No. 868,322. PATENTED OCT. 15, 1907.

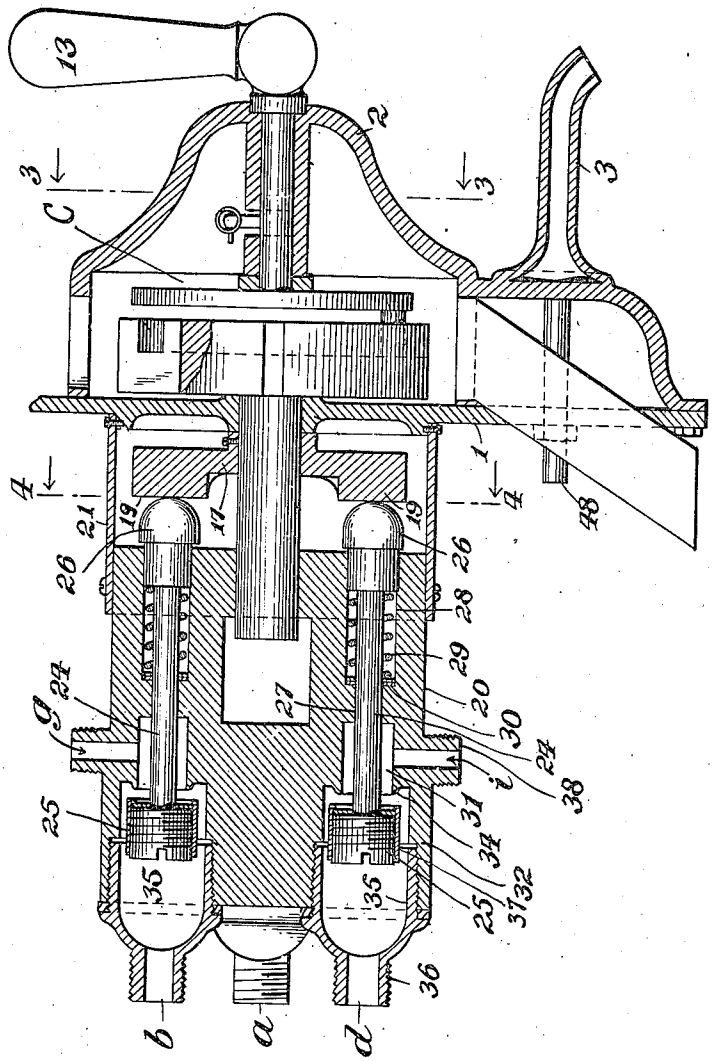
H. BLUM.

AUTOMATIC DISPENSING SODA WATER APPARATUS.

APPLICATION FILED NOV. 16, 1906.

2 SHEETS—SHEET 1.

Fig. 1.



Attest:

Edgworth Bruce

M. A. Osterrelt

Inventor:

Henry Blum,

by F. W. Parker

Atty.

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2 SHEETS—SHEET 2.

Fig. 5.

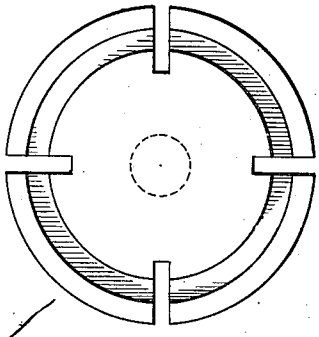


Fig. 6.

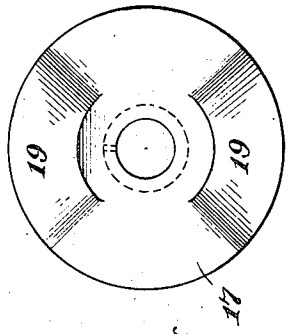


Fig. 3.

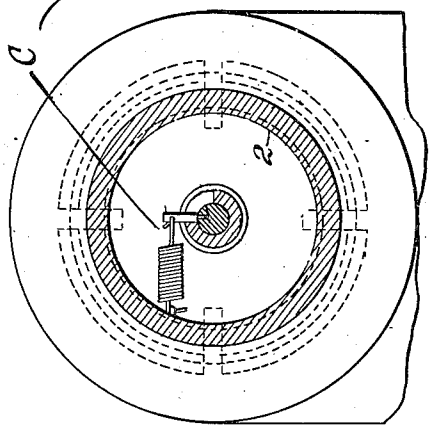


Fig. 4.

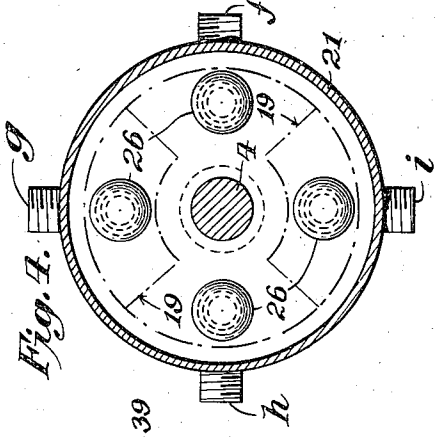
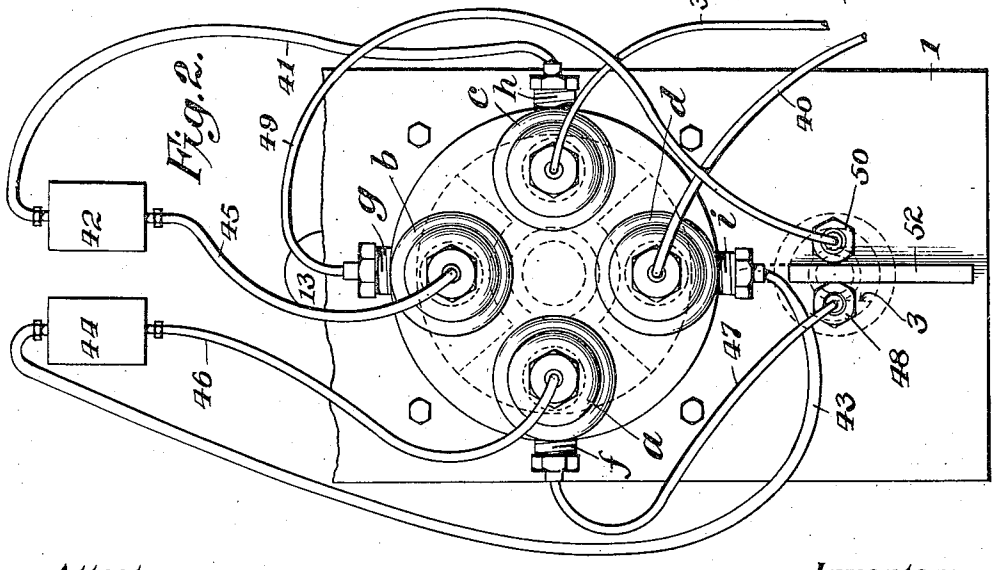


Fig. 2.



Attest:

Edgeworth Greene

M. L. Westervelt

by

Inventor:

Henry Blum

Jno. Barker, Atty.

UNITED STATES PATENT OFFICE.

HENRY BLUM, OF NEW YORK, N. Y.

AUTOMATIC-DISPENSING SODA-WATER APPARATUS.

No. 868,322. Specification of Letters Patent. Patented Oct. 15, 1907.

Original application filed July 7, 1906, Serial No. 325,108. Divided and this application filed November 16, 1906. Serial No. 343,742.

To all whom it may concern:

Be it known that I, HENRY BLUM, a citizen of the United States of America, and a resident of the borough of Manhattan, city, county, and State of New York, have invented certain new and useful Improvements in Automatic-Dispensing Soda-Water Apparatus, of which the following is a specification.

This invention, which is a division of my original application, Serial No. 325,108, filed July 7, 1906, relates to an apparatus for dispensing determined charges of fluid, such as soda water, or other beverages.

More specifically, the invention relates to a construction comprising a pair of fluid receptacles, which are controlled by four independent valves, these valves being operated in pairs, one valve of each pair so operated permitting the charging of one receptacle and the other valve permitting the discharging of the other receptacle. The next actuation of the operating means which moves or unseats the valves permits this pair of valves to close and opens the remaining pair, with the result that the receptacle just discharged is recharged, while the receptacle that was charged during the last operation is emptied.

In the preferred embodiment of my invention, there is a valve block provided with four valve chambers disposed substantially in quadrature about a common center; in these chambers are mounted for parallel reciprocation four spring actuated valves, the ends of whose stems are adapted to be engaged by two oppositely-disposed cam projections on a rotary operating disk, whereby the diametrically opposed valves are opened in pairs by the cam projections, the springs serving to close those valves not engaged by the projections; a pair of fluid receptacles are mounted independently of the valve block; and removable tubing connects the inlets of these receptacles with the outlets of two adjacent valve chambers, the inlets of these chambers being connected with a suitable source of supply, and other tubing connects the outlets of the receptacles with the inlets of the other two adjacent valve chambers, the outlets of these chambers leading to a suitable dispensing discharge or spout.

The principles and details of the invention will become more apparent by reference to the following specification, taken in connection with the accompanying drawings, in which:

Figure 1 is a side sectional elevation of an embodiment of my invention; Fig. 2 is a rear elevation thereof; Fig. 3 is a section on the line 3—3 of Fig. 1; Fig. 4 is a section on the line 4—4 of Fig. 1; Fig. 5 is a detail of the coin-holding wheel; and Fig. 6 is a detail face view of the cam plate or disk for operating the reciprocating valves.

Referring now to these drawings, 1 indicates an upright wall to which the apparatus may be attached; 2 is a hollow cap or cover secured to the front of said wall and containing the coin-controlled parts forming the subject-matter of my former application above referred to and here designated generally by the letter C; 20 is a valve block, preferably of generally cylindrical form, which is conveniently spaced from but connected with the rear side of wall 1 by means of the cylindrical sleeve 21.

Four valve chambers 32 are disposed substantially in quadrature about a common center, being formed partly in the rear end of the valve block 20 and partly within the hollow connecting members 35 threaded therein and provided with the nozzles or tubular extensions 36 for the reception of removable tubing. The forward end of each valve chamber is reduced at 31, forming a rearward-facing valve seat 34; and communicating with this reduced forward end of the chamber is the lateral nozzle or tubing connection 38.

Suitable valves 25 are mounted to reciprocate within the chambers 32, coöperating with the seats 34, being inclosed by forward-projecting rings 37 the better to form a tight joint with the seats. The stems 24 of the valves project forward through the reduced portions 31 of the valve chambers, through the guiding apertures 27, and the spring chambers 28, and are provided at their forward ends with the rounded heads 26, for engagement with the two oppositely-disposed cam projections 19 on the operating disk 17, said disk being adapted to be coin-coupled with the operating handle 13. Springs 29 occupying the spring chambers 28 serve to seat the valves automatically when the heads 26 are not in engagement with the cam surfaces 19.

In Fig. 2, 42, 44 are the two fluid receptacles, these being preferably elevated above the valve block, so that the liquid will flow by gravity to the two discharging valve chambers. These latter are two adjacent chambers, designated for convenience *a*, *b*, tubing 45, 46 connecting the outlets of the receptacles with the nozzles 36 of these chambers. The charging valve-chambers are designated for convenience *c*, *d*; and their lateral nozzles 38, designated as *h*, *i* are connected by tubing 41, 43 with the inlets of the receptacles 42, 44. The nozzles 36 of these charging chambers are connected by tubing 39, 40 with a suitable source of supply (not shown); and the lateral outlet nozzles 38 (designated as *f*, *g*) of the two discharging chambers are connected by tubing 47, 49 with a suitable dispensing discharge, as the spout 3 shown in Fig. 1.

With the foregoing description in mind, the operation of the device will be readily apprehended. With the parts in the positions shown in Fig. 1, the cam projections 19 on the operating plate 17 hold the valves in chambers *b*, *d* unseated, while the valves in chambers *a*, *c* are maintained seated by their springs 29. From receptacle 42, the charge of liquid flows down tube 45 and enters the nozzle 36 of chamber *b*, thence passes through the valve chamber and around the unseated valve and out the lateral nozzle *g*, and finally

through the tube 49 to the spout 3. In this way, a determined charge of liquid is dispensed through the spout. Meanwhile the other receptacle 44 (it being understood that this receptacle was emptied by the preceding operation) is being filled in the following manner. Liquid passes through tube 40 from the source of supply, enters the nozzle 36 of the chamber *d*, passes through this chamber and out the lateral nozzle *i*, and thence through the pipe 43 to the receptacle 44. In order to procure another discharge through the dispensing spout, the operating plate 17 is given a quarter turn. This carries the cam projections away from the valves in chambers 6 and *d*, and permits these valves to become seated under the actuation of their springs. The valves in chambers *a* and *c* are now forced rearward and unseated. The receptacle 44, which was filled by the last operation, is now emptied through tube 46, nozzle 36 of chamber *a*, the interior of this chamber, its lateral nozzle *f*, tube 47, and the spout 3. The empty receptacle 42 is filled by liquid passing from the source of supply through tube 39, nozzle 36 of chamber *c*, the interior of this chamber, its lateral nozzle *h*, and the tube 41. In like manner the receptacles are alternately charged and discharged, each quarter turn of the operating plate resulting in a predetermined quantity of liquid being dispensed through the spout 3.

What is claimed as new is:

In a liquid dispensing apparatus, the combination of a pair of liquid receptacles, a valve block removed from said receptacles and provided with four valve chambers arranged substantially in quadrature about a common center, connection between the inlets of two adjacent valve chambers and a source of supply, connection between the outlets of these chambers and the inlets of said receptacles, connection between the outlets of said receptacles and the inlets of the other two valve chambers, and connection between the outlets of these chambers and a dispensing discharge, reciprocating valves within said chambers, a rotatable operating plate having a pair of diametrically opposite cam projections adapted for every quarter revolution to unseat a pair of diametrically opposite valves, and springs for automatically seating the valves when not actuated by said projections.

HENRY BLUM.

In the presence of—
FREDERICK C. BONNY,
F. W. BUNKER.