(No Model.)

J. RICHTER.

STRAIGHT WAY VALVE.

No. 273,607. Patented Mar. 6, 1883.

Fig. 1.

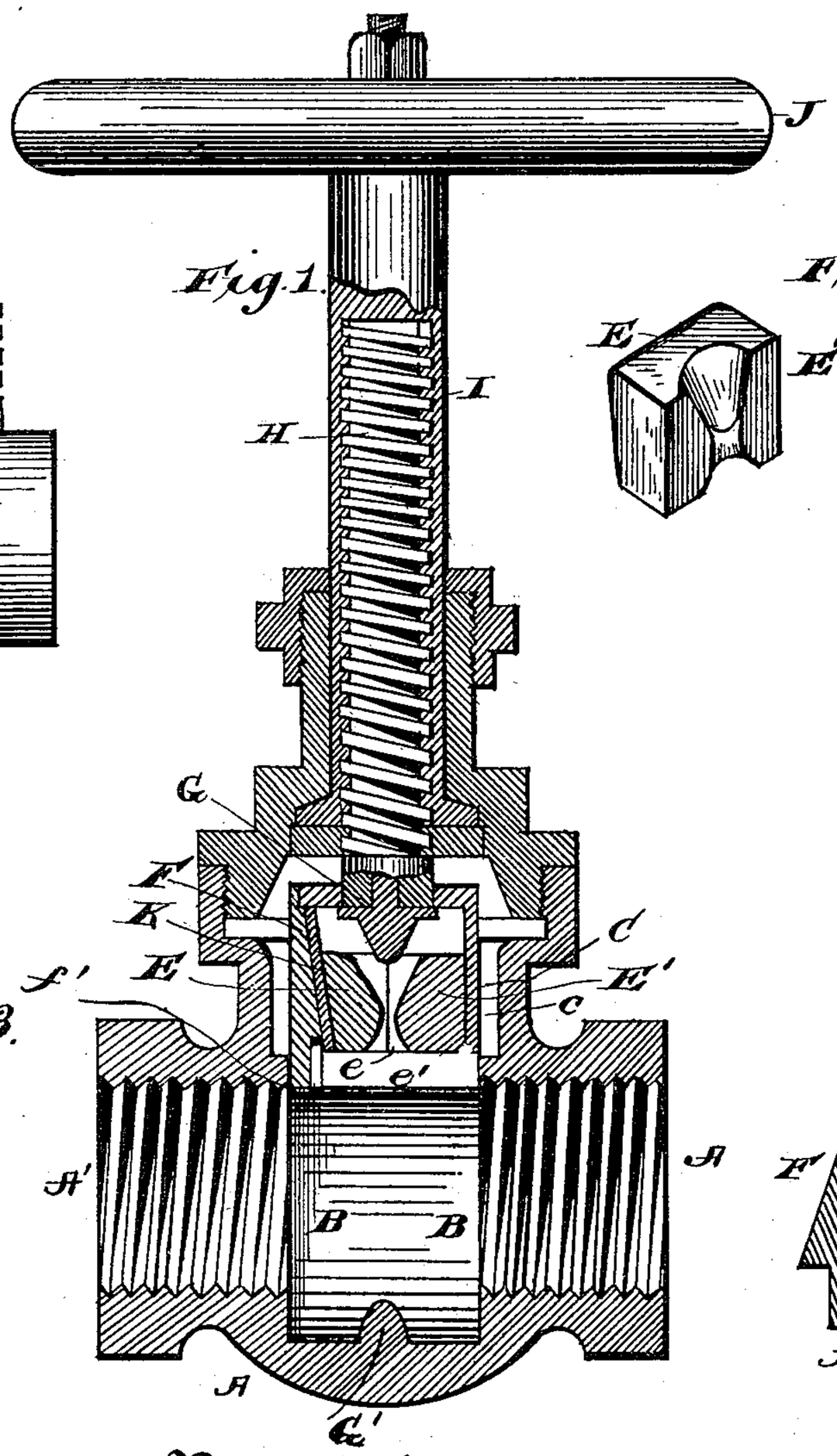


Fig. 5.

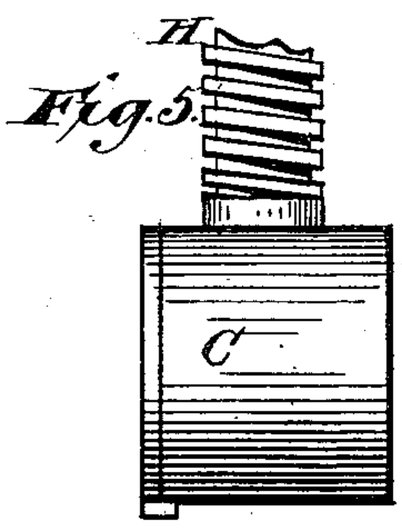


Fig. 6.

Fig. 3.

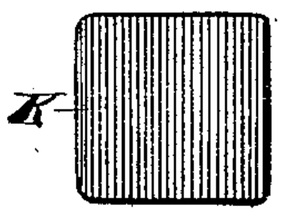


Fig. 4.

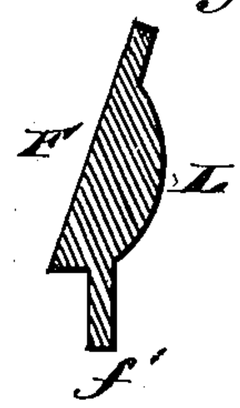
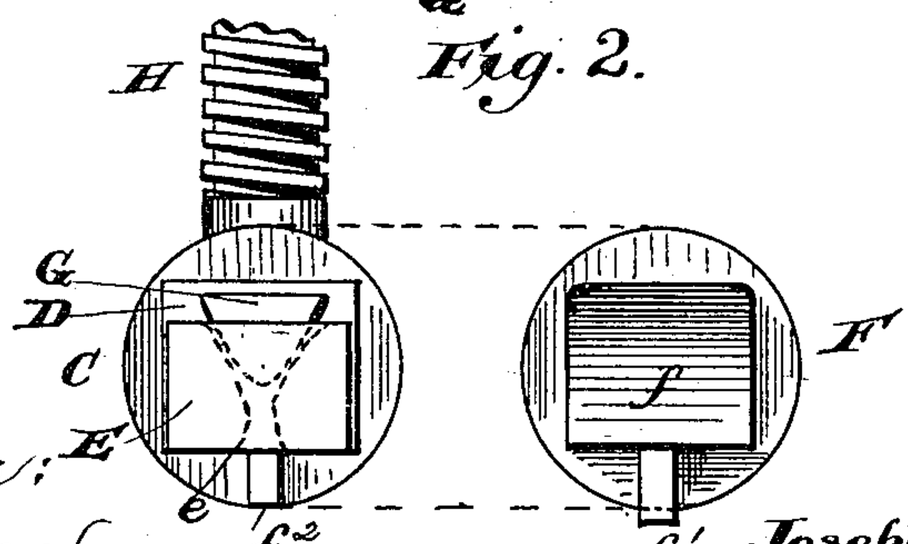


Fig. 2.



Witnesses:
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Attys.

UNITED STATES PATENT OFFICE.

JOSEPH RICHTER, OF CINCINNATI, OHIO.

STRAIGHT-WAY VALVE.

SPECIFICATION forming part of Letters Patent No. 273,607, dated March 6, 1883.

Application filed September 16, 1882. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH RICHTER, a citizen of the United States, and a resident of Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Straight-Way Valves, of which the following is a specification.

My invention relates to improvements in valves, more particularly that class known as "straight-way" valves.

One of the objects of my invention is to provide a valve-box containing wedge-blocks and a removable gate, which are expanded or forced outwardly by conical points in the top of said box and the bottom of the valve-chamber entering inclined grooves on the inner faces of said wedge-blocks, whereby compensation for the wear of the valve gates or seat is accomplished and a close-fitting valve produced.

Another object of my invention is to provide, in connection with said wedge-blocks and gate, one or more filling-plates fitting in the valve-box between said gate and wedge-blocks to still further compensate for the wear of said valve seat and gate, all more fully hereinafter described.

These objects I accomplish by means of the devices illustrated in the annexed drawings, in which—

Figure 1 is a central sectional elevation of a straight-way valve embodying my invention. Fig. 2 is an enlarged elevation, showing the valve-box, one of the wedge-blocks, a broken lower end of the valve-stem, and a detached elevation of the inner face of the valve plate or gate. Fig. 3 is a face view of one of the filling-plates. Fig. 4 is a vertical central section of one form of valve-gate, showing a curved outer face for a curved way or seat. Fig. 5 is an elevation of the valve-box. Fig. 6 shows in perspective the two recessed wedge-blocks.

A represents the shell or ordinary valve-chamber, having the inlet and outlet openings or passage A′.

B represents the guides or ways, constructed as customary, either curved, tapered, or straight, within the valve-chamber A. In the drawings I have shown them straight.

C represents the valve-box traveling in the ways B. Valve C is preferably made, as shown, of box form, with an opening, D, on one side for the insertion and operation of wedge-blocks E E′. These blocks E and E′ are each formed with a recess or channel, which is contracted at or near its middle, so that when the blocks are fitted together a passage contracted at its middle, or practically two tapering or wedge-shaped recesses, *e*, are formed, one at the top and the other at the bottom of the blocks.

e′ is an opening or orifice made in the bottom of valve-box C.

F is a cover fitting the opening D, and serving as one of the valve-gates. The side of the valve-box opposite opening D and cover F may be made similarly; but I prefer the construction herein shown with a solid back.

f represents an inclined lug or raised shouldered face on the inner side of cover F, and *f′* a depending tongue or guide-lug. Lug *f* fits in opening D and tongue *f′* in groove f^2, to prevent any lateral movement or displacement of said cover and to insure its being placed in proper position. Lug *f* also serves as a backing for the wedge-block E.

G is a conical projection or teat in the top of the valve-box, screwing into the valve-stem H, and securing the valve to the stem.

Instead of making the conical point G stationary in the top of the valve-box, it may be secured to the end of the stem H, which passes through an opening in the top of the said box, having a shoulder on it within the box to attach it to the stem. The stem can then be advanced or screwed farther into the valve to spread the wedges apart.

G′ is a similar projection or teat in the bottom of the valve-chamber A intermediate the ways B.

The valve is provided with a stem, H, having male screw-threads, which engage female threads cut in the bore of a secondary stem, I.

J is a hand-wheel mounted on stem I for operating the valve.

The surrounding collars, nuts, and other means for securing and mounting the stem in position for operation are constructed and arranged in the usual manner, and it will be unnecessary for me to further describe them.

The operation of the valve is as follows: By turning hand-wheel J so that the stem and valve will descend for shutting off or closing the openings A′, teat G′ enters the opening *e′* and the narrowing or taper opening between

the wedge-blocks E E′, forcing them apart at the bottom, and a similar effect following by the teat G at the top bringing the gates of the valve in close contact with their seats, thereby insuring a close-fitting valve and a positive cut-off.

When the valve-gates become worn by use I provide filling-plates K, which may be inserted between the wedge-blocks and either or both walls of the box.

Fig. 4 illustrates a cover or gate for the valve-box, provided with a rounded or curved outer face, L, for contact with curved guides or seats within the valve-chamber.

It is obvious that the cover F may also be made tapering from top to bottom on its outer face for contact with tapering seats, and a close-fitting valve obtained.

I claim—

1. The combination, with the valve-box open at one side and carried by the valve-stem, of the wedge-blocks E and E′, loosely fitted within the valve-box, and secured so as to form the tapering recesses *e*, the gate F, applied against the open end of the valve-box, and the teats G and G′, respectively located within the valve-box and at the bottom of the valve-chamber, the said valve-box having an opening in its bottom in which the lower teat is received when the valve-box is lowered, substantially as described.

2. The combination, with the valve-box open at one side and provided with an opening through its bottom, of the wedge-blocks E and E′, received so as to form tapering passages *e*, the gate F, provided with an incline, *f*, and a tongue, *f′*, fitted in a groove in the valve-box, and the teats G and G′, respectively located in the valve-box and at the bottom of the valve-chamber A, substantially as described.

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

JOSEPH RICHTER.

Witnesses:
JNO. E. JONES,
ADOLPH GLUCKOWSKY.