

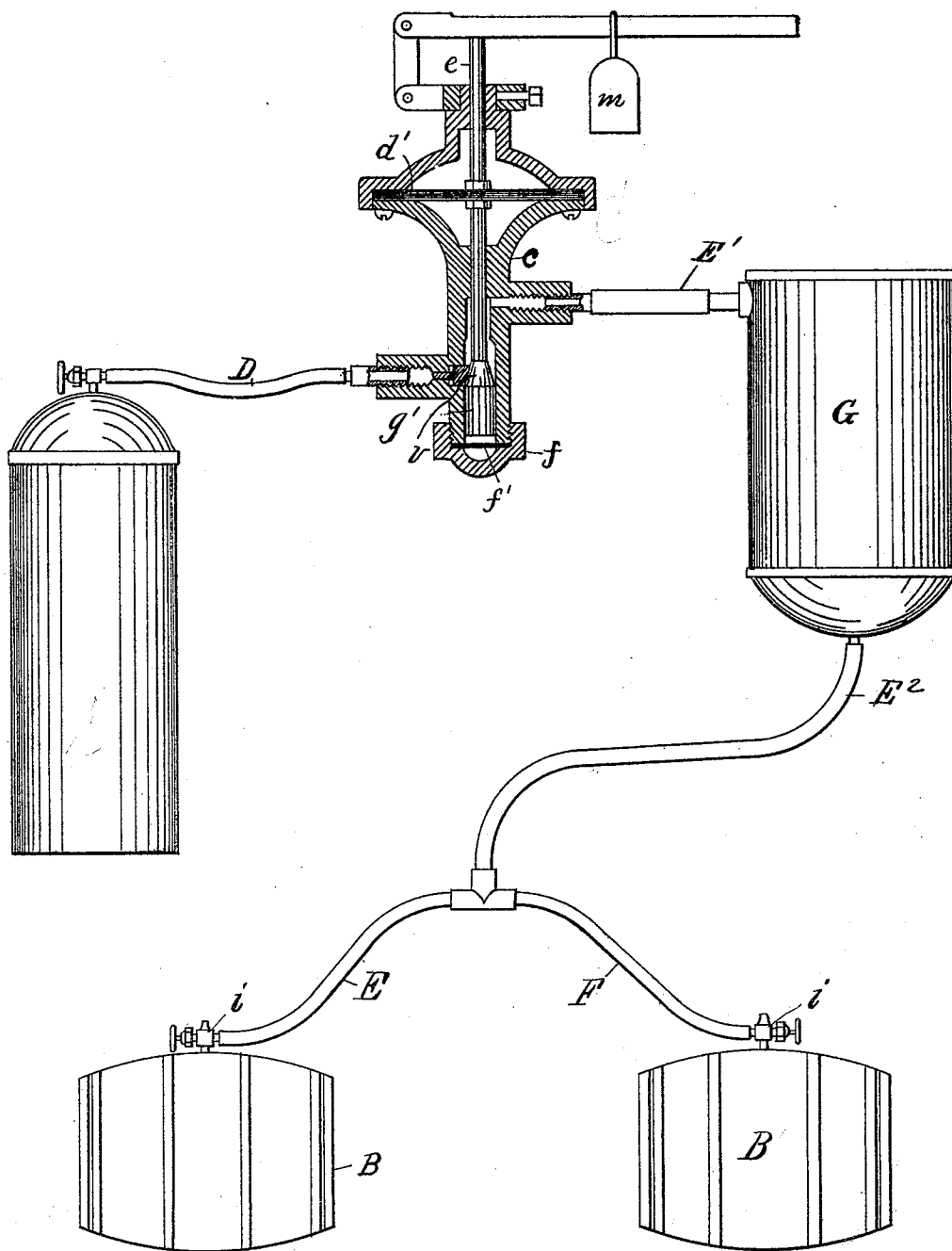
(No Model.)

F. WIDMER.

APPARATUS FOR PRESERVING AND PRESSING BEER.

No. 328,554.

Patented Oct. 20, 1885.



Attest.

Henry J. Miller
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Inventor.

F. Widmer, per
Crane & Miller, Atty.

UNITED STATES PATENT OFFICE.

FRANK WIDMER, OF NEWARK, NEW JERSEY, ASSIGNOR OF ONE-HALF TO
ANDREW ALBRIGHT, OF SAME PLACE.

APPARATUS FOR PRESERVING AND PRESSING BEER.

SPECIFICATION forming part of Letters Patent No. 323,554, dated October 20, 1885.

Application filed July 1, 1885. Serial No. 170,347. (No model.)

To all whom it may concern:

Be it known that I, FRANK WIDMER, a citizen of the United States, residing in Newark, Essex county, New Jersey, have invented certain new and useful Improvements in Apparatus for Preserving and Pressing Beer, fully described and represented in the following specification and the accompanying drawing, forming a part of the same.

10 This invention relates to an improved means of conveying a gaseous pressure from a receiver under high pressure through a regulator to a keg or kegs by means of gas pipes or connections; and it consists in the combination, with such receiver and regulator and
15 gas connections, of an expansion-vessel of special construction, located between the regulator and the beer-kegs, to modify and equalize the pressure of the gas in its flow from the
20 regulator to the kegs.

The annexed drawing represents a gas-receiver and two beer-kegs with their pipe-connection, having a regulator applied thereto, and an expansion-vessel interposed between
25 the regulator and the kegs.

A is the gas-receiver; B B', the kegs; C, the regulator; D, the connection from the receiver to the regulator; E, the connection from the regulator, and F branch pipes leading from
30 the pipe E' to the kegs B B'.

G is the expansion-vessel applied between the regulator and the kegs, the inlet-pipe E' being inserted in the vessel near its top, and the outlet-pipe E'' being led from the bottom
35 of the vessel and joined to the pipes F to convey the pressure to the kegs B B'.

The regulator is shown in section in the drawing of the construction described in my Patent No. 323,093, July 28, 1885, and is provided with a diaphragm, *d*, which operates, when the pressure in the kegs falls below the desired point, to move a spindle, *e*, and open a valve, *v*, to admit more gas from the receiver to the kegs, and thus maintain the desired pressure therein. The valve *v* is seated
45 against the regulator-inlet *b*, so as to exclude the compressed gas from the interior of the regulator when the valve is closed, while the kegs B B' and the vessel G are in constant communication with the diaphragm *d*, so that the

movements of the latter are effected solely by the pressure in the kegs. A diminished pressure in the kegs thus permits the fall of the diaphragm under the pressure of the weight *m*, which acts upon the spindle *e* and moves the cone *g'*, attached to its lower end, so that the valve may open. A rise of pressure in the kegs operates to raise the diaphragm and the cone *g'*, whose sloping side then forces the valve
55 *v* to its seat and prevents the access of any more gas from the receiver, as set forth in my previous patent, No. 323,093, July 28, 1885.

The connection between the kegs and each of the branches F is formed by a cock or stop-valve, *i*, attached to the branch and removable from the keg, the regulated pressure existing equally throughout the branches and in the kegs when the stop-valves are opened.

The expansion-chamber G is applied between the regulator and the kegs to avoid any sudden changes of pressure in the kegs at the instant that the regulator-valve is opened by a movement of the diaphragm, the gas-inlet pipe E' being inserted in the chamber near its upper end, and led from the chamber to the keg at its lower end by the gas-outlet E''. By such interposition of a chamber directly in the pipe, the gas discharged at intervals through the regulator is mingled in the chamber with the volume of gas under a lower pressure, which previously filled the same, and is thence conveyed to the kegs more gradually than if such increased supply of gas were delivered directly through the pipe.

I am aware that it is not uncommon for the gaseous pressure in the beer-kegs to at first exceed the regulated pressure conveyed to them through the connection E, and that in such case the beer is liable to be forced back in the connection when the cock *i* is first driven into the keg. I am also aware that so-called "beer-savers" have been interposed between the regulator and the kegs to catch and retain such beer, the gas inlet and outlet being both introduced into and led from such beer-saving receptacle at its upper end, so that the beer which enters it will fall to the bottom, and although a siphon-pipe is sometimes used (as in German Patent No. 16,826) to return such beer to the keg, the beer cannot be wholly
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removed thereby, but a part thereof is liable to become foul and to mix with other beer entering the vessel afterward, and to then be driven into another keg, to the great injury of its contents. To avoid such mixture of the old and new beer, it has been common to make such beer-savers with a removable bottom, (as in the said German patent,) which can be taken off to remove such beer and cleanse the vessel, if foul.

My expansion-chamber operates quite differently from such beer-saver by having the pipe applied to it in such manner that no beer can be retained therein, the gas-inlet E' being inserted into the chamber at or near the top, and the outlet E'' at the bottom, so that any beer which is forced into the chamber enters at the gas-outlet at its lower end, and is expelled therefrom as soon as the pressure in the keg falls low enough to admit any gas from the regulator.

By my construction the beer that finds access to the expansion-vessel is wholly returned to the keg upon the first diminution of pressure therein, and as no gas can pass from the regulator to the keg until such diminution occurs, the vessel G is fully-adapted to operate as intended, and the beer that temporarily rests therein does not at all affect its operation as an expansion-chamber. I therefore wholly disclaim the said German Patent No. 16,826, and also disclaim the use of any chamber having the pipe E led from its upper end, so as to retain beer which might enter through such gas-discharging pipe.

In my construction the gas-inlet E' is applied near the top of the chamber, and the outlet E'' at the bottom, and the function of the chamber as an expansion-vessel is thus preserved in all emergencies. The expansion-vessel thus serves as an equalizer to prevent sudden variations of pressure in the kegs or other receptacles to which the gas is delivered, and thus avoids any sudden and unequal variations in the flow of the fluid from the tap from which it is liable to be drawn during the opening of the valve v .

Having thus set forth the nature and objects of my invention, what I claim is—

The combination and arrangement of the gas-receiver A , the beer-keg B , and the regulator C , connected thereto and provided with the valve v and the diaphragm d' , actuated by the pressure in the beer-keg, the regulator being connected to the beer-kegs by pipes having an expansion-vessel, G , inserted therein, and the connection E' , from the regulator to the vessel G , being inserted at the top of the vessel, and the connection E'' , from the vessel to the keg, being inserted in the bottom of the vessel, to avoid the retention of beer in the said vessel, substantially as herein shown and described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

FRANK WIDMER.

Witnesses:

L. LEE,

HENRY J. THEBERATH.