

(No Model.)

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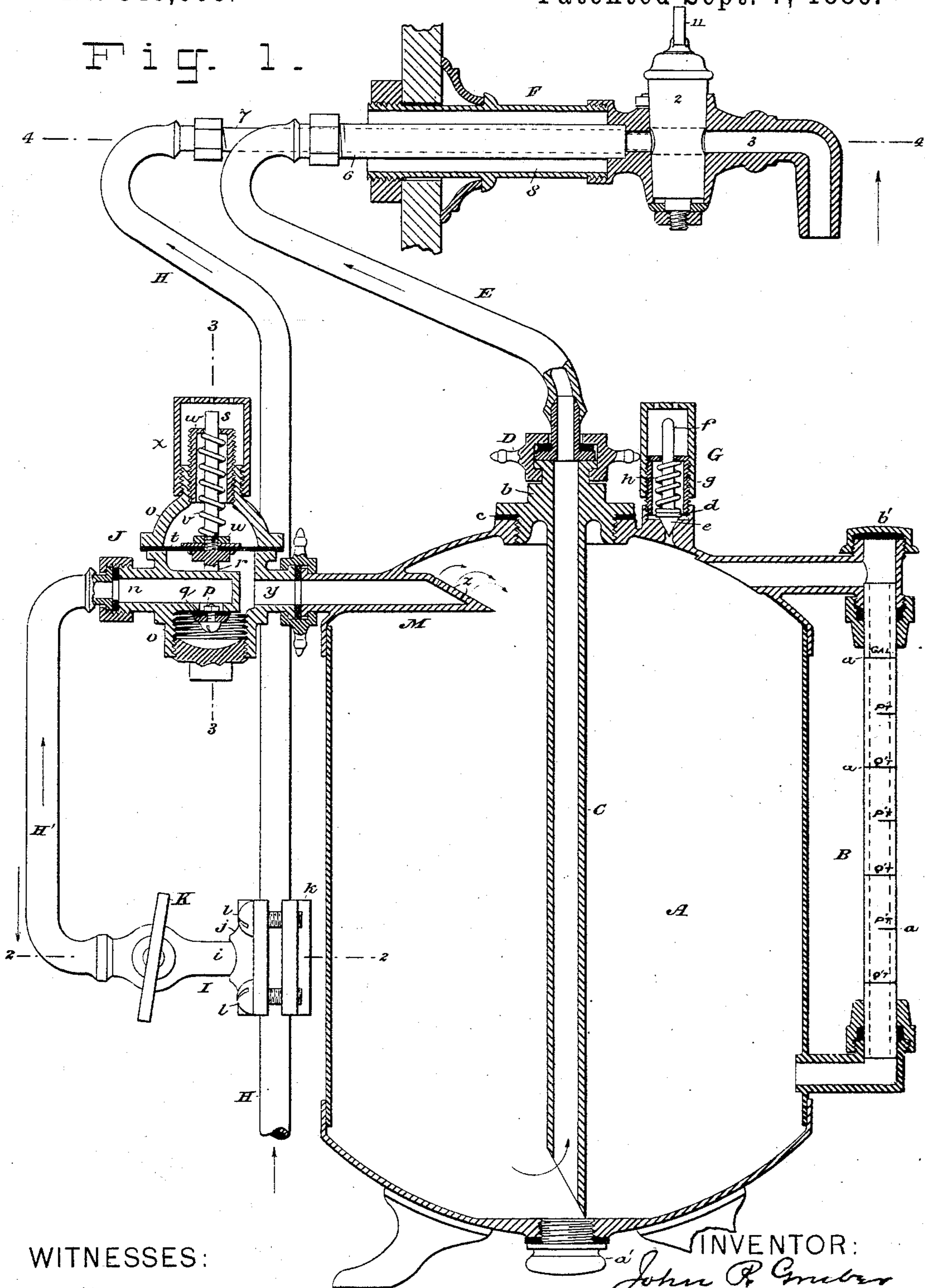
J. P. GRUBER.

SERVICE APPARATUS FOR MALT LIQUORS.

No. 348,668.

Patented Sept. 7, 1886.

Fig. 1.



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(No Model.)

2 Sheets—Sheet 2.

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Fig. 2.

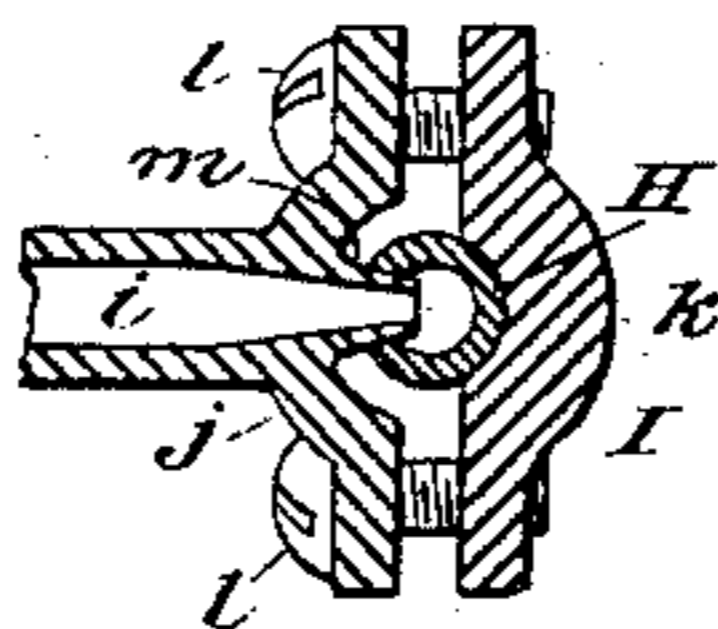


Fig. 3.

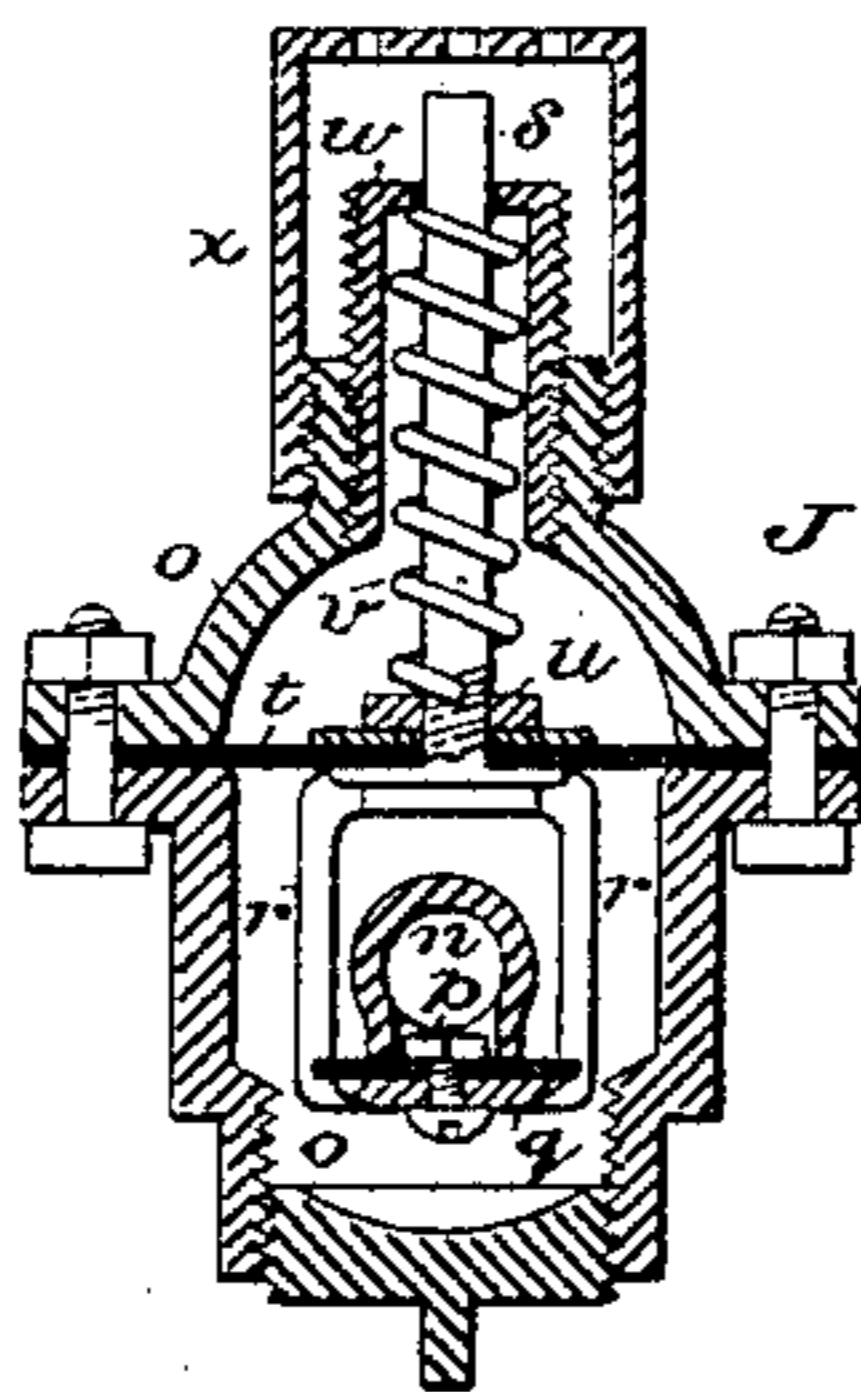
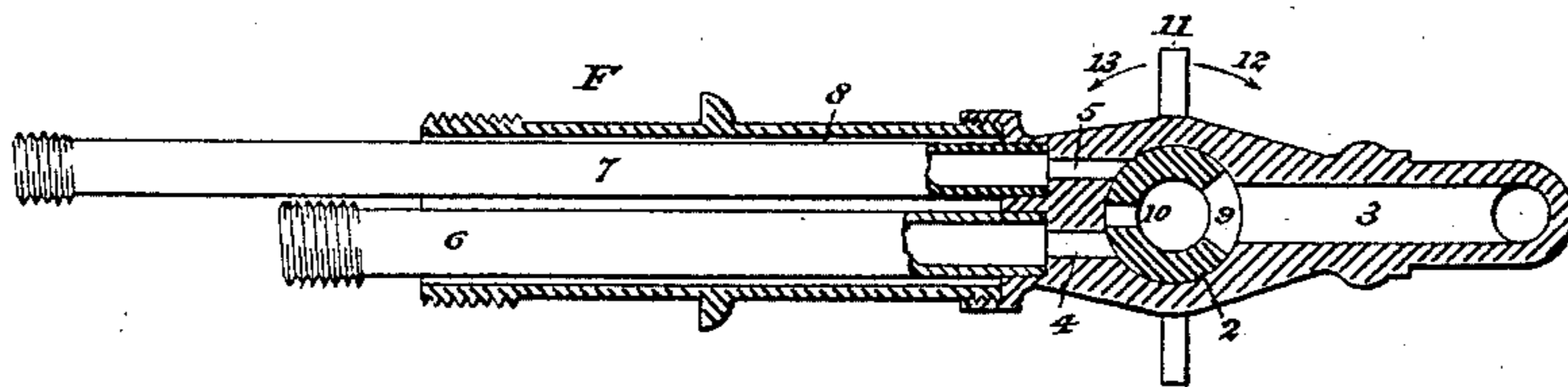


Fig. 4.



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UNITED STATES PATENT OFFICE.

JOHN P. GRUBER, OF JERSEY CITY, NEW JERSEY.

SERVICE APPARATUS FOR MALT LIQUORS.

SPECIFICATION forming part of Letters Patent No. 348,668, dated September 7, 1886.

Application filed March 3, 1886. Serial No. 193,862. (No model.)

To all whom it may concern:

Be it known that I, JOHN P. GRUBER, a citizen of the United States, and a resident of Jersey City, in the county of Hudson and State of New Jersey, have invented certain Improvements in Service Apparatus for Malt Liquors, of which the following is a specification.

My invention relates to an apparatus designed, in the main, for serving that class of malt liquors known to brewers as "ale," although it may be employed for beers classified under other names, and especially those of an unctuous character, which readily foam when drawn.

It is well known that when new ale is drawn from the cask it is usually allowed to stand in a measure for a time, in order that the foam may break up, as it is very difficult to draw it directly into the glass. This use of an open measure is very uncleanly, and in summer time attracts flies and other insects.

The object of my apparatus is to provide means for drawing the ale or other liquor "solid" (or with very little foam) directly into the glass; or at will the liquor may be drawn through the same faucet directly from the cask into a vessel or glass; or, it may be drawn partly directly from the cask and partly from the receptacle of my apparatus, all as will be hereinafter described.

An apparatus embodying to some extent the characteristics indicated above is shown in my Patent No. 240,018, dated April 12, 1881.

The novel features of my invention will be hereinafter fully set forth, and carefully defined in the claims.

In the drawings which serve to illustrate my invention, Figure 1 is a general sectional elevation of my improved apparatus. Fig. 2 is a detached sectional view taken in the plane indicated by line 2 2 in Fig. 1. Fig. 3 is a detached sectional view taken in the plane indicated by line 3 3 in Fig. 1. Fig. 4 is a longitudinal sectional view of the two-way faucet F, whereat the liquor is drawn.

Before proceeding to describe my invention, I will say that herein I have shown the service-faucet connected close to the receiver or receptacle of the apparatus, for convenience of illustration; but this is not essential. They may be separated to any desired extent, and be ar-

ranged with respect to each other in any way that is found most convenient.

A represents a receiver, which I usually make of sheet metal and of cylindrical form. It may, however, be made of any form and of any suitable material.

B is a glass-tube gage, connected to the receiver at its top and bottom in the manner of a tube gage for a steam-generator. This gage has graduations formed by marks *aa*, and designated by the letters "Pt.," "Qt.," arranged in alternate order, as shown. These indicate both the quantity of the liquor at any time remaining in the receiver, and also the amount in pints drawn from it at any time. I usually employ different-colored paints for marking the pint and quart graduations, so that they may be readily distinguished from each other.

C is the eduction or delivery tube of the receiver, which depends to or nearly to the bottom of the receiver, and has a screw-threaded boss, *b*, which screws into the top of the receiver onto a packing-ring, *c*, whereby a gas-tight joint is produced. To the upper outer end of the eduction-tube is coupled by a detachable union, D, the delivery-pipe E, which leads to the two-way service-faucet F, which will be more particularly described hereinafter.

On the crown of the receiver is mounted an adjustable pressure-valve, G, whereby, when the gaseous tension in the receiver exceeds a predetermined point the gas is allowed to escape and relieve the pressure. This device consists of a valve, *d*, which rests on a seat, *e*, and has a stem, *f*, which passes out through the crown of a screw-cap, *g*, which screws down into an internally-screw-threaded flange around the valve-seat. Between the valve and this cap is arranged a spring, *h*, the tension of which is regulated by screwing the cap *g* up or down, as will be well understood.

I will now describe the induction portion of my apparatus.

H is the pipe leading from the cask of ale, which may be placed anywhere, as in the cellar, for example. I have herein shown this pipe as branched at the coupling I, the main pipe going directly to the service-faucet F, and the branch H' going to the receiver through a pressure-regulator, J. Both pipes H H'

might lead directly from the cask; but I prefer to employ one main pipe, H, for the sake of economy and convenience, and to couple the branch H' to it by a union or coupling, I, which I will describe.

K is a cock, usually of brass, which is placed in branch H', usually of lead pipe, and which controls the passage in said pipe. On the end of one of the arms *i'* of cock J is fixed or integrally formed a plate, *j*, having a half-round groove in its face to receive pipe H (also of lead) and flanges with screw-holes therein. Another similar plate, *k*, embraces the pipe H on the opposite side, and screws *l l*, passing through the flanges of the plates *j k*, cause them to clamp the pipe H firmly. A hole of the proper size is cut in the side of pipe H, next to plate *j*, and a short coned tube, *m*, on plate *j*, which may be the prolongation through the plate of the arm *i* of cock K, enters said aperture in pipe H, and thus opens communications between pipe H and branch H'. Of course pipe H' might lead to the cask and pipe H from the branch. The ale on its way through pipe H' to the receiver A must pass through the pressure-regulator J, which I will describe with reference to Figs. 1 and 3. To the inlet *n* of the regulator is coupled the pipe H'. This inlet is prolonged inside of the shell *o* of the regulator, is closed at its inner end, and has an aperture, *p*, which is closed by a valve, *q*. This valve has two arms, *r r*, which pass up alongside of the inlet-tube, and are connected to the valve-stem *s*. Between disks on the stem is clamped a rubber diaphragm, *t*, which forms a partition across the shell *o*. On the valve-stem, and pressing on a flanged nut, *u*, on same, is a spring, *v*, the upper end of which takes under a screw-cap, *w*, that screws down into an aperture in the top of shell *o*. *x* is merely an external cap perforated to admit air to the upper side of the diaphragm and designed to protect the regulator J from accidental injury or disarrangement.

y is the outlet of the regulator, which is coupled by a readily-detachable union to the induction-tube M of the receiver A. In order that the ale may enter the receiver in fine jets and be delivered in an upward direction, I usually slope or bevel the inner end of the tube M on the upper side and cover this end with a perforated plate, *z*.

Referring to Figs. 1 and 4, I will now describe the construction of the two-way faucet F. In the shell 1 is formed the usual conical bore to receive the plug 2, and also the axial outlet-passage 3, and two inlet-passages, 4 and 5. These inlet-passages are connected, respectively, each with one of the pipes E and H, usually through the medium of coupling-tubes 6 and 7, which are arranged in the hollow arm 8 of the faucet. The plug 2 is usually cored out or formed hollow at the point where it passes through the shell 1, and it is provided with a wide port, 9, which is always in coincidence with the passage 3, as the plug 2 is or should be provided with stops, in the

usual way, to limit its axial rotation. The plug 2 also has a narrow port, 10, opposite the port 9, which former may, by the axial rotation of the plug, be placed to coincide with either one of the passages 4 5, or be placed between them, as seen in Fig. 4. When the plug stands as seen in Fig. 4, I prefer to arrange the cross-handle 11 of the plug to stand at right angles to the faucet-axis, as shown. In this position the faucet is closed.

I will now describe the operation of the apparatus, premising that pipe H is connected below to a cask of ale under gaseous pressure, and that faucet F is closed, as seen in the drawings. The tension of spring *v* over the diaphragm of pressure-regulator J is regulated by screwing down or up the cap *w*, and the same is done to the spring of the regulator G on the receiver A. When the cock K is opened, the ale, under pressure from the cask, will flow through pipes H and H', and enter the shell *o* of the regulator J through port *p*, depressing valve *q*, in order to force a passage, and will flow thence through outlet *y* and into the receiver A through the jet apertures *z*. In passing through the regulator J, the gaseous tension will be reduced and made uniform. The degree of tension in the receiver will be regulated by the spring *v*. The pressure tending to open valve *q* is equal to the tension in the pipe H', and this is opposed by an upward pressure on the diaphragm *t*, which is equal to the pressure in the receiver. As the diaphragm is many times larger in area than the port *p*, it follows that a moderate tension in the receiver will close the valve *q* against a much greater pressure on the valve, tending to open it; but the tension of the spring *v* is opposed to the tension in the receiver, and consequently the difference between the initial tension and that in receiver A may be regulated by the spring *v*. This is generally effected primarily, and allowed to remain without change; but the tension in the receiver may be conveniently and readily reduced or increased, temporarily, by means of the regulator G—that is to say, by increasing or diminishing the tension of spring *h* by manipulation of screw-cap *g*. The ale flows into the receiver A until it is full, and its level is indicated on gage B. If it be desired to draw the ale solid—that is, from the receiver—the attendant turns the plug 2 of the faucet F in the direction indicated by arrow 12 in Fig. 4, up to the stop, which opens the faucet by way of passage 4, tube 6, and pipe E with the receiver A, and the ale flows out through induction-tube C under a moderate pressure and with little foam. If it be desired to draw a measured quantity, this will be indicated by the gage B, as the inflow at induction-tube M during the process of drawing will be comparatively inappreciable, and may be ignored. If the ale be too solid or “dead” when drawn as above to suit the purchaser, the attendant may, before the glass or vessel is entirely filled, turn the plug of faucet F quickly in the direction of arrow 13

up to the stop, and this will have the effect to close the faucet to the receiver and open it to the ale-cask direct through passage 5, tube 7, and pipe H. This will of course supply the necessary aeration and foam, as will be well understood. Thus the attendant has it within his control to proportion the quantities of ale under high and low tension to suit the tastes of customers. When required, he may draw wholly directly from the cask.

If it be desired to remove the receiver for cleansing or for repair, this can readily be done without interference with the draft direct at the faucet F by simply detaching the couplings D and L, having first taken the precaution to close cock K. The regulator J may also be removed by means of the detachable connection of same with pipe H'.

In the bottom of receiver A is a screw-plug, a' , which may be removed for convenience of rinsing out the receiver. The glass tube of gage B may be readily swabbed out and rinsed by first removing the screw-cap b' at the top of same.

From the above description it will be seen that my apparatus provides a closed receiver for the ale in lieu of the open measure or pitcher usually employed, thereby avoiding insects, and at the same time keeping a reservoir of the liquor under a reduced gaseous pressure, and not open to the air. As before stated, the attendant may at any time reduce the pressure in the receiver A by manipulation of the cap g of the pressure-valve G. The proper adjustment of the regulators J and G is a matter always within the control of the attendant and subject to his judgment.

I usually make the pipe 6 a little larger than the pipe 7, as the pressure in the latter is greater; but this is not essential.

A close receiver with an inlet controlled by a pressure-regulator near its top and an outlet from near its bottom is fully illustrated in my former patent, referred to; and these features I do not broadly claim herein.

Having thus described my invention, I claim—

1. The combination, with the receiver provided with an outlet and an inlet and with a pressure-regulator arranged between the inlet and the cask from which the beer is drawn, of a two-way faucet, a pipe leading to said faucet from the outlet of the receiver, and a branched pipe from the beer-cask, one branch of which leads to said two-way faucet and the other to the receiver through said pressure-regulator, substantially as set forth.

2. The combination, with a two-way faucet, substantially as described, having two tubes, 6 and 7, whereby it is coupled to the pipes E and H, respectively, of the said pipes, the former connecting the faucet with the receiver and the latter connecting the faucet with the liquid source direct, the receiver A, provided with an inlet, M, the pipe H', which connects the inlet of the receiver with the liquid source, and the pressure-regulator J in the pipe which supplies the liquid to the receiver, whereby the attendant is enabled to draw at will liquid from the receiver or the liquid source direct through the same faucet.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

JOHN P. GRUBER.

Witnesses:

HENRY CONNETT,
ARTHUR C. FRASER.