

(No Model.)

J. F. MARTIN.
ELECTRICAL WIRE INSULATOR.

No. 286,937.

Patented Oct. 16, 1883.

Fig. 1.

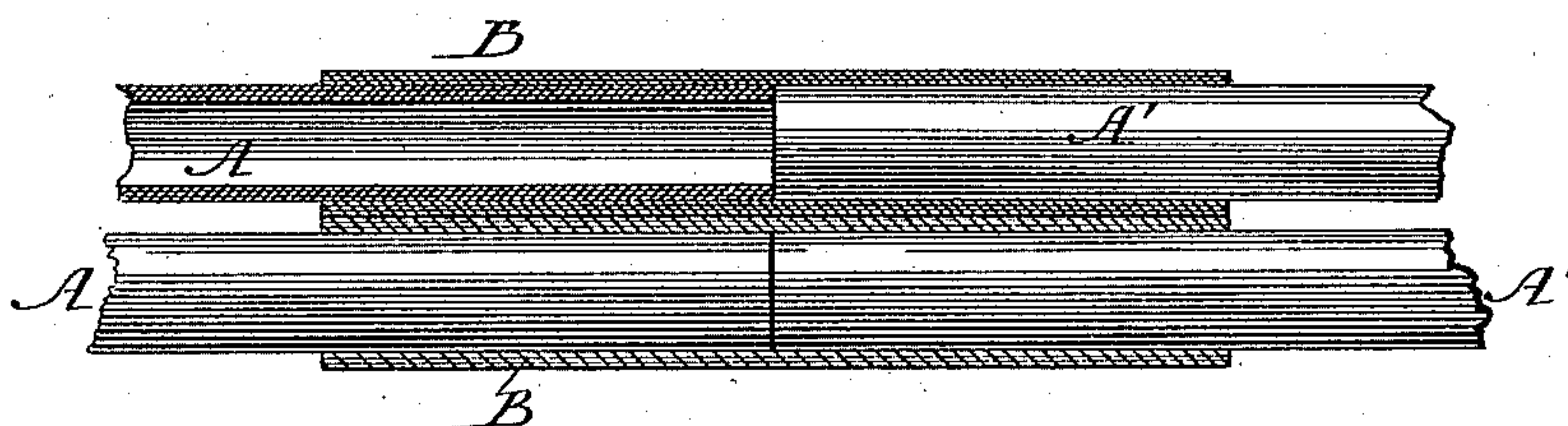
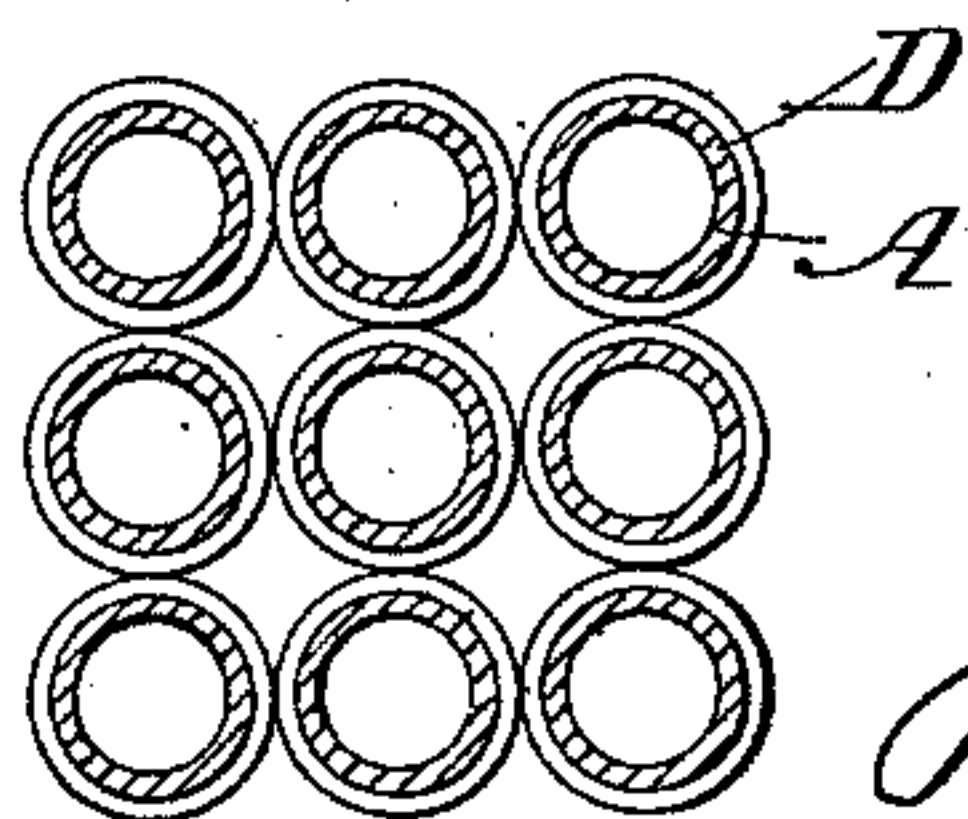


Fig. 2.



Fig. 3.



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JOHN F. MARTIN, OF CHICAGO, ILLINOIS.

ELECTRICAL-WIRE INSULATOR.

SPECIFICATION forming part of Letters Patent No. 286,937, dated October 16, 1883.

Application filed March 12, 1883. (No model.)

To all whom it may concern:

Be it known that I, JOHN F. MARTIN, a citizen of the United States, residing in Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Electrical-Wire Insulators, of which the following is a specification.

My invention relates to improvements in electrical-wire insulators composed of sheet-paper or woven fabric wound in concentric layers about itself in tubular form, and made in sections coupled together in the desired length to form a separate chamber for each individual wire of an underground system.

The objects of my invention are to provide means for coupling the sections conveniently and in such a manner as not only to form an air-tight joint, but to as effectually, if not more thoroughly, insulate the wire at the joints than is accomplished by the body of the insulator at intermediate points to provide means for conveniently and effectively coupling the sections of the insulator in such a manner that they may have a flexible, air-tight, and non-conducting joint, whereby the direction of any section may be changed to a right or oblique angle without destroying in any degree the effectiveness of the coupling or insulator, and to provide a coupling adapted to attain the above-set-forth objects, and at the same time to uniformly space off a series of the insulators bunched together, so that uniform air-spaces shall exist between each adjacent insulator, so as to provide for a circulation of air and obviate induction as nearly as practicable. I attain these objects by devices illustrated in the accompanying drawings, in which—

Figure 1 is a longitudinal section of an electric-wire conductor embodying my invention; Fig. 2, a similar view of a modification of the same, and Fig. 3 an end elevation of the tubes bunched.

Similar letters of reference indicate the same parts in the several figures of the drawings.

A A' represent, respectively, opposing sections of an insulator composed either of sheet-paper or woven fabric wound in concentric layers about itself in tubular form, as more fully described in other applications filed here-

with. These sections, as shown in Fig. 1, are coupled by means of a short tube, B, composed of woven fabric wound in concentric layers about itself, so that the inner diameter of the tube thereby formed corresponds with the external diameter of the insulator-sections, which are fitted tightly therein, preferably with their opposing ends in contact with each other. Tubular coupling B should be of a length sufficient to insure a rigidity of the joint, and may have intermediate layers of non-conducting compound formed by coating the fabric before forming the coupling, and, if deemed necessary, may be likewise coated internally, so as to cement it to the insulator-sections.

To provide for coupling sections of the insulators which are arranged at differing angles—as, for instance, at street-corners, or where branching off from the main system to houses, &c., or up through the hollow posts supporting electric lights, alarm-boxes, &c.—I employ a tubular coupling, D, composed of rubber or other similarly-flexible material, united with the insulators in the same manner as those above described, except a necessary space between the ends of the sections when arranged at an abrupt angle to form the bend in the coupling.

The tubular rubber coupling may be protected from injury by moisture with any suitable wrapping; but such wrapping will not be necessary in the system in which these couplings are designed to be employed, for the reason that means are employed for excluding moisture from the conduits, said system forming the subject-matter of another application.

By reference to Fig. 3 it will be seen that when the insulating-tubes are bunched, as they are when used in numbers in an underground system, the couplings equally serve to separate the tubes, so that uniform spaces exist between each of them, which spaces provide for a free circulation of dry air, affording a very effective insulating medium, and in this respect an important auxiliary to the tubes.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

The combination, with a series of sectional

tubular electric-wire insulators arranged parallel to each other, with the joints of the several insulators substantially in alignment, of a series of flexible couplings composed of short
5 tubes, into which the end of each opposing section is projected and tightly fitted, said couplings having surface-contact with each other throughout the series, so that the insulators

are separated and provided with air-spaces between each of them corresponding with the thickness of the two opposing walls of the coupling, substantially as described. 10

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