

**TESLA ON HIGH FREQUENCY GENERATORS.**

Editor, ELECTRICAL EXPERIMENTER:

I had to summon all my will power to pass under a bridge or other structure as I experienced a crushing pressure on the skull. In the dark I had the sense of a bat and could detect the presence of an object at a distance of twelve feet by a peculiar creepy sensation on the forehead. My pulse varied from a few to two hundred and sixty beats and all the tissues of the body with twitchings and tremors which was perhaps the hardest to bear. A renowned physician who gave me daily large doses of Bromid of Potassium pronounced my malady unique and incurable. It is my eternal regret that I was not under the observation of experts in physiology and psychology at that time. I clung desperately to life, but never expected to recover. Can anyone believe that so hopeless a physical wreck could ever be transformed into a man of astonishing strength and tenacity, able to work thirty-eight years almost without a day's interruption, and find himself still strong and fresh in body and mind? Such is my case. A powerful desire to live and to continue the work, and the assistance of a devoted friend and athlete accomplished the wonder. My health returned and with it the vigor of mind. In attacking the problem again I almost regretted that the struggle was soon to end. I had so much energy to spare. When I undertook the task it was not with a resolve such as men often make. With me it was a sacred vow, a question of life and death. I knew that I would perish if I failed. Now I felt that the battle was won. Back in the deep recesses of the brain was the solution, but I could not yet give it outward expression. One afternoon, which is ever present in my recollection, I was enjoying a walk with my friend in the City Park and reciting poetry. At that age I knew entire books by heart, word for word. One of these was Goethe's "Faust." The sun was just setting and reminded me of the glorious passage:

"Sie rückt and weicht, der Tag ist überlebt,  
Dort eilt sie hin und fördert neues Leben.  
Ach, dass kein Flügel mich vom Boden hebt  
Ihr nach und immer nach zu streben! \*

Ein schöner Traum indessen sie entweicht,  
Ach, zu des Geistes Flügeln wird so leicht  
Kein körperlicher Flügel sich gesellen! \*

As I uttered these inspiring words the idea came like a flash of lightning and in an instant the truth was revealed. I drew with a stick on the sand the diagrams shown six years later in my address before the American Institute of Electrical Engineers, and my companion understood them perfectly. The images I saw were wonderfully sharp and clear and had the solidity of metal and stone, so much so that I told him: "See my motor here; watch me reverse it." I cannot begin to describe my emotions. Pygmalion seeing his statue come to life could not have been more deeply moved. A thousand secrets of nature which I might have stumbled upon accidentally I would have given for that one which I had wrested from her against all odds and at the peril of my existence.

"The glow retreats, done is the day of toil;  
It yonder hastes, new fields of life exploring;  
Ah, that no wing can lift me from the soil,  
Upon its track to follow, follow soaring!"  
\* "A glorious dream! though now the glories fade.  
Alas! the wings that lift the mind no aid  
Of wings to lift the body can bequeath me."

It is to be regretted that a letter addressed to me by Mr. J. Harris Rogers, in your care, was published in the march number of the ELECTRICAL EXPERIMENTER, altho the concurrence of our views in some wireless features might have made this desirable to so wide-awake and enterprising a periodical as yours.

Mr. Rogers seems to be a very appreciative gentleman and nothing would be farther from my thoughts than to detract anything from his merit, but in a separate contribution, which I expect to prepare for your next issue, I shall express myself on this subject without prejudice and in the interest of truth. However, the article by your Mr. H. Winfield Secor on "America's Greatest War Invention - The Rogers Underground Wireless" contains a reference to "a novel and original high frequency generator" of Mr. Rogers' invention. May I not - to use the President's elegant expression - call attention to the fact that this device was described by me years ago, as will be evident from the following excerpt of a communication which appeared in the Electrical Review of March 15, 1899. In speaking of circuit controllers, I said: "I may mention here, based on a different principle, which is incomparably more effective, more efficient, and also simpler on the whole. It comprises a fine stream of conducting fluid which is made to issue, with any desired speed, from an orifice connected with one pole of a generator, thru the primary of the induction coil, against the other terminal of the generator placed at a small distance. This device gives discharges of a remarkable suddenness, and the frequency may be brought within reasonable limits, almost to anything desired. I have used this device for a long time in connection with ordinary coils and in a form of my own coil with results greatly superior in every respect to those obtainable with the form of your letter, make a few statements referring to such make-and-break devices in general, and various forms based on this new principle."

I may add that a great many forms of this apparatus were constructed and employed by me for a long time, proving very convenient and useful. Water does not give particularly good results, being incapable of causing very abrupt changes, but electrolytes have the property of diminishing enormously in resistance when they are heated and the effects are much more intense. Salts of lithium are especially efficient.

NIKOLATESLA.

New York, February 20, 1919.

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