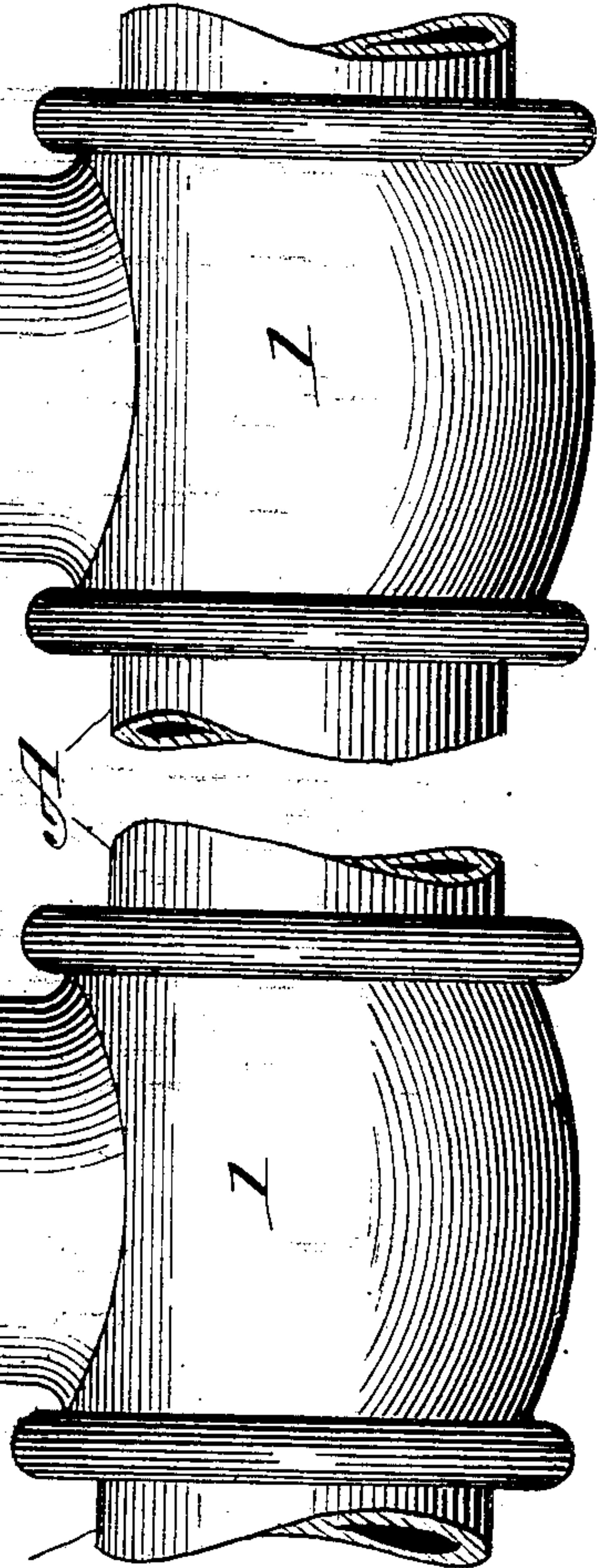
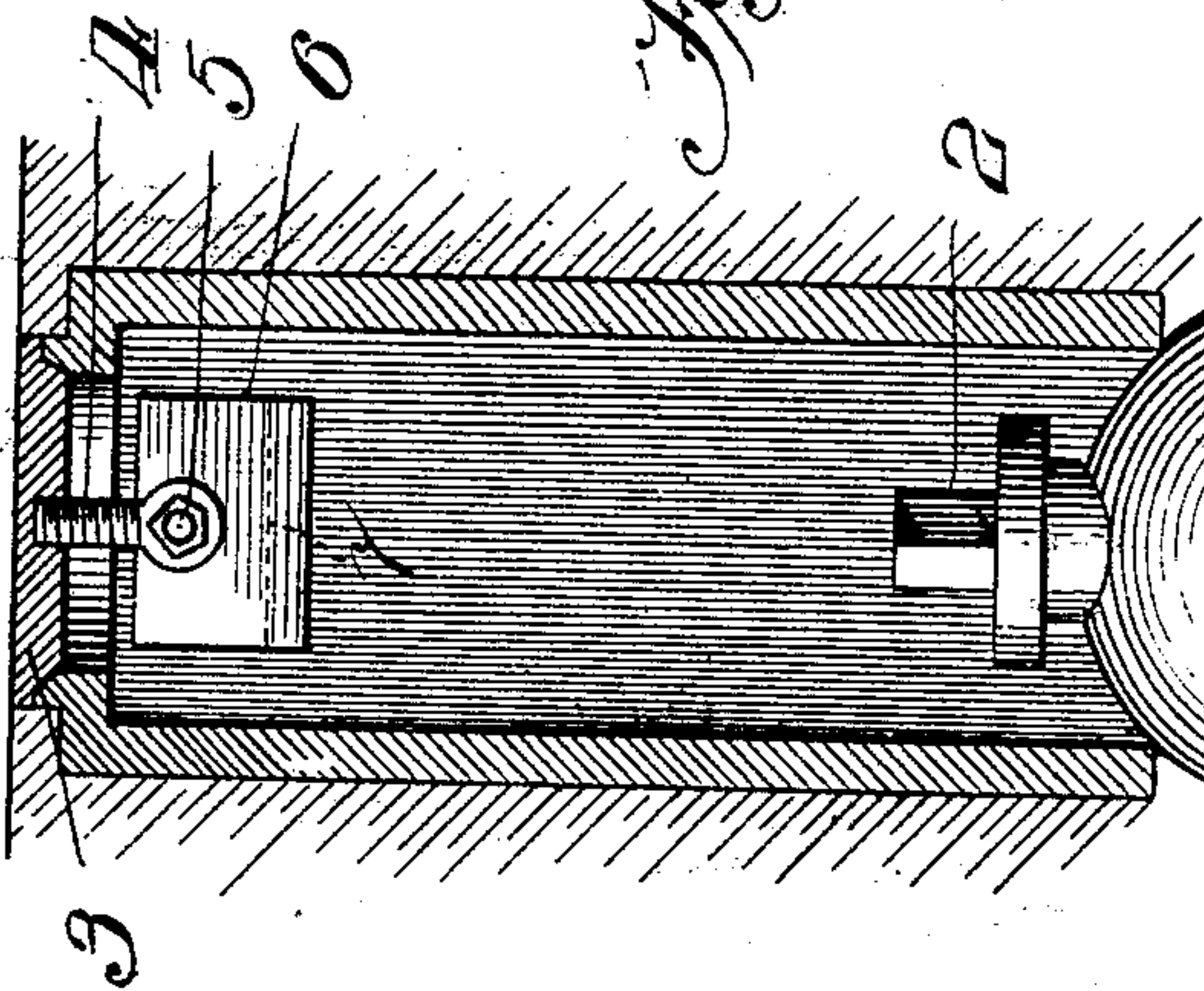
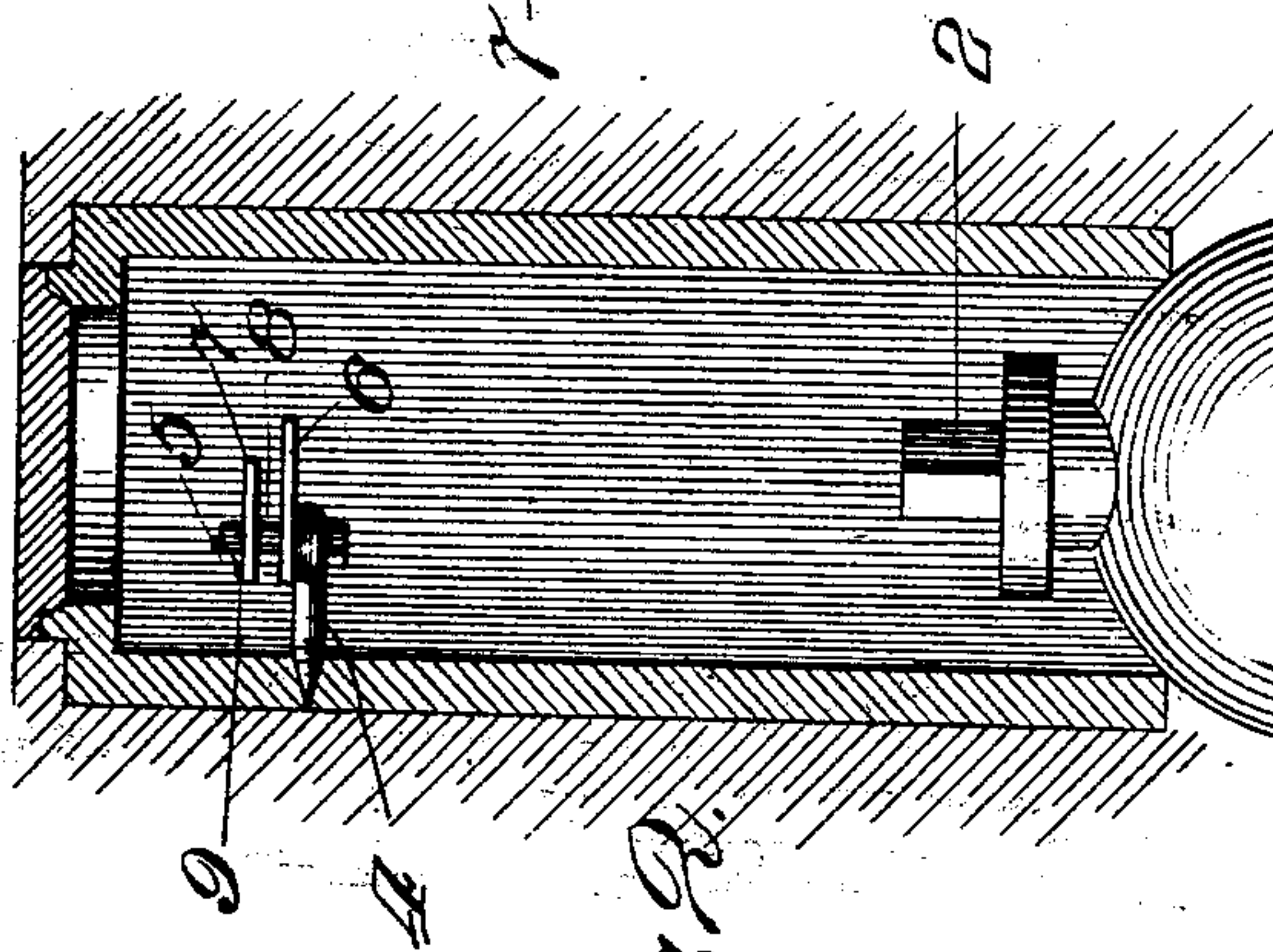
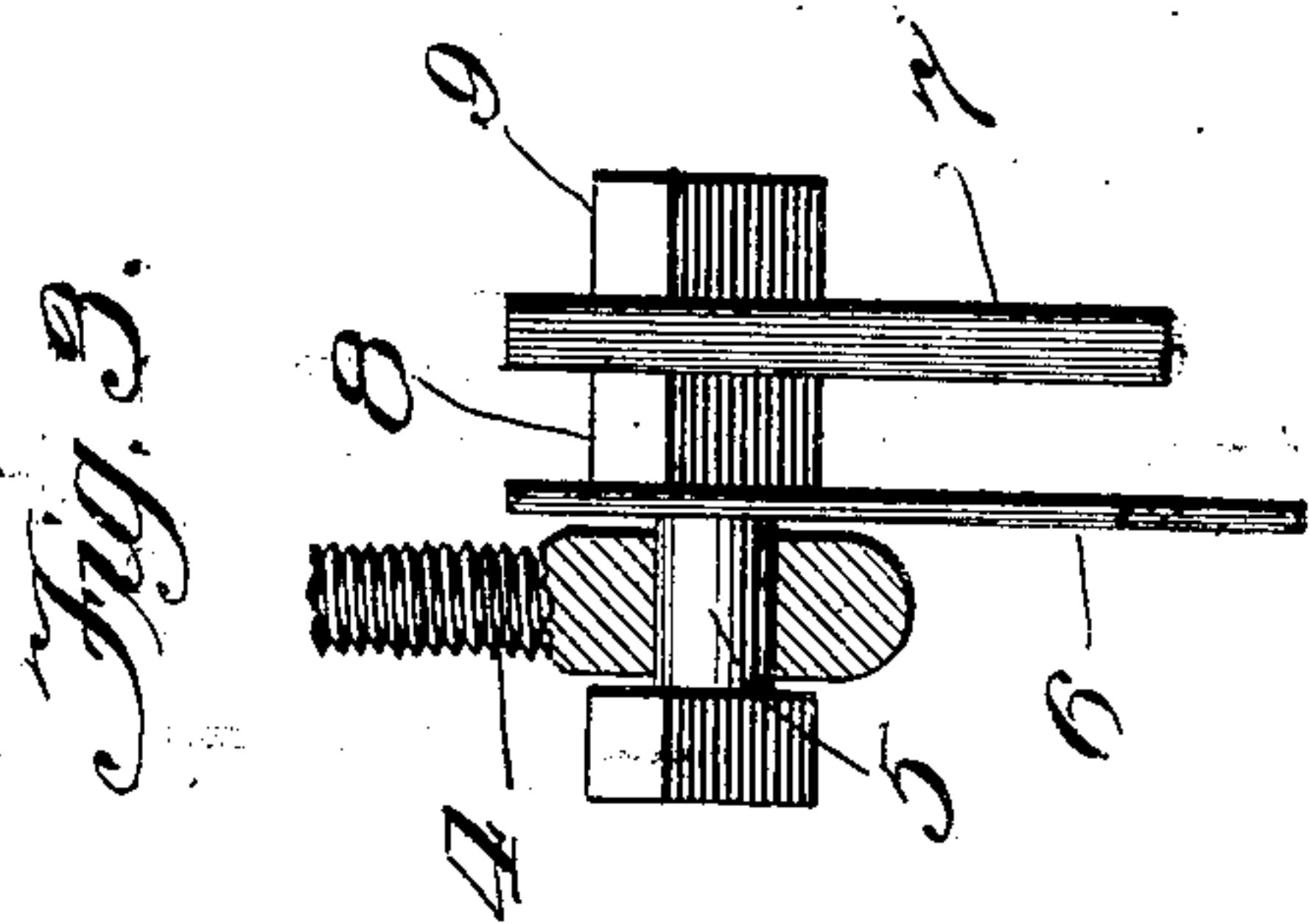
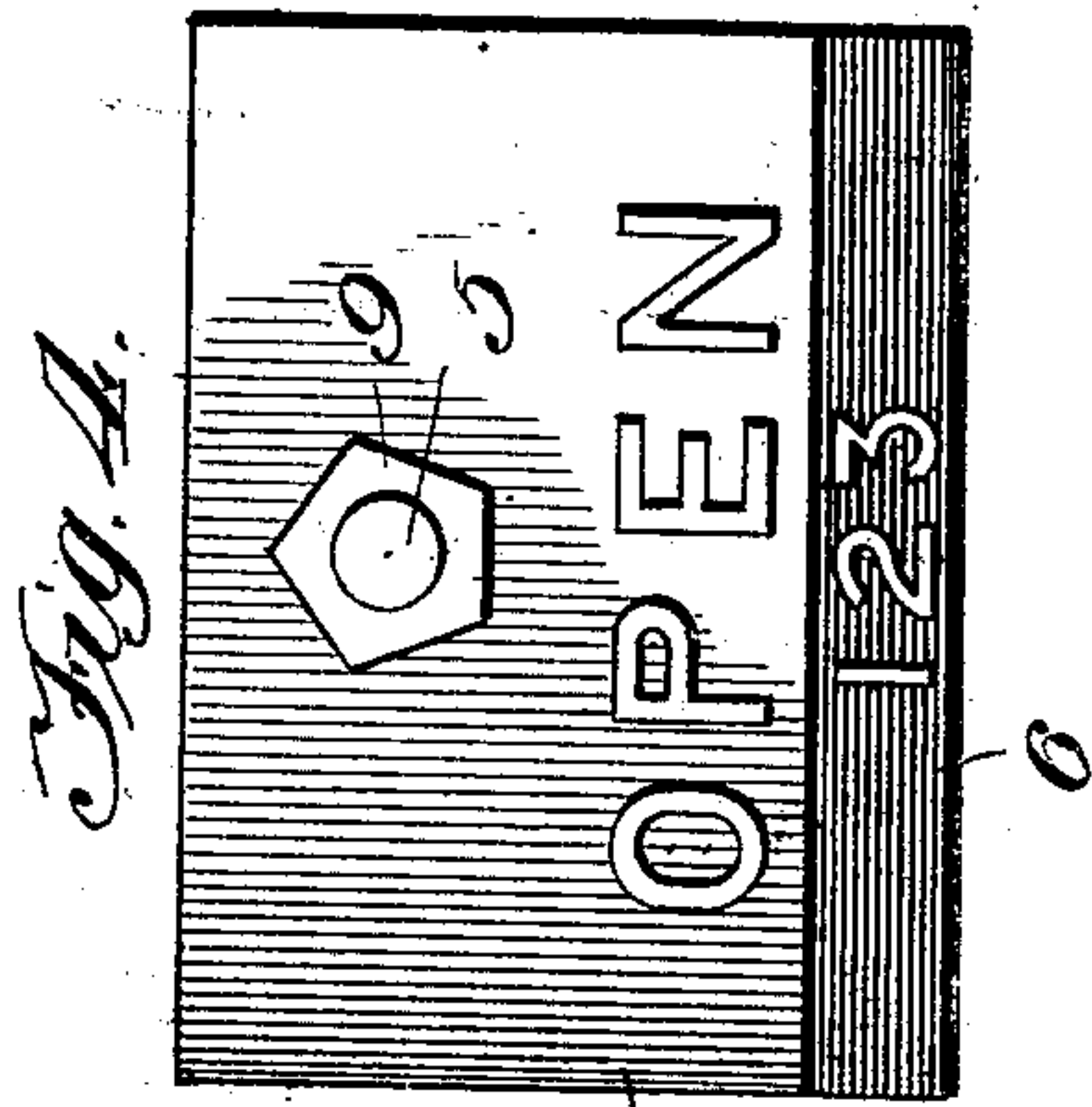


J. A. COLE.
 DEVICE FOR INDICATING THE CONDITION OF VALVES.
 APPLICATION FILED NOV. 23, 1903.

921.675.

Patented May 18, 1909.



Witnesses:
 H. S. Gaither
 J. C. Lee

Fig. 1.
 Inventor:
 John A. Cole
 by A. Miller Bequith

UNITED STATES PATENT OFFICE.

JOHN A. COLE, OF CHICAGO, ILLINOIS.

DEVICE FOR INDICATING THE CONDITION OF VALVES.

No. 921,675.

Specification of Letters Patent.

Patented May 18, 1909.

Application filed November 23, 1903. Serial No. 182,311.

To all whom it may concern:

Be it known that I, JOHN A. COLE, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Devices for Indicating the Condition of Valves, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to means for indicating whether stop valves in water or gas mains or similar pipes are open or shut.

Prominent objects of the invention are to provide a simple and practical manually operable device of this kind; to arrange for the easy and ready operation of the same so as to indicate a change in the condition of the valve; to render practically impossible tampering with the device by boys and other persons not having a right to manipulate it; and to accomplish the foregoing in a simple and expeditious manner.

In the accompanying drawing, Figure 1 is a vertical section of a water or gas main having a valve inclosed in a manhole, and a device embodying my invention for indicating the condition of the valve; Fig. 2 is a similar view of a modified form of indicating device; Fig. 3 is a side view of the indicating device showing a part thereof in section; and Fig. 4 is a front view of the same.

Referring first to Figs. 1, 3 and 4, A represents a pipe which can be either a gas or water main, or any other similar pipe, having a valve 1 controlled by a plug 2. The pipe A extends through the lower portion of a manhole box B which is provided with a cover 3. These parts are of any usual construction such as employed in municipal water or gas systems and elsewhere.

The device which I show herein for indicating whether or not the valve 1 is open or closed, comprises an eye-bolt 4, a bolt 5 passing through the eye of the eye-bolt 4, plates 6 and 7 on said bolt 5, and nuts 8 and 9 also on said bolt 5 on opposite sides of the plate 7, the head of the bolt 5, and the nut 9 being desirably pentagonal. The bolt 5 is held loosely by the eye-bolt 4 so that it is free to turn in the eye thereof. The nuts 8 and 9 are arranged to hold the plate 7 loosely between them. The plate 6 has its end desirably provided with a number which is the number assigned to the valve the device is

to indicate. The plate 7 has on one face the word "Open" and on the opposite face shows the word "Shut". Thus in the arrangement shown one of said words will be exposed by reason of the plate being so arranged as to cause it to face outwardly and the other word will not be exposed by being on the inner side and being to some extent concealed by the plate 6. The numeral on the lower end of the plate 6 will be seen below the plate 7. Thus when the valve 1 in the pipe A is open the plate 7 will be so arranged on the bolt 5 as to expose the word "open", this plate being so arranged in the drawing. When the valve 1 is closed the plate 7 will be taken off from the bolt 5 and its faces reversed, and replaced thereon so that the word "shut" will be exposed. The plate 6 will not be disturbed by this change. In this way the condition of the valve will be indicated, and at the same time its number will always appear. This manipulation of the device to indicate the changed condition in the valve, will be done by a workman or employee connected with the system, who opens the manhole to manipulate the valve, and whenever he does so he manipulates the indicating device to correspond with the change in the condition of the valve. It is obvious that the indicating device will remain in the condition to which it is adjusted, so long as it is left untouched. When however an operator or employee changes the condition of the valve, he will also change the indicator to correspond and it will remain an accurate index of conditions until the valve is again changed.

Tampering with the indicator is made difficult and practically impossible by its arrangement and construction. Obviously no one will tamper with it without opening the manhole and this is a thing that is very seldom done by any except authorized persons. Should the manhole be opened however, the device cannot be tampered with without two box wrenches, one to be applied to the nut 9 and the other to the head of the bolt 5, it being seen that a single wrench will not avail because when applied to either said nut or the head of said bolt, the bolt will rotate because of its loose mounting, and thus baffle any effort to unscrew the parts. As small boys and others having no right or purpose in changing the device, would not ordinarily be equipped with two such wrenches, they would not be able to manipulate the device.

The action of the elements on the device would not have an injurious effect, for if the parts should rust it would only make the nut 9 more difficult to remove and therefore
 5 present a greater obstacle to tampering by unauthorized persons.

In Fig. 2 I have shown the eye-bolt 4 inserted into the side of the manhole B instead of into the cover, and the other parts arranged so that the plate 7 is above the eye-bolt. In this way the result attained is substantially the same, the device being attached to the body of the manhole instead of to its top.

15 It will be seen that my invention contemplates a manually operable index or indicator which is to be operated by an employee or other authorized person of the system on which it is used, in contradistinction to an
 20 automatic indicating device which is set automatically by a change in the condition of the valve. Such a separate manually operable device having no connection with the valve itself, can be added to each valve of a
 25 water works or gas system at but slight expense, as it will not be necessary to change any of the valves, or equip the system with new ones. It will also be seen that each valve whose condition is indicated, is identified,
 30 thus preventing confusion and mistake where several valves are located together.

The form of device which is herein set forth is only one of a vast number of forms and arrangements which can easily be de-
 35 vised to carry out the underlying principle of the invention. It will therefore be understood that I do not wish to limit myself either to the form of device which is herein set forth, nor to the manner of associating it
 40 with the valve whose condition is to be indicated.

What I claim as my invention is:—

1. The combination of a manhole and an indicating device, comprising a reversible
 45 plate bearing characters indicating different conditions of the valve, the different characters being exposed when the plate is in reversed positions, means whereby the plate can be reversed, and means for mounting said
 50 device in the manhole box.

2. The combination of a manhole and an indicating device, comprising a reversible indicating member bearing different inscriptions to indicate different conditions of the
 55 valve, means whereby said member can be reversed, and means for mounting said device in the manhole box.

3. The combination of a manhole box, of an indicating device for indicating the condition of a valve in the box, said device being
 60 a separate entity capable of bodily insertion in and removal from the manhole box, and having no operable connection with the valve, and having provisions for indicating

different conditions of the valve capable of 65 manual manipulation independent of the same.

4. The combination with a manhole for a pipe valve, of a device for indicating the condition of the valve, said device comprising a
 70 plate bearing on opposite sides inscriptions or characters to indicate different conditions of the valve, and means for hanging said plate upon some part of the manhole structure, so as to permit the reversal of the plate
 75 to expose either side, as desired.

5. The combination of a manhole for a pipe valve, an indicating device attached to some part of the manhole structure, said indicating device comprising a plate provided
 80 on opposite sides with different words or characters indicating different conditions of the valve, a bolt carrying said plate, nuts for detachably securing the plate to said bolt, and a screw-threaded eye-bolt in which the
 85 aforesaid bolt is loosely mounted, said eye-bolt being inserted into the manhole structure.

6. The combination of a manhole, and an indicating device, comprising a plate bearing
 90 on opposite sides words indicating different conditions of the valve, a bolt carrying and passing through the plate, said bolt being provided with nuts to hold the plate temporarily in position, and an eye-bolt loosely
 95 supporting said bolt, and adapted for attachment to the manhole.

7. The combination of a manhole and an indicating device comprising an eye-bolt 4 attached to the manhole structure, a bolt 5
 100 loosely mounted in said eyebolt 4, plates 6 and 7 mounted on said bolt 5, the plate 6 being numbered, and the plate 7 being provided on opposite sides with words to indicate the condition of the valve, and nuts 8
 105 and 9 on opposite sides of the plate 7.

8. The combination of a manhole for a pipe valve, and an indicator arranged in and attached to the manhole, said indicator comprising a plate having different words on its
 110 opposite sides to indicate different conditions of the valve, a bolt on which said plate is removably secured, a second plate carried by said bolt in the rear of the first mentioned plate and having numerals located below
 115 said first mentioned plate, whereby the first mentioned plate can be removed and reversed to indicate the condition of the valve, and also whereby the numeral on the second mentioned plate will always be exposed.
 120

In witness whereof, I hereunto subscribe my name this 13th day of Novemebr A. D., 1903.

JOHN A. COLE.

Witnesses:

A. MILLER BELFIELD,
 I. C. LEE.