

No. 659,577.

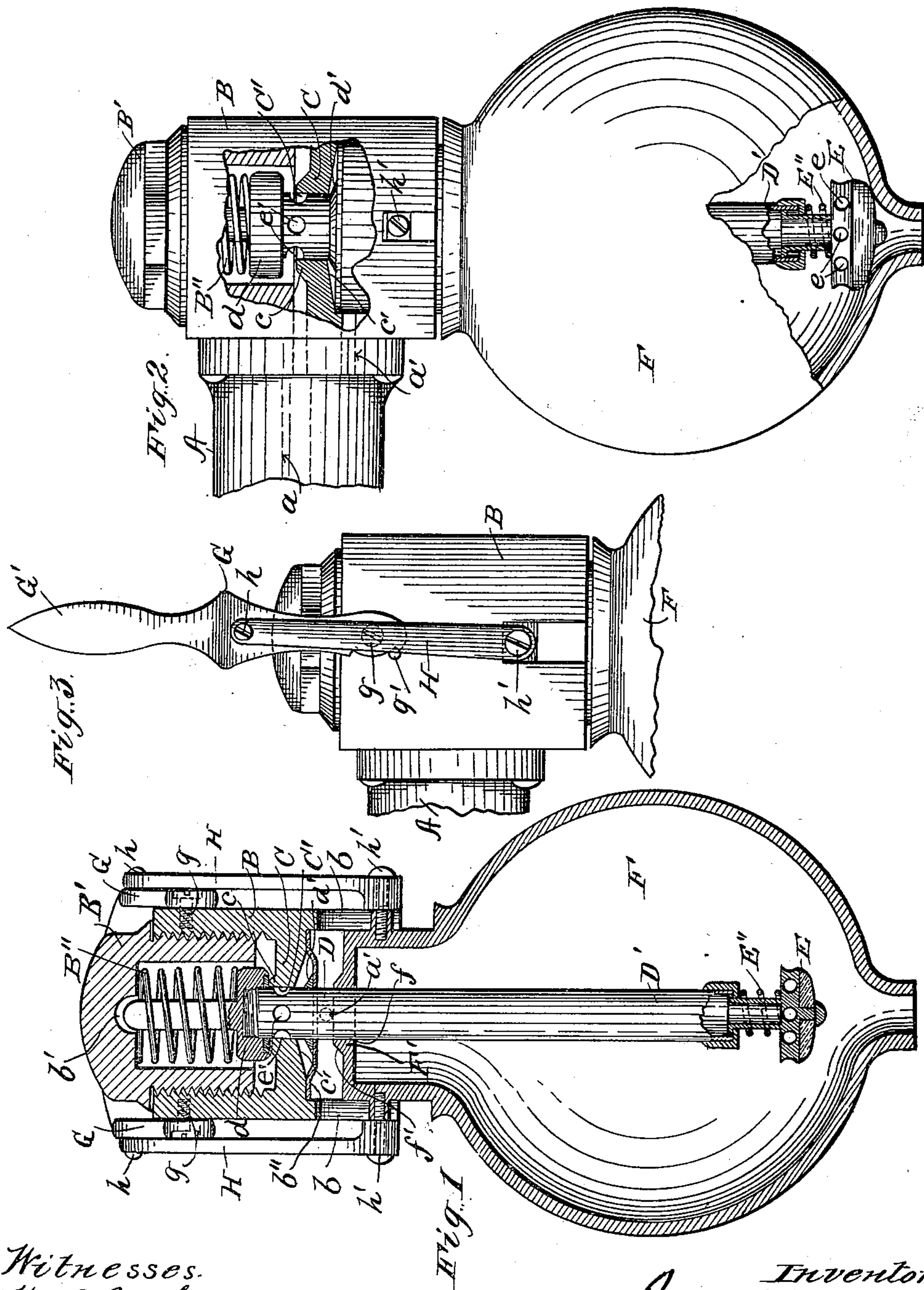
Patented Oct. 9, 1900.

J. CEDERSTROM.
DRAFT APPARATUS.

(Application filed Oct. 7, 1899.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses.
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J. W. Lewis.

Inventor
John Cederstrom.
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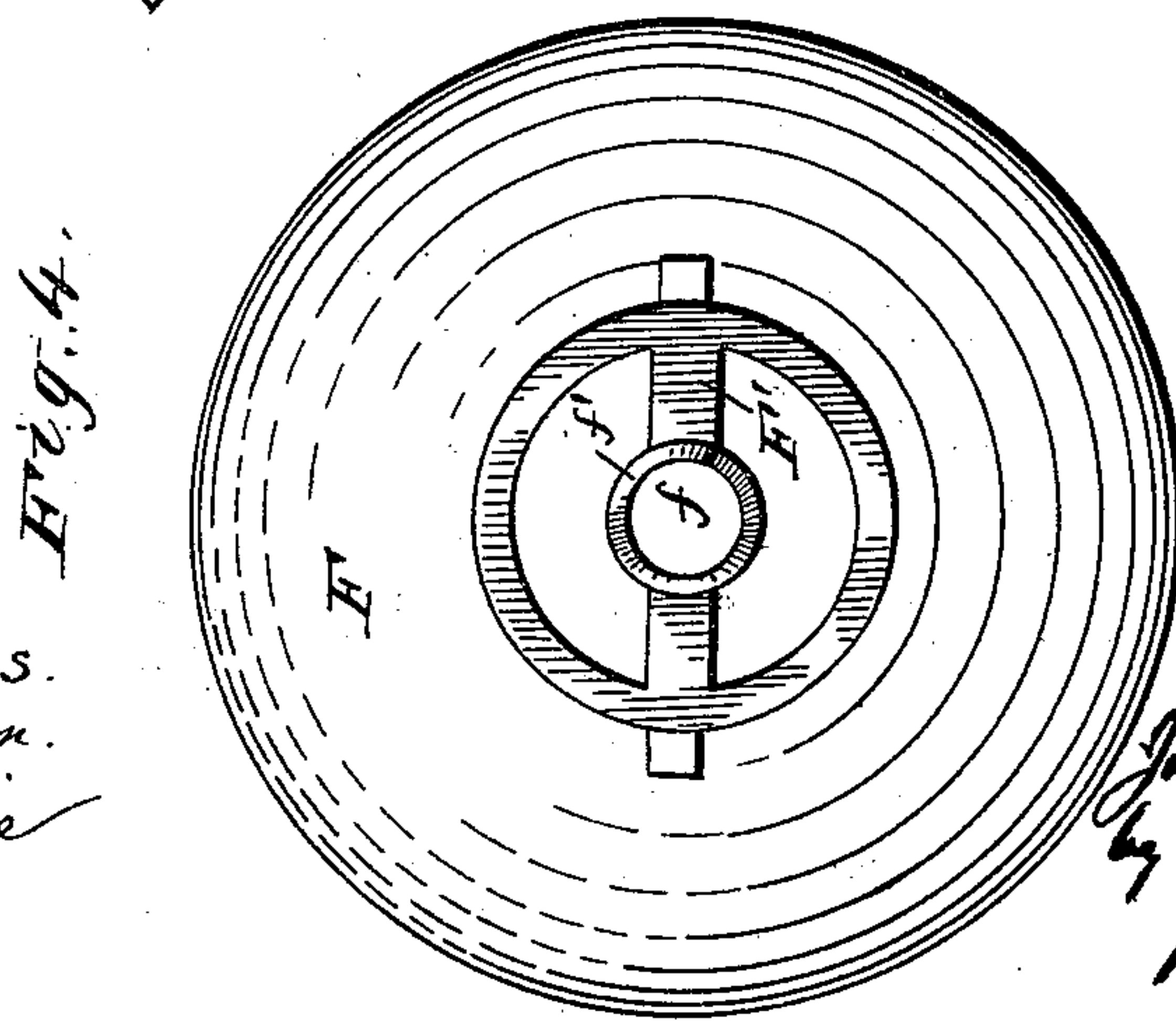
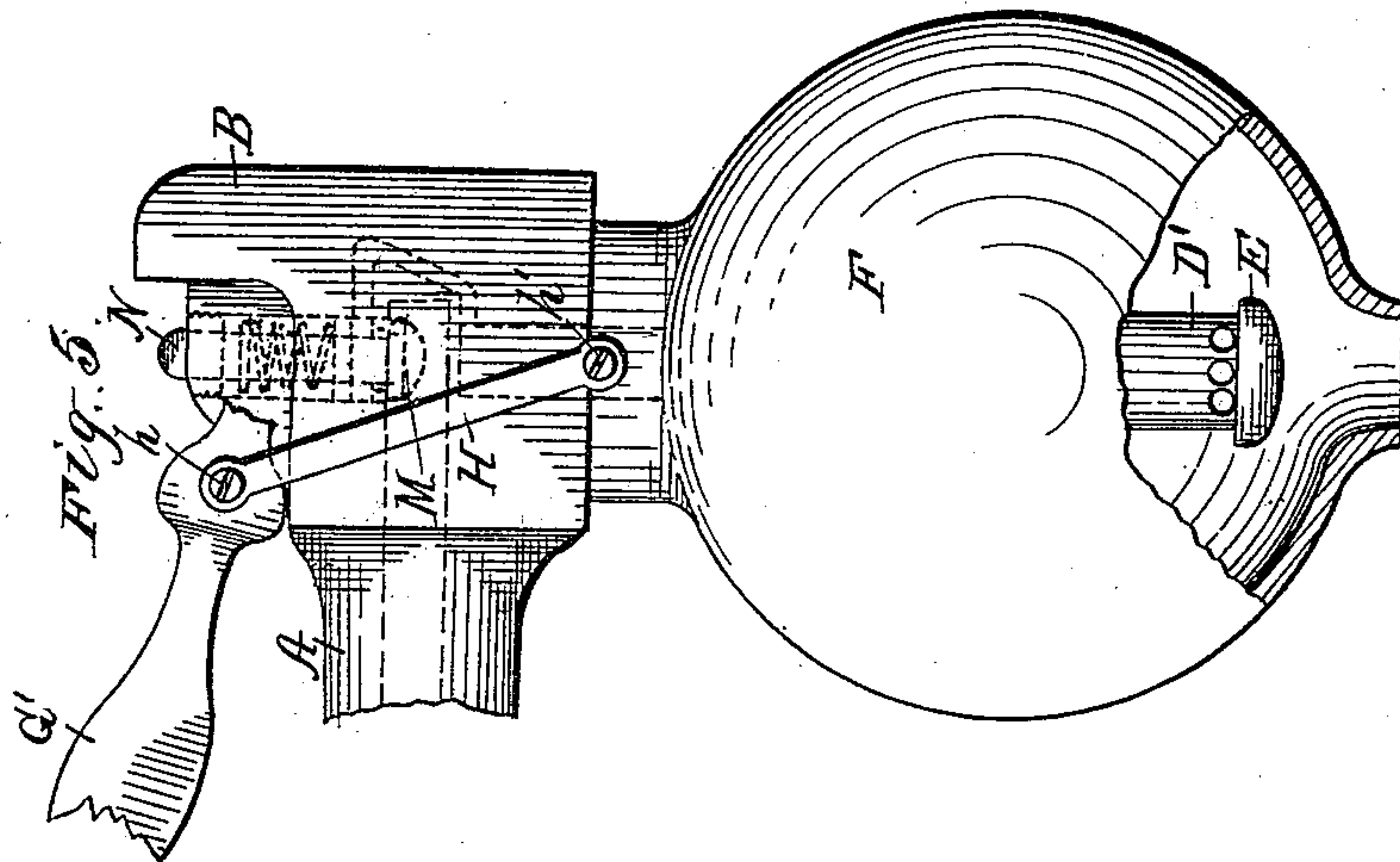
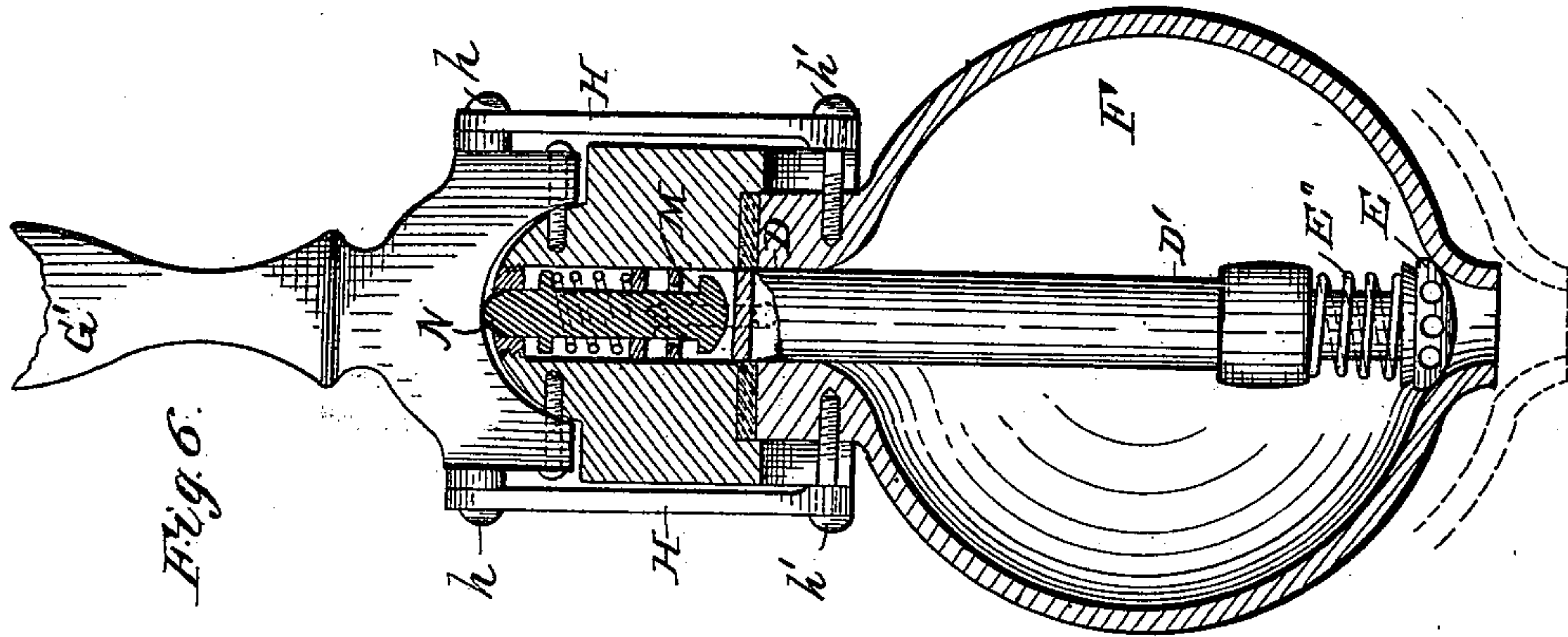
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2 Sheets—Sheet 2.



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UNITED STATES PATENT OFFICE.

JOHN CEDERSTROM, OF NEW YORK, N. Y., ASSIGNOR TO THE UNITED STATES AERATING FOUNTAIN COMPANY, OF NEW YORK.

DRAFT APPARATUS.

SPECIFICATION forming part of Letters Patent No. 659,577, dated October 9, 1900.

Application filed October 7, 1899. Serial No. 732,963. (No model.)

To all whom it may concern:

Be it known that I, JOHN CEDERSTROM, of New York city, in the State of New York, have invented a new and useful Draft Apparatus, which is fully set forth in the following specification.

It is well known that when liquids under pressure—soda-water, beer, &c.—are drawn off under that pressure the tendency is for the surplus gas to shoot out violently, thereby breaking up and releasing another portion of the gas and by this double loss leaving the liquid comparatively flat. In the case of beer this action causes the beer to froth up, creating an excess of foam. Numerous devices have been constructed to overcome this objection by drawing the liquid into a preliminary closed vessel, then blowing off the excess of gas at the top, and finally allowing the liquid to drop by gravity into the drinking vessel. In such a case the liquid is not broken up, as before. Consequently it retains more gas and remains aerated a longer time, and in case of beer there is comparatively little froth. The devices referred to, however, are unsatisfactory, because they are complicated and expensive, having numerous valves and requiring many different manipulations. The chief objection, though, is that these valves are a source of weakness, since operating on the inside of the device, while being manipulated from the outside, they require openings through the exterior casing, with the inevitable leakage and wear. I reduce the number of valves and the corresponding complexity and avoid the necessity for openings in the casing, packing, &c., by moving this intermediate vessel itself (from the outside) against its interior closure-plug instead of having to move the interior closure-plug by devices that have to pass through the walls of the vessel. The valve that controls the exit from the main reservoir is operated in like manner. Thus with only one valve and one plug, with no opening through the walls of the casing, and by one movement only I accomplish the desired result.

Referring to the drawings annexed hereto to illustrate embodiments of my invention, Figure 1 is a vertical section showing the bulb lowered. Fig. 2 is a partly-broken elevation at right angles to Fig. 1, showing the bulb

raised. Fig. 3 is a perspective detail showing the lifting mechanism. Fig. 4 is a top view of the bulb. Fig. 5 shows a modification of the lower end of the plunger and the plug, and Fig. 6 shows still another modification of my invention.

On the end of the ordinary draft-arm A is the chest B, having the central division or floor C, so that in cross-section it resembles the letter H. The cap B' is screwed into the top of the chest. The floor C has a central aperture or outlet C' with a surrounding flange c, and an enlargement c' at its lower end. In the lower extension of the chest may be provided the diametrically-opposite slots b. Passage-way a communicates directly from the main reservoir to the interior of the chest and escape passage-way a' opens into the air from a point a little below the floor C.

D is a plunger located in aperture C' and having a slight vertical play limited by disks or flanges d and d' on opposite sides of the floor, flange d' passing into recess c' when the plunger is lifted, and disk d having an annular groove with a rubber washer adapted to rest on flange c when the plunger is lowered. A coiled spring B'' may be interposed between disk d and cap B', serving to hold the former normally against the floor C, and a recess b' may be provided for the upper end of the plunger. The lower portion D' of the plunger is hollow, with an intumed flange to support the (hollow) stem of plug E, which telescopes therein, and has a corresponding flange to keep it from dropping out. A coiled spring E'' may be interposed between the bottom of portion D' and the plug. In the stem E' (or in the plug) are holes e, and just below the disk d are holes e', the holes e e' serving, when the plunger is lifted, to provide a continuous passage-way from the chest. When the plunger is lowered, holes e' are of course below the floor C, and disk d operates further in closing this outlet.

A bulb or other chamber F is connected to the lower extension of the chest. This bulb is arranged to be raised and lowered by suitable means and has an outlet at its bottom which is closed tightly by plug E when the bulb is raised. The bulb has a (cylindrical) neck at its upper end, which is open and provided with a bridge-piece F', having a cen-

tral opening f for the plunger D' and a surrounding flange f' . A washer b'' is secured against the lower side of floor C and fits snugly around the plunger below the flange d' . The opening of the escape a' is a little below this washer. When the bulb is raised, this escape is cut off and when lowered it is open.

A convenient device for manipulating the bulb consists of a Y-shaped lever G , pivoted at g to the chest and having handles G' . Links H are pivoted to G at h and to the bulb or to a collar or lug thereon at h' . It is convenient to have these lugs I located in the slot b . Stops g' may be provided on the chest to limit the swing of the lever.

The mode of operation is as follows: When the bulb is down, disk d is held down by its spring and the beer or other liquid, while it enters freely into the chest, cannot escape. When the bulb is raised, its outlet is first brought against plug E , which closes it tightly, and the neck of the bulb next closes the escape a' , and finally the further traverse of the bulb by the pressure of coiled spring E'' against plunger D' and of flange f' against flange d' (through washer b'') raises the plunger and with it disk d . This permits the liquid to pass through holes e' , plunger D' , and holes e into the bulb, which is now closed tightly. When the bulb is filled or when desired, it is lowered. The plunger is immediately forced down, which at once shuts off the escape of any more liquid from chest B . The escape a' is next opened, which permits the excess of gas to blow off, and finally the outlet of the bulb is carried free from the plug, when the liquid is dropped in bulk and without being further agitated into the drinking vessel placed to receive it.

The traverse of the plunger is so very short as compared with that of the bulb that I may dispense with the separate plug-stem and its spring and instead attach the plug directly to the plunger, as in Fig. 5. So, also, flange d' is not absolutely essential, and if the plunger fit snugly in aperture C' and proper packing be provided I may dispense with the disk d ; but in practice both disk d and flange d' are desirable. Again, instead of controlling the outlet from the chest by means of the bulb lifting the plunger, I may provide an outlet-valve M , controlled by the handle, as at N , as in Fig. 6, and, finally, where the pressure is not very great, escape a' may be dispensed with if the liquid be allowed to remain in the bulb a short time and settle, since it will reabsorb a portion of the gas and the excess of gas will rest on the top.

Having thus described my invention; I claim—

1. In a draft apparatus, a chest communicating freely with the main reservoir and having a valve-controlled outlet, a vertically-reciprocating bulb located in the extension of said chest and open at the top and the bottom, in combination with means for lifting

said bulb and thereby first closing it at both the top and bottom and then by its further traverse unseating the valve of said chest, substantially as described.

2. In a draft apparatus, the combination with a suitable chest and a valve located therein, of an operating-lever pivoted upon said chest, and a bulb or other vessel connected to said lever by links, the shifting of the lever serving to lift said bulb and to open said valve, substantially as described.

3. In a draft apparatus, a chest communicating freely with the main reservoir and having a valve controlling its outlet, a reciprocating bulb located in the extension of said chest and open at both ends, in combination with means for shifting said bulb and thereby closing it at both ends, and for opening said valve, substantially as described.

4. In a draft apparatus, the combination of a chest having an aperture in its floor, a plunger located in said aperture and provided with a longitudinal passage-way whose upper inlet is normally closed by the floor of the chest, a plug carried by the lower end of said plunger, a bulb surrounding the lower end of said plunger and having an outlet at its bottom and an opening at its top, mechanism for raising said bulb and thereby closing both its outlet and its opening, and means whereby the further traverse of said bulb lifts said plunger and thereby opens the upper inlet of said passage-way, substantially as described.

5. In apparatus for drawing off or delivering liquids either at high or low pressure or by gravitation an intermediate or measuring chamber having an inlet and outlet opening at the top and an outlet-opening at the bottom having an upward-and-downward movement.

6. In an apparatus for drawing off or delivering liquids either at high or low pressure or by gravitation an intermediate chamber having an inlet and outlet at the top and having an outlet-opening at the bottom in combination with a central rod having a valve at each end operated by the perpendicular movement of the chamber.

7. In an apparatus for drawing or delivering liquids either at high or low pressure or by gravitation an intermediate chamber having an inlet and outlet opening at the top and an outlet at the bottom in combination with a rod having a valve at its lower end within said chamber attached in a supplying vessel or tube, operated by the perpendicular movement of the chamber substantially as herein described and explained and as shown in the accompanying drawings.

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

JOHN CEDERSTROM.

Witnesses:

A. L. PIKE,
J. B. CROSBY.