

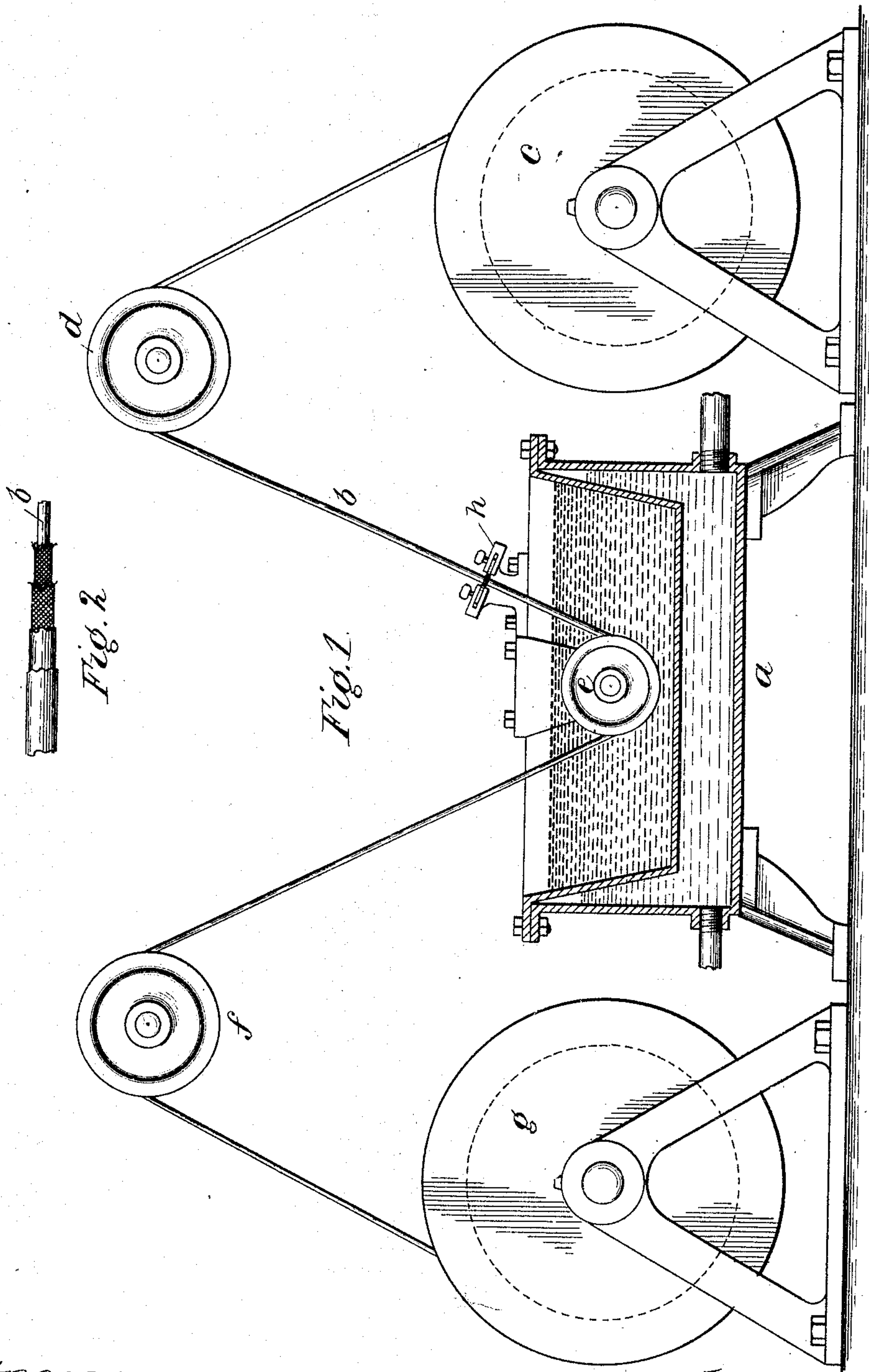
(No Model.)

W. R. PATTERSON.

METHOD OF INSULATING ELECTRIC CONDUCTORS.

No. 356,207.

Patented Jan. 18, 1887.



Witnesses:  
Saml. B. Dover.  
Leopold Stern.

Inventor:  
William R. Patterson  
By George R. Barton  
Att'y.



# UNITED STATES PATENT OFFICE.

WILLIAM R. PATTERSON, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE  
WESTERN ELECTRIC COMPANY, OF SAME PLACE.

## METHOD OF INSULATING ELECTRIC CONDUCTORS.

SPECIFICATION forming part of Letters Patent No. 356,207, dated January 18, 1887.

Application filed August 16, 1886. Serial No. 210,975. (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 Methods of Insulating Electric Conductors, (Case 57,) 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 insulating telegraph-wire; and it consists in passing the wire after it has received its fibrous coating rapidly through a thin solution of glue, so as to cover the fiber superficially with glue without saturating the body of the fiber. After the fibrous covering is thus covered with glue the wire is dried, preferably, in an oven, after which it is immersed in melted paraffine or other insulating material. The paraffine not only covers the glue, but penetrates through the glue and saturates the fiber. After the insulating material has become cold the wire is run through a polishing-machine. The superfluous paraffine is thus removed, and the fibrous coating entirely filled, while the exterior is rendered hard, smooth, and glossy. The fibers being held down by the glue, the covering is less hygroscopic than ordinary paraffined coverings where no glue is used, and the exterior surface is less liable to gather dust, and retains its glossy appearance much longer than where no glue is used.

My invention is illustrated in the accompanying drawings, in which—

Figure 1 is a view of the finished wire. Fig. 2 illustrates the manner of applying the glue to the fibrous covering.

The vat *a* contains a thin solution of glue, which is kept hot, preferably by steam, as shown. The wire *b*, covered with cotton, jute, or other fibrous material, is drawn rapidly through the glue, passing from the reel *c* around suitable sheaves, *d e f*, onto a reel, *g*, as shown. The wiper *h* is arranged to throw off the superflu-

ous glue as the wire leaves the vat. The wiper may be of cork or rubber. I have also used a metallic die of suitable size as a wiper. When the reel *g* is filled, it is placed in a drying-oven, and after the glue is thoroughly dried the coil is dipped into a vat of hot paraffine or other insulating-wax. Unless the glue is thin, the different convolutions of the wire will adhere together, and the product will be rendered brittle. The coil of wire being removed from the vat of paraffine, the paraffine that has saturated and covered the fiber becomes cold, and then the wire thus covered is drawn through rapidly-revolving polishers, which leave the covering smooth, hard, and thoroughly filled with paraffine.

Any other insulating material of like properties may be used in place of the paraffine.

While I prefer glue as a sizing, I have obtained good results with starch and mixtures of glue and starch.

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

1. The method of insulating electrical conductors, which consists in passing the fibrous-covered conductor rapidly through a thin solution of glue, drying the glue upon the covering, and then saturating the covering with hot insulating material, allowing the insulating material thus applied to become cold, and then compressing and polishing the covering thus saturated, substantially as described.

2. An insulated conductor for telegraph purposes, consisting of a wire covered with a fibrous material, a thin coating of glue or its equivalent upon the exterior of the fiber, and an insulating material, like paraffine, saturating the fiber, the whole insulating-covering being compressed and polished, substantially as shown and described.

In witness whereof I hereunto subscribe my name this 21st day of July, A. D. 1886.

WILLIAM R. PATTERSON.

Witnesses:

GEORGE P. BARTON,  
LEOPOLD STERN.