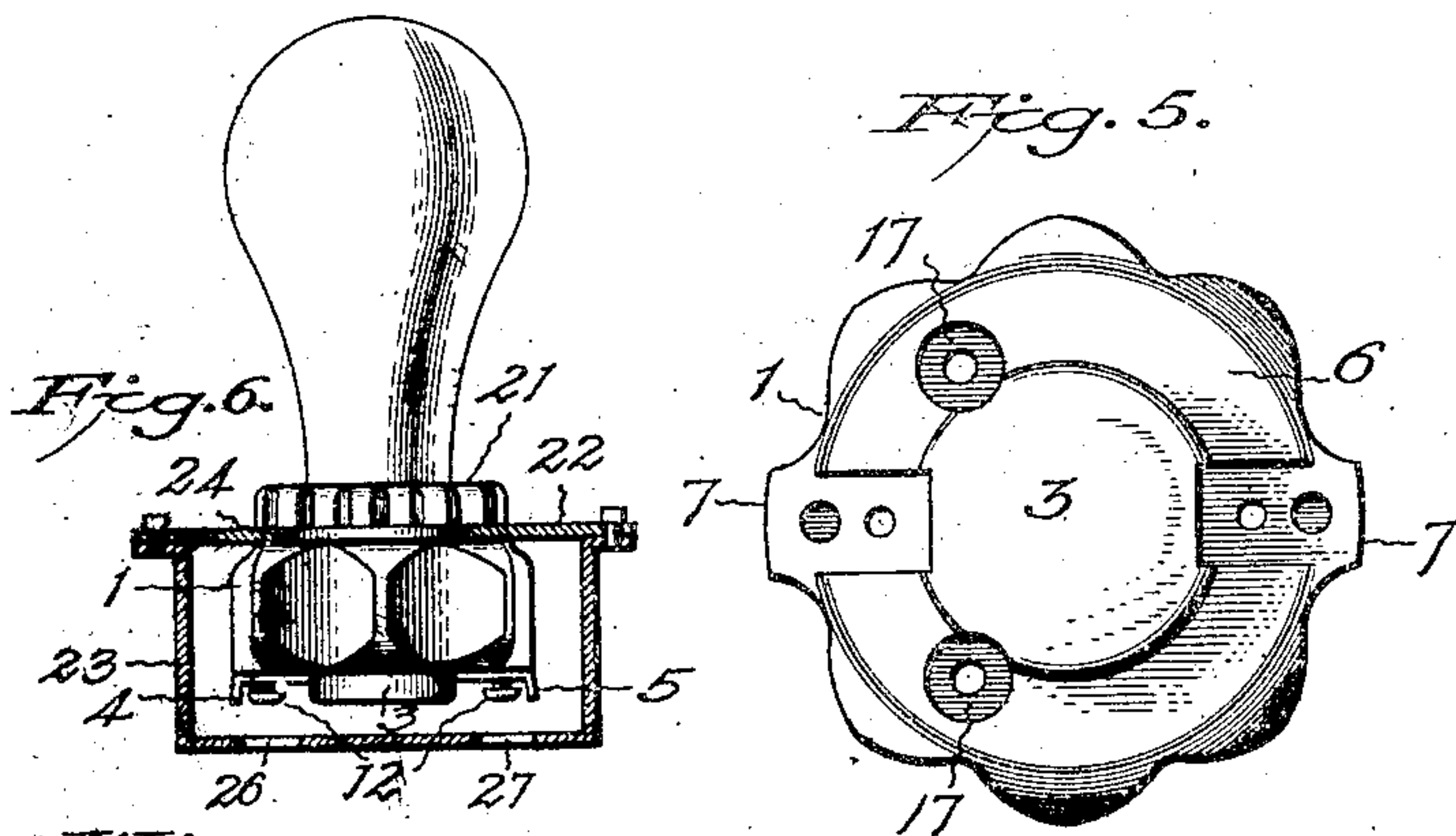
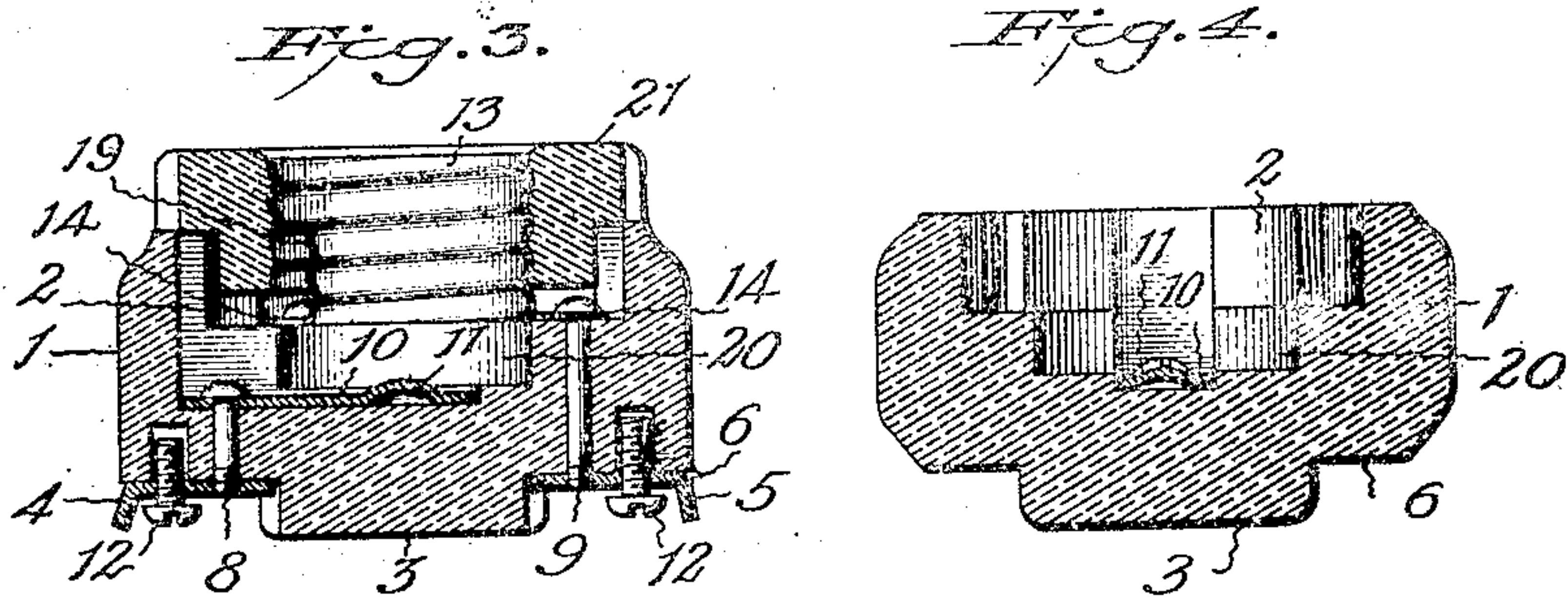
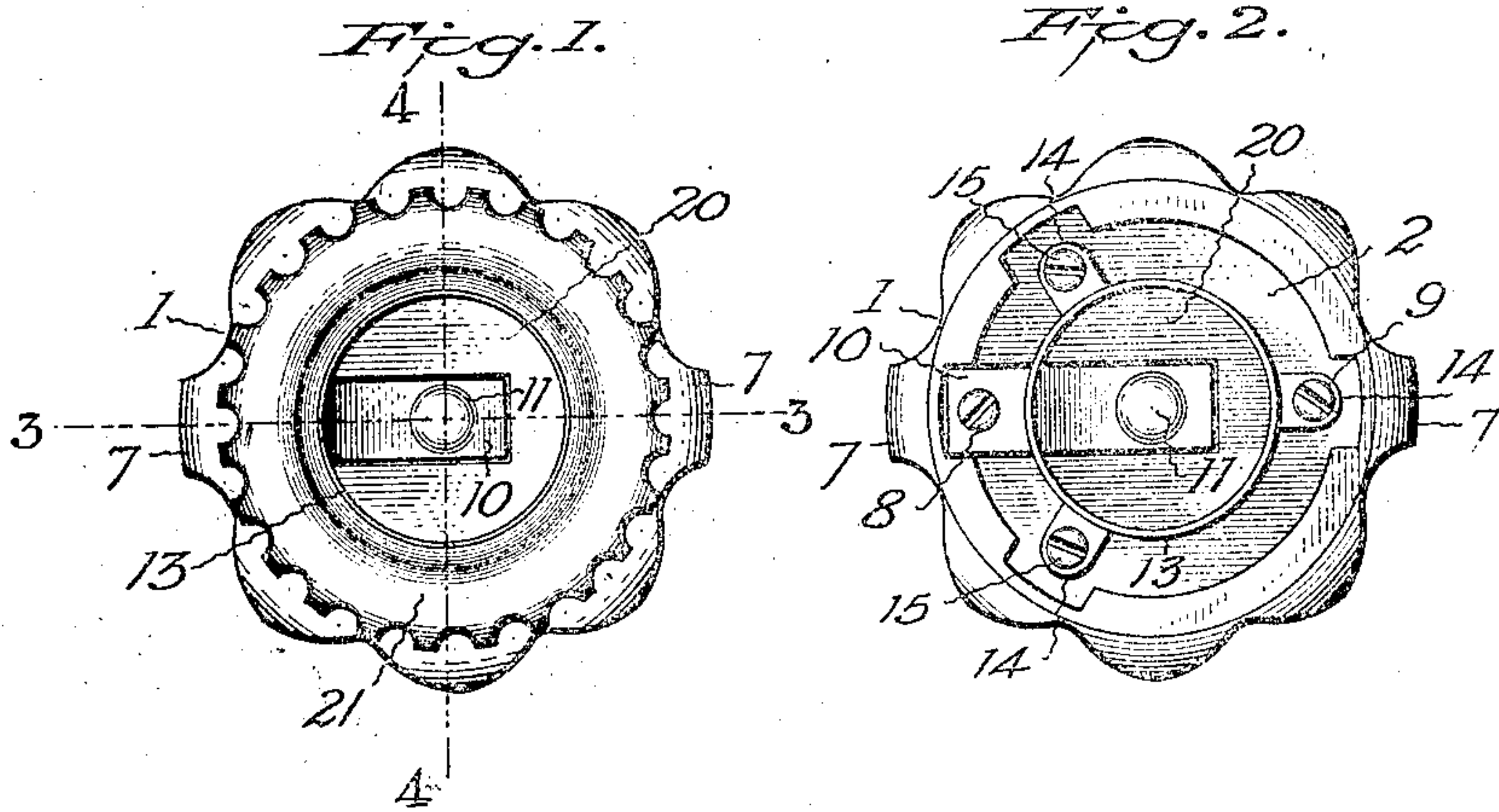


H. W. LAWRENCE.  
ELECTRIC LAMP HOLDING SOCKET.  
APPLICATION FILED JULY 24, 1908.

980,805.

Patented Jan. 3, 1911.



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# UNITED STATES PATENT OFFICE.

HARRY W. LAWRENCE, OF DENVER, COLORADO.

ELECTRIC-LAMP-HOLDING SOCKET.

980,805.

Specification of Letters Patent.

Patented Jan. 3, 1911.

Application filed July 24, 1908. Serial No. 445,149.

*To all whom it may concern:*

Be it known that I, HARRY W. LAWRENCE, a citizen of the United States of America, residing in the city and county of Denver and State of Colorado, have invented a new and useful Electric-Lamp-Holding Socket, of which the following is a specification.

My invention relates to improvements in electric lamp holding sockets, and the objects of my invention are: First, to provide a socket in which the entire screw surface of the screw plug of the lamp is brought into direct electrical contact with the entire screw surface of the receiver of the socket, thus insuring that the entire screw surface of the outer current flowing pole of the lamp's plug will be utilized for electrical contact with the receiver of the socket. Second, to provide a socket that is arranged to prevent accidental short circuiting of the sockets or receptacles. And third, to provide a socket especially adapted for the commonly used iron box and also for electric signs, that is simple, thoroughly practical, and will fully meet the requirements of the National Board of Underwriters. I attain these objects by the mechanism illustrated in the accompanying drawings, in which:

Figure 1, is a plan view of the improved electric lamp socket, the clamping cap being shown in operative position. Fig. 2, is a similar view with the cap removed. Fig. 3, is a vertical, sectional view thereof, on the line 3—3 of Fig. 1. Fig. 4, is a vertical, sectional view on the line 4—4 of Fig. 1, the cap and metal lamp holder being omitted. Fig. 5, is a bottom view of the socket, the terminals being omitted. And Fig. 6, is an elevation of the device showing the same clamped to the lid of the ordinary socket holding casing.

Similar letters of reference refer to similar parts throughout the several views.

Referring to the drawings, the numeral 1, designates the base portion of my improved electric lamp supporting socket. This base portion may be of any desired form, but I preferably make it circular. This base is provided with a large axial chamber 2, which extends nearly but not quite through it, and leaves a thin shell portion that forms the peripheral portion of the base. The central portion of the lower end portion of this base is imperforate and is provided with a projecting lug portion 3,

which acts as an insulating medium between the wire connecting terminal contact and circuit wire connecting strips 4 and 5, and prevents accidental short circuiting of these terminals across the bottom of the base. These terminal contact strips comprise strips of any suitable conductive metal, brass being preferably used, and they are positioned diametrically opposite each other on the opposite sides of the projecting lug portion 3, and are seated on the rim portion of the lower end 6 of the base, a slight radial lug portion 7 being formed on the peripheral surface of the base to form a seat surface for them. These terminal contact strips are secured at their inner end portions to the lower rim portion of the base by screws 8 and 9, which extend through apertures formed through the rim portion of the bottom of the base from the inside of the chamber 2, and the terminal contact strip 4 acts as the terminal pole of a central pole strip 10, which is extended across the bottom of the chamber 2, of the base, from the same side of the base, and directly over the strip 4, to which it is secured by the screw 8, which passes loosely through it and the aperture in the base and screws into a threaded hole formed in the strip 4 to receive it, and to the axial center of the chamber of the base, and on its end portion that terminates in the center of the chamber, a slightly raised cone portion 11 is formed, which is adapted to contact with the terminal pole in the center of the end of the screw plug of the lamp. The terminal contact strip 4 is consequently the circuit wire connecting terminal of the contact terminal pole strip 10, of the center pole of the lamp. A binding screw 12 is threaded to the strip 4 adjacent to its outer end portion, and the outer end of the strip is turned slightly upward to shield the end of the circuit wire and to engage the end of the wire and to firmly secure it by the screw between the screw and the strip.

The terminal contact strip 5 forms the terminal pole of a lamp receiving shell 13, which is provided at its lower end with outwardly projecting feet 14, which are secured to the floor portion of the chamber by screws 15 and the screw 9. The screws 15 extend through apertures formed through the floor of the chamber of the base, and screw into nuts, which are set into apertures 17 formed in the lower end 6 of the base at the side of



the projecting insulating lug portion, and the aperture 17 over the nuts is filled with non-conductive cement. The screw 9, extends loosely through the one foot of the receiver which is arranged over the terminal contact strip 5, and through an aperture in the bottom of the base, and screws into the inner end of the contact terminal strip 5, thus clamping the foot of the receiver and the strip 5, together to the base, and providing a circuit through the screw from the receiver to the contact terminal strip 5. This strip 5 is also provided with a binding screw 12, and a turned up outer end portion similar to and for the same purpose as the contact terminal strip 4. The receiver 13 comprises an internal and an external threaded shell of any suitable conductive metal, preferably brass, and forms an important element of Patent No. 864,427 issued to me August 27, 1907.

A gap 19 is cut in the lower end of the receiver opposite to the foot that is connected to the terminal contact strip 4, and the receiver I use in my present invention is made enough shorter than the one illustrated in my former applications to permit the lower non-threaded portion of the screw plug end of the lamp to screw through and beyond the lower end of it into a concentric recess 20, which is formed in the floor portion of the chamber in the base. In order to accomplish this desirable object, and remedy a serious fault that exists in all of the presently used sockets and receivers, I have had to shorten the lower end portion of the receiver below the ends of its lower threads over the length of the receivers illustrated in my former applications, and I have also found it necessary to form the concentric recess 20 in the center of the floor portion of the chamber of the base in order to allow the end of the lamp's plug to extend through and beyond the lower end of the receiver far enough to permit its upper end thread to screw down into the receiver to its upper end, and I have arranged the receiver so that when the lamp plug is screwed into it to the end of its thread, the lower end of the receiver's interior threads will register with the lower end of the plug's threads. Consequently the threaded surface of the receiver and of the plug are of the same length and all of the out flowing current surface of the lamp plug is in contact with the conductive receiver, thus tending to insure a more brilliant and steady light than when a partial contact is provided. The recess 20 is made enough deeper than the depth the plug extends into the socket, to form a clear space all around it. The chamber in the base is also made enough larger in diameter than the receiver to form an annular space around it, and a ring shaped cap 21 is provided for the base and forms the clamping member of the socket.

The under side of this cap is provided with an annularly projecting flange which fits loosely into and extends into the annular space between the walls of the chamber and the receiver. The aperture through the cap and its projecting annular portion is interiorly threaded and formed to screw onto the outside thread of the receiver. The annular projecting flange thus projects into the annular recess and incases the receiver with a non-conductive insulative material, while the top of the cap is made enough larger than the annular flange to extend over the annular peripheral shell of the base portion, and is made especially so in order that the base and cap can be placed on opposite sides of sign boards, and to the covers 22 of the standard, iron socket inclosing boxes 23. These boxes are commonly used at the present time in wiring buildings.

My socket has been especially designed for use in connection with these iron boxes, and for signs, the flange of the cap being especially designed to extend through an aperture 24 formed through the cover of the box or through a sign board, and the under side of the head of the cap, to bear flush against the surface of the cover or sign board. The base can then be screwed into the annular flange of the cap from the under side of the cover, or vice versa, and the cover and base screwed together until they tightly clamp the cover or the sign board between them, as shown in Fig. 6. The peripheral edge of the cap is corrugated or knurled to afford a friction gripping surface for the hands of the operator, while the peripheral surface of the shell of the base is sufficiently uneven owing to the cut away portions and the projecting lugs of the contact terminal strips to afford a good hand gripping surface on the base.

My improved iron box and sign socket is particularly adapted for use in horizontal and vertical positions in the iron boxes, and the box is provided with apertures 26 and 27 that permit the current line wires to be attached to the base in either a horizontal or a vertical position.

Having described my invention, what I claim as new and desire to secure by Letters Patent, is:

A lamp socket comprising a body of insulating material, having its walls shaped to form therein concentric chambers, one of smaller diameter than the other, the walls of said smaller chamber having a slot therein, a contact strip extending through said slot and means extending through the body portion of the socket to the bottom thereof for making electrical connection to said strip, a conducting screw-threaded shell, having enough threads to engage all the threads on a lamp, supported on the bottom of said larger recess, and means extending through the

body portion of the socket to the bottom  
thereof to make electrical connections with  
said shell and to secure it in place, and a  
ring-shaped cap having an outwardly ex-  
5 tending flange and internal screw-threads  
for engaging the external screw-threads on  
the shell.

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

HARRY W. LAWRENCE.

Witnesses:

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