

No. 754,216.

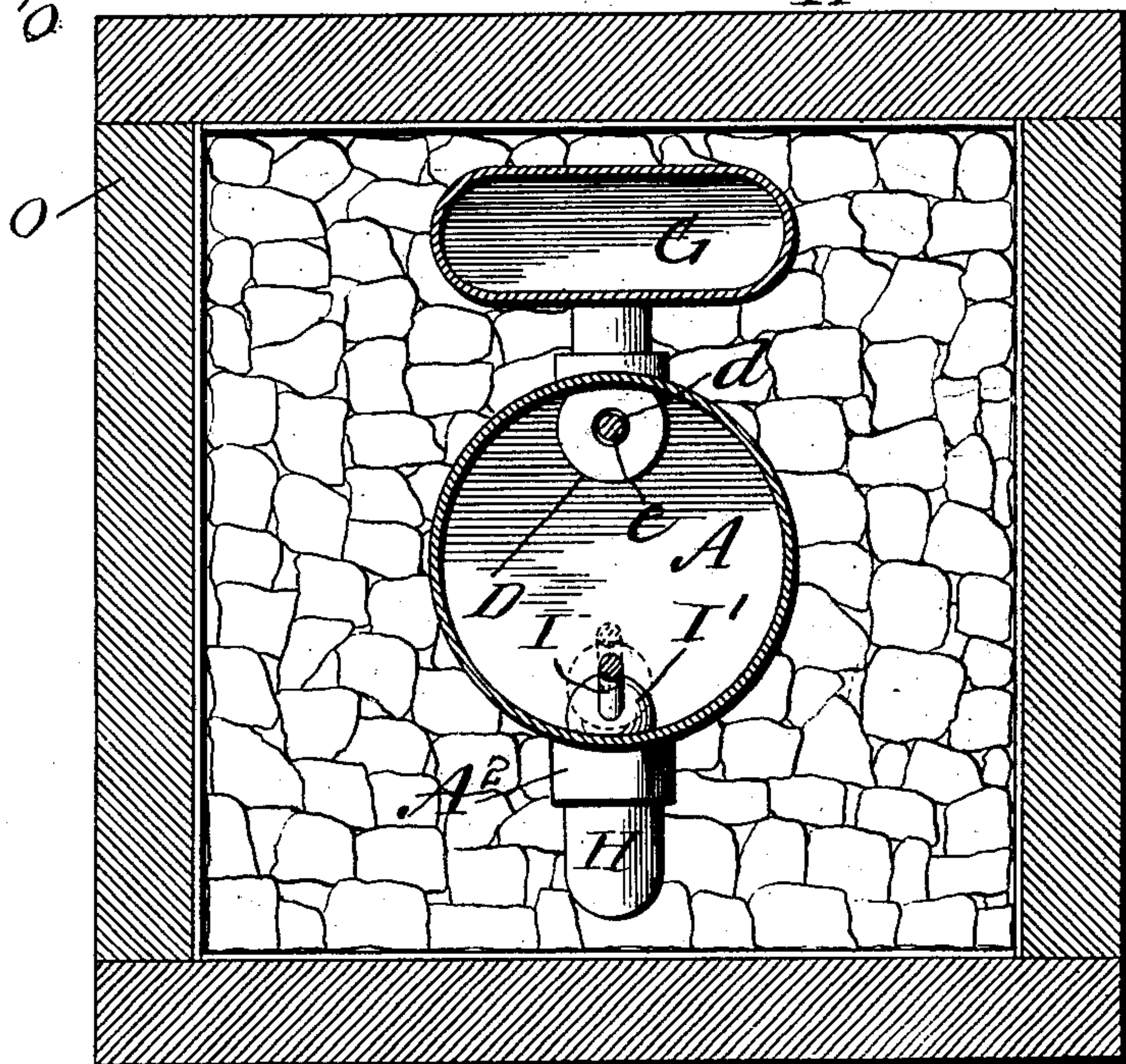
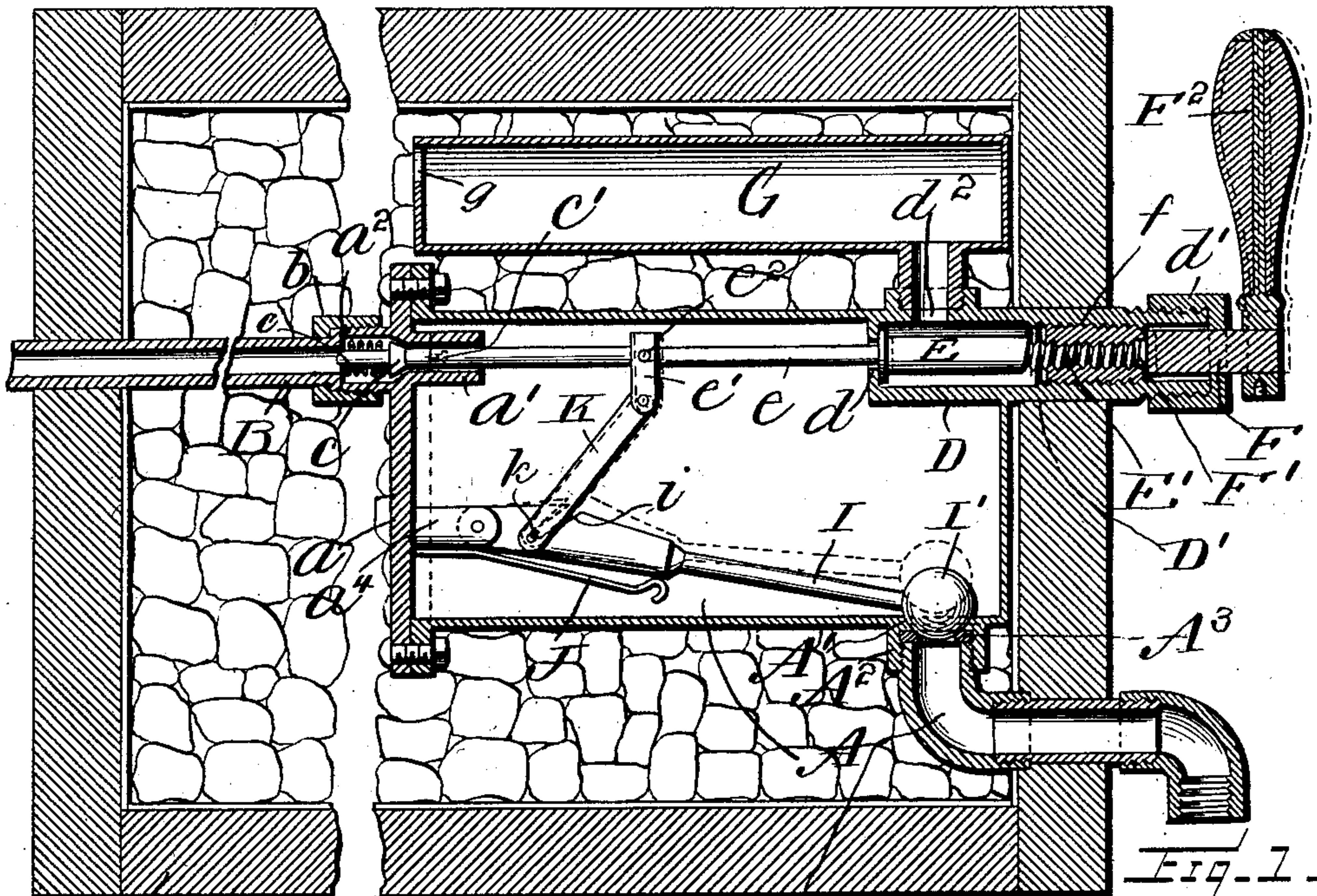
PATENTED MAR. 8, 1904.

T. HENTGEN.

CARBONATED LIQUID DISPENSING APPARATUS.

APPLICATION FILED SEPT. 28, 1903.

NO MODEL.



WITNESSES:

*Wm. F. Doyle.*

*Geo. Hilton*

INVENTOR

*Theodor Hentgen,*

BY

*Alexander & Sowell*  
Attorneys.



# UNITED STATES PATENT OFFICE.

THEODOR HENTGEN, OF NEW YORK, N. Y.

## CARBONATED-LIQUID-DISPENSING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 754,216, dated March 8, 1904.

Application filed September 28, 1903. Serial No. 174,963. (No model.)

*To all whom it may concern:*

Be it known that I, THEODOR HENTGEN, of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Carbonated-Liquid-Dispensing Apparatus; and I hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form part of this specification.

This invention is an improved apparatus for use in dispensing or bottling carbonated liquids, particularly liquids which have been already mixed with syrups and flavorings and which therefore have more "body" than ordinary carbonated waters or beer, ales, &c., and are much more apt to froth excessively, so much so, in fact, that many apparatus which can be used to bottle carbonated water or beer are useless for handling the syruped liquids.

The principal object of my invention is to produce an improved apparatus by which all kinds of carbonated liquids under high gas-pressure and highly effervescent can be bottled or drawn into glasses, if desired, without undesirable frothing or waste of liquid or gas.

Another object is to provide an apparatus which will serve as a cooler for the liquids and enable the latter to absorb and retain such a quantity of gas that it will effervesce for a long time after being drawn into a glass.

Another object is to make the apparatus very simple, compact, and applicable to ordinary coolers or ice-chests.

The invention consists in the novel arrangement of liquid and frothing chambers, in combination with novel valve mechanism, and in novel details of construction and combinations of parts, and the several claims following the detailed description of the apparatus illustrated in the accompanying drawings summarize the features which I desire to protect by Letters Patent.

The following description of the apparatus illustrated in the said drawings will impart an adequate understanding of the invention to those skilled in the art.

Figure 1 is a sectional elevation of the com-

plete apparatus embodying my invention. 50  
Fig. 2 is a vertical section thereof.

The cooling chamber or holder A may be of any desired construction and form. I have shown it as a small cylinder having a capacity somewhat greater than that of an ordinary soda-water glass. The rear end plate *a* of this chamber is preferably detachable to allow of access to interior of the chamber, said plate being gas-tightly secured to the body of the cylinder in any suitable manner. In the upper part of said plate is an inlet-opening surrounded on the inside by a collar *a'* and on the outside by a threaded nipple *a''*, to which the supply-pipe B is connected by means of a union *b*. Said supply-pipe B leads to a tank or vessel (not shown) containing the charged liquid which is to be dispensed or bottled. 60

Within the nipple *a''* is a puppet-valve C, which closes the opening into the chamber A under the action of a spring *c*, surrounding the stem of the valve, as shown. An adjustable screw *c'* is tapped into the inner end of the valve-stem for a purpose hereinafter described. 70

On the front end of the chamber in axial alinement with valve C is a valve-chamber D, which communicates with chamber A through an opening *d*, which is normally closed by a valve E, the stem *e* of which extends through opening *d* through chamber A into collar *a'* and contacts with screw *c'*, the adjustment of parts being such that when valve E is seated to close opening *d* stem *e* will unseat valve C, establishing communication between the pipe B and chamber A. When valve E is opened, valve C is closed by the spring *c*. Valve E has a threaded extension *E'*, which engages an internally-threaded socket *F'* in the inner end of a rod F, which is also externally threaded, as at *f*, and engages internal threads in an extension *D'* of chamber D. Rod F passes through a stuffing-box *d''*, screwed onto the outer end of said extension *D'* as shown, and a handle *F''* is attached to the outer end of rod F, by which the latter can be turned. The threads *E'* run oppositely to threads *f*. Consequently the endwise motion of rod F causes a more rapid linear movement of valve 85 90 95



E and stem *e*. The threads *E' f* are, moreover, preferably double to increase the rapidity of the valve action, so that a slight partial rotation of rod *F* will suffice to open or close valve *E*.

Chamber *D* has an outlet *d<sup>2</sup>*, which communicates with a preferably superimposed froth-chamber *G*, which need not be as large as chamber *A*. Chamber *G* has a vent-aperture *g* in its upper portion for the escape of gas, as hereinafter described. Chambers *A* and *G* are supported in any suitable manner, preferably within an ice-chest *O*, so that they can be exteriorly surrounded by ice, crushed and placed in said chest, as indicated in the drawings.

Chamber *A* has an outlet *A'* in its lowest portion connected to a draw-off pipe *H* in any suitable manner. Any suitable terminal or bottle-attaching device may be connected to the outer end of pipe *H*, none being shown, however. As shown, pipe *H* is screwed into a threaded nipple *A<sup>2</sup>*, surrounding opening *A'*, and a washer *A<sup>3</sup>* is placed in the nipple and forms a seat for a valve *I'*, which is mounted on the end of a lever *I* within chamber *A*, said lever being pivoted at its rear end on a lug or bracket *a<sup>4</sup>*, attached to end plate *a*, so that the lever *I* has only a vertical swing motion. The lever *I* is normally upheld, so as to unseat valve *I'* by means of a spring *J*, which may be conveniently attached to the bracket *a<sup>4</sup>*, as shown. The valve *I'* is seated simultaneously with the closing of valve *E* by means of a link *K*, pivotally attached at its upper end to a hanger *e'* on stem *e*, while the lower end of the link engages an inclined slot *i* in the lever *I* by means of a lateral stud or pin *k*, as indicated in the drawings. When the valve *E* is opened, it moves outward, so as to raise pin *k* in slot *i*, permitting spring *J* to throw lever *I* upward and lift valve *I'*. When valve *E* closes, it moves inward, and link *K* also moves inward, causing pin *k* to seat in the slot *i* and force lever *I* downward, closing valve *I'*. The hanger *e'* can be adjusted to proper position on stem *e* and secured by means of the set-screw *e<sup>2</sup>*.

Operation: The chest *O* should be filled with ice to chill and cool the chambers *A* and *G* and their contents. The pipe *B* is connected to the supply of carbonated liquids which it is desired to dispense or bottle. As above stated, the apparatus is especially adapted for use in handling highly-carbonated syruped liquids, such as ready-prepared soda-water, which is much more effervescent than ordinary liquids. The normal position of parts is shown in full lines, Fig. 1, with valves *E* and *I'* closed and valve *C* open. Consequently the liquid will flow into chamber *A* until the latter is about three-fourths full or the gas-pressure in chamber *A* and the main supply-vessel are equalized. The chamber *A* should be proportioned so as to contain the

desired quantity of liquid which is to be decanted at one operation. When it is desired to empty chamber *A*, valve *E* is opened, resulting in simultaneously closing valve *C*, cutting off the supply of liquid, and establishing communication between chambers *A* and *G*, so that the gas-pressure in chamber *A* vents immediately into chamber *G* and the froth produced by effervescence of the liquid passes into chamber *G* also. The valve *I'* is also opened, and the liquid (which is clear below) passes out under very slight pressure through pipe *H* into the receiver. The free gas escapes from chamber *G* through vent *g*, while the froth and liquid carried thereinto pass back into chamber *A*, being drawn thereinto by the suction caused by the outflow of liquid through pipe *H*. By this construction the high pressure is immediately relieved by venting-chamber *A* into chamber *G*, so that the liquid passes out through pipe *H* under approximately atmospheric pressure, while the froth formed in chamber *G* passes back eventually into chamber *A* and forms a sufficient "head" on the beverage when drawn into an open glass to please the purchaser. Upon closing valve *E* valve *I'* is simultaneously closed and valve *C* opened, and a fresh modicum of liquid is forced into chamber *A* and held there ready for withdrawal by another operation, such as above described.

I do not restrict myself to the specific form, arrangement, or constructions of parts shown in the drawings, as it is obvious that the invention once disclosed can be utilized and embodied in different apparatus without in the least departing therefrom in substance.

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

1. The combination of the holder having a draw-off outlet, an outlet-valve, a venting-chamber communicating with the holder, and a vent-valve controlling communication between the holder and venting-chamber, having a longitudinally-movable stem, means for operating the vent-valve, a lever connected to the outlet-valve, and connections between said lever and vent-valve stem, whereby the outlet-valve is opened and closed simultaneously with the vent-valve.

2. The combination of the holder having a draw-off outlet, an outlet-valve, a venting-chamber communicating with the holder, a vent-valve controlling communication between the holder and venting-chamber and a lever within the holder connected to the outlet-valve, with a link connected to the vent-valve stem and loosely engaging said lever whereby the outlet-valve is closed simultaneously with the vent-valve, and a spring engaging said lever for opening the outlet-valve when the vent-valve opens, substantially as described.



3. The combination of the holder, the outlet-valve, and vent-valve, a pivoted lever within the holder connected to said outlet-valve, and having a slot, a link pivoted to the vent-valve stem and loosely engaging the slot in the lever, and a spring to open the outlet-valve, substantially as described.

4. The combination of the holder, a supply-valve, an outlet-valve, and a vent-valve, a stem connected to the vent-valve adapted to unseat the inlet-valve when the vent-valve is closed; a lever connected to the outlet-valve, a link connected to said stem between the inlet and vent valves and loosely engaging said lever and adapted to cause said lever to close the outlet-valve when the vent-valve is closed, and springs adapted to close the inlet-valve and to open the outlet-valve, substantially as described.

5. The combination of the holder or cooler, a vent or frothing chamber communicating

therewith, a vent-valve controlling communication between said chambers, a supply-pipe communicating with said holder, a valve controlling said supply; an outlet-valve from said chamber; a stem connected to said vent-valve adapted to open the inlet-valve when the vent-valve closes; a pivoted lever within the holder connected to the outlet-valve, a link connected to said stem between the inlet and vent valves and adapted to engage the lever and close the outlet-valve with the vent-valve; and springs arranged to close the inlet-valve and to open the outlet-valve, all substantially as described.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

THEODOR HENTGEN.

In presence of—

JACQUES MERSCH,  
T. H. ALEXANDER.