April 1, 1941. J. R. FOLEY 2,236,941

FUSE PULLER

Filed Jan. 28, 1937 2 Sheets-Sheet 1

Fig. 1. Fig. 2. Fig. 3. Fig. 4. Fig. 5.

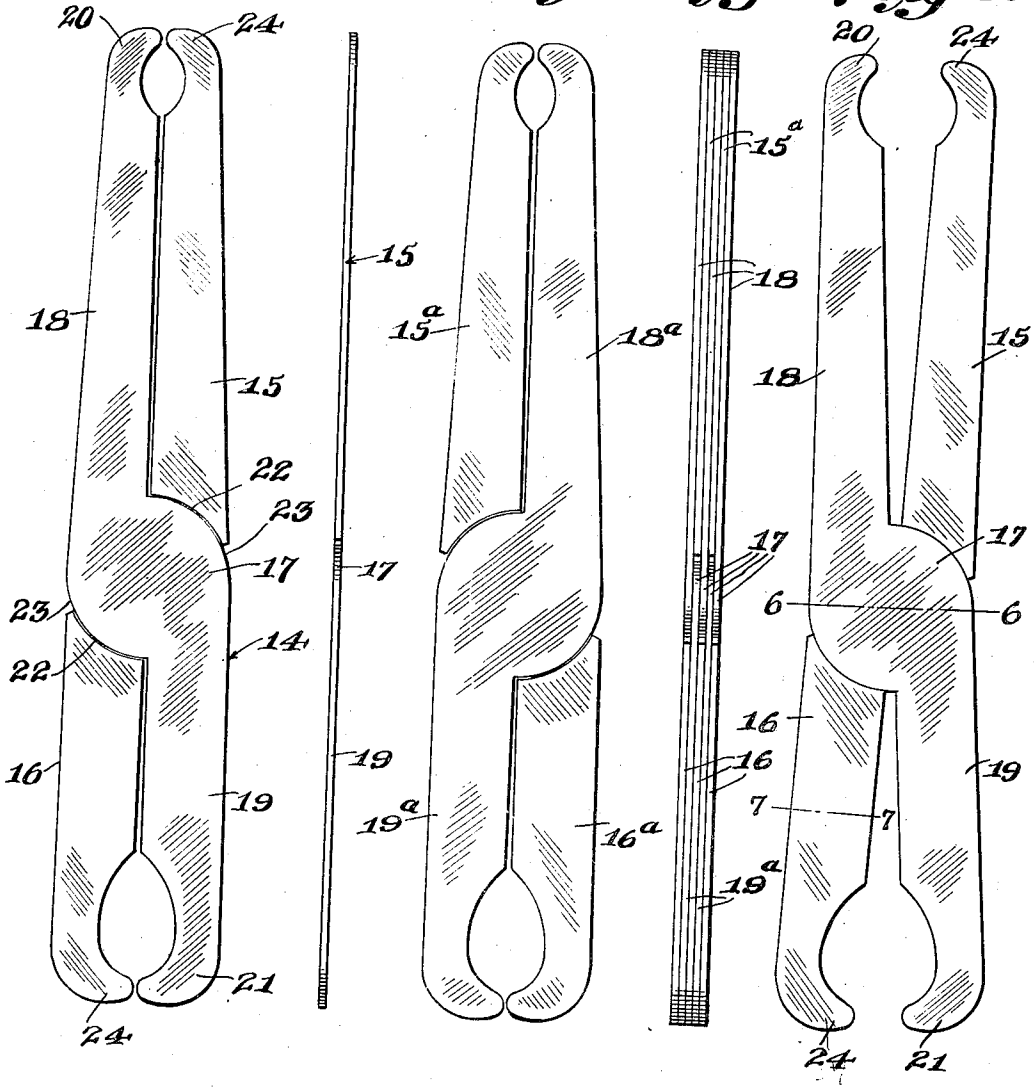


Fig. 6.



Fig. 7.



Inventor

John R. Foley

By Seymour, Bright & Nottingham

Attorneys

April 1, 1941. J. R. FOLEY 2,236,941

FUSE PULLER

Filed Jan. 28, 1937 2 Sheets-Sheet 2

Fig. 8.

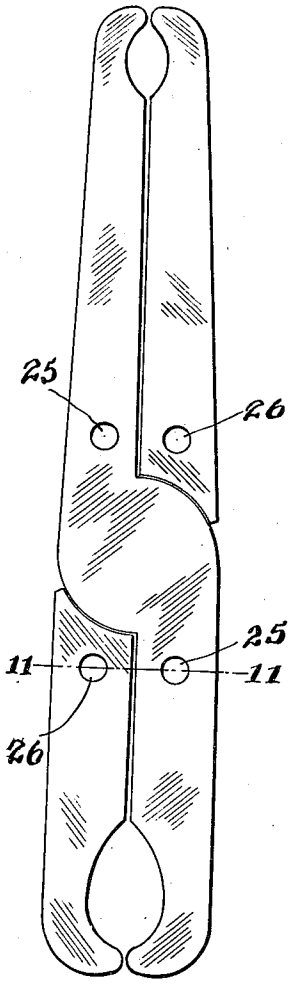


Fig. 9.

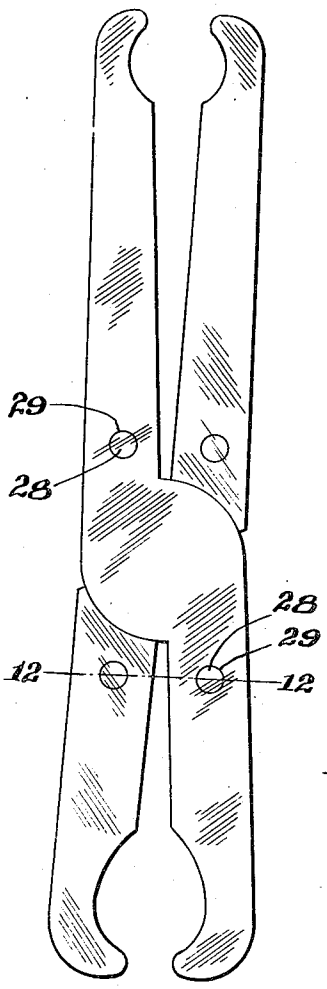


Fig. 10.

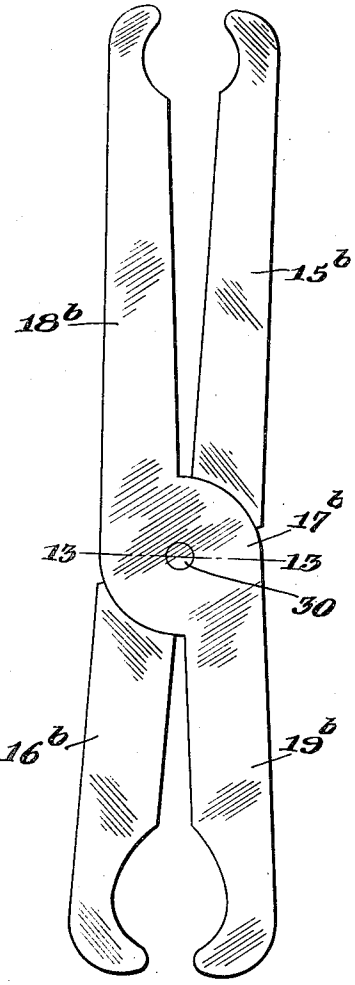


Fig. 11.

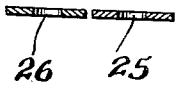


Fig. 12.

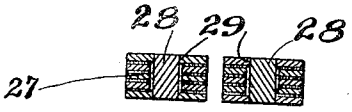
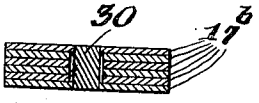


Fig. 13.



Inventor

John R. Foley

By Seymour, Bright & Nottingham

Attorneys

Patented Apr. 1, 1941 2,236,941

UNITED STATES PATENT OFFICE

2,236,941

FUSE PULLER

John R. Foley, New York, N. Y., assignor to Marjorie Hart, New York, N. Y.

Application January 28, 1937, Serial No. 122,832

3 Claims. (Cl. 81—3.8)

This invention relates to improvements in fuse pullers and more particularly to fuse pullers of the pincher type.

The primary purpose of the invention is to provide a fuse puller which is absolutely a non-conductor of electricity.

My improved fuse puller is formed entirely from a thermoplastic material having a high dielectric strength and which is substantially non-absorbent. It is constructed with a total absence of metal or other conducting material and even though the relatively movable members thereof are turnably connected together, the turning is accomplished without the use of any conducting material. Consequently, the improved tool can be used in proximity to high tension voltage without danger to the user or without liability of short circuits or the like.

Further objects and advantages of the invention will be set forth in the following detail description which should be considered in connection with the accompanying drawings, in which

Fig. 1 is a plan view of three of the pieces or blanks employed in building up the improved fuse puller.

Fig. 2 is an edge view of the pieces shown in Fig. 1.

Fig. 3 is a view similar to Fig. 1 showing the structure after a multiplicity of the blanks have been arranged in superposed relation and before the parts are properly connected by a suitable cementing agent.

Fig. 4 is an edge view of one form of the complete tool.

Fig. 5 is a plan view of the same.

Figs. 6 and 7 are sectional views taken respectively on the lines 6—6 and 7—7 of Fig. 5.

Fig. 8 is a plan view of modified blanks employed in building up the tool; these blanks being provided with holes for reinforcing plugs.

Fig. 9 is a plan view of a complete tool assembled from blanks of the type shown in Fig. 8.

Fig. 10 is a plan view of another modification of a tool similar to the one shown in Fig. 5, but with a central plug reinforcing the members of the tool.

Fig. 11 is a sectional view taken on the line 11—11 of Fig. 8.

Fig. 12 is a similar view taken on the line 12—12 of Fig. 9.

Fig. 13 is a sectional view on the line 13—13 of Fig. 10.

In the embodiment of the invention illustrated in Figs. 1 to 7 inclusive, 14 designates one of the long blanks and 15 and 16 designate a pair of the short blanks used in making the improved tool. These blanks are preferably formed from flat sheet material having high dielectric strength. This material may be what is known as "Plastacele," which is cellulose acetate free of nitrate and camphor. Each long blank has an intermediate pivotal portion 17 and oppositely extending arms 18 and 19 whch terminate respectively in jaws 20 and 21.

Each short blank is provided at its inner end with a curved edge 22 conforming to a curved edge 23 of the pivotal portion of the long blank, and each short blank terminates at its outer end in a jaw 24; these jaws in the finished tool cooperating with the jaws 20 and 21 respectively.

After three of the blanks have been placed, as shown in Fig. 1, on a suitable support, a second layer of blanks is placed on them in the order shown in Fig. 3. In other words, the long blank which is superposed on the blanks, shown in Fig. 1, is so placed that the arms 18*a* and 19*a* are superposed on the short blanks 15 and 16 respectively, while the short blanks 15*a* and 16*a* are placed respectively on the arms 18 and 19 of the first long blank.

The next layer of blanks will be superposed on the first two layers in the order shown in Fig. 1; the fourth layer in the order shown in Fig. 3 and so on until the desired number of layers have been placed to form a tool of the desired thickness.

While assembling the blanks or even after assembling them, the arms of the long blanks are cemented to the short blanks by means of a suitable medium such as acetone. The central portions 17 of the blanks are not cemented together but are left free of one another so that they form a pivoting means at the medial portion of the tool.

The resulting tool has sufficient rigidity to withstand the strains to which it is subjected in use, and of course, it is an absolute non-conductor of electricity. Consequently, it will be safe to use and protect the user even in an environment of electrical contamination.

Instead of cementing the arms of the long blanks to the short blanks, I may provide the arms and short blanks with holes 25 and 26 as shown in Figs. 8 and 11. However, the holes in the inner layers of blanks will be made larger than the holes in the blanks of the outer layers, as shown at 27 in Fig. 12, so that the plugs 28 may pass freely through these holes but will be wedged into the holes of the outer layers, as shown at 29 in this figure. In this modification

the plugs will be formed preferably of the same material as the blanks, and they may be secured to the outer layers by acetone or the like.

I may also use a combination of cement and plugs in assembling the blanks. For example, as shown in Figs. 10 and 13, the arms 18*b* and 19*b* of the long blanks may be secured to the short blanks 15*b* and 16*b* by cement and the pivotal portions 17*b* of the long blanks may be pivotally connected by a plug 30 formed of the same material as the blanks, and secured to the outer layers by acetone or any other suitable insulating cement.

It will be manifest that the jaws may be arranged at only one end of the tool if desired instead of at both ends.

The herein described and illustrated embodiments of my invention have given satisfactory results, and it will be obvious to those skilled in the art, after an understanding of the invention, that other changes and modifications may be made without departing from the spirit or scope of the invention, and it is intended that all matters contained in the above description or shown in the drawings shall be interpreted as illustrative and not in a limiting sense.

What I claim and desire to secure by Letters Patent is:

1. A fuse pulling tool or the like consisting of crossed connected members turnable about an axis and forming jaws at one end of the tool and formed in its entirety of a material having high dielectric strength, each member being formed of parallel layers of such material and the layers consisting of long and short blanks alternately arranged.

2. A fuse pulling tool or the like consisting of crossed connected members turnable about an axis and forming jaws at one end of the tool and formed in its entirety of a material having high dielectric strength, each member consisting of a multiplicity of parallel layers of alternately arranged long and short blanks, and plugs connecting said blanks, the intermediate layers having holes of larger diameter than the plugs to permit the plugs to freely pass therethrough.

3. A fuse puller comprising layers of members having high dielectric strength, each layer being formed of a long member and two short members, each long member having an intermediate portion with opposite curved edges, the two short members of each layer having opposite curved ends which abut the curved edges of the long member, the long member of one layer being secured to the short members of an adjacent layer while the short members of said one layer are secured to the long member of said adjacent layer.

JOHN R. FOLEY.