

WIRELESS TELEGRAPHY.

The demonstrations of the actual transmission of messages between distant points which were made last week in the office of THE CHRONICLE, were sufficient to show the extraordinary simplicity of the apparatus and system and the feasibility of sending messages without any wires outside the building, from or to which they are sent, or received.

The apparatus was installed in this office in a few minutes. Communication was at once established with another station in a building a number of blocks distant. Although the whole affair was hastily arranged, the messages transmitted from a distant part of the city were received as correctly as the ordinary telegraphic message. The apparatus did not occupy more room on a table than a hand valise, or dressing case.

The word "wireless," though practically, is, however, not technically correct, as the receiving instrument has three short wires, two of which extend some six or ten feet, two of which may be suspended from a hat rack, or window curtain, and the third, a "ground" wire, is put in contact with a water pipe. The messages are received then by wires in contact with an instrument by which they are made intelligible to the receiving operator.

Up to a recent date it was thought necessary for the apparatus to have direct contact by its wires with the air outside the operating room. This was found not to be so by a lucky incident. While work was in progress to place the ends of the apparatus wires in contact with the outside air, the reserving operator exclaimed, "Hold on there—messages are coming!" although at the time he spoke, the wires were wholly "inside" the building, laid loosely aside ready for being run outside. This revealed the non-necessity of any wires having contact with the exterior air. To-day, wherever the De Forest system is installed, the messages pass into buildings without any apparatus of any kind being outside the walls. Messages, indeed, have been received inside a closed safe or vault.

The transmitting and receiving apparatus have to be tuned to each other. This is an illustration and practical application of a law of acoustics, by virtue of which any wire, or, indeed, any object capable of giving out a sound, on being vibrated, responds to the same note to which it is tuned. Thus, when a pianoforte is being played, there are sympathetic vibrations continuously responding to others, enriching the harmony when the instrument is in perfect tune. If a tuning fork which gives out, say, the note A, is struck, when near to another of the same note, the second one will, as it were, echo its characteristic note, but no other.

So the wireless message speeds on its course until its wave motion, or vibration impinges upon an apparatus tuned like the transmitting instrument. To such an instrument it yields up its inaudible secret, which it may have kept sacred for hundreds of miles.

Already, this system enables a line of steamers between New York and the West Indies, to be kept in constant touch with the head office, while en route to and fro. It is anticipated that, in the near future, wireless messages will be sent to and from Montreal, Chicago, and intermediate points. The time occupied is inappreciable, transmission is instantaneous.

Wireless telegrams can be handed in to any postal telegraph office in the United Kingdom. At every such station is displayed a list of vessels that are equipped with wireless apparatus, announcing their sailings and the day and hour when they will be in touch with coast stations. The ships having the service number twenty-five, and include the finest vessels engaged in the transatlantic trade. Ships so equipped will, at present, be reached while they are within 200 miles of wireless land stations, and they will be in touch with these stations for several hours after their departure from port, and before their arrival.

Wireless telegraphy, ere long, will be as familiar as the telephone or telegraphy. But it can never cease to be one of the most marvellous systems for annihilating space in bringing human beings into communication.

There are, however, difficulties inherent in wireless telegraphy, which will have to be removed before it will be able to compete as successfully as its promoters predict, with the established telegraph system, by wires. For effecting communication between stations on land and vessels out on the open sea, there can, of course, be no competition with any system which involves any form of material contact between such stations and vessels in motion. In that sphere, wireless telegraphy has and will have a monopoly. It is, however, pointed out that there must be a limit to the number of stations from which messages may be sent, or by which they may be received. The apparatus at every port, for instance, cannot be syntonsed or tuned, to receive messages from every vessel. Along the coasts of this continent, of the United Kingdom, of Europe, and other continents, there are thousands of vessels continually sailing past thousands of ports. All these vessels and ports cannot possibly be brought into communication by wireless telegraphy, so far as the system is now known and practiced. Already, there have sprung up national and trade jealousies in regard to the systems in use. The Marconi companies have