

PAWTUCKET'S BOY STUDENT OF WIRELESS TELEGRAPHY

Thomas P. Giblin, 16, of the High School, Has Received Messages Sent by Friend One Mile Away – Determined to Become Inventor

Wireless telegraphy and the problems of transmitting messages to just certain specific points without the aid of wires, or, in other words, the matter of directing of making possible "secret" wireless telegraph messages, are topics which are absorbing the attention and closest study of many of the greatest minds of the world today, and also many of the youngest. Master Thomas P. Giblin, aged 16 years, who resides with his mother, Mrs. Mary A. Giblin, at 295 Fountain street, in the Pleasant View district of Pawtucket, figures prominently among the younger class of these students, as he has a complete wireless telegraph transmitting and receiving system in operation at his home, being the only person of his age who is known to possess such fine wireless telegraph stations anywhere in this section of the country.

Another important fact which speaks especially well for the ability and determination of Master Giblin is that he has made every bit of his transmitting and receiving wireless telegraph apparatus himself, including the spark coil, coherer, decoder, sounder and relay, and receives not the least encouragement in his study and practice with wireless telegraph instruments from his mother and many of his relatives, they being of the belief that his time would be more profitably spent in paying closer attention to some of his high school studies, as he is a member of the freshman class of 1907, at the Pawtucket High School.

Although he stands well in his classes at the high school, Master Giblin's study is chiefly of wireless telegraphy and all kinds of electrical apparatus. He asserts that he hopes in the near future to realize his ambition to invent some device which will repay him for the time and thought which has devoted to these subjects.

Daily large numbers of Master Giblin's friends and schoolmates visit his home and interest themselves in the many novel mechanical devices which he has to display for the inspection and approval, and to each of his visitors he delights in explaining the workings of his wireless telegraph system. He has his receiving apparatus in the barn, located at the rear of the house, and the transmitting station he established temporarily in one of the parlors of the home. Master Giblin assembles his visitors about the receiving apparatus on one of the scaffolds in the barn, and then he goes into the house and transmits messages to them, thus proving the practicability of his system.

At one end of the barn, Master Giblin had erected a pole which is about 35 feet in height, with a thin piece of plate copper suspended at a point a few inches from the top. This serves as one of his aerial poles and aids in directing the course of the wireless telegraph messages. A wire is stretched from the barn to the house, being connected to the faucet on the exterior of the latter, which serves to ground the wire, and at the same time act as the receiving apparatus. Inside the house, Master Giblin connects the wire leading from his transmitter to the radiator, which leads to the boiler in the cellar and thus ground his portion of the system. For a pole in the house, he attaches the wire to one of the gas fixtures over his transmitter, by means of a silk thread, leaving the end of the copper wire projecting from the covering perpendicularly into the air.

Guglielmo Marconi's system is the one Master Giblin has in operation, and it consists of a coherer tube with silver pole-pieces, and this is connected with a local cell and a sensitive telegraphic relay. The coherer is a small glass tube containing metal filings, which by cohering and decohering form and break a circuit,

allowing the current to flow through the relay, which sets up a heavier current. This heavier current automatically works the tapper, which by contact with a bridge on which the coherer rests, jars the metal filings apart, so that the coherer is made susceptible to the next impulse or wave,

In circuit with the relay is a bell signal by which the operator is called. Although its working is not very distinct at first to one who is not well up in the study of electricity, Master Giblin soon thoroughly informs his visitors concerning its "manoeuvres," and it becomes very interesting when the operator is making the miniature lightning flashes which creak like pistol shots as they create the wave currents which form, the message.

It has been proven that when the Hertzian waves (an explanation of which will follow in the next few paragraphs) impinge on the coherer, its resistance falls enough to allow the current from the local cell to flow through it and energize the electro-magnet of the relay, and also close the circuit containing a battery, (which comprises a number of cells connected together), with a Morse telegraphic sounder and a trembling electric bell. The gong of the bell is removed, allowing the bell to act as a decoherer. The gong of the bell is removed, allowing the bell to act as a decoherer. The hammer of the bell is adjusted as to tap the coherer tube and shake the filings in it sufficiently to decoherer them.

Hertzian waves take their name from Dr. Hertz, who is devoted a great deal of his time to the elucidation of their properties. They do not undulate as rapidly as heat waves, and, as far as can be learned, they vibrate at the rate of 230,000,000 per second, and travel at a velocity of 186,400 miles per second. They are longer than those of light, and are capable of reflection, refraction and polarization. They may be set up by any sudden discharge of electricity, such as that produced by an induction coil, Leyden jar, or a lightning flash.

In order that these Hertzian waves may be made evident to our senses they, must be received by something which is capable of taking up the same rate of vibration, or that is in "tune" with them as one would say in comparing them with sound waves. For example if a tuning-fork be set into vibration and another tuning-fork is brought in close proximity to it, it will set up vibrations and emit a musical sound provided they are in tune with one another. This is caused by the sound waves being propagated by the air.

Dr. Hertz had demonstrated the existence of electric waves, and had also succeeded in differentiating between electrostatic and magnetic waves. He has proved also that these oscillations have all the properties of light and heat waves. In comparison, Dr. Hertz has shown that the human ear is capable of hearing waves in the air not less than 16 nor more than 44,000 per second: which waves we call sound. When coal is glowing at a red heat, or anything else at that temperature, it is sending out waves at the rate of 10,000,000,000 per second. It is estimated that the sun is sending out light waves whose rate of motion is over 500,000,000,000,000 vibrations per second. Hertzian waves vibrate at the rate of 230,000,000 per second, and are 3 ½ feet in length, while light waves are 1-40,000 of an inch in length, or less.

It is now believed by the greatest students of wireless telegraph that the most plausible and probably the only way to make "secret" or private wireless telegraphy possible is to so adjust ones transmitting and receiving apparatus that it will transmit and receive only messages at a certain rate of vibrations. In this way only those wireless telegraph stations which send forth and accept messages at the same rate and

“tune,” or syntonny, of wave vibrations, will receive the messages which are “whizzing” through the ether at this certain rate.

Continuing, after this partial explanation of the Hertzian waves, it will no doubt be interesting to know that small chocking coils which are wound so as to have self-induction, are introduced between the coherer and the relay in Master Giblin’s system, Nickel seems to be the best metal to use in the coherer as it is most sensitive to the Hertzian waves, and it is the most easily decohered. The function of these chocking coils is to compel the greater part of the oscillatory current induced in the circuit by the electrical waves to traverse the coherer, instead of wasting most of the energy in the circuit afforded by the relay.

Marconi had found that if these chocking coils are omitted, and if other circumstanced remain the same, the distance at which the signals could be distinguished is reduced to nearly on-half that attained when they are employed. Marconi had also proven that unless provision is made against it, the relay, the sounder, and the tapper, all produce disturbing effects on the receiver; but he has remedied the effects by introducing suitable non-inductive resistances, in parallel with the chocking coils. This shunting prevents all sparking at the contacts and sudden perturbations, due to the local battery current, both of which would otherwise produce disturbin effects on the coherer.

Master Giblin converses very intelligently regarding all the parts of the receiving and transmitting apparatus, also concerning their individual and collective action. He sent his first wireless telegraph message from one end of his barn to the other, over a year ago.

The longest message Master Giblin had transmitted and received with his wireless telegraph system was a distance of about a mile. One of his friends, John McGovern, aged about 20 years, transmitted the message from his home, corner of North Main and East streets, and Master Giblin received it at his home on Fountain Street.

In order to prove to Master McGovern that he received his telegraph message without the aid of wires Master Giblin requested him to send something of which he knew nothing about. When Master McGovern reached the receiving station of this young genius and Master Giblin told him he received three “S’s” and two “R’s,” exactly what was transmitted, Master McGovern was obliged to believe it. Master Giblin asserts that often times the bell on his receiving apparatus rings when a message comes from, some other wireless telegraph station. Within a few months, Master Giblin hopes to have more powerful storage batteries to energize his transmitting apparatus, which will enable him to send messages much longer distances. In connection with this, he intends to make a larger spark coil.

Master Giblin is a native of Pawtucket, having been born in the same house in which he now resides, and last June he graduated from the Sacred Heart Parochial School on Park Street, with high honors. He has been a close student of electricity, curing the past five years, and has read the 775 of more volumes on the subject which have been loaned him by the officials of the Pawtucket Free Public Library. He is original in many of his ideas and is expert in free-hand drawing, drafting all his plans for devices himself.

About three years ago Master Giblin installed a private telephone system of his own manufacture between his home and that of his aunt. Mrs. E. M. Cahill of 7 Woodbine Street, which had has kept in perfect operation ever since. He has also installed a complete electric lighting system in the store now occupied by Frank Germain, at 299 Fountain Street, and another in the basement or parish hall of the Church of the Sacred Heart, on Park Street. When entertainments are given in this hall, Master Giblin

always installs the special electrical effects and operates them. He has also followed closely the changes wrought by the X-rays, being especially interested in their properties and utility.

A short time ago Master Giblin had an automobile of goodly proportions and strongly constructed all completed, ready for installation of the motor, but he couldn't quite make up his mind to spend in the vicinity of \$100 for a motor, therefore he has yet been unable to ride down town in an automobile of his own manufacture. He has repaired several "balky" automobiles for chauffeurs who have become stalled in the Pleasant Vies district, never up to this date having become puzzled to any such "emergencies"

Master Giblin is a young man who is sparkling over with wit and good sheer, and is held in high regard by all of his acquaintances. He is a most genial and interesting person to meet.