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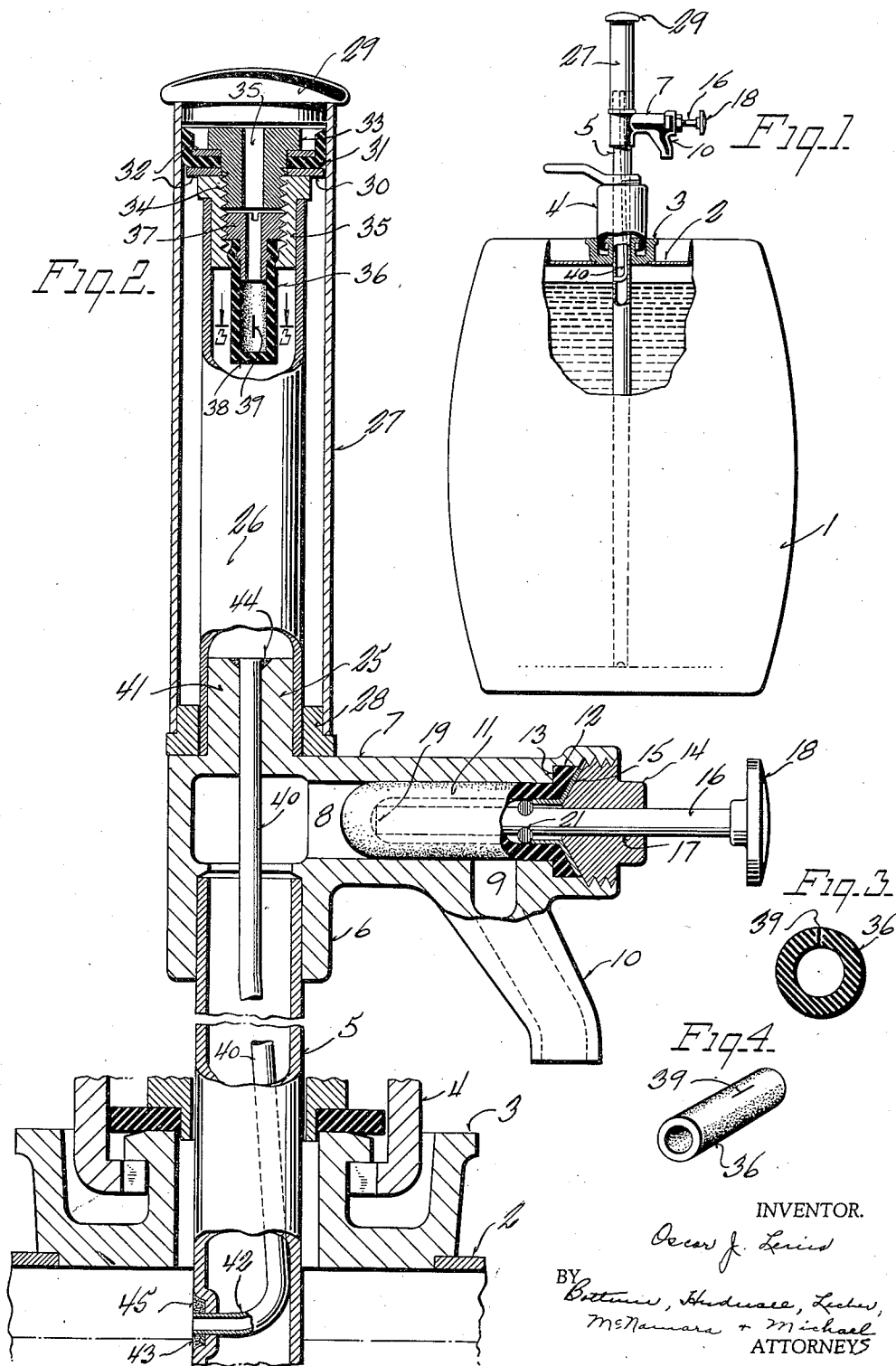
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2,061,240

BEER PUMP

Filed Jan. 12, 1934

2 Sheets-Sheet 1



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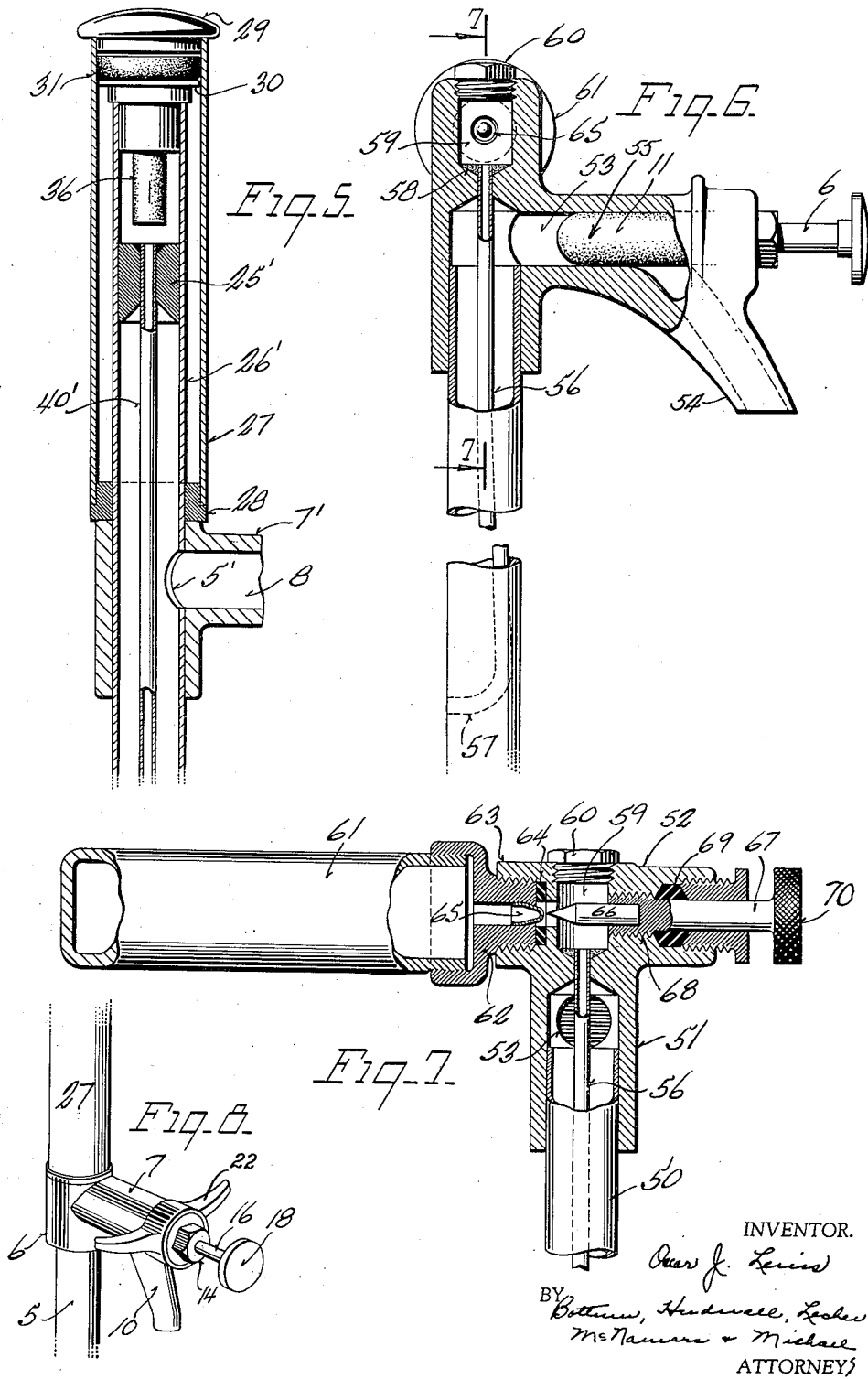
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UNITED STATES PATENT OFFICE

2,061,240

BEER PUMP

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7 Claims. (Cl. 225—16)

This invention relates to an improvement in beer dispensers or pumps of the type designed for use by the consumers in drawing or dispensing beer or similar beverages from kegs, barrels or similar containers.

The invention lends itself to embodiment in a structure employing either a hand pump or a cartridge or small drum of carbon dioxide, for placing a head of pressure on the beverage.

One of the objects of the invention is to improve, simplify and compact the construction of a device of this character so as to render its production easy and economical with the consequence that the pump may be sold at a reasonable and popular price.

Another important object of the invention is to provide a pump or dispenser having the advantages mentioned and which facilitates the drawing of the beer and tends to keep it in better condition than prior pumps of similar character.

Another object is to provide a device of this character which is of light weight, attractive in appearance, easily handled and operated and also easy and convenient to apply to or remove from a keg or barrel.

Other objects and advantages reside in certain novel features of the construction, arrangement and combination of parts which will be hereinafter more fully described and particularly pointed out in the appended claims, reference being had to the accompanying drawings forming a part of this specification, and in which:

Figure 1 is a view in side elevation showing one type of beer pump in which the present invention may be embodied, parts being broken away and shown in section for the sake of illustration;

Figure 2 is a view partly in side elevation and partly in transverse vertical section further illustrating the device shown in Figure 1;

Figure 3 is a sectional view taken on line 3—3 of Figure 2;

Figure 4 is a detail perspective view of the valve shown in Figure 3;

Figure 5 is a view partly in side elevation and partly in transverse vertical section illustrating a slight modification of the pump structure;

Figure 6 is a fragmentary view in side elevation and partly in transverse vertical section illustrating another embodiment of the invention;

Figure 7 is a view partly in elevation and partly in vertical section, the section being taken on line 7—7 of Figure 6; and

Figure 8 is a fragmentary perspective view showing the finger pieces provided on the valve casing to facilitate operation of the valve.

Referring to the drawings, and more particularly to Figures 1 and 2, the numeral 1 designates a keg or barrel of beer. The upper head 2 of the barrel is equipped with the usual bung bushing or tap fitting 3 with which any conventional or known tap 4 may interlock to secure in position a tap tube or draft tube 5, the tap, in addition to securing the tube 5 in place, performing its usual function of providing the seals between the bung bushing and the tap and the tap tube.

In the form of the invention shown in Figure 2, the upper end of the tap tube 5 is connected to the inlet nipple 6 of a valve casing 7. A passage 8 is provided in the casing 7 and extends from the inlet nipple 6 to an outlet 9 which discharges through a faucet or nozzle structure 10. A rubber valve thimble 11 is disposed in the passage 8 and is so compressed as to block or seal this passage under the influence of its inherent elasticity. One end of the nipple 11 is flanged as at 12 and such flange seats against an abutment or seat 13 provided on the casing. A retaining nut 14 and washer 15 secure the nipple in position.

A push rod or valve rod 16 is slidably fitted in an opening 17 provided therefor in the retaining nut 14. On the outer end of this rod 16 a knob 18 is provided. The inner end 19 of the rod 16 engages the closed end of the thimble and when the push rod 16 is pressed inwardly serves to stretch the thimble with the result that its periphery is disengaged from the wall of the passage 8 to allow liquid or fluid to flow from the tube 5 through the passage 8 to the outlet 9 and thence out through the faucet 10. As soon as pressure on the knob 18 is released, the elasticity of the valve thimble 11 returns it into sealing engagement with the wall of the passage-way and re-positions the valve rod thereby shutting off further flow. Portions 21 of the rod may be flattened or slabbed down to limit the extent to which the push rod 16 may be moved outwardly through the nut 14.

As shown to advantage in Figure 8, the valve casing 7 is preferably provided with finger pieces 22 which extend outwardly or laterally from the opposite sides thereof. They may be readily grasped with the finger while the knob 18 is pressed in with the thumb. Such manner of operating the valves precludes the possibility of the dis-

penser or operator accidentally turning the tap and consequently spilling the beer.

On the top of the casing 7 a projection or boss 25 may be integrally formed and extends into and is secured to the lower end of an inner pump tube 26. An outer pump tube 27 is mounted to slide up and down along the inner pump tube and for this purpose has a guide ring 28 at its lower end slidably fitting on the inner pump tube and is provided with an operating cap or knob 29 at its upper end which may be conveniently grasped when the outer pump tube is to be reciprocated. The piston of the pump is stationary, being designated generally at 30, and being supported by the upper end of the inner pump tube 26.

As illustrated, the piston 30 comprises a cupped leather washer 31, the inner peripheral portion of which is clamped between metallic washers 32 by means of a clamp screw 33 which is inter-threaded as at 34 with a valve housing 35. This valve housing 35 is a press fit in the upper end of the inner pump tube 26 or may be secured in such position in any desired way. The clamp screw 33 has an axial opening 35 therethrough. The valve employed is designated at 36 and, as shown, consists of a rubber cylinder having one end open and secured to the valve casing 35 by means of a valve insert 37 threaded to the interior of the valve casing and clamping the upper end of the valve cylinder 36 thereto. The lower end of the valve cylinder 36 is closed as indicated at 38. A slot or slit 39 is provided in the body of the cylinder 36 and extends longitudinally thereof.

With this construction, when the knob 29 is grasped and pulled upwardly the pump tube 27 is carried with it. The space above the piston 30 and defined by this piston, the knob 29 and the portion of the pump tube 27 above the piston then become larger. Due to the rarefaction occurring in this space, air will flow past the guide ring 28 up through the space between the tubes 26 and 27, past the upwardly facing cupped leather washer 31 of the piston and into the space above the piston and defined thereby and by the knob 29 and the portion of the valve tube 27 above the piston. The tendency which the outer cylinder 27 and its knob or head 29 have to draw air into the space therein above the piston 30 will not draw in through the slit 39, the action being such as to tend to close this slit. However, when the outer cylinder 27 and its head 29 are pushed downwardly the cupped washer 31 of the piston will be expanded into sealing engagement with the inner wall of the cylinder 27 and the entrapped air will be forced through the opening 25 of the clamping screw 23, through the opening of the valve insert and out through the slit 39 into the inner valve pump tube 26.

A gas or air supply or transfer pipe 40 is provided for transferring the air from this inner valve tube 26 into the interior of the keg at a point just above the beer line (when the keg is full). As shown, this pipe 40 extends through an opening 41 provided in the boss 25 and then passes down through the draft tube or tap tube 5, the pipe line 40 having its lower end bent as at 42 and extended through an opening 43 provided therefor in the draft tube. Solder or the like designated at 44 and 45 may be employed for securing the ends of the pipe 40 in position. With this arrangement the air pressure is built up over the surface of the beer and the disadvantage of causing air to flow through the beer is avoided.

The construction shown in Figure 5 is identical with that just described with the exception that

the inner pump tube designated at 26' is formed as a continuation of the tap tube and in lieu of having a boss on the valve casing serve as a support for one end of the air supply pipe here designated at 40', a sealing plug designated at 25' is provided in the inner pump tube 26'. The valve casing designated at 7' has its structure slightly varied in order to admit of the passage of the tapping rod therethrough. The tapping rod has an opening 5' which registers with the passage 8 of the valve casing. The operation of this modification is the same as that of the device first described and it will be understood that the casing 7' contains the same type of valve mechanism as that shown in Figure 2.

In the form of the invention shown in Figures 6 and 7 the hand pump is eliminated and is replaced by a cartridge or drum of carbon dioxide. As there illustrated, the tapping tube 50 has its upper end interconnected with the inlet nipple 51 of a casing 52. Communicating with the inlet nipple is a passage-way 53 which terminates in a faucet or discharge spout 54 and which has a valve 55 made up of a rubber thimble 41 and the cooperable parts previously described. In this form of the invention the gas transfer pipe is designated at 56 and, as before, extends through the tapping rod, its lower end 57 extending laterally through the rod and its upper end being soldered as at 58 to a ported partition provided in the casing 52. On one side of this partition the casing 52 is provided with a chamber 59 to which access may be had by removing the plug 60. A drum or cartridge 61 of carbon dioxide has its neck 62 threaded into a nipple 63 provided on the casing 52 adjacent the chamber 59, the neck seating against a gasket 64. For puncturing the sealing cap 65 of the drum or cartridge and metering the flow of gas, a needle valve 66 is provided and is carried by an operating stem or screw 67 threadedly interconnected with the casing 52 as indicated at 68 and suitably packed as indicated at 69. With this construction, the serrated or knurled knob 70 of the valve stem 67 may be turned to cause the pointed end of the valve 66 to puncture the cap 65 and then the valve 66 may be further adjusted to regulate the flow of gas pressure through the punctured cap and into the chamber 59 and subsequently through the pipe 56 into the space within the keg or barrel above the beer. The beer may be dispensed through the faucet 54 by simply pressing in on the valve rod or push rod 16 as before.

While I have shown and described several constructions in which my invention may be embodied, it is to be understood that these structures have been selected merely for the purpose of illustration or example and various changes in the size, shape and arrangement of the parts may be made without departing from the spirit of the invention or the scope of the subjoined claims.

The invention claimed is:

1. A device for dispensing beverages from a container comprising a tap tube adapted for insertion in said container, a valve casing carried by said tube and having a discharge spout adapted to communicate with the interior of the tube, a valve controlling communication between said tube and said spout, there being a section of tubing above the casing, a piston and valve carried by said section of tubing, a cylinder cooperable with said piston and reciprocable along said section of tubing for compressing air within the section of tubing, and means for transferring said compressed air from said section of tubing into the

interior of the container at a point above the level of the beverage therein whereby said cylinder and said valve may be conjointly employed to dispense beverages from said container.

5 2. A device for dispensing beverages from a container comprising a tap tube adapted for insertion in said container, a valve casing carried by said tube and having a discharge spout adapted to communicate with the interior of the tube, a
10 valve controlling communication between said tube and said spout, there being a section of tubing above the casing, a piston and valve carried by said section of tubing, a cylinder cooperable with
15 said piston and reciprocable along said section of tubing for compressing air within the section of tubing, and a transfer pipe smaller than and extending through the tap tube and having one end
20 communicating with said section of tubing and having its other end extending transversely through the tap tubing.

3. A device for dispensing a beverage from a container comprising a single tap tube adapted to be inserted in the container, a portion of said tube extending outside of said container, a valve
25 casing having a cylindrical portion in which said portion of said tap tube is fitted and secured whereby said casing is supported in spaced relation to said container, said valve casing extending radially outwardly from said tap tube and being
30 provided at its outer end with a discharge spout, there being a passage in said valve casing for establishing communication between said tap tube and said spout, a valve biased to closed position and operable to prevent flow of fluid from
35 the tap tube to the discharge spout, means movable radially inwardly of said tube carried by said casing and cooperable with the valve for opening the same, and means on said casing adapted for conjoint use with said first named
40 means to preclude torsional and bending strains being placed on said casing and tube upon operation of said valve.

4. A device for dispensing a beverage from a container comprising a tap tube adapted for insertion in said container, valve controlled means
45 cooperable with said tap tube for regulating the discharge of fluid therefrom, there being a section of tubing above said valve control means, a piston fixed to the upper end of said section and having an opening therethrough, a check valve associated with the piston to provide for flow of fluid
50 into said section and preclude exhaust, and a reciprocable cylinder cooperable with said piston

and movable back and forth with respect to the section to build up pressure in said section, there being means establishing communication between the interior of said section and the container.

5 5. A device of the character described comprising a tap tube having a lateral opening through the wall thereof intermediate its ends, a valve casing fitted on the tube and having a
10 passage communicating with said opening, said valve casing being also provided with a spout and in communication with said opening, a valve for controlling the flow through said passage, and means cooperable with the tube above the casing
15 for supplying gas under pressure.

6. A device for dispensing beverages from a container comprising a tap tube adapted for insertion in said container, a valve casing positioned outside of and out of contact with said
20 container, vertical and horizontal passages within said casing, said passages being intercommunicative, a discharge nozzle for said horizontal passage formed integral with said casing, a valve for said nozzle within said horizontal passage, said vertical passage fitting around and secured
25 to said tube to hold said tube and casing in related position, means on the outside of and carried by said casing for supplying gas under pressure, and a transfer pipe carried by and within said casing and tap tube, said pipe transferring gas from said means to the outside of
30 said tube at a point within said container.

7. A device for dispensing carbonated beverages comprising a tap tube, a valve casing associated with the tap tube having a vertical and
35 transverse passage, a portion at least of said vertical passage accommodating said tap tube, the inner end of said transverse passage communicating with the tap tube, a spout connected with the outer end of the transverse passage, a
40 valve in the transverse passage for controlling flow therefrom to the spout, means for supplying gas under pressure, a gas transfer pipe smaller than the tap tube and extending therethrough, the lower end of the gas transfer pipe extending
45 transversely through the tap tube, and means coacting with the upper end of the gas transfer pipe to shut off communication between said gas supply means and said tap tube while providing
50 for communication between said gas supply means and said gas transfer pipe.

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