(No Model.)

W. F. CLASS.

BEER FORCING APPARATUS.

No. 342,329. Patented May 25, 1886.

Fig. 1

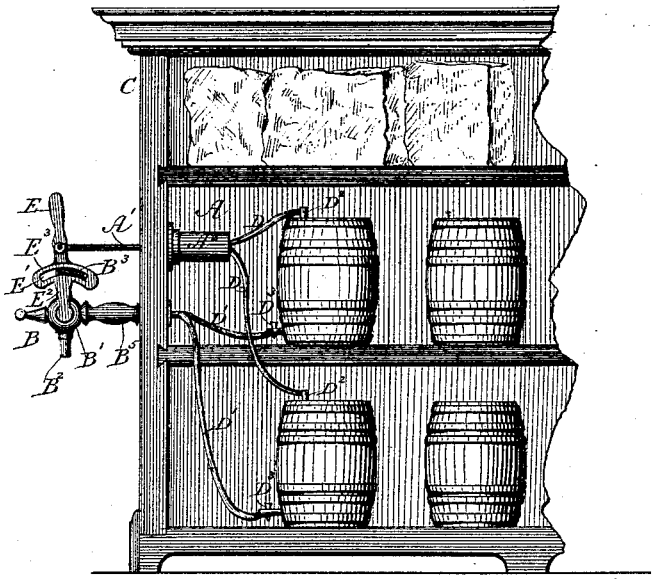


Fig. 2

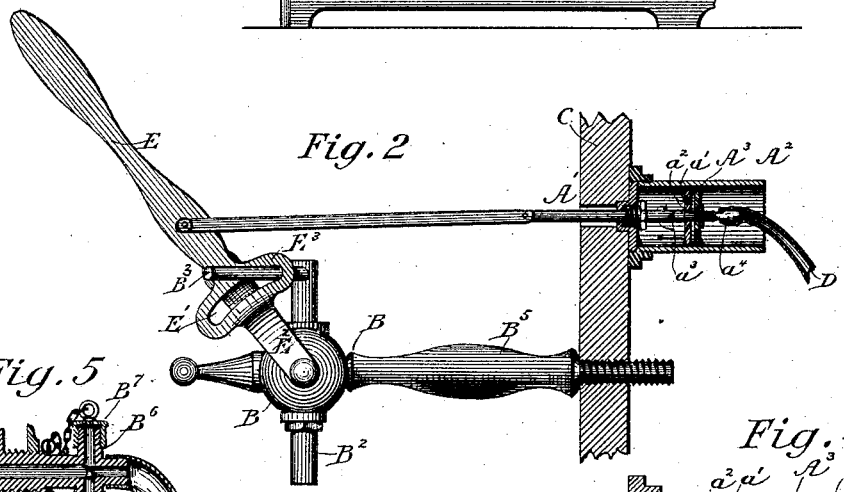


Fig. 5

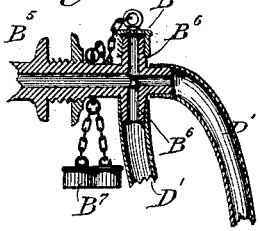


Fig. 3

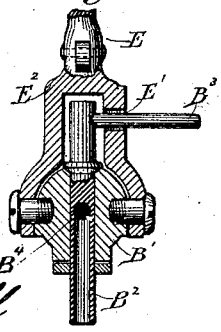
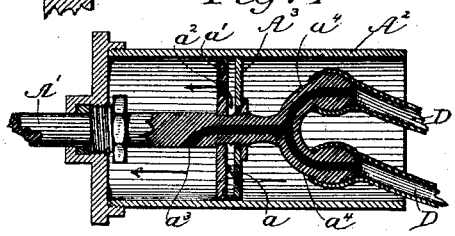


Fig. 4



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UNITED STATES PATENT OFFICE.

WILLIAM F. CLASS, OF CHICAGO, ILLINOIS, ASSIGNOR, BY MESNE ASSIGNMENTS, TO C. EBERLEIN, OF SAME PLACE.

BEER-FORCING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 342,329, dated May 25, 1886.

Application filed May 2, 1885. Serial No. 164,166. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM F. CLASS, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Beer-Forcing Apparatus, of which the following is a specification.

This invention relates to an improvement in beer-forcing apparatus wherein an air-pump operated by hand is provided to force air from time to time into a keg or cask of beer, and a drawing-off cock employed for drawing off the beer under pressure as needed.

The principal object of the invention is to provide a novel construction whereby a hand-lever employed to operate the air-pump may, when operated for such purpose, be also made to serve as a means for alternately opening and closing the valve of the drawing-off cock, or on the other hand be operated so as to actuate the air-pump without disturbing the drawing-off-cock valve, the conditions necessary to operate the valve as well as the air-pump, or to operate the air-pump without actuating the valve, being simply a variation in the extent of stroke on the part of the hand-lever, a long or full stroke thereof serving to actuate the valve as well as the piston of the air-pump, and a shorter stroke on the part of the lever serving to operate the air-pump piston without actuating the valve. Said object is attained by the devices hereinafter described and claimed, and illustrated in the annexed drawings, in which—

Figure 1 represents the interior of a chest or casing containing several beer-kegs, with a beer-forcing apparatus constructed in accordance with the principles of my invention arranged at the front side of the chest or casing, and connected with two of the kegs. Fig. 2 represents, on a somewhat larger scale, the drawing-off cock in elevation and the air-pump in longitudinal section, the drawing-off cock and the air-pump being in this instance each adapted to connect with a single keg, whereby the apparatus is susceptible of forcing air into and drawing beer off from but one keg at a time. Fig. 3 represents a central section through the drawing-off cock on a plane through and coincident with the axis of its valve-plug, the lower yoke-shaped or bifurcated end of the hand-lever for operating the air-pump and controlling the position of the valve-plug being also shown in section. Fig. 4 is a central longitudinal section through the air-pump cylinder and piston, with the piston adapted to connect with two tubes designed to connect with two separate kegs at one and the same time. Fig. 5 is a detail section through the inner end portion of the drawing-off cock, adapted to connect with several tubes.

A indicates an air-pump for forcing air into the keg or kegs of beer, and B denotes, as a whole, the drawing-off cock through which the beer under pressure may be drawn off. The air-pump and the drawing-off cock are herein shown arranged at the front of a chest or casing, C, which is conveniently made of a capacity to contain several kegs and a suitable quantity of ice for cooling the air within the chamber wherein the kegs are placed. The air-pump may be connected with one or more of these kegs by means of one or more flexible tubes, D, and the drawing-off cock may be connected with said keg or kegs through the medium of one or more flexible tubes, D′. The tube leading from the air-pump to a keg will be in practice connected with the keg, preferably at the top, by means of any suitable plug, D^2, containing a check-valve, which is opened by pressure from the air-pump and closed by pressure within the keg, and the tube D′, leading from the keg to the drawing-off cock, will be connected with the keg at the bottom by means of a suitable plug, as at D^3, provided with any ordinary or desirable form of valve or cock, if desired. The stem A′ of the air-pump piston is connected with and operated by a hand-lever, E, which is in turn pivoted to the shell B′ of the drawing-off cock, and the valve B^2 of the drawing-off cock is provided with a pin or projecting finger, B^3, which extends through a slot, E′, formed in the hand-lever, whereby the hand-lever, while being operated to actu-

ate the piston of the air-pump, may be vibrated to an extent sufficient to cause it to engage the pin or finger B^3 at either end of slot E′, so as to actuate the valve, or whereby the hand-lever may be operated to a more limited extent, so as to avoid striking and engaging the pin or finger of the valve. The hand lever is bifurcated, so as to form at one of its ends a yoke, E^2, which embraces and is pivoted at its sides to opposite sides of the shell which contains the valve B^2. One of the sides of this yoke is widened out, as at E^3, in order to provide material for the slot E′, which is formed transversely to the length of the lever and preferably made on a curve concentric to the pivotal axis about which the hand-lever swings.

The construction of valve herein employed consists of a hollow plug provided with a lateral inlet-port, B^4, connecting with an axial passage leading to the discharge end of the plug. This valve-plug is fitted to have a rotary oscillatory movement within the shell, and is arranged vertically therein, as a matter of preference, so as to bring its discharge end underneath. The valve-plug is also extended upwardly above the shell, so as to provide a stem or extension, to which the laterally-projecting finger B^3 is applied. The stem or upward extension of the valve-plug extends between the sides of the bifurcated end portion of the hand-lever, whereby the finger B^3 may extend through the slot E′. The slot E′ of said hand-lever is of such length, and the inlet-port of the valve-plug is so located with reference to the position of the pin or finger upon the valve-plug, that when the inlet-port is out of register with a passage formed through the stem B^5 of the shell, so as to close said passage, the hand-lever may be operated with a short stroke in order to actuate the air-pump without operating the valve-plug. The relative position of the finger to the lever to permit such action will be when the finger stands intermediate of the positions shown in Figs. 1 and 2, the finger in such case standing at about right angles to the plane in which the hand-lever operates, and being thereby midway of the two extreme positions reached by the lever in making its usual full stroke or vibration. While the finger is in such position the passage through the drawing-off cock is closed, and hence by operating the lever within the limit of the full extent of its stroke it will not bring the end walls of its slot against the finger on the valve-plug. The air-pump may be worked to force air into the keg without opening the drawing-off cock. On the other hand, however, by giving a longer swing or stroke to the lever the end walls of its slot will be alternately brought into engagement with the finger of the valve-plug, so as to oscillate the same and thereby alternately open and close the drawing-off cock, which may be arranged so that when air is forced into the keg by an impulse of the air-pump the lever will operate to throw the valve-plug into the position indicated in Fig. 2, and thus close the drawing-off cock, and when a reverse impulse is given to the air-pump, so as to take air into the latter, the lever will throw the finger back, so as to bring the valve-plug into position to open the passage through the drawing-off cock and permit the beer under pressure to be drawn off from the keg. It will also be seen that the hand-lever can be operated to close the valve-plug and bring it, if desired, into the position indicated in Fig. 2. By such means the valve of a drawing-off cock is readily controlled by a hand-lever employed for operating an apparatus for forcing air into the keg, and said lever permitted to be operated independently of the valve of the drawing-off cock, in order to force air into the keg without drawing off the beer, or, by simply extending the length of its stroke without changing the construction of any of the parts, air can be forced into and beer drawn off from the keg alternately. The cylinder A^2 of the air-pump is open at one end and closed at the other end, its closed end being herein shown as secured against the inner side of the casing C, under which desirable arrangement the piston-stem passes through a suitable stuffing-box at the closed end of the cylinder and extends out through an opening in the casing.

The piston-disk or piston proper, A^3, of the air-pump is provided with a valved inlet-port, *a*, through which air is admitted when the piston is moved toward the open end of the cylinder.

The valve herein shown for the piston consists of a disk, *a′*, provided with an aperture, a^2, and fitted to slide back and forth to a limited extent upon the piston-stem at a point just back of the disk A^3. When the piston is drawn back to compress the air within the cylinder, the disk *a′* closes against the disk A^3, thus closing the apertures of both disks; but when the piston is moved outwardly the inner loose disk, *a′*, will separate from the outer disk, and thereby open the apertures of both disks, in order to permit air to pass back of the piston. The piston is also provided with an outlet port or passage, a^3, which may be connected with one or more flexible tubes, D. For the purpose of making such connection, the outlet port or passage a^3 is formed through the piston-stem, which is extended beyond the piston-disk in order to provide one or more nipples, to which one or more tubes may be attached, the passage a^3 opening at its inner end at the side of the stem at a point back of the piston-disk, and at its outer end terminating at the end of each one of the nipples.

In Fig. 2 the stem of the piston is extended beyond the piston-disk, and adapted to provide a single nipple, a^4, to which but one tube D is attached. In Fig. 4, however, this outer end of the stem is adapted to form two nipples, a^4 a^4, to each one of which one of the tubes is attached, the port or passage a^3 being

in such case arranged to branch at a point suitable for forming a continuation thereof through each nipple. Where but one keg is to be attached at one time, the stem B^5 of the drawing-off cock may be made as in Fig. 2; but where it is designed to connect the apparatus with two or more kegs, the inner end of said stem can be provided with two or more nipples—as, for example, as in Fig. 5, in which the said stem is shown provided with three nipples, B^6, with detachable caps B^7, for closing any of the nipples not in use.

The advantage gained by duplicating the tubes D and D′ is, the air-pump and drawing-off cock may be at all times connected with a keg containing a supply of beer, it being seen that when one keg becomes empty the tubes connected therewith may be disconnected and applied to a fresh keg, the apparatus being meanwhile still connected with a keg containing a supply of beer.

What I claim is--

1. The combination, in a beer-forcing apparatus, of an air-pump for forcing air into a keg and a drawing-off cock for drawing off the beer under pressure, with a slotted hand-lever connected with the air-pump piston and a finger projecting from the valve of the drawing-off cock through the slot of the hand-lever, for the purposes and substantially in the manner described.

2. In a beer-forcing apparatus, the drawing-off cock provided with an oscillatory valve-plug having a laterally-extending finger, in combination with an air-pump and a hand-lever connected with the piston of the air-pump, and having a slot, E′, through which the finger of the oscillatory valve-plug extends, substantially in the manner and for the purposes described.

3. In a beer-forcing apparatus, the drawing-off cock provided with an oscillatory valve-plug, B^2, having at one end a laterally-projecting finger, in combination with an air-pump suitable for forcing air into the keg and a lever, E, having a connection with the piston of the air-pump and constructed with a bifurcated end, which is pivoted to the shell containing the oscillatory valve-plug and provided with a slot, E′, through which the finger of said valve-plug extends, substantially as and for the purpose described.

4. In a beer-forcing apparatus, the air-pump A, secured to the wall of a casing, in combination with the drawing-off cock B, likewise secured to said casing, a lever, E, connected with the air-pump piston, and a finger, B^3, extending from the drawing-off-cock valve through a slot, E′, of said lever, as set forth.

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