

(No Model.)

M. ROBINSON.  
INSULATING TUBE.

No. 517,591.

Patented Apr. 3, 1894.

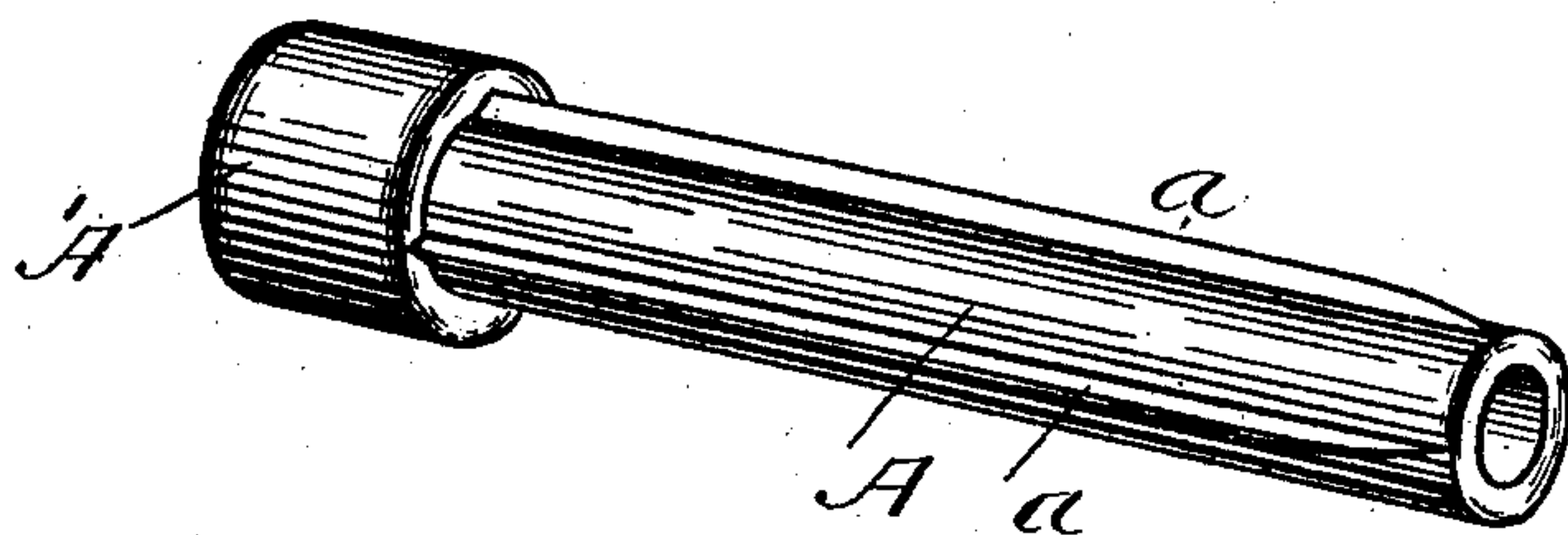


FIG. 1.

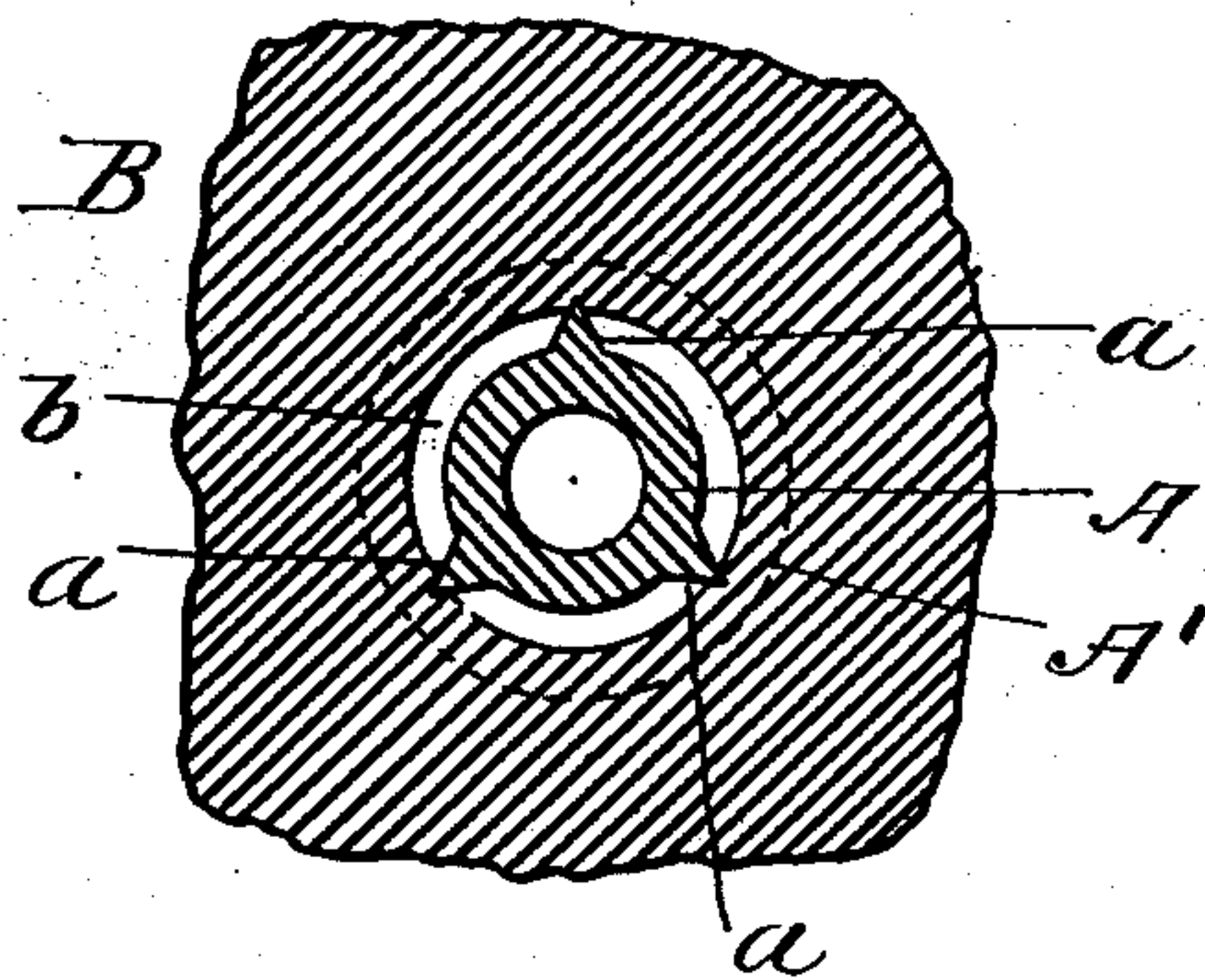


FIG. 2.

WITNESSES

Edmund & Manner,  
G. Genter.

INVENTOR

Miner Robinson  
by Albert E. Leach  
his atty.

# UNITED STATES PATENT OFFICE.

MINER ROBINSON, OF NEWTON, MASSACHUSETTS.

## INSULATING-TUBE.

SPECIFICATION forming part of Letters Patent No. 517,591, dated April 3, 1894.

Application filed January 6, 1894. Serial No. 495,953. (No model.)

*To all whom it may concern:*

Be it known that I, MINER ROBINSON, of Newton, in the county of Middlesex and State of Massachusetts, have invented a new and  
5 useful Improvement in Insulating-Tubes, of which the following, taken in connection with the accompanying drawings, is a specification.

My invention consists of an improved insulating tube for leading electric wires through  
15 timbers or other material, my object being to so construct the tube that it is rigidly held in any position within the hole in the timber previously made for it, and that it is always concentric with the hole, an air space being  
20 interposed between the outer surface of the tube and the inner surface of the hole for the purpose of more complete insulation. To this end, the tube is provided with narrow ridges arranged longitudinally in the manner  
25 hereinafter described.

Referring to the accompanying drawings Figure 1 shows in perspective the tube itself, and Fig. 2 is a sectional view showing the tube in place within the timber.

30 I make my improved tube preferably of glass or porcelain, or other fire-proof non-absorbing insulating material.

A, is the body of the tube or the portion intended to pass through or rest within the hole  
35 b in the timber B, and A' is the enlarged head of the tube.

The portion A of the tube is provided with three or more ridges  $\alpha$  presenting a narrow edge along the top and passing continuously  
40 lengthwise of the tube from the head to a point at or near the outer end thereof.

A hole is bored in the timber B of a diameter slightly less than that of a circle inclosing the ridges  $\alpha$ , so that it is necessary to use  
45 some force in driving the tube into the hole. The tube may be either driven clear in so that the enlarged head rests against one surface of the timber, or only partially so that a considerable portion of the tube at the head end projects beyond the timber, which latter position is desirable for the purpose of turning

a corner with the wire or changing its direction, thereby rendering an additional insulator or fastening at that point unnecessary. In either case whether wholly or partially  
50 driven in, the tube is held very firmly in the wood against any possibility of being turned around or changed in position, or easily withdrawn.

Very high insulation resistance is secured  
55 by reason of the fact that the tube is in contact with the wood along the three ridges  $\alpha$  only, there being an air space between the main portion of the tube and the inner surface of the hole. This construction acts not  
60 only to greatly increase the insulation by reason of the small portion of the tube in contact with the wood, but also insures a quick drying out of the tube and hole in case of wetting.

Although I have considered the use of the tube in connection with a timber, it is of course to be understood that the tube is equally  
65 applicable for use in brick work or other material in buildings.

I claim—

1. A timber or other part of a wall or floor provided with the hole b in combination with an insulating tube A having the longitudinal  
70 ridges  $\alpha$  throughout the entire length of the body of the tube whereby the tube is firmly held concentrically in the hole with an insulating air space on all sides of the tube between it and the timber, substantially as described.

2. An insulating tube A provided with longitudinal ridges  $\alpha$  throughout the entire length of the body of the tube substantially as and for the purposes described.

In testimony whereof I have signed my  
85 name to this specification, in the presence of two subscribing witnesses, on this 24th day of November, A. D. 1893.

MINER ROBINSON.

Witnesses:

ALBERT E. LEACH,  
G. GUNTHER.