(No Model.)

W. T. FOX.

AIR PRESSURE APPARATUS FOR FORCING BEER, &c.

No. 270,944. Patented Jan. 23, 1883.

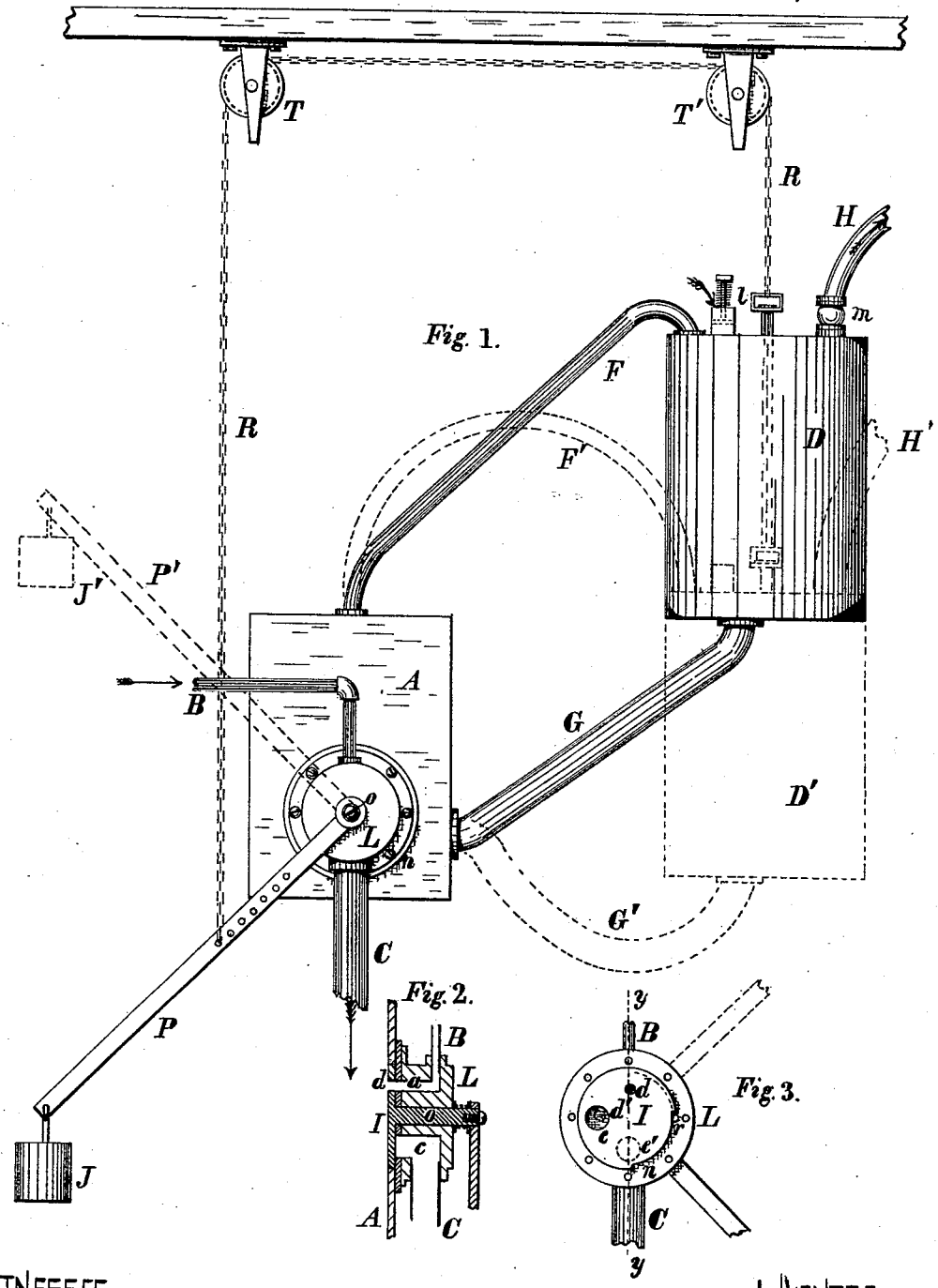


Fig. 1.

Fig. 2.

Fig. 3.

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UNITED STATES PATENT OFFICE.

WILLIAM T. FOX, OF ROCHESTER, NEW YORK, ASSIGNOR TO HIMSELF AND SAMUEL SLOAN, OF SAME PLACE.

AIR-PRESSURE APPARATUS FOR FORCING BEER, &c.

SPECIFICATION forming part of Letters Patent No. 270,944, dated January 23, 1883.

Application filed May 15, 1882. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM T. FOX, of Rochester, in the county of Monroe and State of New York, have invented certain Improvements in Air-Pressure Apparatus for Forcing Beer, Ale, &c., of which the following is a specification, reference being had to the accompanying drawings.

My invention relates to certain improvements in apparatus for forcing air for raising beer, ale, or other liquids, which improvements are hereinafter fully described and specified.

My improved air-pressure apparatus for forcing beer, ale, and other liquids is represented in the accompanying drawings, in which—

Figure 1 is a side elevation. Fig. 2 is a section through the valve on the line *y y*, Fig. 3. Fig. 3 represents the interior face of the valve.

In the accompanying drawings, A represents the water-chamber; B, the water-inlet; C, the outlet-pipe; D, the movable air-reservoir; F G, flexible pipes; H, the air-discharge tube; I, the valve, and J the weight or counterpoise.

The water-chamber A is constructed of metal, of any preferred size or shape, and of sufficient strength to withstand the pressure to which it is subjected. To one of the sides of the water-chamber is secured the valve-casing L, with which the inlet and outlet pipes B and C connect. The inlet-passage *a* in the casing communicates with the inlet-pipe B, while the outlet-passage *c* delivers the water to the pipe C on its discharge from the chamber.

The valve I consists of a circular plate, through which pass the inlet and outlet ports *d* and *e*. Between the valve and valve-casing is interposed the packing *n*, which may be of leather or other suitable material, and which, extending outward as far as the edge of the flange on the valve-casing L, serves also to pack the joint between the side of the chamber and the valve-casing. The position of the valve I when the inlet-port is open is represented in the full lines in Fig. 3, and when the discharge-port is open in dotted lines. The valve I is provided with the stem *o*, which passes through the center of the valve-casing, and has the lever P attached to its outer end. The stud *r*, Fig. 3, inserted in the casing, serves to limit the motion of the valve, a portion of the edge of the valve being cut away to permit its movement.

The water-chamber A is secured to any suitable support—a bench or counter—or it may be fastened against a wall. The upper part of the water-chamber communicates with the upper end of the air-reservoir by the flexible pipe F, and the lower part of the water-chamber communicates with the lower end of the air-reservoir by the flexible pipe G. The compressed air is delivered to the beer-kegs through the flexible pipe H, which connects with the upper end of the air-reservoir.

The air-reservoir is suspended by the chain R, which passes over the pulleys T T′, attached to the ceiling or other suitable support, and is connected with the lever P. The counterpoise J is fastened to the outer end of the lever P.

The operation of my improved air-pressure apparatus is as follows: Supposing the parts to be in the relative positions represented by the full lines in Fig. 1, the inlet-passage *a* being open and the outlet-passage *c* closed, the water under pressure from service-pipes or other suitable source of supply entering the chamber A will expel the air therefrom through the flexible pipe F into the air-reservoir D, whence it is forced by the tube H into the vessels holding beer or other liquids for the purpose of raising them to the faucets for consumption or delivery to customers. After the water has filled the chamber A it commences to enter the reservoir D through the tube G, and as soon as the weight of the water in D overbalances the counterpoise J the reservoir D moves downward to the position indicated by the dotted lines D′ in Fig. 1, thereby, through the chain R, raising the lever P and turning the valve I so as to cut off the entrance of water into the chamber and to open the discharge-passage *c*. The water then flows out of the reservoir and chamber, while air enters through the inlet-valve *l*. As soon as the reservoir D becomes empty the weight J will raise it to its original position and the operation will be repeated. The outlet-pipe H is provided with a check-valve, *m*.

I do not intend to confine myself to the use

of the chain R, as described, as it is evident that a flexible wire or other cord may be employed to transmit the motion of the air-reservoir to the valve I.

It is obvious that, if the water-chamber A be made small and the air-reservoir arranged so that when in its lowest position its bottom is above the valve, the flexible pipe F may be dispensed with.

It is also obvious that jointed or sliding pipes may be substituted for the flexible tubes herein shown.

Instead of the lever P, the cord R may be connected to the valve by a wheel-segment attached to the stem *o*, and the weight J may be hung from a cord passing over the segment.

I prefer to construct the apparatus with the water-chamber very much smaller than the air-reservoir.

I claim—

1. The combination, with the water-chamber A and vertically-movable air-reservoir D, of flexible pipes F and G, valve I, having inlet and outlet passages, counterbalanced lever P, and chain or cord R, arranged to transmit the motion of the reservoir to the valve, substantially as and for the purposes set forth.

2. The combination of the water-chamber A, valve-casing L, provided with passages *a* and *c*, valve I, and interposed packing extending between the water chamber and the valve-casing, substantially as and for the purposes set forth.

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Witnesses:
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