

H. J. BAILEY.
HYDRANT.

No. 85,267.

Patented Dec. 29, 1868.

Fig. 1.

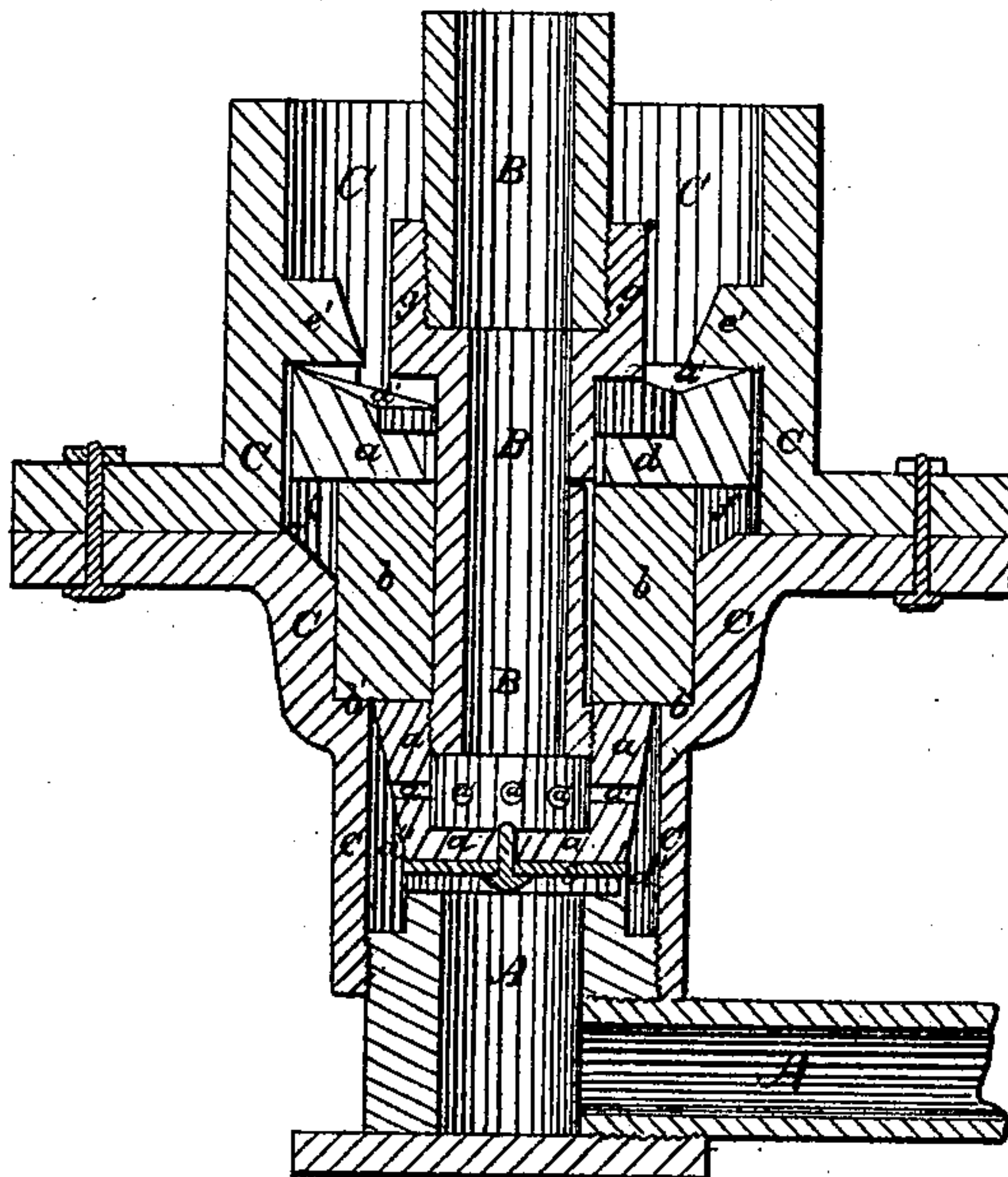
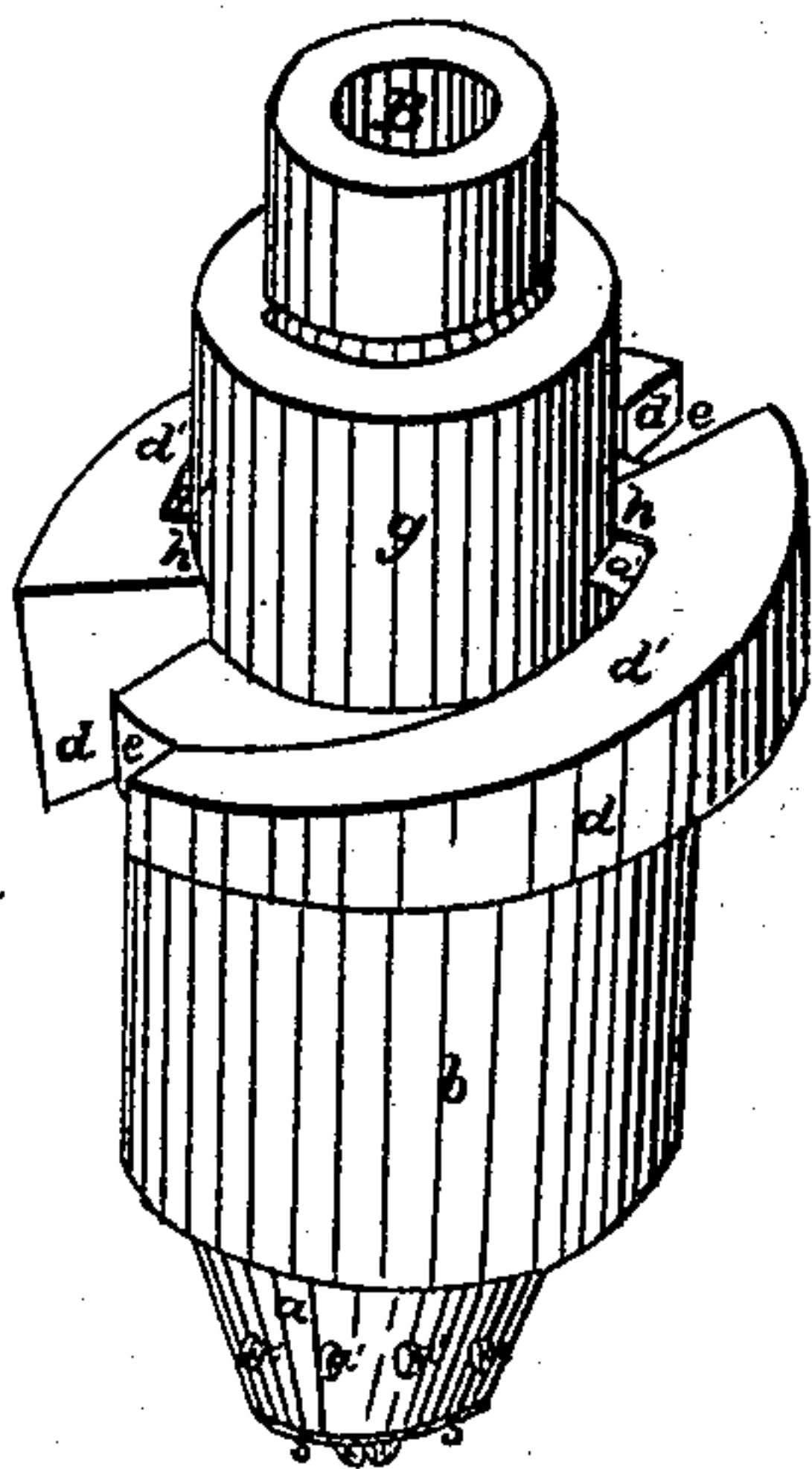
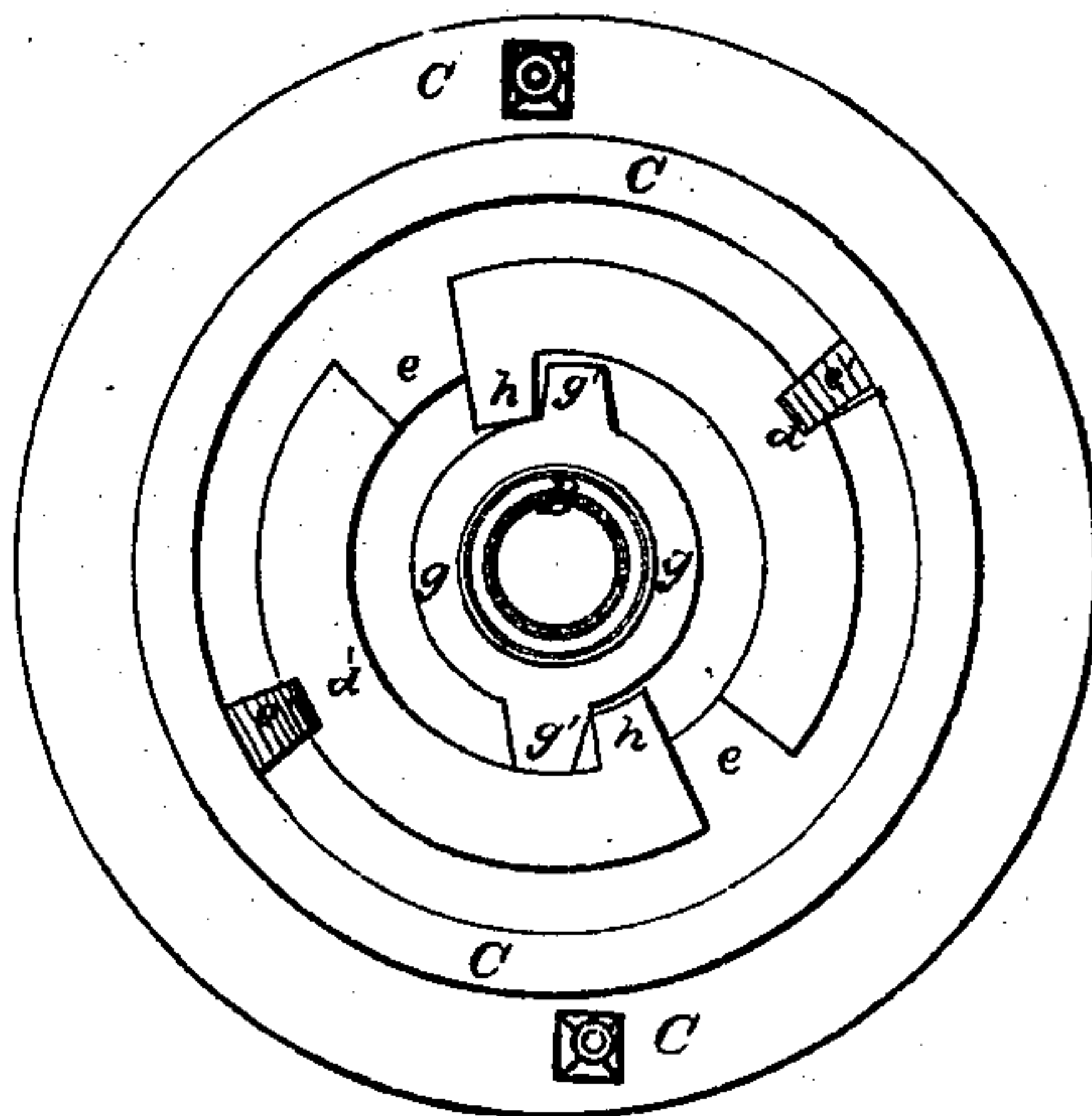


Fig. 2.



Witnesses.
Thomas Rogers.
P. Wrenshall.

Fig. 3.



Inventor
Harry J. Bailey,
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United States Patent Office.

HARRY J. BAILEY, OF PITTSBURG, PENNSYLVANIA.

Letters Patent No. 85,267, dated December 29, 1868.

IMPROVEMENT IN HYDRANTS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, HARRY J. BAILEY, of Pittsburg, in the county of Allegheny, and State of Pennsylvania, have invented a new and useful Improvement in Hydrants; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawing, making a part of this specification, in which—

Figure 1 is a vertical section, formed by a plane passing through the axial line of the outlet-pipe, valve, &c.;

Figure 2 is a perspective view of the inner removable parts of the hydrant; and

Figure 3 is an upper face view of the devices shown in fig. 2, and of the case in which they work.

Like letters of reference indicate like parts in each.

The nature of my invention consists in such construction of a hydrant-valve packing and fastening as that—

First, the lower face of the valve shall close the supply, and the upper face shall cut off the waste;

Second, the waste-groove shall be in the outlet-pipe, and of course removable with it; and

Third, the outlet-pipe shall work vertically through a stationary packing-ring in opening and closing the valve and waste.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and mode of operation.

A is a water-supply pipe;

B, the outlet-pipe; and

C is a valve-box or case, of tubular form, and with differently-sized recesses, as presently to be described.

On the lower end of the outlet-pipe B is a hollow double-seated-valve, *a*, with perforations *a'*, in its sides.

Its lower face is packed with a gasket, *s*, so as to fit neatly on a valve-seat in the upper open end of the supply-pipe A.

Its upper edge projects out laterally beyond the pipe B, on to which it is screwed sufficiently far to give a seat, which, when the valve is raised, comes against the lower face of the annular packing-ring *b*.

The lower cavity or recess *a''* is rimmed out to receive the valve *a*, but is so made as to leave room between the two, when the valve *a* is raised, for the upward flow of the water from the supply-pipe A, through the perforations *a'*, whence it passes upward through the outlet-pipe B.

The cavity above is recessed out for the annular packing-ring *b*, the lower end of the packing-ring resting on the step or shoulder *b'*, where it is held firmly by the inclined screw-plate *d*, through which the pipe B passes.

In the edges of the inclined plate *d* are notches *e*, by which the inclined plate is slipped down into the cavity *f* of the box C, below the projections *e'*.

The upper face of the plate *d* is made with inclined faces *d'*, like the faces of a crab, or clutch, such as used in machinery to prevent motion in one direction while permitting it in the opposite direction.

Above this plate *d*, and rigidly attached to the pipe B, is a collar or nut, *g*, on the opposite sides of which are lugs *g'*, and these in turn engage similarly-shaped lugs *h*, on the upper face of the plate *d*.

Then, by using the pipe B as a screw-driver, the lugs *g'* are made to engage the lugs *h*.

The inclined faces *d'* then acting under the projections *e'* on the screw-principle, the plate *d* is forced down, so as to hold the valve in place, and prevent it receiving other motion than that necessary to open and close it.

To take the valve out, it is only necessary to reverse the motion, unscrew the plate *d* till the notches *e* correspond with the projections *e'*, when the valve *a*, packing-ring *b*, plate *d*, with the outlet-pipe B, may be removed.

The packing-ring *b* fitting closely around the pipe B, and also resting snugly in its recess or cavity, closes all connection between the supply and outlet-pipes, except through the valve *a*, and through the waste, which consists of a groove, *i*, extending along the outer face of the pipe B, from at or near its junction with the upper seat of the valve *a*, upward till it opens above the packing-ring *b* into the outlet-pipe B, or into the box C, or both.

The parts thus described are so made, relatively to each other, that the outlet-pipe B, carrying, as it does, on its lower end, the valve *a*, may have a slight vertical motion or lift, sufficient to raise the latter from its seat on the open end of the pipe A. The water then flows upward between the valve *a* and the sides of its recess *a''*, through the perforations *a'*, and out by the pipe B. At the same time, the raising of the pipe B inside the packing-ring *b*, brings the lower end of the waste-groove *i* above the lower edge of the ring *b*, whereby it is covered, and the waste is cut off.

By depressing the pipe B, the valve *a* is lowered to its seat, and the lower end of the waste *i*, coming below the ring *b*, is uncovered, and the water above the valve is allowed to escape.

Fig. 1 shows the position of the devices when the valve is open for the outflow of water.

The packing-ring *b*, it will be observed, is rigidly fixed, encircling the outlet-pipe, covering the waste, and through which the outlet-pipe works up and down, to open and close the waste.

The plate *d* holds the packing-ring to its place, and thereby prevents the valve from being lifted too far from its seat, or moving in any other than the proper vertical direction.

If the waste-groove *i* extends down to the upper face of the valve *a*, it is then closed, when the valve *a* is raised by such upper face coming against the lower face of the packing-ring *b*. The valve *a* in such case performs a double function: it closes the supply-pipe when down, and the waste when up, and *vice versa*.

Another advantage, and a very material one, is this, that the waste-groove *i* being in the outlet-pipe A, can be removed with it, to be cleaned, when, as it sometimes does, it becomes fouled or clogged. The whole

valve, in fact, and all fixtures connected therewith, may be lifted out, to be cleaned, repaired, or renewed.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. A double-faced valve *a*, so made as to close down on the supply-pipe, to cut off the flow of water, and upward against the stationary packing-ring *b*, to close the waste, substantially as hereinbefore set forth.

2. The waste-groove *i* of a hydrant, in the outer face of the outlet-pipe, so arranged, relatively to the annular stationary packing-ring *b* and valve *a*, as to be opened and closed by the closing and opening of

the valve, and so as to be removable, substantially as and for the purposes hereinbefore expressed.

3. The outlet-pipe *B*, working vertically through the stationary packing-ring *b*, to open and close the valve, substantially as and for the purposes hereinbefore set forth.

In testimony whereof, I, the said HARRY J. BAILEY, have hereunto set my hand.

HARRY J. BAILEY.

Witnesses:

W. BAKEWELL.

C. C. TAYLOR.