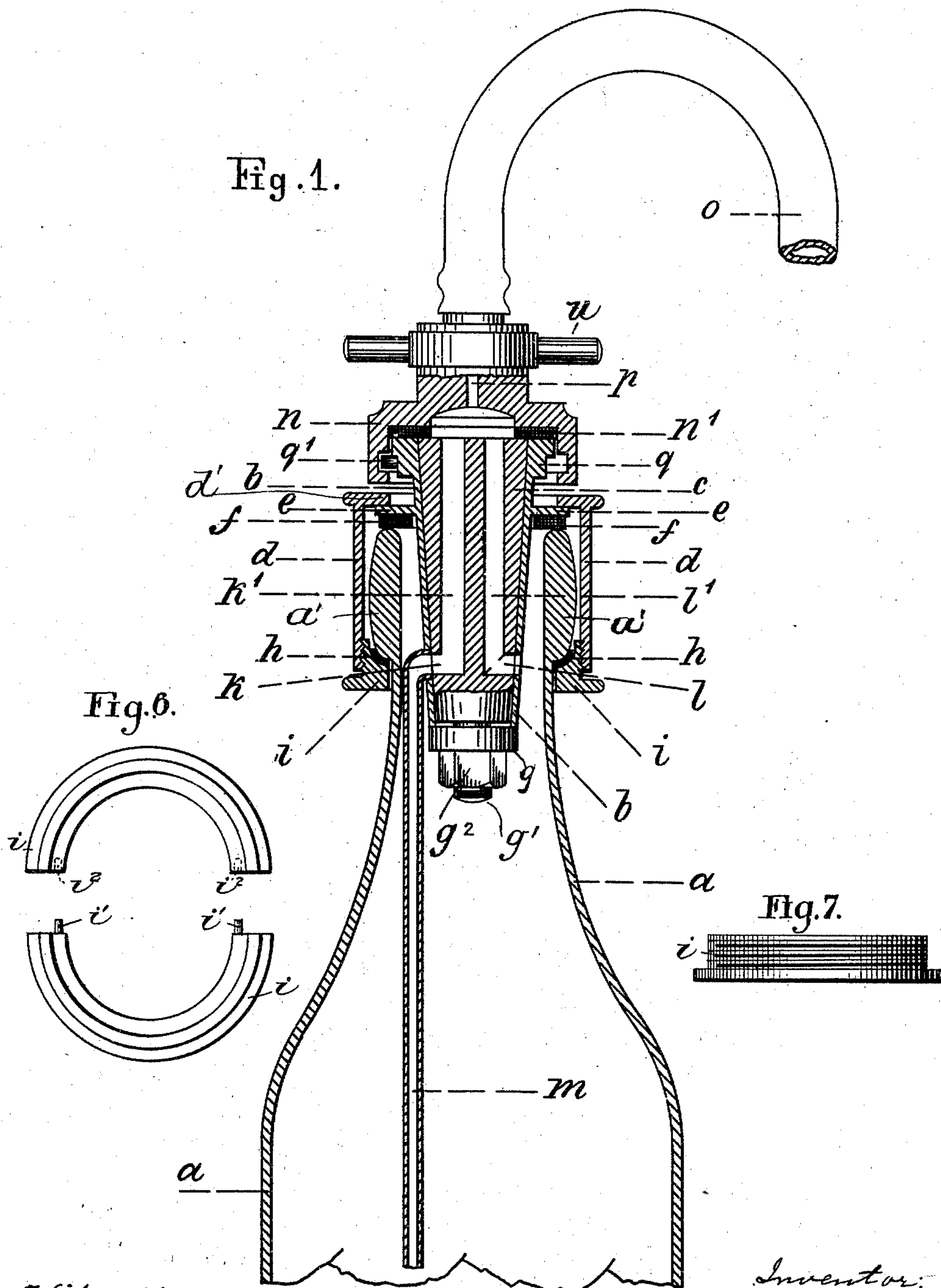


G. GOLDBERG.
VALVE FOR CARBONATED LIQUID RECEPTACLES.
APPLICATION FILED JULY 9, 1907.

965,704.

Patented July 26, 1910.

2 SHEETS—SHEET 1.



Witnesses:
Walter Brown
Walter N. Harris

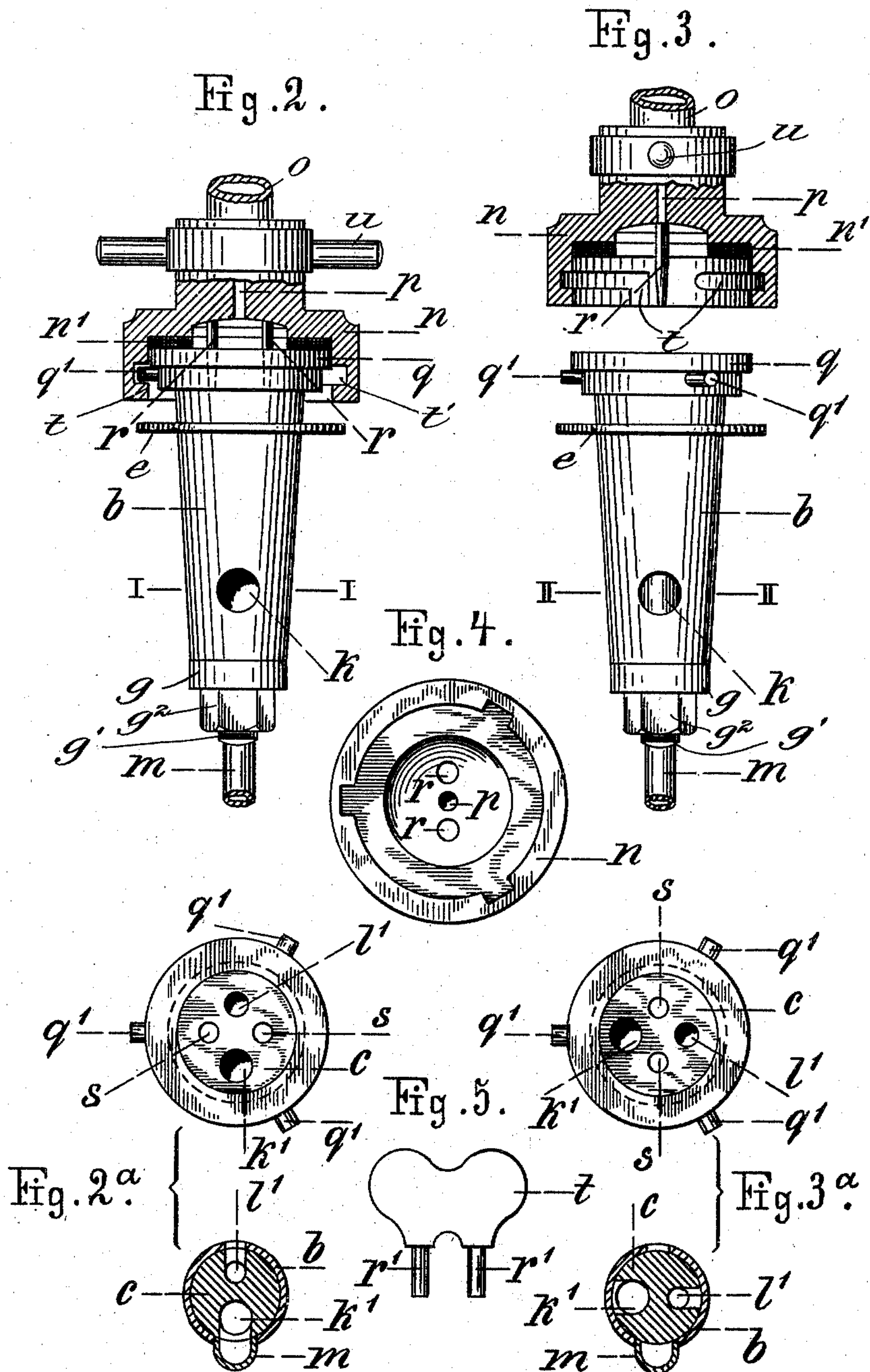
Inventor:
Georg Goldberg,
By H. H. de Vries,
Attorney.

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G. Goldberg,
By *H. H. Adams*
attorney.

UNITED STATES PATENT OFFICE.

GEORG GOLDBERG, OF AMSTERDAM, NETHERLANDS, ASSIGNOR OF TWO-THIRDS TO
ISIDOR KOKOSKY AND M. H. G. TH. FIEDELDY DOP, BOTH OF AMSTERDAM,
NETHERLANDS.

VALVE FOR CARBONATED-LIQUID RECEPTACLES.

965,704.

Specification of Letters Patent.

Patented July 26, 1910.

Application filed July 9, 1907. Serial No. 382,884.

To all whom it may concern:

Be it known that I, GEORG GOLDBERG, of 329 Prinsengracht, Amsterdam, Netherlands, a subject of the Emperor of Germany, have
5 invented a certain new and useful Improvement in Valves for Carbonated-Liquid Receptacles, of which the following is a full and exact specification.

The objects of my invention are to provide
10 a valve for carbonated liquid receptacles, by the use of which the liquid in the receptacle may be first pasteurized while out of contact with the atmosphere, then carbonated, and the valve closed and the re-
15 ceptacle shipped to the consumer, and while not limited thereto my invention is more particularly designed and adapted for use with bottles.

My said invention is fully shown and de-
20 scribed in the following specification of which the accompanying drawings form a part, wherein similar letters of reference designate like or equivalent parts wherever found throughout the several views, and in
25 which—

Figure 1 is a view in central vertical section of a bottle top provided with my new and improved valve; Fig. 2 is a side view in detail of the valve, the coupling union
30 of the service pipe through which the receptacle is to be filled, being shown in vertical section and locked upon the valve casing so as to open the valve. Fig. 3 shows the plug in the closed position, the coupling union being shown detached and in process
35 of removal. Fig. 4 is a bottom view of the coupling union. Fig. 2^a is a top view of the valve-casing and plug in the open position shown in Fig. 2, the lower portion
40 thereof being a cross section taken on the line I—I of Fig. 2, while Fig. 3^a is a like view showing the like parts in the closed position shown in Fig. 3, on line II—II. Fig.
45 5 is a side view of a key by which the valve-plug may be turned so as to open or close the valve when it is desired to fill the same or dispense the liquid. Fig. 6 is a plan view
50 of the two members of a split ring employed for holding the locking sleeve in place. Fig. 7 shows a side elevation of the same.

Referring to the drawing:—The reference letter *a* designates a bottle of any suitable form, and this bottle is provided at the

mouth with the enlarged head *a'*. Extending down into the bottle mouth is the valve
55 casing *b* of the circular conical form shown, provided near the lower end on one side with the tube orifice *k*, in communication with the tube *m*, which extends down into the
60 bottle nearly to the bottom, and with a like orifice *l* in free communication with the bottle at the upper end.

Fitting snugly in the valve-casing *b* is the valve turn-plug *c*, which is provided with longitudinal passages *k'* and *l'*, adapted to be brought into and out of communication with the orifices *k* and *l* by the turning of the plug. Such plug *c* is provided at the lower end with the screw threaded portion *g'*, having a nut *g''*, which is screwed
70 tightly up so as to force the washer *g* against the lower end of the casing *b*. The valve casing *b* is provided adjacent to the top with the outwardly extending annular securing flange *e* which is of about the same di-
75 ameter as is the head *a'* of the bottle, between which and the bottle mouth, when in position thereon, is interposed the annular packing ring *f*, of soft rubber or other suitable packing material. Passing down over
80 the bottle head, is the securing sleeve *d*, provided at the bottom with a female screw thread as shown in Fig. 1, into which screws the male screw-thread of the split-securing-
85 ring *i*, which enables it to be placed in position upon the bottle neck beneath the head *a'*. Such split-ring is split centrally on a line passing through its center into two semi-
90 circular parts; one member of the ring having pins *i'* and the other sockets *i''* into which the pins fit as shown in Fig. 6, and between this split ring and the head *a'* is usually interposed a packing ring or washer
95 *h* like the washer *f* usually of soft rubber, the valve casing being forced firmly into position on the bottle head *a'*, by pressure upon the flange *e* by the inwardly extending flange *d'* of the securing sleeve *d* as shown in Fig. 1.

The valve-casing *b* is provided at the upper end with a peripheral step flange *g*, from the lower step of which extends outward securing pins *g'*, adapted to enter the bayonet joint slots *t'*, of the securing cup *n* of the coupling union secured to the pipe *o*, shown
105 in Figs. 2 and 3; such union being provided

with the usual turning handles *u*. This union coupling cup is provided with a passage *p* on either side of which within the cup, are the key pins *r*, adapted to enter the pin holes *s*, in the upper part or face of the turn-plug *c*, when the cup is placed on the valve, so that when turned so as to lock the cup thereon this will cause the turn-plug to be turned into the open position, and vice versa. The coupling cup is also usually provided with a packing washer or ring *n'*, by which the joint between the same and the valve casing and plug is made tight when the parts are locked together.

My improved valve having first been secured in the bottle neck, the valve plug is turned into the open position by means of a thumb-key *t*, having the pins *r'*, adapted to enter the holes *s* of such plug, and the bottle is then filled by way of the passage *k'* and pipe *m*, the air escaping by way of the orifices *l* and passage *l'*. When sufficiently full, by means of the key *t*, the valve plug is turned into the closed position shown in Figs. 3 and 3^a, and the bottle thus sealed is then subjected to a sufficiently high temperature to thoroughly pasteurize the contents, this being done in any suitable apparatus. After pasteurizing the bottle is allowed to cool; then the coupling cup *n* of the union is locked thereon as shown in Figs. 1 and 2, which operation will again open the valve without bringing the contents into contact with the atmosphere; carbonic acid gas, under sufficient pressure to properly impregnate the liquid in the bottle, is then led in through the pipe *o*, and after sufficient interval the coupling is removed which will again hermetically close and seal the bottle by turning of the valve plug into the closed position, when the bottle and contents will be ready for shipment. When it is desired to use the liquid, the coupling *n* being of course withdrawn, it may be drawn off by turning the plug into the open position by means of the hand-key *t*, the liquid then passing out through the passages *l*, *l'*. In pouring the liquid the bottle is tilted in the usual way.

It will be understood that the bottle is never completely filled with liquid which never reaches the valve mechanism. When the bottle stands upright there is always left over the liquid a space which receives carbonic acid gas. It will also be understood that after the bottle is filled with liquid it is hermetically closed. The liquid is then sterilized and after that it is cooled, inasmuch as this cooling promotes the absorption of the carbonic acid gas subsequently admitted. After the bottle is thus filled and the contents thereof sterilized, the bottle is coupled to the means for supplying carbonic acid gas in the manner before described, and when the coupling is turned to a proper ex-

tent, gas enters the bottle, air of course not being allowed to enter. Carbonic acid gas is absorbed by the liquid and this operation may be promoted by tilting the bottle, thus presenting a larger surface area for the absorption of the gas and this absorption may be still further promoted by agitating or shaking the bottle during the introduction of the gas. After the liquid is charged with carbonic acid gas in the manner above described, the coupling *n* is withdrawn and the valve is closed.

What I claim is:—

1. The combination with a receptacle for liquid, of a valve casing having a port opening into the receptacle, means for securing the casing to the receptacle, a valve mounted to turn in said casing and having a passage extending from its outer end to the port in the casing, a coupling cup equipped with a tube and provided with means engaging the valve for turning it within its casing and also with means engaging the valve casing for locking it thereto.
2. The combination with a receptacle for liquid, of a valve casing having a port opening into the receptacle, means for securing the casing to the receptacle, a valve mounted to turn in said casing and having a passage extending from its outer end to the port in the casing, a coupling cup equipped with a tube and provided with means engaging the valve for turning it within its casing, and a bayonet joint connection between the coupling cup and the valve casing.
3. The combination with a receptacle for liquid, of a valve casing having a port opening into the receptacle, means for securing the casing to the receptacle, a valve mounted to turn in said casing having a passage extending from its outer end to the port in the casing, and having sockets in its outer end, a coupling cup equipped with a tube and having lugs adapted to enter said sockets in the valve whereby the valve may be turned, and means for locking the coupling cup to the valve casing.
4. The combination with a receptacle for liquid, of a valve casing having a port opening into the receptacle, means for securing the casing to the receptacle, a valve mounted to turn in said casing and having a passage extending from its outer end to the port in the casing, lugs *q'* projecting laterally from the valve, a coupling cup having slots adapted to engage the lugs and equipped with a tube, and means carried by the cup engaging the valve whereby the latter may be turned to open it in the act of locking the cup to the lugs on the valve casing.
5. The combination of a bottle having an enlargement at the outer end of its neck, a valve casing having a flange extending across the mouth of the bottle, a sleeve sur-

rounding the end of the bottle neck and
having a flange projecting over the flange
of the valve casing, a two-part ring en-
gaging the lower end of the sleeve and the
5 under side of the enlargement of the bottle
neck, a valve mounted to turn in the valve
casing, a coupling cup equipped with a fill-
ing tube, and means carried by the cup for
turning the valve and for locking the cup
to the valve casing. 10

In witness whereof I have hereunto set
my hand in presence of two witnesses.

GEORG GOLDBERG.

Witnesses:

WOLDEMAR HAUPT,
HENRY HASPER.