

July 18, 1950

M. RUBINFIELD
APPARATUS FOR MIXING AND DISPENSING FLAVORING
SIRUPS AND CARBONATED WATER

2,515,570

Filed April 21, 1947

2 Sheets-Sheet 1

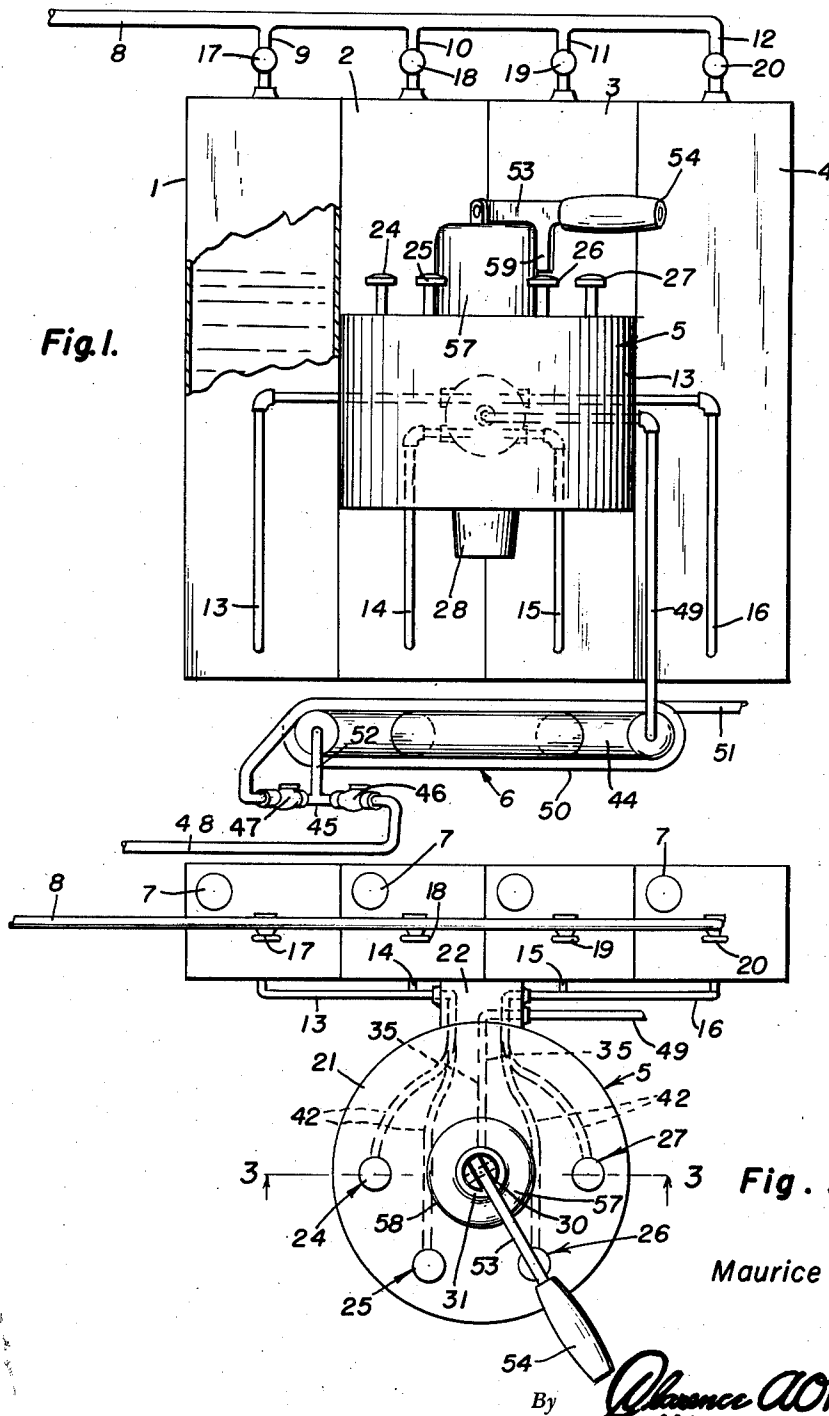


Fig. 1.

Fig. 2.

Inventor

Maurice Rubinfield

By

Clarence A. O'Brien
and Harvey B. Jacobson
Attorneys

July 18, 1950

M. RUBINFIELD
APPARATUS FOR MIXING AND DISPENSING FLAVORING
SIRUPS AND CARBONATED WATER

2,515,570

Filed April 21, 1947

2 Sheets-Sheet 2

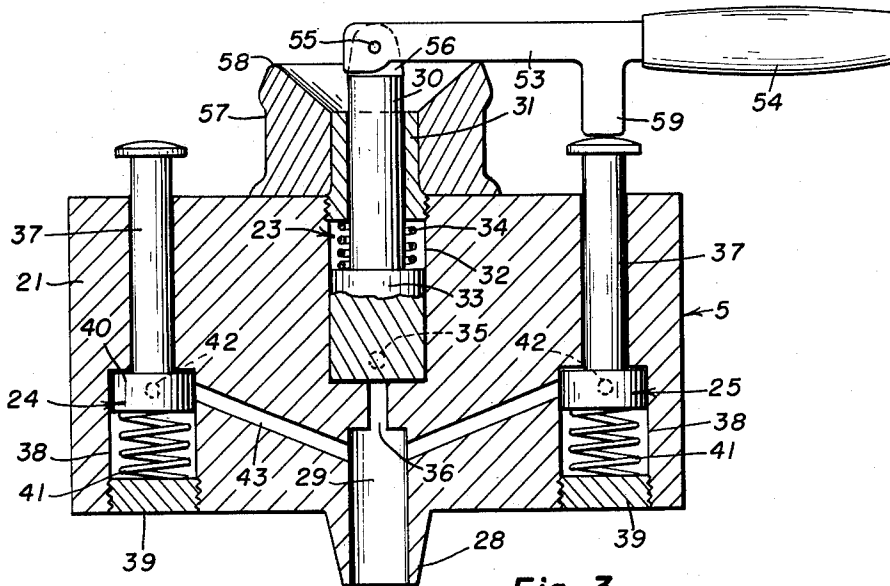


Fig. 3.

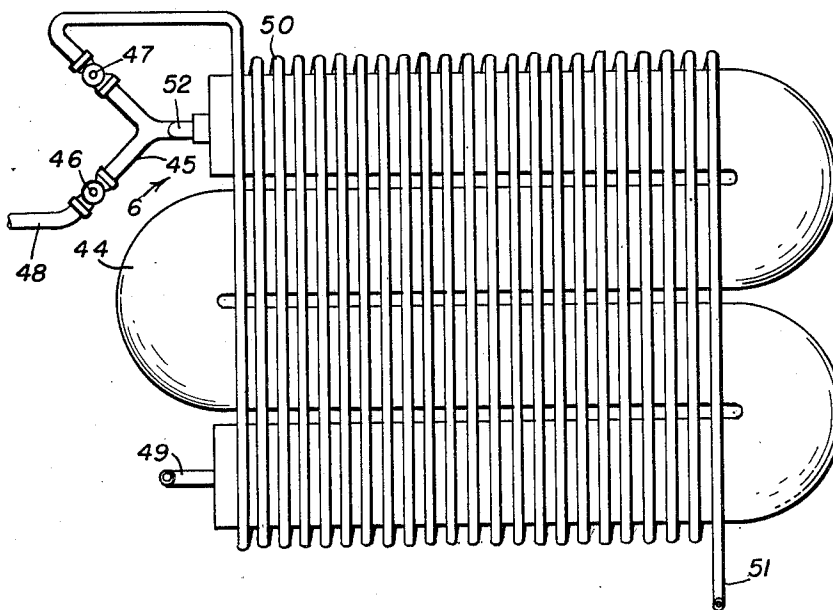


Fig. 4.

Inventor

Maurice Rubinfeld

By

Clarence W. O'Brien
and Harvey B. Jacobson
Attorneys

UNITED STATES PATENT OFFICE

2,515,570

APPARATUS FOR MIXING AND DISPENSING FLAVORING SIRUPS AND CARBONATED WATER

Maurice Rubinfeld, Pittsburgh, Pa.

Application April 21, 1947, Serial No. 742,834

2 Claims. (Cl. 222-135)

1
My invention relates to improvements in apparatus for mixing and dispensing flavoring sirups and carbonated water for fountain drinks in drugstores and other refreshment dispensing establishments.

The primary object of my invention is to provide apparatus of simple, compact form, and comparatively inexpensive construction, for mixing different flavoring sirups, selectively, with carbonated water and at the same time dispensing the mixture for use for preparing drinks, all by operation of a single lever or handle, and whereby the preparation of drinks involving such ingredients is expedited and rendered easy and economical.

Other and subordinate objects, also comprehended by my invention, together with the precise nature of my improvements, and the advantages thereof will be readily understood when the succeeding description and claims are read with reference to the drawings accompanying and forming part of this specification.

In said drawings:

Figure 1 is a view in front elevation, partly in section, illustrating my invention in a preferred embodiment thereof;

Figure 2 is a view in plan;

Figure 3 is a view in transverse section of the dispensing and mixing head taken on the line 3-3 of Figure 2 and drawn to a larger scale;

Figure 4 is a view in plan of the carbonater drawn to a larger scale.

Referring to the drawings by numerals, my improved apparatus, as illustrated, comprises, as the basis thereof, a battery of preferably rectangular tanks 1, 2, 3, 4 for containing flavoring sirups of different flavors, respectively, a dispensing and mixing head 5, and a carbonater 6.

The tanks 1, 2, 3, 4 are preferably arranged side by side with the dispensing and mixing head 5 disposed in front of the battery, and the carbonater 6 arranged directly beneath said battery and head, all for compactness in arrangement of the apparatus. A suitable filler cap 7 is provided in each of said tanks.

Any suitable cabinet of a type adapted for projection of the dispensing and mixing head out of the same may be provided for enclosing the apparatus otherwise but since such a cabinet forms no part of my invention it has not been deemed necessary to illustrate the same.

An air pressure line 8 with lateral branches 9, 10, 11, 12 to the tops of the tanks 1, 2, 3, 4 provides for pressure discharge of the sirups out of discharge lines 13, 14, 15, 16 extending from the bot-

2
tom portions of said tanks 1, 2, 3, 4. The air pressure line 8 may be supplied from any suitable source, not shown, of air pressure remote from the apparatus. Pressure control valves 17, 18, 19, 20 are interposed in the branches 9, 10, 11, 12 for regulating the air pressure in said tanks as required.

The dispensing and mixing head 5 comprises a cylindrical, flat top, body 21, having a rear boss 22 thereon, an axial, upwardly opening, discharge control valve 23 for carbonated water, a series of downwardly opening sirup discharge control valves 24, 25, 26, 27 therein grouped in an arc around said valve 23 concentric thereto, and a bottom axial discharge spout 28 the bore of which extends upwardly into said body 21 and forms a mixing chamber 29.

The discharge control valve 23 for the carbonated water comprises a vertically slidable and rotatable valve stem 30 arising above the body 21 and working in an upstanding bushing 31 threaded into and arising out of a cylindrical valve chamber 32 in which an enlarged cylindrical valve member 33 fast on the lower end of said stem 30 is rotatable and vertically slidable. A coil spring 34 in the valve chamber 32, between the bushing 31 and the valve member 33 urges said member 33 and the stem 30 downwardly and seats said member on the bottom of said chamber 32 to close a water feed duct 35 extending horizontally in the body 21 and opening out of the boss 22. A throat duct 36 establishes communication between the bottom of the valve chamber 32 and the mixing chamber 29.

The sirup discharge control valves 24, 25, 26, 27 each comprise a headed valve stem 37 slidably extended upwardly out of the body 21 from a valve chamber 38 in the bottom of said body closed at its bottom by a screw plug 39. An enlarged cylindrical valve member 40 on the lower end of the valve stem 37 is slidably fitted in the valve chamber 38. A coil spring 41 in the valve chamber 38 yieldingly seats the valve member 40 upwardly against the top of the valve chamber 38 so that said member closes a sirup feed duct 42 in the body 21 which opens out of the boss 22. A gravity feed duct 43 declines downwardly from each valve chamber 38 to the mixing chamber 29. The sirup feed ducts 42 are each supplied by one of the discharge lines 13, 14, 15, 16 which are suitably tapped into the boss 22 and the open ends of said ducts.

The carbonater 6 comprises a mixing coil 44 having a Y-shaped inlet fitting 45 in one end thereof with a pair of back pressure check valves

46, 47 therein to one of which there is suitably connected a carbonic acid line 48 leading from a suitable supply source, not shown, of such gas. A carbonated water feed line 49 extends from the other end of said coil 44 and is suitably tapped into the boss 22 and the outer end of the mentioned feed duct 35. A water pre-cooling coil 50, which may be cooled by refrigeration in any suitable manner, not shown, surrounds the mixing coil 44 with one end 51 adapted for connection to a suitable water supply source, not shown. The other end 52 of said pre-cooling coil 50 is suitably connected to the check valve 47.

Means are provided for opening the discharge control valve 23 for carbonated water and simultaneously opening the sirup discharge control valves 24, 25, 26, 27, selectively and comprising the following. A hand lever, or handle 53 with an outer end hand grip 54 thereon is pivoted at its inner end by a cross pin 55 between upstanding ears 56 on the valve stem 30 so that said hand lever is vertically swingable and rotatable about the valve stem axis. A collar 57 surrounds the bushing 31, on top of the body 21, and is fixed to said bushing with an upper, bevel, annular edge 58 adapted to underlie said hand lever 53 and act as a rest therefor when said lever is extended from said stem 30 substantially horizontal. A lateral lug 59 on the hand lever 53 is provided for pressing downwardly on the valve stems 37 selectively by revolving said hand lever to position said leg 59 over a selected valve stem 37 and then swinging said hand lever downwardly.

As will now be manifest, the hand lever 53 may be swung substantially horizontally about the axis of the valve stem 30 to position the leg 59 over any selected valve stem 37, and said lever then swung downwardly to rock the same on the edge 58 as a fulcrum to thereby lift the valve stem 30 and open the discharge control valve 23 for the carbonated water, while at the same time pressing down the valve stem 37 of a selected sirup discharge control valve 24, 25, 26, 27 to open the selected valve. Upon opening of the discharge control valve 23 for the carbonated water, and a selected sirup discharge control valve 24, 25, 26, 27 carbonated water will be fed, under pressure, from the coil 44 by way of the water feed line 49 and water feed duct 35 into the valve chamber 32 to issue out of said chamber through the throat 36 into the mixing chamber 29 and be discharged out of the spout 28. At the same time, the selected sirup discharge control valve being open, sirup will be fed from the related tank 1, 2, 3, 4 through the appropriate discharge line 13, 14, 15, 16 and the communicating sirup feed duct 42 to the valve chamber 40 of the selected valve to issue out of said chamber by way of the duct 43 leading therefrom and be mixed in the mixing chamber 29 with the carbonated water being discharged. By swinging the hand lever 53 to invert the leg 59, said lever may be swung downwardly while fulcruming on the edge 58 to open the discharge control valve for the carbonated water for discharge of plain carbonated water alone.

The water is carbonated in the coil 44 in the

usual manner, by absorption and therefore this need not be explained.

By adjusting the valves 17, 18, 19, 20 the amount of sirup discharged from the tanks 1, 2, 3, 4 may be varied at will.

The foregoing will, it is believed, suffice to impart a clear understanding of my invention, without further explanation.

Manifestly, the invention, as described, is susceptible of modification without departing from the inventive concept, and right is herein reserved to such modifications as fall within the scope of the appended claims.

What I claim is:

1. In apparatus of the class described, a battery of pressure discharge tanks for differently flavored liquids respectively, a carbonater for discharging carbonated water under pressure, a dispensing and mixing head having a mixing chamber therein and a discharge spout leading from said chamber, a plurality of valves in said head in communication with said chamber, a pressure feed line from said carbonater to one of said valves, pressure feed lines from said tanks to the other valves respectively, and manipulative means for opening the first mentioned valve and simultaneously opening any one of the other valves selectively comprising a single hand lever, the first mentioned valve opening upwardly and the other valves downwardly, said lever being pivotally mounted to swing downwardly with a fulcruming action to open said valves, and swingable laterally into operative relation to said other valves, and a member on said head providing an annular rest over which said lever may be swung laterally to fulcrum thereon in different laterally swung positions thereof.

2. A dispensing and mixing head for a liquid dispensing apparatus comprising a cylindrical body having an axial mixing chamber and a discharge spout leading from said chamber, an upwardly opening valve in the axis of said body communicating with said chamber and having a stem projecting above said body upwardly movable to open said valve, a series of valves in said body communicating with said chamber and including stems extending upwardly of said body and downwardly movable into valve opening positions, and means for moving the first mentioned stem upwardly and simultaneously moving said other stems downwardly including a single hand lever swingable laterally about the axis of the first mentioned stem into engagement with said other stems selectively and then swingable in another direction to move the first mentioned stem and the stem with which said lever is engaged, and a member on said body over which said lever is swung laterally and upon which said lever fulcrums when swung in said other direction.

MAURICE RUBINFELD.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS		
Number	Name	Date
1,600,170	Henderson	Sept. 14, 1926