

(No Model.)

A. J. PAUL.  
INDICATING VALVE.

No. 577,147.

Patented Feb. 16, 1897.

Fig. 2.

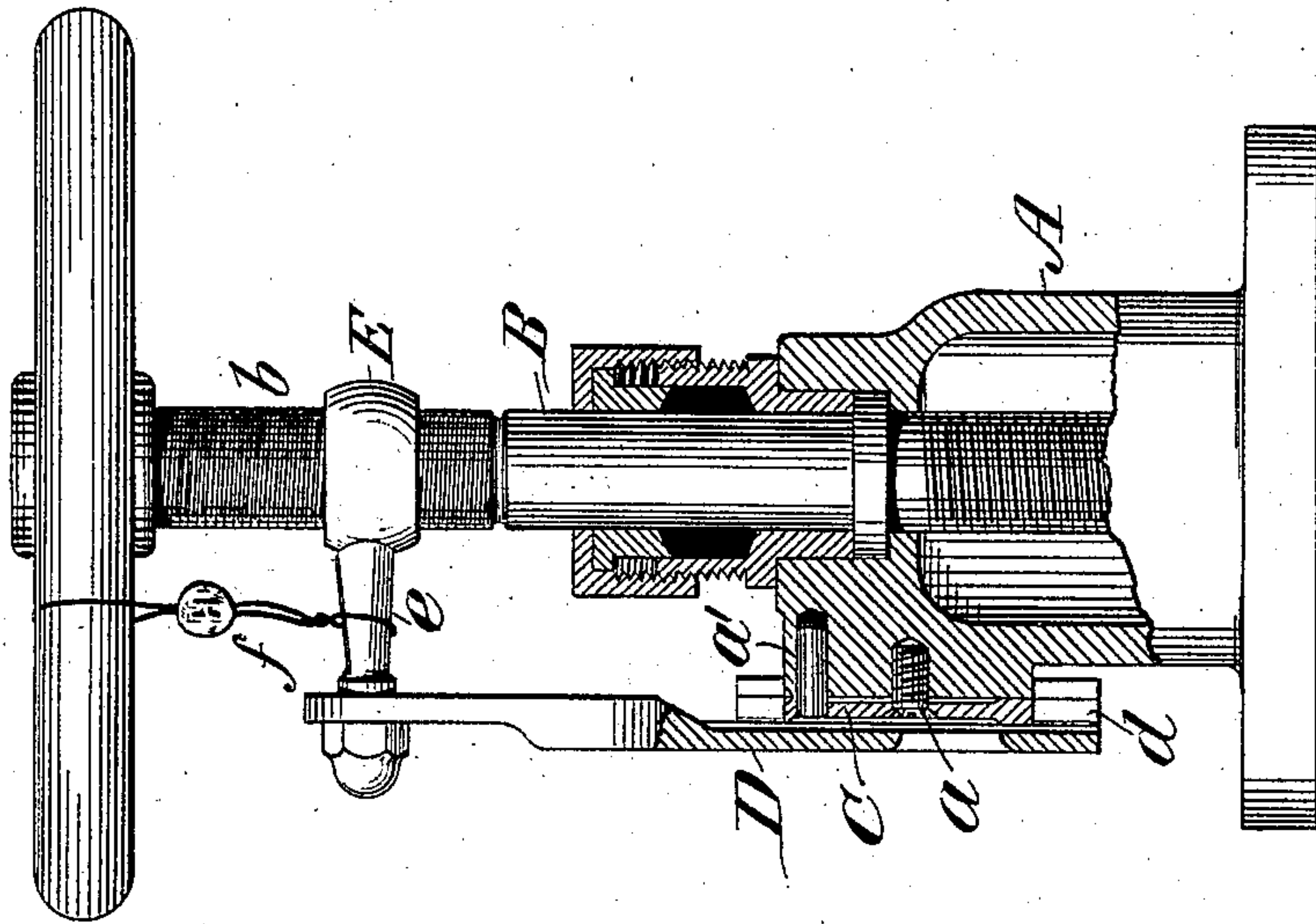


Fig. 1.

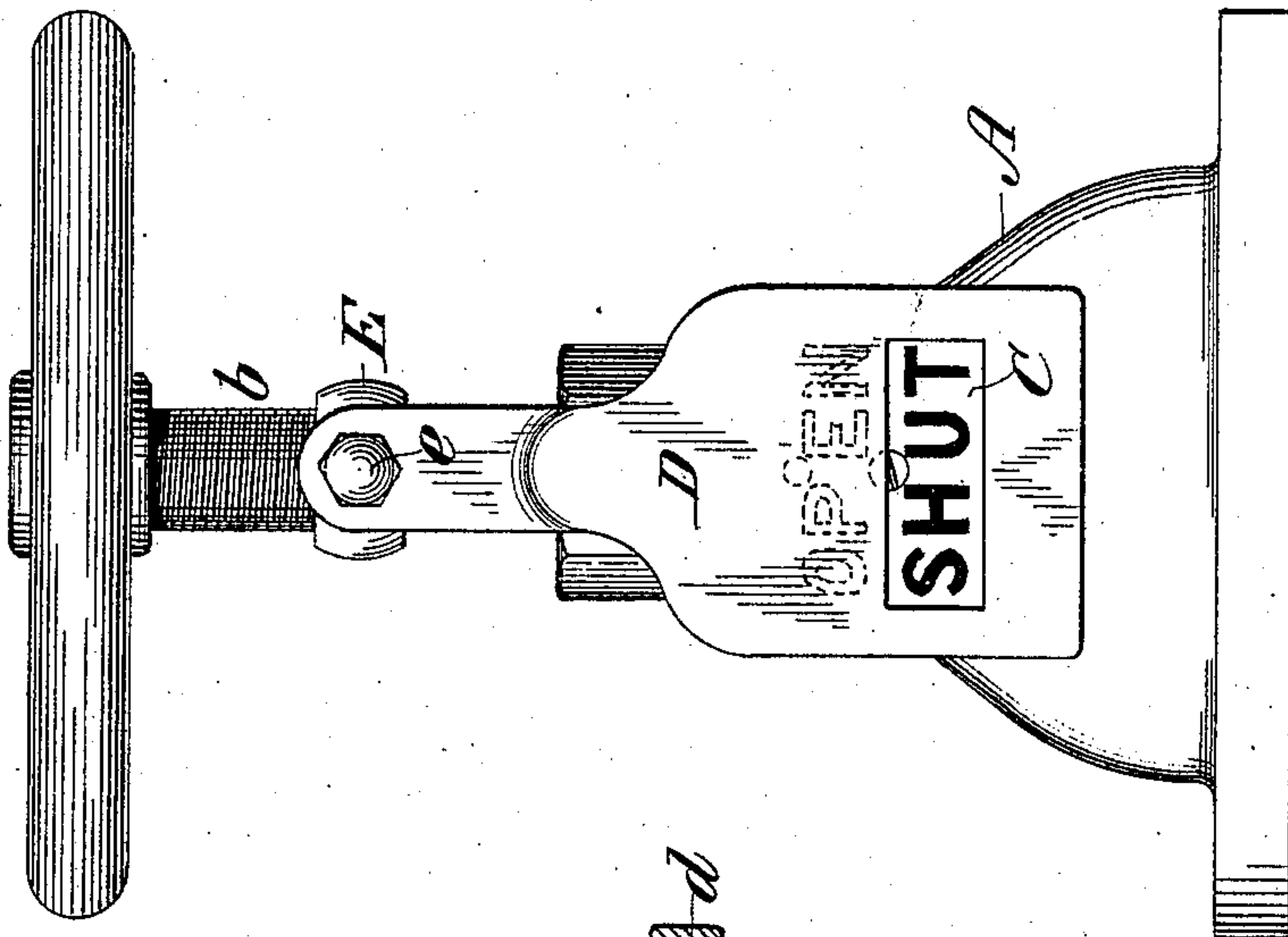
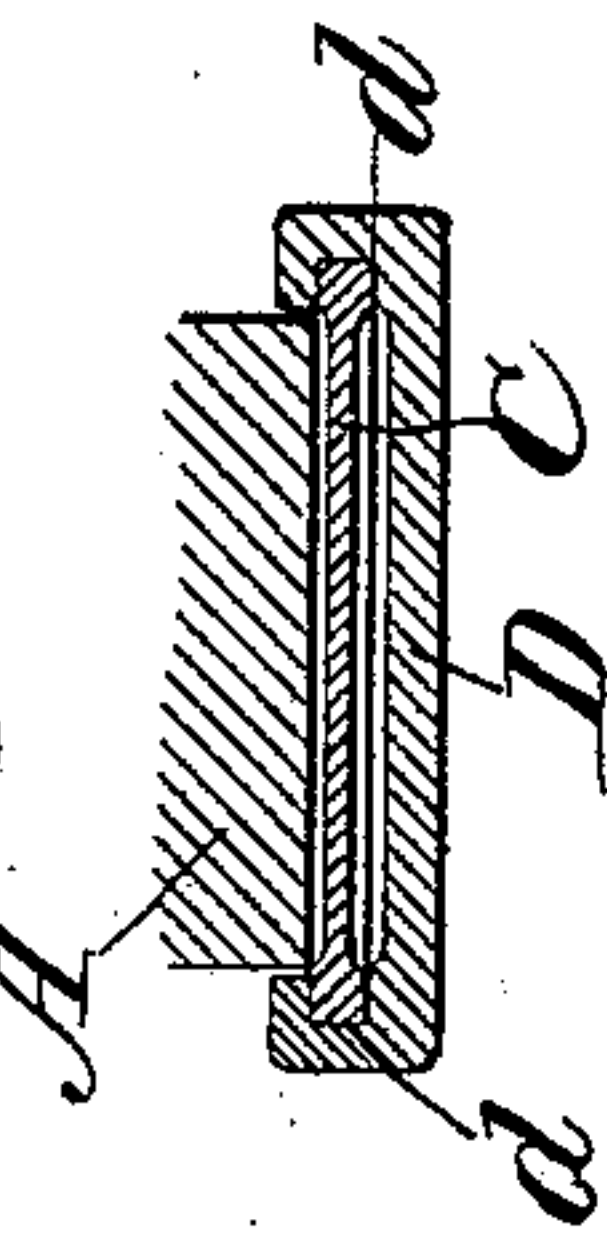


Fig. 3.



WITNESSES:

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INVENTOR

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BY *Witter & Kenyon*

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# UNITED STATES PATENT OFFICE.

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## INDICATING-VALVE.

SPECIFICATION forming part of Letters Patent No. 577,147, dated February 16, 1897.

Application filed June 27, 1896. Serial No. 597,171. (No model.)

*To all whom it may concern:*

Be it known that I, ANDREW G. PAUL, a citizen of the United States, residing in Boston, in the county of Suffolk and State of Massachusetts, have invented Improvements in Indicating-Valves, of which the following is a specification.

This invention relates to valves of that character wherein the valve-stem is rotatable but is fixed against longitudinal movement. In valves of this kind as ordinarily constructed there has been no satisfactory means to clearly indicate when the valve is open and when it is closed. In accordance with this invention simple and inexpensive means which are not liable to get out of order are provided, whereby the condition of the valve may be always clearly indicated.

The invention consists of the construction hereinafter set forth.

In the drawings forming part of this specification, and in which like parts are designated by similar letters of reference, Figure 1 is a front elevation of a valve embodying my invention. Fig. 2 is a side elevation with the valve-casing and indicator in section, and Fig. 3 is a detail horizontal section.

Referring now more particularly to the embodiment of the invention as shown in the drawings, A is the valve-casing, provided with the rotatable and longitudinally-fixed valve-stem B, having the screw-threads *b*. On one side of the casing is fixed an indicating-plate C, having projecting edges, as shown in Fig. 3. The shutter D is arranged to move back and forth over the plate C and is provided with suitable means to hold it in place and prevent it from turning sidewise. In the best form of the invention I provide for this purpose grooves or channels *d* at the edges of the shutter, adapted to receive projections on the valve-casing. In the drawings I have shown the grooves *d* fitting over the edges of the plate C, which thus provides the projections in a convenient way.

E is a non-rotatable nut fitting on the threads *b* of the stem B and arranged to travel up and down on the stem to actuate the shutter when the valve-stem is rotated. In making the nut non-rotatable and in arranging for it to actuate the shutter any suitable

means may be employed for the purpose. The means for this purpose which I consider the best are shown in the drawings and consist of an arm *e*, rigidly connected with or made in one piece with the nut and having its outer end detachably and rigidly connected with the shutter.

The indicating-plate C bears two separate marks or legends of suitable character, one to indicate that the valve is open and the other to indicate that the valve is closed. I prefer to employ the words "open" and "closed" for this purpose, as shown in the drawings, and the plate C is provided with these words on both sides, but in inversed arrangement, so that the plate may be reversed to make the words clearly readable if the position of the valve when fixed in its place requires such reversal. In providing for the reversal of the plate C, I employ a plurality of screws, pins, or other easily-detachable fastening means passing through the plate into the valve-casing to hold the plate in place and at the same time to render the plate readily removable. To remove the plate C, it is only necessary to move the shutter so as to expose the screw and steady-pin, when both may be easily taken out and the plate removed, reversed, and put back and secured again in place, all this being done without the necessity of detaching the shutter.

The detachable fastening means for the plate C are behind the shutter D and are in the best form of the invention so disposed that they cannot be entirely detached, so as to remove the plate C, without changing the position of the shutter. This will be understood by reference to the screw *a* and steady-pin *a'*, the preferred fastening means. The screw *a* and pin *a'* are disposed one above the other, so that when the shutter is in position to expose one plate and render it accessible the other is covered and inaccessible, and vice versa. The valve, when connected in place for use as a fire-valve, is generally sealed in closed position by means of a sealing-wire *f* and cannot be operated without first breaking the seal. By the disposition and arrangement of the fastening means for the plate C above described it will be seen that the plate C cannot be reversed without first breaking the



seal. A mischievous reversal of the plate can therefore be instantly detected. This is an important feature of the invention, because without it an evil-disposed person could  
5 surreptitiously reverse the plate C without detection and practically render the valve useless in an emergency. The shutter may have an aperture, as shown, through which to read the indicating-plate, or, if desired,  
10 the shutter may be of a size just sufficient to cover one mark or legend on the plate while exposing at the same time the other mark or legend.

Having fully described my invention, what  
15 I desire to secure by Letters Patent is—

1. In a valve, the combination of a valve-casing provided on one side with a reversible indicating-plate bearing on each side two separated marks or legends, one to signify "valve  
20 open" and the other to signify "valve closed," readily-removable means for securing said indicating-plate in place, a movable and non-rotatable shutter adapted to move back and forth over the indicating-plate to render each  
25 one of said marks or legends separately visible while the other is simultaneously obscured, said shutter held in place by suitable means, a rotatable and longitudinally-fixed valve-stem provided with screw-threads and normally sealed in one position, and a non-rotatable nut on the threaded valve-stem arranged  
30 to actuate the shutter, the means for holding the indicating-plate in place so disposed with respect to the shutter that they cannot be entirely withdrawn to remove said plate until  
35

the valve-seal has been broken and the valve and shutter moved from one position to another, substantially as set forth.

2. In a valve, the combination of a valve-casing provided on one side with a reversible indicating-plate bearing on each side two separated marks or legends, one to signify "valve open" and the other to signify "valve closed," said indicating-plate fixed to the valve-casing by means of a screw and steady-pin, a movable and non-rotatable shutter adapted to move back and forth over the indicating-plate to render each one of said marks or legends separately visible while the other is simultaneously obscured, said shutter comprising a  
40 plate provided with longitudinal grooves fitting over suitable projections on the valve-casing, a rotatable and longitudinally-fixed valve-stem provided with screw-threads and normally sealed in one position and a non-rotatable nut on the threaded valve-stem arranged to actuate the shutter, the means for holding the indicating-plate in place so disposed with respect to the shutter that they cannot be entirely withdrawn to remove said  
45 plate until the valve-seal has been broken and the valve and shutter moved from one position to another, substantially as set forth.

In testimony whereof I have signed my name to this specification in the presence of  
65 two subscribing witnesses.

ANDREW G. PAUL.

Witnesses:

EDWIN SEGER,  
CHARLES J. PUPKI.