The Late George Westinghouse.

George Westinghouse, who died of heart disease in New York, Mar. 12, was born at Central Bridge, N. Y., Oct. 6, 1846. His father was an inventor, who, in 1856, removed his family to Schenectady, N. Y., where he established the Schenectady Agricultural Works. The boy attended the public and high schools of the town, spending much of his leisure time, after studies, in his father's machine shop. Before he was 15 he invented and made a rotary engine, and passed at an early age the examination for the position of Assistant Engineer in the U. S. Navy, in which he served from 1863 to 1865.

In 1865 he invented a device for replacing railway cars upon the track, which was made of cast steel, at Troy, N. Y. Going to Troy one day, a delay caused by a collision between two freight trains, suggested to him the idea that a brake under the control of the locomotive driver might have prevented the accident. His first thought was an automatic brake attached to the couplers, which was unsuccessful. This was followed by steam, which proved also to be unsatisfactory, because by the time it reached the brake from the engineer's cab it lost its power. He saw an account of the use of compressed air in digging the Mont Cenis tunnel, and after much study and investigation, the use of compressed air further impressed itself on him. Drawings of the air pump, brake cylinder and valves were made, but considerable time elapsed before a practical trial of the brake was obtained. The first patent was issued April 13, 1869, and the Westinghouse Air Brake Co. was formed on July 20 following. Many changes and improvements were being made in the brake all the while, the business flourished, and the manufacturing works, begun in 1869, were completed in 1870. In 1870 he went abroad to introduce the air brake in England —a difficult problem, as the trains in Europe had hand brakes upon only the brake vans, there being no brakes upon the other vehicles. Not only did this require the spending of seven years in Europe, between 1871 and 1882, but it taxed his inventive ability considerably to meet the new conditions of railway practice. In the meantime, he invented the automatic feature of the brake which overcame the imperfections in the first form, and removed the danger from parting of trains on steep grades. In 1886, he invented the quick action brake, the improvement being made in what is known as the triple valve. By this valve it became practicable to apply all brakes on the train of 50 freight cars in two seconds.

About 1880, he became interested in the operation of railway signals and switches by compressed air, and soon after there was developed and patented the system now manufactured by The Union Switch & Signal Co.

In 1886 the Westinghouse Electric Co. was formed for the manufacture of lamps and electric lighting apparatus, Mr. Westinghouse having become interested in the subject. The business rapidly developed and in 1889 and 1890 this company absorbed the United States Electric Co., and the Consolidated Electric Light Company. In 1891 all these properties were reorganized into the Westinghouse Electric & Manufacturing Co., which owns extensive works at East Pittsburgh, employing over 22,000 people.

In 1895 the Electric Co. outgrew its small quarters and moved to East Pittsburgh and the same year works of the British Westinghouse Co. were established at Manchester.

The question of the steam turbine and its applications was investigated by Mr. Westinghouse and he secured the patent rights of C. A. Parsons of England in 1897-98. This development of a new prime mover soon led him to consider the use of the turbine as a prime mover for ships. The trouble was the high speed. He then developed and brought out the mechanical reduction gear for reducing the inherently high speed of a turbine to the slow speed of a ship propeller or direct current dynamo. He also occupied himself with the development of an air spring for automobiles and motor trucks.

He rendered an invaluable service to electrical development when, in spite of opposition, ridicule and many efforts to crush his alternating current system, he remained steadfast in his belief that this class of high tension transmission would make distant electrical distribution possible. This system his engineers developed, and in this connection secured Nicola Tesla, in 1887, who invented the alternating current induction motor. A struggle almost identical with that of the earlier fight for alternating current transmission is the recent development of alternating current traction by means of the single phase motor. In spite of the same opposition, Mr. Westinghouse achieved a far step in electric railway practice which the electrical world was quick to follow just as in the case of alternating current transmission.

Owing to his many achievements in mechanics, electricity, steam and gas, his name was known the world over, and he had many honorable distinctions conferred upon him for his achievements and in recognition of the services he rendered the various branches of engineering. His alma mater, Union College, Schenectady, conferred upon him the degree of doctor of philosophy. He was decorated with the order of the Legion of Honor, with the order of the Royal Crown of Italy, with the order of Leopold of Belgium. He was the second recipient of the John Fritz medal. He received the degree of doctor of engineering from the Koenigliche Technische Hochschule of Berlin, Germany. He was an honorary member of the American Society of Mechanical Engineers, of which body he was President in 1910. He was one of the two honorary members of the American Society for the Advancement of Science. He was an honorary member of the National Electric Light Association of America. He was awarded the Scott premium and medal by the Franklin Institute of the State of Pennsylvania. He received the Edison gold medal for meritorious achievements in the alternating current system of electrical distribution. He received the Grashof gold medal from the Society of German Engineers in Germany, which acknowledged him the greatest American engineer.

He was connected with a large number of industries at home and abroad, many of which bore his name. He was President and director of Westinghouse Air Brake Co., Westinghouse Machine Co., Nernst Lamp Company, Union Switch & Signal Co., Canadian Westinghouse Co., Societe Anonyme Westinghouse, Paris., Cooper Hewitt Electric Co., Pittsburgh Meter Co., Societe Italiane Westinghouse, Italy, East Pittsburgh Improvement Co., Westinghouse Brake Co., London, Westinghouse Cooper Hewitt Co., London, Westinghouse Friction Draft Gear Co., Westinghouse Metal Filament Lamp Co., London. He was also Chairman of the Board of Directors of Westinghouse Electric Co., London, and Director Westinghouse Electric & Manufacturing Co., Traction & Power Securities Co., Westinghouse Metallfaden Gluhlampenfabrik, Vienna. The Westinghouse companies employ 50,000 men, on whom 150,000 persons are dependent. The total capitalization of all the companies is $200,000,000. Although actively associated with a large number of industries, he had during the last few years begun to transfer his responsibilities to the shoulders of his trusted lieutenants, the fortunate selection of which had always been one of the leading characteristics of his varied career. His death, therefore, will not cause any material change in the policy or operation of the companies so indelibly linked with his name.

Regulations Respecting the Removal of Regular Station Agents.

Canadian Railway and Marine World for March contained an order passed by the Board of Railway Commissioners, Jan. 31, respecting the removal of regular station agents, the complaints on which it was based having reference to certain specified stations west of Port Arthur, Ont. On Feb. 19 Assistant Chief Commissioner D'Arcy Scott gave the following decision which was concurred in by Commissioners McLean and Goodeve:—

"For some weeks past the Board has received many complaints from places in the Western Provinces where permanent agents had been established by railway companies, that the agent was being removed and the station being turned into a flag station. So numerous were these complaints, that the Board thought it proper to issue General Order 119, requiring railway companies which intend to remove a permanent agent from a station and make the station a flag station, to first notify the local municipality or board of trade, of its intention to apply to the Board; and, then send in to the Board an application for permission to close the station, with a statement of the grounds upon which action was to be taken. When a railway company opens a station and appoints a permanent agent there, business in that locality is built up on the assumption that the station will continue to be a permanent station. The Board thinks it proper that it should be consulted, and that those representing the public should be heard before such a station is closed by a railway company. The services given by a railway company at a station where there is a regular agent, and at a flag station, are very different; and, it may amount to a great hardship to a community to suddenly have its station closed. The Board has no intention of interfering with a railway company in practising economy by closing a regular station, if the facts of the particular case warrant such action; but, as the closing of a station has such a material effect upon the interests of the public who have been using that station, the Board should have an opportunity of determining in each case upon its own merits whether the railway company would be justified in closing a regular station or not. At the hearing, the point of view of the railway companies was clearly set forth. We realize the necessity for prompt action in all cases where it is reasonable that a company should be permitted to close a regular station. No general rules can be laid down. Each case will have to be dealt with on its merits. The intention of the Board in issuing General Order 119 was that it should apply only to cases where the company desired to close a regular agency station and make that station a flag station. It was not intended to apply to cases where a special agent had been temporarily employed to look after some particular class of business which was of a temporary nature. No order is necessary in this case."