

No. 706,423.

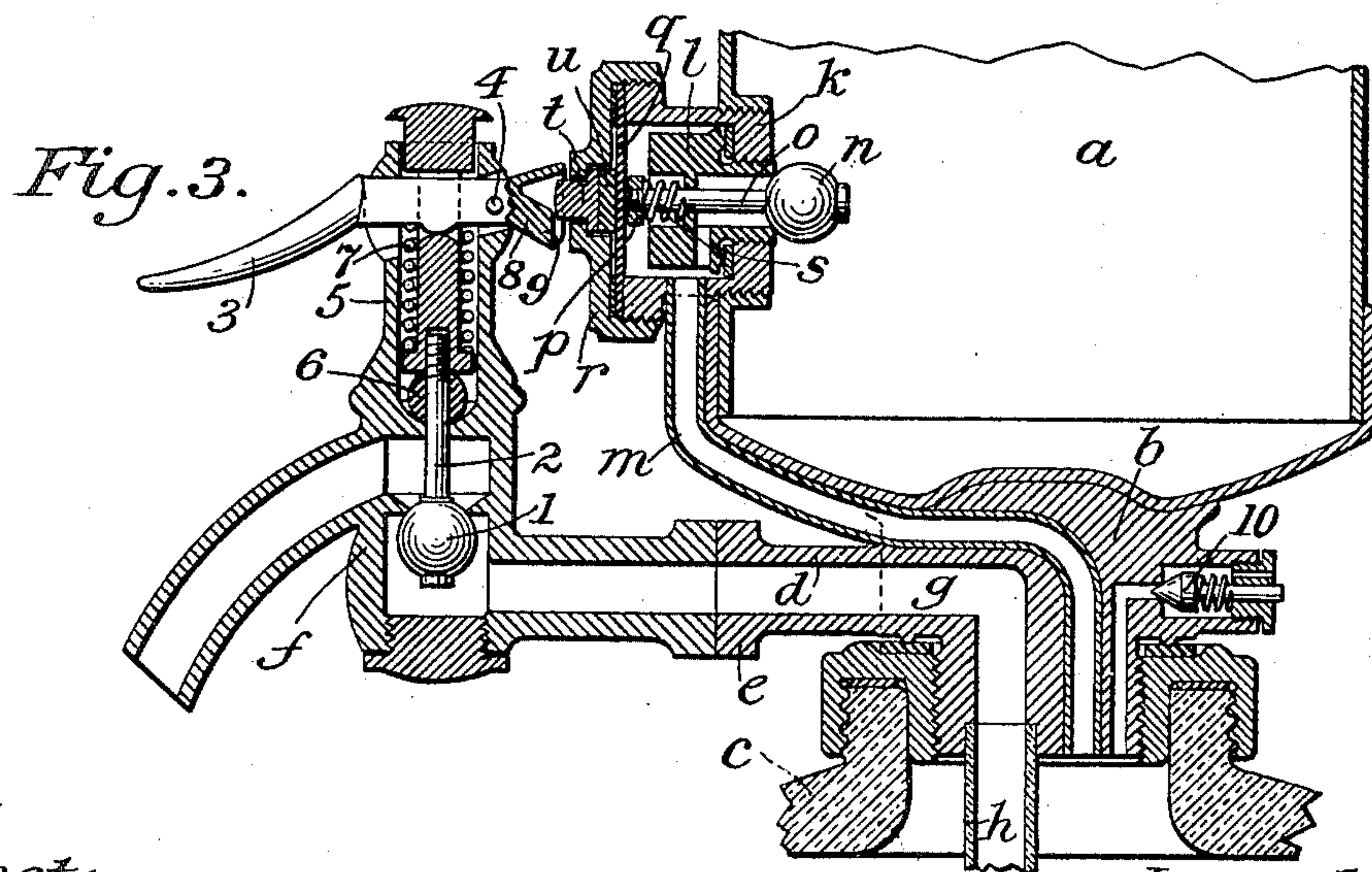
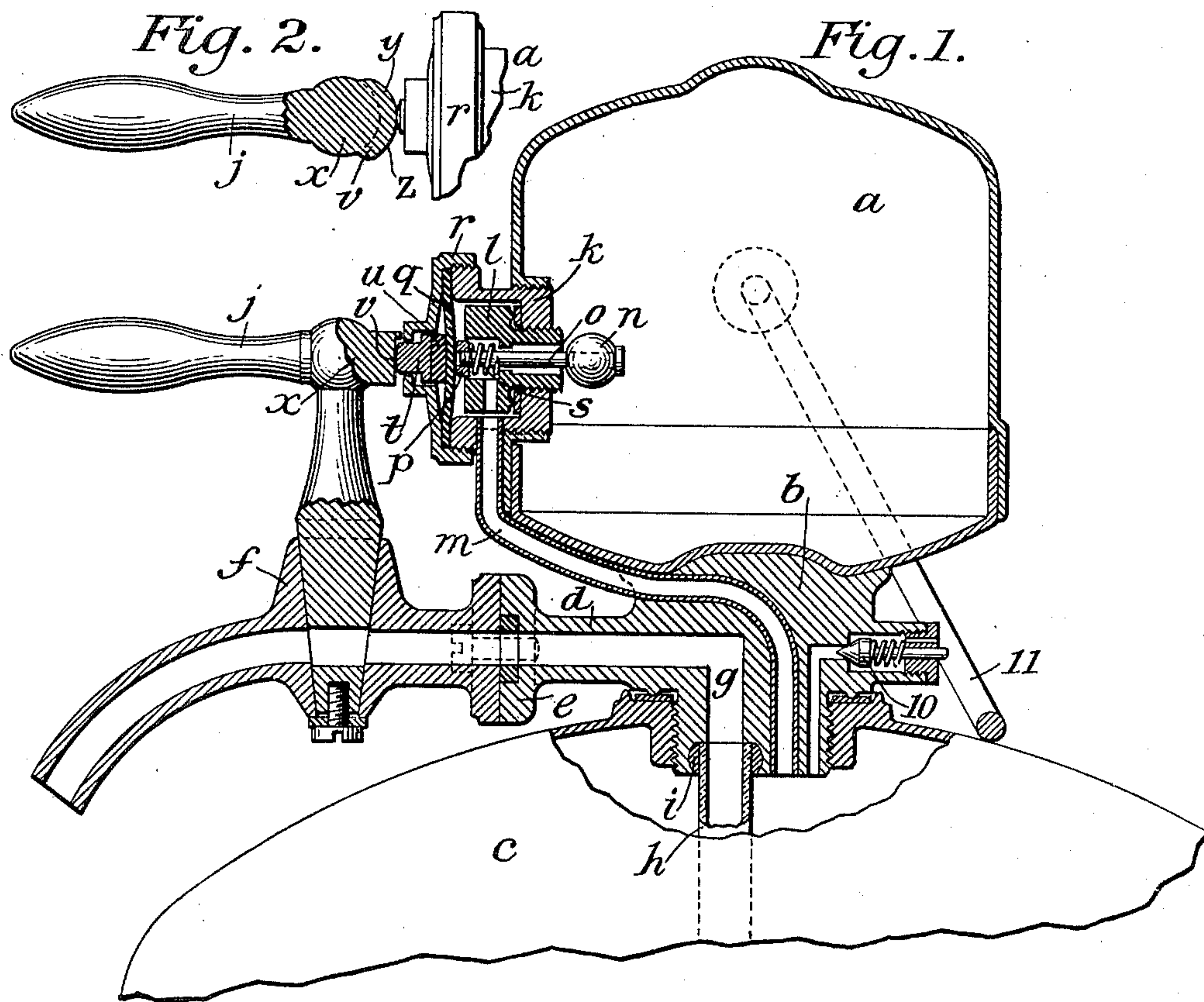
Patented Aug. 5, 1902.

A. KLEINFELDT.
SIPHON FOR DISPENSING LIQUIDS.

(Application filed Jan. 23, 1901.)

(No Model.)

2 Sheets—Sheet I.



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Fig. 4.

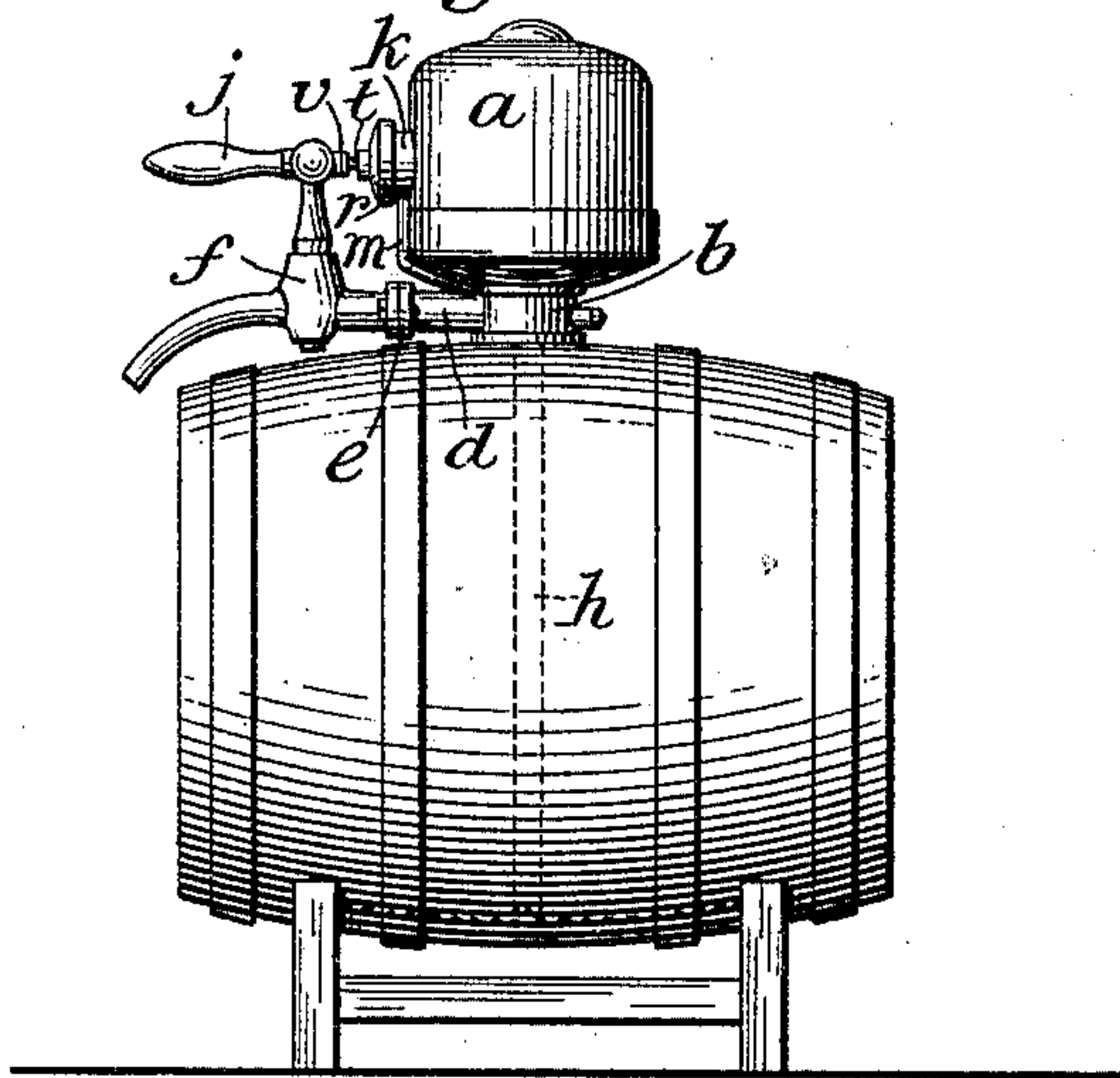
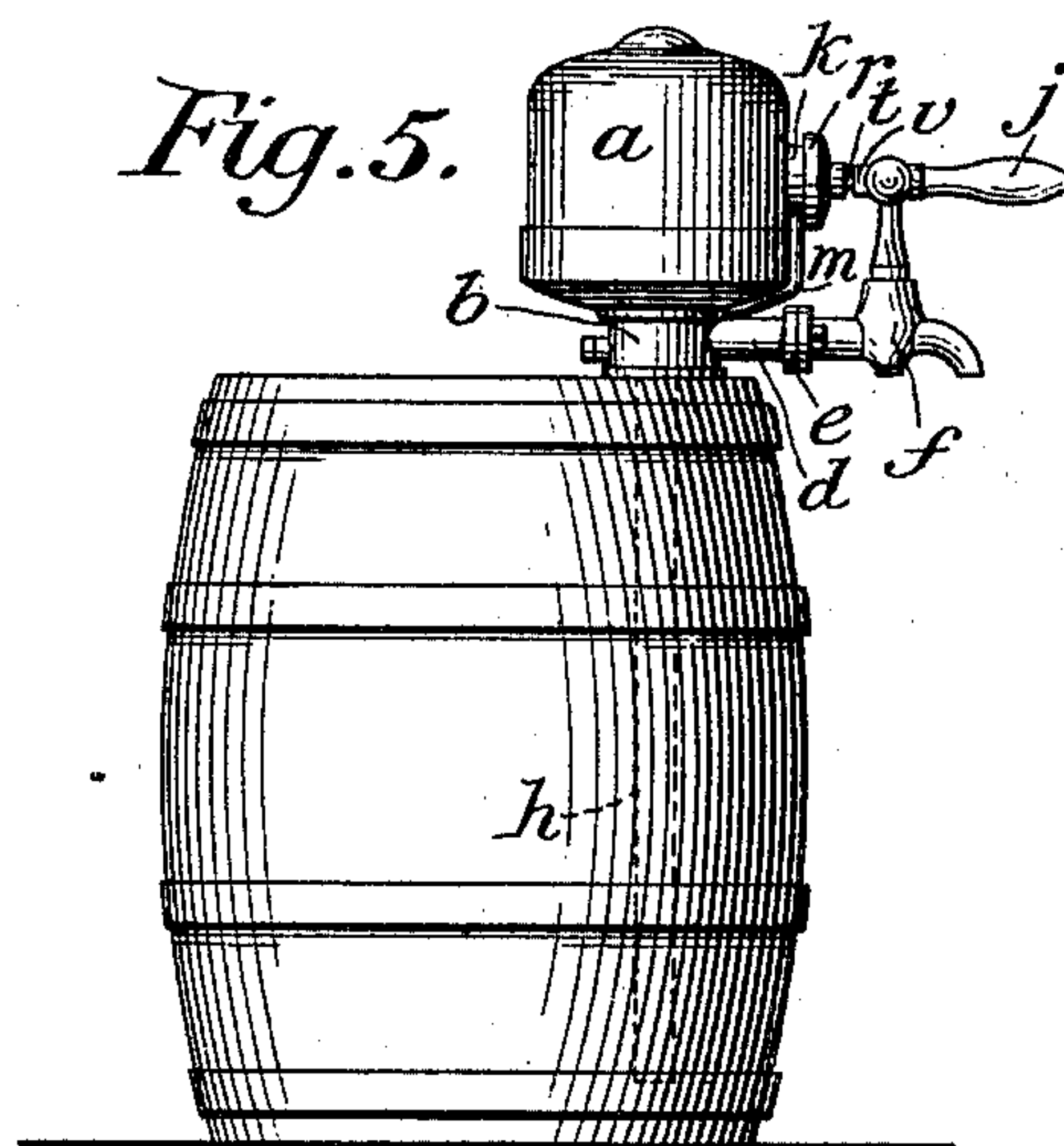


Fig. 5.



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UNITED STATES PATENT OFFICE.

ARTHUR KLEINFELDT, OF NEW YORK, N. Y.

SIPHON FOR DISPENSING LIQUIDS.

SPECIFICATION forming part of Letters Patent No. 706,423, dated August 5, 1902.

Application filed January 23, 1901. Serial No. 44,441. (No model.)

To all whom it may concern:

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

The invention relates particularly to mechanism for supplying a sufficient quantity of carbonic-acid gas to a liquid-containing receptacle and dispensing same under uniform pressure of gas; and the invention consists in the new and novel features of construction and combinations of parts hereinafter set forth and claimed.

In the accompanying drawings, Figure 1 represents a central vertical section of the siphon and a portion of the receptacle. Fig. 2 is a detail view showing the cam upon the end of the faucet-handle. Fig. 3 is a view similar to Fig. 1, showing another form of faucet. Figs. 4 and 5 are corresponding views representing the siphon attached to a barrel or cask.

The carbonic-acid-gas receiver or reservoir *a* is preferably of steel or similar material and is secured to a neck or stopper *b*, adapted to be screwed or otherwise hermetically secured in receptacle *c*, containing the liquid. The stopper is provided with a projection *d*, having a flange *e* formed thereon, to which is secured a draw-off tap or faucet *f*, which communicates through a passage *g* with a tube *h*, extending to near the bottom of the receptacle. The socket by which the tube is fastened to the stopper is preferably provided with a bushing *i*, of rubber or similar material, which facilitates the insertion or removal of the tube.

Arranged in the side of the carbonic-acid-gas reservoir adjacent to handle *j* of the faucet is a plug *k*, provided centrally with a thimble *l*, having a passage formed therein that communicates with the interior of the reservoir and with a pipe or tube *m*, communicating with the interior of the receptacle. A valve *n* in the gas-reservoir seats against the mouth of the passage. The valve-spindle *o* is provided at its outer edge with a button or washer *p*, engaging an elastic diaphragm *q*, of rubber or similar material, that

is secured in position by means of the cap *r* upon the plug. The valve is normally held to its seat, and the button on the end of the spindle is held in contact with the diaphragm by means of a spring *s*. A plunger *t*, arranged in line with the valve-spindle, extends through the cap and engages the outer face of the diaphragm. A spring of any preferred kind, such as a packing of rubber *u*, is interposed between the diaphragm and the inner end of the plunger. The outer end of the plunger engages a cam *v*, formed on the end *x* of the faucet-handle. A portion *y* of said cam is constructed with a smaller radius than the other portion *z*, so that the plunger may be pushed inward a varying distance and at a varying speed.

In case it is desired to control the outflow from the receptacle more perfectly than is possible by means of an ordinary faucet the overflow-passage *g* may be provided with a valve *1*, securely fastened to a stem *2*, that engages with and is movable by means of a handle *3*, pivoted at *4* to the spring-casing *5*, formed integral with the faucet. The valve is held to its seat by a rubber spring *6*, that also forms a packing to prevent access of the liquid to the spring-casing. The handle is normally held in its raised position by a spring *7*. The end *8* of the handle is provided with a cam *9* of any preferred radius that engages the end of the plunger.

An escape-valve *10* of any preferred structure is provided in the side of the stopper opposite the faucet.

Preferably the reservoir is provided with a bail *11*, so that same can be readily carried when it is removed from the liquid-containing receptacle.

In order to charge the reservoir with carbonic-acid gas, the reservoir is removed from the receptacle and is then connected with a carbonic-acid-gas cylinder. The pressure of the gas will force the valve inward against the action of the spring and permit the gas to flow into the reservoir. When the reservoir is detached from the cylinder, the pressure of the gas in the reservoir, together with the action of the spring, closes the valve. The stopper and reservoir are attached to the receptacle containing the liquid, so that the plunger will be engaged with the faucet-

handle when same is actuated. The rotation of or pressure upon the handle causes the cam upon the end of same to engage with the plunger, which is forced inward, thereby opening the valve and permitting a quantity of the carbonic-acid gas to escape into the interior of the receptacle. The arrangement of the cam upon the faucet is such that the outflow-pipe is always opened before the carbonic-acid gas is admitted; but in case the pressure in the receptacle should become too high the escape-valve will prevent the bursting of the receptacle. The rubber diaphragm and the spring or packing between same and the end of the plunger provide yielding pressure against the end of the valve-spindle, thereby permitting automatic regulation of the quantity of the gas supplied to the receptacle, since the resistance afforded by the gas against the inward movement of the valve will be much greater when the reservoir is full than when same is empty. The spring or packing will be compressed by the pressure of the gas against the valve if the reservoir is full, so that the opening will be much smaller than when the reservoir is comparatively empty, thus permitting less gas to escape.

The apparatus is especially useful in preserving fermented liquids, which quickly become flat and stale if exposed to the air. It is compact in shape, so that it can be readily stored in a small refrigerator, and thus becomes available for the use of comparatively small consumers, who can be supplied with the desired beverage in quantity instead of in bottles, as is now customary. Since the contents of the receptacle are constantly under pressure of carbonic-acid gas, the liquid does not lose its brilliancy or "life," but is always refreshing and palatable, and can be drawn in such quantities and at such times as desired. The gas-supply reservoir can be readily removed from the receptacle to be recharged with gas and can then be attached to the same or a different receptacle, if desired. The same valve is utilized in charging and discharging the reservoir, in the one case acting as a check-valve to prevent the escape of the gas and in the other case acting as a supply-valve to regulate the quantity of gas permitted to enter the receptacle. The valve regulates the outflow automatically to an extent depending upon the tension of the spring or yielding packing interposed between the plunger and the diaphragm. The valve can be further regulated by a cam that engages the end of the plunger, since the parts of same have a different radius.

I claim as my invention—

1. A carbonic-acid-gas reservoir provided with a neck portion whereby said reservoir may be secured to a receptacle, a passage in

said neck portion providing a means for filling the reservoir and for supplying gas to the interior of the receptacle, a valve in said passage provided with a spindle engaging a yielding packing, a faucet communicating with the interior of the receptacle provided with a handle operatively engaging said spindle when the faucet is opened and closed to reciprocate the same and open and close the valve, and means for normally holding said valve closed but permitting the valve to be opened automatically by the pressure of the incoming gas when the receptacle is charged through said passage.

2. The combination with a receptacle, of a carbonic-acid-gas reservoir having an outlet communicating with said receptacle, a valve controlling said outlet, means for normally closing said valve, a plunger in alignment with the spindle of said valve, whereby said valve is actuated, a faucet communicating with the interior of the receptacle provided with a handle engaging with said plunger when the faucet is open to reciprocate same, and a yielding packing interposed between said plunger and valve-spindle, substantially as described.

3. The combination with a receptacle, of a carbonic-acid-gas reservoir having an outlet communicating with said receptacle, a valve controlling said outlet, a spring for holding said valve in its closed position, a plunger engaging said valve to open same against the resistance of the spring, a faucet communicating with the receptacle having a handle engaging with said plunger when the faucet is partly open to reciprocate same and open the valve, and a yielding packing interposed between said plunger and the valve-spindle, substantially as described.

4. The combination with a receptacle, of a carbonic-acid-gas reservoir having an outlet communicating with said receptacle, a valve on the interior of said receptacle for controlling said outlet, a spring for holding said valve in its closed position, a plunger arranged to actuate the spindle of said valve, a faucet communicating with the interior of the receptacle having its handle provided with an irregular cam engaging said plunger to move same varying distances, an elastic diaphragm to prevent the escape of the gas through the opening for said plunger, and a yielding packing interposed between said plunger and the valve-spindle, substantially as described.

In testimony whereof I sign this application, in the presence of two witnesses, this 22d day of January, 1901.

ARTHUR KLEINFELDT.

Witnesses:

A. N. JESBERA,
LUCIUS E. VARNEY.