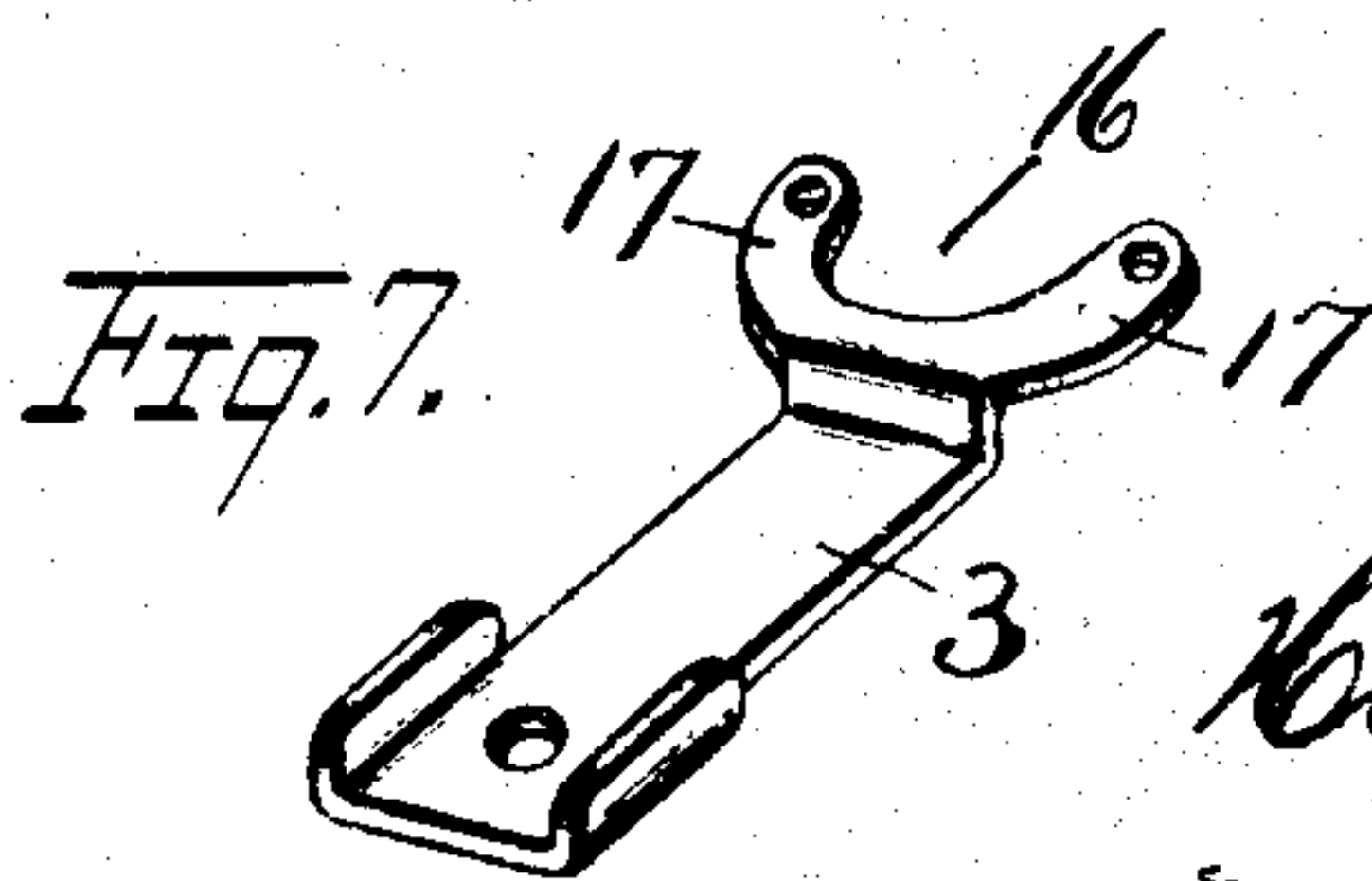
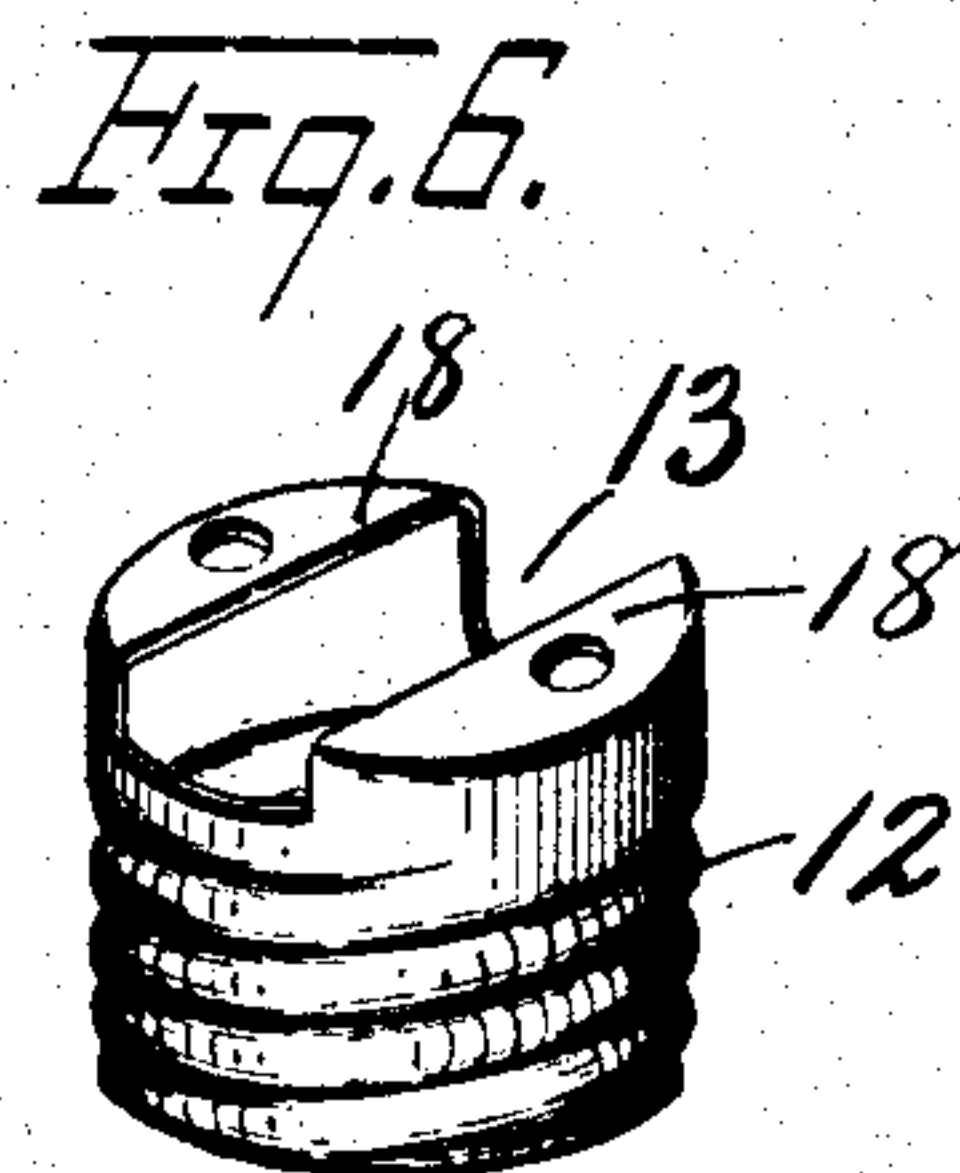
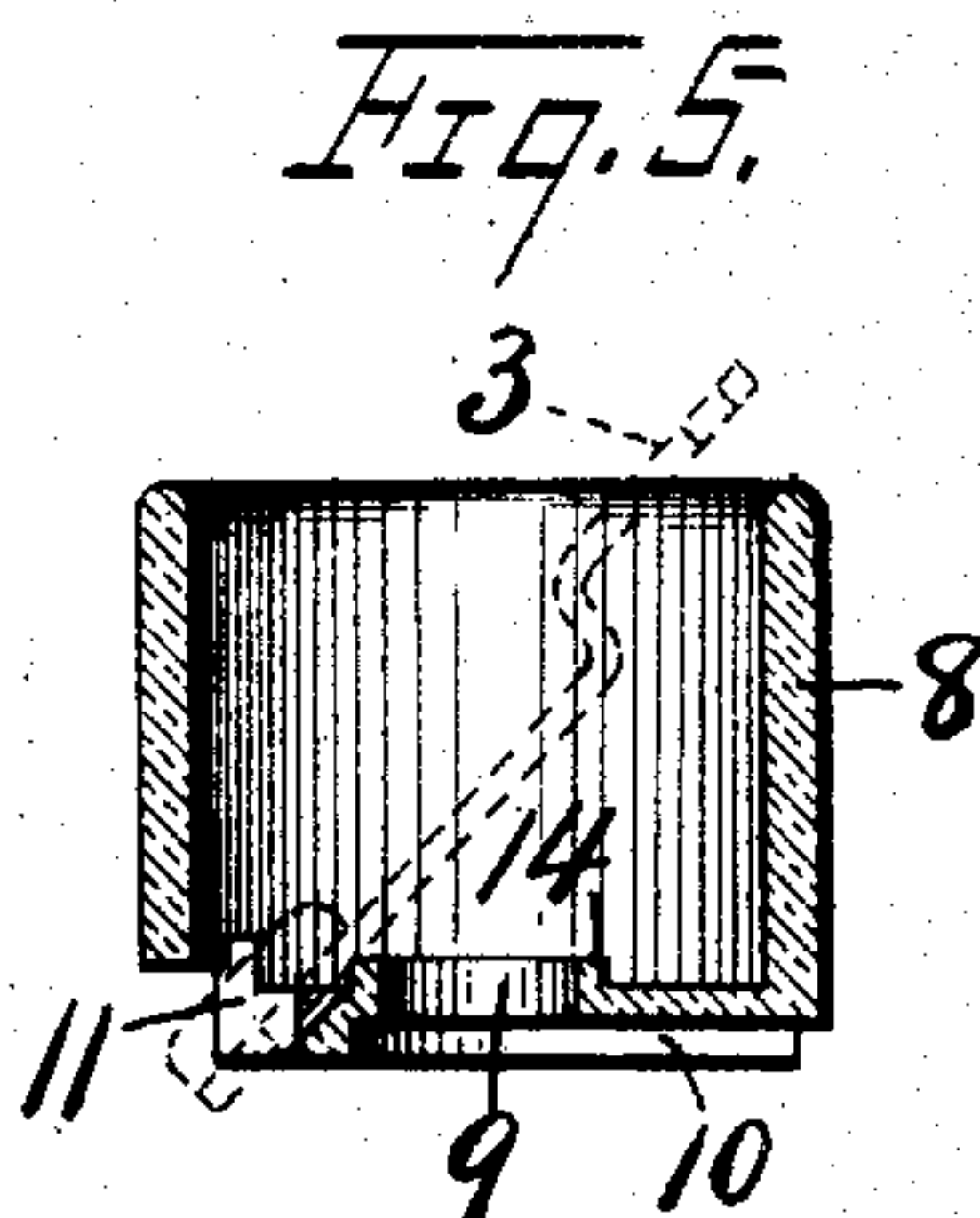
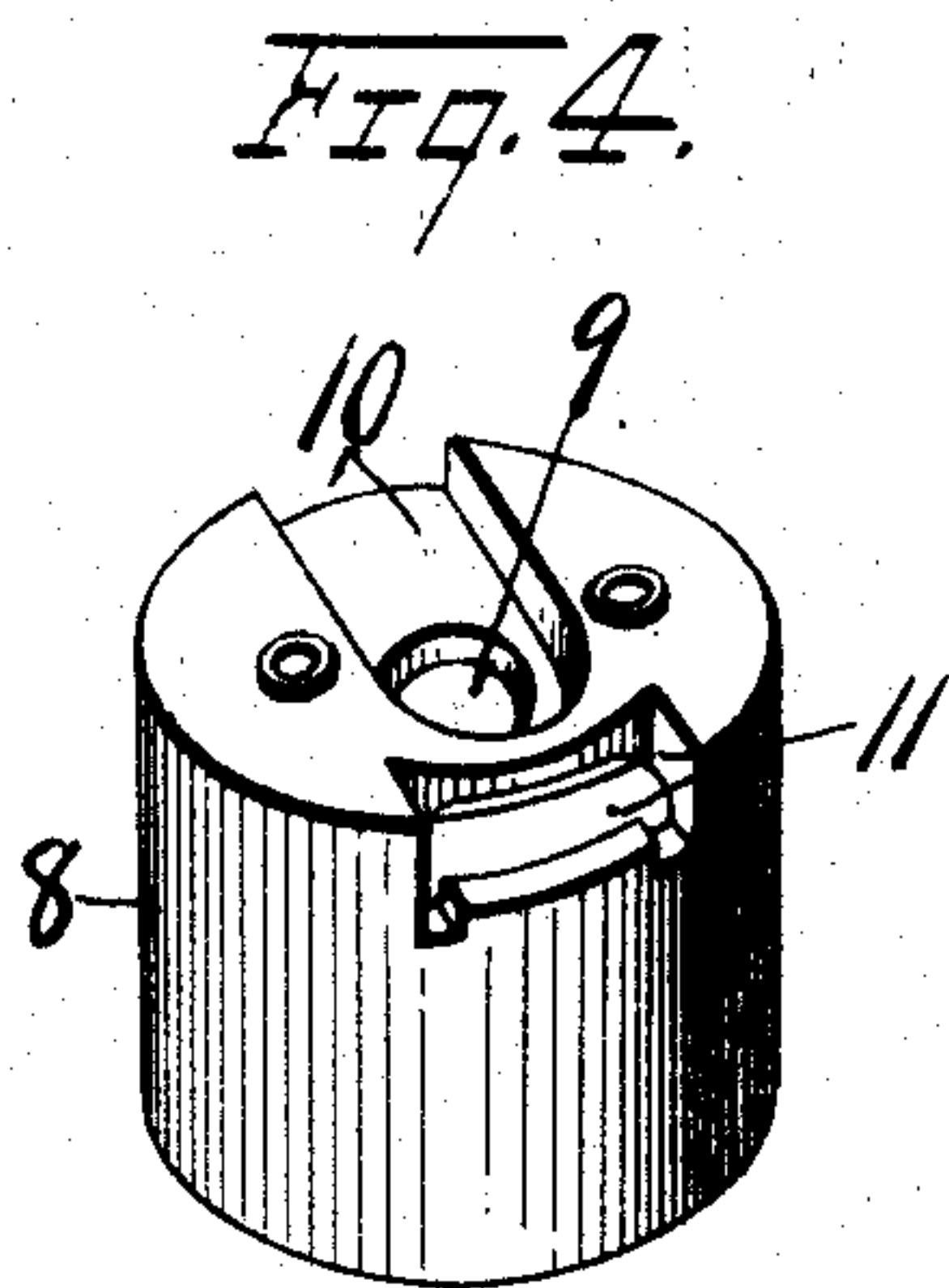
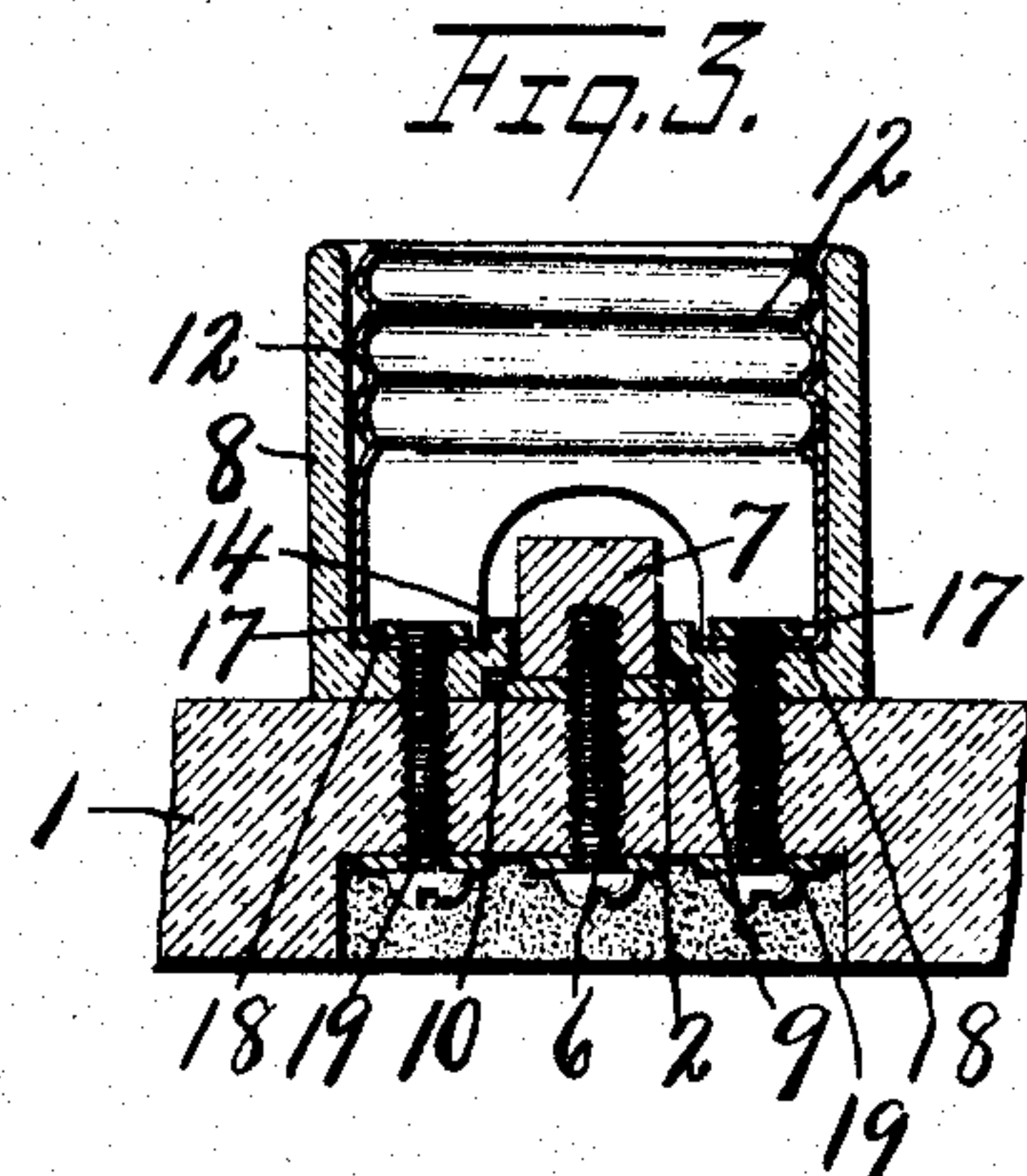
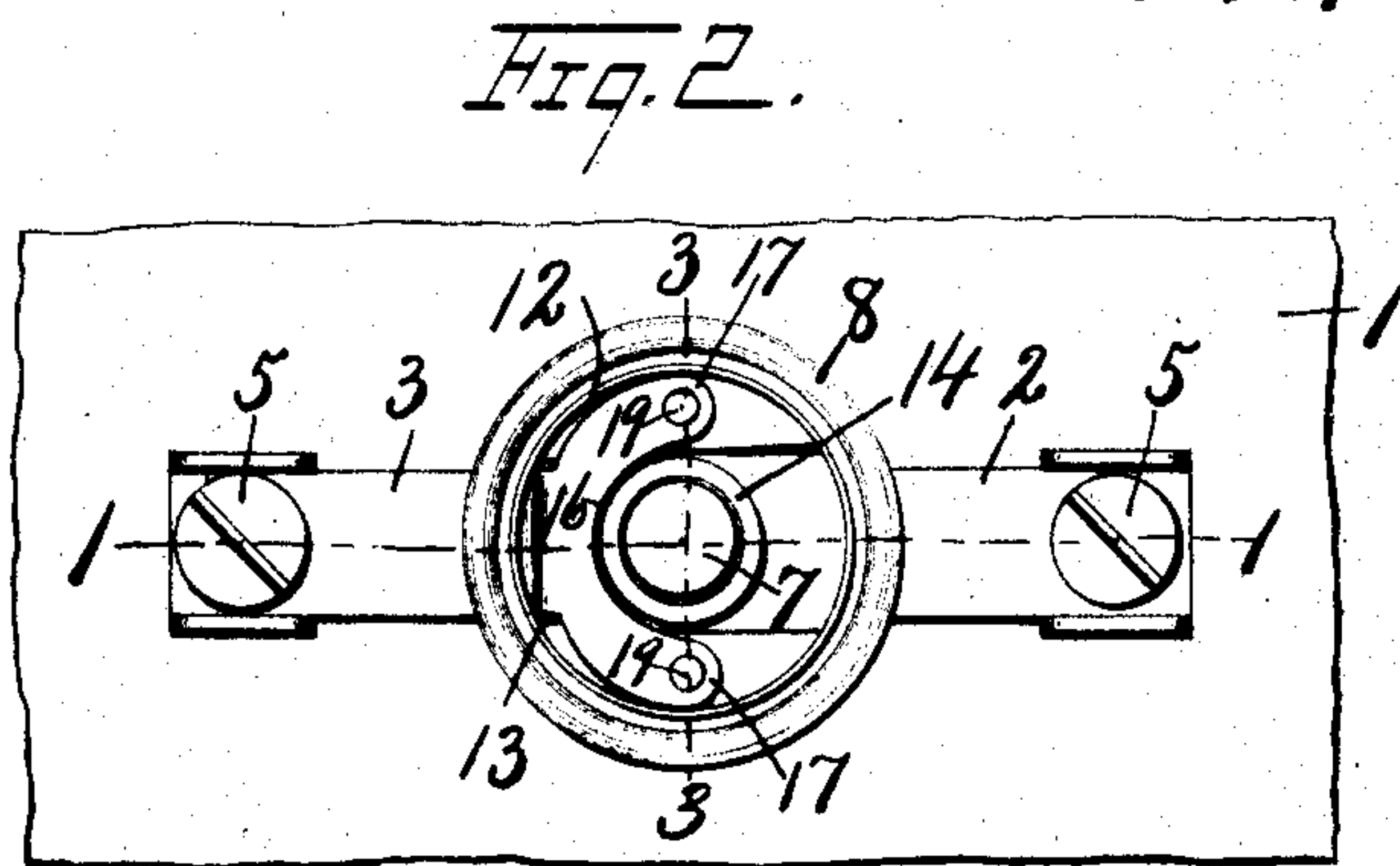
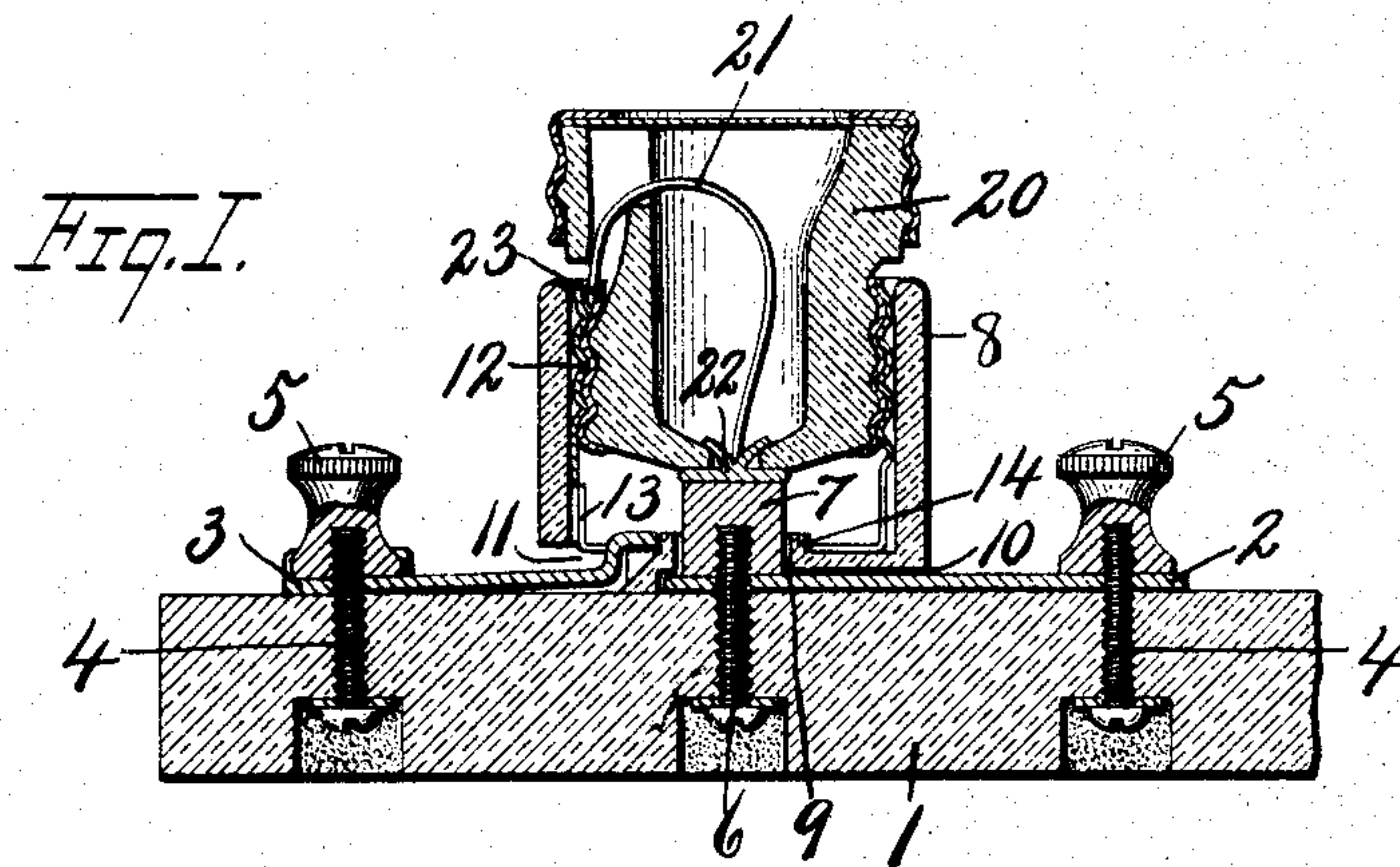


No. 813,353.

PATENTED FEB. 20, 1906.

H. B. CROUSE.
INSULATOR.

APPLICATION FILED APR. 18, 1904.



Witnesses:
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UNITED STATES PATENT OFFICE.

HUNTINGTON B. CROUSE, OF SYRACUSE, NEW YORK.

INSULATOR.

No. 813,353.

Specification of Letters Patent.

Patented Feb. 20, 1906.

Application filed April 18, 1904. Serial No. 203,732.

To all whom it may concern:

Be it known that I, HUNTINGTON B. CROUSE, of Syracuse, in the county of Onondaga, in the State of New York, have invented new and useful Improvements in Insulators, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to improvements in insulators, and is particularly useful in connection with switchboards for receiving and supporting metal sockets for fuse-plugs, lamps, and similar devices which are adapted to be removably secured in the metal sockets for closing the electrical circuit through the fuse-wire or lamp.

The object of my present invention is to inclose and protect the metal socket from contact with external or foreign objects which might injure the socket or establish any short circuits between the terminals of the power-circuit.

Another object is to enable the socket to be secured to the switchboard or base by the same means which secures one of the terminals of the power-circuit to the metal socket.

Other objects and uses will appear in the following description.

In the drawings, Figure 1 is a sectional view taken on line 1 1, Fig. 2, showing a fuse-plug in place. Fig. 2 is a top plan of my improved socket, showing it as operatively mounted upon and connected to a suitable switchboard or base and the terminals of an electric circuit, the fuse-plug being removed. Fig. 3 is a transverse sectional view taken on line 3 3, Fig. 2. Fig. 4 is an inverted perspective view of my improved insulator. Fig. 5 is a transverse vertical section through the same, showing one of the terminals in dotted lines as being removed or inserted through an opening in the base of the insulator. Fig. 6 is an inverted perspective view of the detached metal socket used in connection with my improved insulator. Fig. 7 is a perspective view of one of the terminals which is adapted to be electrically connected to the socket and engages the base of the insulator, whereby the same means which secures the terminal to the metal socket also holds the insulator in place.

Similar reference characters indicate corresponding parts in all the views.

In carrying out the objects stated I provide a base 1 of insulating material, upon which is mounted a pair of terminals 2 and 3

of an electric power-circuit, said terminals being secured to the base 1 by suitable fastening means, as screws 4, and binding posts or nuts 5. The terminals 2 and 3 extend toward each other from their fastening means 4, and the inner end of the terminal 2 is also secured to the base by a suitable fastening device, as a screw 6. These terminals each consist of thin copper bars or plates of suitable width to lie flat upon the base 1, and upon the inner end of the terminal 2 is secured a metal boss or contact-piece 7, which is held in place by the fastening-screw 6, as seen in Figs. 1 and 3. Mounted upon the base 1, so as to inclose the inner adjacent ends of the terminals 2 and 3, is a cup-shaped insulator 8, having its bottom resting directly upon the same face of the base to which the terminals 2 and 3 are secured and provided with a central opening 9 and recesses 10 and 11. The central opening 9 receives the projecting boss or contact-piece 7, which is in electrical connection with the terminal 2, and therefore the bottom of the insulator 8 entirely surrounds the inner end of the contact-piece 7, adjacent to the terminal 2, and I usually provide the bottom with an inwardly-projecting annular flange 14, surrounding the central opening, the purpose of which will be presently described. The recess 10 forms a continuation of the opening 9, but is somewhat larger diametrically than said opening 9 and extends laterally in the lower face of the bottom of the insulator and through one side for receiving the terminal plate 2, this recess being of sufficient depth to permit the remaining portions of the bottom of the insulator to rest directly upon the adjacent face of the base 1 and is of substantially the same or of slightly greater width than the terminal 2. It now appears that the terminal 2 extends from the central contact-piece 7 laterally through the recess 10 and beyond the one side of the insulator. The recess 11 is formed in the side and bottom of the insulator at the side of the central opening 9 opposite to the recess 10 and is cut entirely through the bottom and side, so as to form an opening entirely through the insulator at this point for receiving one end of the terminal 3.

One of the objects of this insulator is to receive and inclose a metal socket 12, which is placed in the open outer end of the insulator and fits somewhat loosely therein, with its base resting upon the bottom of the insulator, but at opposite sides of the annular

flange 14, so as to avoid electrical contact with the boss and adjacent portions or contact-piece 7, it being understood that the bottom of the metal socket 12 is cut away at 13 to fit around the flange 14 and also for the purpose of permitting the removal and insertion of the terminal 3. The inner end of this terminal 3 extends through the cut-out 13 in the metal socket 12 and also through an opening formed by the recess 11 and is forked or bifurcated at 16 to form opposite arms 17, which fit around the flange 14 and rest upon the bottom flanges 18 of the metal socket 12.

The base 1, flanges 18, and arms 17 are formed with apertures for receiving clamping bolts or screws 19, whereby the insulator 2, metal socket 12, and inner end of the terminal 3 are secured to the base 1, the apertures in the arms 17 being threaded to receive the ends of the screws 19. It is now apparent that the arms 17 of the terminal 3 are drawn into close electrical contact with the flanges 18, and thus electrically connect the terminal 3 to said metal socket, while the terminal 2, as previously described, is electrically connected to the contact-piece or boss 7.

The fuse-plug 20 is provided with a fuse-wire 21, having one end electrically connected to a contact-piece 22 centrally on the inner end of the plug, which contacts with the contact-piece 7, and thereby electrically connects one end of the fuse-wire to the terminal 2. The other end of the fuse-wire is electrically connected to an annular metal ring 23, surrounding the periphery of the fuse-plug 20, and which is in electrical contact with the metal socket 12 when the fuse-plug is in operative position, thereby electrically connecting this end of the fuse-wire to the terminal 3, and thus completing the electrical connection between the terminals 2 and 3 through the fuse-wire.

The metal socket 12 and annular band 23 are preferably screw-threaded, so that the plug may be screwed into the metal socket to bring the contact member 22 in contact with the part 7.

It will be observed that the extreme width of the inner end of the terminal 3 across the arms 17 is greater than the width of the recess or cut-out 13 in the metal socket and is also greater than the width of the opening 11, while the outer end of said terminal is somewhat less in width than said cut-out and opening, so that in assembling the parts it is necessary to insert the terminal 3 through the open ends of the metal socket 12 and insulator 2 when the plug 20 is removed, the outer end of the terminal passing readily through the cut-out 13 until the arms 17 engage the inner walls of the metal socket, and in like manner the outer end of the terminal 3 passes readily through the opening 11 and may then be brought to a horizontal position

at right angles with the axis of the socket, as seen in Fig. 1, so as to lie flatwise upon the adjacent face of the base 1, with the arms 17 also lying flatwise upon the flanges 18. After the terminal 3 has been placed in position, as just described, the insulator, with the metal socket and terminal 3, is placed upon the base 1 and fastened to said base by the screws 19.

In removing the insulator it is only necessary to remove the screws 19 and the screw 4, which holds the terminal 3 in place, whereupon the insulator 2, the metal socket 12, and terminal 3 may be removed together and then the socket and terminal may be removed from the insulator in the reverse order from that described for assembling these parts.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination with a base of insulating material, of a cup-shaped insulator resting on the base and provided with a central aperture in its bottom, a metal socket loosely fitted in the insulator and a pair of terminals, one of which is electrically connected to the metal socket and the other bearing on the base and extending outside of the insulator and provided with a contact-piece projecting through the central aperture in the insulator and a screw passing through the base and connecting said terminal and said contact-piece.

2. The combination with a base of insulating material, a cup-shaped insulator having its bottom resting upon the base and provided with a central aperture and an annular flange surrounding said aperture, an electric contact-piece secured to the base and projecting through said aperture, a metal socket loosely fitted in the insulator and removable therefrom, and a terminal in electrical contact with the socket and secured to the base said terminal having forked ends fitting around said flange.

3. A cup-shaped insulator having an end wall or bottom provided with a central opening surrounded by an annular flange in combination with a metal socket having bottom flanges resting upon the bottom of the insulator at opposite sides of the flange.

4. An insulator for receiving metal sockets for fuse-plugs and similar devices, said insulator consisting of a cylindrical shell of insulating material having an end wall provided with a central opening, and a recess in its end face extending laterally from the opening through the side of the shell, said bottom being also provided with an annular flange surrounding the opening.

5. An insulator consisting of a cylindrical shell of insulating material having a transverse wall, with a central opening there-through and with a recess in one of its end faces extending laterally through one side of

the shell, and having an annular flange surrounding the central opening, in combination with a socket loosely fitted in the insulator, and formed with bottom flanges, a terminal
5 having a bifurcated end embracing said flange of the insulator and resting on the flanges of the socket, a second terminal extending under the insulator, a base on which the insulator is mounted, a screw extending through
10 said base and through said second terminal and a contact-block arranged in the central opening of the insulator, said screw screwing into said contact-block, substantially as described.

15 6. An insulator for the purpose described, consisting of a cylindrical shell of insulating

material having a transverse wall provided with a central opening therethrough and with a recess in one of its end faces extending laterally through one side of the shell, said shell
20 being also provided with an additional opening at one side of the central opening and extending through the adjacent side of the shell, and an annular flange surrounding the central opening and separating it from the additional
25 opening.

In witness whereof I have hereunto set my hand this 15th day of April, 1904.

HUNTINGTON B. CROUSE.

Witnesses:

H. E. CHASE,

HOWARD P. DENISON.