

No. 614,257.

Patented Nov. 15, 1898.

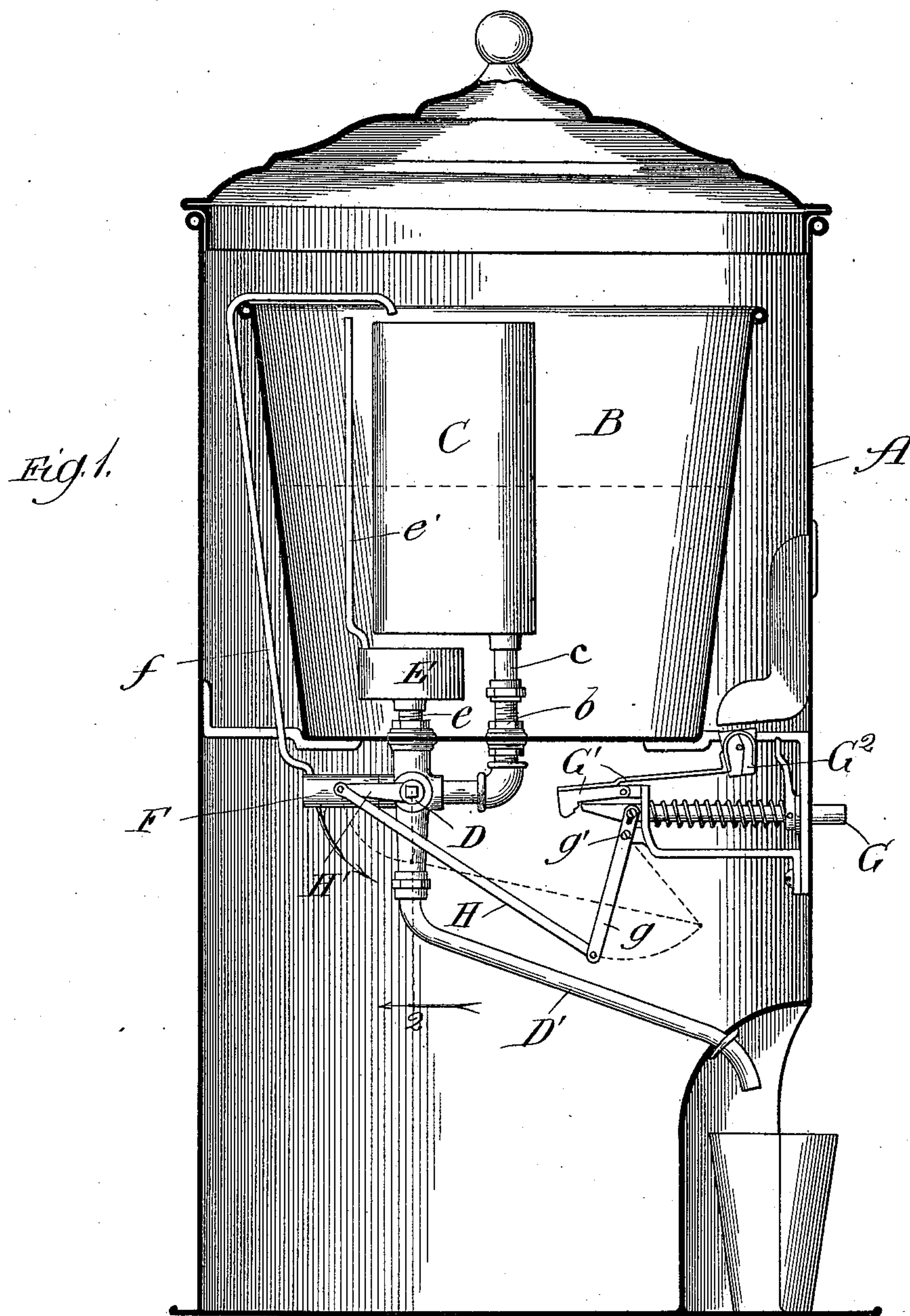
C. E. WESTLAKE.

COIN CONTROLLED LIQUID VENDING APPARATUS.

(Application filed Jan. 1, 1896.)

(No Model.)

2 Sheets—Sheet 1.



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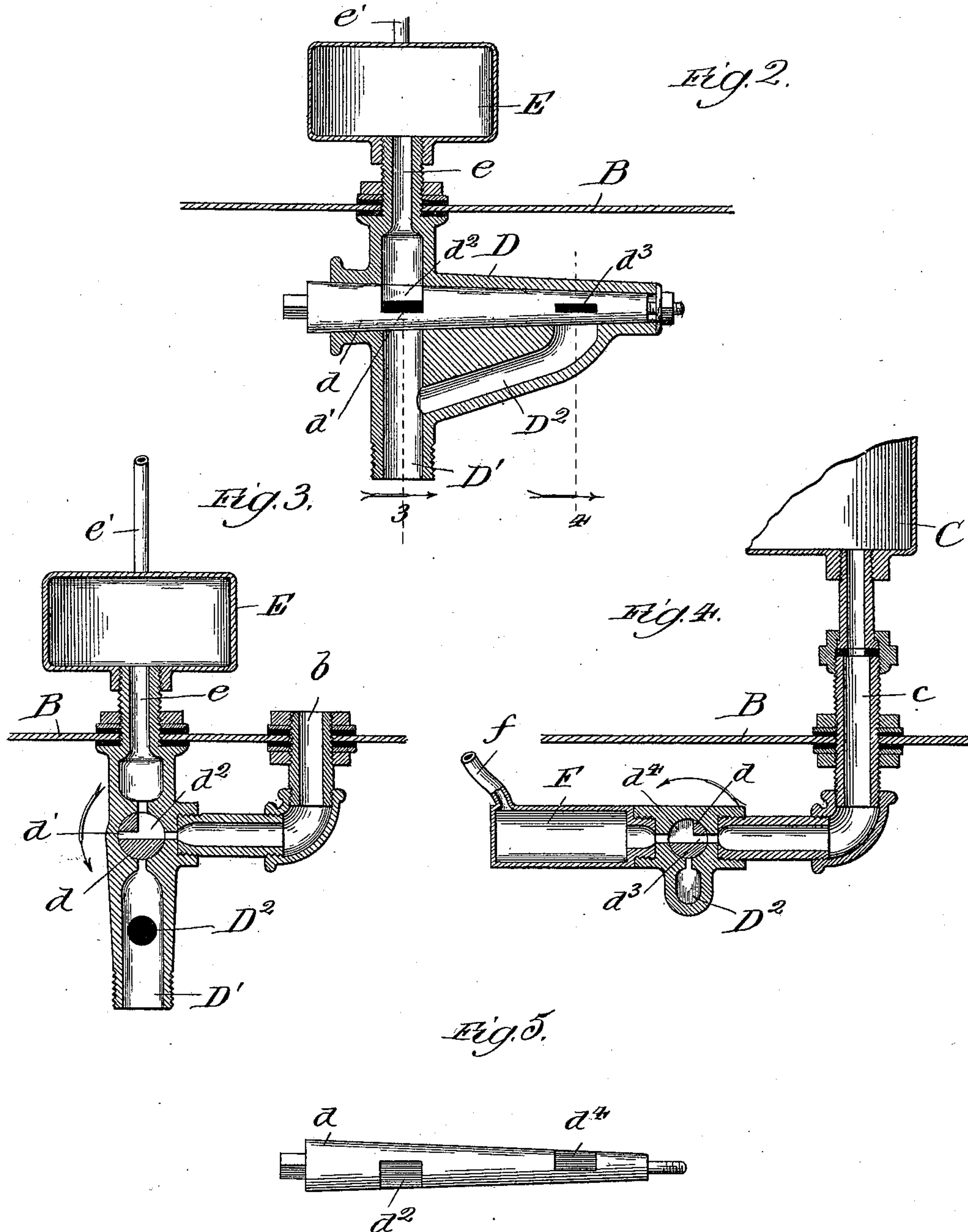
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UNITED STATES PATENT OFFICE.

CHARLES E. WESTLAKE, OF CHICAGO, ILLINOIS, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE CHICAGO AUTOMATIC COMPANY.

COIN-CONTROLLED LIQUID-VENDING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 614,257, dated November 15, 1898.

Application filed June 1, 1896. Serial No. 593,828. (No model.)

To all whom it may concern:

Be it known that I, CHARLES E. WESTLAKE, residing at Chicago, Cook county, Illinois, have invented certain new and useful Improvements in Liquid-Vending Apparatus, of which the following is a specification.

My invention has particular relation to means, preferably under control of coin-actuated mechanism, for measuring different liquids contained in separate supply-receptacles and mixing them in the proper proportions at the time of delivery or consumption. Heretofore a mixture of the necessary liquids has been previously prepared and contained in a single supply tank or receptacle, from which it has been drawn off in measured quantities through the operation of a valve. This method has been found objectionable and unsatisfactory for many obvious reasons, particularly in that a large surface of the mixture is exposed to atmospheric action and the mixture is liable to spoil after standing a short while. To avoid these objections, I employ separate tanks for the water and for the essential element of the mixture, usually fruit-juices, phosphates, &c., and use measuring attachments, all controlled by a single valve device for measuring and mixing the liquids whenever the valve is operated either by coin-controlled apparatus or by hand or otherwise.

My invention embodies other advantageous and novel features in construction and operation, which will be apparent from the description hereinafter made.

In the drawings, Figure 1 is a sectional elevation of a liquid dispensing or vending apparatus, showing the liquid-tanks and the coin-actuated mechanism operating the valve controlling the passages of measured liquid to a delivery-pipe; Fig. 2, a sectional view of the valve and water-measuring chamber, taken on line 2 of Fig. 1; Fig. 3, a sectional view taken on line 3 of Fig. 2, showing the normal open passage through the valve from the water-tank to the water-measuring chamber; Fig. 4, a sectional view on line 4 of Fig. 2, showing the syrup-chamber and its measuring-chamber with the passages therebetween, all such sectional views looking in the

direction of the arrows; and Fig. 5, an elevation of the valve plug or shank.

Within a suitable case or housing A, I support a tank or receptacle B, which is adapted to contain a supply of water, and preferably within such tank I arrange a smaller tank or receptacle C, which is adapted to contain a supply of syrup or fruit-juice or other liquid, for which reason I will hereinafter designate the same as the "syrup-tank" and likewise the other tank as the "water-tank." These tanks may be of any desired shape or dimensions, and for compactness I prefer to arrange them one within the other, as shown in Fig. 1, although they may be disposed otherwise.

Upon the bottom of the water-tank I secure a valve device D, communicating with the interior thereof through a passage or pipe b. This valve device, which is substantially a three-way cock or valve, is provided with a plug or shank d, having an outlet-passage d' and a passage or recess d², forming a direct connection between the tank B, through passage b, to a water-measuring chamber E, through a passage e. This chamber is preferably located in the water-tank, as shown, and is of a certain predetermined capacity, so that a proper proportion of water is delivered to form a mixture with a predetermined quantity of syrup, as hereinafter explained.

The plug or valve g also regulates a passage c, leading from the syrup-tank through the bottom of the water-tank to a syrup-measuring chamber F, also of a predetermined capacity, to make with the water a mixture of the proper strength. The plug is provided with a passage d³ and a passage or recess d⁴, which when the plug is in normal position, as shown in Fig. 4, forms an open passage between the syrup-tank and its measuring-chamber, whereby the latter is filled with syrup. The chamber F is provided with a tube f for the escape of air therefrom when it is being filled, and likewise the water-measuring chamber has a tube e' for the same purpose. The valve has an outlet-passage D', communicating direct with the water-measuring chamber when the plug is properly turned and also with the syrup-measuring chamber

through a passage D^2 , as clearly shown in Fig. 2. It is obvious that when the plug is in normal position the measuring-chambers are in communication with their respective supply-tanks, but that when the plug is rotated a quarter this communication will be closed and free passage from the measuring-chambers to the outlet established, whereby the proper proportions of the liquid will be measured and mixed in the outlet-passage; but such mixture will only be formed at the time of use. The passages from the supply-tanks into their respective measuring-chambers and also from the chambers are thus under the control of one valve having several passages, by whose operation the passages from the tanks to the chambers which are normally open are closed and the discharge therefrom simultaneously opened, and vice versa. This valve may therefore be termed a "multipass-valve."

As one means for actuating the valve by coins I have selected the mechanism illustrated in Fig. 1, in which a spring-pressed plunger G reciprocates in bearings inside the casing A and extends outside thereof. This plunger is locked in normal position and prevented from being thrust inward by means of a lever G' , which engages the end of the plunger and is released therefrom by the weight of a coin in the hopper G^2 .

A lever g is pivoted at g' and one end is attached to the plunger. The other end is secured to a connecting rod or link H , extending to an angle-arm H' , secured upon the end of the valve-plug, whereby as the plunger is released and thrust inward the levers and rod will be moved to the position indicated by the dotted line in Fig. 1 and the plug rotated to open and close the passages, as heretofore explained. I prefer to so arrange the ports and passages in the plug that the communication with the supply-tanks will be cut off before the outlet from the measuring-chambers is established.

My invention is particularly designed to operate in connection with coin-controlled apparatus for vending drinkable liquids; but it is obvious that the valve device and its concomitant parts may be used to measure and mix any two or more liquids used for any purpose whatever, and I describe and entitle it with reference to such apparatus as showing one mode of application of my invention for the sake of a brief and clear description thereof without intending to limit myself to the coöperation of such mechanism except as may be expressly done in some of the claims.

Although I have described more or less precise forms and details of construction, I do not intend to be understood as limiting myself thereto, as I contemplate changes in form, proportion of parts, and the substitution of equivalents as circumstances may suggest or render expedient. Furthermore, although I have shown means for measuring and mixing two different liquids, yet it is obvious that

the same mechanism with the simple addition of supply-chambers and measuring-receptacles and additional passages in the valve-plug will operate to measure and mix more than two different liquids, such changes being capable of being made without departing from the spirit and scope of my invention and claims.

I claim—

1. In a liquid-vending apparatus, the combination of two tanks or receptacles adapted to contain separate liquids to be mixed and vended, two measuring-chambers connected respectively with said receptacles, a delivery pipe or passage, a cock or valve simultaneously controlling both passages from the two receptacles to their respective measuring-chamber and normally affording open passage therebetween but making connection from both measuring-chambers to the delivery-pipe when turned, coin-controlled mechanism, a plunger normally locked by such mechanism and a connection between the plunger and valve whereby as the plunger is reciprocated and the valve turned communication between the said receptacles and their respective measuring-chambers is closed and the measuring-chambers emptied of their contents through the same delivery pipe or passage.

2. In a liquid-vending apparatus, the combination of a water-tank, a syrup-tank, a water-measuring chamber connected with the water-tank, a syrup-measuring chamber connected with the syrup-tank, passages between the tanks and their respective chambers and a valve controlling said passages and comprising a casing having ports leading from the tanks and chambers respectively and to the atmosphere, a horizontal shank d in the casing having ways and slots d' d^2 for governing the water through the discharge-passage D' and having ways and slots d^3 d^4 for governing the syrup through the branch passage D^2 communicating with the discharge-passage D' below the shank and extraneous thereof.

3. In liquid-vending apparatus, the combination of separate tanks adapted to contain separate liquids, measuring-chambers, passages between the tanks and their respective chambers, a valve controlling said passages and permitting the liquids to be mixed in measured proportions and be discharged, said valve comprising a shank or plug having two separate slots or ways passing there-through and two separate recesses in connection with the ways respectively, the ways normally connecting the tanks with the measuring-chambers and the recesses opening the discharge from the measuring-chambers when the plug is turned.

4. In liquid-vending apparatus, the combination of a water-tank, a syrup-tank located within the water-tank, a water-measuring chamber within its tank, a syrup-measuring chamber extraneous of the tanks, a passage

5 *b* from the water-tank, a valve-casing *D* interposed between said passage *b* and the water-measuring chambers and communicating both with the tank and its chamber, said casing also communicating with the syrup-tank and its chamber and provided with a discharge-opening, and a valve-plug having separate slots passing transversely there-through to normally establish communication

between the tanks and their respective chambers and also having ways for connecting the chambers with the discharge when the plug is turned.

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