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J. W. CHANNELL

2,237,474

DEVICE FOR REPAIRING CABLE TERMINAL BINDING POSTS

Filed Jan. 3, 1940

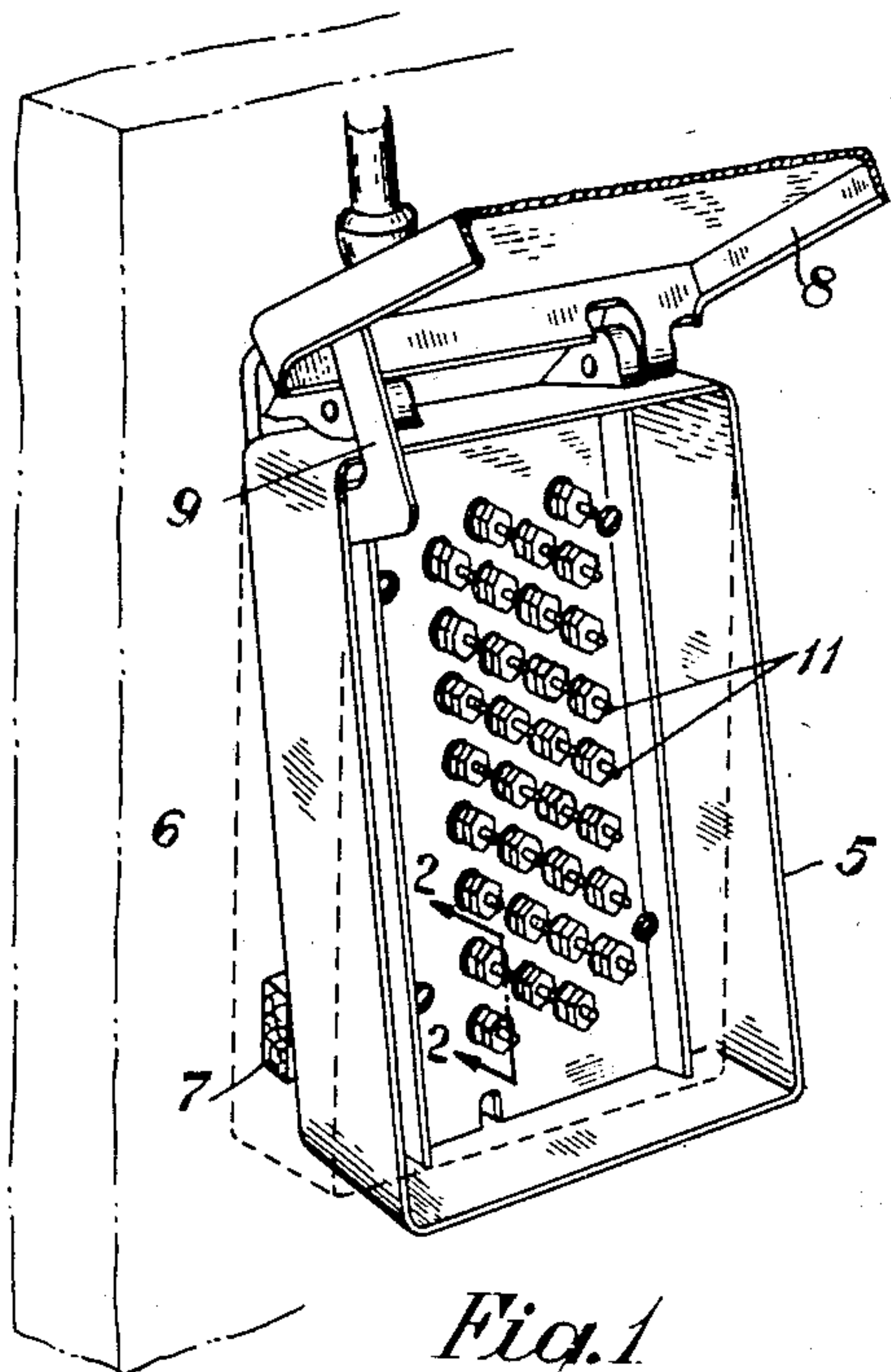


Fig. 1

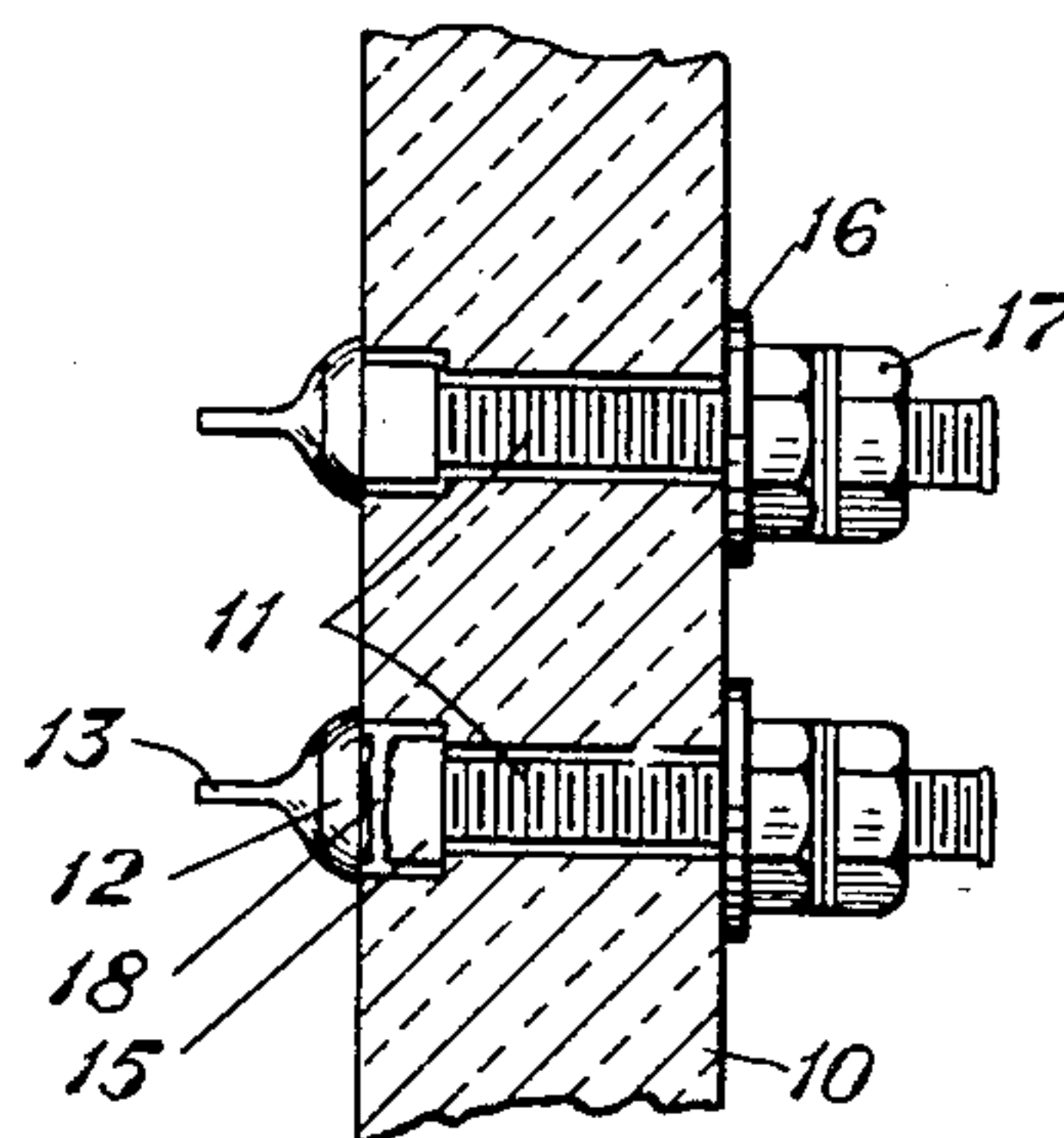


Fig. 2

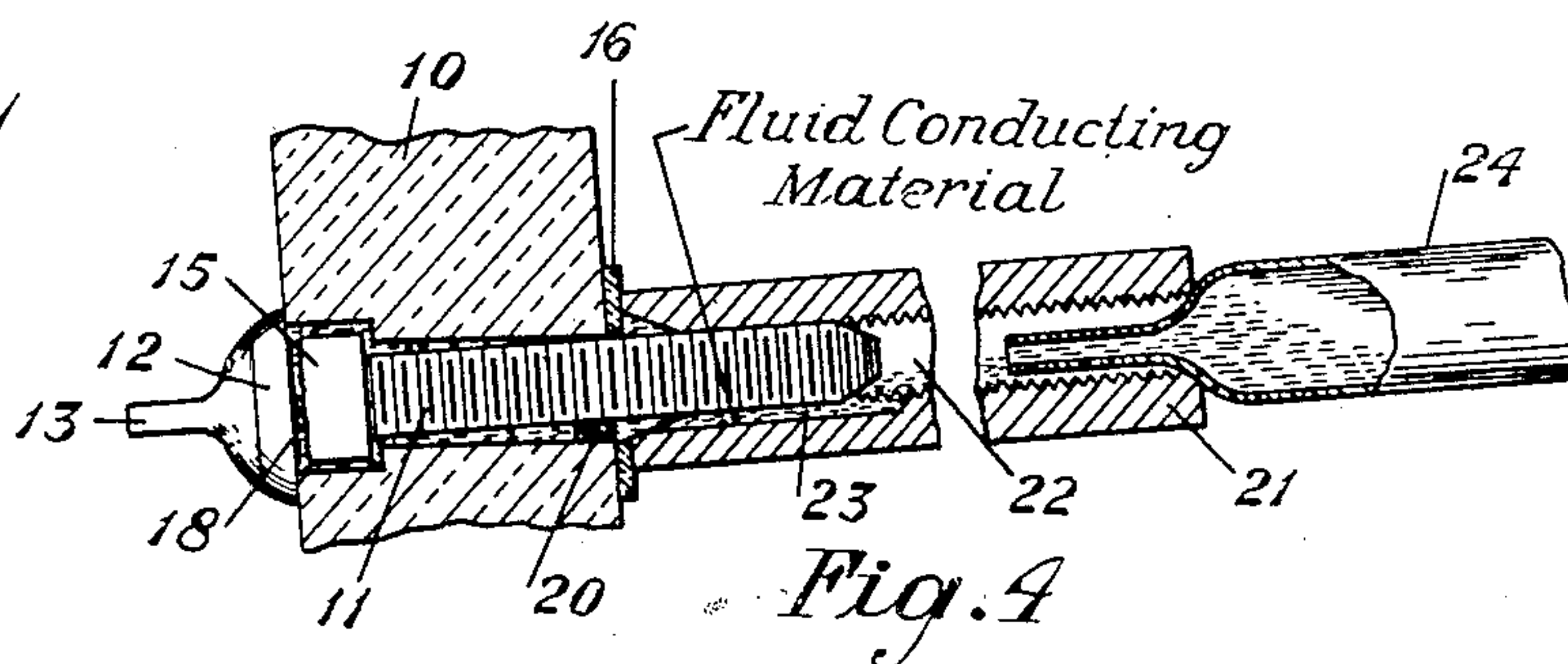


Fig. 4

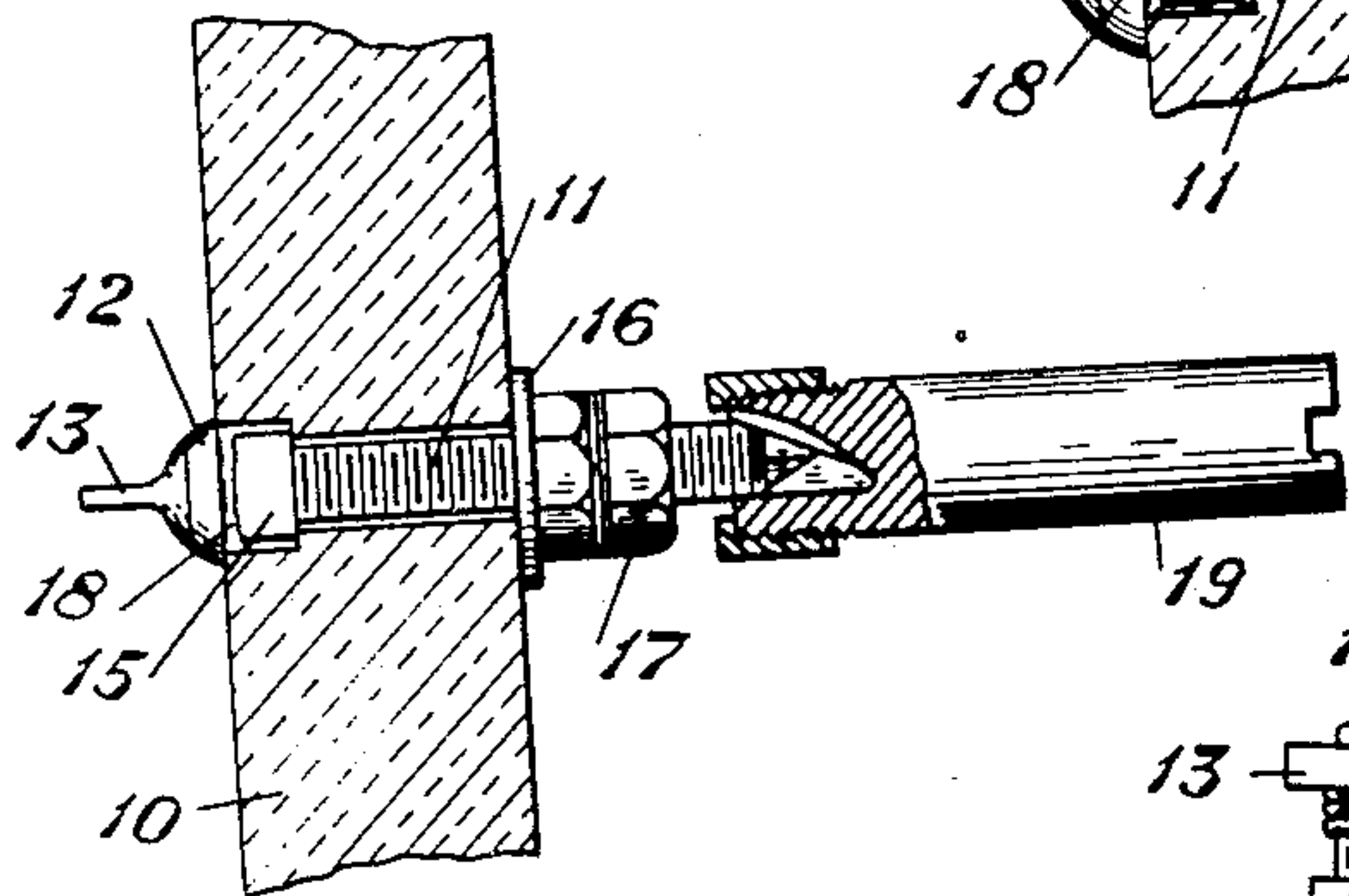


Fig. 3

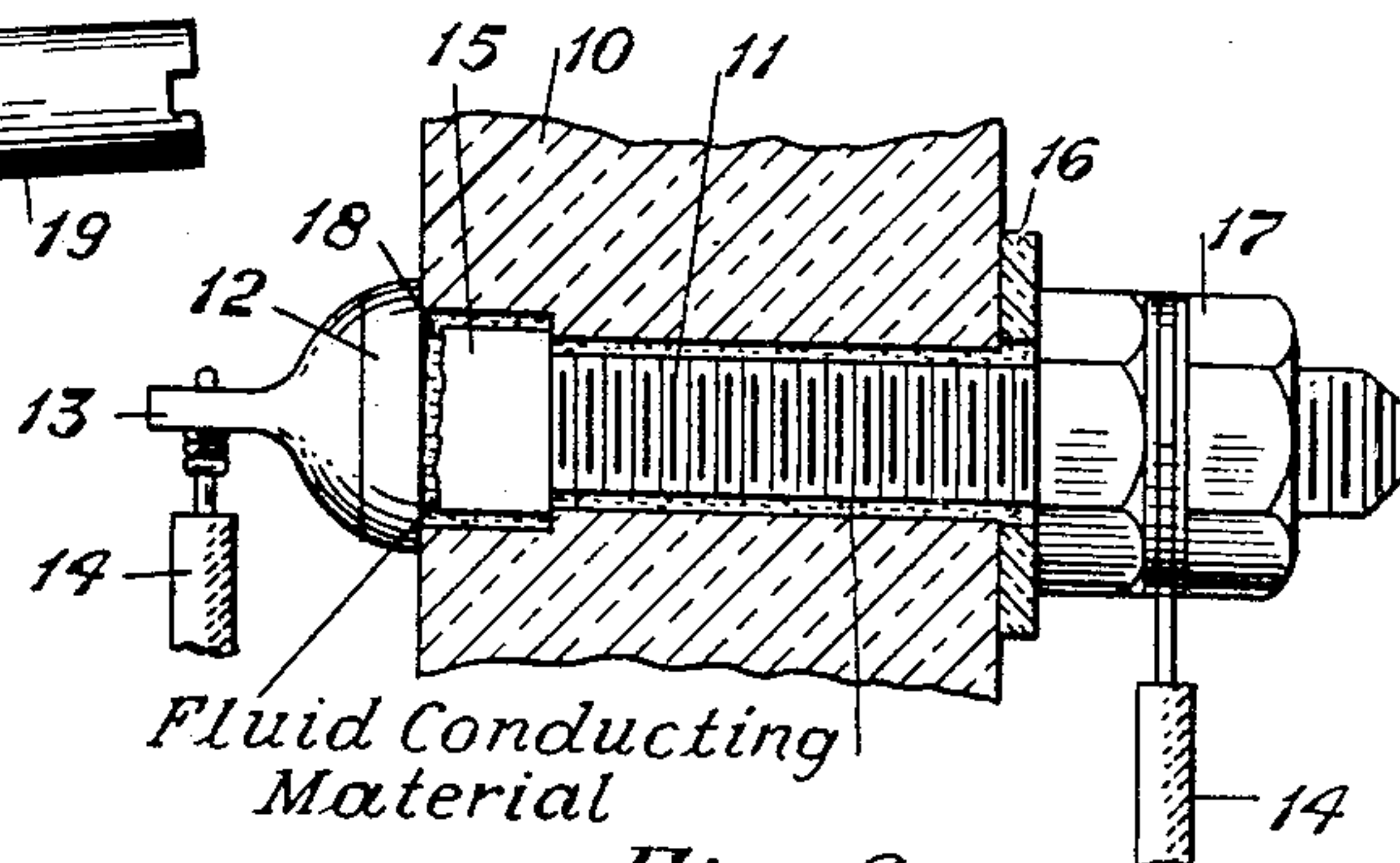


Fig. 6

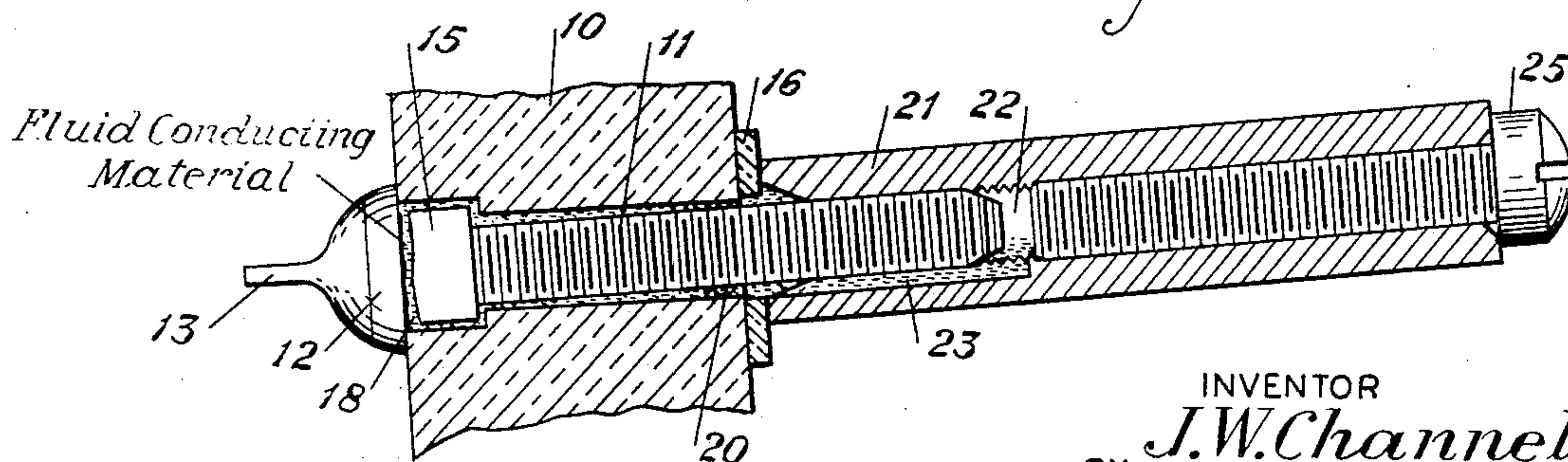


Fig. 5

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DEVICE FOR REPAIRING CABLE TERMINAL
BINDING POSTSJames W. Channell, South Gate, Calif., assignor to
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Application January 3, 1940, Serial No. 312,266

1 Claim. (Cl. 221—79)

This invention relates to a device for repairing broken binding posts of cable terminal boxes such as is disclosed in my Patent No. 2,173,327, dated September 19, 1939.

Trouble has been experienced in the interruption of telephone service due to broken or damaged binding posts of cable terminal boxes. In accordance with well known practice, these binding posts are mounted in an insulating plate enclosed in the cable box, and have terminals appearing on each face of the plate to which electrical conductors are connected. Electrical circuits are completed over these conductors, and through the binding posts when they are in normal or operative condition. It will be understood, of course, that the continuity of the circuits is interrupted when the binding posts become broken by "season" cracks, undue strain in tightening the posts, or other reasons. When this happens, interruption in the service occurs and much time and expense is involved due to the replacement of the terminal or abandonment of the broken posts in order that the service may be restored.

Accordingly, it is an object of this invention to provide a device by means of which the broken binding posts may be repaired in an inexpensive and expeditious manner.

This and further objects of the invention will be apparent from the following description when considered in connection with the accompanying drawing.

Referring to the drawing, Figure 1 is a perspective view of the cable terminal box in slightly tilted position, and with its cover raised to expose the interior thereof. The normal position of the box is indicated by dotted lines.

Fig. 2 is a section taken on the line 2—2 of Fig. 1, showing the location of a break in the binding post at the rear of the face plate.

Fig. 3 is a section similar to that of Fig. 2, showing a binding post cutter applied to one of the posts to remove the spinning or upset end.

Fig. 4 is a section showing the application of an injector which forms one portion of this invention, and a dropping tube containing a supply of conductive fluid material to be introduced through the injector to fill the gap in the broken binding post.

Fig. 5 is a section similar to Fig. 4, showing a cooperating element for use with the injector, which forces through the injector and causes it to enter and fill the gap of the broken binding post, and

Fig. 6 is a section showing the binding post in

normal horizontal position, and with the conductive fluid material filling the gap and restoring the continuity of the defective binding post.

The cable terminal box 5 is of well known construction in which the interior is filled with a molten asphaltic compound which completely surrounds the cable conductors and that portion of each binding post which extends through the face plate into the sealing chamber. In accordance with this well-known construction just outlined, it will be obvious that when the insulating compound congeals upon cooling, it provides adequate support for the head of a broken post to maintain it in place on the terminal box, even though a gap or break may occur between the post head and its shank. This terminal box is shown in the drawing as being mounted on a supporting surface 6. The bolts at the bottom of the box (not illustrated) are removed and the upper bolts are loosened to permit the box to be rotated from its normal position as shown by dotted lines, to a slightly tilted position, as indicated. The box is raised to this latter position so that the defective binding post may be repaired more readily as will presently appear.

A suitable block 7 is placed between the supporting surface 6 at the box 5 to hold the box in this temporary tilted position, and a cover 8 for the terminal box may be held in open position by the arm 9, in a well understood manner, so that access may be had to the interior of said box.

A face plate 10 is carried in the terminal box 5 and provides a mounting for a plurality of binding posts 11. The shanks of these binding posts extend through the face plate and are provided at one end with a head including a circular portion 12 which is of larger diameter than the shank and abuts the surface of one side of the face plate. This circular head has a lug 13 attached thereto which provides a connecting terminal for a conductor 14 incoming to the terminal box. A shoulder 15 connects with and extends inwardly from the circular head portion and is provided with squared sides which fit into walls of like shape in the face plate. The threaded shank portion of the binding post extends through and outwardly from the front surface of the plate 10 a sufficient distance to permit the application of a washer 16, which is preferably made of fiber, and also nuts 17. The threads at the extremity of the extended portion of the binding post are upset to prevent the dislodgement of the washers and nuts.

A break in the binding post caused by any of

the various reasons previously outlined usually occurs at the meeting point of the square shoulder and circular portion 12 as shown at 18 in the drawing. This break is repaired by means of this invention as follows:

When the terminal box 5 has been tilted, as previously described, a binding post cutter 19 is applied to a broken binding post to remove its upset end shown in Fig. 3. The nuts 17 and washer 16 may then be removed from the shank so that the binding post lies loosely in the face plate 10, and a wedge or toothpick 20 may be applied between the wall of the plate and surface of the post, as illustrated in Figs. 4 and 5. This serves to tilt the post slightly upward to provide a less unobstructed path for the introduction of fluid conductive material, such as mercury, around the post and to fill the gap at the broken portion 18. A suitable washer may be now applied around the binding post and against the surface of the face plate 10, and the improved injector or filler tool 21 is screwed on the extended end of the binding post to a point where it bears against the washer, as shown in Fig. 4. The injector is provided with a central threaded bore 22 which communicates with a longitudinal slot 23. This slot extends to the engaged end of the tool and provides a path over which the fluid conductive material, or mercury, may flow around the broken binding post to fill the gap 18 and restore the continuity of the post. This material may be supplied by means of a dropping tube 24 connected to a suitable container (not shown) in which a quantity of the substance is held. After a sufficient amount of the mercury, or other substance, has been applied, an impelling device 25, which is shown in the present instance in the form of a screw

plunger, is threaded into the injector, as shown in Fig. 5, for the purpose of forcing the mercury around the broken binding post and into the gap. The present improved device including the injector 21 and the impelling element 25 may be now withdrawn from the repaired binding post and the nuts and washer replaced. After these operations have been performed, the binding post is subjected to a test to determine its electrical continuity, after which the terminal box and its associated elements are restored to normal position.

While there is shown and described herein a certain preferred form of the invention, by way of illustration, it is understood it is not limited nor confined to the precise details of construction herein described and delineated, as modification and variation may be made within the scope of the appended claim without departing from the spirit of the invention.

What is claimed is:

A device for restoring the electrical continuity of a broken threaded terminal of a group mounted on an insulating plate in a terminal box, said device including an injector having a bored portion internally screw-threaded so that it may be attached to the threaded portion of a broken terminal, said bored portion having an internal longitudinal slot extending to an end of the injector, said bored portion encompassing the engaged portion of the terminal to enable fluid conducting material in the bore to flow along the terminal to its broken point, and a screw-plunger adapted to engage the interior of the bored portion to force said conducting material through the longitudinal slot and about the broken portion of the terminal.

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