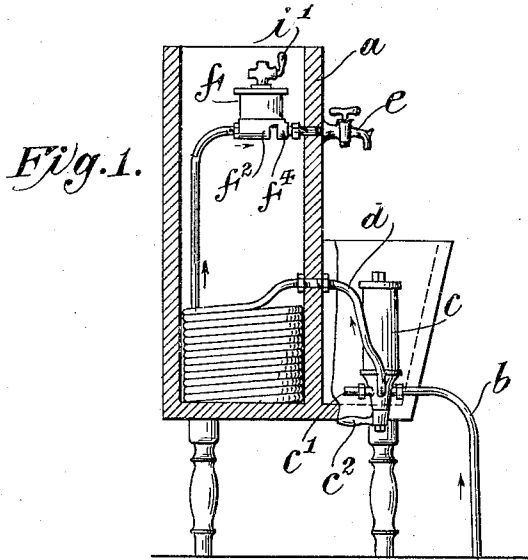
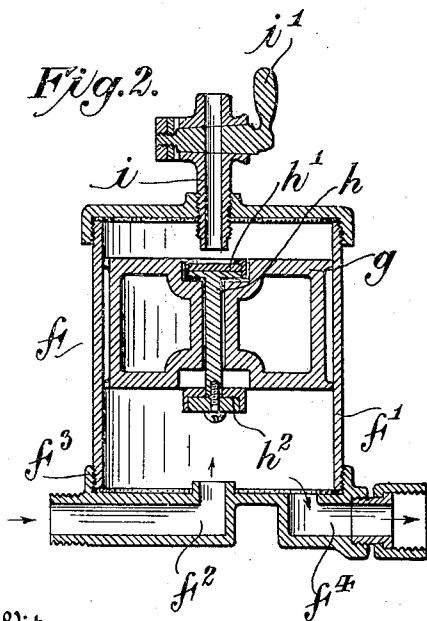
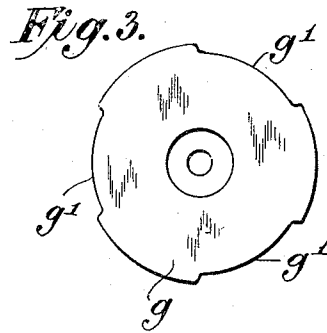


F. SCHNEIBLE.
BEER DISPENSING APPARATUS.
APPLICATION FILED MAY 6, 1915.

1,200,764.

Patented Oct. 10, 1916.
2 SHEETS—SHEET 1.



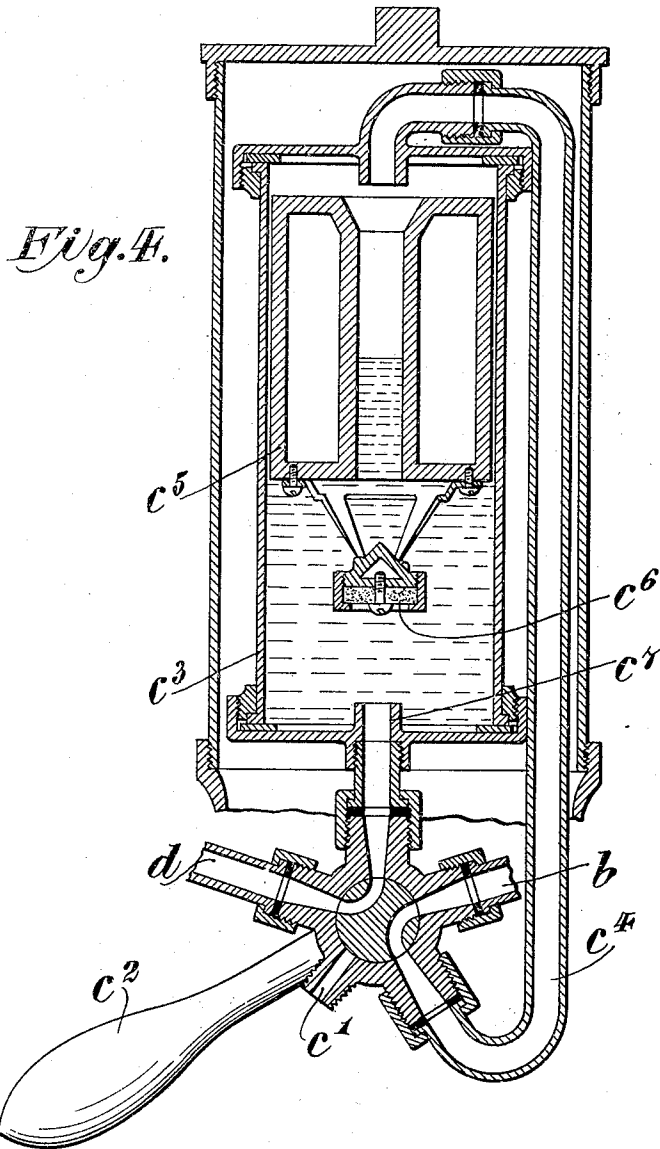
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BEER-DISPENSING APPARATUS.

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Specification of Letters Patent.

Patented Oct. 10, 1916.

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To all whom it may concern:

Be it known that I, FRANK SCHNEIBLE, a citizen of the United States, residing in the borough of Manhattan of the city of New York, in the State of New York, have invented certain new and useful Improvements in Beer-Dispensing Apparatus, of which the following is a specification, reference being had to the accompanying drawings, forming a part hereof.

This invention relates to beer dispensing apparatus and has for its general object to provide apparatus in which the flow of beer is controlled largely by automatic devices and the required attention of the attendant thereby reduced to a minimum. The particular improvement of apparatus of this kind to which this invention is directed resides in an automatic vent by which the passage of gas, foam and other obnoxious substances to the faucet is prevented. This automatic vent, however, is supplemental to an automatic cut-off for the source of supply by which the dispensing pipe is automatically cut off from the source of supply when the latter is nearly exhausted, thereby preventing, to a great degree, the passage of gas, foam, sediment, etc., from the source of supply to the dispensing pipe. While this automatic cut-off alone is very effective in attaining the desired end, it is well known that there is a tendency for gas, foam, etc., to become trapped in the dispensing pipe proper at the highest point thereof, which is usually very near the faucet. Necessarily this accumulation of foam and gas is picked up and carried out through the faucet, to a greater or less degree, each time that beer is withdrawn. In accordance with the present invention, apparatus is provided which is automatic throughout, the operations being controlled entirely by automatic devices and the attention of the attendant not being required at any time. In the apparatus there is employed an automatic cut-off to prevent any great flow of gas or sediment from the source of supply to the dispensing pipe, and in addition an automatic vent is placed in the dispensing pipe proper between the automatic cut-off and the faucet and at that point in the pipe where there is a tendency for gas and foam to accumulate, whereby such accumulation is vented automatically from time to time and the passage of obnoxious substances to the faucet is prevented. The preferred embodi-

ment of the invention will be described with some detail hereinafter, reference now being had to the accompanying drawings in which—

Figure 1 is a view partly in vertical section and partly in side elevation of a coil box on which are supported the necessary elements of the improved apparatus. Fig. 2 is a detail view in vertical section and on a somewhat larger scale of an automatic vent constructed in accordance with the present invention. Fig. 3 is a view in plan of the float shown in Fig. 2. Fig. 4 is a sectional view in detail of the automatic cut-off.

For convenience, the improved apparatus is shown in the accompany drawings as being supported on a coil box *a* of usual form, although it will be evident as this description proceeds that the invention is not to be limited to any particular relationship of parts so long as the intended function of each element is performed and the usual unsatisfactory conditions in a beer dispensing apparatus overcome. The source of supply of beer, indicated by the pipe *b*, passes through an automatic cut-off *c* in which may be formed a vent *c'* controlled by a hand valve *c''*, by means of which obnoxious substances in the apparatus may be vented before placing each fresh source of supply, to which the pipe *b* is connected, in communication with the dispensing pipe *d* through which the beer flows from the automatic cut-off. An automatic cut-off, suitable for the purpose, is illustrated in detail in Fig. 4, although it will appear hereinafter that the advantageous coöperation between the automatic cut-off and the automatic vent can be secured without regard to the particular character of either of these elements so long as each functions automatically under the influence of the beer in the pipes communicating therewith. The automatic cut-off shown in Fig. 4 comprises a cylindrical tank *e* into the upper end of which beer is discharged from a pipe *e'* which may be placed in communication with the supply pipe *b* through the hand valve *c''*. Within the cylinder *e* is a float *e''* which carries on its lower end a valve *e'''* adapted to seat on an outlet passage *e''''* in the bottom wall of the cylinder, this passage *e''''* being adapted to be placed in communication with the dispensing pipe *d* by means of the hand valve *c''* at the time the supply pipe *b* is placed in

communication with the inlet pipe c^4 of the cylinder. In this way, the beer in the interposed cylinder c^3 supports the float c^5 and holds its valve c^6 away from its seat on the outlet passage c^7 so that beer flows freely from the supply pipe b to the dispensing pipe d so long as there is a plentiful supply of beer. However, when the beer is about exhausted its level in the cylinder c^3 will drop so as to permit the valve c^6 to seat and cut off the supply of beer to the dispensing pipe b . This cut-off will occur before all of the beer is withdrawn from the cylinder so that a liquid seal is always maintained. This seal prevents the passage of foam, sediment, gas, etc., from the supply keg to the dispensing pipe and by reason of the seating of the valve c^6 at about the time the keg is exhausted, the gas pressure within the keg is cut off from the dispensing pipe d automatically.

In all successful systems for dispensing beer or similar liquids, it is well known that gas, foam, etc., tend to accumulate at the highest point in the dispensing pipe which is usually very close to the discharge faucet, for a reason that will be apparent from a glance at the disposition of the automatic vent f shown in Fig. 1, the dispensing pipe d at this point being bent so as to lead the beer from the coil box through the wall thereof to the faucet e . In the present apparatus there is connected in the dispensing pipe d at this highest point, the device f by which the gas, foam, etc., are vented automatically from time to time so that only clean, liquid beer is withdrawn through the faucet e . This automatic vent takes care of all of the obnoxious substances in the dispensing pipe d and between the automatic cut-off and the faucet, while the automatic cut-off as previously explained, prevents the entrance into the dispensing pipe d of the great bulk of obnoxious substances which are usually drawn from the source of supply. The automatic vent, then, supplements the automatic cut-off so that apparatus is provided by which the discharge of clean, liquid beer is insured, without the especial attention of the attendant.

The improved apparatus as a whole having now been described, one embodiment of the improved automatic vent f will now be considered in detail, reference being had particularly to Figs. 2 and 3. This vent comprises generally a cylinder f' which is placed in communication with the dispensing pipe d through an inlet duct f^2 conveniently cast in an integral supporting head into which the cylinder f' is threaded, as at f^3 . From the cylinder f' the beer flows to the faucet e out through a discharge duct f^4 , also formed conveniently in the integral head with the inlet port f^2 . In the cylinder f' is slidably disposed a float g , the edge of

which is preferably scalloped, as at g' , to permit the free flow past it of gas, foam, etc. The float g carries loosely therein a valve stem h which is axially movable with respect to the float and carries on its ends yielding valves h' and h^2 adapted to seat respectively on a venting duct i and the inlet duct f^2 , according to whether the float g is raised by the presence of beer in the cylinder f' or falls in the cylinder by gravity when the supply of beer is cut off. The valve stem h preferably passes loosely through a central aperture formed in the float g and this aperture is provided at its ends with enlarged recesses to receive loosely the valves h' and h^2 at one extreme position of the float or the other, as will be understood. The primary purpose of providing the valve h^2 is to shut off the pipe d^2 from the atmosphere when all beer is withdrawn from the cylinder f' .

In the operation of the improved apparatus, beer is permitted to flow through the supply pipe b into the automatic cut-off c and the vent c' is kept open through the hand valve c^2 , until the obnoxious substances in the fresh supply have been fully vented and only liquid beer remains to pass into the dispensing pipe d , whereupon the vent is closed and the beer is permitted to flow through the automatic cut-off into the coil box. From the dispensing pipe d the beer flows through the inlet port f^2 into the cylinder f' , thereby raising the float g until the valve h' is seated on the venting duct i . Simultaneously with the withdrawal of beer through the faucet e , fresh beer flows into the cylinder f' and out through the discharge port f^4 , the cylinder f' constituting an effective trap and insuring the discharge of clean, liquid beer only. As the foam, gas, etc., accumulates in the usual manner, at the highest point of the dispensing pipe (which will be at the automatic venting device f) this gas and foam begin to fill the cylinder f' and accumulate above the liquid beer at the top of the cylinder. As soon as the pressure in the cylinder, due to the presence of this gas and foam, becomes sufficient, the float g will be forced downward and after a limited relative movement between the float and the valve h' , the latter will be unseated, thereby opening the venting duct i and permitting the automatic venting of the entrapped gas, foam, etc. As soon as the pressure is relieved by the venting of these obnoxious substances to a predetermined degree, the inflowing beer will raise the float g and finally seat the valve h' on the venting duct i . This automatic operation will be repeated from time to time, so that a trap of liquid beer will always be maintained in the cylinder f' and only clean, liquid beer will be dispensed. It should be noted that while it is desirable to include in the struc-

ture of the float *g*, the relatively movable valve stem *h*, the action of the venting device will be the same in principle where the valves *h'* and *h''* are carried directly by the float. The advantage of having the valve stem *h* as a relatively movable element resides in this, that upon each withdrawal of beer through the faucet *e* and from the cylinder *f'*, there is a tendency for the beer level in the cylinder to drop momentarily prior to the inflow of a fresh supply from the dispensing pipe *d*. If the valve *h'* were permitted to follow this slight lowering of the beer level upon each withdrawal, and leave its seat on the venting duct *i*, there would be a slight venting of gas each time the faucet *e* were operated, this venting being rather ineffectual and being accompanied by an undesirable spurt of foam through the vent and an unpleasant sound. By the illustrated construction, the float *g* follows the beer level as it is lowered upon each withdrawal of beer, but the valve *h'* maintains its seat during such withdrawal and is drawn from its seat only upon excessive movement of the float *g*, as when the pressure of gas and foam in the cylinder *f'* becomes great.

In addition to the provision of the novel automatic vent described and the realization of the many advantages flowing from its incorporation in beer dispensing apparatus, it is proposed, in accordance with the present invention, to supplement the action of the vent and guard against one possible objection to its use by the inclusion in the apparatus of the automatic cut-off *c*. It will be appreciated that were the vent *f* connected directly to the pipe *b*, it would function in some degree, in the manner intended, so long as there were a constant flow of beer from the source of supply. When, however, the supply of beer became exhausted, the gas under pressure in the keg would continue to flow through the pipe *b* into the venting chamber *f* and vent itself through the duct *i*, carrying with it all of the remaining foam, sediment, etc. within the system and discharging all this objectionable waste into the coil box. Again, were the automatic cut-off *c* not included, this venting of gas pressure after the emptying of the keg, would continue until the entire source of supply of gas, which is usually derived from an independent tank, became exhausted. This situation would be so objectionable that, without the provision of some such check as the automatic cut-off *c*, objection might be raised to the use of the automatic vent *f*. By using the automatic cut-off *c* all these dangers are overcome and the whole apparatus is made entirely automatic in its action in that the automatic cut-off closes the communication between the dispensing pipe *d* and the sup-

ply pipe *b* as soon as the beer in the keg is about exhausted. In this way, the dispensing pipe never receives any of the objectionable waste products from the keg and the gas pressure from the source of supply *b* is never wasted by being permitted to vent itself through the duct *i* when the beer is withdrawn. By employing the automatic cut-off and the automatic vent advantageous results are secured by their coöperation which could not be realized were the vent used alone.

As a precautionary measure the venting duct *i* has been shown as provided with a cock *i'* which remains open during normal operation of the apparatus but which should be closed by the attendant in case of the failure of the automatic cut-off *c*, so as to prevent a continual venting of the pressure in the system. This cock *i'* will find usefulness under other conditions which will appear to those skilled in the art.

As suggested before, changes in the details of construction of the parts employed in the improved apparatus and rearrangements thereof may be made without departing from the spirit of the invention, provided such changes and rearrangements effect the stated objects and are such as to fall within the scope of the appended claims.

I claim as my invention:

1. Beer dispensing apparatus comprising a source of supply of beer, a dispensing pipe communicating therewith, an automatic cut-off controlled by the beer from the source of supply between the source of supply and the dispensing pipe to prevent automatically the flow of gas, foam and similar obnoxious substances from the source of supply to the dispensing pipe, a faucet to permit the withdrawal of beer from the dispensing pipe and an automatic vent controlled by the beer in the dispensing pipe and connected in the dispensing pipe between the automatic cut-off and the faucet and at the highest point in the pipe to vent gas, foam, etc., from the dispensing pipe.

2. Beer dispensing apparatus comprising a source of supply of beer, a dispensing pipe communicating therewith, an automatic cut-off controlled by the beer from the source of supply and a vent between the source of supply and the dispensing pipe to prevent automatically the flow of gas, foam and similar obnoxious substances from the source of supply to the dispensing pipe, a faucet to permit the withdrawal of beer from the dispensing pipe, and an automatic vent controlled by the beer in the dispensing pipe and connected in the dispensing pipe between the automatic cut-off and the faucet and through which the beer flows, said vent serving to discharge all accumulations of gas, foam, etc.

3. In combination with a dispensing pipe for beer and a faucet for withdrawing the beer therefrom, an automatic vent connected in the dispensing pipe at the highest point thereof, comprising a float chamber through which the beer flows, a venting duct for gas, foam, etc., carried by the chamber, a float slidably disposed in the chamber, and a valve to control the venting duct loosely carried and actuated by the float and movable to a limited extent in each direction with respect to the float.

4. In combination with a dispensing pipe for beer and a faucet for permitting the withdrawal of beer therefrom, an automatic vent for gas, foam, etc., connected in the pipe at the highest point thereof and comprising a cylinder in one head of which

is formed an inlet communicating with the dispensing pipe and an outlet port communicating with the faucet and in the other head of which is formed a venting duct, a cock whereby the venting duct may be controlled manually, a float formed as a piston slidably disposed in the cylinder and having its edge scalloped, valves to control the venting duct and the inlet port respectively, and a single valve stem on the ends of which said valves are carried, said stem passing loosely through the center of the piston float and being movable axially with respect to the float for a limited distance.

This specification signed this 5th day of May, A. D. 1915.

FRANK SCHNEIBLE.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."