

(No Model.)

W. R. PATTERSON.

SPLICE FOR UNDERGROUND CABLES.

No. 346,942.

Patented Aug. 10, 1886.

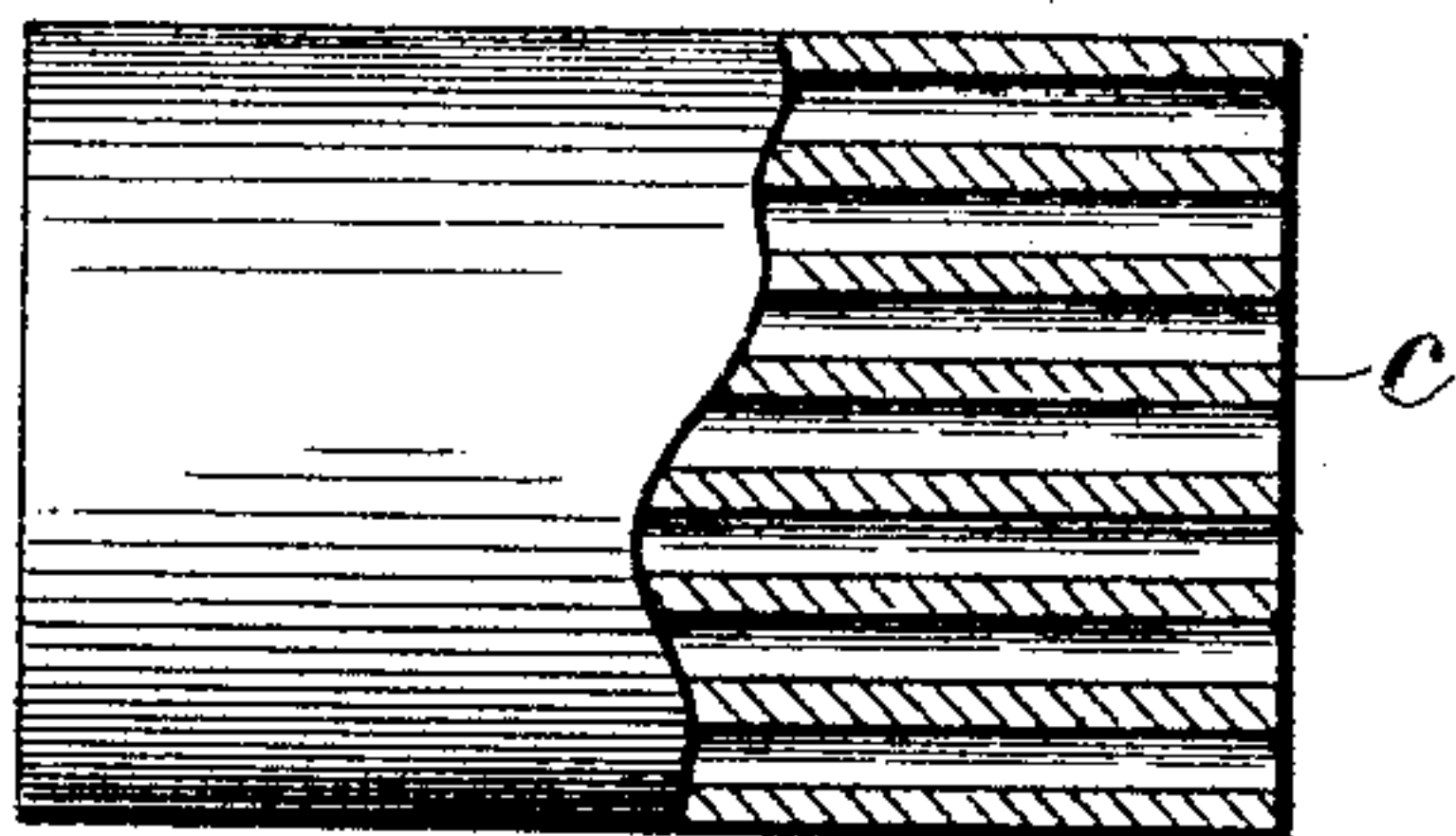


Fig. 3.

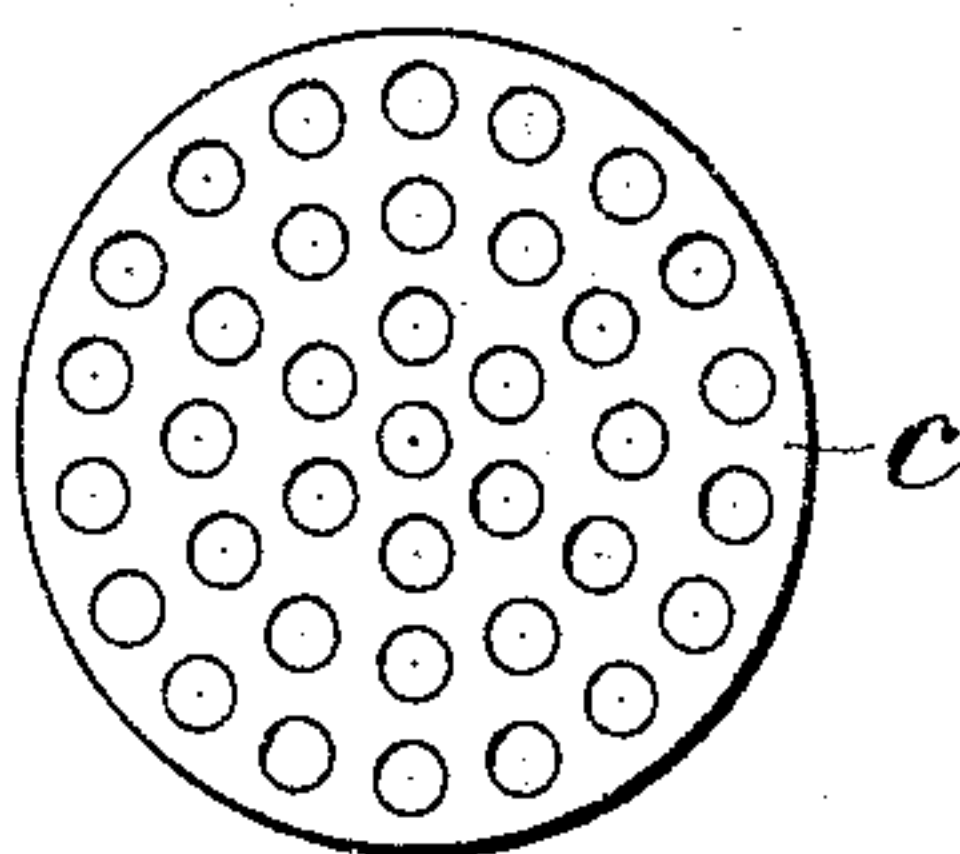


Fig. 4.

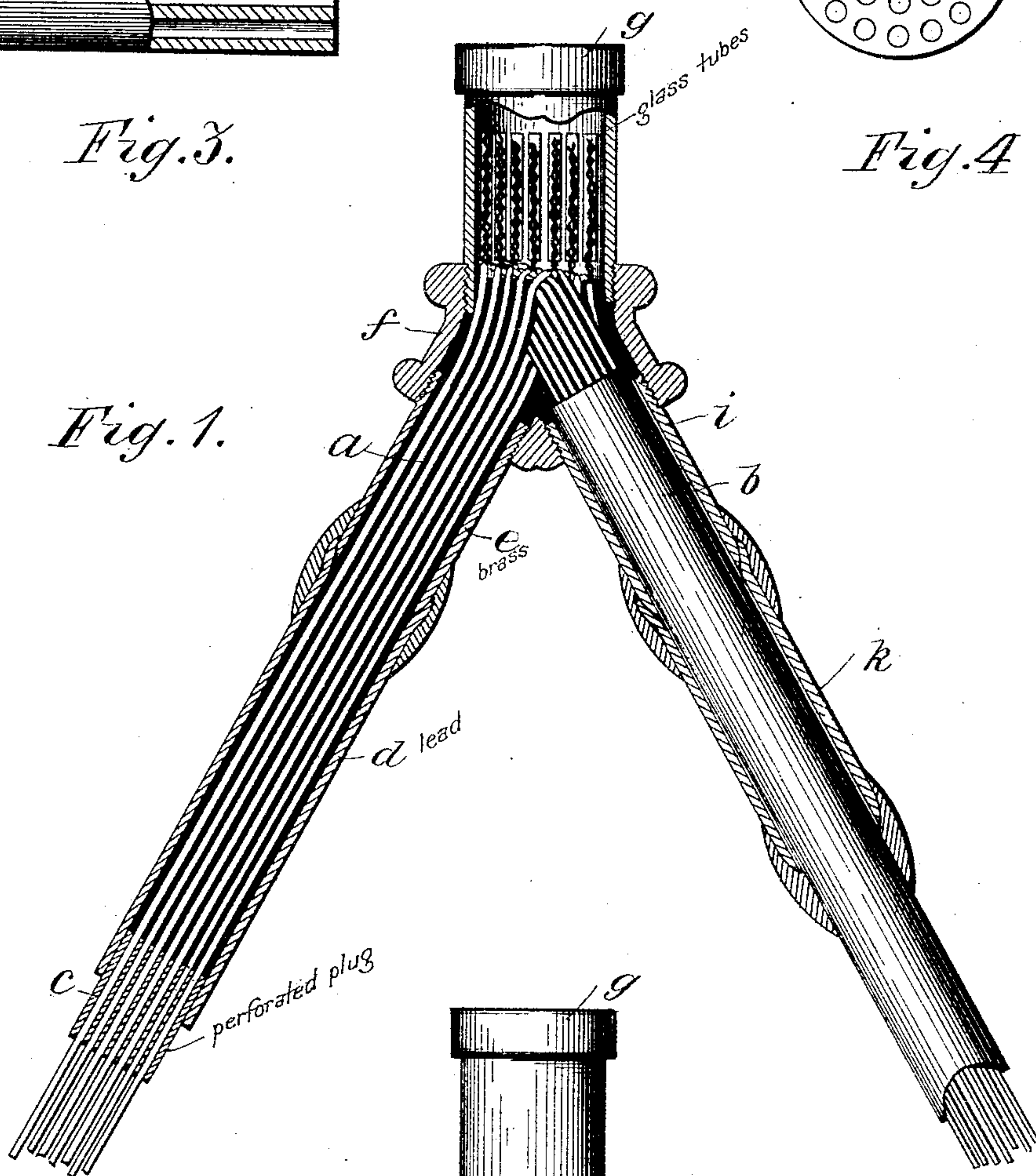
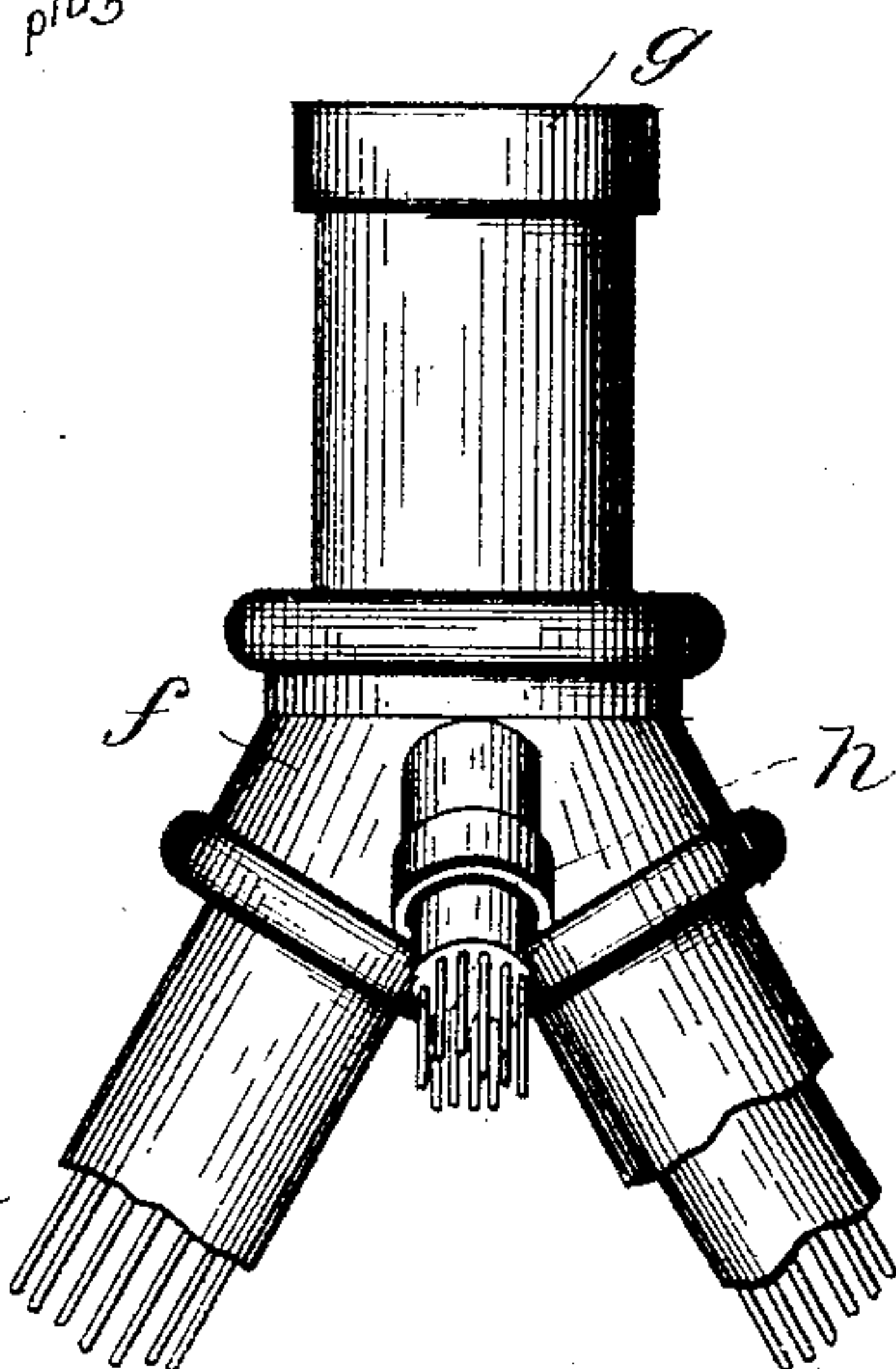


Fig. 1.

Fig. 2.



Witnesses.  
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# UNITED STATES PATENT OFFICE.

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## SPLICE FOR UNDERGROUND CABLES.

SPECIFICATION forming part of Letters Patent No. 346,942, dated August 10, 1886.

Application filed February 2, 1886. Serial No. 190,655. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM R. PATTERSON, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Splices for Telegraph-Cables, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to telegraph-cables in which the conductors are separately insulated and made water-proof, of which kerite cables may be taken as a type. In splicing such cables it is very difficult to make good joints by any of the methods now in use. The method now in common use is to cover the splice of each conductor separately with the same compound used to protect the rest of the conductor, and then to vulcanize the covering thus formed over the splice. This method is difficult, expensive, and uncertain. In splicing such a cable with one in which the core is not water-proof, but is protected in mass by lead pipe, even greater difficulties arise by the use of any of the well-known methods. When the splices of the individual wires are separately wound with tape or with vulcanized material, it is difficult to make any tests or to pick out any individual wire.

The object of my invention is to provide means for splicing kerite or other cables of this class, in which the conductors are separately protected, with one another, or with cables in which the cores are protected from moisture in a mass by lead pipe or otherwise.

By the use of my invention the separate wires are made accessible, and the troubles and uncertainties heretofore experienced avoided.

In the drawings, which are illustrative of my invention, Figure 1 is a sectional view showing my invention embodied in a splice between two different kinds of cable. Fig. 2 is a plan view of the Y-piece which is placed over the joints of the wires. Fig. 3 is an enlarged side view of the perforated templet or plug through which the separate wires of the cable to be spliced are drawn. Fig. 4 is an end view thereof.

Like parts are indicated by similar letters of reference throughout the different figures.

In cable *a* the conductors are separately protected—for example, by “okonite,” “kerite,” india-rubber, or any other vulcanized compound. Cable *b* consists of a core of separately insulated and paraffined wires, which is inclosed in a lead pipe. The ends of the conductors of cable *a* are drawn separately through the perforated plug *c* far enough to give sufficient length for splicing. The plug is then inserted in the end of the piece of lead pipe *d*, which is secured to the brass section *e* by a wipe-joint, as shown. This brass section is screwed, as shown, into the casting *f* of the Y or T piece. The ends of the wires thus drawn in are then laid bare and spliced, respectively, to the corresponding wires of the cable *b*. I preferably put glass tubes over the joints thus formed, as shown in the drawings, and as described in my Patent No. 233,162, of October 12, 1880.

In order to prevent moisture from in any way penetrating to the splice, I fill the space above the plug in and about the wires with, preferably, rosin and shellac, using about four parts of rosin to one of shellac. Other substances of a similar character may be used. I, moreover, screw the cap *g* into the casting, thus forming a closed space at the joints of the wires. By thus protecting the joints it is evident that no moisture can penetrate thereto. By removing the cap *g* it is evident that the separate wires may be readily reached for taking out a wire, making tests, or for any other purpose.

In Fig. 2 I have shown a small cable, similar to cable *a*, branched to the Y-piece. The ends of the conductors of this cable may be spliced, as above described, within the cap, so as to connect in either direction with the wires of the other cables branched to the same Y-piece. The ends of this cable will be protected in the same manner as cable *a*, hereinbefore described. I have thought it only necessary to show a portion of the filling *h* and the covered wires extending a short distance from the Y-piece.

I have shown and described the cable *b* as spliced to cable *a*. This cable is of the class described in my Patent No. 248,209, of October 11, 1881, in which the core of separately-insulated wires is protected by a lead pipe. The sleeve which is placed over the lead pipe of



the cable is preferably formed of a brass section, *i*, screwed to the Y-piece, and a lead section, *k*. This lead section is united with the lead pipe of the cable, and with the brass section, by means of wipe-joints. For a further and more complete description of this sleeve reference is made to my Patent No. 277,335, of May 8, 1883.

It is evident that my invention is of special utility in splicing separately-connected wires with the conductors of cables protected in a mass; that it may be used to advantage whenever separately-insulated wires are to be spliced with one another; or, in fact, with any other conductor.

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

1. The combination, with the separately-protected wires of cable *a*, of a perforated plug or templet, the pipe in which said plug is in-

serted, the filling in said pipe, and the Y-piece placed over the joints of the conductors, whereby moisture is prevented from penetrating to the joints, substantially as and for the purpose specified.

2. The combination, with the separately-protected wires of cable *a*, of a perforated plug or templet, the pipe in which the said plug is inserted, the filling in said pipe, and the branched pipe placed over the joints of the conductors, whereby moisture is prevented from penetrating to the joints, substantially as and for the purpose specified.

In witness whereof I hereunto subscribe my name this 30th day of January, A. D. 1886.

WILLIAM R. PATTERSON.

Witnesses:

GEORGE P. BARTON,  
F. H. McCULLOCH.