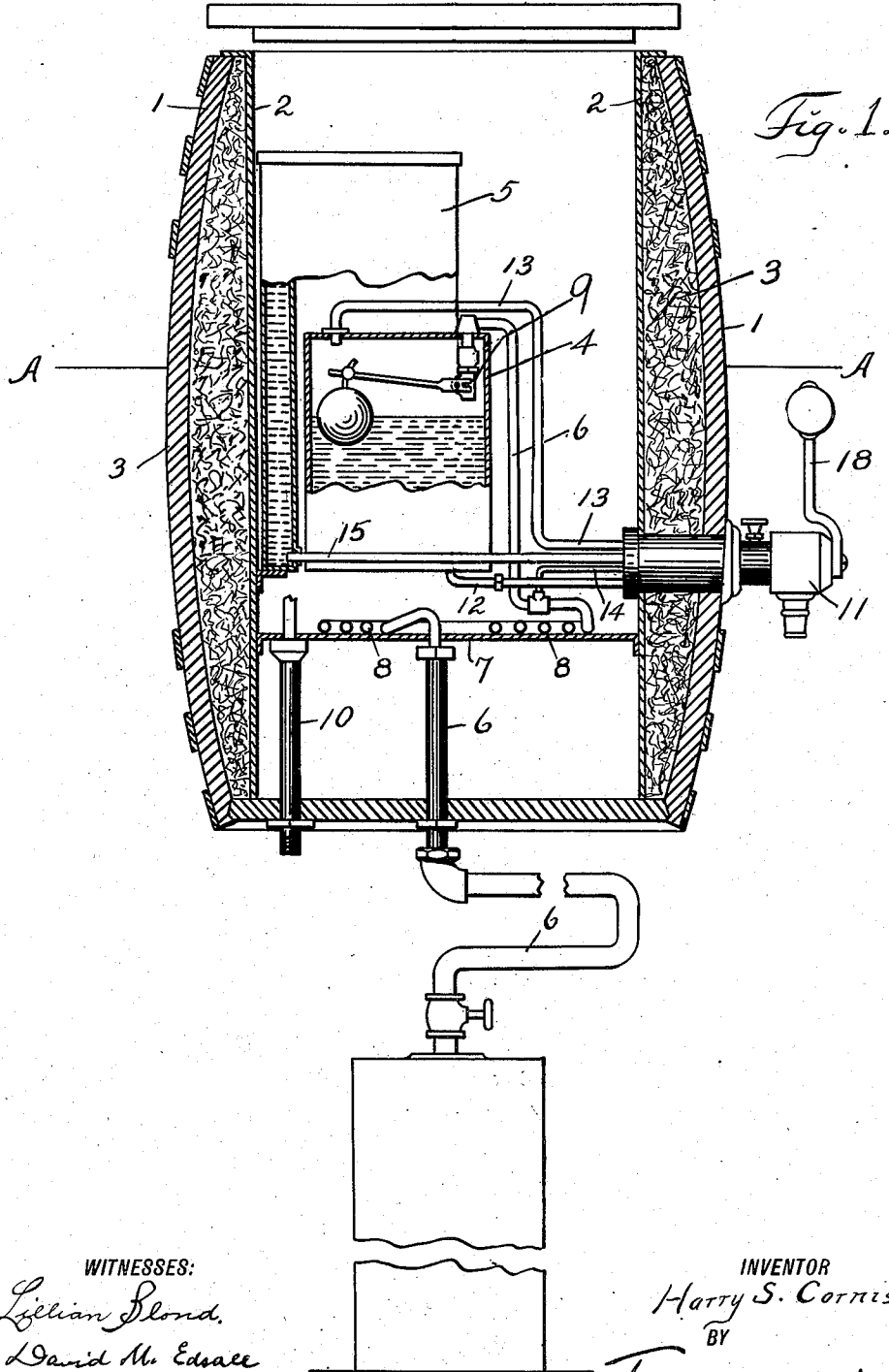


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 LIQUID DISPENSING APPARATUS.  
 APPLICATION FILED JULY 30, 1908.

942,165.

Patented Dec. 7, 1909.

4 SHEETS—SHEET 1.



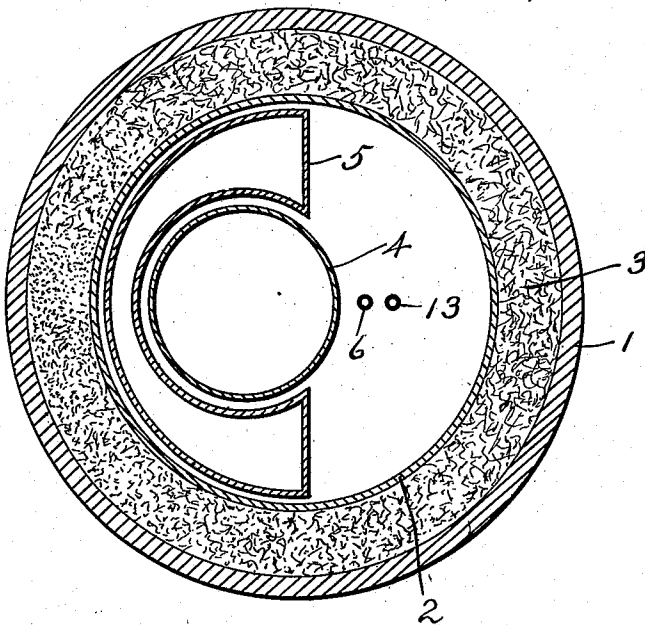
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4 SHEETS—SHEET 2.

*Fig. 2.*



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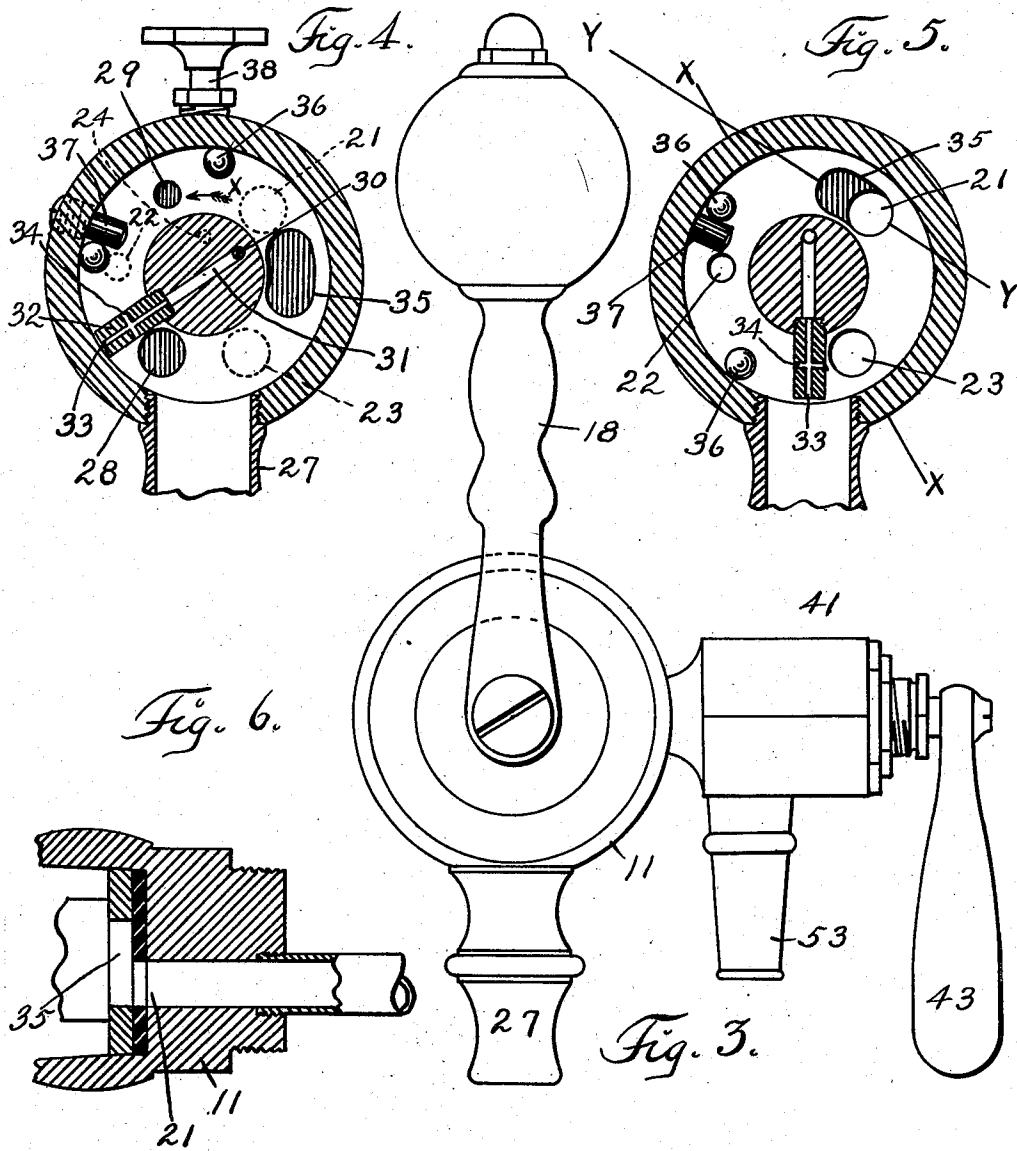
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4 SHEETS—SHEET 3.



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4 SHEETS—SHEET 4.

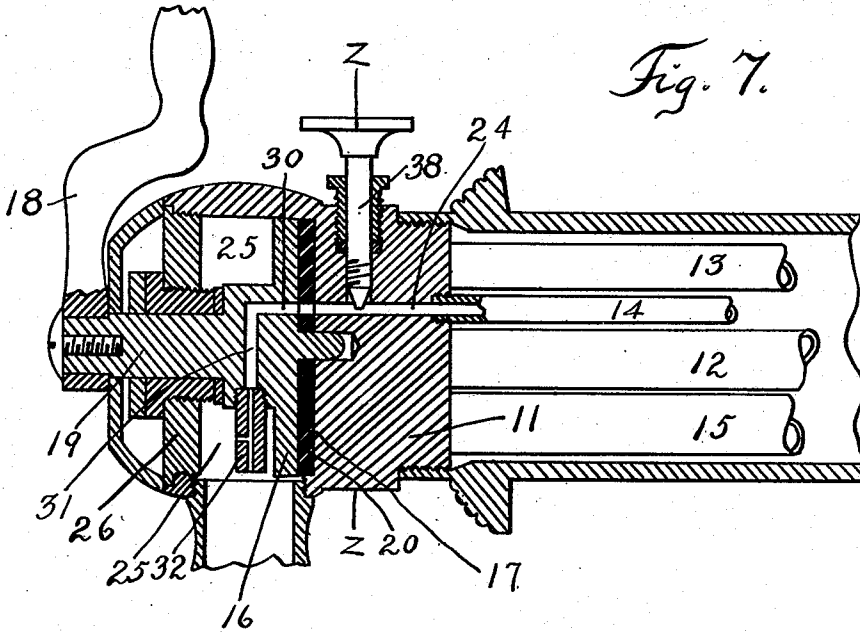


Fig. 7.

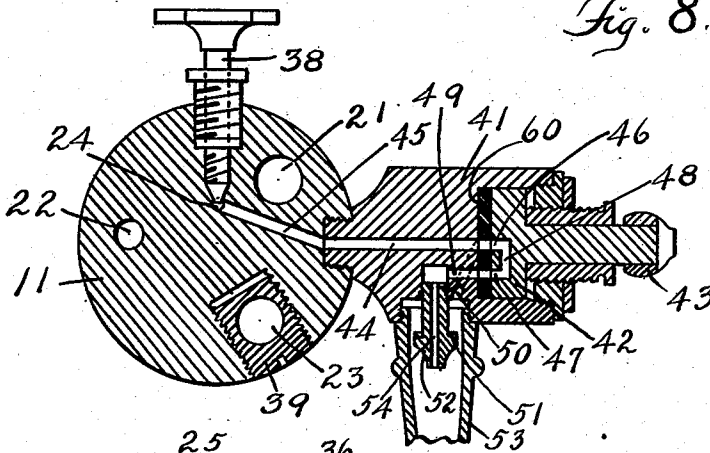


Fig. 8.

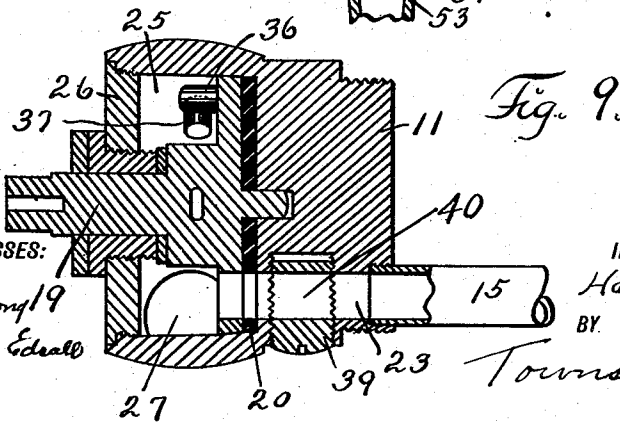


Fig. 9.

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# UNITED STATES PATENT OFFICE.

HARRY S. CORNISH, OF NEW YORK, N. Y.

## LIQUID-DISPENSING APPARATUS.

942,165.

Specification of Letters Patent.

Patented Dec. 7, 1909.

Application filed July 30, 1908. Serial No. 446,038.

*To all whom it may concern:*

Be it known that I, HARRY S. CORNISH, a citizen of the United States, and a resident of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Liquid-Dispensing Apparatus, of which the following is a specification.

My invention relates to means for mixing and dispensing liquids and is more particularly adapted for serving what are commonly known as "soft drinks" and has for its principal object to provide a compact apparatus from which the different liquids making up the drink may be drawn in positive and unvarying proportions, whether the amount drawn be large or small.

Another object is to provide means whereby all the liquids which go to make up the drink can be drawn simultaneously by one movement of an operating handle and through one outlet.

A further object is to provide a faucet, through which a mixed drink is drawn, with a separate outlet through which a drink of plain aerated water can be drawn by utilizing the same stream which supplies the water to the main faucet.

A still further object is to provide means whereby any desired amount of foam may be given to a drink.

With these and other objects in view, which will be apparent from the subjoined description, my invention consists mainly in the combination of a tank adapted to hold a flavoring syrup, a closed settling tank into which is introduced the charged water, means for simultaneously drawing from the syrup tank and the settling tank and means for simultaneously drawing charged water at an increased pressure.

My invention also consists in providing means adapted to relieve the pressure from the closed settling tank through the dispensing faucet and by the same operation as the drawing of the ingredients of the drink. By this construction the gas from the top of the liquid in the settling tank is caused to mix with the liquids being drawn from the faucet and adds to the "life" or sparkling of the drink.

My invention also consists in providing the main dispensing faucet with an auxiliary faucet in communication with the charged water passage of the main faucet, so that plain charged or aerated water can be

drawn without drawing the flavoring syrup and without having to provide additional connections to the storage tank, thereby broadening the use of my dispensing apparatus and avoiding the necessity of additional apparatus.

My invention also consists in the details of construction and combinations of parts hereinafter more particularly described and then specified in the claims.

In the accompanying drawings, Figure 1 is a general vertical section and side elevation of an apparatus embodying my invention. Fig. 2 is a horizontal section taken on the line A, A, Fig. 1. Fig. 3 is a front elevation of the dispensing faucets. Fig. 4 is a transverse vertical section through the mixing chamber and shows the valve in closed position. Fig. 5 is a similar section showing the valve in open position. Fig. 6 is a section on the line Y, Y, Fig. 5. Fig. 7 is a longitudinal vertical section through the main faucet. Fig. 8 is a transverse vertical section through the main faucet and a longitudinal section through the auxiliary faucet and taken on the line Z, Z, Fig. 7. Fig. 9 is a section on the line X, X, Fig. 5, and illustrates the adjustment for the syrup stream.

In the preferred form of carrying out my invention, 1 indicates the outer casing of the apparatus which may be of wood and is preferably constructed as a barrel, but may be of any other desired form.

2 indicates an inner casing preferably bearing on the bottom of the outer casing and separated from the outer casing by a closed space filled with granulated cork or other similar non-conducting substance 3.

4 indicates a closed reservoir or tank which contains the liquid in a still or settled condition and is suitably supported within the casing 2 and preferably at a distance from the bottom thereof. A syrup tank also supported within the casing 2 is preferably constructed crescent-shaped to fit around the reservoir 4 to economize space and make the apparatus more compact, but obviously the tanks 4 and 5 might be otherwise disposed within the casing 2.

A conduit 6 leading from a source of charged liquid supply, such as aerated or carbonated water, enters the chamber within the casing 2 where it is elongated and coiled, as at 8, the coils thereof preferably resting upon a platform 7 secured to the sides of the casing 2 and forming a supple-

mentary bottom therefor. The conduit 6 is continued beyond the coils and enters the reservoir 4 to which it delivers liquid such as carbonated water through a float valve 9 as described in my prior patent for liquid dispensing apparatus No. 887,312, dated May 12, 1908.

The space within the casing 2 and above the platform 7 forms a storage space into which ice may be introduced through the top of the apparatus. The ice, or water due to the melted ice, surrounds the various pipes and tanks, a suitable overflow drain pipe 10 being provided for keeping the iced water at a constant level. The packing, such as granulated cork, between the inner and outer casings serves to retain the cold within the casing 2 and prevents sweating of the outer casing 1.

11 indicates the body of the main dispensing faucet, the shank of which passes through the inner and outer casings and is secured thereto.

By means of the float and valve within the reservoir or settling tank 4, a constant level of liquid is maintained within the tank as when the liquid drops down due to drawing off a drink the float drops and opens the valve 9 which admits more liquid from the storage tank to the reservoir 4 and when the liquid therein reaches the desired level, a level such that there will always be an air space between the top of the liquid and the top of the tank, the float rises and closes the valve which shuts off the supply.

12 indicates the pipe forming the still liquid outlet from the reservoir 4 passing through the walls of the casings to the faucet 11 located outside the outer casing. The outlet pipe 12 makes connection with the liquid in the reservoir 4 preferably through the bottom thereof so that all the liquid can be readily drawn from the reservoir through the faucet.

A pipe 13 forming a snifting or vent pipe communicates at one end with the air space between the top of the liquid and the top of the tank 4 and passes through the casings and communicates with the faucet 11 so that the gas contained on top of the liquid is permitted to pass through the faucet and allow the liquid in the reservoir 4 to readily pass through the pipe 12 and faucet 11 as will be hereinafter described. A branch pipe or connection 14 from the conduit 6 connects with the faucet and supplies the carbonated water direct from the storage tank to the faucet and at a pressure equal to the pressure in the storage tank. A pipe 15 also establishes communication from the syrup tank 5 to the faucet to permit drawing off the syrup in the tank 5.

The preferred form of dispensing faucet comprises a disk 16 turning on a seat 17 formed in the main body portion 11 of the

faucet, said disk being provided with a suitable operating handle 18 secured to the stem 19 to which the disk 16 is secured. The seat 17 is provided with a compressible substance 20 upon which the valve disk 16 turns.

The faucet body 11 is provided with ports or passages communicating with the connecting pipes from the various sources of supply located within the casing 1. The port or passage 21 communicates with the snifting pipe 13, the port 22 with the still liquid supply pipe 12, the port 23 with the syrup supply pipe 15 and the port 24 with the pipe 14 through which the carbonated water under pressure is supplied.

25 indicates the mixing chamber closed by the cap 26 and is provided with an outlet or spout 27. A port 28 in the valve disk 16 is adapted to register with the port or passage 23 in the valve seat 17 and establish communication between the syrup tank 5 and the mixing chamber 25. A port 29 passing through the disk 16 registers with the port or passage 22 and establishes communication between the still liquid reservoir 4 and the mixing chamber 25. A port 30 in the face of the disk 16 is adapted to register with the passage 24 and communicates by means of a channel 31 with a discharge nozzle 32. The discharge nozzle 32 is adapted, when the port 30 registers with the port 24, to point directly down through the center of the spout 27 and is provided with a longitudinal passage 33 through which the liquid is adapted to be delivered directly into the drinking glass and with transverse passages 34 through which the liquid is caused to discharge against the sides of the mixing chamber 25. By this construction the liquid under pressure is discharged directly into the drinking glass to create a foamy drink and it also acts as an ejector nozzle to draw the liquid from the mixing chamber, while the liquid which passes through the transverse openings with considerable force serves to thoroughly mix the different ingredients of the drink which are admitted to the mixing chamber. A port 35 passing through the disk 16 registers with the port 21 and permits the gas on the top of the liquid in the reservoir 4 to escape through the spout 27 which allows the liquid to be readily drawn from the bottom of the reservoir. The port 35 is preferably elongated so that communication will be established with the port 21 slightly before the other ports are registered so that the gas from the reservoir will be permitted to escape before the liquid will be drawn.

All the ports in the disk 16 are adapted to register with their attendant ports in the valve seat simultaneously by one movement of the operating handle 18 in the direction of the arrow X Fig. 4. The movement of

the valve disk is limited in either direction when the ports are registered or when they are closed by means of laterally projecting stops 36 secured to the disk 16 striking an inwardly projecting pin 37 secured to the faucet body and entering the mixing chamber.

A tapered spindle 38 suitably packed to prevent leakage is adjustable into and out of the passage 24 to control and regulate the amount of liquid under pressure delivered to the mixing chamber and by means of which more or less foam can be given to the drink as desired.

A plug 39 provided with an opening 40 therethrough of approximately the same size as the passage 23 enters the passage 23 at any suitable place. The plug 39 has a threaded engagement with the body of the faucet so that by turning the plug the opening 40 therethrough will be disposed at a more or less angle to the passage 23 and acts as a throttle to cut off the amount of syrup which will pass through the passage 23. By means of this latter regulation the strength of the drink can be varied to obtain any desired mixture.

41 indicates an auxiliary faucet body secured to the main faucet body 11 and is provided with a valve seat 60 and disk valve 42 adapted to turn thereon by an operating handle 43 secured to a stem rising from the valve 42. The body 41 is provided with a passage 44 communicating with the fine stream passage 24 or stream under pressure of the main faucet by a passage 45. The valve disk 42 is provided with ports 46 and 47 in the face thereof and connected by a channel 48, the port 46 being always registered with the port 44 while the port 47 is adapted to be registered with a port 49 in the valve seat or a port 50 also located in the valve seat, or it can, by stopping in an intermediate position, be entirely closed. When registered with the port 50 the liquid strikes a cup 51 formed on a nozzle 52 and breaks over the side of the nozzle and falls into the drinking glass through a spout 53. When the port 47 is registered with the port 49 the liquid passes directly into the drinking glass through a passage 54 formed on the nozzle 52. By means of this auxiliary faucet an independent supply of carbonated water can be obtained without the necessity of having a separate source of supply.

The auxiliary faucet 41 is of the usual construction as used in soda fountains and forms, *per se*, no part of my invention, but its combination, as employed with the rest of my apparatus is new and novel.

What I claim as my invention is:—

1. In a liquid dispensing apparatus the combination of a dispensing faucet, an operating handle therefor, means for delivering a syrup to said faucet, means for

delivering charged liquid in a still condition to said faucet, means for delivering charged liquid at an increased pressure to said faucet and means for simultaneously drawing all of said liquids from said faucet by a single movement of said operating handle.

2. In a liquid dispensing apparatus, the combination with a syrup tank and a still liquid reservoir, of a dispensing faucet, an operating handle therefor, connections from said syrup tank and said reservoir to said faucet and adapted to deliver liquid thereto, means for delivering liquid to said faucet from a source of charged liquid supply under pressure and means for simultaneously drawing liquid through said faucet from said syrup tank, said reservoir and said source of charged liquid by a single movement of said operating handle.

3. In a liquid dispensing apparatus, the combination with a syrup tank and a still liquid reservoir, of means for supplying liquid to said reservoir from a source of charged liquid supply, a float valve adapted to govern the flow of liquid to said reservoir, a dispensing faucet, an operating handle therefor connections from said syrup tank and said reservoir to said faucet and adapted to deliver liquid thereto, means for delivering liquid to said faucet direct from said source of charged liquid supply, and means for simultaneously drawing liquid through said faucet from said syrup tank, said reservoir and said source of charged liquid by a single movement of said operating handle.

4. In a liquid dispensing apparatus, the combination with a syrup tank and a closed still liquid reservoir, of means for supplying liquid to said closed reservoir from a source of charged liquid supply, means for automatically governing the flow of liquid to said reservoir, a dispensing faucet, connections from said syrup tank and said reservoir to said faucet and adapted to deliver liquid thereto, means for delivering liquid to said faucet direct from said source of charged liquid supply, means for simultaneously drawing liquid through said faucet from said syrup tank, said reservoir and said source of charged liquid supply and means for simultaneously shifting the top pressure from said closed reservoir through said faucet.

5. In a liquid dispensing apparatus, the combination with a syrup tank and a closed still liquid reservoir, of means for supplying liquid to said closed reservoir from a source of charged liquid supply, means for automatically governing the flow of liquid to said reservoir, a dispensing faucet, connections from said syrup tank and said reservoir to said faucet and adapted to deliver liquid thereto, means for delivering liquid to said faucet direct from said source of charged liquid supply, means for simulta-

neously drawing liquid through said faucet from said syrup tank, said reservoir and said source of charged liquid supply, and a connection between said faucet and the gas space in said closed reservoir whereby the gas from said reservoir may escape through said faucet.

6. In a liquid dispensing apparatus, the combination with a syrup tank and a closed liquid reservoir, of means for supplying liquid to said closed reservoir from a source of charged liquid supply, means for automatically governing the flow to said reservoir, a dispensing faucet, connections from said syrup tank and said reservoir to said faucet and adapted to deliver liquid thereto, means for delivering liquid to said faucet direct from said source of charged liquid supply, means for simultaneously drawing liquid through said faucet from said syrup tank, said reservoir and said source of charged liquid supply, a pipe connection between said faucet and the gas space in said closed reservoir and means adapted to permit the gas from said reservoir to escape through said connection and said faucet.

7. In a liquid dispensing faucet, the combination with the faucet body forming a mixing chamber, of an operating handle for said faucet, means for delivering a coarse stream of charged liquid into said mixing chamber, means for simultaneously delivering a flavoring syrup into said mixing chamber and means for simultaneously delivering a fine stream of charged liquid at an increased pressure directly into the drinking glass, all of said liquids being simultaneously drawn by one movement of said operating handle.

8. In a liquid dispensing faucet, the combination with the faucet body forming a mixing chamber, of means for delivering a coarse stream of charged liquid in a still condition into said mixing chamber, means for simultaneously delivering a flavoring syrup into said mixing chamber and means for simultaneously delivering a fine stream of charged liquid at an increased pressure directly into the drinking glass and against the sides of said mixing chamber.

9. In a liquid dispensing faucet, the combination with the faucet body forming a mixing chamber, of means for delivering a coarse stream of charged liquid in a still condition into said mixing chamber, means for simultaneously delivering a flavoring syrup into said mixing chamber, means for simultaneously delivering a fine stream of charged liquid at an increased pressure directly into the drinking glass and means for throttling said fine stream.

10. In a liquid dispensing faucet, the com-

bination with the faucet body forming a mixing chamber, of means for delivering a coarse stream of charged liquid in a still condition into said mixing chamber, means for simultaneously delivering a flavoring syrup into said mixing chamber, means for simultaneously delivering a fine stream of charged liquid at an increased pressure directly into the drinking glass and a needle valve adapted to throttle said fine stream.

11. In a liquid dispensing faucet, the combination with the faucet body forming a mixing chamber, of means for delivering a coarse stream of charged liquid in a still condition into said mixing chamber, means for simultaneously delivering a flavoring syrup into said mixing chamber, means for simultaneously delivering a fine stream of charged liquid at an increased pressure directly into the drinking glass, and means adapted to control the supply of said flavoring syrup.

12. In a liquid dispensing faucet, the combination with the faucet body forming a mixing chamber, of means for delivering a coarse stream of charged liquid in a still condition into said mixing chamber, means for simultaneously delivering a flavoring syrup into said mixing chamber, means for simultaneously delivering a fine stream of charged liquid at an increased pressure directly into the drinking glass, means adapted to throttle said fine stream of charged liquid and means adapted to positively control the supply of said flavoring syrup.

13. In a liquid dispensing apparatus, a faucet adapted to simultaneously deliver a flavoring syrup, a coarse stream of liquid and a fine stream of liquid at an increased pressure, in combination with an independently operated auxiliary faucet secured to said first-named faucet and in communication with the fine stream of liquid passing through said first named faucet.

14. In a liquid dispensing apparatus, a faucet adapted to simultaneously deliver a flavoring syrup, a coarse stream of liquid and a fine stream of liquid at an increased pressure, in combination with an independently operated auxiliary faucet secured to said first-named faucet and adapted to deliver a coarse and a fine stream of liquid, said auxiliary faucet receiving its supply through the fine stream passage in the first named faucet.

Signed at New York city in the county of New York and State of New York this eighth day of July A. D. 1908.

HARRY S. CORNISH.

Witnesses:

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