

# SAN FRANCISCO BOY INVENTOR

## BY MABEL BEESON

WHAT THE INVENTOR SAYS: It has already been proved that distance does not affect the wireless transmission by the Hertzian wave.

My telephone messages from fifty feet to seven miles are a further demonstration of this fact. The first application of my wireless telephone will be for marine service. Wireless telegraphy has been used successfully on about 250 ships up to date. As my telephone will work as far as any wireless telegraph instrument after some development I intend to apply it for the same service. In that case every battleship fitted with wireless telephony will be able to get any particular ship within its range without the danger of messages being intercepted. An ordinary wireless telegraph instrument requires an operator. By using my telephone the officer in command could carry on the conversation personally. In a great many cases where wireless telephony could be better adopted than the ordinary wire telephone. For instance two persons desiring an absolutely secret telephone communication between Oakland and San Francisco would have to go to a tremendous expense to secure it. At a nominal expenditure of money two wireless telephone stations could be erected and maintained, assuring absolutely secret and uninterrupted communication between these two points. The field of my wireless telephony is greater than that of the wire telephone, in view of the fact that it can be used in isolated places.

The following is a summary of the uses to which my telephone will be applied: Marine service, lumber camps, mines, ferry-boats, lighthouses, mountainous districts, desert lands, balloons and our future airships; in fact, in all places where it is either impossible or too expensive to apply the ordinary telephone.

FRANCIS J. McCARTY.

PERHAPS when the subject of child culture shall receive the same expert attention that Luther Burbank gives to his experiments in the plant world it will be possible to know just what powers and possibilities every one may have. Certain characteristics will be cultivated and even the physical features will be under control. We shall develop scientists, artists, inventors, laborers, as a matter of course, and no one will be surprised at another's gifts.

Up until this time comes—and it is still far in the future, isn't it?—we shall not be able to contemplate splendid achievements without enthusiasm, and any one who by a great invention or a long-sought discovery lightens the burden of the world's workers will be received with loud acclaim.

Not often are we called upon to acknowledge such obligations to one of the least among us, the children, and that is why I rejoice at the opportunity of meeting the subject of this sketch, Francis J. McCarty, inventor of a system of wireless telephony.

That he, a boy of fourteen, should have discovered the secret of transmitting the tones of the human voice over long distances without the use of wires is the face of statements from most of the scientists who had considered the problem and pronounced it impossible of solution, puts him in a place apart. He is not to be judged by ordinary standards, for whether the scheme was evolved by accident or as the result of close study, he has put the world in the way of still further annihilating its limitations of time and space, and all the while he is growing into a tall, slender youth of seventeen.

Do you wonder what manner of boy he is, this youthful inventor? Three years have passed since he had his first proof that the Hertzian waves will carry the sound of the voice as well as articulate impulses, and he has grown into a tall, slender youth of seventeen.

Quiet of manner and direct of speech, he is a type of the vigorous American boyhood with which we are all acquainted and upon which we are depending for our great work of the future.

Not until he begins to talk upon the subject of wireless telegraph and telephone does he appear to differ from any one of a hundred young men we know, but then his voice takes on a new tone—he speaks as one having authority.

"People think," says this student of the new use for electric power, "that only recently has there been any attention given to the invention of wireless telephony, but that is not true. More than forty years ago Morse had a plan for communicating without direct connection, and though he used three or four times as much wire as would have been needed for the other system, he made it practical for commercial purposes, and he proved that with only the ether as a medium vocal tones could be transmitted."

He continues to talk of the early investigators, and I learn of Lindsey, Scotchman, who had definite theories of both wireless telephony and telegraph systems, a generation ago, and who is also reported to have studied the problem of electric light. He was pitifully poor, however, often going without food in order to buy some piece of apparatus required in his experiments, and was unable to bring his work to completion.

The discoveries of Hertz, the great German, are discussed with enthusiasm, and we pass on to the achievements of Popoff, who demonstrated before the Russian Research Society, ten years ago, a wireless telegraph equipment that was satisfactory under limited tests, to listen to his clear, concise statements.

With what a complete absence of self-consciousness are his opinions and facts delivered!

This is no precocious youth, who, having stumbled upon an important discovery, preens himself upon his distinction. He is an investigator by virtue of his temperamental fitness and we may reasonably expect from him other valuable contributions as his experience widens.

Quite naturally, too, does he assume the teacher's attitude and his illustrations—homely examples to illustrate principles that are elementary to himself, but unknown to me—are both simple and apt.

I have only to close my eyes to imagine myself in the presence of a distinguished savant, some man of mature years who has had the benefit of long study and acquaintance with the trend of modern thought along this line.

"But," I interpose, "I want to know what you have done. Tell me about your work."

At once he is again the easy, careless boy.



"I'm afraid there isn't anything very interesting to say about myself," he observes, "because I've always done just about what the other boys did." But he has done some things the other boys never dreamed of trying; he has done some things that many men, "children of a larger growth," have sought to do without success.

"That is why he interests us, and so I tell him. He cannot understand it, but, being good natured, he yields the point and continues his story. 'I had to leave school when I was twelve. I was always interested in mechanical problems, you know, and in looking for work I wanted something in that line. First with the telephone company and later with an electrical supply company. I found plenty to keep me busy. 'When I was fourteen, I went into the electrical contracting business for myself, but I soon gave it up, for I discovered my principle of the wireless telephone and work on that has taken all my time ever since.

"I used to do the repairing and adjusting of the wireless telegraph apparatus that was being demonstrated here, but had to give up even that because I needed all my days for my own work." "How did you learn all the history of the work? Surely that matter is not a part of the regular school course for children under twelve?" "It has been some time since I left the public school and I am accustomed to surprise at the scope of the present curriculum for very young children, but this seemed most astounding. 'Oh, no, indeed! You see, I'm always reading about this kind of work and whenever I find in a book or magazine any report of some man's experiment with a diagram of the apparatus with which he made his tests, I set right at building a duplicate to see if I can get the same results. You really can't understand the problem and the way he worked it out unless you do this.' I immediately decide that if genius has been correctly defined as 'an infinite capacity for taking pains,' Francis J. McCarty has tully established his right to the title of Genius. Think of the spirit of thoroughness that compelled him to refuse to be satisfied with the experimenter's deductions until he had contrived a similar apparatus of his own and arrived at similar conclusions.

"I had been working for the wireless telegraph company," continues the young apostle of the importance of being definite, "and it seemed to me that since we could send the wave signals without direct connection we should be able to send exact tones. They said this could not be done because the rate of vibration of the human voice was so much lower than of the Hertzian wave, but I was not convinced. If we could only have the right transmitting instrument I thought it could be done, and so I kept on trying. Finally I struck the right plan. 'The first telephone outfit I made was

very small and crude. The transmitting instrument was in the front room of the house and the receiving on the porch in the rear. The aerial wires were suspended on posts not over five or six feet high and the ground plates were laid on the floor. It worked all right over a distance of about fifty feet and anything that was said, even in very low voice and with the intermediate doors closed, could be heard plainly. 'Then we tried it over a distance of 75 feet and then between Oakland and San Francisco, and the longest test we have made to date, was between San Mateo and Millbrae, seven miles and a half. In every case it was satisfactory. 'Of course, we haven't carried on any conversation, for I've had only the use of one set of instruments, but when I can talk or sing or whistle into the transmitter and can be heard perfectly seven miles and a half away, that proves that the plan is right, doesn't it? 'And I admit that it certainly does. 'Are you superstitious?' he inquires with seeming irrelevance. 'Now, I am superstitious—a very, very little. Just enough, in fact, to make me reasonably careful to see that, by all outward signs, the fates are propitiously disposed toward any new undertaking. But I do not like to admit even that, so I parry this question with another, 'Why?' 'It is about the number 13, which has played a very prominent part in my investigations. Some of the tests have been made on that day of the month—the San Mateo one, for example, on the thirteenth of June—and when it is not the thirteenth, it is Friday that haunts me. I don't plan to make it come just so, you understand. It just happens. 'We agree that "unlucky" days have not, apparently, hindered his progress and he says, with a boyish laugh, 'When I remember what a struggle Lindsey has had in making his tests, and even then not being able to carry out his tests, I think I've been pretty fortunate. 'A peculiar ring at the door—rather a succession of rings—wakes the school and, in response to my questioning look, I am told that it is "some one of the boys. They always ring my initials according to the telegraphic code." 'The boyish chums are as important a part of his life as ever. A short time ago they were playmates. They sympathized with the early disappointments in his work and now share his elation over the final outcome. In a word, they "belong."

I am curious to know how he has secured his instruments, whether he has had help in their constructing. 'The making of the apparatus has been my problem and I have had no help in its solution. Some of the parts needed cannot be found in San Francisco, so I have had to design and make them myself, and as I am not naturally mechanical in that way it has been very difficult. The receiving apparatus is very simple and easily secured. It is the transmitting instrument—my patented feature—that offers the difficulties. You see, I can't give any electrician a detailed drawing with specifications as to what I want; not just yet. That would be giving away my secret, but when I can go to New York, as I hope to in another month, and secure precisely the apparatus I ought to have you will see some splendid demonstrations of wireless telephony. Then I will file the final papers at the Patent Office and will arrange for foreign patents, too. 'Doesn't it seem a wonderful thing—this invention that is to be covered by patents here and abroad, and that may become as familiar as the telegraph or the present telephone?' 'With all his heart he answers, 'It is splendid! And the cost of installing will be so little, with cost of maintenance nothing, that the central offices can give the service very cheaply indeed. There will be no franchises, no wire-and-pole privileges to pay for. It is beautifully simple. 'The profits from similar inventions, in the past, have been enormous,' is my suggestion. 'Yes, I know, but that is not the important thing, is it? The biggest and best part is the working out of the idea and proving that it is correct. 'There spoke the genuine enthusiast. He has devoted his time in proving whether the experiments of other workers correct and true—and now, taking precedence over all other considerations is the necessity of proving that his own discovery, his original theory, is commercial practicality. The thought of the money to be made holds second place. 'I would not have you believe," he adds quickly, "that I set no store at all by the property rights of my invention. One reason I am so interested in protecting myself by European patents before pushing the work here is that I do not want to lose any proper benefit of what has been done. My grandfather had that unfortunate notion, too? 'He invented a number of important devices, but none of them exactly electric. Perhaps the best known is the prismatic flashlight, by which basement rooms are lighted through the pavement. That was patented and afterward sold. His name, William Lynch, may be seen on some of these lights even to-day. He was the only inventor I know of in the family, so we will say I have my knack from him. 'When you do go East," I caution him, "do not become so pleased with New York as to be unwilling to come home." 'As if there were any such danger," he laughs. "California is the place for me. It is my State and I want California to have all the credit for whatever I may do. 'There could be no more final proof of the practicability of my invention than the experience of this youthful scientist. The day that ruled "Children should be seen and not heard" is of long, long ago, and no one is found to regret its passing. 'In this year of grace, any one with a serious message can command the world's attention. For the man or woman, boy or girl, who knocks at our doors, seeking to interest us in a new thought or a new invention, there are only two questions: Is it needed? and Are you in earnest? 'If the scheme be found to contain new elements of truth, its creator becomes our benefactor and all the world has need of him. 'Probably no one does as much valuable service as he who finds new methods of transmitting knowledge and intelligence. We may not know all the corners of the earth, face to face, but we demand increasingly detailed information of their happenings; we must know each day what the people of all nations are doing and planning. 'Like Ajax of old, we breathe an unceasing, earnest prayer still for light; no country is too remote for our interest, and no plan of communication that brings us closer together can escape a cordial welcome. (Copyright, 1903, by Albert Britt.)

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## The Tragedy of the Humorist-- A Fable for the Foolish

By Nicholas Nemo

WHAT is a humorist and why? The answer to this double-barreled conundrum is so simple that it is hardly worth offering to an intelligent community. In the beginning the humorist is an accident; later he is a habit. This is the alpha and omega of the whole matter. The budding humorist is launched upon his career of after-dinner speeches, contributions to the comic supplements and other minor misdemeanors by the veriest chance. Perchance it befalls that on a day when he thinketh no particular evil to his fellow-man he is called upon to respond to a toast at the annual dinner of the Sons of St. Algernon or some other religious organization. When the fateful moment arrives he rises to his feet and by some lucky or unlucky accident drags forth from the inmost recesses of his being what is at once recognized as a highly humorous effort worthy of the only Chauncey.

No one knows how he did it, himself least of all, but the fact remains that for all time he is branded with the mark of the after-dinner humorist. It isn't necessary to give any particular name to this unlucky individual who has purchased a through ticket on the Facilis Descensus Averno Limited. He infests every community and the insane

asylums and graveyards are full of him. He is a humorist, only that and nothing more, and he wouldn't be that in the majority of cases if people were more careful in their use of English. But perhaps some one may rise and inquire why it is such an unpleasant thing to be a humorist. Surely such a one will say there are advantages connected with the pursuit of the prehensile pun or the after-dinner speech that lieth by daylight through the medium of the Associated Press. What would not a man give in exchange for a free invitation to dinners without number or for the privilege of seating his name in all the Sunday supplements in big letters with special line cuts of Lydia E. Pinkham and Dr. Munyon illustrating his humor. It is to be assumed that there are compensations even to being hanged, although the latter are not widely advertised at present since electrocution has come in, but it is hard for the budding humorist to see the bright side of the cloud of humor that surrounds him at all times. From level to level he falls gradually and he may be without sensation, but still down. From dinner to dinner he writes pieces for the papers, and even essays to collect the evidences of his degeneracy and if he can discover a publisher sufficiently lost to the sense of shame to give them forth to the world bound in cloth at a dollar and a half per. It may be that for a time he flourishes and waxes fat on the proceeds of his villany,

and make his living by honest toil until such time as public taste shall take a change for the better. Vain hope! By some strange decree of fate it has been determined from the foundation of the world that a leopard, an Ethiopian, and a humorist are one in their inability to change their spots, their skin, or their stripes. Once a humorist always a humorist is the law of the universe as fixed and unalterable as the laws of the Medes and Persians or the decisions of a national league umpire. The humorist assumes that his post-prandial practice entitles him to shy his glove into the political arena and take a try at a vacant seat in Congress or a foreign consulate in Senegambia. He is intelligent, honest, in spite of the temptations of his previous occupation, industrious, if he can see enough in it, amiable to a fault, at least to his own, and guaranteed gentle in single or double harness. Surely his power of imparting thrills of pleasure to the "spinal columns" of his hearers will avail him in other and more serious fields. So he launches his frail political bark and mounts the quarter-deck to give the orders for the voyage. But his most-stentorian commands are received with shouts of laughter; his most ponderous reflections on the state of the nation are treated as delicious humor; his dire prophecies of the fate that awaits the country evoke nothing but chuckles. The late humorist is at a loss to understand his reception until the sad truth breaks in upon him that every one thinks

that it is just another of his jokes. The more serious he is and the louder he thunders for his prophecies the greater the laughter and merriment that attends his progress. Then he tries writing serious articles for the magazines. Surely no one could be suspected of being humorous in the magazines, outside of the advertising pages; but even here fate digs his footsteps. Not even in his palmyest days of intentional humor is he so applauded as when he is trying to convince the world that he is endeavoring to add to its sum total of wisdom and preserve it from its impending fate. Apparently the world doesn't care about being saved as long as there is anything left to laugh at. In the midst of his bitter struggle the poor humorist who is trying to be taken seriously gives up the ghost and dies quietly but firmly. It is the one act of his career that is not looked upon as a joke but even then the sorrowing family carves on his tombstone the grim post-humorous epitaph, "Here lie the ashes of the man who has made his bed must lie in it and the dog who has received a bad name must bear it to the end of the chapter, even if it is given him for no fault of his own. (Copyright, 1903, by Albert Britt.)

FRANCIS J. McCARTY  
VAUGHAN AND KEITH PHOTO.