ELMER A. SPERRY

Elmer Ambrose Sperry, President of The American Society of Mechanical Engineers for the year 1928-1929, was born at Cortland, New York, October 12, 1860. He attended the State Normal School of his native town and spent the college year 1879-1880 at Cornell University. His training, however, was obtained mostly by his own efforts after leaving school. The honorary degree of Doctor of Engineering has been conferred upon him by the Stevens Institute of Technology and Lehigh University, and that of Doctor of Science by Northwestern University.

In 1879, when not yet twenty years old, he perfected one of the first electric arc lights and secured its practical adoption. In 1880, he founded the Sperry Electric Company of Chicago, and manufactured arc lamps, dynamos, motors, and other electrical appliances. In 1883 he erected on Lake Michigan an electric beacon 350 ft. high, the highest in the world, and equipped it with 40,000 candlepower of arc lights.

In 1888 he was the first to build electrical mining machinery. His machines have been widely used, and started a distinct advance in mining.

About 1890, he became a designer of electric street-railway cars and soon founded the Sperry Electric Railway Company of Cleveland, Ohio, to build them. In 1894 the patents were purchased by the General Electric Company. He then designed electric carriages and manufactured them for several years. In 1896 he drove the first American-built automobile in Paris. A number of his electric carriages were sold there.

Electrochemistry also interested Mr. Sperry. He originated a process for caustic soda and bleach which still continues to be used extensively because a second large plant has recently been put into operation. Under other Sperry patents the National Battery Company was organized. He invented a detinning process for recovering tin from old cans and scrap, and an electrolytic process for producing white lead from wastes of copper mines.

He invented machinery for producing fuse wires. On this invention the Chicago Fuse Wire Company was established.

In 1918, Mr. Sperry announced his high-intensity arc searchlight, having a brightness 500 per cent greater than that of any light previously made. It has high actinic value and has made possible indoor photographing of motion pictures without the sun. It is a great aid in the navigation of air and water, and is the standard searchlight for the principal armies and navies of the world.

Mr. Sperry has devoted much thought, energy, and money to the development of compound internal-combustion engines using low-grade fuel oil. His compound Diesel engine for a given horsepower has about one-fifth the size and weight of the ordinary types.

About 1896 Mr. Sperry turned his attention to making practical use of the principles underlying the toy known as the gyroscope. This amazing device appears to have been invented some time in the eighteenth century. It was studied scientifically by Foucault, a French physicist, about 1851. The gyroscope is a wheel with a heavy rim, so mounted that it can spin very rapidly on its axis. When friction is reduced to a minimum and the method of mounting and suspending eliminates restraint by other objects or external forces, the gyroscope tends to point its axis in a definite direction and to return to that direction if disturbed. Possibilities of great usefulness were perceived. By diligent, tedious, and expensive investigation and great ingenuity, overcoming many obstacles, Mr. Sperry skilfully combined electrical and mechanical elements into successful gyroscopic compasses and stabilizers for ships and airplanes. Other applications of the gyroscope followed. The inventions were great contributions to safety and comfort of navigation of the seas and the air. In some respects they are the most distinctive productions of a remarkably prolific inventor.

Mr. Sperry was president of the Sperry Gyroscope Company, New York, organized in 1910 to manufacture the gyrocompass, ship and airplane stabilizers, high intensity searchlights, fire-control apparatus, internal combustion engines, and other products invented by him. He is now president of the Sperry Development Company, Brooklyn, N. Y., and also a director of the Goodman Manufacturing Company, Chicago, Ill.

Mr. Sperry has more than four hundred patents. For nearly fifty years he has

been an unusually productive worker in a surprisingly wide area of science and engineering. Many honors have been conferred upon him for his achievements. In 1914 he was awarded the First Prize of the Aero Club of France for his airplane stabilizer. In that year he also received the Franklin Institute Medal. Other awards include the Collier Trophies in 1915 and 1916; the John Fritz Medal, 1927; the Holley Medal, 1927; the albert Gary Medal of the American Iron and Steel Institute, 1929; the Elliott Cresson Medal of the Franklin Institute, 1929; two decorations from the Emperor of Japan, the Order of the Rising Sun and the Order of the Sacred Treasure; two decorations from the last Czar of Russia; and the Grand Prize, Panama Exposition.

Mr. Sperry is a member of the United States Naval Consulting Board and Chairman of the Division of Engineering and Industrial Research of the National Research Council. He is a founder member of the American Institute of Electrical Engineers and the American Electrochemical Society; a life member of The American Society of Mechanical Engineers, which he joined in 1910; and past-president of the New York Electrical Society. He also belongs to the American Chemical Society, the Society of Naval Architects and Marine Engineers, of which he is a member of Council, Society of Automotive Engineers, American Petroleum Institute, American Association for the Advancement of Science, National Academy of Sciences, Edison Pioneers, National Aeronautic Association, Franklin Institute, and other technical and scientific organizations in this country. He is an honorary member of the Japanese Society of Mechanical Engineers, the Japanese Society of Naval Architects, the Japanese Society of Electrical Engineers, and the Engineering Association of Hawaii. He is a member of the Engineers Club of New York as well as of numerous other social organizations.

Mr. Sperry is credited with having originated the World Engineering Congress in Japan in 1929. He was elected chairman of the American Committee, of which Mr. Hoover was honorary chairman. At the Congress he was elected an honorary vice-president, and as leader of the American delegation took a very active part in the program.