

R. KLINGER.
COCK AND THE LIKE.
APPLICATION FILED MAR. 9, 1909.

970,834.

Patented Sept. 20, 1910.

2 SHEETS-SHEET 1.

Fig. 1

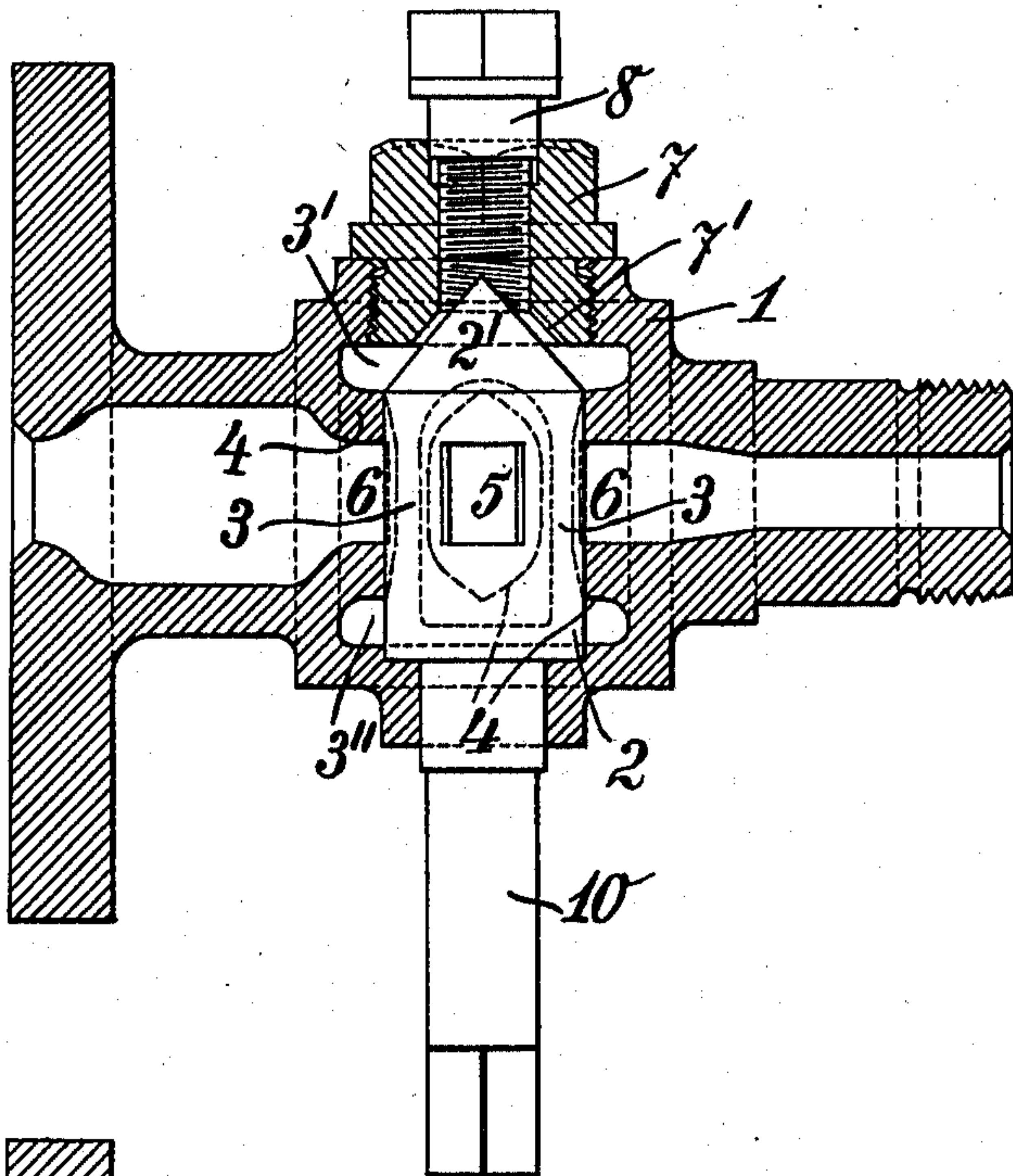
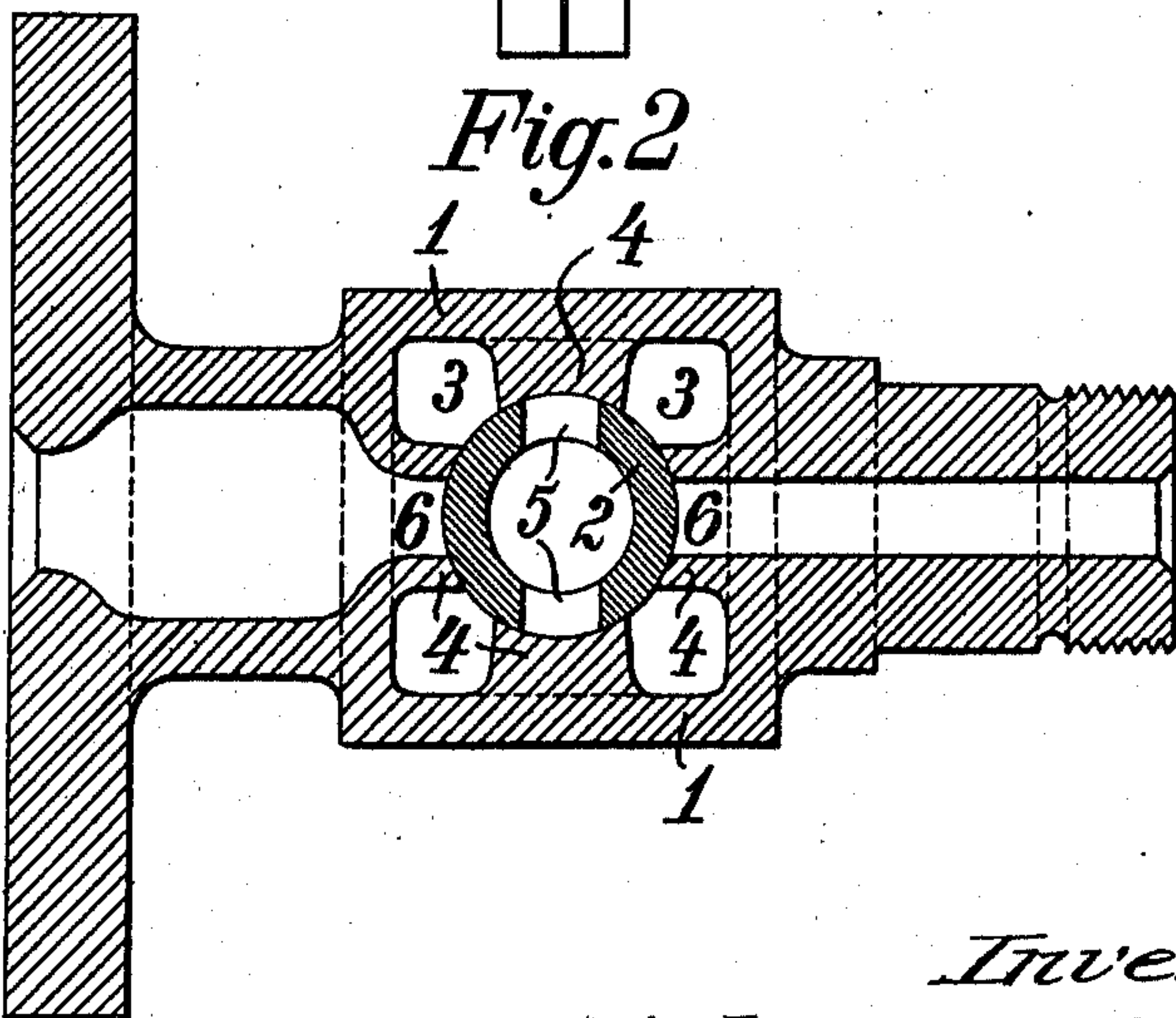


Fig. 2



Witnesses

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2 SHEETS-SHEET 2.

Fig. 3

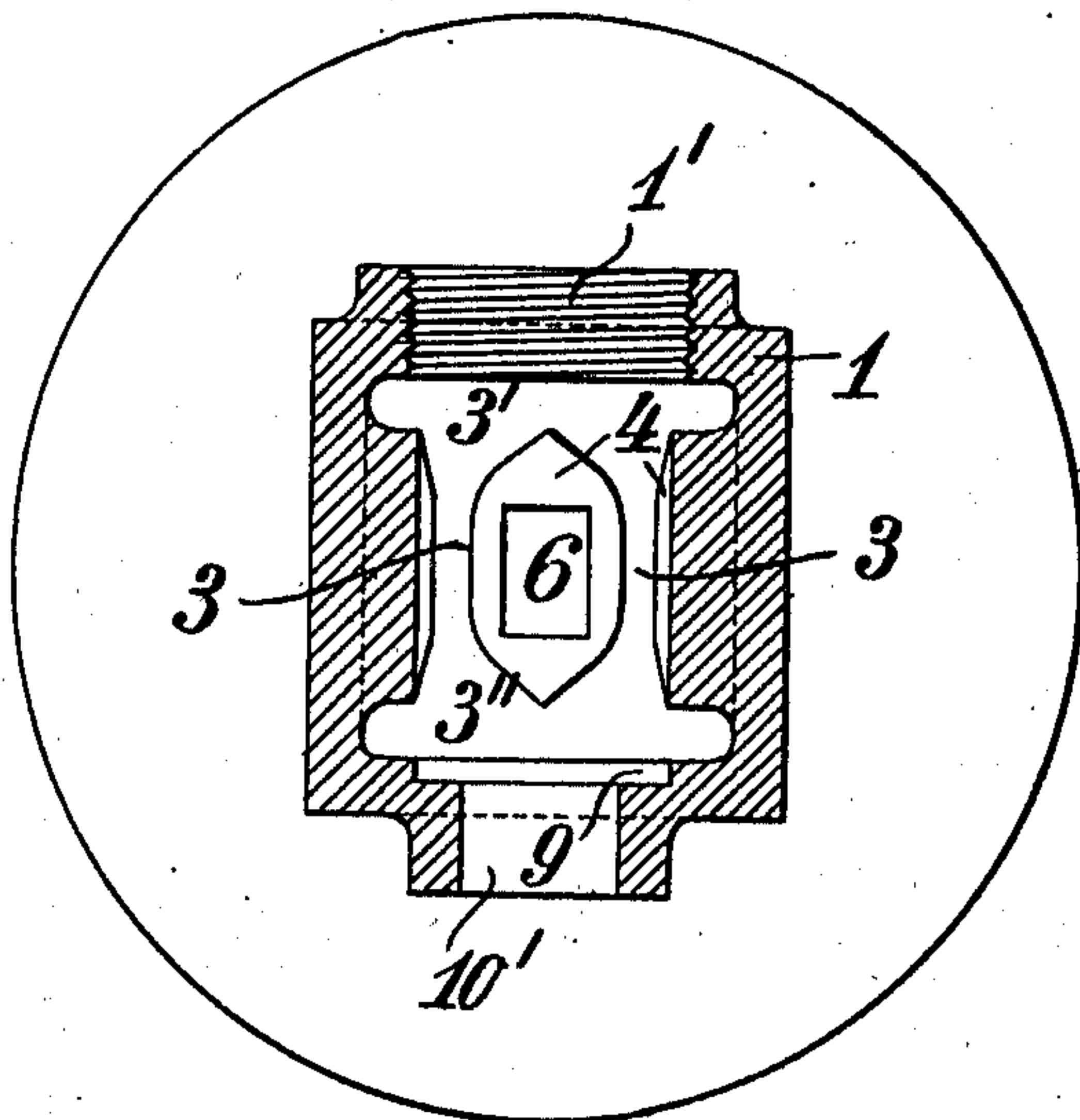
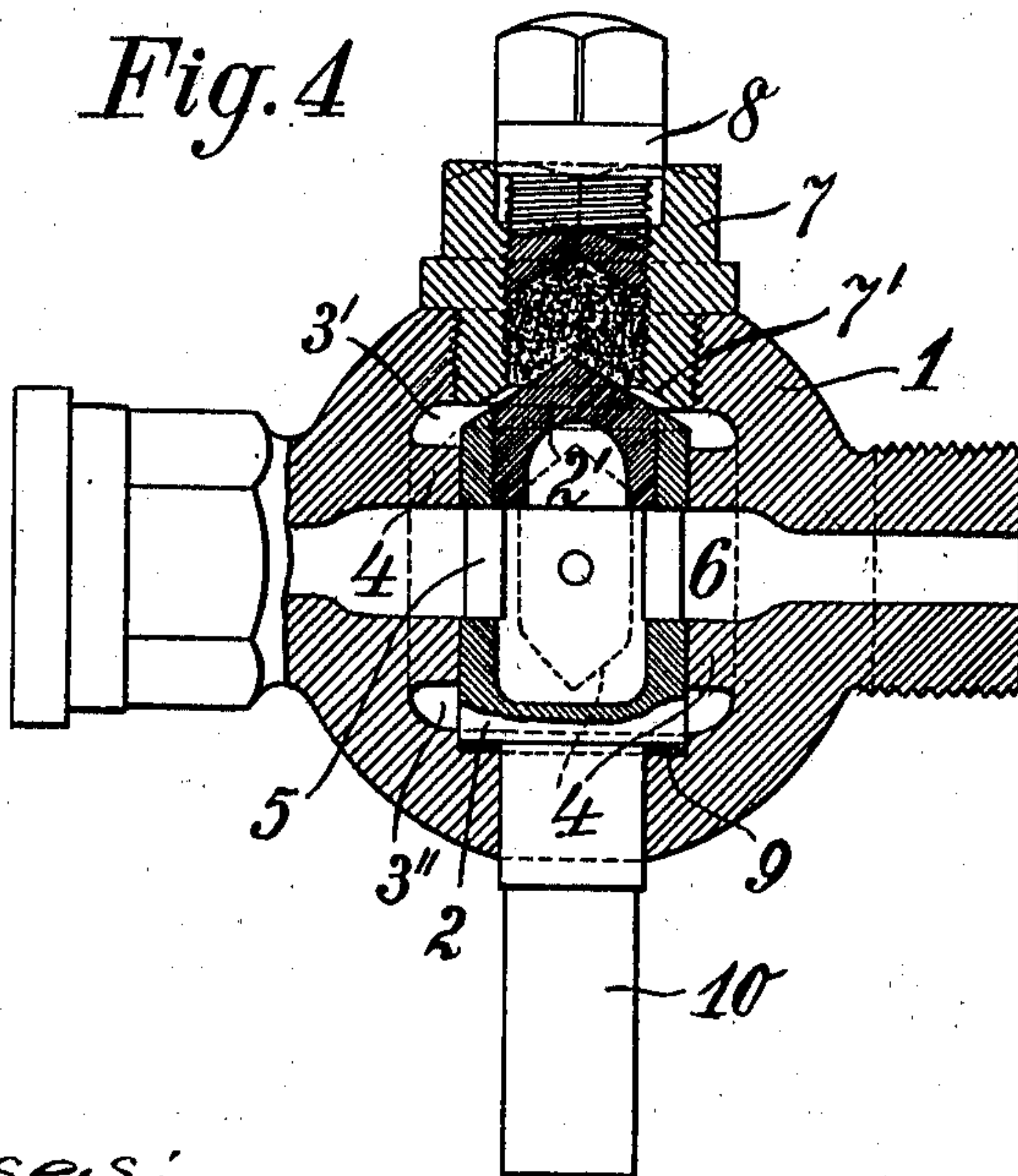


Fig. 4



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UNITED STATES PATENT OFFICE.

RICHARD KLINGER, OF GUMPOLDSKIRCHEN, NEAR VIENNA, AUSTRIA-HUNGARY.

COCK AND THE LIKE.

970,834.

Specification of Letters Patent. Patented Sept. 20, 1910.

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To all whom it may concern:

Be it known that I, RICHARD KLINGER, subject of the Emperor of Austria-Hungary, residing at Gumpoldskirchen, near Vienna, Lower Austria, Austria-Hungary, have invented certain new and useful Improvements in Cocks and the Like, of which the following is a specification.

This invention relates to cocks or valves the shells or casings of which are provided in the usual way with passages which open toward the plug and which are arranged between inwardly extending ribs that guide the plug.

The object of this invention is to permanently prevent with certainty any leakage, as well as any looseness, when the plug is in the closed position, without the provision of a stuffing box or gland for the spindle of the cock plug. For this purpose according to this invention instead of the shell casing being closed by a stuffing box or gland it is closed by a cap formed with a hole into which the cone shaped end of the plug projects after the manner of a valve and the hole in the closing cap is itself arranged to be closed by a screw plug. In a cock so constructed suitable packing medium can be placed in the hole of the closing cap and forced with great pressure, exerted from outside the cock, through the annular space between the inner wall of the cap and the coned end of the plug and distributed uniformly in the passages of the cock shell or casing and after screwing the screw plug in the cap the packing medium can, in case of necessity, be pressed uniformly against the parts of the plug to be packed by adjusting such screw plug. This pressure will be uniformly transmitted from all sides to the circumference of the plug and insures perfect packing. When the packing medium is worn the screw plug can be removed and a plug of packing can be placed in the hole of the closing cap and forced into the cock shell by again screwing in the screw plug.

The accompanying illustrative drawing shows in Figure 1 in a central vertical section a cock embodying this invention; Fig. 2 is a central horizontal section thereof, and Fig. 3 shows the shell or casing of the cock without the plug in central vertical section in a plane at right angles to that of Fig. 1; Fig. 4 is a similar view to Fig. 1 showing a modified form of cock according to this invention.

1 is the shell or casing of the cock; 2 a hollow cylindrical plug mounted to rotate within it. Arranged symmetrically around the periphery of the plug are vertical passages 3 formed in the shell or casing 1 and opening toward the plug; vertical ribs 4 which act as guides for the plug separate the passages one from the other. Certain of said ribs are formed with perforations 6 which are designed to register with diametrically opposite ports 5 formed in the plug, such arrangement providing for a flow of liquid through the cock when the plug is in its open position. The passages 3 are placed in free communication one with the other at their upper and lower ends by horizontal annular passages 3', 3''. The lower annular passage 3'' surrounds an annular recess 9 formed in the cock shell or casing serving to support the lower end of the cock plug the spindle 10 of which projects outwardly through a hole 10' formed in the shell or casing concentric with the annular recess 9 and passage 3''. Projecting through the upper annular passage 3' into a somewhat large screw threaded opening 1' formed through the cock shell or casing is the cone-shaped upper end 2' of the plug. Screwed into this opening is a closing cap 7 which is formed with a centrally arranged screw threaded hole to receive a screw plug 8 the lower end of such hole terminating in a cone shaped recess 7' that surrounds the conical inner end of the plug.

For the purpose of making a fluid tight joint between the plug and the shell or casing appropriate packing medium is forced through the hole of the closing cap 7 after such cap has been inserted in place, such packing medium passing through the annular space between the cone of the plug and the inner wall of the cap into the horizontal annular passage 3', thence into the vertical passages 3 and finally into the annular passage 3'' and being compressed together by screwing in the screw plug 8. By this packing medium, which is under pressure as before stated, the plug is pressed down into the recess 9 so that a leak cannot take place at this point; moreover the packing medium forced into the passages 3 forms packing strips between the ribs 4 which lie close against the periphery of the plug and when the cock is shut off, see Fig. 2, constitute a sure and lasting packing. By screwing the plug 8 inwardly to an increased extent the

packing can, in cases of necessity, be pressed more tightly, which may become necessary after long use of the cock, for the purpose of keeping the pressure of the packing medium uniform on all sides of the plug and to the degree necessary for effective packing.

In the construction shown in Fig. 4 the hollow plug is open at the top and the conical upper end 2' of the plug 2 is constructed as a separate piece which is movable in the upper end of the plug body so that the plug body is forced by the pressure of the liquid flowing through the cock against a packing placed in the recess 9 on the one hand and on the other hand its upper end 2' is raised toward the conical recess 7' in the central hole in the closing cap 7 and thereby compresses the lubricant situated within this hole. As in this case the upper end 2' of the plug bears like a valve upon the wall of the recess 7' which acts as a seat, any leakage of steam which might arise between the plug and the ribs 4 on the one hand and between the plug wall and the upper movable end 2' inserted therein on the other hand is prevented from escaping.

When the plug is in its closed position it is possible, in case of necessity, to periodically slightly tighten up the screw plug 8, the end of which is preferably hollowed out conically and thereby to exert through the medium of the plug of packing medium, a pressure upon the upper end 2' of the plug and force it down into its normal or original position in which a small annular space is left between the recess 7' and the upper end 2' of the plug for the outlet of the packing medium into the passages 3', 3 and 3''.

40 Claim.

1. The combination, in a cock, of a shell having a threaded opening in its upper end, and formed with interiorly located upper and lower annular passages, and with spaced

vertical passages connecting the same, said passages being adapted to receive packing; a cap threaded in said opening and formed with a threaded bore into which the packing may be introduced, said bore terminating at its lower end in a conical recess; a rotatable hollow plug fitted within said shell and provided with a conical upper end projecting into said recess, the wall of said end being spaced from that of said recess; and a plug threaded in said bore for forcing the packing through said space into the upper annular passage, and thence into the other passages, and for regulating the pressure of said packing upon said rotatable plug.

2. The combination, in a cock, of a shell having a threaded opening in its upper end, and formed with interiorly located upper and lower annular passages, and with spaced vertical passages connecting the same, said passages being adapted to receive packing; a cap threaded in said opening and formed with a threaded bore into which the packing may be introduced, said bore terminating at its lower end in a conical recess; a rotatable hollow plug fitted within said shell and comprising a body member and a top member movable therein, said top member being formed with a conical end projecting into said recess, whereby the liquid flowing through the cock will force said members in opposite directions; and a plug threaded in said bore for forcing the packing between the wall of said recess and said conical end into the upper annular passage and thence into the other passages.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

RICHARD KLINGER.

Witnesses:

JOSEF RUBARDY,

ROBERT W. HEINGARTNER.