Jan. 2, 1923.

1,440,425

H. F. WALTER ET AL.
SODA FOUNTAIN.
FILED JUNE 17, 1922.

2 SHEETS-SHEET 1

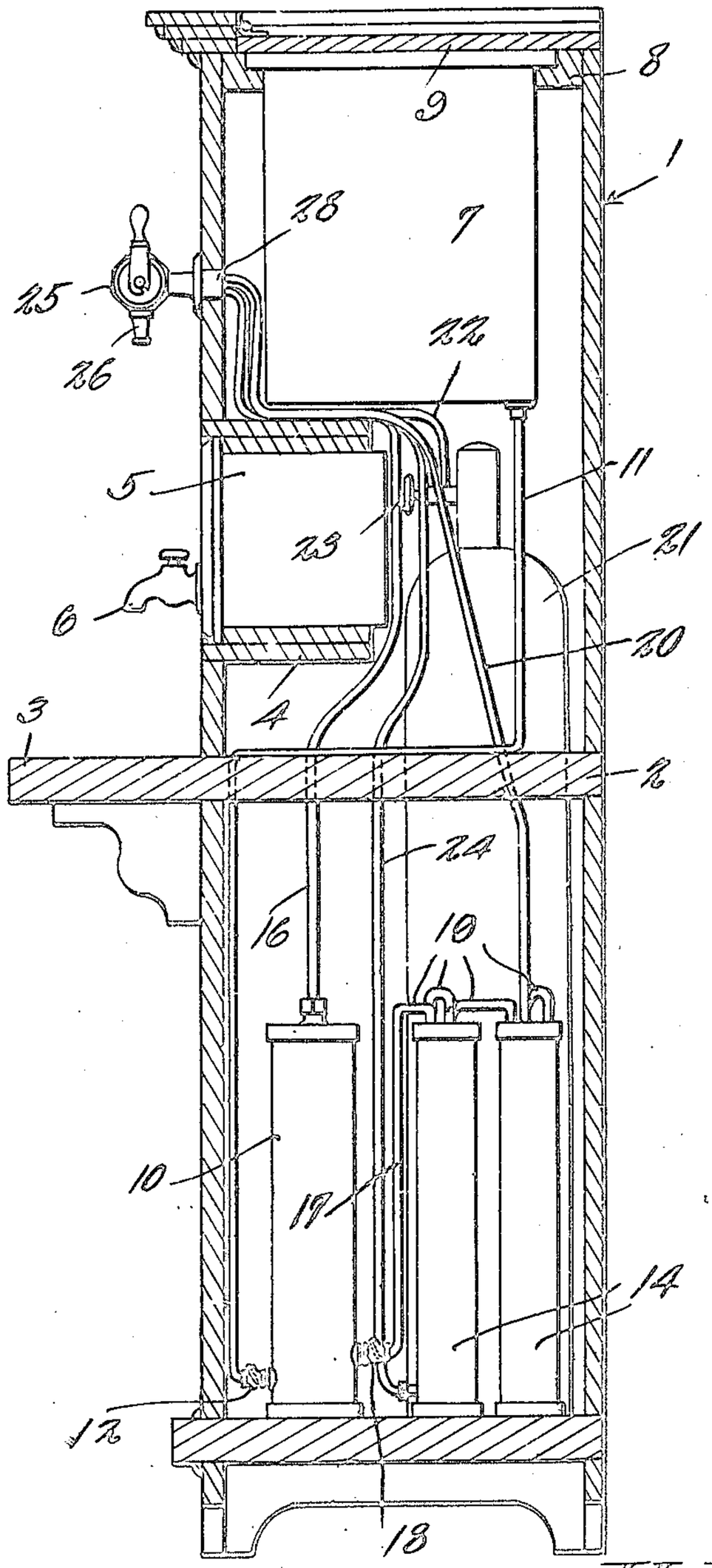

Fig. 1.

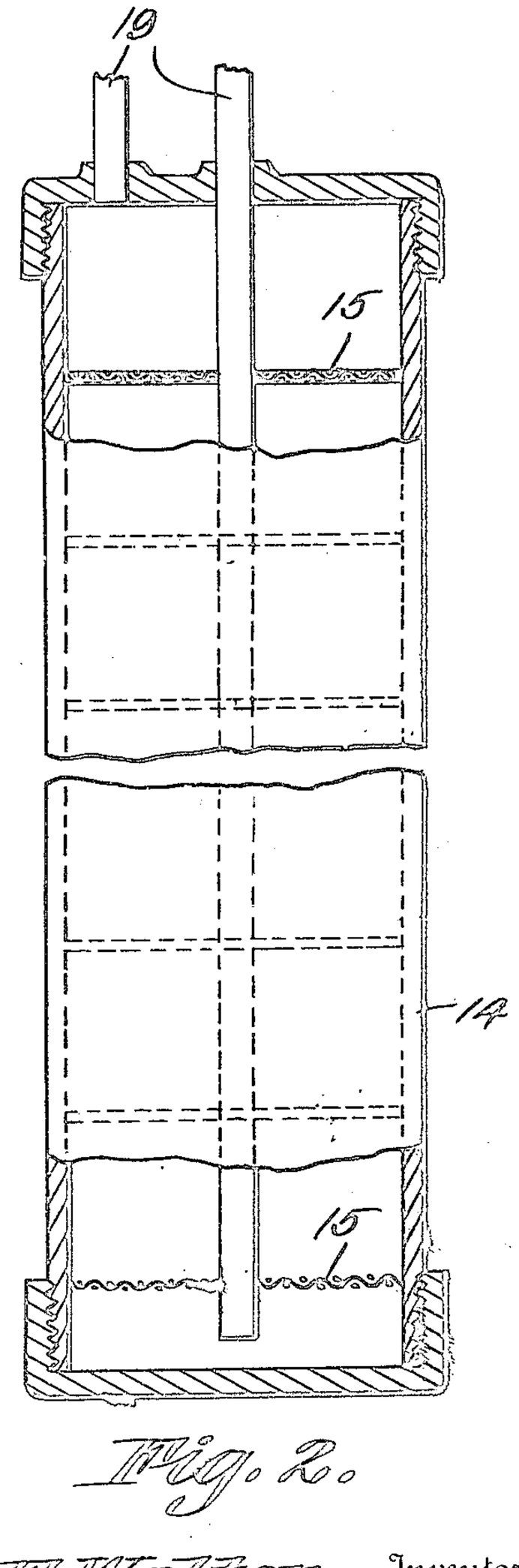

Fig. 2.

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2 SHEETS-SHEET 2

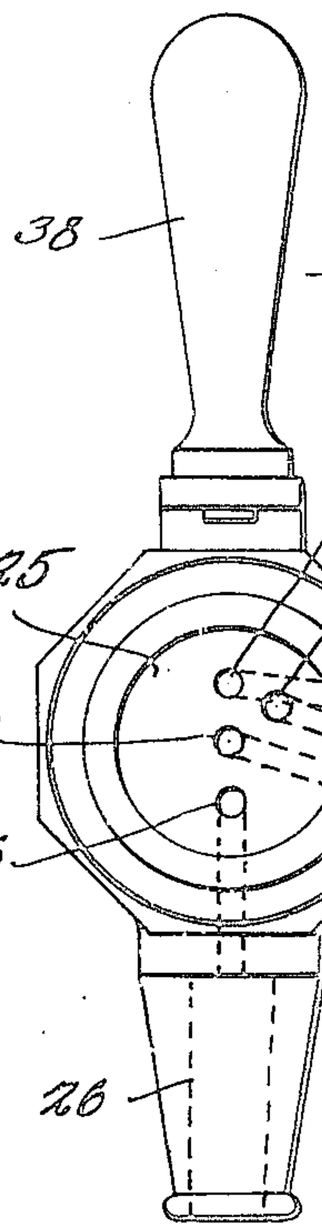

Fig. 3.

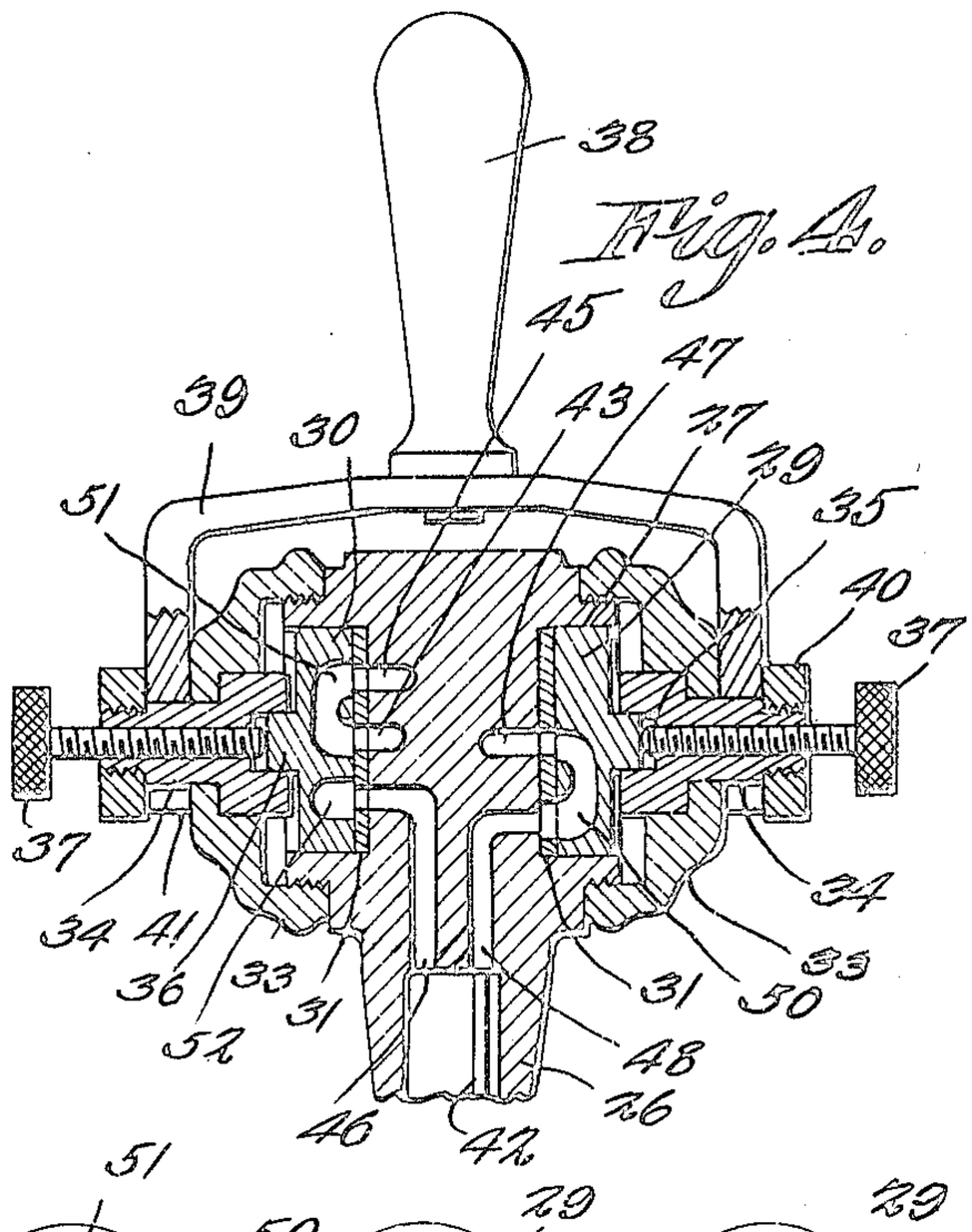

Fig. 4.

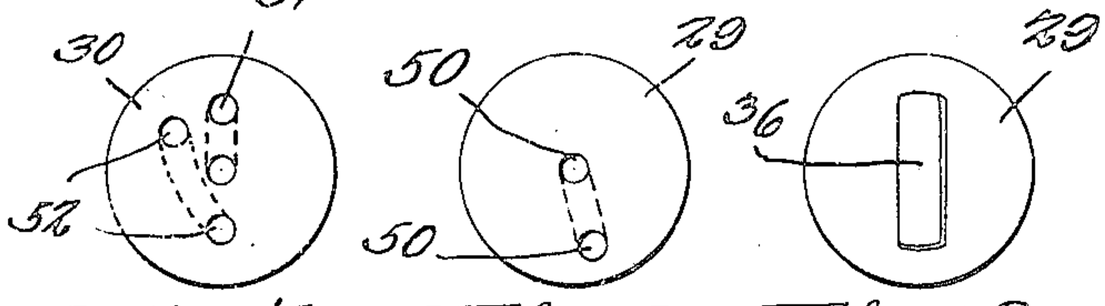

Fig. 7. Fig. 8. Fig. 9.

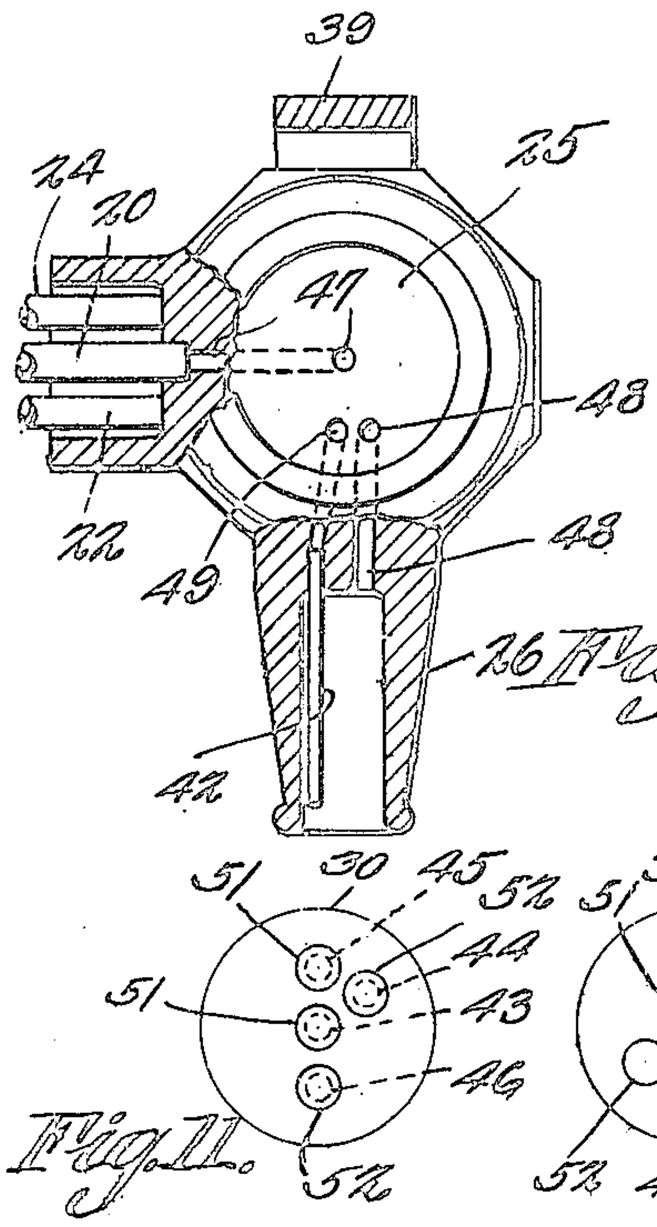

Fig. 5.

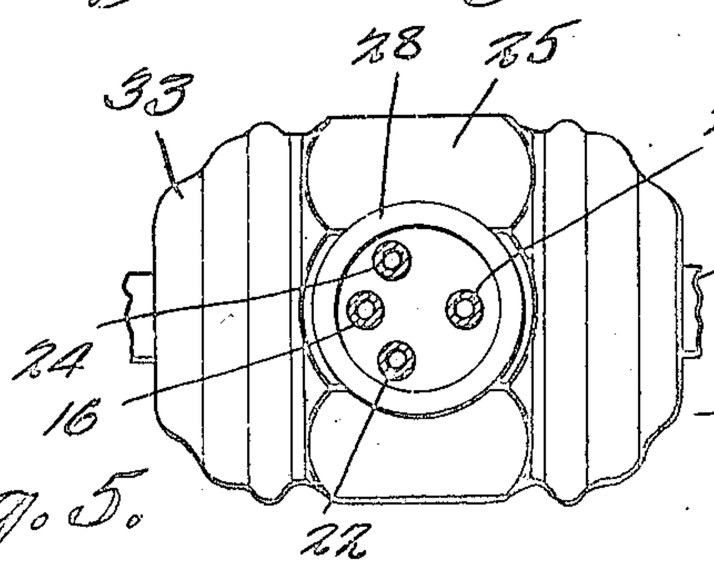

Fig. 6.

Fig. 11.

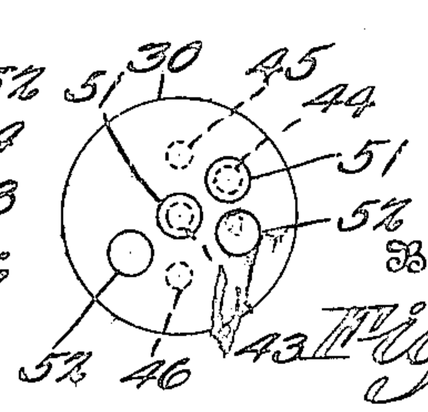

Fig. 10.

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Patented Jan. 2, 1923. 1,440,425

UNITED STATES PATENT OFFICE

HARVEY F. WALTER AND GEORGE R. McNEELY, OF KINSTON, NORTH CAROLINA.

SODA FOUNTAIN.

Application filed June 17, 1922. Serial No. 569,127.

To all whom it may concern:

Be it known that we, HARVEY F. WALTER and GEORGE R. MCNEELY, citizens of the United States, residing at Kinston, in the county of Lenoir, State of North Carolina, have invented a new and useful Soda Fountain, of which the following is a specification.

One object of this invention is to provide a soda fountain adapted to be embodied in a portable frame or cabinet, the water being supplied by gravity, and it being unnecessary to connect the device with a water system wherein a pressure exists. Another object of the invention is to improve the valve whereby the dispensing of the drink is brought about, and whereby the flow of water and gas is controlled.

Figure 1 shows in vertical section, a device constructed in accordance with the invention, parts appearing in elevation; Figure 2 is an elevation disclosing one of the mixing chambers, parts appearing in section; Figure 3 is an elevation of the valve, parts being removed, and parts appearing in section; Figure 4 is a section taken through the valve mechanism; Figure 5 is a view similar to Figure 3 but showing the opposite end of the valve casing from that depicted in Figure 3; Figure 6 is a side elevation of the valve casing, the pipes appearing in section; Figure 7 is an elevation showing the inner surface of one valve; Figure 8 is an elevation showing the inner surface of the other member of the valve; Figure 9 is an elevation applicable equally to the outer surface of either valve member; Figure 10 is a diagrammatic view showing one of the valves in closed position; Figure 11 is a diagrammatic view showing the same valve in open position.

In carrying out the invention, there is provided a frame or cabinet 1, provided with a transverse partition 2 extended to form a shelf 3. The cabinet 1 has one or more supports 4 adapted to receive drawers 5 which contain the flavoring syrup, each drawer having a tap 6 located above the shelf 3 and constituting means whereby the operator may drain the desired amount of flavoring into a glass. A water tank 7 is located in the upper portion of the cabinet 1 and is supported therein as shown at 8, access being had to the tank by way of a hinged lid 9. The numeral 10 designates a water receiver located in the bottom of the cabinet 1. A pipe 11 leads from the tank 7 to the receiver 10, there being a check valve 12 in the pipe, the check valve opening toward the receiver 10. A pipe 16 extends upwardly from the receiver 10. Especial attention is directed to the fact that the water may flow by gravity from the tank 7 to the receiver 10, it being unnecessary to connect the device with a water system wherein pressure is maintained, the device being capable of being used anywhere, regardless of the remoteness of the source of water supply, since water, derived from any source, may simply be poured into the supply tank 7, to flow by gravity into the receiver 10.

Any desired number of mixing chambers 14 are disposed in the cabinet 1. Each mixing chamber 14 carries a plurality of vertically spaced screens 15 which aid in securing a thorough mixture of the water and carbonating gas. From the lower end of the water receiver 10 a pipe 17 leads to the upper portion of the first mixing chamber 14. A check valve 18 is located in the pipe 17 and closes toward the first mixing chamber 14. Each mixing chamber 14 is connected to the mixing chamber next therebeyond by a pipe 19, one end of the pipe being mounted in the top of each mixing chamber, and the other end of the pipe extending downwardly to a point adjacent the bottom of the mixing chamber, through the screens 15. A pipe 20 leads from the last mixing chamber 14, and it is through this pipe that the carbonated water is delivered to the valve mechanism which will be described hereinafter.

A gas tank 21 is located in the cabinet 1, a pipe 22 leading from the gas tank, a valve 23, under the control of an operator, being interposed in the pipe 22. A pipe 24 communicates with the first mixing chamber 14.

The valve mechanism comprises a casing 25 having a neck 28 mounted in the front of the cabinet 1, the casing comprising a spout 26. The casing 25 has end compartments 27, wherein valves 29 and 30 are journaled, washers 31 being interposed between the valves and the bases of the compartments 27. Caps 33 are threaded on the ends of the valve casing 25. Shafts 34 are journaled in the caps 33 and are provided at their inner ends with transverse seats 35 adapted to receive lugs 36 on the valves 29 and 30.

Adjusting members 37, such as screws, are threaded into the shafts 34 and bear upon the lugs 36 of the valves 29 and 30 to hold the valves seated in operative relation to the casing 25, within the compartments 27 which receive the valves. The numeral 38 marks a handle, including a yoke 39 having notches 41 receiving the ends of the shafts 34, the yoke being held on the shafts by nuts 40 which are threaded upon the outer ends of the shafts. A reduced nozzle 42 is located within the spout 26.

The casing 25 has a passage 43, which communicates with the pipe 22 that is connected to the gas tank 21. The passage 43 opens through the casing 25 at the center of rotation of the valve 30, as shown in Figures 3 and 4. The valve casing 25 has a passage 44 which communicates with the pipe 16 that is connected to the water tank 10. The passage 44 opens through the casing 25 in spaced relation to the axis of the valve 30, as shown in Figure 3. The valve casing 25 has a passage 45 which communicates with the pipe 24 that is connected to the first mixing chamber 14. The passage 45 opens through the casing 25 in spaced relation to the axis of the valve 30, shown in Figures 3 and 4. The casing 25 has a passage 46 which communicates with the spout 26. The passage 46 opens through the casing 25, in spaced relation to the axis of the valve 30 as shown in Figures 3 and 4. The casing 25 has a passage 47 which communicates with the pipe 20 that is connected to the last mixing chamber 14. The passage 47 opens through the casing 25 at the center of rotation of the valve 29, as shown in Figures 4 and 5. The casing 25 has a passage 48 leading to the spout 26. The casing 25 has a passage 49 leading to the nozzle 42. The passages 48 and 49 open through the casing 25 in spaced relation with respect to the center of rotation of the valve 29, as shown in Figure 5.

The valve 29 has a first U-shaped duct 50. One end of the duct 50 is always in registration with the passage 47 in the casing 25. The other end of the duct 50 is adapted to move into and out of registration with the pasages 49 and 48 the casing 25, when the valve 29 is rotated. The valve 30 is provided with a second U-shaped duct 51. One end of the duct 51 is always in registration with the passage 43 of the casing 25. The other end of the duct 51 moves into and out of registration with the passages 45 and 44 in the casing 25 when the valve 30 is rotated. The valve 30 has a third U-shaped duct 52. One end of the duct 52 is adapted to move into and out of registration with the passage 44 in the casing 25, and the other end of the duct 52 is adapted to move into and out of registration with the fourth pasage 46 in the casing 25 when the valve 30 is rotated.

Suppose that the valves 29 and 30 are in closed position. The duct 51 in the second valve 30 is in registration with the passage 44 of the casing 25 and is in registration with the passage 43 of the casing. Gas flows from the tank 21 through the pipe 22 and the fifth passage 43 into the duct 51 of the valve 30, and from the duct into the sixth passage 44 in the casing 25, the gas passing from thence into the water tank 10 by way of the pipe 16, the water flowing to the mixing chambers 14 through the pipe 17 and the pipes 19. The duct 50 in the valve 29 is out of registration with the passages 48 and 49 in the casing 25, and, consequently, no carbonated water is delivered from the last mixing chamber 14 by the pipe 20, the first passage 47 in the casing 25 and the duct 50 in the valve 29 either to the third passage 48 in the casing, or to the second passage 49 therein, there being no delivery of carbonated water through the spout 26 or through the nozzle 42.

Suppose, however, that the first valve 29 is turned until the duct 50 in the valve registers with the passage 48 in the casing 25. Then there will be a delivery of carbonated water from the last mixing chamber 14 by the pipe 20, the passage 47, the duct 50 in the valve 29 into the spout 26 by way of the passage 48. When the valve 29 is turned, the valve 30 is turned likewise. The duct 51 in the valve 30 establishes communication between the passage 43 in the casing 25 and the passage 45 therein. Gas now flows from the tank 21 through the pipe 22, the passage 43, the duct 50 in the valve 30, the seventh passage 45 and the pipe 24 to the first mixing chamber 14 and, thence, to the other chambers to effect the carbonating of the water. A vent line for the water receiver 10 is established, the same comprising the passage 46, the duct 52, the passage 44 and the pipe 16, water being permitted to flow into the receiver 10 from the tank 7, through the pipe 11, the valve 18 closing under the gas pressure existing in the first mixing chamber 14.

The various passages in the valve casing 25 and the ducts in the valves 29 and 30 have lap enough so that when the valves are in open position, as shown in Figure 11, the valves may be shifted slightly, thereby to bring the duct 50 in the valve 29 into registration with either of the passages 48 and 49. The operator, therefore, may, at will, discharge a fine stream through the nozzle 42, it being possible to discharge the carbonated water either through the nozzle 42 or through the spout 26.

What is claimed is:—

1. In a device of the class described, a casing having a spout and provided with a nozzle located in the spout, a first valve and a second valve journaled on the casing,

the casing being provided with first, second and third passages which extend laterally of the casing at one end thereof, the first passage being located coaxially of the first valve, and the second and third passages being located in spaced relation with respect to the axis of the first valve, the second passage communicating with the nozzle and the third passage communicating with the spout, the casing being supplied with fourth, fifth, sixth and seventh passages which extend laterally of the casing at the other end thereof, the fourth passage communicating with the spout, the fifth passage being located coaxially of the second valve, and the sixth and seventh passages being located in spaced relation with respect to the axis of the second valve, the first valve having a first U-shaped duct, one end of which is in continuous communication with the first passage, the other end of which is adapted to move into and out of registration with the second and third passages, the second valve having a second U-shaped duct and a third U-shaped duct, one end of the second duct being in continuous communication with the fifth passage, and the other end of said duct being movable into and out of registration with the sixth and seventh passages, one end of the third duct being movable into and out of registration with the sixth passage, and the other end of the third duct being movable into and out of registration with the fourth passage; and means for rotating the valves simultaneously.

2. A device of the class described constructed as set forth in claim 1 and further characterized by the fact that the passages and ducts have lap enough so that when the valves are in discharging position, the valves may be shifted slightly thereby to bring the duct of the first valve into registration with either the second or third passages.

In testimony that we claim the foregoing as our own, we have hereto affixed our signatures.

HARVEY F. WALTER.
GEORGE R. McNEELY.