

## WIRELESS POWER

ference limited its greatest usefulness, Tesla has long since been conducting experiments along altogether different lines of transmission, in which he has developed perfect isolation and selectivity. He has discovered that any desired degree of individualization of aerograph and aerophone messages may be attained by employing a large number of cooperative elements and arbitrary variations of their distinctive features and order of succession, so that not only many thousands, but even millions, of simultaneous aerograph and aerophone messages may be sent through one conducting medium without the slightest interference.

The general term "World Telegraphy" has been suggested for Tesla's scheme of intelligence transmission, although "World Aerophony" would be as applicable, since his system will make it as practicable to talk as to telegraph through or round the globe, and as easily to a person using his aerophone at the antipodes as one in an office in the next block. Nor will it require a great, unwieldy contrivance for sending or receiving either aerograph or aerophone messages; such, for instance, as required in the present wireless system. Instead, Tesla assures us, for this purpose a small, cheap, and extremely simple device, so compact and portable that it may be carried in one's pocket, may be set up or held in one's hands anywhere on land or sea while it sends through intermediary transmitting plants messages to any part of the terrestrial universe, or receives such special messages as may be intended for it, or records the news of the world as constantly despatched from the various news distributing stations.

Professor Tesla is confident that his system of intelligence transmission constitutes, in its principles of operation, means employed, and capacities of application, a radical and fruitful departure from what has been done before. "I have no doubt," he adds, "that it will prove very efficient in enlightening the masses, particularly in still uncivilized countries and less accessible regions, and that it will add materially to general safety, comfort, and convenience, and maintenance of peaceful relations. It involves the employment of a number of plants, all of which are capable of transmitting individualized signals to the uttermost confines of the earth. Each of them will be preferably located near some important center of civilization, and the news it receives through any channels will be flashed to all points of the globe. Thus the entire earth will be converted into a huge brain, as it were, capable of response in anyone of its parts. Since a single plant of one hundred horsepower can operate hundreds of millions of instruments, the system will have a virtually infinite working capacity, and it must needs immensely facilitate and cheapen the transmission of intelligence."

WITH universal aerophony available by the use of a convenient pocket instrument, the balloonist dropping into the far interior of uninhabited Canada need never be featured in the news as "lost." The explorer striving to reach the earth's poles, or venturing into the wilds of the world's untraveled regions, will be able to keep in hourly touch with his friends, to report his progress to the world, or to send out a call for relief or rescue over bleak fields of ice, the desert wastes, or jungle fastnesses. Also, the man hunting in the big woods, or on a solitary journey on land or sea, can spend an otherwise lonely evening talking with the folk at home. There will never be any reports of "line's busy" by Central on this aeroline. Nor will there be any eavesdropping on "party lines" or delays through an inattentive Central; for, lo! there will be no Central. Each instrument and its operator will constitute an aerophone central in themselves; all calls being direct from the instrument calling to the one called. And any operator with his individual pocket instrument may call any other instrument anywhere on the face of the earth, simply by adjusting the selective device on his instrument to correspond with that of the one desired.

"At my plant on Long Island," says this magician, "when all the apparatus is perfected for commercial use, I shall be able from my aerophone there to call up any 'phone in the universe, and, although apparently inconceivable, it is nevertheless true that my small voice through the delicate apparatus I am completing will be able to set the utmost confines of the whole world trembling with the vibrations of its force. As to the wireless telegraph of today and the incipient wireless telephone, they are but a puny step in the field of wireless transmission."

"Another valuable application of my wireless system," he continues, "will be the driving of clocks and watches from a master wireless time transmitter. These timepieces will be exceedingly simple, will require absolutely no attention, and will indicate rigorously correct time."

THE farmer will be one of the greatest beneficiaries of the wireless transmission of electrical energy; and through him, as a result of increased yields and decreased cost of production, the people of the cities and the public at large.

Some years ago one of the great American inventors claimed the discovery that worn-out soils could be made surprisingly productive by a more or less simple process of electrical treatment, and he rendered the world an immeasurable service in disclosing the process. But it ended there. To deliver a supply of electricity sufficient to consummate the process on the six million farms of the country was quite another problem; for in this case neither the valleys, the plains, nor the hillsides could go to Mohammed to be run as grist through his electric apparatus, but Mohammed must needs go with his equipment to wherever the land to be treated lay.

Through the perfection of his discovery Tesla will provide a way to deliver to every farm, not alone in the United States, but in the universe, enough electricity to apply the treatment effectively. And, presto! the farmer who today rides a plow behind a team of horses or draws a gang behind a tractor, may tomorrow in similar fashion ride an implement operated by wireless power, by which the soil, instead of being turned over as with the plow, will be lifted in furrow-deep slices and run through a wonderfully contrived machine in an endless ribbon, broken up into minute particles and made loose as ashes as it undergoes the necessary treatment by electricity, furnished as part of the wireless transmission, thoroughly pulverized and made firm as it leaves the implement into a perfect seed or plant bed, charged with sufficient available and soluble plant food to produce a quantity and quality of crop yield beyond the present expectations of the most sanguine of modern scientific agriculturists. It is claimed, too, as one of the advantages of wireless electricity, that it will be possible to control the weather in any locality to the extent of either preventing or producing rainfall to meet soil and crop requirements.

Of the two thousand million acres in continental United States, about half is estimated as being capable of cultivation in its present condition. Some of this is so dry you wouldn't think of raising even an umbrella on it. In 1910 our improved farm lands amounted to four hundred and seventy-five million acres. Irrigation and drainage are the principal factors that must solve the problem in the cultivation on most of the remaining vast areas that may be reclaimed and made tillable.

WIRELESS power offers the means of solution. Location presents no bar. Whether current is supplied from a power site in the community, or by a hydroelectric plant in the jungles of Africa, will be of no consequence; the cost will be the same. From distant streams or from geysers at wells on the land the farmer may draw water in literal floods to irrigate his fields, through powerful rotary pumps, another of Tesla's inventions, which have many times greater capacity for their size and require less power than any pump heretofore produced. Or, on the other hand, he may drain semi-submerged and otherwise impossible marsh land, usually the richest of all soil in natural fertility. With the coming application of wireless power to this end, our millions of acres of parched desert lands and dismal swamps may be converted into Gardens of Eden, whence will come billions of tons of grain and fruit and vegetables and millions of cattle from knee-deep pasture lands to meet the demands of an ever growing population.

More than that, every farmstead, wherever located, may have its own individual wireless terminals to operate its field implements, to drive its machinery,—its cutters, grinders, threshers, mills,—and also to lighten the labor in the home, by running the electric washer, wringer, dryer, ironer, the sewing machine, the dough mixer and baker, the chopper, spice mills, cream separator, churn, freezer, and do all the cooking, as well as heat the house in winter and run a refrigerating plant to cool it and manufacture ice in summer.

"In each instance," says Tesla, "a small



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