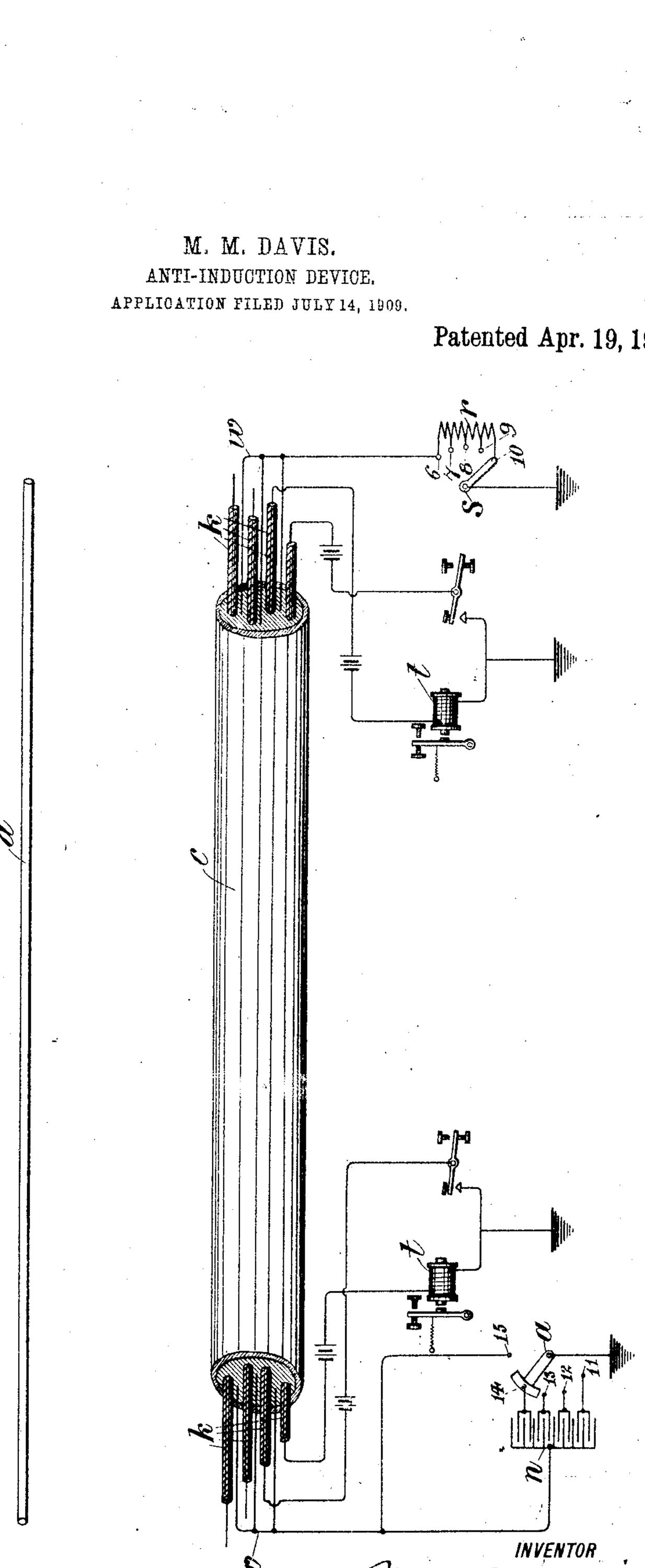
M. M. DAVIS.

ANTI-INDUCTION DEVICE.

APPLICATION FILED JULY 14, 1909.

955,141. Patented Apr. 19, 1910.



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ANTI-INDUCTION DEVICE.

955,141. Specification of Letters Patent. Patented Apr. 19, 1910.

Application filed July 14, 1909. Serial No. 507,473.

To all whom it may concern:

Be it known that I, MINOR M. DAVIS, a citizen of the United States, residing in the city of New York, borough of Brooklyn, county of Kings, State of New York, have made certain new and useful Improvements in Anti-Induction Devices for Electrical Conductors, of which the following is a specification.

This invention relates to means for preventing induction between separated, substantially parallel conductors.

The object of this invention is to prevent the harmful action of conductors carrying alternating impulses of considerable strength, such as are used for power purposes, upon conductors within inductive distance of such conductors employed for signaling purposes, such as telegraphing.

The improvements consist in placing an idle conductor in close proximity to but insulated from a conductor connected in a signaling circuit so that both of these conductors are subject to the induction from the disturbing source, and are affected to the same extent, but the idle conductor will react on the circuit conductor and I adjust this reaction so as to compensate or neutralize the action of the disturbing source on the circuit conductor. Stated specifically a positive impulse in the disturbing conductor induces a negative impulse in the circuit conductor and the idle conductor, the negative impulse in the idle conductor re-acts tending to generate a positive impulse in the circuit conductor. By varying the constants of the idle conductor that is, the resistance or capacity or both, the impulses from the idle conductor may be made to counteract the disturbing impulses in the circuit conductor.

The accompanying drawing illustrates the invention.

A conductor *d* used for conveying alternating electric impulses acts as a disturbing cause on conductors within the cable *c*. This cable *c* includes two classes of conductors, arranged parallel and insulated from each other, the conductors *k* are used for signaling purposes as, in telegraphing; and are included in circuit with telegraph instruments *t*. There are also a series of what may be called idle conductors *w*, these are substantially like the conductors *k* but are used for compensating purposes. They are connected together, as shown, at one end, and to a grounded adjustable resistance *r*. At the opposite terminal they are connected through an adjustable condenser *n* and may be connected directly with the ground.

Let us assume a positive impulse in the conductor *d*, this induces a negative impulse in the conductors *k* and *w*. If the resistance or capacity, or both, of the conductors *w* is properly adjusted said negative impulse in conductors *w* is so increased in its effect upon the conductor *k* as to neutralize the inductive impulse of the conductor *d*. To secure this result the resistance of the conductor *w* is varied by moving the switch-arm *s* over the contacts 6, 7, 8, etc., and the capacity of the condenser *n* is varied by moving switch-arm *a* over the contacts 11 to 15 until the proper resistance and capacity is attained. The conductor *k* may be say, 100 miles long and the conductor *w* may be 20 miles or less, but by establishing the constants of conductors *w*, that is the resistance, or capacity, of said conductors at a determinable point an effect is produced in conductors *w* that is efficient to compensate for the effect of the disturbing cause on conductor *k*. In other words the induction of conductor *d* on conductor *w* and conductor *k* is neutralized by making the constants of *w* effective for such purpose.

What I claim and desire to secure by Letters Patent is:

1. An anti-inductive arrangement of conductors in inductive relation with respect to a conductor carrying disturbing current impulses, consisting of the combination of an insulated conductor in circuit with suitable signaling instruments, a parallel, idle conductor, in substantially fixed relation to the last-named conductor, and means for varying the resistance and capacity of said idle conductor until the induced impulses

therein re-act on said signal conductor to a substantially equal and opposite extent as compared with the impulses in said disturbing conductor.

2. An anti-inductive arrangement of conductors in inductive relation with respect to a conductor carrying disturbing current impulses, consisting of the combination of an insulated conductor in circuit with suitable signaling instruments, a parallel, idle conductor, in substantially fixed relation to the last-named conductor and an adjustable capacity connected to said idle conductor.

MINOR M. DAVIS.

Witnesses:
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