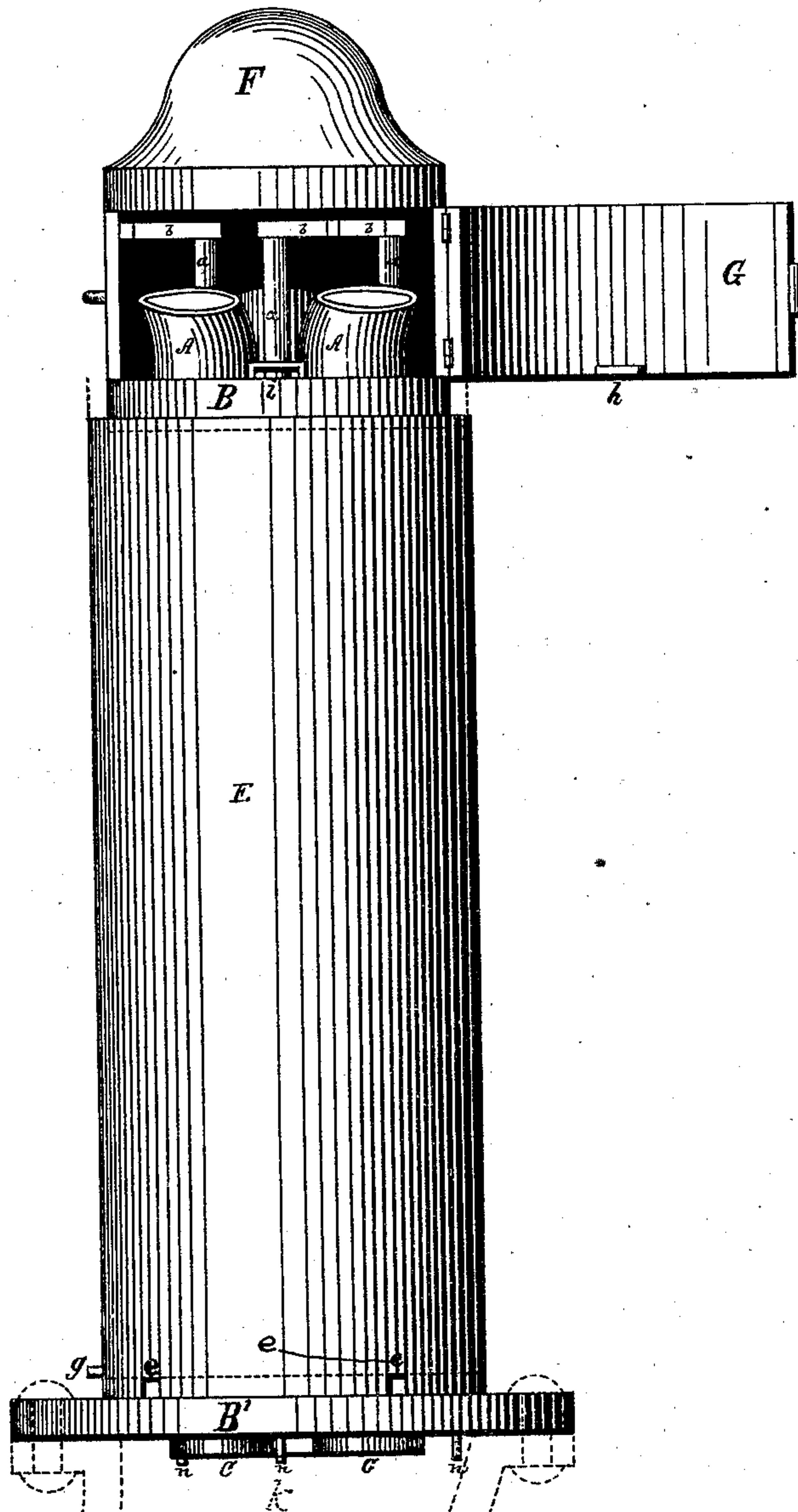


L. S. CHAPMAN.  
Fire Plug or Hydrant.

No. 163,301.

Patented May 18, 1875.

Fig. 1



WITNESSES

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Fig. 3

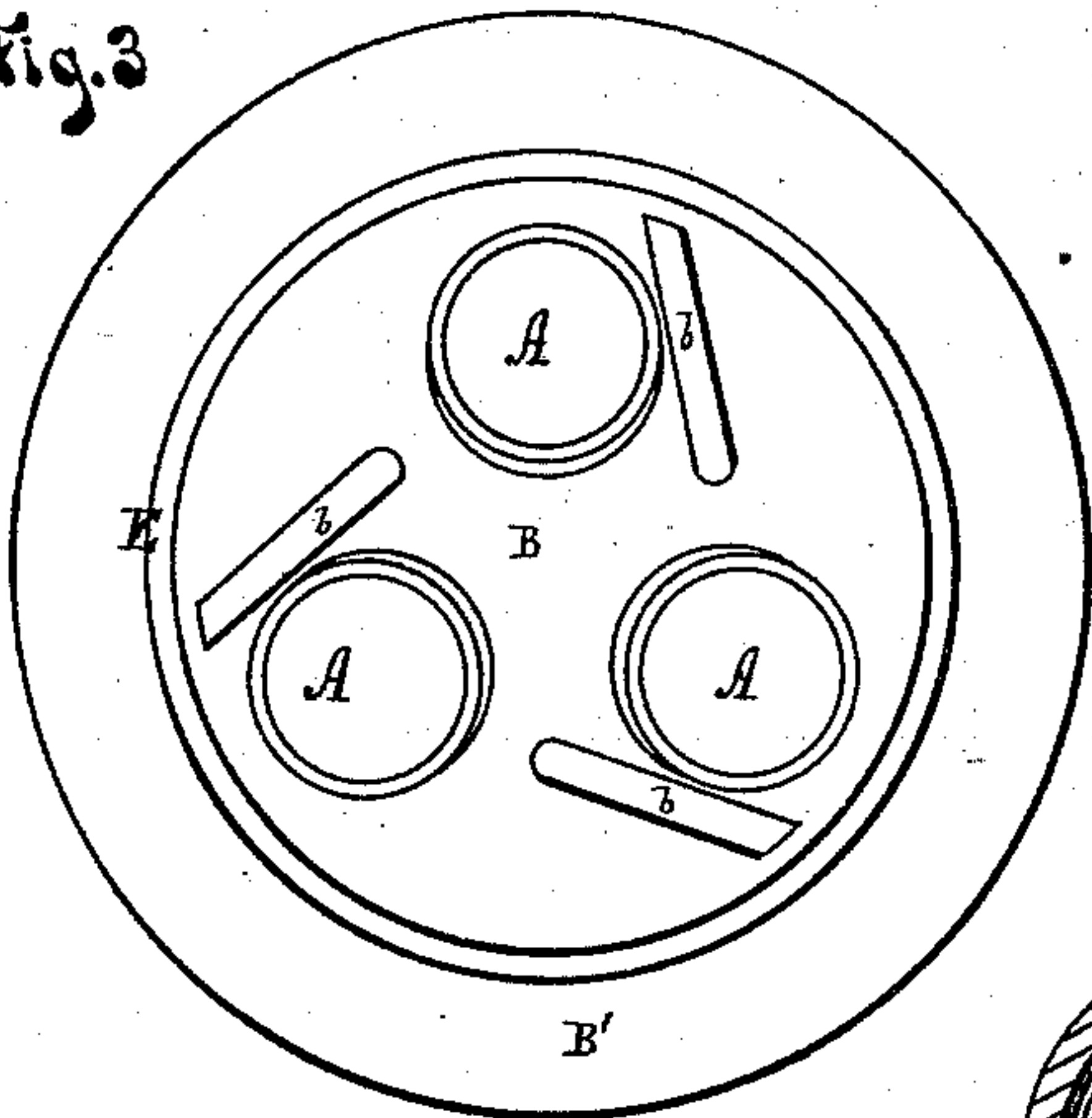


Fig. 4

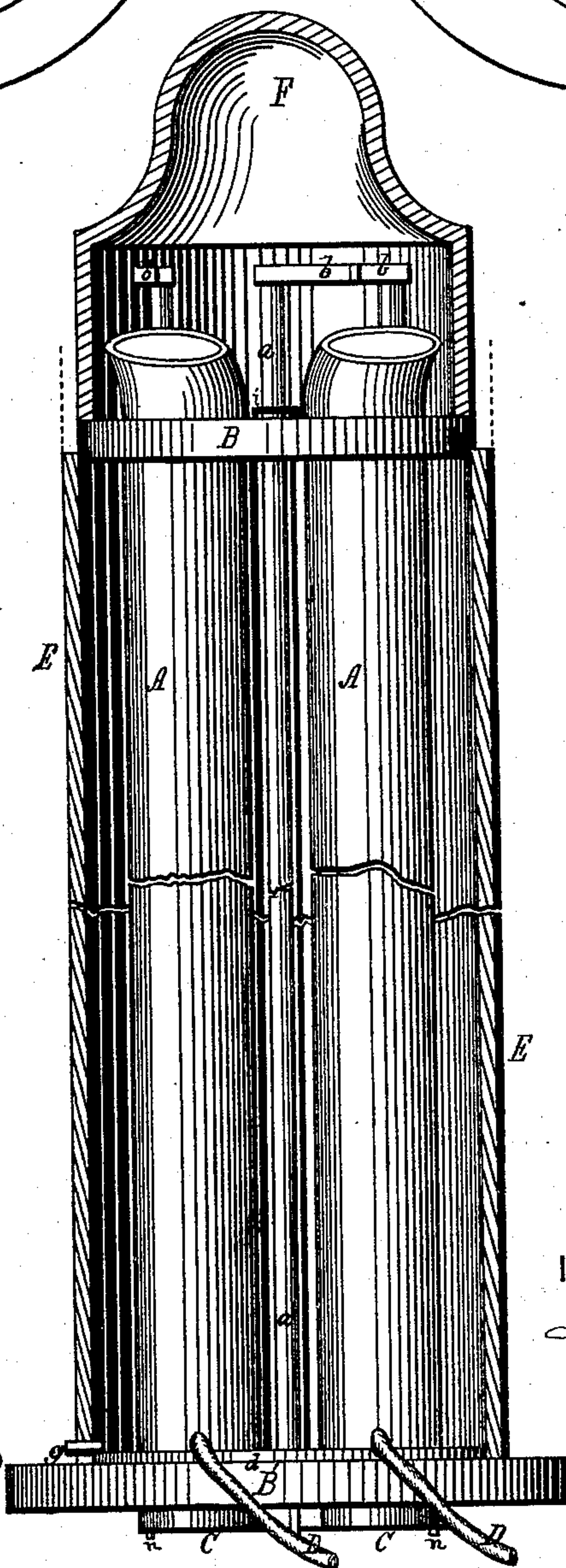
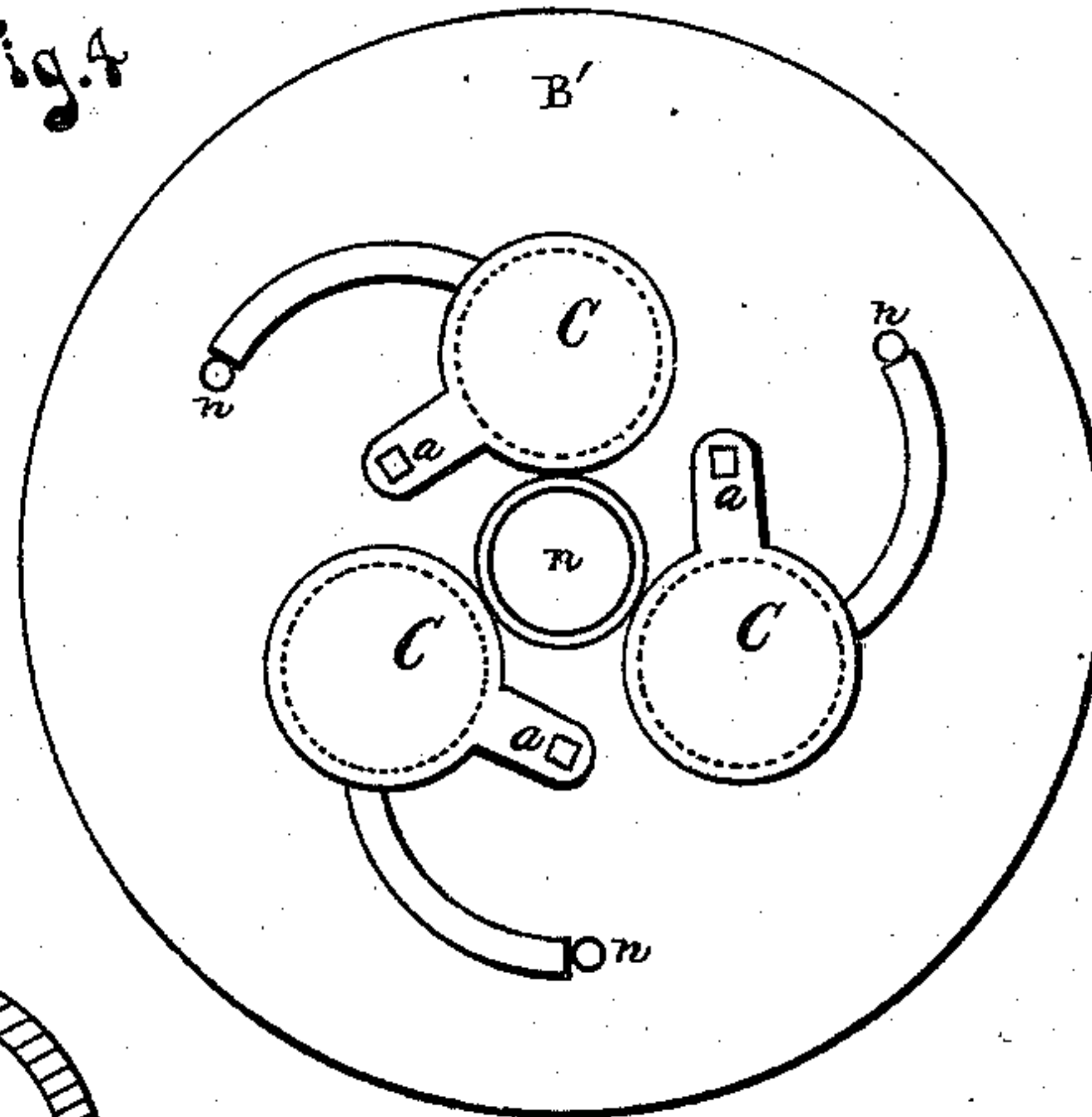


Fig. 5

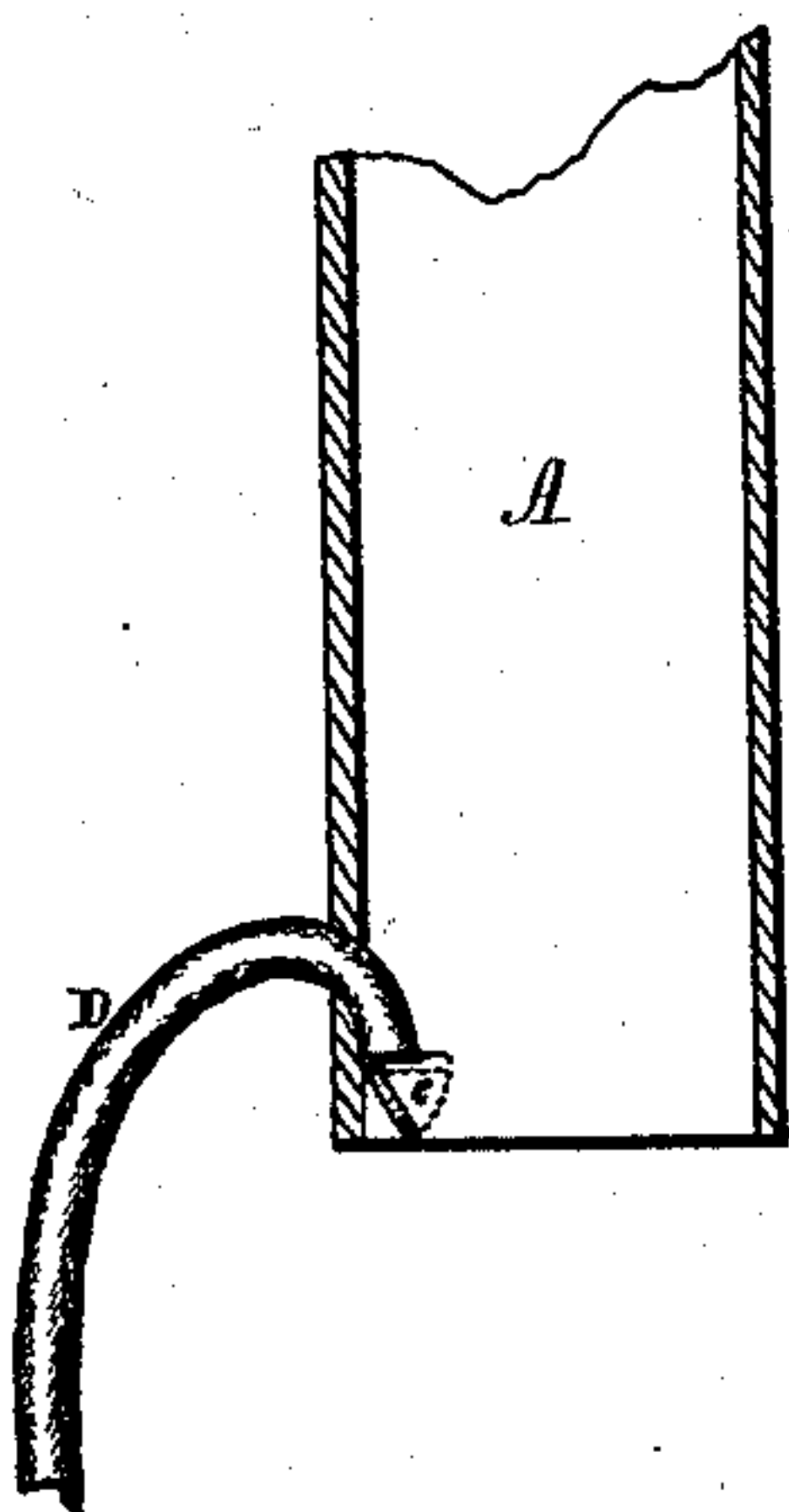
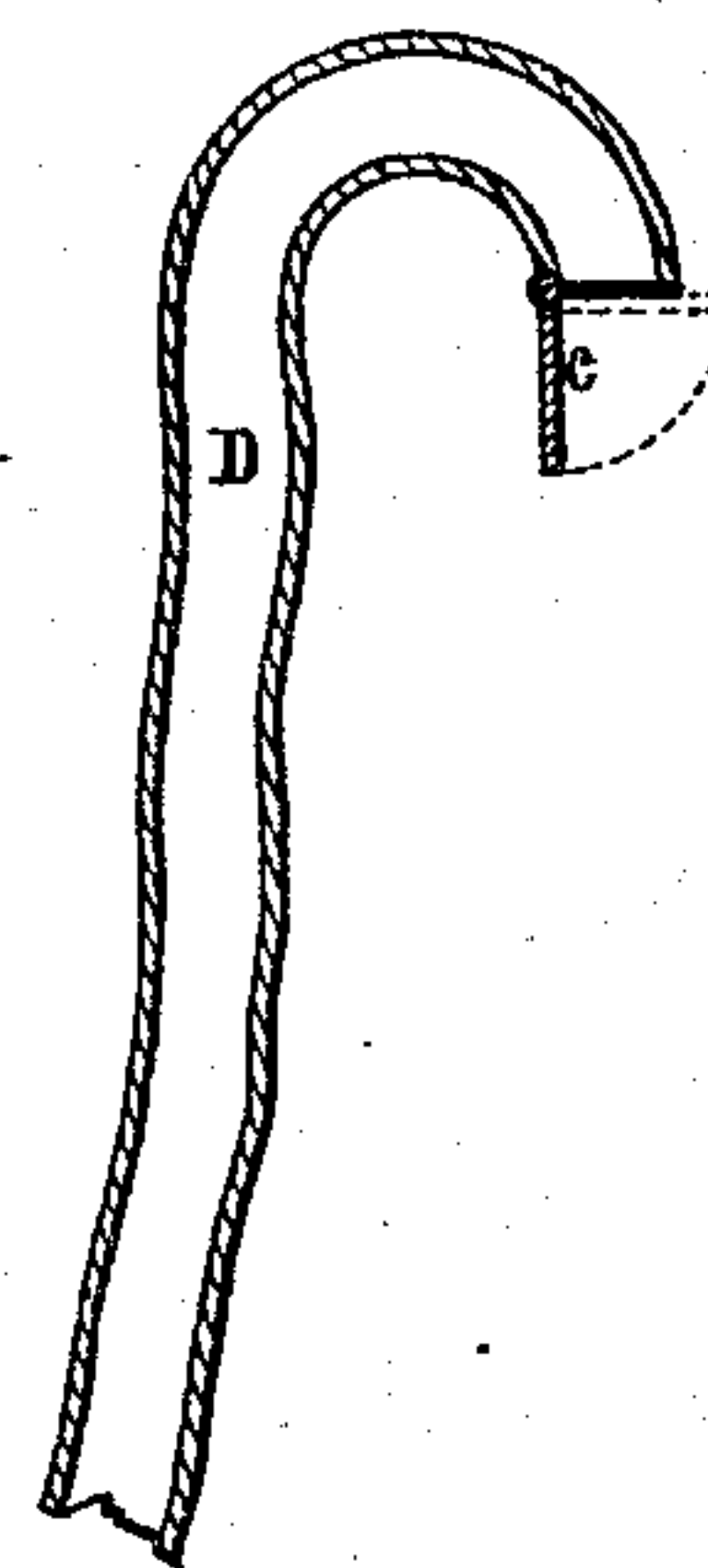


Fig. 6



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# UNITED STATES PATENT OFFICE.

LEONARD S. CHAPMAN, OF WASHINGTON, DISTRICT OF COLUMBIA.

## IMPROVEMENT IN FIRE-PLUGS OR HYDRANTS.

Specification forming part of Letters Patent No. **163,301**, dated May 18, 1875; application filed March 29, 1875.

*To all whom it may concern:*

Be it known that I, LEONARD S. CHAPMAN, of Washington, in the county of Washington and District of Columbia, have invented a new and valuable Improvement in a Fire-Plug or Hydrant; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a side elevation of my device, showing the covering-jacket, the dome closed down and its door open. Fig. 2 is a central and vertical cross-section of the same, showing the discharge-pipes, valve-rods, the framing-plates, and the draining-tubes. Fig. 3 is a top view of my device with the dome removed. Fig. 4 is a bottom view of the same, showing the sliding valves closed.

My invention is an improved fire-plug or hydrant; and consists in the novel construction, arrangement, and operation of the same, embracing the following peculiar elemental features: Three or more separate discharge-pipes, firmly secured in a vertical position by two horizontal plates, through which said pipes pass, above and below, so as to form a substantial frame, upon and to which the other parts of my device are attached and adjusted; sliding valves corresponding in number to that of said pipes, pivoted upon the bottom surface of said lower plate, and slid to and fro and closely over and from the lower ends of said pipes, each by an independent valve-rod, extending vertically from the said pivoting and valve end up through both of said plates, outside of said discharge-pipes, and sufficiently above the upper ends of the same to allow to the bent or handled end of said rod a clear and unobstructed movement; branch draining siphon-tubes, one leading from the inside of the lower end of each discharge-pipe, and all joining entirely outside of the whole device into one pipe, so as to form a siphon with one or more branches; a vertically-sliding jacket extending and covering in the said parts of my device from the periphery of the upper to the lower one of said horizontal

plates, all of which and their purposes are hereinafter more fully described, and illustrated by the accompanying drawings, in which the same letters designate identical parts of my device in the different figures, respectively.

The letter A represents the said discharge-pipes, which are metallic, of any desired number, of any suitable caliber or length, entirely distinct and separated from each other, and firmly secured in a vertical and triangular or circular position by the two horizontal plates B B', forming with said pipes a substantial frame, as aforesaid. The upper ends of said pipes are slightly curved outward and screw-threaded, so that when hose is connected therewith there shall be a smooth and unobstructed current of water through said pipes and hose. The supporting horizontal plates B B' are circular metallic disks, the upper one, B, of suitable diameter and thickness to embrace the pipes A, as aforesaid, the lower one, B', being of somewhat larger dimensions, for purposes hereinafter described, and both pierced with suitable holes, through which said pipes pass, and within which they are tightly and firmly held. The lower end of each pipe A is provided with a sliding valve, C, as shown, which lets on and shuts off communication through said pipe by being pivoted to the lower extremity of a valve-rod, *a*, closely upon the bottom surface of said lower plate, where the pipes A are cut off flush with said surface, and moved by a handle, *b*, at the other extremity of said rod. The said rods *a* are each entirely independent of the others, and are easily held in a vertical position, and turned within suitable holes pierced through both plates B B' for the purpose, and suitably bushed and packed to prevent leakage. Said rods are also adjusted and operated entirely outside of the discharge-pipes A, for the purpose of allowing a free and unobstructed current through said pipes, of preventing the rapid destruction of the rods by rust, and the clogging of their movement by frost or otherwise. The said lower or base plate B' is made with a larger diameter than the other, to allow for the space required for the suitable movements of said sliding valves C, the extent of their oscillations being lim-



ited by the check-pins *n*, suitably placed, and to provide also a sufficient base for the permanent security of the above and herein described apparatus.

The letter D represents the said siphon draining-tubes, one of each leading from the inside and lower end of each discharge-pipe A, commencing closely as possible to the inner and upper surface of its respective sliding valve C, and all joining below and entirely outside of my device into one larger and longer pipe, which thus drains either or all of said discharge-pipes into a sewer or absorbent earth. At the head of each such draining-tube is suitably attached a flap-valve, *e*, which is metallic, of a somewhat larger diameter than the end of the tube, and so adjusted that when the discharge-pipe is opened by the sliding back, as aforesaid, of its valve, the upward current of water will tightly close said flap-valve; but when the sliding valve shuts off said current, the weight of the column of water remaining in the discharge-pipe, together with its own weight, opens the flap-valve and starts a current through said draining-tube, which continues to run until the whole contents of said pipe are completely drained away.

The letter E represents the aforesaid jacket, consisting of a metallic and evenly cylindrical shell, of suitable thickness, and of sufficient diameter to slide closely over the periphery of the said upper plate B, and down over a thin and narrow flange, *d*, which is of the same diameter as the said upper plate, and vertically projecting above said lower plate B', and around the outside of said discharge-pipes. Said jacket is made of sufficient length to reach from the said lower plate B' nearly up to and around the upper surface of said upper plate B, and thus inclose all those parts of my device between the two said plates. It has also suitable slots, *e*, cut into its lower edge, within one or more of which are suitable guide-pins *g*, projecting from said flange *d*, so that when said jacket is slid vertically upward, by action of frost or otherwise, it will easily clear itself from the said draining-tubes beneath without turning or twisting, and also readily fit over them again when said jacket is returned to its proper position.

The letter F represents the aforesaid dome, which consists of a hollow cast-metal shell, of suitable height and thickness, and of equal outside diameter, to be flush with the periphery of said upper plate B, upon which said dome rests when closed. Said dome is suitably hinged at its lower edge, so as to swing back out of the way when the fire-plug is in use; and when closed down, the hinge must be so adjusted as not to obstruct the sliding off or on of the said jacket. Said dome is also provided with a door, G, suitably hinged, and opening, as shown, and which has also a catch or bolt, *h*, projecting horizontally inward from the middle of its

lower edge, to fit within the staple *i*, projecting above the plate B, so that when said dome is swung down and its door is closed and locked, the whole of said covering contrivance is securely fastened down, and the handles of the valve-rods kept, as aforesaid, immovably in place.

Instead of the above-described dome and its door, said covering may be a simple cylinder, resting permanently upon said plate B, as aforesaid, and provided with a movable cap, which will open backward upon a suitable hinge, and expose the discharge-pipes A sufficiently to give the handles of the valve-rods free movement, and allow hose to be easily attached to any or all of said pipes.

The whole of my fire-plug or hydrant, thus described, is firmly and suitably secured upon a combined water-chamber and gooseneck, H, as shown, said chamber being gradually enlarged as it curves upward, from its connection with the service-pipe at *m* toward its junction with said fire-plug at *k*, all under ground, so as to give an unobstructed water-current from said service-pipe of the main into any or all of said discharge-pipes.

My fire-plug can, and should be, adjusted in the ground, at any suitable depth, in connection with the service-pipe, leading from any water-main, so that the dome or covering aforesaid shall be just above the surface of the earth or pavement, to allow the said covering to be readily seen and thrown back whenever the said hydrant is required for use.

The operation of my device is as follows: Whenever a supply of water is desired through said fire-plug, the door G is opened, which looses the dome F, which is thrown back; hose is then attached, as aforesaid, to any or all of the tops of the discharge-pipes A; one or more of the handles of the sliding valve-rods turned outward, which opens the lower ends of said discharge-pipes, and allows the current of water from the source of supply to flow readily and unobstructedly through said pipes and hose into the open air, a fire-engine, or wherever desired.

By reversing the above details of operation, the water is shut off and the hydrant securely closed.

Thus, my device, as described and compared with others of similar character, is simpler in construction, less liable to disarrangement or fracture, more easily mended and rearranged, and much readier and more effective in operation; therefore,

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

1. In a fire-plug or hydrant, the several and separate discharge-pipes A, constructed and arranged as shown, in combination with the horizontal plates B B', substantially as and for the purposes specified.

2. The sliding valves C, constructed and arranged as shown, and operated by the valve-rods *a* and their handles *b*, in combina-



tion with the horizontal plates B B' and the discharge-pipes A, substantially as and for the purposes specified.

3. The branch draining siphon-tubes D, constructed and arranged as shown, and operating by the flap-valve *c*, in combination with the discharge-pipes A, substantially as and for the purposes specified.

4. The vertically-sliding jacket E, provided with the slots *e*, in combination with the plates

B B', the latter provided with the flange *d* and guide-pins *g*, substantially as and for the purposes specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

LEONARD S. CHAPMAN.

Witnesses:

E. C. WEAVER,  
R. H. STEELE.