

J. E. GRAYBILL.
 CONNECTION BOX FOR ELECTRIC CONDUITS.
 APPLICATION FILED JULY 29, 1908.

Patented Apr. 4, 1911.
 2 SHEETS—SHEET 1.

988,461.

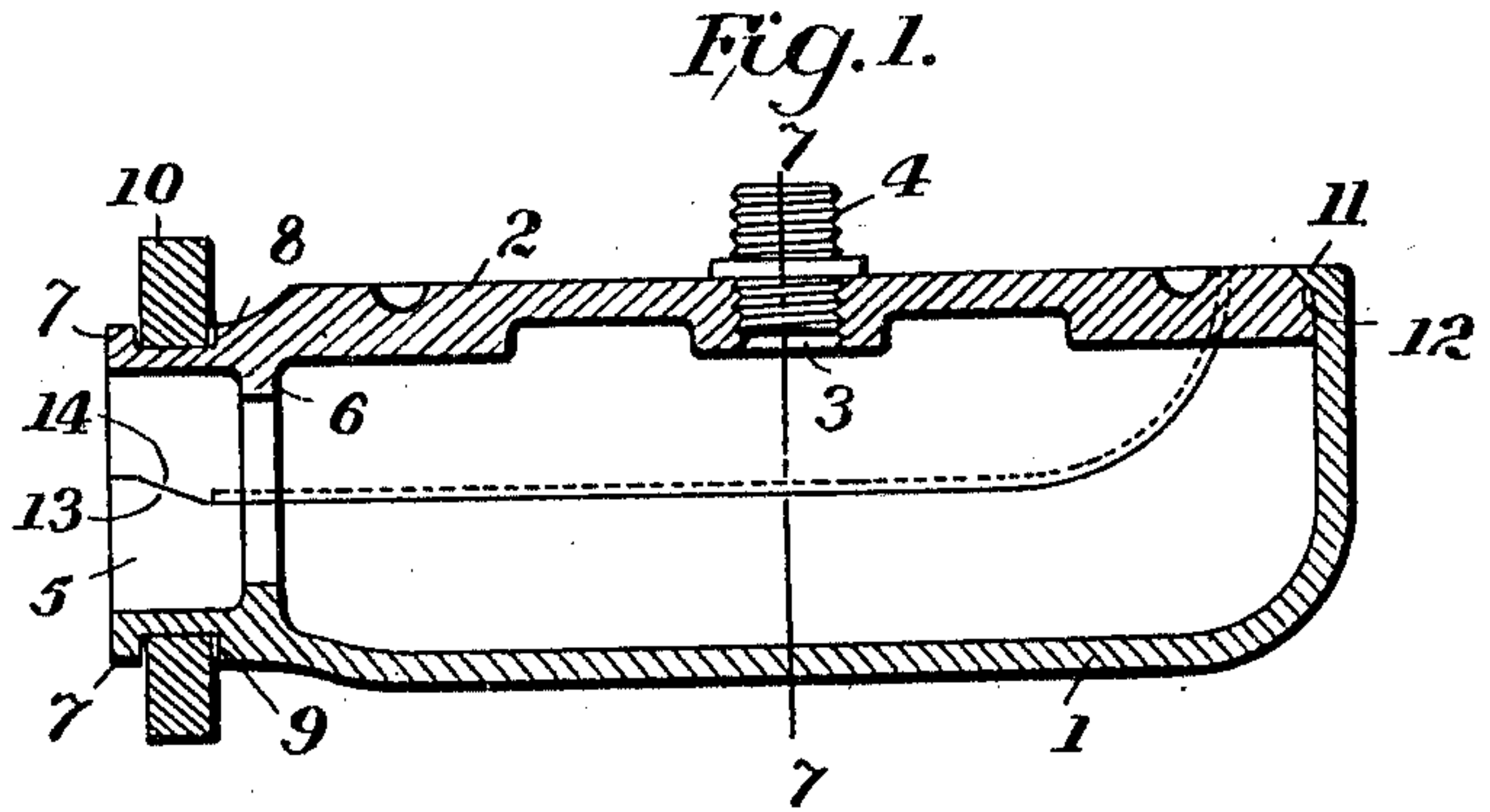
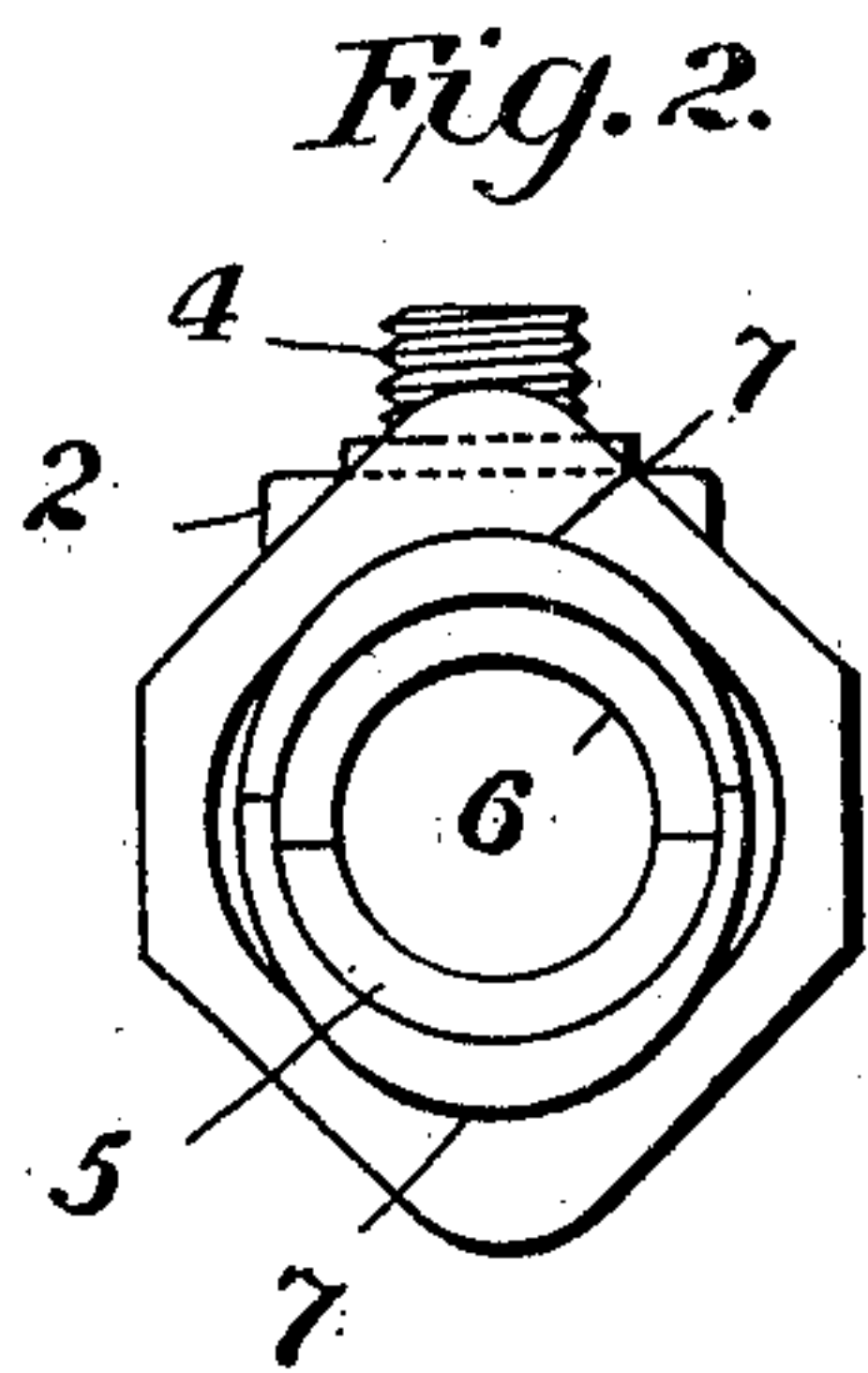


Fig. 3.

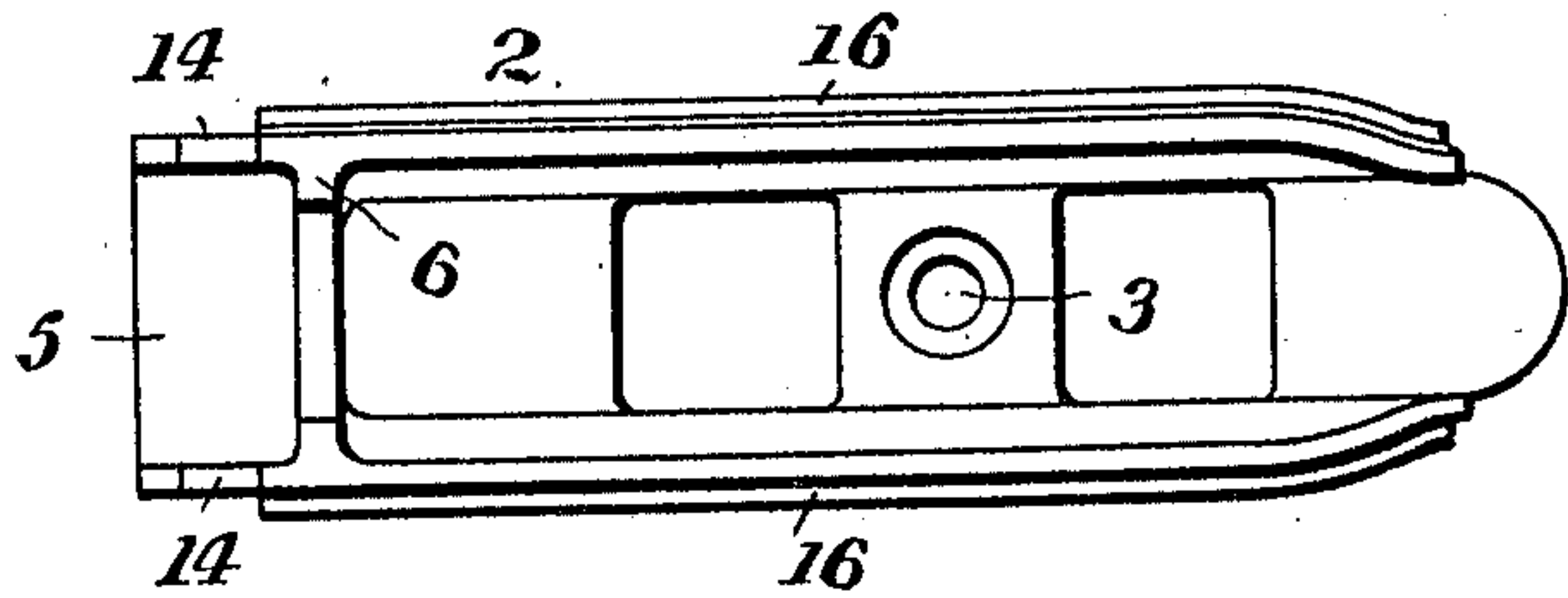


Fig. 4.

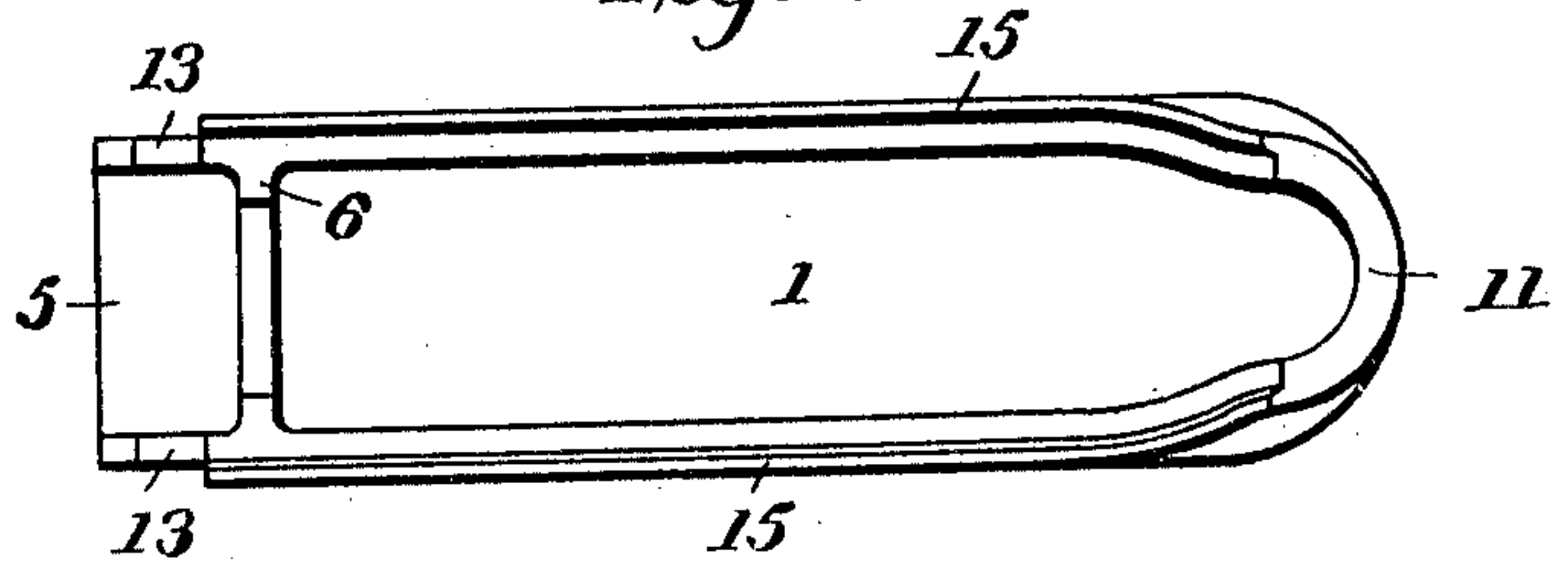


Fig. 5.

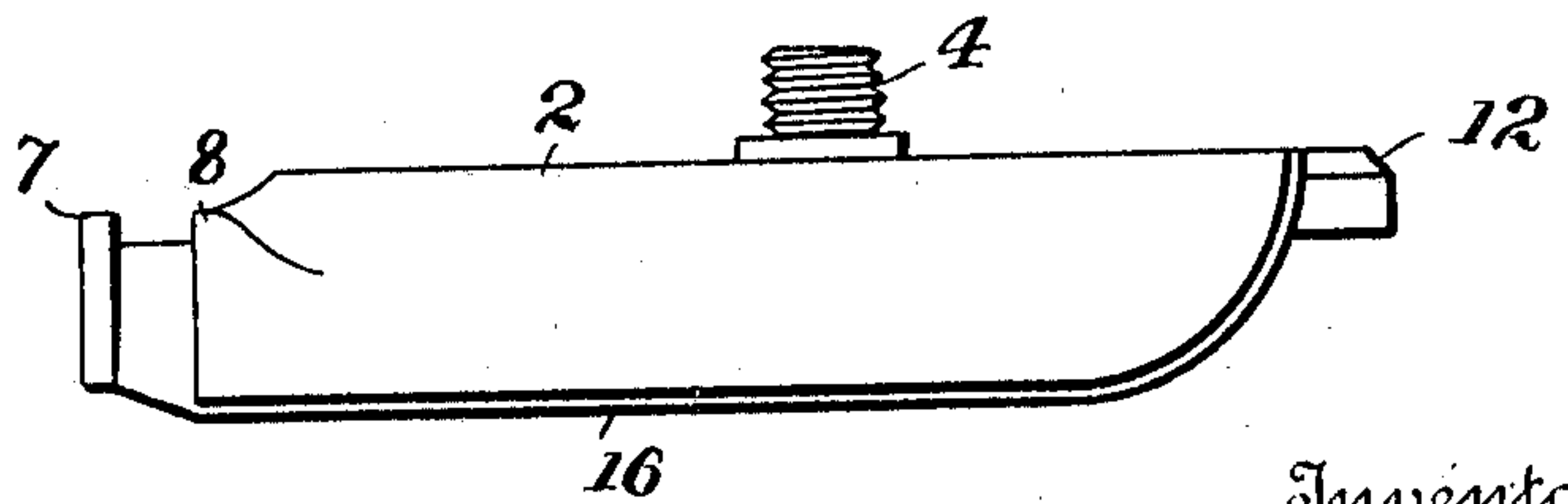
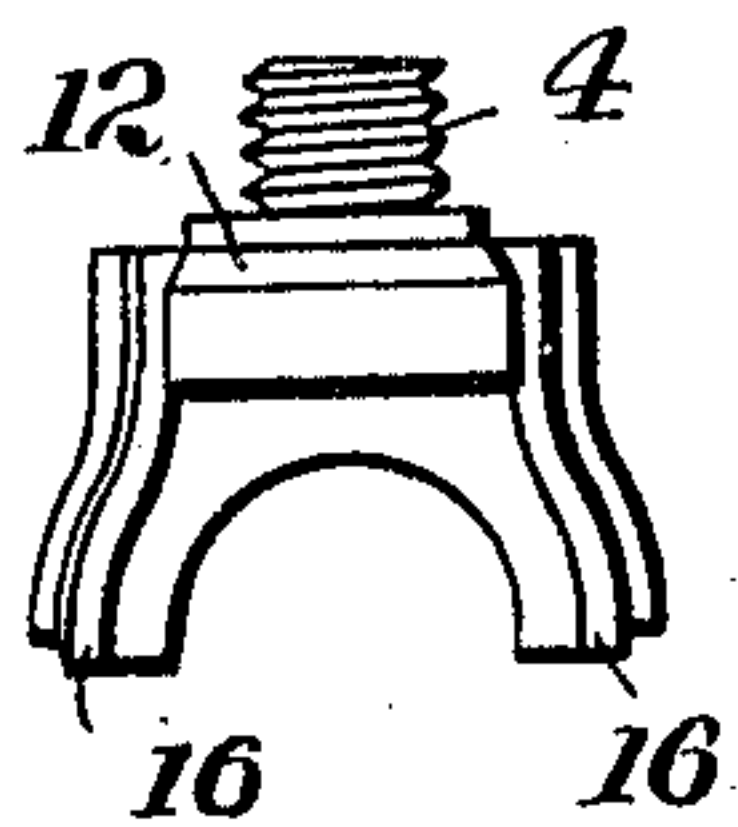


Fig. 6.



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2 SHEETS—SHEET 2.

Fig. 9.

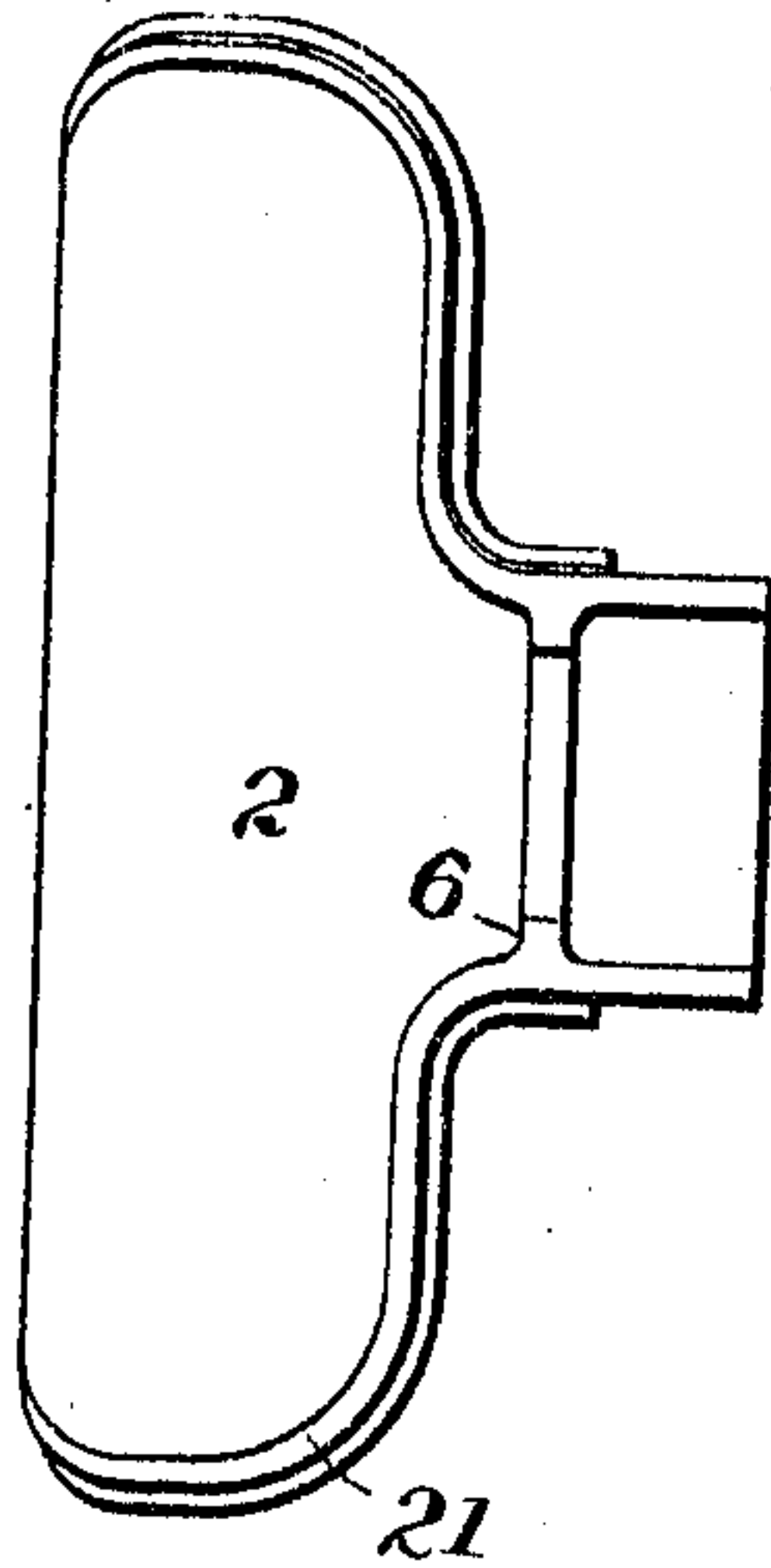


Fig. 8.

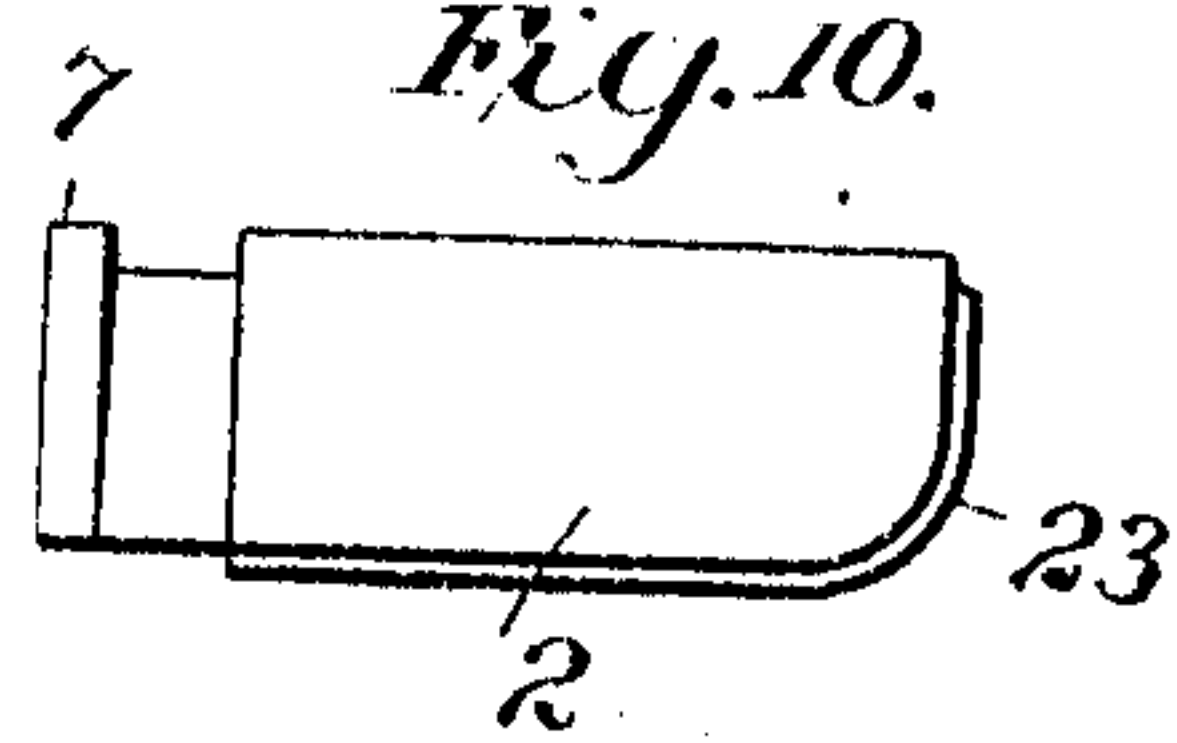
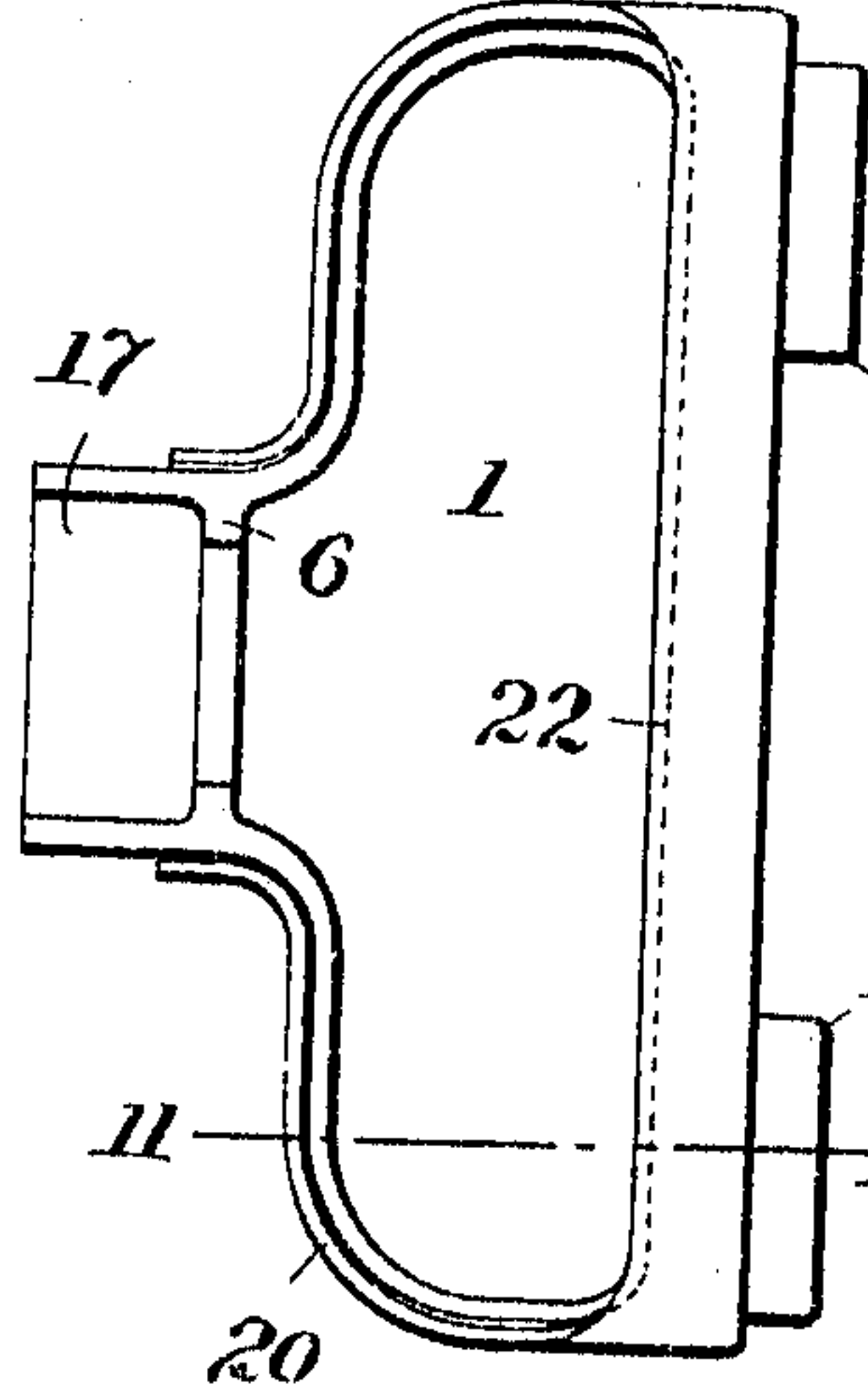


Fig. 11.

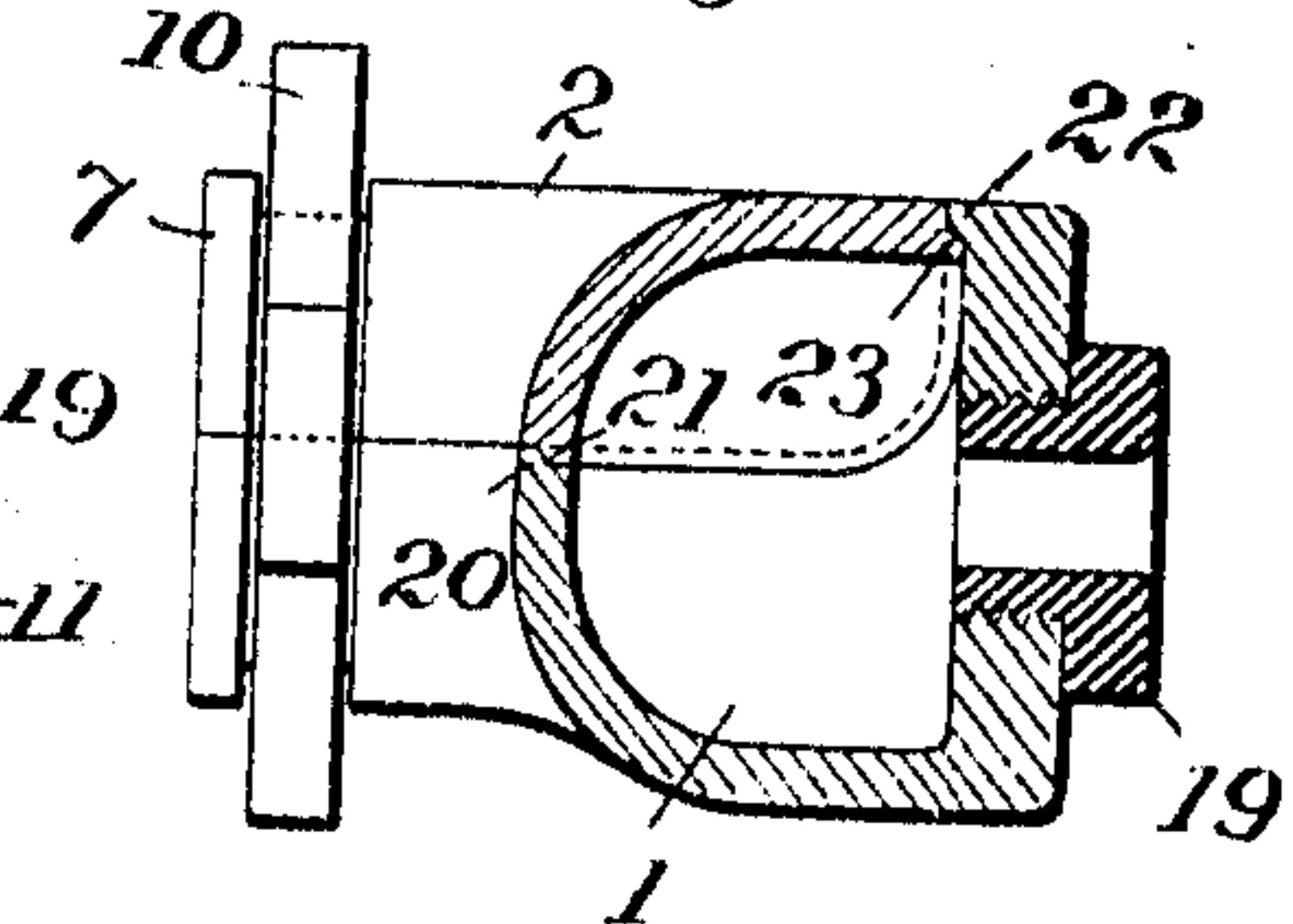


Fig. 12.

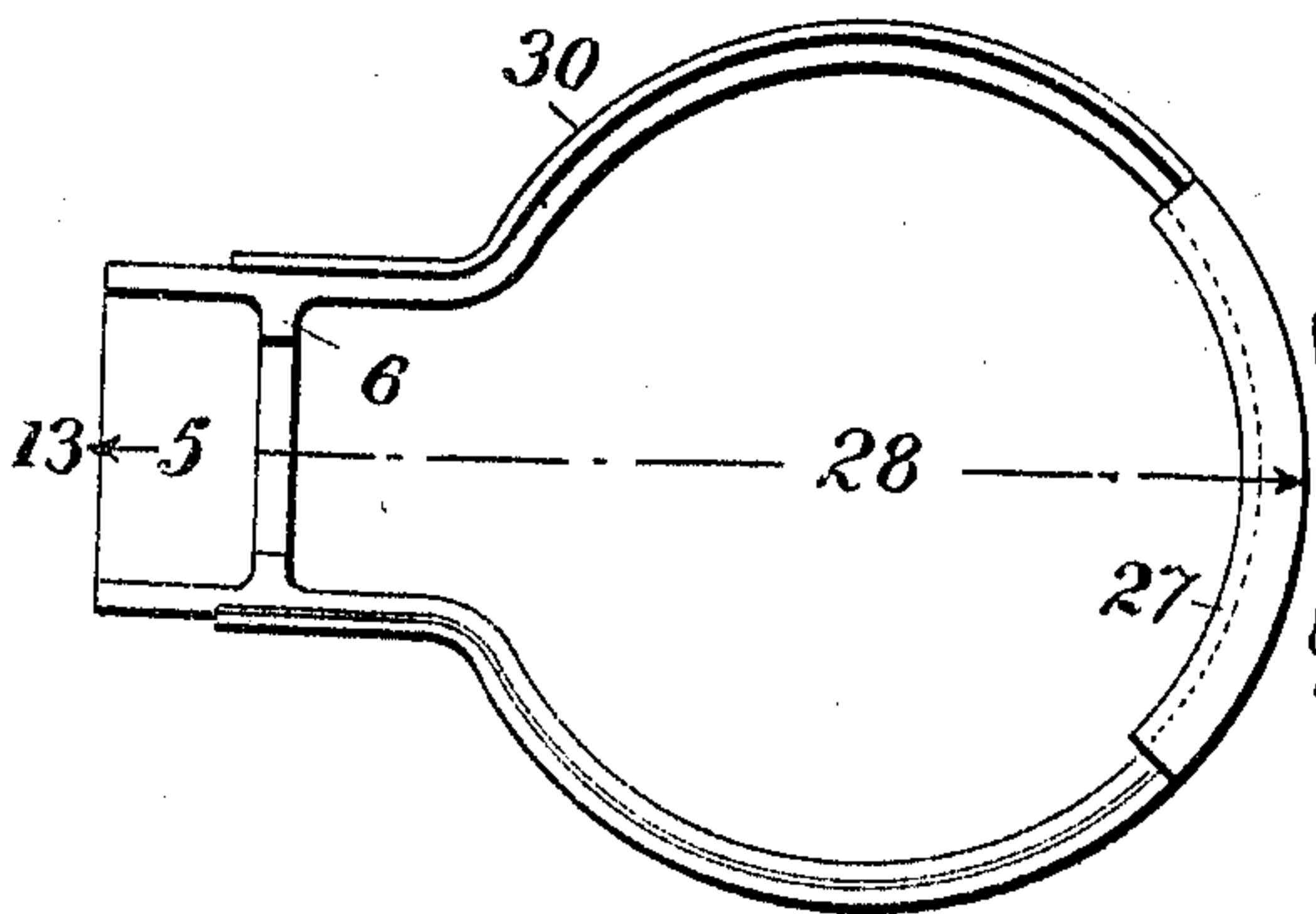


Fig. 16.

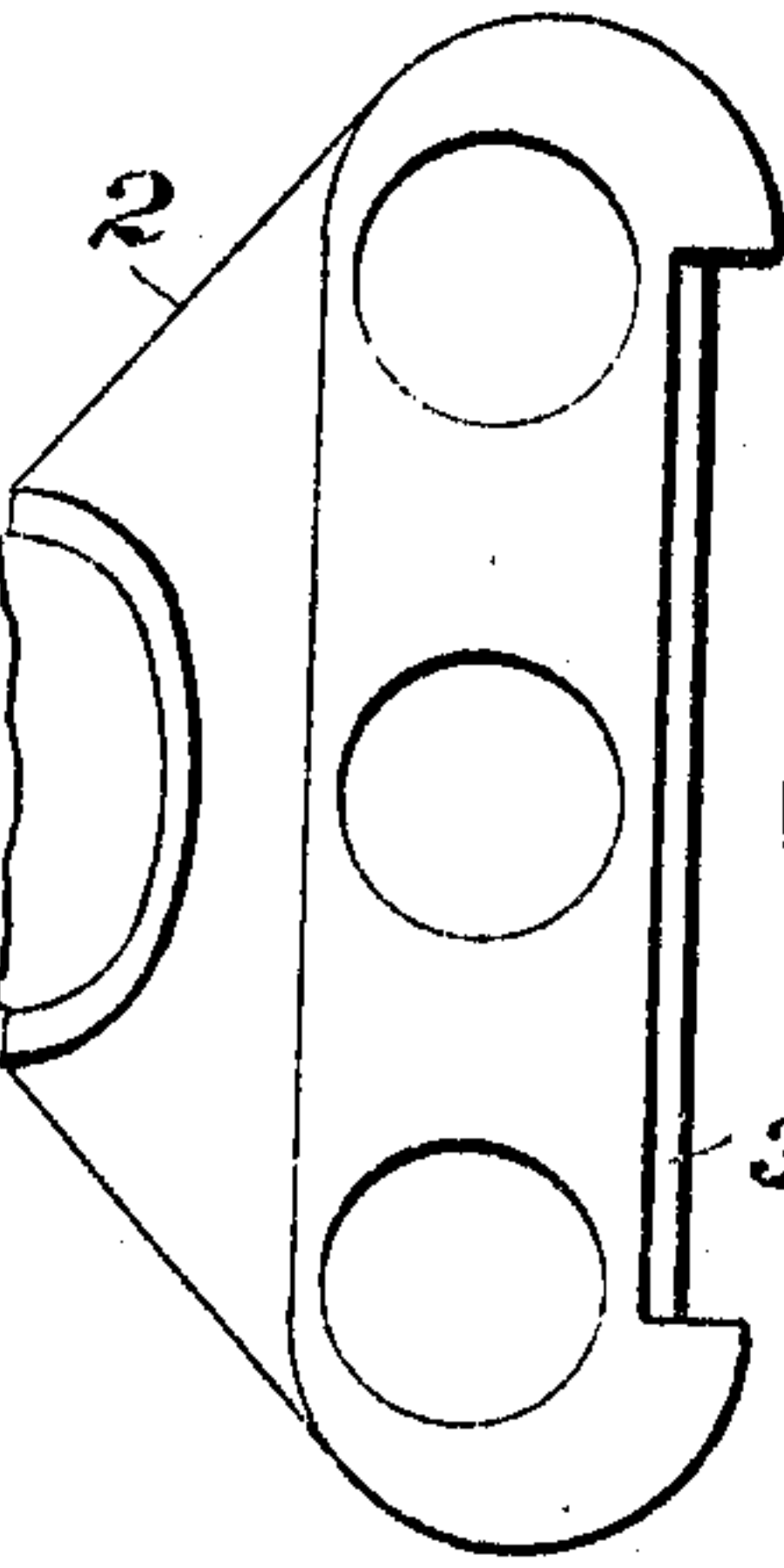


Fig. 15.

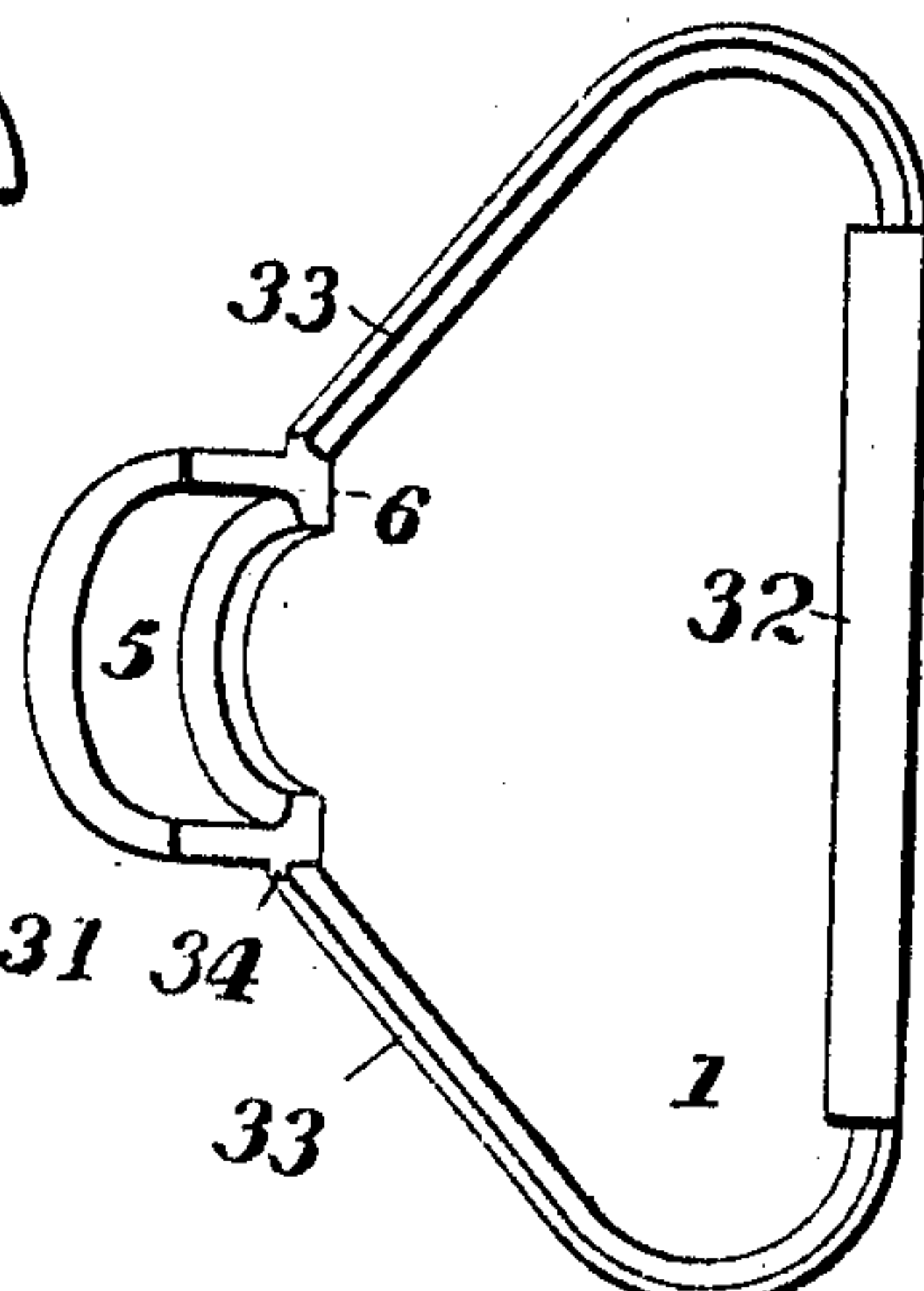


Fig. 13.

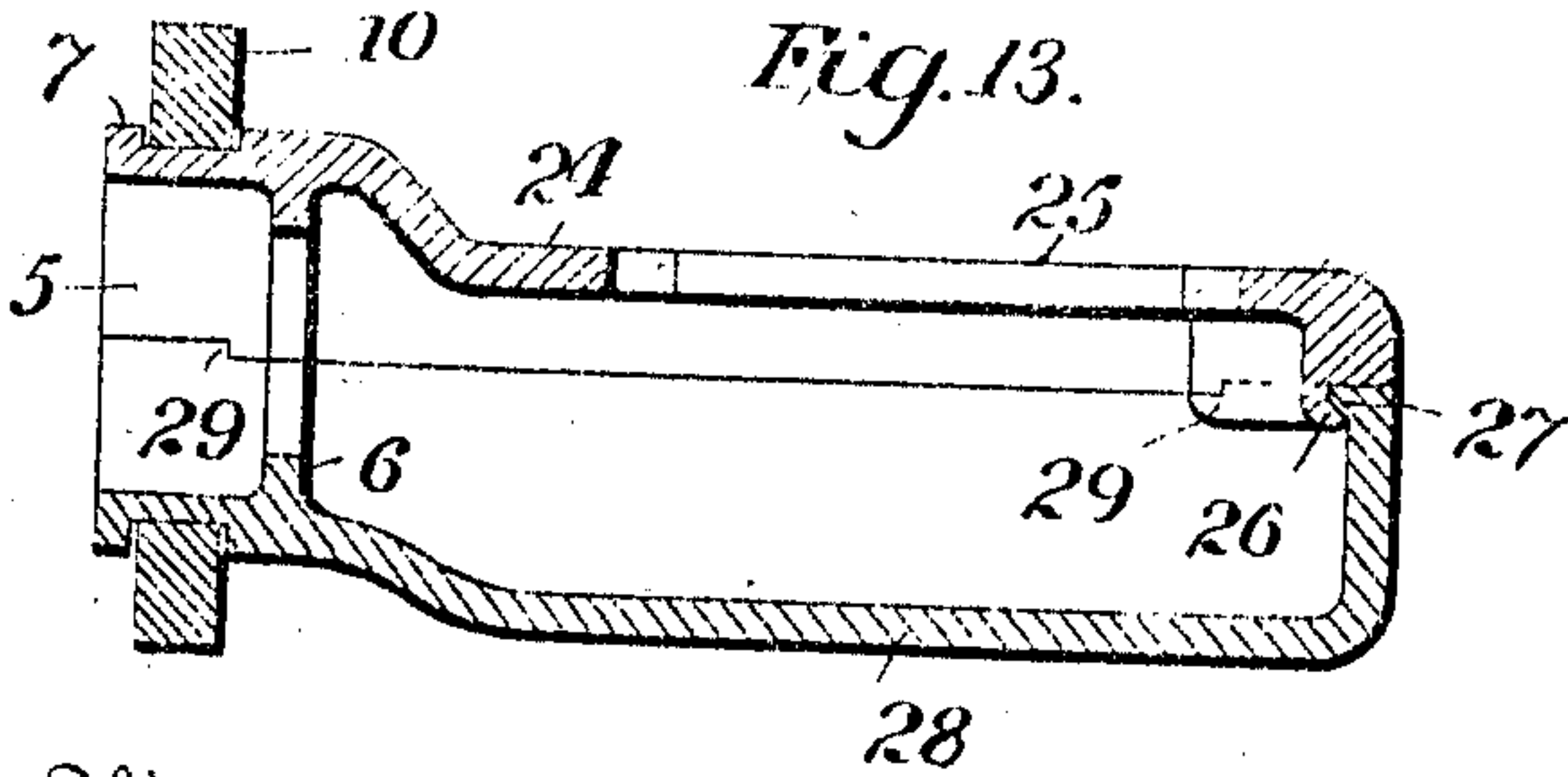
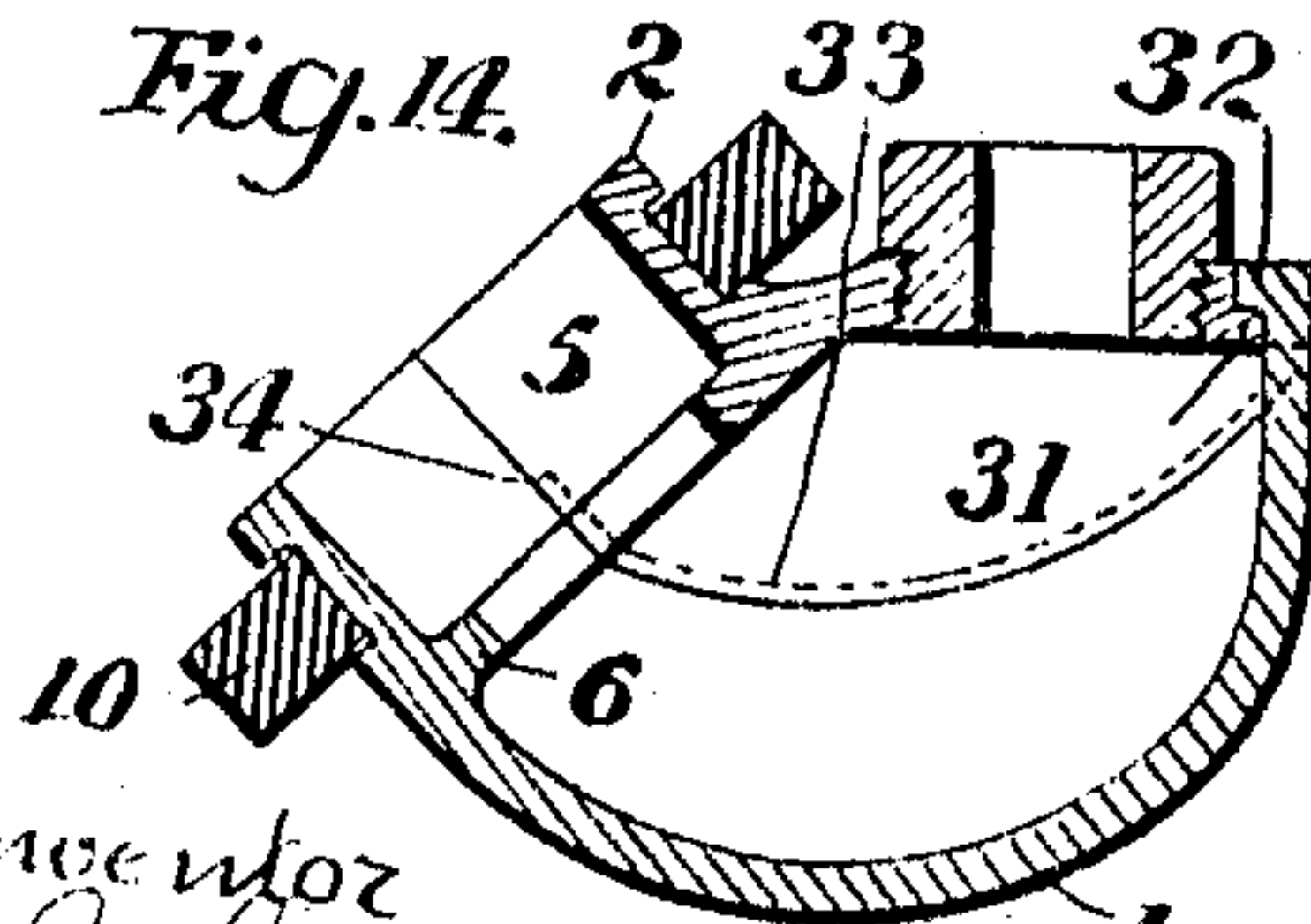


Fig. 14.



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UNITED STATES PATENT OFFICE.

JOHN E. GRAYBILL, OF YORK, PENNSYLVANIA.

CONNECTION-BOX FOR ELECTRIC CONDUITS.

988,461.

Specification of Letters Patent.

Patented Apr. 4, 1911.

Application filed July 29, 1908. Serial No. 445,946.

To all whom it may concern:

Be it known that I, JOHN E. GRAYBILL, a citizen of the United States, and resident of York, in the county of York and State of Pennsylvania, have invented certain new and useful Improvements in Connection-Boxes for Electric Conduits, of which the following is a specification.

This invention relates to improvements in boxes for inclosing electric wire conduits. It is particularly applicable to the terminals of such conduits but it may also be applied to connection or junction boxes interposed at points along the length of the conduit. Its object is to simplify the construction of such boxes and to provide means by which they may be easily applied and removed without disturbing the conduit itself.

The invention will be fully understood from the following description.

Figure 1 is a longitudinal section through one form of my invention applied to a terminal box; Fig. 2 is an end view of the box shown in Fig. 1; Fig. 3 is a plan view of the top section of the box shown in Fig. 1, looking from the bottom; Fig. 4 is a plan view of the bottom section of the box; Fig. 5 is a side view of the top section; Fig. 6 is an end view of the section shown in Fig. 5, looking from the right side of that figure; Fig. 7 is a cross section on the line 7—7 of Fig. 1; Fig. 8 is a plan view of another form of terminal box having two outlets for the electric wires, and the top section being removed; Fig. 9 is an inverted plan view of the top section to be used in the form shown in Fig. 8; Fig. 10 is a side view of the top section shown in Fig. 9; Fig. 11 is a cross section on the line 11—11 of Fig. 8, showing the top section in place; Fig. 12 is a plan view of the bottom section of a terminal box adapted to receive the switch, receptacle or other lighting fixture; Fig. 13 is a cross section on the line 13—13 of Fig. 12, showing the top of the box in place; Fig. 14 is a cross section of a modified form of terminal box showing the inlet for the conduit and the outlet for the wires at an acute angle to each other; Fig. 15 is a plan view of the bottom section of the box shown in Fig. 14; and Fig. 16 is a plan view of the top section of the box shown in Fig. 14.

Referring to Figs. 1 to 7 of the drawing, 1 designates the bottom section of the terminal box, and 2 designates the top section which fits on the bottom section and makes

up the box which incloses the end of the conduit. In this form the box is made tubular, having the top part flattened and the said top part being provided with an opening 3 carrying a screw-threaded plug 4 as the outlet for the electric wires. The electric conduit enters the box through the substantially cylindrical end 5 which is provided with an interior flange 6 a short distance from the end. It will be observed that this end or sleeve is divided longitudinally by the line of division between the upper and lower sections of the box and that the outer surface of the sleeve is elliptical in cross section. The outer end of this sleeve is provided with elliptical lugs or flanges 7, thus making a groove between these flanges and the shoulders 8 and 9 on the sections. A ring 10 having an elliptical opening of sufficient size to pass over the end 5 and its flanges 7 is placed in the groove formed on the end 5, and by turning it the short diameter of the ring makes contact with the long diameter of the end 5 and thus clamps the two sections together. The bottom section 1 is provided at the top of its closed end with a lug or flange 11, under which fits the lug 12 at the end of the top section 2, so that when the parts are placed together it will be impossible for the top section to move vertically. The division line between the top and bottom sections is made upon a curve at the closed end, as is clearly shown in Fig. 1. This division line extends longitudinally of the box and in the form shown in Figs. 1 to 6 is provided with the inclined surfaces 13, 14 which make contact and which because of their inclination tend to force the sections longitudinally of each other so as to bring the lugs 11 and 12 into close contact when the two sections are clamped together. The longitudinal meeting edges of the sections are provided with vertical flanges 15, 16 which fit together and prevent any lateral movement of the parts and make a close joint between the parts.

The modified form of terminal box shown in Figs. 8 to 11 has the same general features of construction as that described above and differs therefrom principally in the form of the box. In this instance there is a single inlet 17 for the electric wire conduit and there are two outlets 18, 19 for the electric wires, the box being extended laterally instead of being made in tubular form. The

two sections have the longitudinal division line with the vertical cooperating flanges 20, 21, and also have the cooperating lugs 22, 23. The end flanges 7 and the locking ring 10 are made in the same way and operate in the same way as in the form shown in Fig. 1. In this particular form there are no inclined portions of the meeting edges tending to force the locking lugs into contact, as disclosed in Fig. 1, but this is not necessary since the curvature of the flanges 20 accomplish the same result. In fact the inclined portions 13, 14 are not absolutely necessary in the form shown in Fig. 1 since the locking ring cooperating with the lugs 7 would hold the parts in proper position.

In Figs. 12 and 13 I have shown the invention applied to a terminal box adapted to carry a switch, receptacle or other lighting fixture, the box itself being shown as circular in outline and having the inlet 5 for the electric wire conduit. The top section 24 is provided with an opening 25 to receive the ordinary porcelain member of a switch or receptacle, and this top section is provided with a flange 26 at the end opposite the inlet, which flange engages a corresponding flange 27 on the lower section 28. The longitudinal meeting edges in this form of the device are made with notches 29 which serve to center the device and to hold the flanges 26, 27 in close engagement when the parts are clamped together by the ring 10. In this form also the meeting edges are preferably provided with vertical centering flanges 30.

In Figs. 14 to 16 I have shown a modified terminal box in which the inlet and the outlet are at an acute angle. In this form, as in the others, the top and bottom sections are divided upon longitudinal lines, have the engaging lugs 31, 32 at the closed end, and have the clamping ring 10 at the open end. The meeting edges are also provided with vertical flanges 33 which cooperate to center the parts and which in this instance are shown as terminating at 34, short of the open end, whereby relative longitudinal movement of the sections is prevented when they are in close contact.

It will be observed from Fig. 2 that the clamping ring 10 is made of irregular form on its exterior and the purpose of this is to provide means whereby the ring itself will indicate to the observer whether or not it has been turned to the clamping position. When the observer sees the ring in the position shown in Fig. 2 he will know that the parts of the box are securely clamped together, whereas if the flat side of the ring were on top he would know that the parts were not clamped. It is of course obvious that other indicating means might be used on the ring to show when it is in clamped position, such as a mark placed thereon at a

particular point. The advantage of this is that the inspector may by a mere glance see whether the parts are properly adjusted.

It will be observed that in all of the forms of the invention disclosed in the present application it is necessary to use only one clamping ring and that the parts may be easily and quickly brought together and securely and tightly fastened in place. Each form includes the interengaging means on the sections at one end and the separate clamp at the other end, and while this is shown as applied to a terminal box which has one closed end, the invention is not necessarily limited to such a box since the interengaging lugs might be provided upon one of the open ends of a junction box.

While I have described the ring 10 and the groove in which it fits as elliptical in form, it is to be understood that I do not use the term in its mathematical sense and that it is intended to include surfaces having one diameter longer than another so that by turning, the interior short diameter of the ring will bear upon the exterior long diameter of the groove and clamp the parts together.

The clamping ring may be made of spring steel so as to hold the parts in close engagement.

It will be understood that the engaging flanges serve not only to center the parts but also exclude dust and water. The flanges being vertical it will be clear that they provide effective means for shedding dust, water or moisture which may collect on the device.

What I claim is:

1. The herein described box for electric wire conduits comprising a plurality of separable longitudinal sections, the said sections being adapted to form a tubular conduit at one end and having interlocking means at the other end, and a locking means adapted to releasably secure the tubular ends together.

2. The herein described box for electric wire conduits comprising a plurality of separable longitudinal sections, the said sections being adapted to form a tubular conduit at one end and having interlocking means at the other end adapted to be brought into operation by a slight longitudinal movement, and a locking means adapted to releasably secure the tubular ends together and to prevent relative longitudinal motion of the sections.

3. The herein described box for electric wire conduits comprising a plurality of separable longitudinal sections the said sections having interlocking means at one end and a tubular portion at the other end having an exterior surface elliptical in cross section, and an elliptical ring adapted to fit on said tubular portion and bind the parts together by rotation thereon.

4. The herein described box for electric wire conduits comprising a plurality of separable longitudinal sections the said sections having interlocking lugs at one end adapted to be engaged or disengaged by slight longitudinal movement of the sections, means for clamping the other ends of the sections together, and inclined shoulders on said sections adapted to interengage and to give the sections relative longitudinal motion to bring the lugs into close contact when the sections are brought together.

5. The herein described box for electric wire conduits comprising two sections separable upon longitudinal lines the said sections having interlocking lugs at one end and interlocking longitudinal flanges upon the

meeting edges, and means for locking the other ends of said sections together.

6. A clamping means for a divided electric conduit box comprising a tubular portion of said box divided longitudinally and having an exterior elliptical in cross section, and an elliptical ring adapted to freely fit said tubular portion and by turning thereon to clamp the divided sections together, the said ring having indicating means on it to show when it is in its clamped position.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN E. GRAYBILL.

Witnesses:

EDWARD J. LOUCKS.

ADA ALLISON.