

C. C. Parsons,
Stop Cock,
No 55,700, Patented June 19, 1866.

Fig. 1.

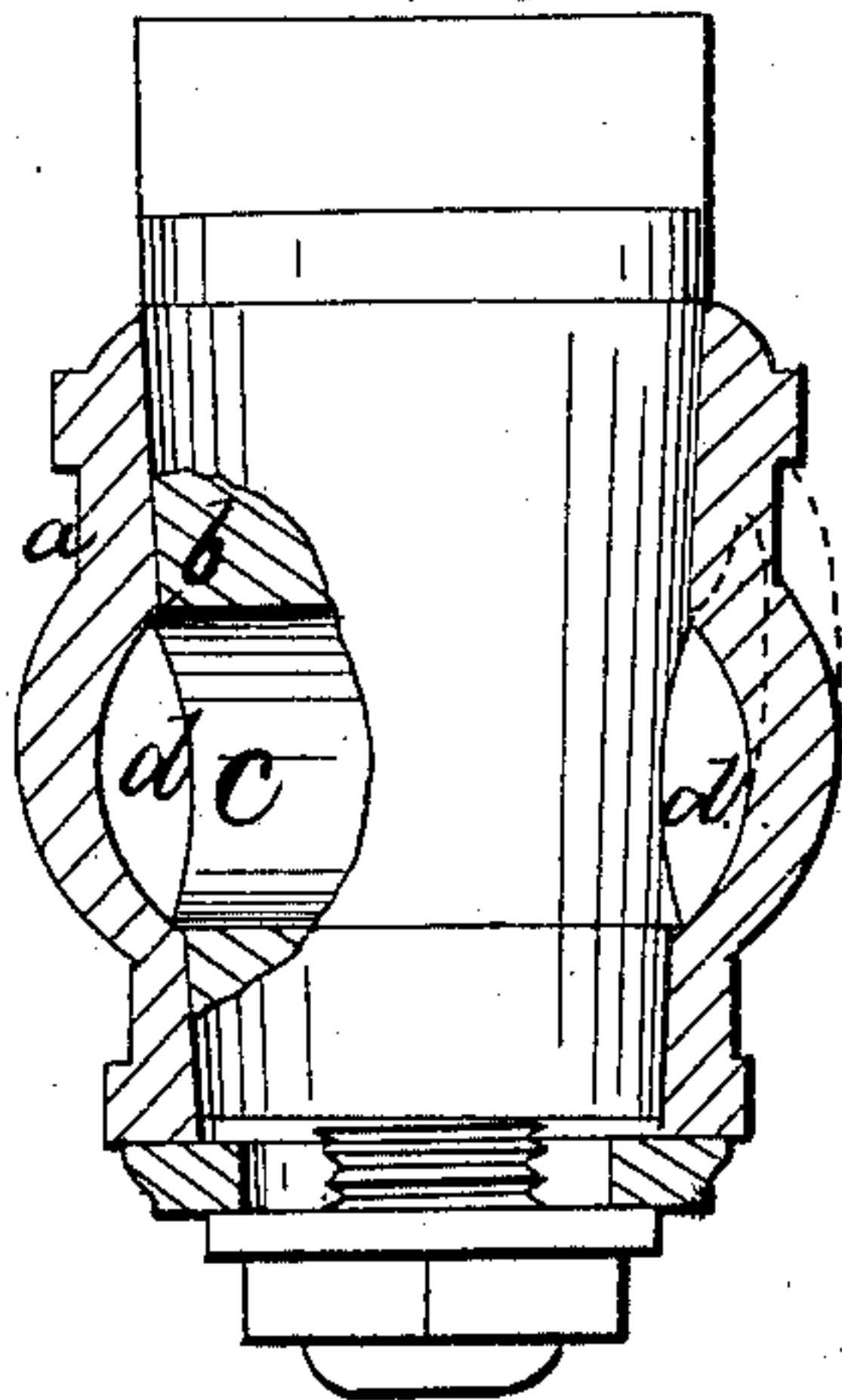


Fig. 2.

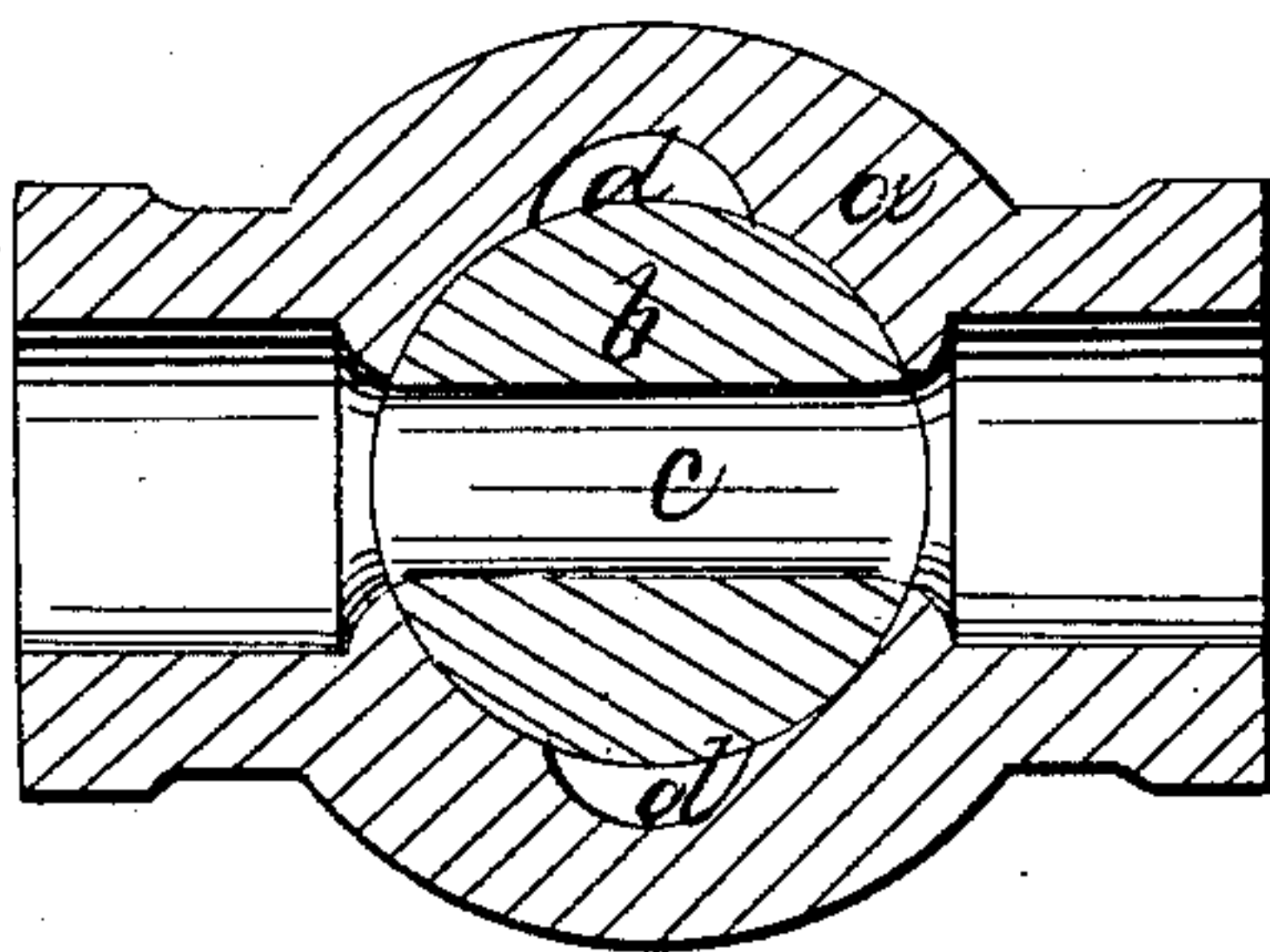
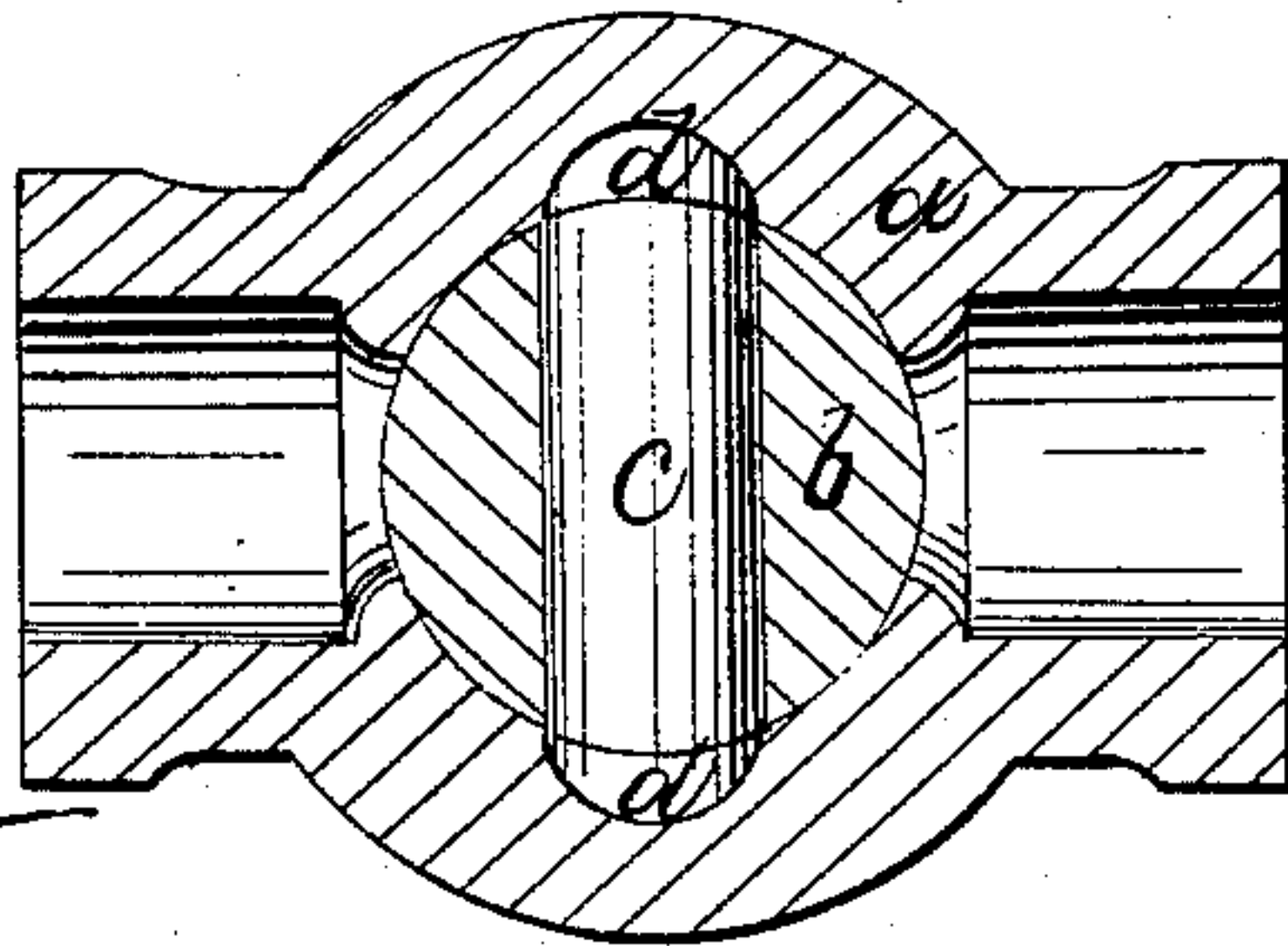


Fig. 3.



Witnesses:
James Gould
J. B. Kidder.

Inventor:
C. C. Parsons
by his Att'y -
W. B. Crosby

UNITED STATES PATENT OFFICE.

C. C. PARSONS, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN STOP-COCKS.

Specification forming part of Letters Patent No. 55,700, dated June 19, 1866.

To all whom it may concern:

Be it known that I, C. C. PARSONS, of Boston, in the county of Suffolk and State of Massachusetts, have invented an Improved Construction of Stop-Cocks; and I do hereby declare that the following, taken in connection with the drawings which accompany and form part of this specification, is a description of my invention sufficient to enable those skilled in the art to practice it.

In that common construction of stop-cocks generally known as the "plug-cock" much trouble arises during cold weather and in exposed situations from the breaking or bursting of the cock, consequent upon the freezing of liquid contained in the plug of the cock when it is so turned as to close the communication through the cock, the aperture through the plug being full of liquid, which is confined therein when turned as mentioned, without chance to escape, and this expanding in the act of freezing finds vent by breakage of some part of the cock.

To remedy this difficulty is the object of my invention, which consists in chambering out recesses in the barrel of the cock, which, when the plug is so turned as to close the communication through the cock, shall connect with the aperture through the plug, forming not waste-passages to empty the cavity of the plug of its liquid contents, but air-tight chambers communicating only with the cavity in the plug.

In the drawings, which illustrate a stop-cock embodying my invention, Figure 1 shows the barrel in vertical central section, with the plug in elevation, but with a portion shown as broken away to show the construction. Fig. 2 shows a horizontal cross-section through the cock, showing the plug therein in such position as to leave the aperture through the cock fully open. Fig. 3 is a section similar to Fig. 2, but showing the aperture through the cock as closed, and the passage in the plug in communication with the chambers or receptacles in the barrel of the cock.

a is the barrel of the cock; *b*, the plug; *c*, the opening through it; and *d d* are the chambers in the barrel *a*.

Suppose the plug in the position shown in Fig. 2, and with fluid flowing freely through the cock. Now, if the plug is turned about forty-five degrees the opening through the cock will be closed, and the aperture through the plug will be and will remain filled with the fluid, in which condition, if the fluid in the plug freezes, breakage will ensue unless the parts are of unusual strength; but if the plug is turned still farther, so that the opening *c* communicates with the chambers *d d*, the expansion of the fluid in *c* will find vent in the air-chambers *d d*, and will only compress the air therein contained, thus preventing rupture of any of the parts of the cock.

The proportions of the parts of the cock should be as shown in the drawings, such that when turning the plug the opening through the cock should be entirely closed before the aperture *c* communicates with the chambers *d d*. These chambers may be enlarged, as indicated in dotted lines at the right of Fig. 1.

I am aware that cocks have been constructed with waste-passages in the barrels thereof, by which, under certain circumstances, when the plug is so turned as to shut off the flow through the cock, the cavity will be emptied of its liquid contents. Such a construction I do not claim, nor are such passages the equivalents of my closed air-tight chambers, as the two devices operate upon different principles.

I claim—

A stop-cock constructed with one or more closed air-tight chambers, *d*, operating in combination with the opening through the plug.

In witness whereof I have hereunto set my hand this 25th day of January, A.D. 1866.

C. C. PARSONS.

Witnesses:

J. B. CROSBY,
FRANCIS GOULD.