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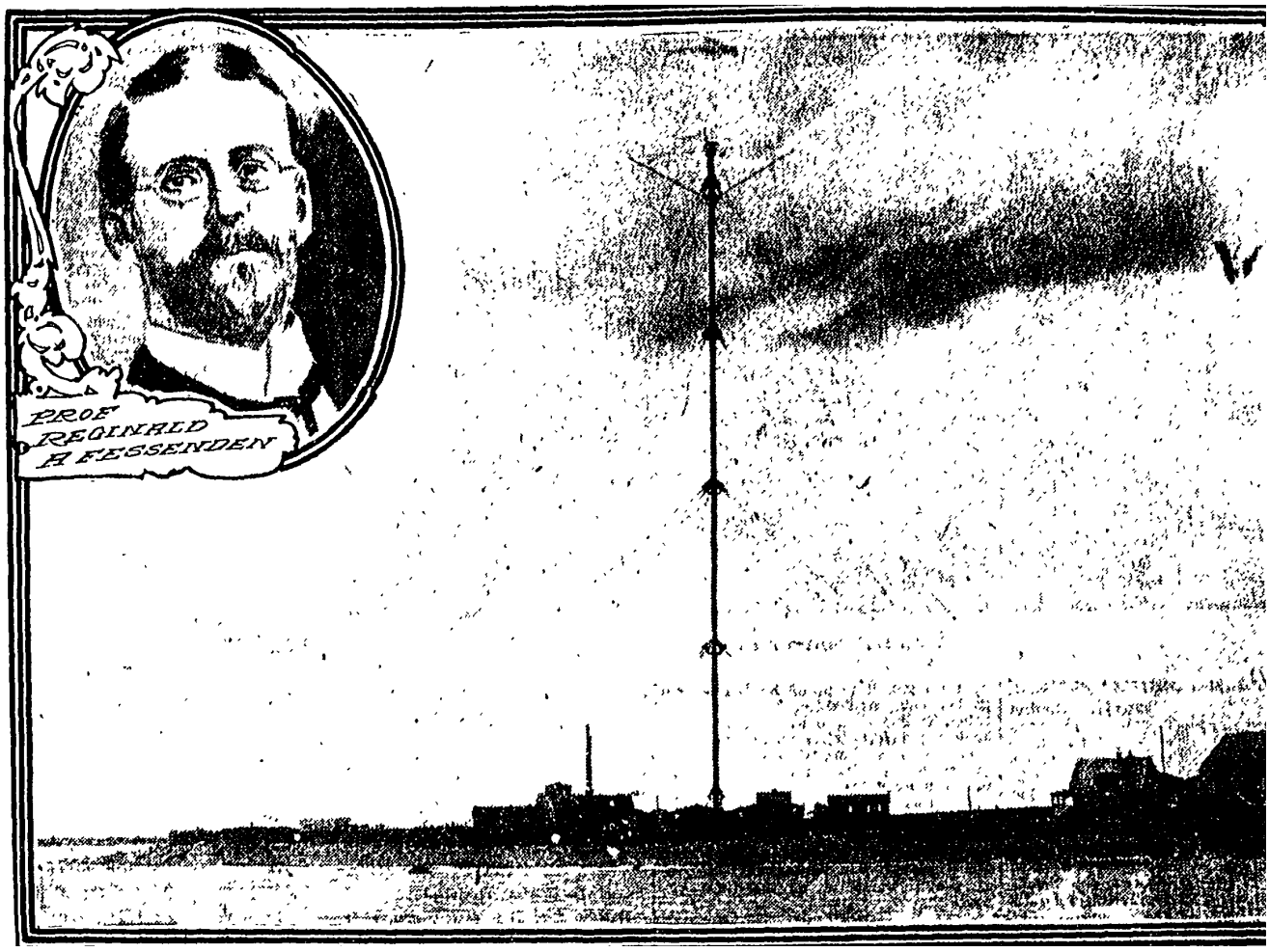
Waves Sent Out from Great Mast on the Coast Near Duxbury Picked Up by a Station at Alexandria—System is the Invention of Prof Reginald A. Fessenden, Who Has Also Perfected a Long-Distance Wireless Telephone—Navy Has Been Experimenting with His Invention—The Personality of the Inventor.



THE WIRELESS STATION AT BRANT ROCK.

WHEN on a warm summer night the casual visitor to Brant Rock, on the Massachusetts coast near Duxbury, hears the snap-snap-snap and sees the blue sparks of wireless apparatus in action at the top of a great steel mast tower 420 feet above the little cottage out of the bedroom window of which he is looking, he finds the time opportune for reflecting on the wonders of modern science.

This great mast and the machinery sheltered in various low, gray wooden buildings at its base are part of a marvelous mechanical unit which has developed wireless telegraphy and wireless telephony to a point undreamed of a few years ago.

Messages by wireless from this station by women. These guys stretch over nearly 1000 feet at the base.

The mast is 420 feet tall, the tallest wireless staff in the country. It is of steel, tubular, built section on section, like an elongated smokestack. Its base is drawn in to a point, resting on a single pin, like a bridge truss.

At the top are four yardarms, from which depended the antennæ, or wires which send out and pick up the waves. These lead off to a great distance on each side. On one hand they cross the roofs of several buildings; on the other their ends are anchored on the shore some way out from high water mark.

Inquiries at the station meet with short, though courteous answers. The were able to communicate constantly with the station at greater distances than have hitherto been attained by wireless, except perhaps occasionally under "freak" conditions.

Be that as it may, there are electricians familiar with the Brant Rock station and the general principles of the Fessenden system of wireless telegraphy who believe it far outstrips any other system now in use and that by it various problems that were as a sealed book to other inventors have been solved by its originator.

Prof Fessenden, at a meeting of electrical engineers at Atlantic City in June-July, 1908, read a paper on his wireless telephoning system, in which he described tests that had been made at Brant Rock, first with Plymouth, 10 bat the wireless companies step by step.

"No matter to what perfection the art of wireless telegraphy is brought," says Prof Fessenden, "years will elapse and the exercise of a great deal of political influence will be necessary, before the public gets the advantage of cheaper rates."

Of the personality of the master mind behind the Brant Rock station the public gets only an occasional glimpse. For some months recently Prof Fessenden has been abroad. When at the Brant Rock station he is too much absorbed in his work to see many people. To those he does see he extends no confidences. He shuns publicity.

Something about the man impresses all who see him that he is the sort to do big things. He is a marvel of energy, is big of body and brain—he stands about 6 feet 4 inches—and is in-

tion have been picked up at a station in Alexandria, Egypt, 4000 miles away. The marvel of it to the summer visitor in the little cottage is perhaps greatest in this single phase: the thought from the sending brain there at Brant Rock is flashed to the receiving brain in Egypt in an almost unmeasurable fraction of a minute—in a flash, so far as the layman may describe the period occupied in its transmission.

Aside from the snapping of the spark at the top of the great mast, and its visibility at night, Brant Rock knows little about the wireless station. Nor does the general public know more. Various stories have been published purporting to tell of its work. They have been fabricated from mere shreds of fact.

The backers of the enterprise are fighting not alone a great scientific, but a great commercial fight. They are doing it secretly, so far as the public is concerned. They take nobody into their confidence.

Thus to the visitor, who as a rule is nothing if not inquiring, the Brant Rock station is a place of mystery. Signs warning all persons not to trespass, and directing visitors to the office, coupled with the wierd demonstrations of the great tower at night, when the station is at work, increase this sense of mystery.

The construction of the tower is also a source of interest, particularly to the mechanically inclined. It is like no other. At a distance the joints in the many guys supporting it stand out like the dots on a certain kind of veil worn

station is privately owned by a company incorporated under the laws of New Jersey, the capital being supplied by Pittsburg millionaires. The originator of the enterprise is Prof Reginald A. Fessenden.

That is all. What is being done with the station is not for the public to know. Certain technical facts, particularly regarding wireless telephoning experiments at the station, have been communicated to the American institute of electrical engineers by Prof Fessenden. Beyond the statements that the station can work with ease and facility with stations on the other side of the Atlantic, and but for certain restrictions, legal and otherwise, could conduct a commercial business with distant countries, these papers contain little of general interest.

In the past winter the U S navy department, which in the past has been rather stiff in its dealings with wireless inventors, took up the Fessenden system to the extent of sending out two scout cruisers, the Salem and the Birmingham, to conduct a series of long-distance tests with the station at Brant Rock.

Special apparatus was installed aboard the cruisers for the purpose, as the Fessenden system does not work with the same sort of appliances as any other wireless system.

These tests were carried out as arranged, the ships going across the Atlantic and to various West Indian points.

The result of the tests has not been announced. If the expectations of the inventor were realized, and there is reason to believe they were, the ships

miles off, next with points on Long island and next with Washington.

The voice, he said, is conveyed with greater distinctness and finer gradation of inflections by his wireless telephone than by the system employing wires.

Prof Fessenden's paper convinces the reader that the day is not far off when telephoning without wires will be common, and a business man in Boston can call up his representative in New York without the bother of asking the long-distance operator to connect him with that city.

Of his wireless telegraph Prof Fessenden said that he had worked with Porto Rico, 1700 miles away, and Machrihanish, Scot, 3000 miles, and that his messages have been picked up at Alexandria, 4000 miles away, and that Capt Hogg of the refrigerator ship Glacier of the navy, when en route with the Pacific fleet around South America, picked up Brant Rock when off cape St Roque, Brazil.

"There is absolutely no difficulty in operating commercially and with ease across the Atlantic," said the inventor.

He then explained the difficulties encountered by wireless companies in their attempts to establish commercial wireless service. His description makes plain that they are combatted by vested interests, of one sort or another, at every turn.

In nearly all foreign countries telegraph lines are government monopolies. Wireless companies, therefore, can get no permits to establish a service.

Cable companies, strong financially and in political influence, naturally com-

tensely sincere.

Although by the accident of birth he is a Canadian, he comes of old New England stock, his family formerly having lived in Cambridge. His father, E. J. Fessenden, was a clergyman, and Reginald A. was born at Milton, Que. His academic education was received at the Doveaux military school at Suspension Bridge, N Y, and Trinity college school at Port Hope, Ont, where he finished in 1883.

Prof Fessenden chose electrical science as his career, and was fortunate enough to associate himself from the beginning with large concerns. By 1886 he had reached the position of inspecting engineer for the Edison company of New York. In 1887 he became head chemist for the Thomas A. Edison laboratory, where he remained three years. He was next head electrican of the Westinghouse company of Newark. This employment he left in 1892 to accept the professorship in physics and electrical engineering at Purdue university. He next became professor in electrical engineering for the Western Pennsylvania university, where he remained for seven years, 1893-1900.

His interest in wireless, always keen, resulted in these years in his first important experiments.

Leaving the professor's chair in 1900, he became a special agent of the weather bureau at Washington, his field being the development of wireless telegraphy and telephony. In these lines he conducted experiments in 1902 at Roanoke island, on the coast of North Carolina, in which it was reported he eclipsed the greatest achievements of Marconi to that date.

The Brant Rock experiment station was an outgrowth of this work. The great mast is a thing of recent construction, and the time may not be far distant when the world will know what has been accomplished in the station at its base in the furthering of the science of wireless telegraphy and telephony.