

## Tesla's Radiant Energy Patents

In 1901 Nikola Tesla was granted several patents for a system of radiant energy transmission and reception. The system utilized "natural media" such as the atmosphere and ground to transmit power with virtually no losses. A decade earlier, Tesla had destroyed the DC power industry with his superior AC system. Now he was poised to do it again, with broadcast power.

The radiant energy system was revolutionary because it did away with wires and meters. Modest amounts of electric power would be available anywhere, at any time, for lighting and communications. Simply erect an aerial collector, attach the ground plate and plug in. Tesla's vision was to provide free electricity in the service of humanity.

Unfortunately, this vision did not impress the financial backers in the utilities industry. With heavy investments in the AC system, there was little interest in supporting the more noble, but less profitable, radiant system. Tesla's demonstration plant at Wardenclyffe, Long Island, was never completed. Ironically, the perfected radiant system marks a turning point in his career. Though still popular with the press, few of his later inventions were ever put into production.

The article that follows appeared in *Scientific American*, in November of 1901. It presents a technical overview of the radiant energy patents. There are two veiled references to the extraction of power from space, in excess of power received from the transmitting station.

### Notes:

1) Tesla's radiant energy patents include #685954 through #685958. Also see #645576.

2) Two excellent references on Tesla and his work are:

- *The Fantastic Inventions of Nikola Tesla*, Adventures Unlimited Press, Kempton, IL, 1993. ISBN 0-932813-19-4  
- "The Broadcast Power of Nikola Tesla", by Gerry Vassilatos. *Borderlands*, Vol. LII, No. 2 - 3, 1996.

from *Scientific American*, November 30, 1901:

### Tesla's Recent Patents

"Nikola Tesla has received several patents for a 'Method of Intensifying and Utilizing Effects Transmitted Through Natural Media.' In one of these systems Tesla varies the potential point or region of the earth by imparting to it intermittent or alternating electrifications through one of the terminals of a suitable source of electrical disturbances which to heighten the effect, has its other terminal connected with an insulated body, preferably of large surface and at an elevation. Electrifications communicated to the earth spread in all directions, reaching a circuit which generally has its terminals arranged and connected similarly to those of the transmitting source and which operates upon a highly sensitive receiver.

Another of Tesla's methods is based upon the fact that the atmospheric air, which behaves as an excellent insulator to currents generated by ordinary apparatus, becomes a conductor under the influence of currents or impulses of enormously high electromotive force. By such means air strata, which are easily accessible, are rendered available for the production of many desired effects at distances. Although either method may be employed, it is obviously desirable that the disturbance should be as powerful as possible and should be transmitted with a minimal loss. The loss reduces greatly both the intensity and the number of the co-operative impulses, and since the initial intensity of each of these is necessarily limited, only an insignificant amount of energy is thus available for a single operation of the receiver. Furthermore the energy obtained through the cooperation of the impulses is in the form of an extremely rapid vibration and unsuitable for the operation of ordinary receivers. To overcome the limitations of the two methods mentioned, Tesla reproduces arbitrarily varied or intermittent disturbances or effects; transmits these disturbances through the air to a

distant receiving station, utilizes the energy derived from such disturbances at the receiving station to charge a condenser, and uses the accumulated potential so obtained to operate a receiving device.

The apparatus which is employed at the receiving station consists in the combination of a storage device included in a circuit, connection points at a distance from the source of the disturbances and between which a difference of potential is created by such disturbances, a receiving circuit connected with the storage device, a receiver included in the receiving circuit, and a mechanism for closing the receiving circuit at any desired moment, thereby causing the receiver to be operated by the energy with which the storage device has been charged.

In another method the energy stored is not, as in the previous instance, obtained from the energy of the disturbance effect transmitted from a distance, but from an independent source. The method in general consists in charging a storage device with energy from an independent source, controlling the charge of the device by the action of the effects or disturbances transmitted through the natural media and coincidentally using the stored energy for operating a receiver. A condenser is used as the storage means.

The invisible radiations of the spectrum and of vacuum tubes are generally considered to be vibrations of extremely small wave length. These radiations possess the property of charging and discharging conductors of electricity, the discharge being particularly noticeable when the conductor upon which the rays impinge is negatively electrified. It is usually held that these radiations ionize or render conducting the atmosphere through which they are propagated. Tesla's own experiments lead him, however, to conclusions more in accord with the theory he has already advanced, in which he holds that sources of such radiant energy throw off with great velocities minute particles of matter which are strongly electrified, and therefore capable of charging an electrical conductor, or even if not so, of discharging an electrified conductor either by carrying off bodily its charge or otherwise.

Tesla has taken out a patent based on a discovery which he has made, that when rays or radiations of this kind are permitted to fall upon an insulated conducting body connected with one of the terminals of a condenser while the other terminal is made by independent means to receive or carry away electricity, a current flows into the condenser as long as the insulated body is exposed to the rays. Under certain conditions an indefinite accumulation of electrical energy takes place. This energy after a suitable time interval during which the rays are allowed to act, may manifest itself in a powerful discharge, which can be utilized for the operation or control of mechanical or electrical devices or rendered useful in many other ways. The radiant energy is directed upon an elevated conductor, connected with one of the armatures of the condenser, positively electrified by the invisible radiations. The electricity is carried off from the other armature by connecting it with the ground. The accumulated energy is discharged through a suitable receiver."