

H. HUBBELL.  
SEPARABLE ATTACHMENT PLUG.  
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994,517.

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Fig. 1.

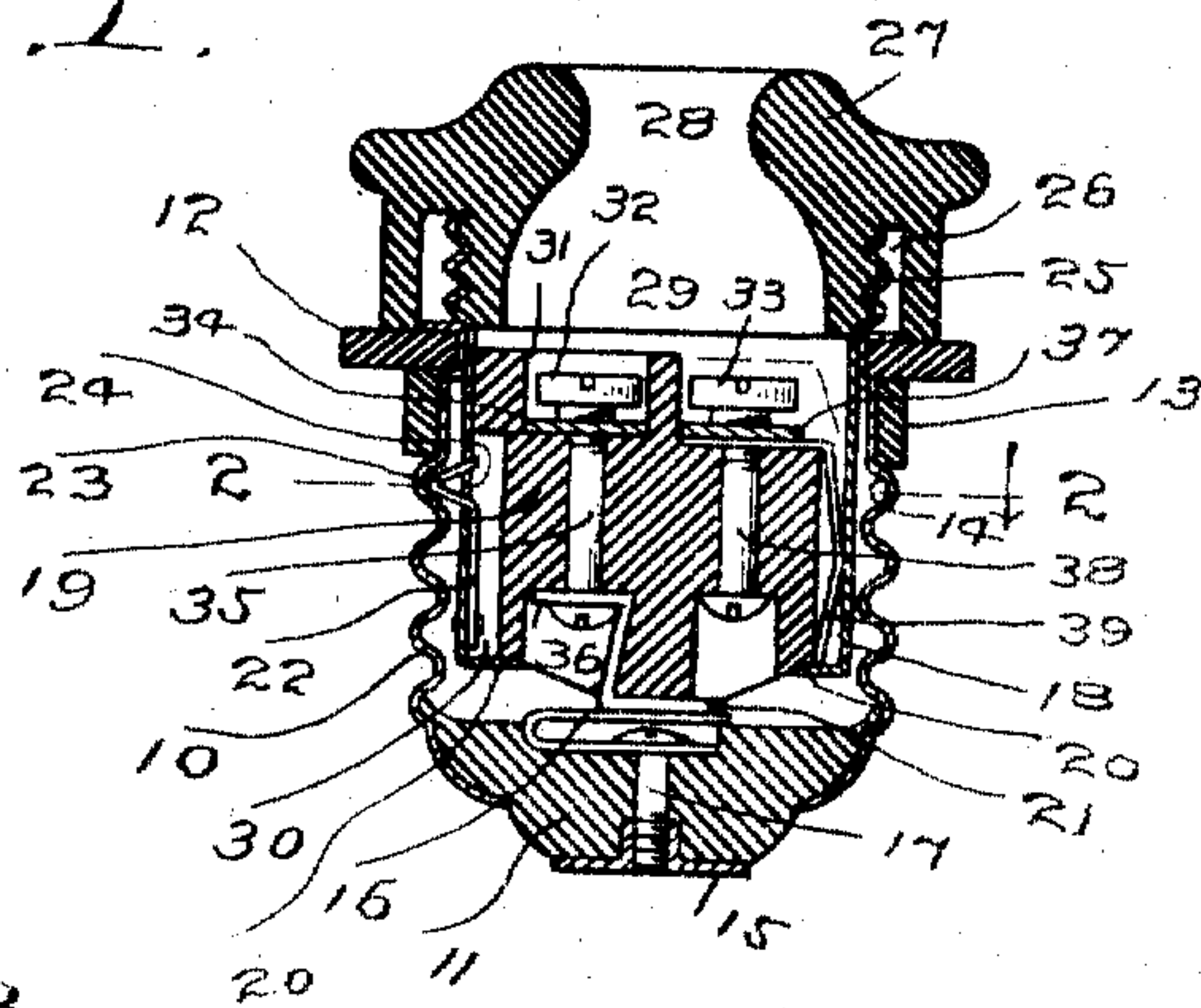


Fig. 3.

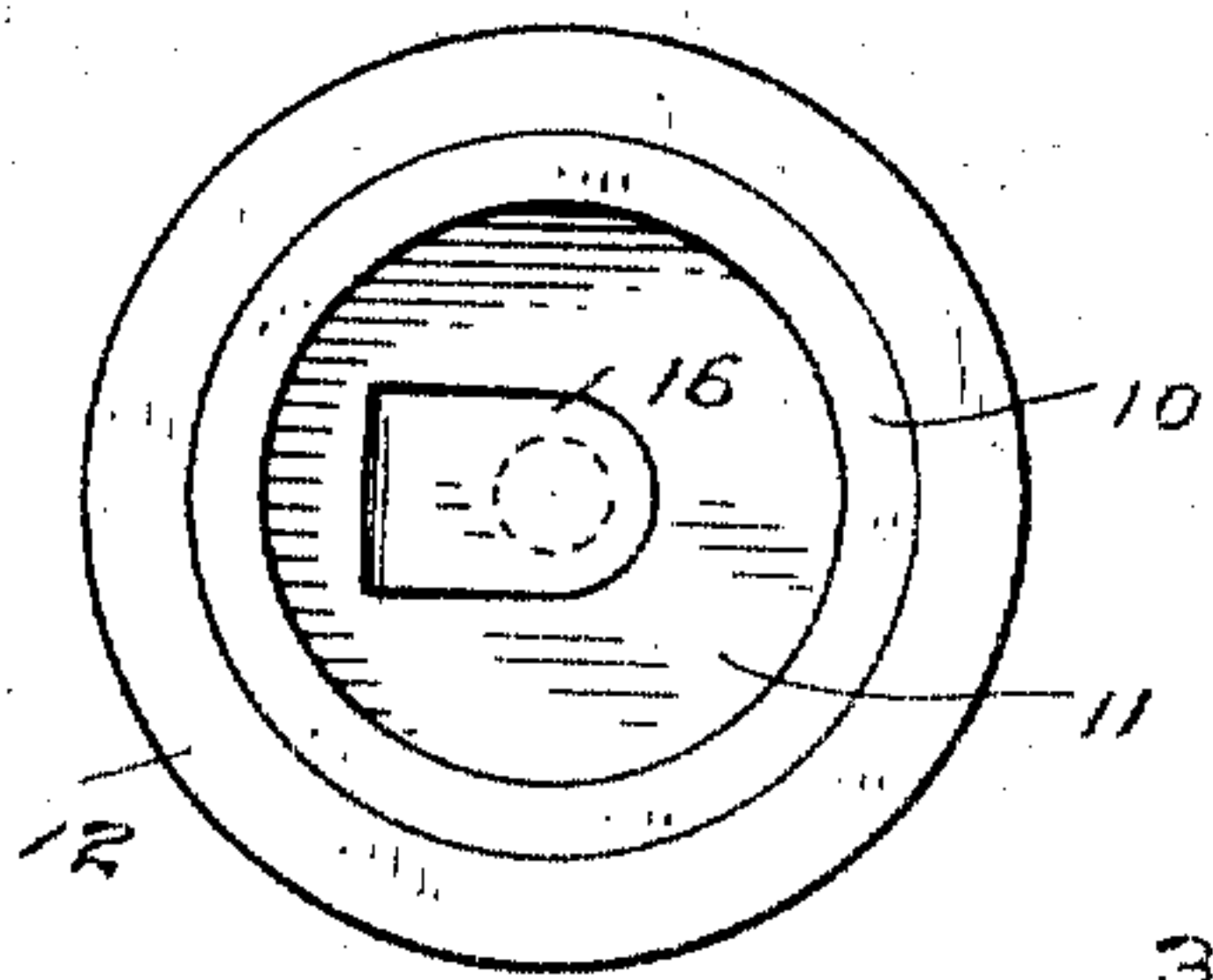


Fig. 4.

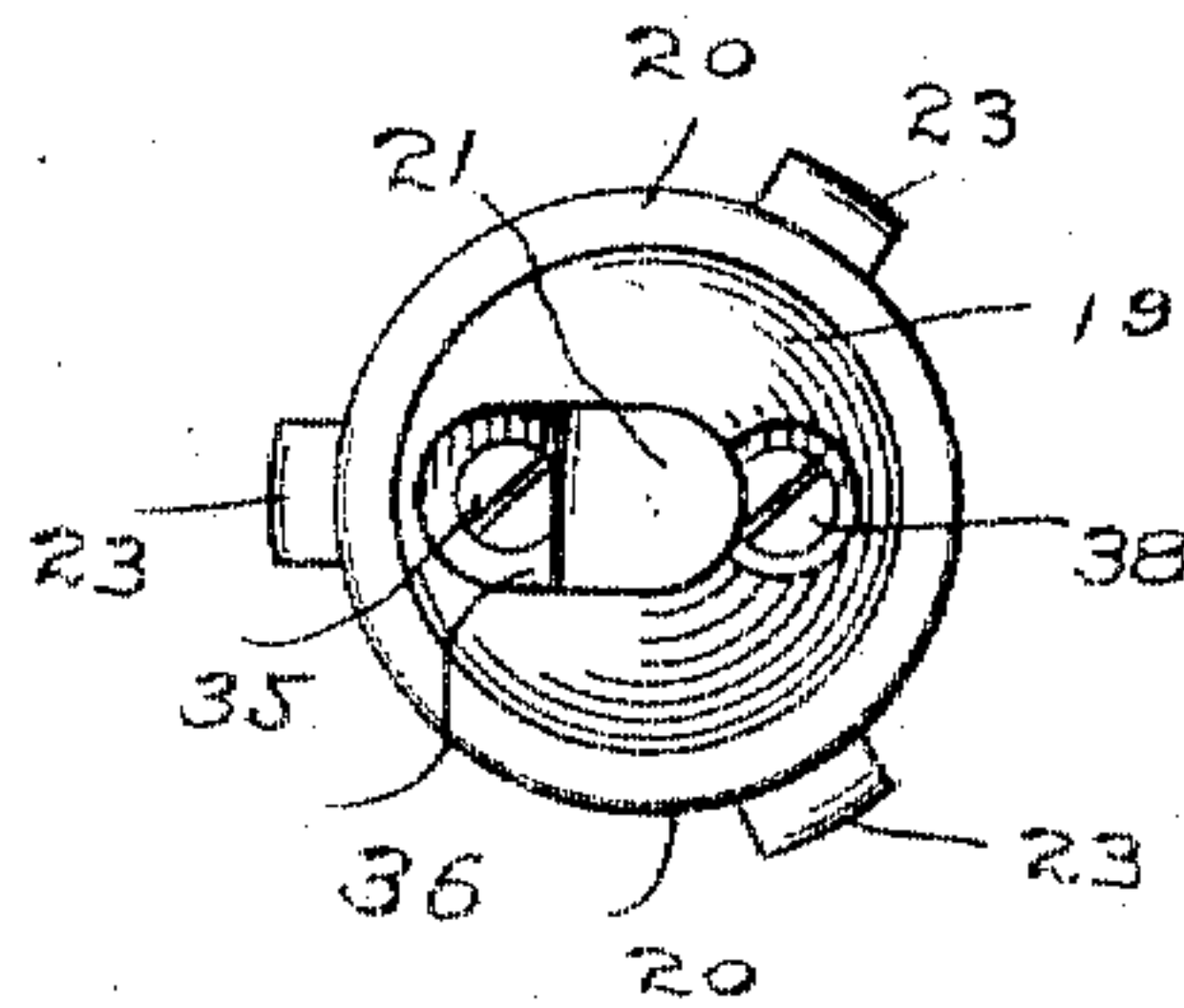
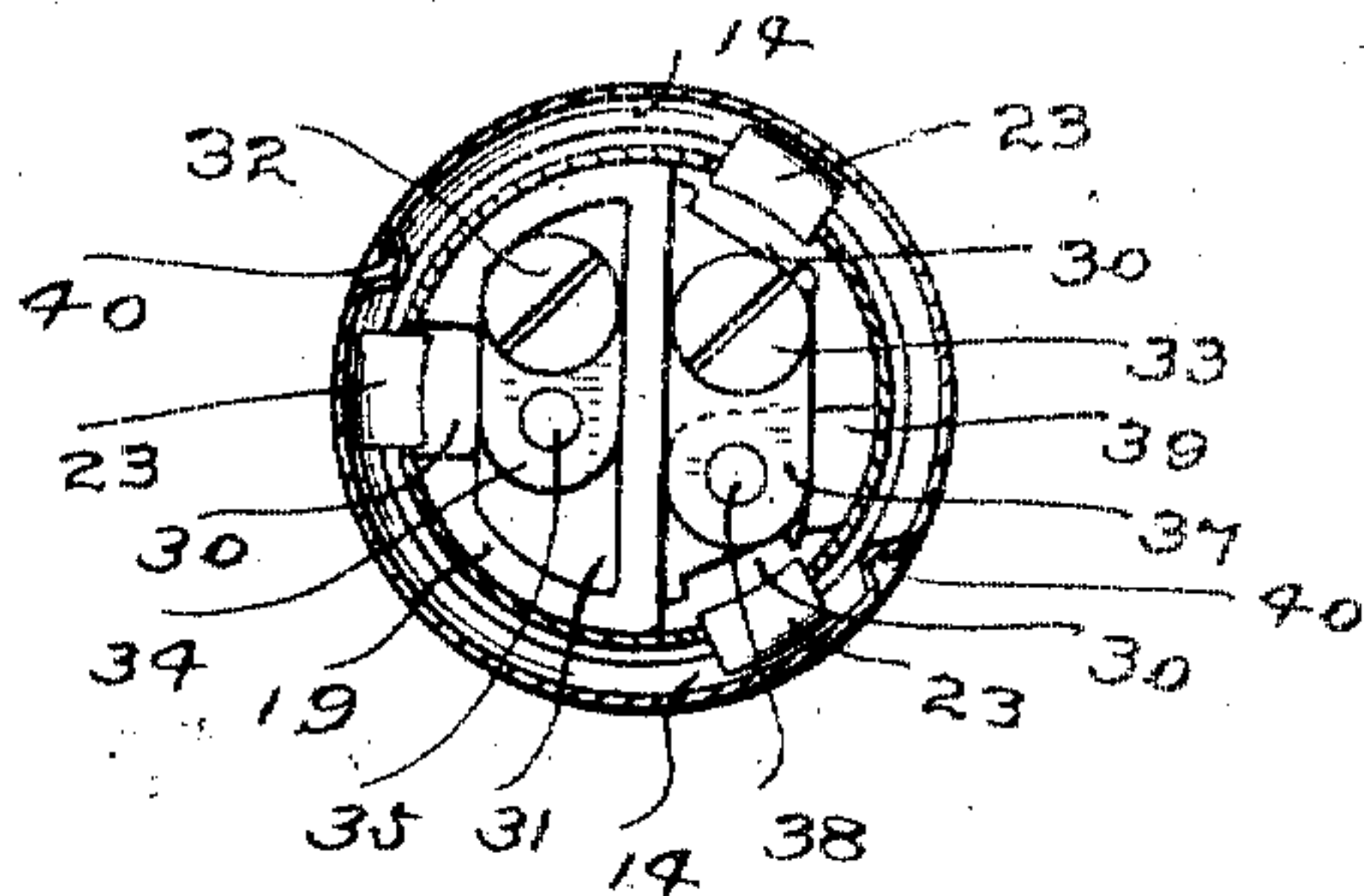


Fig. 2.



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SEPARABLE ATTACHMENT-PLUG.

994,517.

Specification of Letters Patent.

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*To all whom it may concern:*

Be it known that I, HARVEY HUBBELL, a citizen of the United States, residing at Bridgeport, county of Fairfield, State of Connecticut, have invented an Improvement in Separable Attachment-Plugs, of which the following is a specification.

This invention relates to separable attachment plugs and has for its object to simplify, cheapen and generally improve their construction and mode of operation.

With these ends in view I have devised the simple and novel attachment plug which I will now describe, referring to the accompanying drawing forming a part of this specification and using reference characters to indicate the several parts.

Figure 1 is a longitudinal section of my novel plug on an enlarged scale, the members being engaged; Fig. 2 a section on the line 2--2 in Fig. 1, looking in the direction of the arrow; Fig. 3 a plan view of the outer member showing the interior thereof; and Fig. 4 is an end view of the inner member.

10 denotes the screw shell which is adapted to engage a receptacle (not shown) and has rigidly secured at its forward end an insulating button or head 11. At the opposite end of the screw shell is a knurled insulating ring 12 for convenience in operation and below the knurled ring is an insulating sleeve 13, both of which are retained in place by closing the metal of the shell about them. At the inner end of the screw thread and contiguous to the insulating ring is a circumferential groove 14, the purpose of which will presently be explained. Upon the outer side of the insulating head is a contact plate 15 and on the inner side thereof is a contact spring 16, said contact plate and contact spring being connected by a screw 17 by which both are rigidly secured to the insulating head. The screw shell and the parts carried thereby have been referred to as the outer member. The inner member comprises an inner shell, indicated by 18, and an insulating block 19 which lies within the shell and is retained against forward movement by a flange 20 at the forward end of the shell. The insulating block projects through the shell and is provided at its forward end with a contact plate 21 which is adapted to engage contact spring 16 in the assembled position. The inner shell carries a plurality of locking springs 22, in the present instance three, which are provided with

projections 23 adapted to engage circular groove 14 in the screw shell to lock the members in the assembled position. I have shown these springs as riveted to the inner side of the inner shell and the projections as extending through openings 24 in the shell, although these special details of construction are immaterial so far as the principle of the invention is concerned. At the rear end of the inner shell is a screw thread 25 of greater diameter than the body of the shell, which is adapted to engage a corresponding thread in a groove 26 in a cap 27. This cap is provided with the usual central hole 28 through which the electric conductors (not shown) pass and with a recess 29 within which the conductors may be tied if preferred. Insulating block 19 is provided in its outer side with grooves 30 which receive the locking springs and in its rear end with a recess 31 which receives one of the binding screws, the wall of the recess insuring its perfect insulation from the other binding screw.

32 and 33 denote the binding screws. Binding screw 32 engages a plate 34 which is connected by means of a screw 35 to an extension 36 of contact plate 21, said screw securing both plate 34 and the contact plate to the insulating block. Binding screw 33 engages a plate 37 which is secured to the insulating block by a screw 38 and to which a contact plate 39 is secured which bears upon the inner shell. The course of the current is as follows: from binding screw 32 through plate 34, screw 35, contact plate 21, contact spring 16, screw 17 and contact plate 15 to the lamp and returning from the screw shell through locking springs 22 to the inner shell and through contact plate 39 and plate 37 to binding screw 33.

An important feature of the present invention is that both members of the plug may be removed together from a receptacle without separating the members. In order to accomplish this result I provide bosses or projections 40, two in the present instance, which project into groove 14 and lie in the path of projections 23 on the locking springs. To remove the plug from a receptacle the inner member is rotated by means of the knurled ring and the outer member is at once picked up and carried with it through the engagement of a projection on a locking spring with one of the bosses on the screw shell and the plug complete is



turned out. The two members are connected or disconnected when required by a straight push or pull, the projections on the locking springs passing readily over the threads and engaging the groove with sufficient pressure to retain the members securely together under the ordinary conditions of use but permitting them to be separated by a moderate pull. In connecting the members, should a projection on a spring come in alinement with one of the bosses, one of the members is turned slightly and complete engagement will take place.

Having thus described my invention I claim:

1. A screw shell having at its forward end an insulating head carrying a contact plate and a contact spring connected thereto, and having on its inner side a circular groove and bosses in said groove.

2. An attachment plug comprising a screw shell having at its forward end an insulating head carrying a contact plate and a contact spring connected therewith and having on its inner side a circular groove, an inner shell carrying locking springs with projections engaging said groove, an insulating block within said shell carrying a contact plate adapted to engage the contact spring and electrical connections.

3. An attachment plug comprising a screw shell having at its forward end an insulating head carrying a contact plate and a contact spring connected therewith and having on its inner side a circular groove and bosses in said groove, an inner shell carrying locking springs with projections engaging said groove, said projections engaging the bosses when the inner shell is rotated, for the purpose set forth, an insulating block within said shell carrying a contact plate adapted to engage the contact spring and electrical connections.

4. An attachment plug comprising a screw shell having an inner circular groove and bosses in said groove, an insulating head

at the forward end of said shell having a contact plate and a contact spring secured thereto, an inner shell carrying locking springs adapted to engage said groove and bosses, for the purposes set forth, an insulating block within said shell carrying a contact plate adapted to engage the contact spring and electrical connections.

5. An attachment plug comprising a screw shell having a circular groove and bosses therein and at its forward end an insulating head carrying a contact plate, an inner shell carrying locking springs adapted to engage said groove and bosses, an insulating block in the inner shell, binding screws carried by said block and electrical connections from one binding screw to the screw shell and from the other binding screw to the contact plate.

6. An attachment plug comprising a screw shell having a circular groove and bosses therein and an inner shell carrying locking springs having projections adapted to engage said groove to detachably secure said shells together and to engage said bosses so that the shells may be detached from a socket without separation from each other.

7. In an attachment plug, the combination with a screw shell having a circular groove and bosses therein and an insulating head carrying a contact plate and contact spring, of an inner shell carrying locking springs having projections adapted to engage said groove and bosses, for the purposes set forth, an insulating block in the inner shell carrying a contact plate adapted to engage the contact spring and electrical connections.

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

HARVEY HUBBELL.

Witnesses:

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S. W. ATHERTON.