

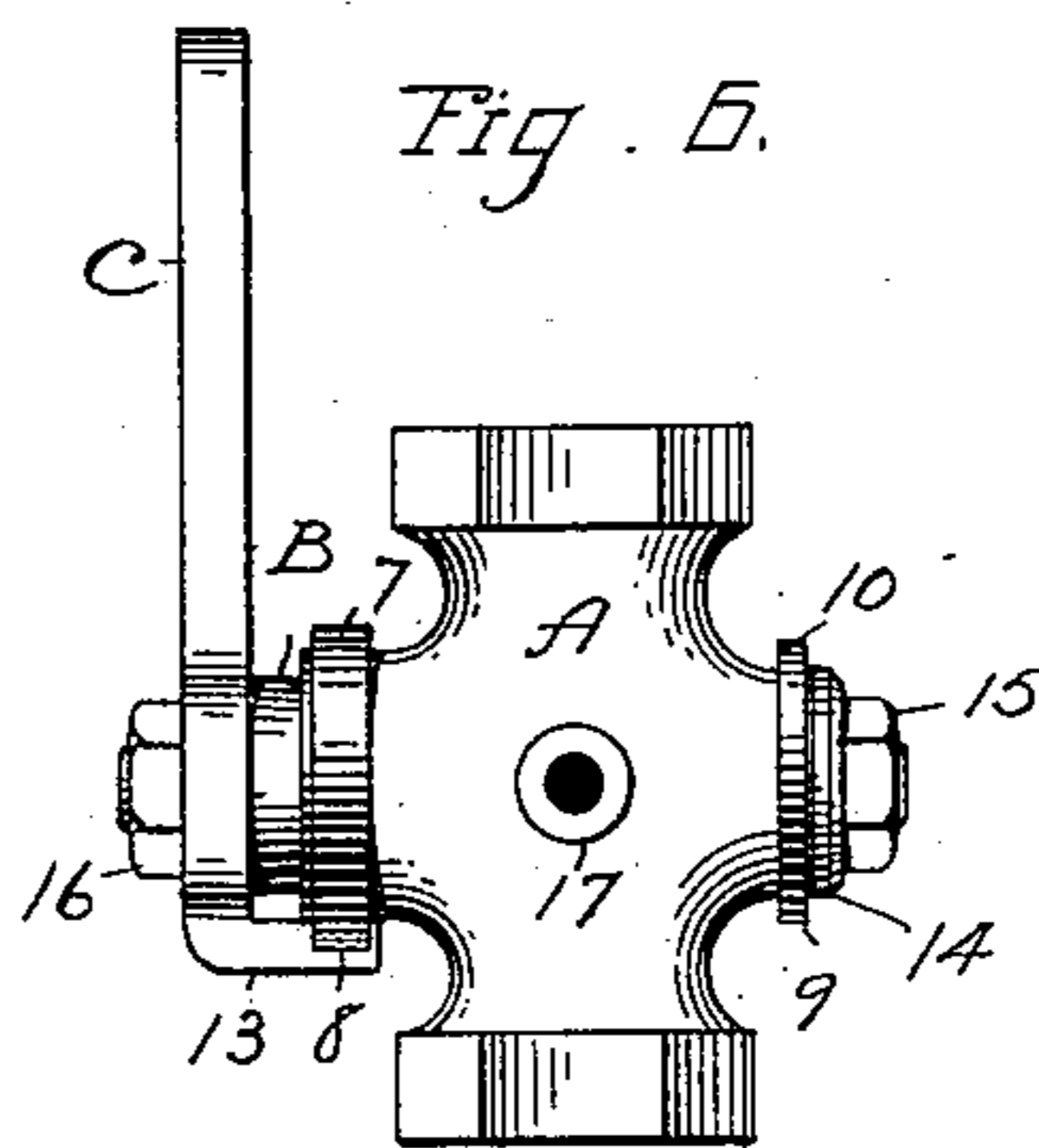
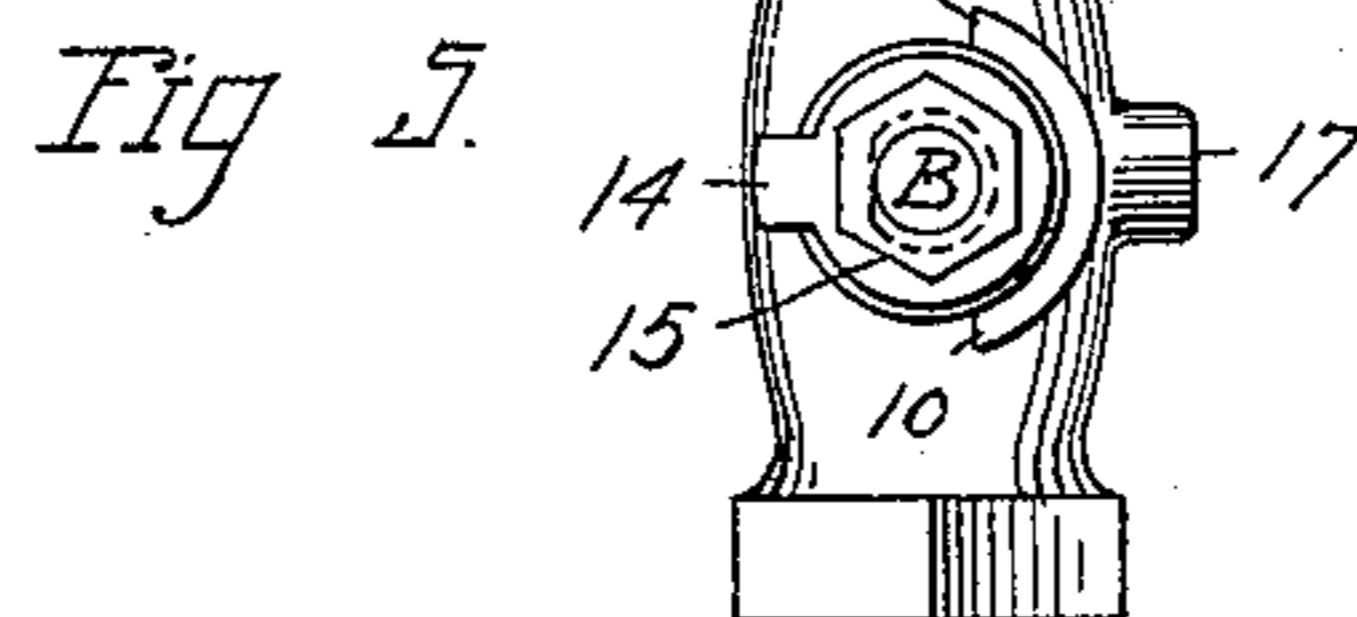
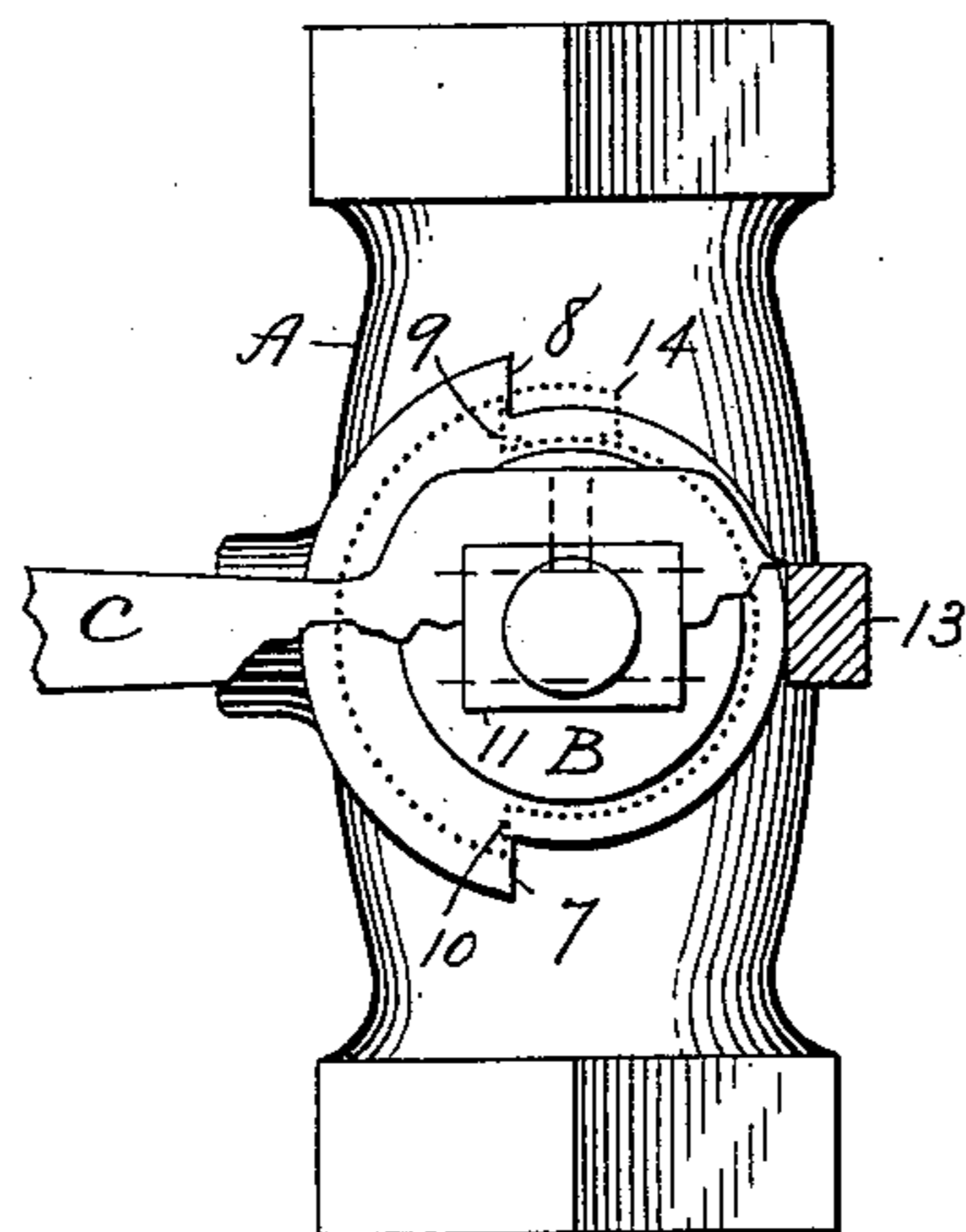
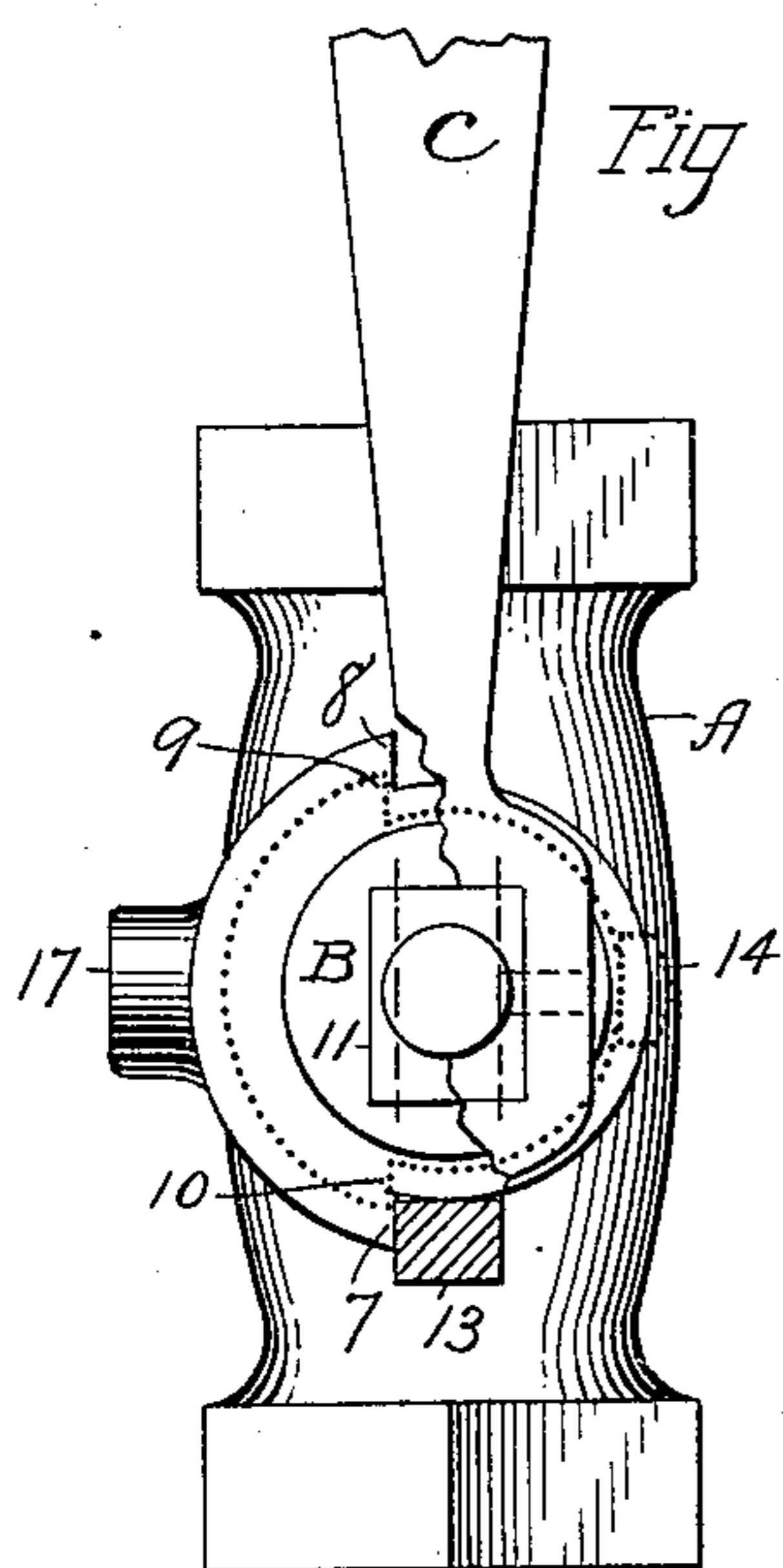
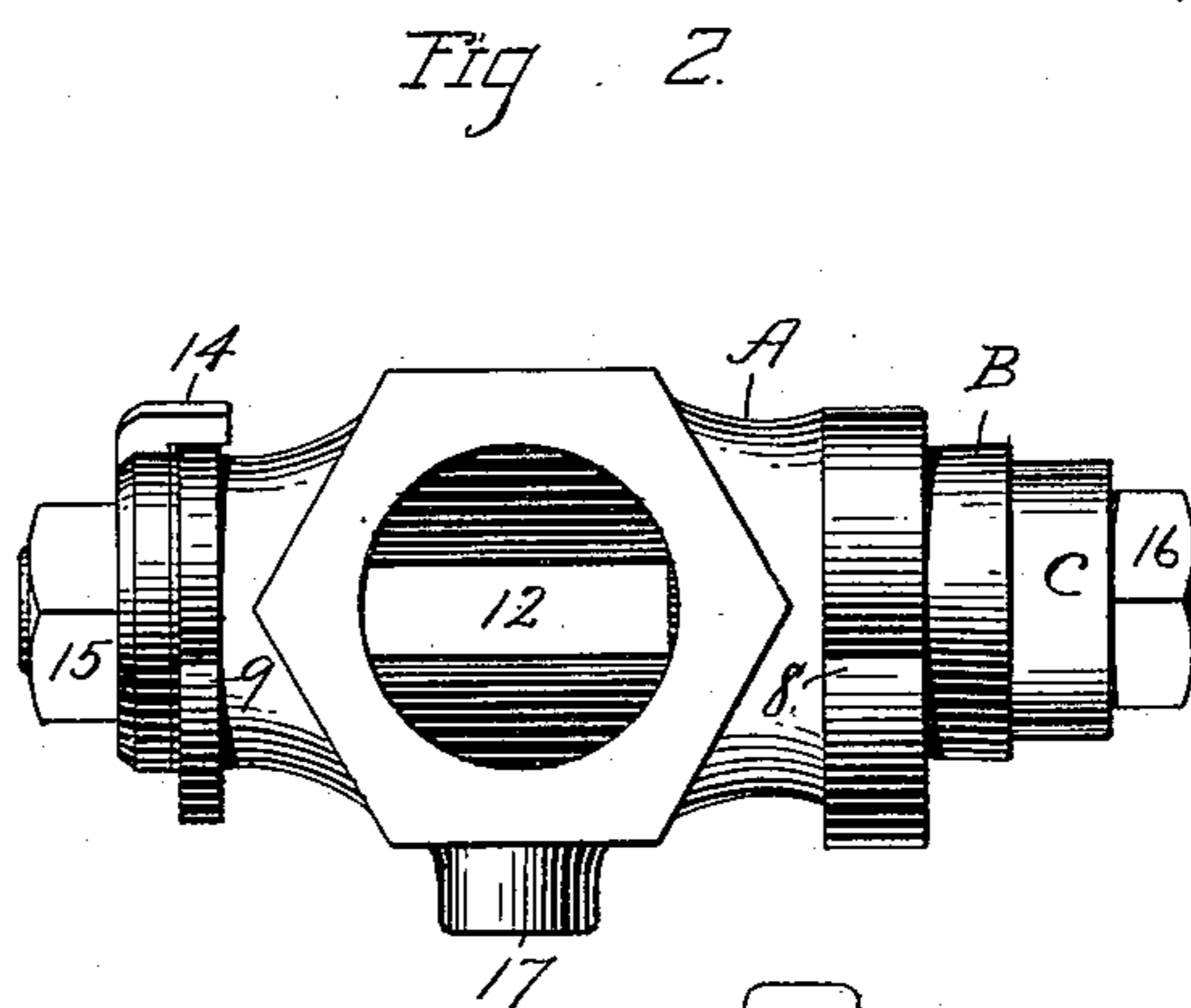
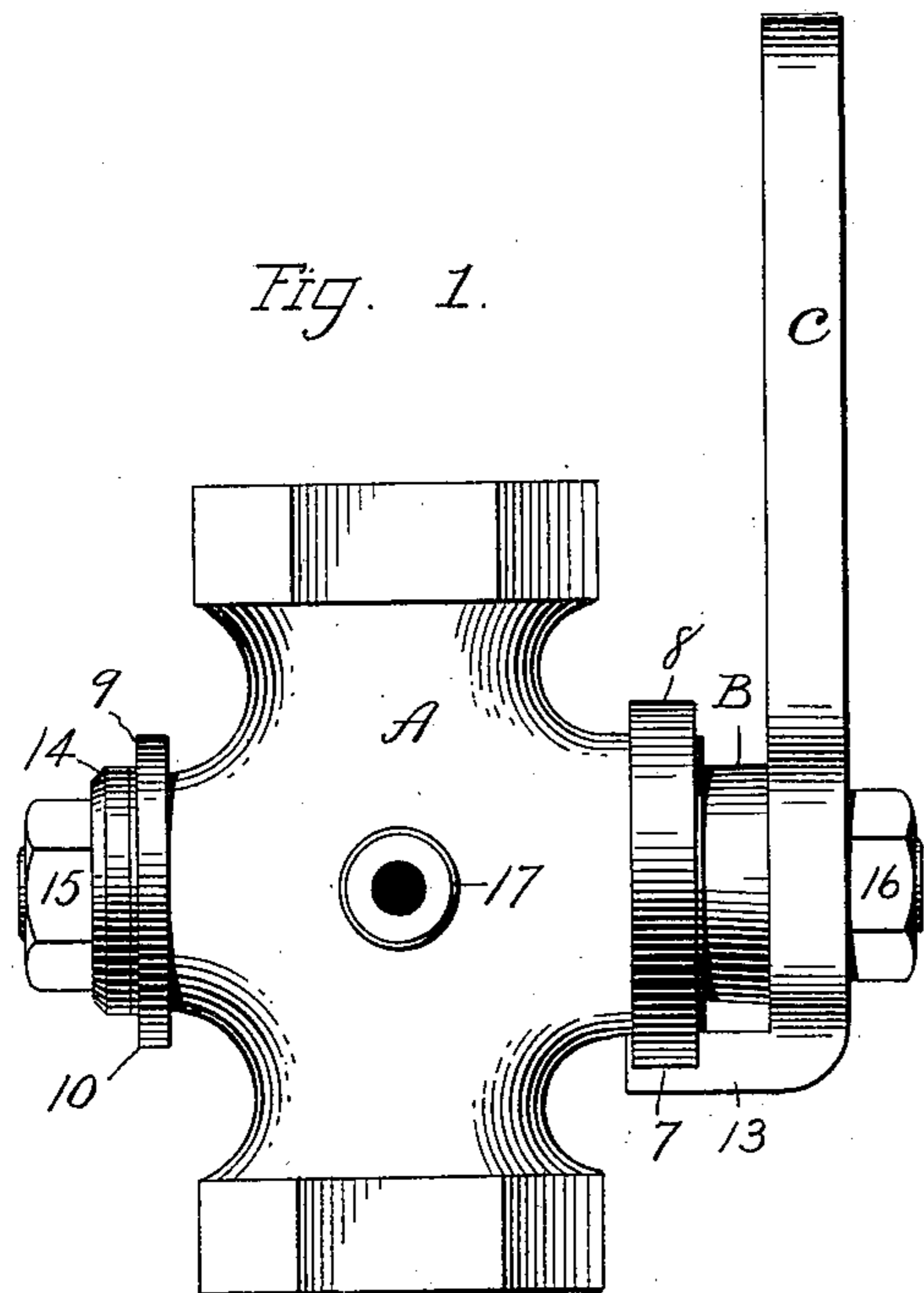
(No Model.)

C. F. SMITH.

RIGHT AND LEFT HAND STOP AND WASTE COCK.

No. 594,161.

Patented Nov. 23, 1897.



WITNESSES

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CHARLES F. SMITH, OF NEW BRITAIN, CONNECTICUT, ASSIGNOR TO THE
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RIGHT AND LEFT HAND STOP AND WASTE COCK.

SPECIFICATION forming part of Letters Patent No. 594,161, dated November 23, 1897.

Application filed May 29, 1897. Serial No. 638,715. (No model.)

To all whom it may concern:

Be it known that I, CHARLES F. SMITH, a citizen of the United States, residing at New Britain, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Right and Left Hand Stop and Waste Cocks, of which the following is a specification.

My invention relates to improvements in right and left hand stop and waste cocks; and the objects of my improvements are simplicity and economy in construction and simplicity and convenience in use.

In the accompanying drawings, Figure 1 is a front elevation of my stop and waste cock as arranged for a right-hand cock on a vertical pipe with the cock opened. Fig. 2 is a plan view of the same. Fig. 3 is a diagraphic side view of the same with the handle-nut removed, the handle partly broken away, and with its stop in section. Fig. 4 is a like view of the same with the cock closed. Fig. 5 is a side elevation on a smaller scale, showing the reverse side from that shown in Figs. 3 and 4, and Fig. 6 is a front view of the same as arranged for a left-hand cock on a vertical pipe.

A designates the body of the cock, which in its general features is of ordinary form and within the cross-bore of which the rotary plug B is fitted, the general form of said plug and the passages through it being of the ordinary form. The handle end of the body is provided with one pair of fixed stops 7 8 and a second pair of fixed stops 9 10, which in the particular construction shown are at the opposite end of said body in the line of the plug, while the middle portion of said body on its front side is provided with the ordinary waste-nozzle 17. The fixed stops on the body in each pair are arranged relatively to the moving stop that directly engages therewith, so that they represent one-half a revolution of the plug. The fixed stops 9 10 and plug-stop 14 are indicated by dotted lines in Figs. 3 and 4.

The shank 11 of the plug for receiving the handle C is of an oblong rectangular form, and the opening in the head of the handle which is fitted thereto is of a corresponding form, whereby the handle can be changed in position on the plug only by a half-revolution.

The main passage 12, Fig. 2, through the plug is parallel to the longer dimension of the shank 11, and the longer dimension of the opening in the head of the handle extends in the longitudinal direction of the handle, whereby the direction of the transverse passage 12 through the plug is always indicated by the longitudinal direction of the handle. The said passage through the plug is indicated by the two longer parallel broken lines in Figs. 3 and 4, while the two shorter parallel lines at right angles thereto indicate the ordinary waste-passage of the plug. The handle is also provided at one end on its inner side with a stop 13 for engaging the fixed stop 7 when used as a right-hand cock and the fixed stop 8 when used as a left-hand cock. The plug at its smaller end in the particular construction shown is also provided with the stop 14, rigidly secured thereto in any proper manner for engaging the fixed stop 9 when used as a right-hand cock and for engaging the fixed stop 10 when used as a left-hand cock. This stop may be fitted to an angular portion on the small end of the plug, so as to always be placed thereon in the same position. For example, the portion of the plug to which said stop is fitted may be round with one side slabbed off, and the body of the stop which is fitted thereon may have a round hole filled in on one side, as indicated by the broken lines underneath the nut 15 in Fig. 5. I call this stop 14 the "plug-stop" in order to more readily distinguish from the stop 13, which is rigid with the handle, and may be called the "handle-stop." The handle C is held in place by a nut 16, screwed on the outer end of the shank of the plug.

It is evident that both of the movable stops 13 and 14, as herein shown, have each a pair of stop-faces that coact with the faces of the two pairs of fixed stops on the body of the cock. The essential feature of each moving stop is that its faces move in a path to engage some fixed obstruction, beyond which obstruction it cannot move.

As illustrated in Figs. 1 to 5, the upper end of the body of the cock is designed to be connected with the house side of the water-pipes and the lower end with the water-main. In Figs. 1, 2, 3, and 5 the handle stands parallel

to said pipes and the cock is open. By reference to Fig. 3 it will be seen that the waste-passage in the plug is on the rear side of the cock, so that it is properly closed. It will also
 5 be seen that when the handle is brought into this position its movement is limited by the engagement of one face of the stop 13 on the handle with the fixed stop 7 on the body A. To shut off the water, the handle is
 10 pulled toward the front (and consequently toward the waste-nozzle) until its movement is limited by the engagement of one face of the plug-stop 14 with the fixed stop 9 on the body A, as shown in Fig. 4, while Figs. 3 and
 15 5 show that a quarter-turn of the handle toward the waste-nozzle 17 would bring said moving and fixed stops into engagement. In the position shown in Fig. 4 the lower end of the cock for connecting with the water-main
 20 is closed, while the ordinary waste and main passages in the plug permit the water from above (in the house-pipe) to run down and out at the waste-nozzle 17.

In order to change the device to a left-hand
 25 cock for use in the position shown in Fig. 6 and still have the house-pipe above the cock, it is only necessary to turn the cock over end for end and then remove the handle and replace it on the plug with the handle end up-
 30 permost, thereby in effect changing its position one-half of a revolution on the plug. In this position the opening movement is limited by the handle-stop 13, engaging the fixed stop 8 on the body, while its closing movement is
 35 limited by the engagement of the plug-stop 14 with the fixed stop 10 on the body by the smaller end of the plug.

When the cock is used on a horizontal pipe, it is only necessary to change the position of
 40 the handle one-half a revolution on the plug to change the same from a right to a left hand cock, or vice versa. In all cases the handle is parallel with the main or pipe passage through the plug, and whether the
 45 handle is on the right or the left the cock is closed by pulling the handle toward the waste-nozzle at the front. The movement of the plug is always limited in one direction by the handle-stop and one of the fixed stops of
 50 the body for engaging therewith and in the other direction by the plug-stop and one of the fixed body-stops for engaging therewith, so that while each pair of fixed stops represents half a revolution of the plug one stop in

each pair always coacts with one stop of the 55 other pair to limit the rotation of the plug to a quarter-revolution only.

I do not wish to limit myself to the particular details of construction shown and described nor to the particular form and loca- 60 tion of the several stops, for I reserve the right to make such changes as may fairly fall within the spirit and scope of my invention.

By my improvement the construction is simple and inexpensive. The cock may be re- 65 versed by placing it in proper position and changing the handle a half-revolution on the plug without changing the position thereon of any other part. There are only two positions in which the handle can be placed on 70 the plug, so that there is no danger of setting the handle incorrectly or setting it so that the handle can ever stand transversely to the pipe when the cock is open. In short, the operation is very simple and free from all per- 75 plexing problems.

I claim as my invention—

1. A stop and waste cock having a body and plug, a handle and handle-stop detachably fixed on said plug, a pair of fixed stops on 80 said body at each end of said plug, and a plug-stop at the small end of the plug, the said handle-stop and plug-stop being arranged for acting upon said fixed stops at the respective ends of said body, substantially as 85 described.

2. A stop and waste cock having a body provided with two pairs of fixed stops, a plug fitted to said body, a handle for turning said plug, and two stops moving with the plug and 90 handle, one of which engages one fixed stop of one pair and the other of which engages one fixed stop of the other pair, substantially as described.

3. A stop and waste cock having a body provided with two pairs of fixed stops, a plug fitted to said body, a plug-stop having a single position only on said plug, and an operating-handle and handle-stop changeable on said plug by half-revolutions, the said handle-stop 100 acting in connection with one pair of fixed stops and the said plug-stop acting in connection with the other pair, substantially as described.

CHARLES F. SMITH.

Witnesses:

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 J. B. JUDD.