No. 795,911. PATENTED AUG. 1, 1905.

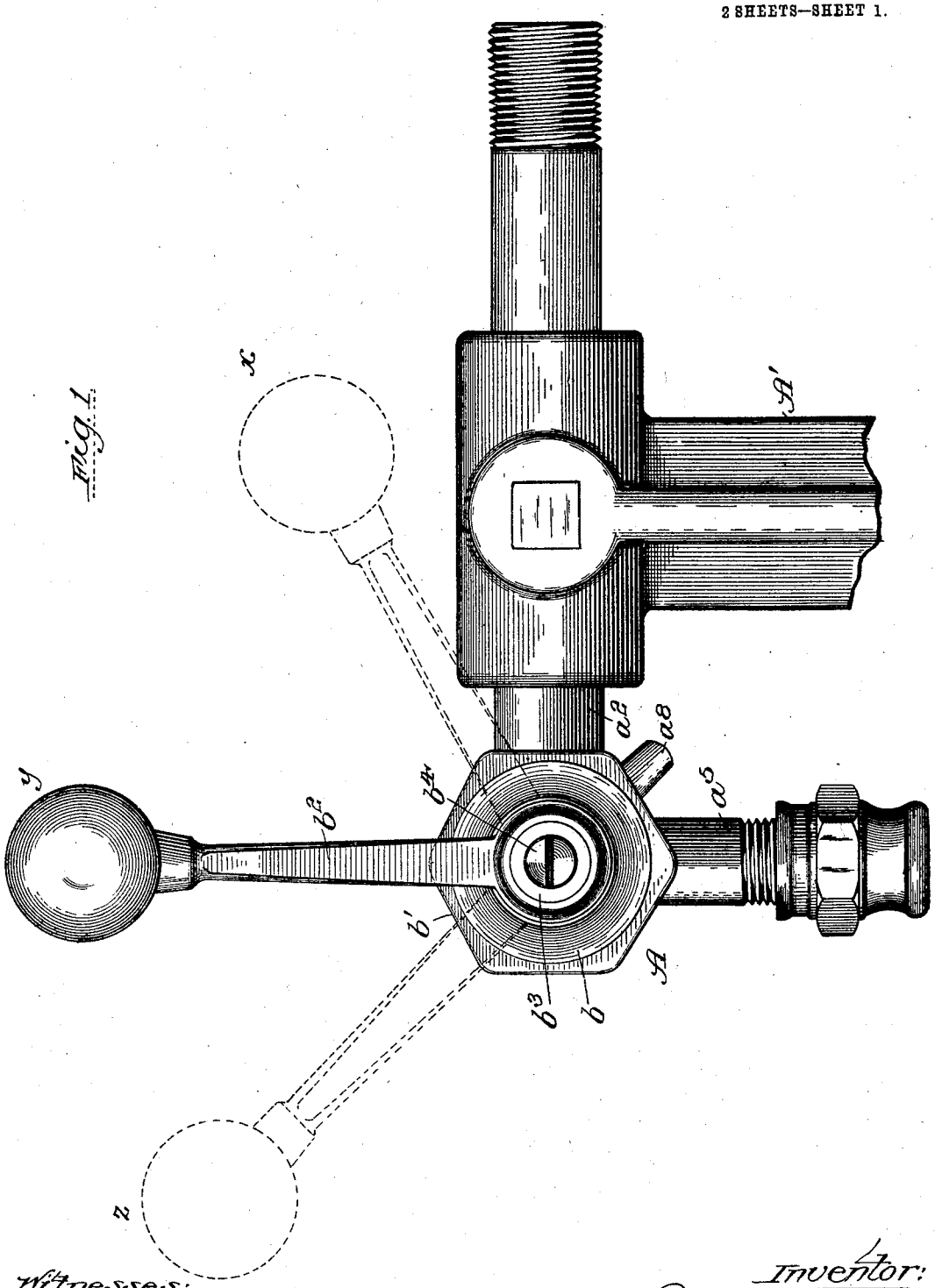
C. B. HALL.

BOTTLE FILLER.

APPLICATION FILED JAN. 15, 1903.

2 SHEETS—SHEET 1.

Fig. 1.



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2 SHEETS—SHEET 2.

Fig. 2.

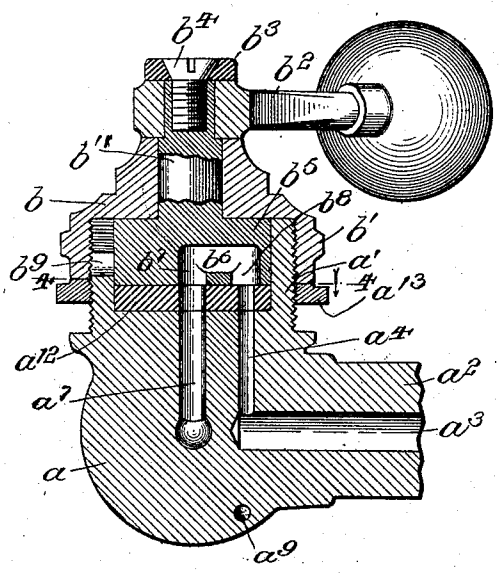


Fig. 3.

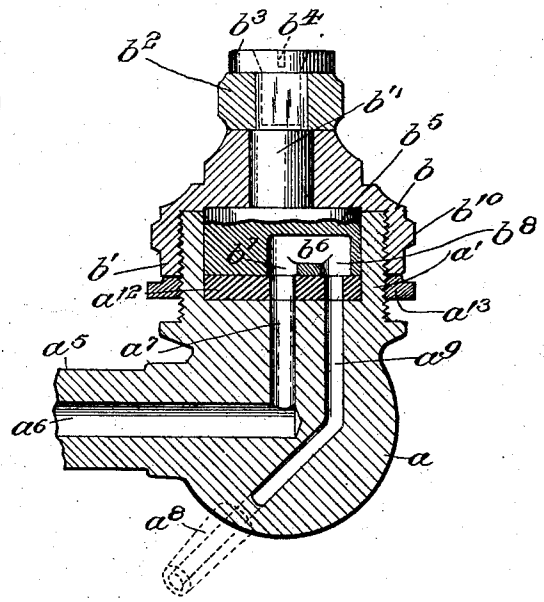


Fig. 4.

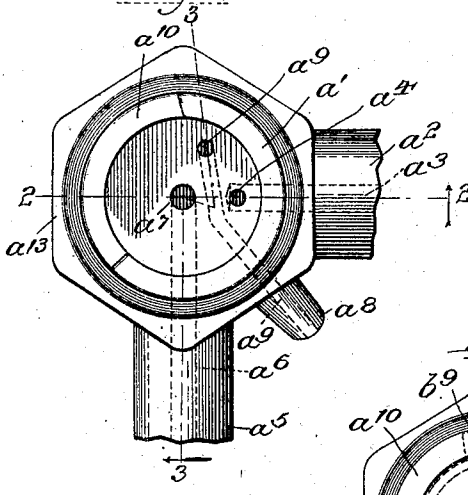


Fig. 5.

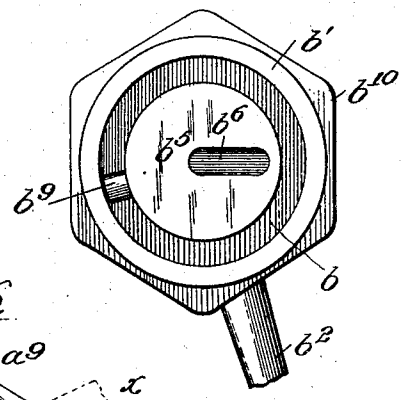
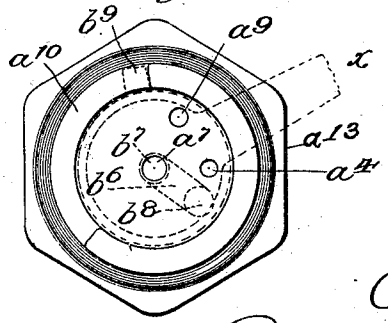


Fig. 6.



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UNITED STATES PATENT OFFICE.

CHARLES BEASLEY HALL, OF CHICAGO, ILLINOIS, ASSIGNOR TO W. H. HUTCHINSON & SON, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

BOTTLE-FILLER.

No. 795,911. Specification of Letters Patent. Patented Aug. 1, 1905.

Application filed January 15, 1903. Serial No. 139,188.

To all whom it may concern:

Be it known that I, CHARLES BEASLEY HALL, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Bottle-Fillers, (Case No. 1,) of which the following is a specification.

My invention relates to bottle-fillers, and especially to that class of such devices employed in filling bottles with charged water or similar beverages.

The invention consists in the organization and arrangement of parts, as hereinafter described, and particularly pointed out in the appended claim.

In the accompanying drawings, Figure 1 is a side elevation of a filler embodying my invention and attached to an ordinary stand in position for operation. Fig. 2 is a central horizontal sectional view on the line 2 2 of Fig. 4, showing the parts in position for filling purposes. Fig. 3 is a sectional view on the line 3 3 of Fig. 4, showing the parts in position for snifting or venting the air from the bottle being filled. Fig. 4 is a sectional view on the line 4 4 of Fig. 2, showing the body of the filler with the cap removed. Fig. 5 is a bottom plan view of the cap; and Fig. 6 is a sectional view on the same line as Fig. 4 and showing the parts in the position to shut off all connections or communications, the valve appearing in dotted lines.

Referring to the drawings, the reference-letter A denotes a head or filler considered as a whole and constructed in accordance with my invention mounted upon a suitable stand, (designated by the letter A',) which may be of any well-known construction. The head is metallic and is composed of a solid body a, of any suitable size and shape, and a cap b. The body a is preferably spherical in cross-section and is provided at one side with a lateral flange a', having an external thread to receive a corresponding internal thread on the flange b' of the cap for connecting these parts, as clearly shown in Figs. 2 and 3. The head is mounted upon a suitable stand A' and is preferably disposed with its flanges in horizontal position with its cap at the front side, as shown in Fig. 1. The flanges of the body and cap are cup-shaped to provide an intermediate chamber, into which the several ports or passages from the various pipes lead and in which the controlling-valve is located. The body is provided in any suitable manner with a supply-pipe a^2, which is suitably connected with a tank or other source of charged water or other liquid. The bore a^3 of the supply-pipe communicates with a lateral inlet port or passage a^4, formed in the body and opening into the valve-chamber formed between the body and cap and at one side of the central line of the chamber. The body is also provided with a downwardly-directed discharge-pipe a^5, whose bore a^6 is in extension of a lateral outlet port or passage a^7, formed in the central line of the body and opening laterally and centrally into the valve-chamber. The body is further provided with a vent or snifter a^8, whose bore or passage is in extension of a lateral port a^9 formed in the body and which opens into the valve-chamber at one side of the discharge-port a^7 and upon the same circle as the feed or supply port a^4, as shown in Figs. 4 and 6.

The cap b is provided with a horizontal central bearing for a valve-stem b'', which extends laterally through the bearing and is provided at its front end with a square portion to receive a suitable handle b^2, which is secured to the stem by a washer b^3 and a screw b^4. On its inner end the stem carries a valve b^5, preferably in the form of a circular disk, these parts being in practice formed integrally. The valve is held within the cavity of the cup formed by the flange b' by means of the handle and its attaching devices. The valve oscillates in the valve-chamber and assumes three positions: first, to cut off all intercommunication between the ports opening into the chamber; second, to provide communication between the inlet and outlet ports on the one hand, and, third, to provide communication between the outlet and vent ports on the other hand. The valve may be constructed to accomplish these various functions in any suitable manner, and for this purpose I prefer to provide it with a radial passage or channel as constituting the simplest embodiment of means for this purpose. This channel extends radially from the center of the valve, where it is always in register with the outlet-port a^7 and is of sufficient length to connect this port alternately with either of the radial ports a^4 and a^9, it being understood

that the channel does not form a connection between the ports a^4 and a^9, which are never in communication with each other. The channel may be provided in the valve, which is preferably of brass, in any suitable manner, as by merely cutting away or grooving the inner face of the valve for the required distance, as shown in Fig. 5, or by constructing the valve with an interior channel of the required length and terminating at its ends in a central lateral mouth b^7 in register with the port a^7 and with an outer lateral mouth b^8, as shown in Figs. 2 and 3. The channel is adapted either to be brought into register alternately with the ports a^4 and a^9 or to be thrown out of communication with both of said ports, as hereinafter more fully described. The valve is provided with a stop for limiting its throw or movement in both directions, and in the present embodiment I supply this feature by a pin or lug b^9, which projects radially from the periphery of the valve and enters a way or groove a^{10} in the flange a' of the body. This way is preferably formed by cutting away the flange a' for the required distance, as shown in Figs. 2, 4, and 6.

In order to provide tight connections and obviate all danger of leakage between disconnected ports, I prefer to employ a packing a^{12}, which is seated in the cavity of the cup formed by the flange of the body and is provided with openings or perforations to register with and in extension of the ports a^4, a^7, and a^9, all as shown in Figs. 2 and 3.

The cap may have a suitable rim b^{10} square or angular in outline to receive a wrench or other tool, and the body may have a jam-nut a^{13} to lock the cap in position on the body and also prevent leakage in the joint between these parts.

The inner end of the channel b^6 always registers with the outlet-port a^7, and the handle normally stands in the inoperative or turned-off position, (designated by the reference-letter x in Fig. 1,) in which position the outer end of the channel b^6 of the valve does not register with either of the ports a^4 and a^9, but opens against the face of the washer a^{12}, as shown in Fig. 6. When a bottle is positioned at the end of the discharge-pipe a^5, the operator throws the handle to vertical position, (indicated in Fig. 1 by the letter y,) in which position the outer end of the channel b^6 registers with the inlet-port a^4 and establishes communication between that port and the outlet-port a^7, as shown in Fig. 2, whereby the charged water or other liquid flows from the source of supply through the head to the bottle. When the bottle has been partially filled, it is necessary to allow the air confined within the bottle to escape, for which purpose the operator throws the handle to the position indicated in Fig. 1 by the letter z, whereby the outer end of the channel b^6 registers with the vent-port a^9 and establishes communication between that port and the outlet-port a^7, as shown in Fig. 3, whereby the air which has been compressed in the bottle by the partial filling thereof is allowed to escape through the snifter or vent. After the air has escaped, which it does very quickly, the operator again shifts the handle to its central vertical position (indicated in Fig. 1 by the letter y) to re-establish the communication between the inlet and outlet ports, as shown in Fig. 2, whereby the filling of the bottle is completed, after which the handle is returned to position x to cut off all communication. The positions x and z are determined by the stop-pin b^9, abutting against the shoulders formed at the ends of the way a^{10} by the flange a', and, if desired, the position y may be indicated by any suitable means—such, for example, as registering-marks on the parts—although in practice this is clearly indicated by the vertical position of the handle.

In operating the device there is no unnecessary or lost motion, and the air does not escape from the partially-filled bottle until the operator wishes it to pass out. The quickness and effectiveness with which the air-vent can be controlled prevents the escape of the gas, and the air-space in the bottle can be filled with the charged water without allowing air to get back into the bottle. When the handle is at inoperative position, the inlet is completely shut off, so there is no escape of charged water while the filled bottle is being removed and an empty one put in place on the stand.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

In a bottle-filler, the combination with a body having a central outlet-port and provided with an externally-threaded flange which is recessed to provide a way having stop-shoulders at the ends, a depending discharge-pipe in extension of the said port and from which the bottles are adapted to be filled, a cap having a central opening and an annular internally-threaded flange in engagement with the flange of the body and forming therewith a valve-chamber, the body being provided with inlet and vent ports communicating with the chamber, a washer seated against the body within the flange thereof and having openings alined with the inlet, outlet and vent ports, an oscillating disk-shaped valve in the chamber and having a radial channel registering with the outlet-port at its inner end and adapted to register with either the inlet or vent port at its outer end, a stem on the valve projecting through the cap-opening, a handle fixed to the stem, and a radial pin on the valve entering the recess in the flange of the body and coöperating with the stop-shoulders one of which arrests the valve when the outer end

of the channel is out of register with both the inlet and vent ports and the other of which arrests the valve when the outer end of the channel registers with the vent-port, the inlet-port entering the valve-chamber so as to register with the channel at a point between the positions defined by the stop-shoulders.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES BEASLEY HALL.

Witnesses:
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J. MCROBERTS.