

(No Model.)

T. J. DEWEES.
ELECTRIC CABLE.

No. 527,414.

Patented Oct. 16, 1894.

FIG. 1

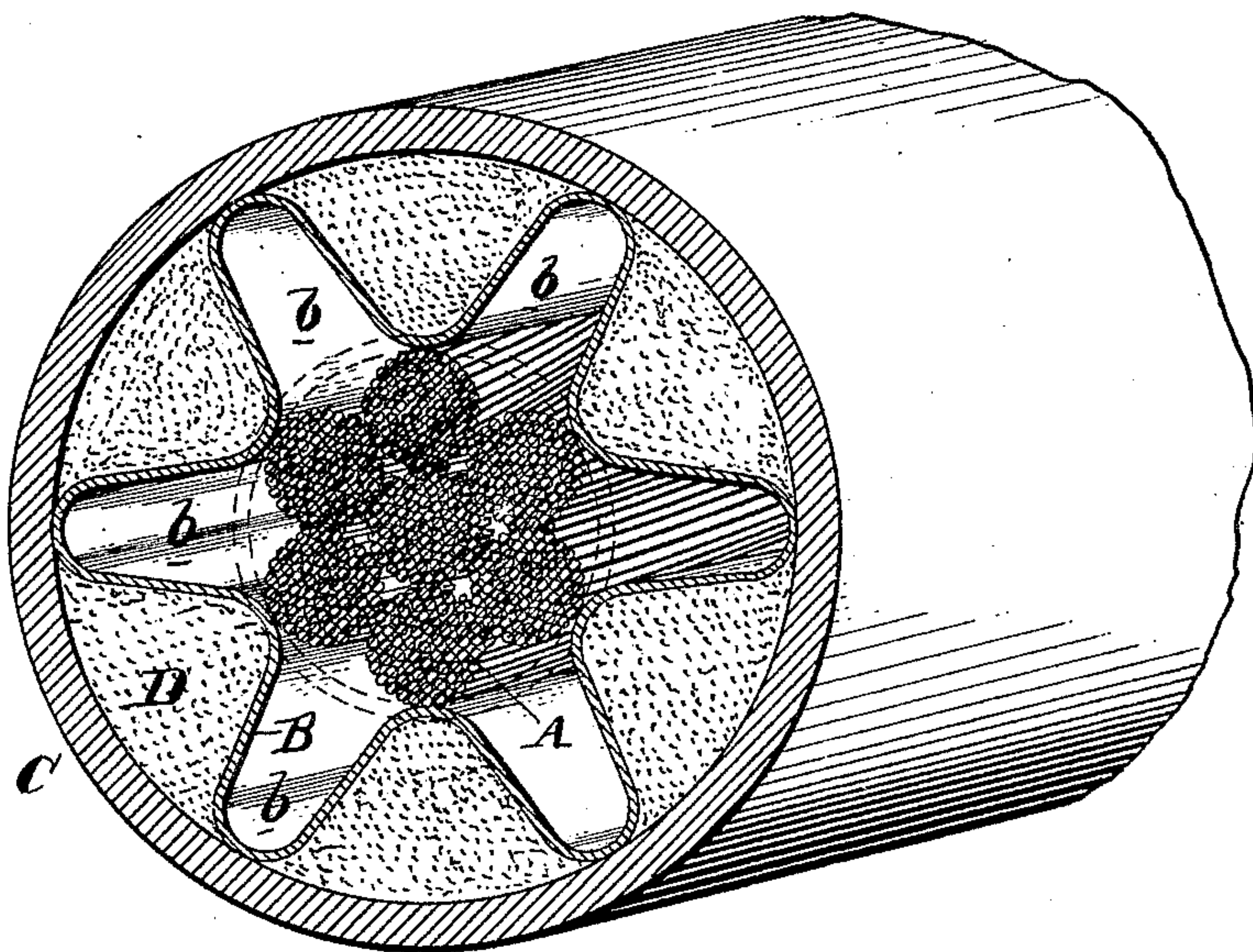
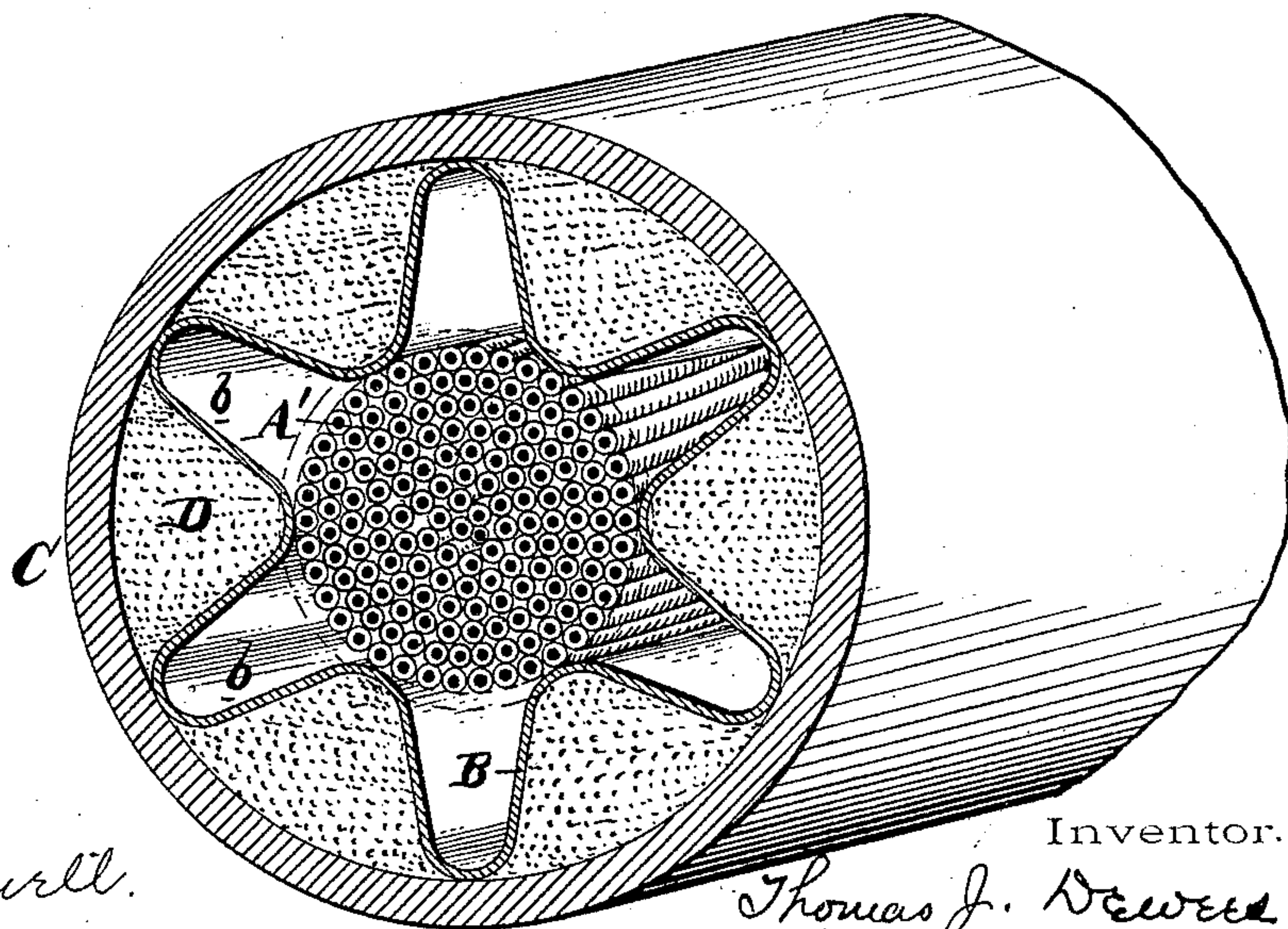


FIG. 2



Witnesses:

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Inventor.

Thomas J. Dewees
By *[Signature]*
Attorney.

UNITED STATES PATENT OFFICE.

THOMAS J. DEWEES, OF PALMYRA, NEW JERSEY, ASSIGNOR TO THE ELECTRIC CABLE CONSTRUCTION AND MAINTENANCE COMPANY, OF PENNSYLVANIA.

ELECTRIC CABLE.

SPECIFICATION forming part of Letters Patent No. 527,414, dated October 16, 1894.

Application filed June 20, 1894. Serial No. 515,115. (No model.)

To all whom it may concern:

Be it known that I, THOMAS J. DEWEES, of the city of Palmyra, county of Burlington, and State of New Jersey, have invented an Improvement in Electric Cables, of which the following is a specification.

My invention has reference to electric cables, and consists of certain improvements which are fully set forth in the following specification and shown in the accompanying drawings which form a part thereof.

My improvement has particular reference to the construction of cables for electric current and is especially designed to secure high insulating qualities for the conductors and a low inductive capacity.

In carrying out my invention I employ a cable made up of a series of wires so as to be flexible, and in which the wires composing the said cable may be bare wires resting one in contact with the other, or formed of insulated wires in which each insulated wire may convey a separate current. The cables may be made in the form of a rope, or otherwise have the wires bunched together so as to form a practical and flexible structure. The conductors so formed are inclosed in an insulating wrapping of paper or other fibrous material forming more or less air spaces throughout the cable, and exterior to said insulating wrapping is an outer casing of metal to shield the inner structure and make it water proof. I also prefer to arrange within the outer metallic casing or tubing and exterior to the paper a moisture absorbent such as powdered quick-lime or chloride of calcium. It is desired to leave more or less air space which is thoroughly dried by this moisture absorbent, though in practice considerable of the quick lime may get within the fibrous or paper insulation or sheath during the process of construction. The object is to secure as far as practicable a good dry air space about or in contact with the wires forming the cable conductor.

My invention will be better understood by reference to the accompanying drawings, in which—

Figure 1 is a cross section through the end of a piece of my cable where there is a single large flexible conducting cable; and Fig. 2 is

a similar view of the cable made up of separate insulated wires.

A is the conducting cable and may be formed in any suitable manner. In Fig. 1 this cable is shown similar to any well known rope cable where a series of small wires is bunched to form several bunches of twisted wires, and these several bunches are strands of the cable and are twisted together to form a rope structure. In the construction shown in Fig. 2 the cable is made up of a series of separate insulated conductors A' each one of which is adapted to telephonic or telegraphic distribution. The cable such as shown in Fig. 1 is more especially designed for large powers such as employed in electric railways and electric lighting. Surrounding this cable (of whatever character it may be) is arranged an irregularly formed sheath of paper or other fibrous material B, forming preferably air spaces *b* about the cable. In the drawings this inclosing sheath of paper or fibrous material is shown in its preferred form, though it is evident that in the practical construction of the cable it will be hardly possible to keep the parts in such symmetrical shape, and the corrugations and air spaces have been somewhat exaggerated in order to more clearly show the principles of the invention. The construction will however, be substantially the same.

Inclosing the paper or fibrous covering B is an outer casing C of lead, which has the property of being flexible, and at the same time is perfectly air tight and moisture proof.

The cable should be supported substantially in a central position relatively to the casing C by means of the irregular shape of the insulating sheath B of paper or fibrous material. The thickness of the sheath may be greatly varied, as its thickness is immaterial to the principle of construction. The spaces D between the paper sheath or covering B and the outer tube C is filled with a moisture absorbing substance such as powdered quick-lime or chloride of calcium, the function of which is to absorb all moisture from the air which surrounds the cable so that the cable is directly inclosed within a covering or atmosphere of thoroughly dry air, which is the best non conductor known. If the pa-

per sheath B is more or less open, some of the drying substance D will find its way into the air spaces *b*, but this will not affect the general construction and operation of the cable, and is not inconsistent with my invention, though I prefer as far as possible to have considerable dry air surrounding the cable. The paper sheath or fibrous insulation B may be applied in any suitable manner and may be bound or otherwise secured in position about the cable proper as a preliminary to inclosing the same in the outer metallic tubing of lead C.

A cable of this character will be perfectly flexible and will have the highest insulation capacity, thereby excellently adapting it to the various purposes involving the transmission of electric energy of all tensions. Of course it is evident that the cable A may be a solid bar if desired, but such a design is not practical on account of the difficulty of removing and inserting the cable in conduits where such cables are commonly employed. It is also to be remarked that the cable proper may be inclosed in an insulating covering if so desired as indicated in dotted lines, but this is not necessary, as full and thorough insulation is secured by the construction otherwise described.

While I prefer the construction illustrated, I do not confine myself to the details thereof, as the same may be modified without departing from my invention.

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

1. An electric cable consisting of a conduc-

tor or conductors through which the current or currents are caused to pass, an irregular inclosing covering of fibrous material forming air spaces about the said cable, an outer metallic tubing or casing inclosing the said cable and its fibrous covering, and a moisture absorbing substance interposed between the fibrous covering of the cable and the metallic tube or casing.

2. An electric cable consisting of a conductor or conductors through which the current or currents are caused to pass, an inclosing casing of paper or fibrous material arranged in a zig zag or irregular manner about the cable forming air spaces about the said cable, an outer metallic tubing or casing inclosing the said cable and its fibrous covering, and a moisture absorbing substance such as quicklime interposed between the paper or fibrous covering of the cable and the metallic tube or casing.

3. The combination of a metallic cable formed of flexible conductors, and inclosing irregular sheath of paper or fibrous material secured about the said cable in a manner to form air spaces adjacent to the cable, an inclosing lead sheath or outer tubing, and quicklime contained within the outer lead tube or sheath and supported by the paper or fibrous covering of the cable.

In testimony of which invention I have hereunto set my hand.

THOMAS J. DEWEES.

Witnesses:

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C. H. NEWCOMB.