No. 660,331. Patented Oct. 23, 1900.

J. NAGELDINGER.

DEVICE FOR DRAWING EFFERVESCENT LIQUIDS.

(Application filed May 12, 1900.)

(No Model.) 3 Sheets—Sheet 1.

FIG. 1

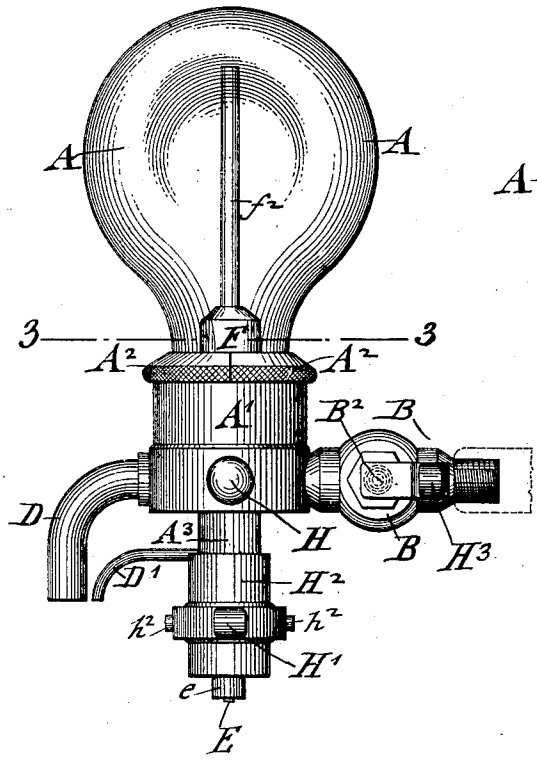

FIG. 2

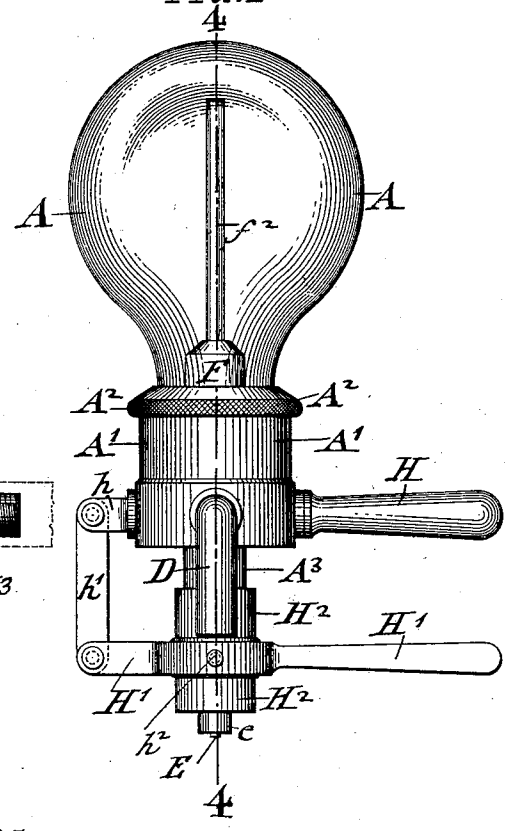

FIG. 3.

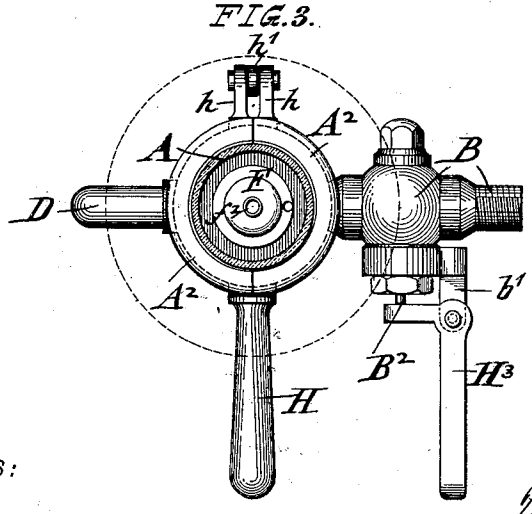

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FIG. 4.

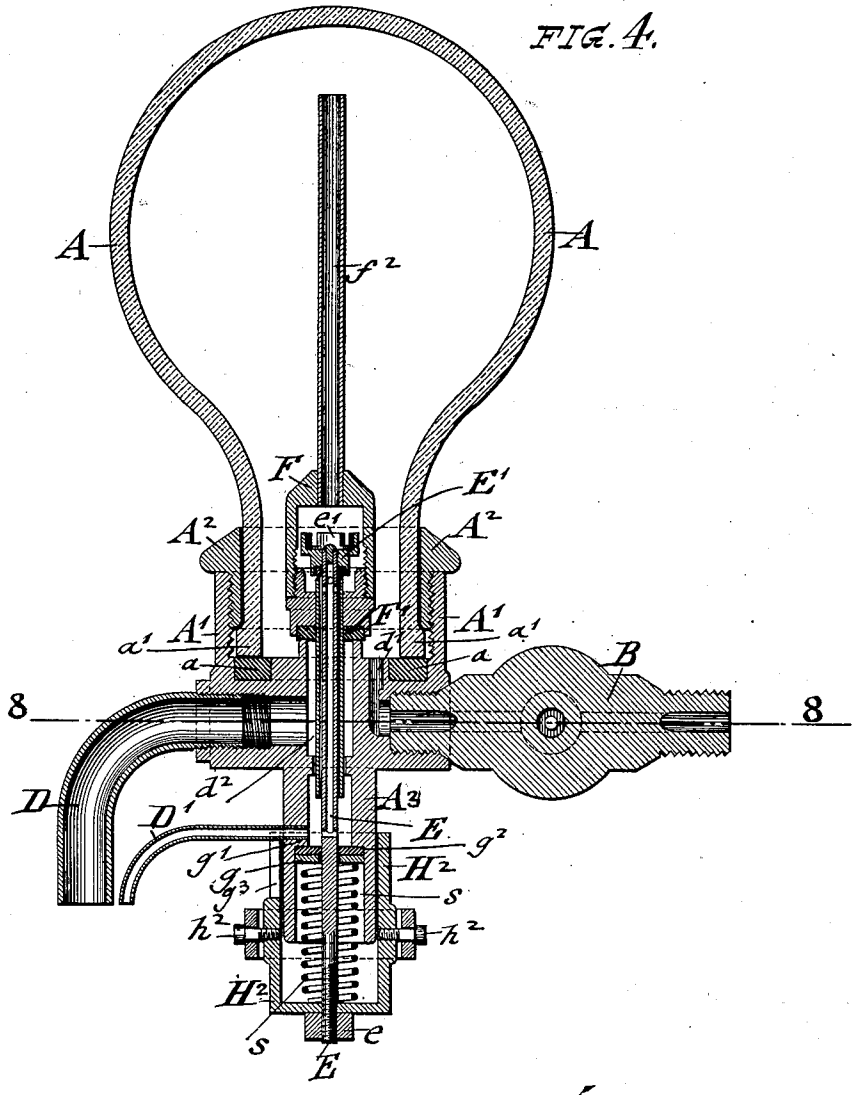

FIG. 5.

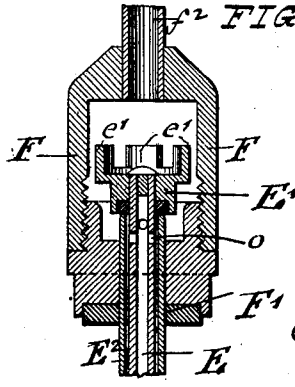

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FIG. 6.

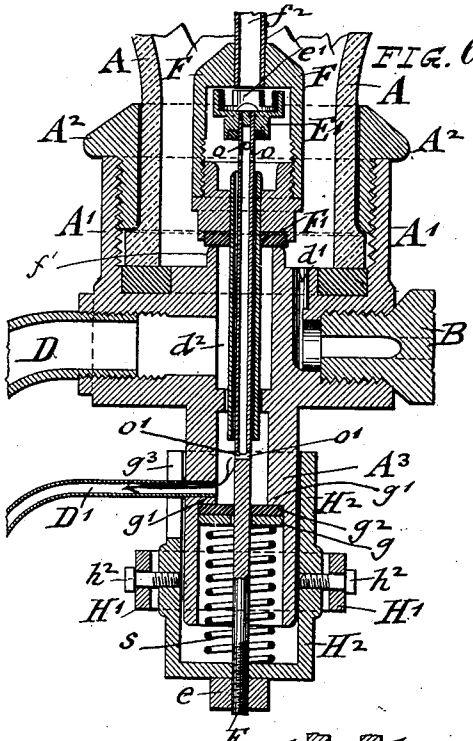


FIG. 7.

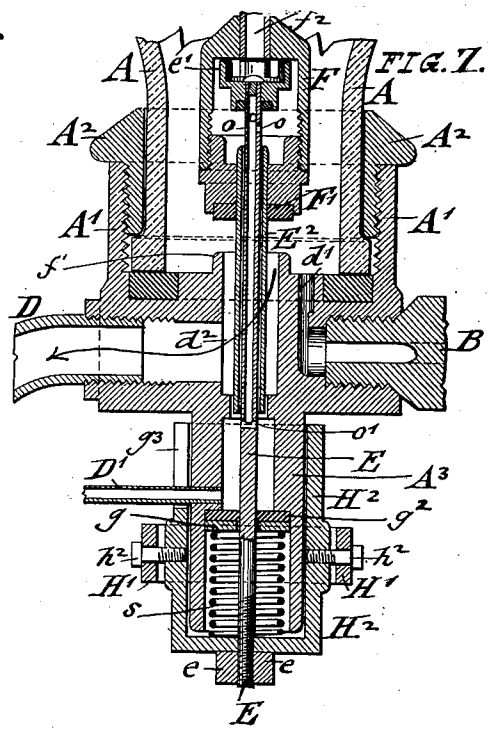


FIG. 8.

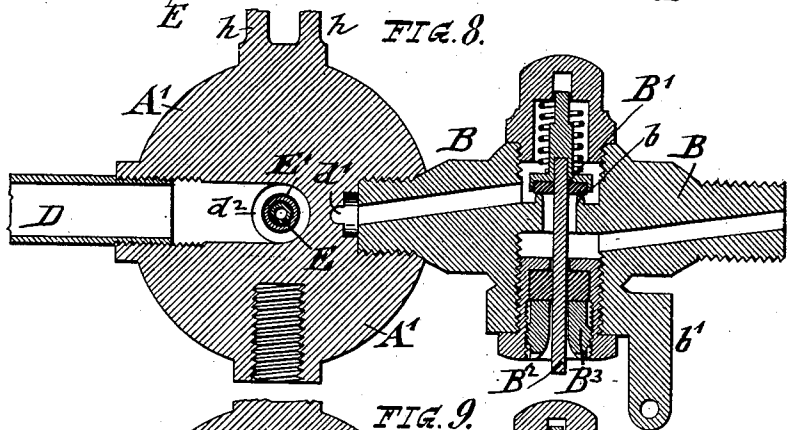
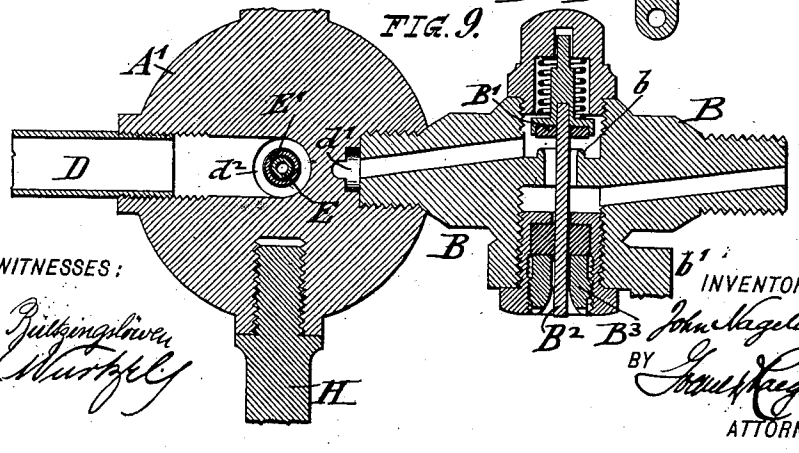


FIG. 9.



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UNITED STATES PATENT OFFICE.

JOHN NAGELDINGER, OF NEW YORK, N. Y.

DEVICE FOR DRAWING EFFERVESCENT LIQUIDS.

SPECIFICATION forming part of Letters Patent No. 660,331, dated October 23, 1900.

Application filed May 12, 1900. Serial No. 16,410. (No model.)

To all whom it may concern:

Be it known that I, JOHN NAGELDINGER, a citizen of the United States, residing in New York, borough of Manhattan, State of New York, have invented certain new and useful Improvements in Apparatus for Drawing Effervescent Liquids, of which the following is a specification.

This invention relates to improvements in apparatus for drawing off liquids under pressure of carbonic-acid gas without the excessive foaming which occurs when the liquid is drawn off directly from the fountain, the object of the invention being to provide an apparatus in which the manipulations of supplying the carbonated beverage from the fountain to a pressure-relieving chamber, the discharge of the excess of gas from said chamber, and the drawing off of the beverage are accomplished by simple and easily-manipulated devices; and the invention consists of an apparatus for drawing effervescent liquids, which comprises a pressure-relieving chamber, a socket for supporting said chamber, the socket being provided with a supply-channel, a pressure-relieving channel, and a discharge-channel, a valved supply-pipe connected with the supply-channel, a pressure-relieving valve, a spindle for operating said pressure-relieving valve, a valve-chamber inclosing said pressure-relieving valve and provided with a discharge-tube extending upwardly into the pressure-relieving chamber above the level of the carbonated liquid in the same, a liquid-discharge valve, a stationary handle on the socket of the pressure-relieving chamber, an auxiliary handle below the same for operating the pressure-relieving and liquid-discharge valves, and a lever for operating the supply-valve, as will be fully described hereinafter and pointed out in the claims.

In the accompanying drawings, Figure 1 represents a side elevation of my improved apparatus for drawing effervescent liquids. Fig. 2 is a front elevation of the same. Fig. 3 is a horizontal section on line 3 3, Fig. 1. Fig. 4 is a vertical longitudinal section on line 4 4, Fig. 2, drawn on a larger scale. Fig. 5 is a detail vertical section of the relief-valve for discharging the surplus gas from the pressure-relieving chamber, drawn on a still larger scale. Fig. 6 is a vertical longitudinal section showing the gas-relief valve of the pressure-relieving chamber in position for discharging the surplus gas from said chamber. Fig. 7 is a similar section showing the gas-relief valve and liquid-discharge valve in open position for discharging the carbonated beverage from said pressure-relieving chamber. Figs. 8 and 9 are horizontal sections on line 8 8, Fig. 4, showing the supply-valve respectively in closed and open position, so as to interrupt or permit the supply of carbonated liquid from the fountain to the pressure-relieving chamber.

Similar letters of reference indicate corresponding parts.

Referring to the drawings, A represents a pressure-relieving chamber, which is preferably made of glass of suitable thickness so as to resist the pressure of the effervescent liquid that is to be supplied to and drawn off from the same. The pressure-relieving chamber A is preferably made of a rounded shape at its upper closed part and provided with a cylindrical neck, which is supported in a socket A′, the lower end of the neck resting on an elastic packing-ring a, that is seated in an annular recess in the bottom of the socket A′. The lower end of the neck of the pressure-relieving chamber A is made thicker, so as to form a rim a', which is engaged by a split annular screw-nut A^2, that screws by its exterior screw-thread into the interiorly-threaded socket A′, so as to hold the neck of the pressure-relieving chamber A tightly in connection with the elastic packing a. The rear part of the socket A′ is connected by a valved supply-pipe B with the vessel or fountain containing the carbonated liquid under pressure. In the bottom of the socket A′ are arranged two vertical channels d' and d^2, the channel d' communicating with the supply-pipe B, while the central channel d^2 communicates with a discharge-spout D, which is screwed into the front part of the socket A′ diametrically in line with the supply-pipe D. The bottom of the socket A′ is provided at right angles with the supply-pipe B and the discharge-spout D with a horizontal stationary handle H, while at a point diametrically opposite thereto are arranged two lugs h h, which are connected by a pivot-link h' with

the end of the second fulcrumed handle H′, which is provided with a circular enlargement that extends around a cylindrical casing H^2, which slides on the cylindrical neck A^3 of the socket A′. The circular enlargement of the lower handle H′ is fulcrumed by diametrical pivot-screws h^2 to the casing H^2, the handle H′ being located vertically below the stationary handle H, so that when the palm of the hand rests on the stationary handle the fingers can readily grasp the lower handle H′, and thereby lift it in an upward direction toward the stationary handle H.

In the neck A^3 of the socket A′ is guided a spindle E, which is screwed into the bottom of the casing H^2 and is held in position therein by a jam-nut *e*. The upper end of the spindle E carries a valve E′, which presses on a seat at the upper end of a tube E^2, which is attached into the bottom of a cylindrical valve-chamber F, located in the neck of the pressure-relieving chamber A. The bottom of the valve-chamber F is provided at its under side with an elastic gasket F′, that rests on a circular valve-seat f' at the upper end of the central channel d^2 of the socket A′, while the upper tapering end of the valve-chamber F is provided with a tube f^2, which extends centrally through the pressure-relieving chamber above the level of the liquid in said chamber, the upper interiorly-threaded end of the valve-chamber being screwed onto the bottom portion of the same, as shown clearly in Fig. 5. The lower part of the spindle is made solid, while the upper part is made tubular by means of a central bore, the upper end of the spindle being provided below the valve E′ with several transverse holes *o*, while the lower end of the bore is also provided with transverse holes *o*′, which communicate with the hollow space around the spindle and from there with a small gas-relief spout D′, which is located below the liquid-discharge spout D, as shown in Fig. 4.

The valve E′ is provided with several upwardly-projecting lugs *e*′, that abut against the upper end of the valve-chamber F, so as to lift the valve-chamber when the spindle E is lifted by the handle H′ and produce thereby, first, the opening of the gas-relief valve and then the opening of the liquid-discharge valve F, as shown in Figs. 6 and 7. A helical spring *s* is interposed between the bottom of the cylindrical casing H^2 and a washer *g*, which is pressed against an interior shoulder *g*′, an elastic packing being interposed between the washer *g* and shoulder *g*′. The tension of the spring *s* holds the gas-relief valve, as well as the liquid discharge and supply valve, normally in a closed position when the lower handle H′ is not lifted. When the handle H′ is lifted, the casing H^2 slides in upward direction on the neck A^3 of the socket A′, it being provided with a vertical recess g^3 for clearing the auxiliary gas-discharge spout D′, the lifting of the sliding casing H^2 and spindle E producing successively the opening of the gas-relief valve, together with the lifting of the valve-chamber, gas-relief tube, and of the liquid-discharge valve.

The supply-pipe B is provided with a spring-actuated valve B′, which is firmly pressed against its seat *b* when in a normally-closed position. The valve B′ is provided with a spindle B^2, that extends through a gland B^3 of the valve-casing to the outside, the outer end of the spindle being acted upon by the shorter arm of an elbow-shaped lever H^3, which is fulcrumed to a horizontal lug *b*′ of the valve-casing, the longer arm or handle of the elbow-shaped lever being arranged parallel with and on a level with the stationary handle H, as shown clearly in Figs. 1 and 3. The rear end of the supply-pipe B is coupled with a pipe leading to the fountain containing the carbonated liquid to be dispensed.

When the proper connection with the fountain is made, my improved apparatus for dispensing the effervescent liquids is operated as follows: The tumbler or other vessel into which the carbonated beverage is to be discharged is held in the left hand, while the right hand is used for operating the apparatus. For this purpose the palm of the right hand is placed on the stationary handle H, so that the fingers can grasp the handle of the main supply-valve and move the same toward the stationary handle. This opens the supply-valve B′ against the tension of its spring, so that immediately a supply of carbonated liquid from the fountain is delivered through the connecting-channel in the valve-casing and the channel *d*′ in the socket A′ to the pressure-relieving chamber, in which the liquid rises to such a level until the equilibrium of pressure in the pressure-relieving chamber and the fountain is established. As soon as the pressure-relieving chamber is filled to this extent the handle H^3 of the supply-valve is released and the auxiliary handle H′ grasped by the fingers, so as to produce the lifting of the same. This produces the lifting of the cylindrical casing H^2 on the neck of the socket A′ and the lifting of the spindle E against the tension of the spring *s*, so that first the gas-relief valve at the upper end of the spindle is lifted away from its seat, as shown in Fig. 6, and thereby the connection between the space above the liquid in the pressure-relieving chamber, the hollow upper end of the spindle, the interior of the valve-chamber, and the gas-discharge spout is obtained and an immediate discharge of the surplus gas in the pressure-relieving chamber is produced. By continuing the lifting of the auxiliary handle, valve-casing, and spindle the upwardly-projecting lugs at the upper end of the gas-relief valve abut against the upper part of the valve-chamber F and produce the lifting of the same, so that the liquid-discharge valve in the neck of the pressure-relieving chamber is moved away from its seat, and thereby a connection between the neck of the pressure-relieving chamber, the channel d^2, and the

discharge-spout D is established, so that the carbonated liquid can be drawn off from the pressure-relieving chamber without excessive foaming into the glass or vessel held below the spout. During the drawing off of the carbonated liquid from the pressure-relieving chamber the air is permitted to pass through the auxiliary spout D′, the neck of the socket A′, the central bore of the spindle, valve-chamber, and the discharge-tube, so that atmospheric pressure is established in the upper part of the pressure-relieving chamber and the free drawing off of the carbonated liquid into a tumbler or vessel obtained. The blowing off of the surplus gas through the auxiliary spout and the discharge of the carbonated liquid take place in quick succession, as the upward motion of the auxiliary handle produces the opening of the gas and liquid discharge valves, the escape of gas being indicated by a slight noise, which takes place immediately before the flow of the liquid from the discharge-spout. When it is desired to interrupt the discharge of the effervescent liquid, the auxiliary handle is released, so that the gas relief and discharge valves are immediately returned by the tension of the spring on the sliding casing H^2 to their closed positions on the respective valve-seats and the discharge of the liquid interrupted.

As the supply of the carbonated liquid to the pressure-relieving chamber is accomplished by one lever and the discharge of the carbonated liquid by a second lever, no possible mistake in operating the device can occur. The actuation of one lever produces immediately a supply of carbonated liquid, while the actuation of the other lever produces the discharge of the same. As the hand always rests on the stationary handle when operating either the handle of the supply or discharge valve, the drawing off of the carbonated liquid from the fountain is accomplished in a very convenient and certain manner without any excessive foaming of the liquid.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination, of a pressure-relieving chamber, a socket for supporting the same, said socket being provided with a liquid-supply channel and a liquid-discharge channel, a valved liquid-supply pipe connected with the supply-channel, a valve-chamber in said pressure-relieving chamber provided with a discharge-tube, a liquid-discharge valve at the lower end of said valve-chamber, a gas-relief valve in said valve-chamber, a spring-actuated spindle having longitudinal and transverse openings, connected with the gas-relief valve and means for successively operating the liquid-supply valve, the gas-relief valve and liquid-discharge valve, substantially as set forth.

2. The combination, of a pressure-relieving chamber, a socket for supporting the neck of said chamber, said socket being provided with a liquid-supply channel and a liquid-discharge channel, a valved liquid-supply pipe, connected with the supply-channel, a valve-chamber in said pressure-relieving chamber provided with a gas-relief tube, a liquid-discharge valve at the lower end of said valve-chamber, a gas-relief valve in the valve-chamber, a spring-actuated spindle having a longitudinal bore and transverse openings, attached to said relief-valve, a liquid-discharge spout, a gas-relief spout on the neck of the supporting-sockets and means for successively operating the liquid-supply valve, gas-relief valve and liquid-discharge valve, substantially as set forth.

3. The combination, with a pressure-relieving valve, a socket for supporting the same, said socket being provided with a liquid-supply channel and a liquid-discharge channel, a valved liquid-supply pipe connected with the liquid-supply channel of the socket, a liquid-discharge valve for opening or closing the liquid-discharge channel, a valve-chamber above the liquid-discharge valve, a gas-discharge tube extending from said valve-chamber to the upper part of the pressure-relieving chamber, a gas-relief valve in said valve-chamber, a spring-actuated spindle attached to the gas-discharge valve, the spindle being provided with a longitudinal bore and openings at the upper and lower ends of said bore connecting the valve-chamber and the gas-relief channel, a stationary handle on the sockets, a fulcrumed handle on the valve supply-pipe, and a fulcrumed auxiliary handle connected with the valve-operating spindle, so as to first supply the pressure-relieving chamber with liquid, then blow off the surplus gas in the same, establish atmospheric pressure in the pressure-relieving chamber and then discharge the carbonated liquid from the same, substantially as set forth.

4. The combination, of a pressure-relieving chamber, a socket for the same, said socket being provided with a liquid-supply channel and a liquid-discharge channel, a valved liquid-supply pipe connected with the supply-channel, a discharge-spout connected with the liquid-discharge channel, a liquid-discharge valve for the liquid-discharge channel, a valve-chamber in the pressure-relieving chamber, a gas-relief valve in the same, a spring-actuated spindle connected with the gas-relief valve, a gas-discharge tube at the apex of the valve-chamber connecting the upper end of the valve-chamber with the upper part of the pressure-relieving chamber, a liquid-discharge spout on the neck of the socket, a gas-discharge spout also on the neck of the socket, communicating with a longitudinal bore and openings in the valve-spindle, a sliding casing in the neck of the socket, a stationary handle on the socket, a handle below said stationary handle fulcrumed to the casing of the valve-spindle and a handle

for operating the supply-valve of the liquid-supply pipe, so that by successively operating the handles of the liquid supply and discharge valves, the pressure-relieving chamber is filled with carbonated liquid, relieved of its surplus gas and the liquid then discharged, substantially as set forth.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

JOHN NAGELDINGER.

Witnesses:

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M. H. WURTZEL.