

No. 855,262.

PATENTED MAY 28, 1907.

L. STEINBERGER.
SPIRAL CORE INSULATOR.
APPLICATION FILED JUNE 11, 1906.

Fig. 1.

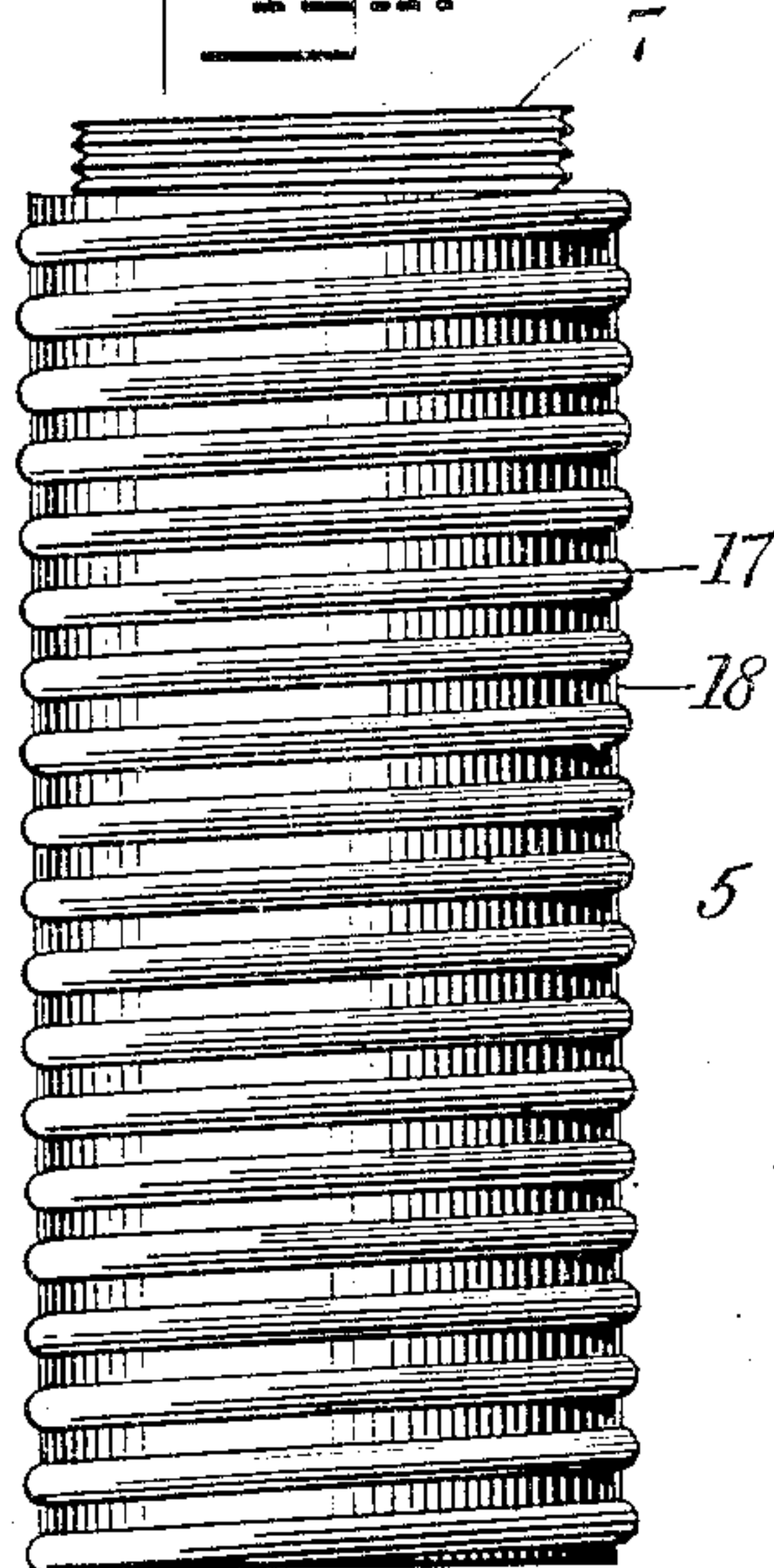


Fig. 2.

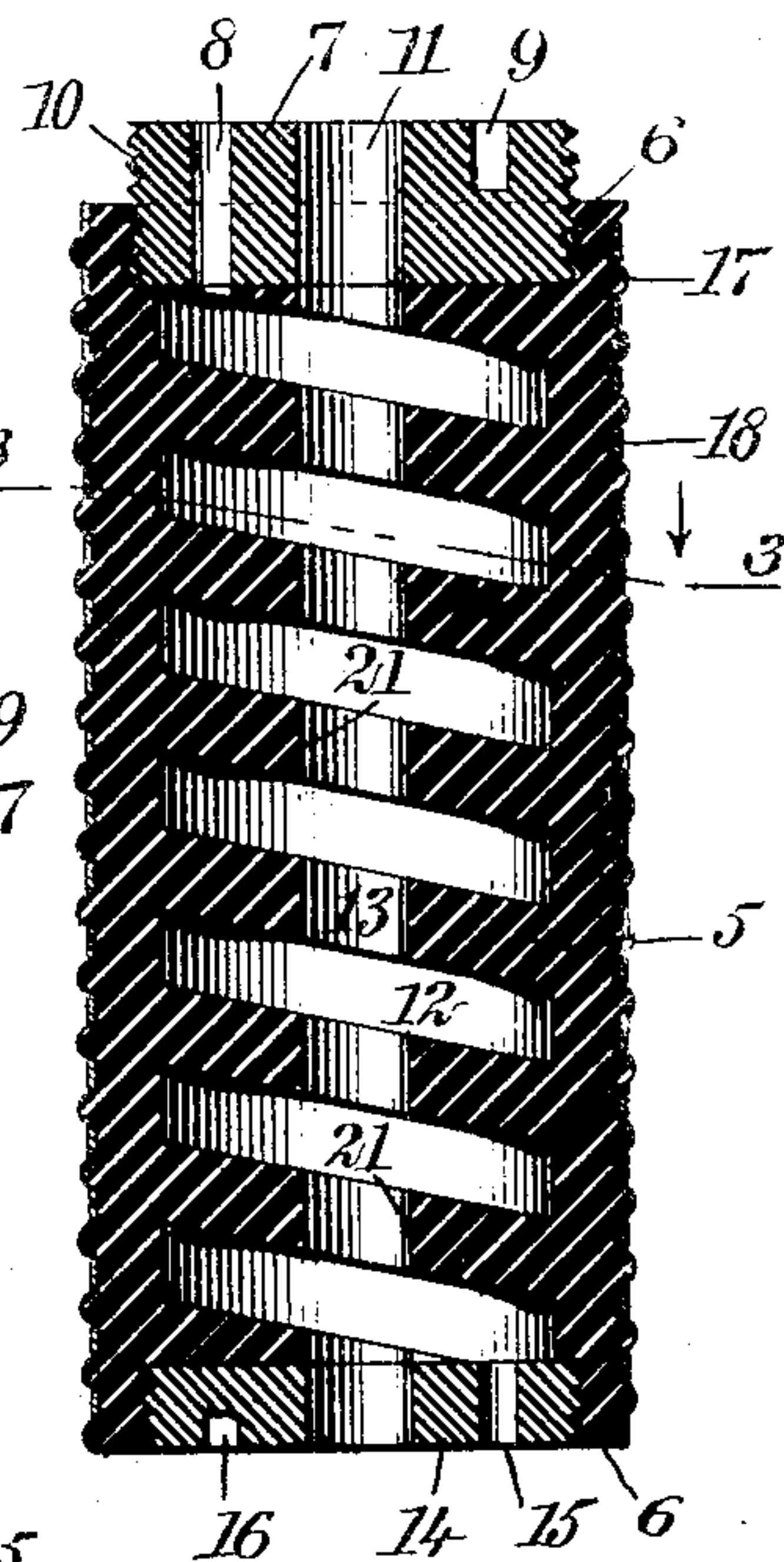


Fig. 4.

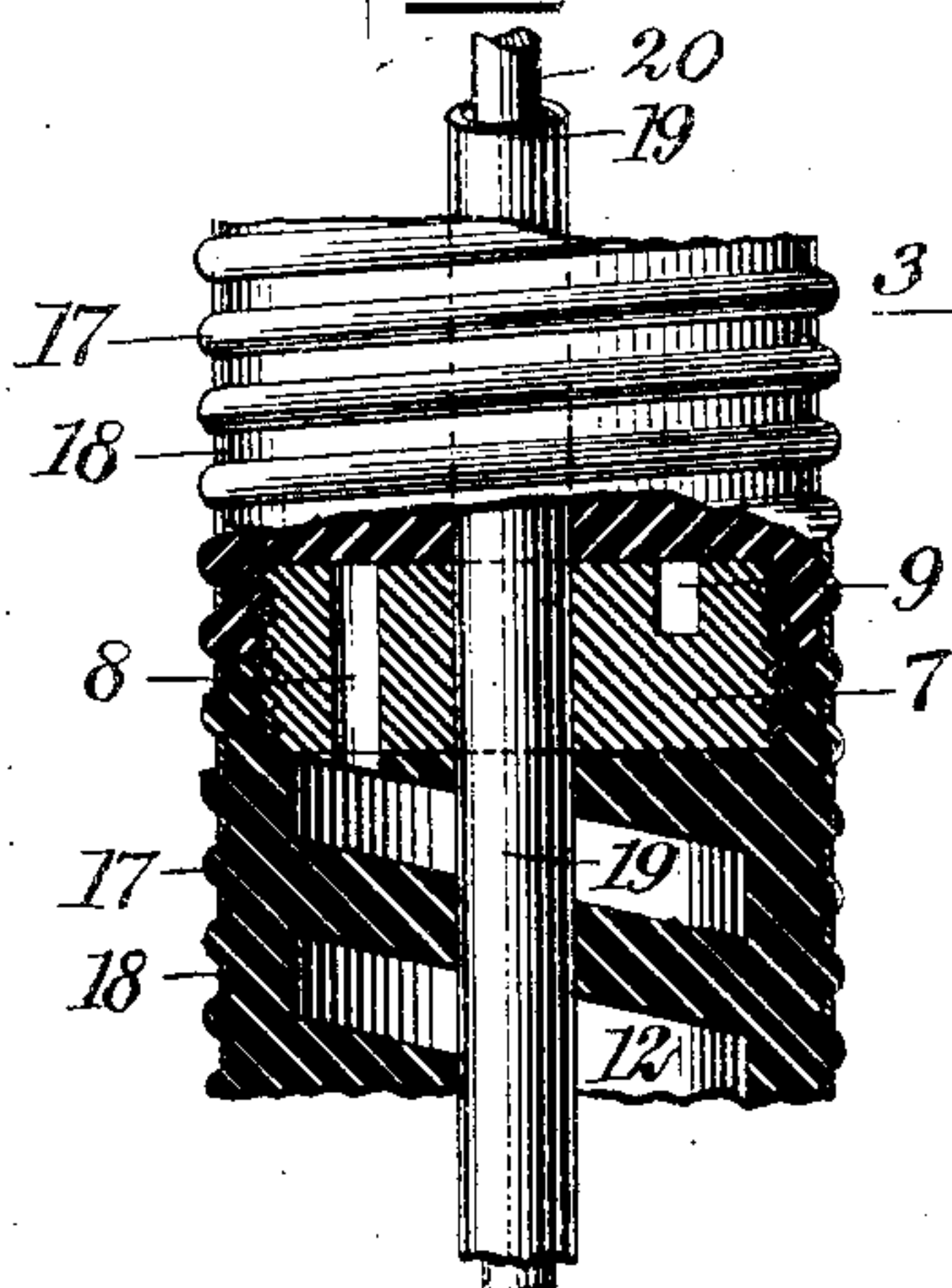
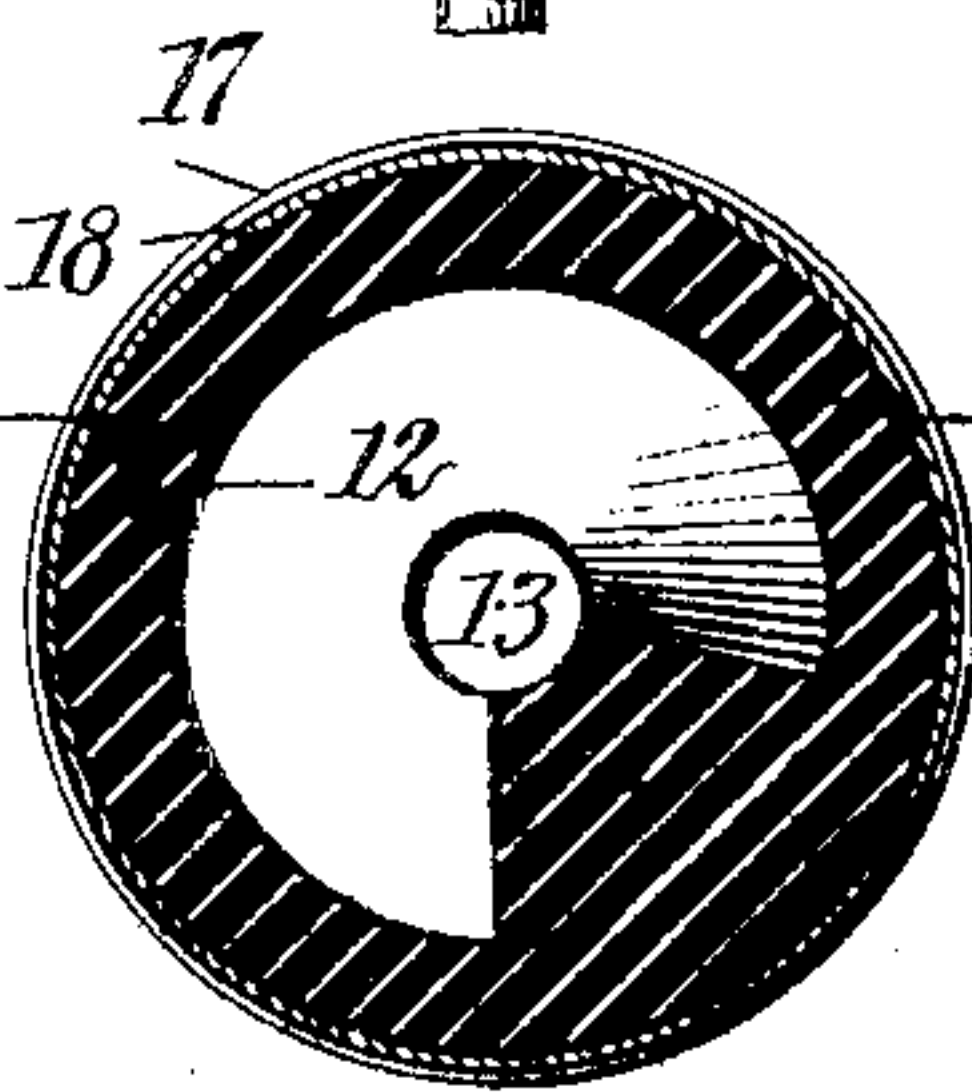


Fig. 3.



WITNESSES

William P. Goebel.
Walton Harrison.

INVENTOR

Louis Steinberger

BY

Mum Co

ATTORNEYS

UNITED STATES PATENT OFFICE.

LOUIS STEINBERGER, OF NEW YORK, N. Y.

SPIRAL-CORE INSULATOR.

No. 855,262.

Specification of Letters Patent.

Patented May 28, 1907.

Application filed June 11, 1906. Serial No. 321,200.

To all whom it may concern:

Be it known that I, LOUIS STEINBERGER, a citizen of the United States, and a resident of the city of New York, borough of Brooklyn, in the county of Kings and State of New York, have invented a new and Improved Spiral-Core Insulator, of which the following is a full, clear, and exact description.

My invention relates to insulators, my more particular object being to produce a type of insulator suitable for use in various general relations and of peculiar value for leading in cables.

Among the special purposes of my invention are the following: 1. To give the core such a conformity as to permit the flow of a circulating medium through it, if desired. 2. To provide a type of tubular insulator that will admit of forming two spiral cores, each of which may be of materials having different dielectric and physical properties. 3. To give the core such conformity as to permit the use of a solid and a liquid insulating medium alternately disposed in spiral form. 4. To provide a tubular insulator having continuous outer ribs for its protection and for the reception between said ribs of an armor, said ribs also providing increased insulating surface to take up leakage of current. 5. To provide an insulator with a spiral channel for holding an armor to be wound thereupon. 6. To thread the insulator externally and internally in order to enable it to be secured in position by turning, if desired. 7. To provide a type of tubular insulator in which a minimum quantity of material is employed in its construction. 8. To enable a number of insulating body members to be detachably coupled together so as to form a composite insulating body of considerable length. 9. To provide an efficient form of coupling for connecting together the body members mentioned.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a plan view of a tubular section provided at one of its ends with a coupling, the latter serving also as a means for closing the end; Fig. 2 is a central horizontal section through the construction shown in Fig. 1 and showing the spiral interior of the same, as well as showing in section the armor disposed spirally around the tubular core; Fig.

3 is a horizontal section, upon the line 3—3 of Fig. 2, looking in the direction of the arrow and showing the spiral aperture and the spiral armor; and Fig. 4 is a fragmentary plan view, partly in section, showing two of the insulator sections coupled together.

Each section 5 is of substantially cylindrical form and is provided with ends 6 each threaded internally. A coupling 7, of insulating material, is threaded externally so as to fit into the threaded ends as will be understood from Fig. 2. Each coupling 7 is provided with an aperture 8 passing entirely through it and further provided with an aperture 9 extending about half-way through it. These apertures 8 and 9 may be entered by the projecting portions of a wrench and thus used in turning the coupling 7. This coupling is provided externally with a thread 10 fitting the thread of the ends 6, and is further provided with a central axial aperture 11. A spiral aperture 12 extends entirely through the section from one of its ends to the other, and is merged into a central cylindrical bore 13 as will be understood from Figs. 2 and 4. I also provide a comparatively thin disk or plug 14 having an aperture 15 extending entirely through it, and also an aperture 16 extending half-way through it. These apertures may be engaged by a wrench. The apertures 8 and 15 may be used for allowing a cooling medium to be circulated through the section. Each section is provided externally with a raised thread 17, and intermediate of the convolutions of this thread is a metallic ribbon or flat wire 18 serving as an armor for the section. This armor strengthens the section, and also takes up induced currents. As indicated in Fig. 4 a number of these sections may be placed end to end and coupled together so as to form virtually a single continuous member of any desired length and built up of units which are interchangeable. A tube 19, of insulating material, may be passed axially through the several sections and couplings, and through this tube a cable 20 may be threaded. In this case, as indicated in Figs. 2 and 4, it engages the internal supports of the insulation at a plurality of points. In other words, the insulation, because of its spiral conformity, engages the tube 19 at intervals throughout so much of its length as is represented by the sections through which it passes.

It will be understood that the sections above described admit of general use and

may be employed in a variety of relations. They are particularly useful as insulating members for leading in cables, but this is not their only use. They may be employed, for instance, as basic structures through which wires may be threaded spirally, so as to constitute windings for induction coils and transformers. By filling the central aperture with various insulating materials the dielectric qualities of the insulating sections may be varied at will. The number of purposes associated with these sections is so great that it is not necessary to lay emphasis upon the particular use for the device.

I do not limit myself to any particular material used for the dielectric members, but I prefer to employ the substance commercially known as "electrose." Neither do I limit myself to the particular shape or conformity of any part.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:—

1. As an article of manufacture, a member of insulating material provided with ends threaded internally, and a coupling threaded externally and adapted to engage said threads.

2. As an article of manufacture, a substantially cylindrical member of insulating material provided externally with a spirally raised thread and with a metallic member wound around said member of insulating material and disposed parallel with said thread.

3. As an article of manufacture, a single integral member of insulating material provided with an axial bore extending there-through, and with a spiral space disposed about said bore, and means for admitting a cooling medium into said spiral space.

4. A device of the character described, comprising a substantially cylindrical member of insulating material threaded externally and provided with a spiral armor wound thereupon.

5. An insulating structure, comprising members of insulating material, and a coup-

ling of insulating material revolubly connected therewith for the purpose of securing a plurality of members of insulating material together, said coupling being provided with means for facilitating the application of a wrench thereto.

6. An insulating structure comprising a substantially cylindrical section of insulating material, provided with a spiral opening extending axially throughout its entire length, and further provided with a tube disposed axially through the center of said section and concentric to said spiral opening.

7. As an article of manufacture, a member of insulating material provided externally with a thread, and a metallic member joined spirally around said member of insulating material and constituting an armor for the same.

8. As an article of manufacture, a member of insulating material provided with an axial bore forming a bearing surface, and a spirally formed channel below the general surface of said bore.

9. An insulating device, comprising a longitudinal member of insulating material provided with an axial bore having a spirally formed bearing portion, and a conductor disposed within said bore, the insulating member having a spirally formed channel extending about said conductor.

10. As a new article of manufacture, an insulator consisting of a body of insulating material having a bore forming a support for a conductor, and a chamber extending around the said bore and conductor support.

11. As a new article of manufacture, an insulator consisting of an insulator body having a bore, the wall of which is in spiral form and forms a support for receiving a conductor.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

LOUIS STEINBERGER.

Witnesses:

WALTON HARRISON,
JNO. M. RITTER.