

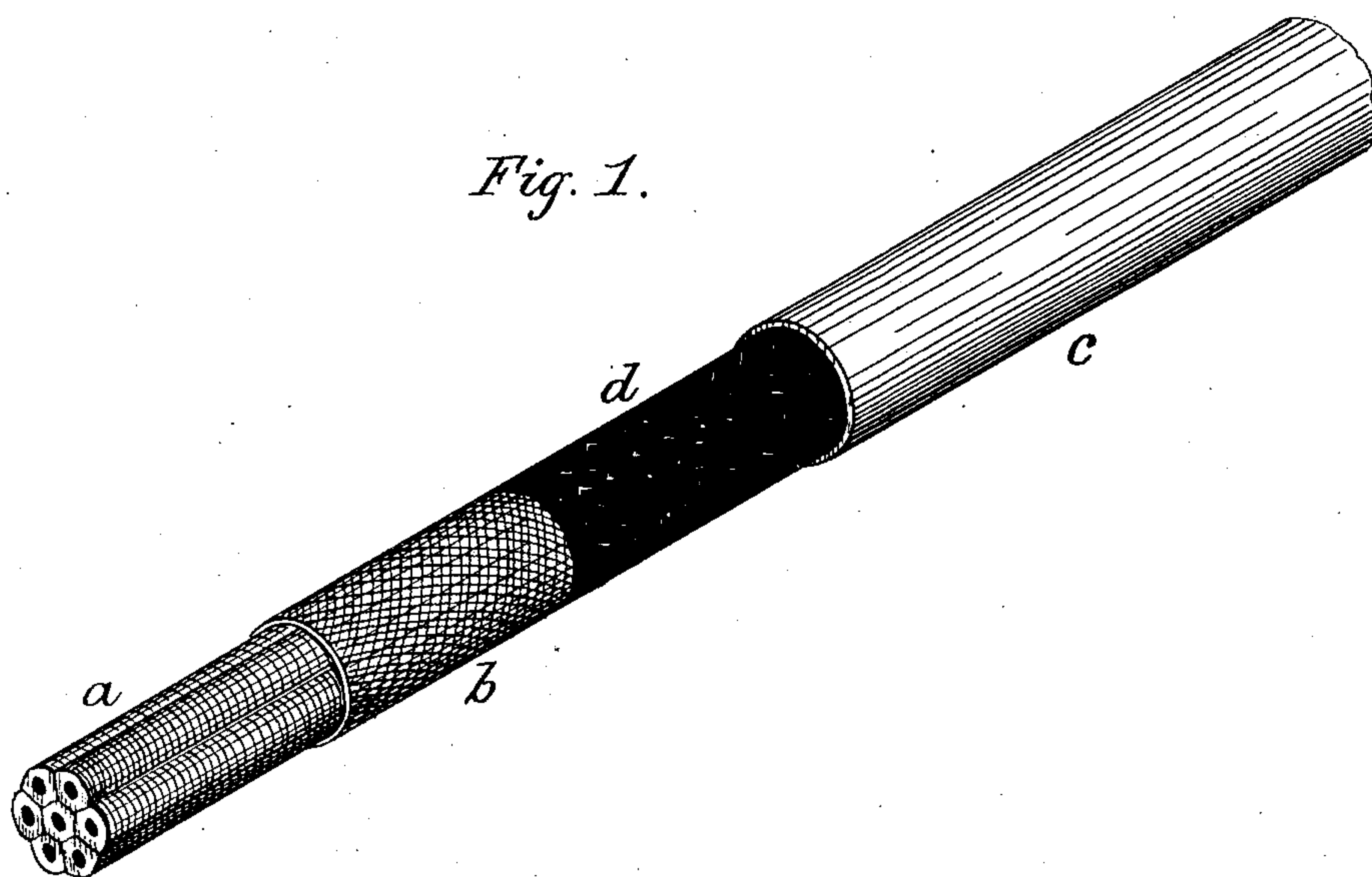
(No Model.)

J. H. DALZELL.

BUNCHED ELECTRIC CABLES.

No. 369,593.

Patented Sept. 6, 1887.



Witnesses:-  
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# UNITED STATES PATENT OFFICE.

JOHN HENRY DALZELL, OF PITTSBURG, PENNSYLVANIA.

## BUNCHED ELECTRIC CABLE.

SPECIFICATION forming part of Letters Patent No. 369,593, dated September 6, 1887.

Application filed November 26, 1886. Serial No. 219,962. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN HENRY DALZELL, a citizen of the United States, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in the Manufacture of Bunched Electric Cables; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

In the manufacture of "bunched" electric cables—namely, cable composed of a number of insulated wires covered with lead by the action of a hydraulic lead-press—it is sometimes advisable to avoid all possible friction and strain on the individual wires and their insulation, and for some uses where the cable is subject to much flexion after being made it is also desirable to have something more than the ordinary protection against contact of the wires with the lead covering, such as is afforded by the individual insulation of the wires themselves.

To these and other ends my invention consists in forming what I term a "preparatory core" composed of a bunch of insulated wires, the whole overlaid with a braiding of fibrous material, saturating this with a suitable liquid insulation, and then passing the whole through a lead-press, whereby the mass is consolidated together and tightly covered with a lead envelope compressed upon the same and into its external cavities. The details of a lead-press capable of performing such work are well known by cable-manufacturers, and need not be specifically described herein.

In the drawing I have shown the completed cable with its lead covering and fibrous braiding removed in parts. I take the desired number of wires *a*, each of which has been separately insulated, preferably by a winding or several windings of cotton yarn, and by suitable braiding machinery I overlay the bunch externally with a compact fibrous braiding, *b*. The whole is then thoroughly saturated with a suitable liquefiable insulating

material, *d*, and in this condition is passed into and through the lead-press, which is arranged and adjusted to act in such manner as to powerfully compress the wires and their insulation, compact the braiding, and cover the whole with a solid and closely-adhering envelope of lead, *c*, which is compressed thereon and forced into the external cavities of the prepared core. There is during this action of the press no tendency by friction, due to the transverse compression obtained, to draw harder on the outer wires, as sometimes happens in the ordinary manner of covering with lead, the wires are doubly protected from contact with the lead envelope, and the operations at the lead-press much simplified.

The preparatory core *a b* can be made by the wire-maker and coiled upon a reel, so that when it comes to the press-room there is no complication of reels to handle, and the matter of saturating the core is rendered more convenient in all respects.

I claim as my invention—

1. The improved electric cable composed of a number of insulated wires bunched together and overlaid with a braiding of fibrous material, the whole saturated with a liquefiable insulating substance or compound and a continuous seamless lead envelope compressed around the same and into its external cavities, substantially as described.

2. The herein-described process of manufacturing bunched electric cables, consisting in bunching together a number of insulated wires, overlaying the whole with a fibrous covering, saturating with a suitable liquid insulating material, and finally compressing upon the same and into the external cavities thereof a continuous seamless covering of metallic lead, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN HENRY DALZELL.

Witnesses:

J. A. CHAMBERS,  
K. T. MEAD.