consideration Mr. Sprague had—and they are certainly sufficient—he was not the "inventor of the trolley car" and contributed practically nothing whatever to that form of electric railway. The trolley car today is almost exactly as Mr. van Depoele devised it, but, of course, improvements are made in detail and operation.

The facts in this case are matters of public record which it is useless to dispute. T. J. JOHNSTONE.

New York, Oct. 30, 1934.

To the New York Herald Tribune:

My letter to you of October 29 advised you that Frank J. Sprague was not, as you stated in your issue of October 26, the "inventor of the high-speed elevators for skyscrapers," but that he invested his entire personal capital of half a million dollars to produce and install high-speed electric elevators in all skyscrapers until bought out by the Otis Elevator Company.

Sprague was both father and mother of electric railways; he not only conceived every basic function but he made Wall Street finance it, a dual feat achieved by few engineers.

Early experience with elevators and with electric motors gave me the opportunity to design, build and install in the Tremont House, Boston, in 1889, the first high-speed electric elevator ever built. Sprague discovered this elevator and retained me to develop, produce and install it; also other types of electric elevators. For historic data on this see my paper on "Elevators" in Vol. XX, May, 1899, American Society of Mechanical Engineers.

It is unfair to Sprague to create a doubt of his parentage of electric railways by claiming him to be the inventor of high-speed electric elevators of which he is the parent only by adoption.

CHARLES R. PRATT.

Upper Montclair, N. J., Nov. 8, 1934.