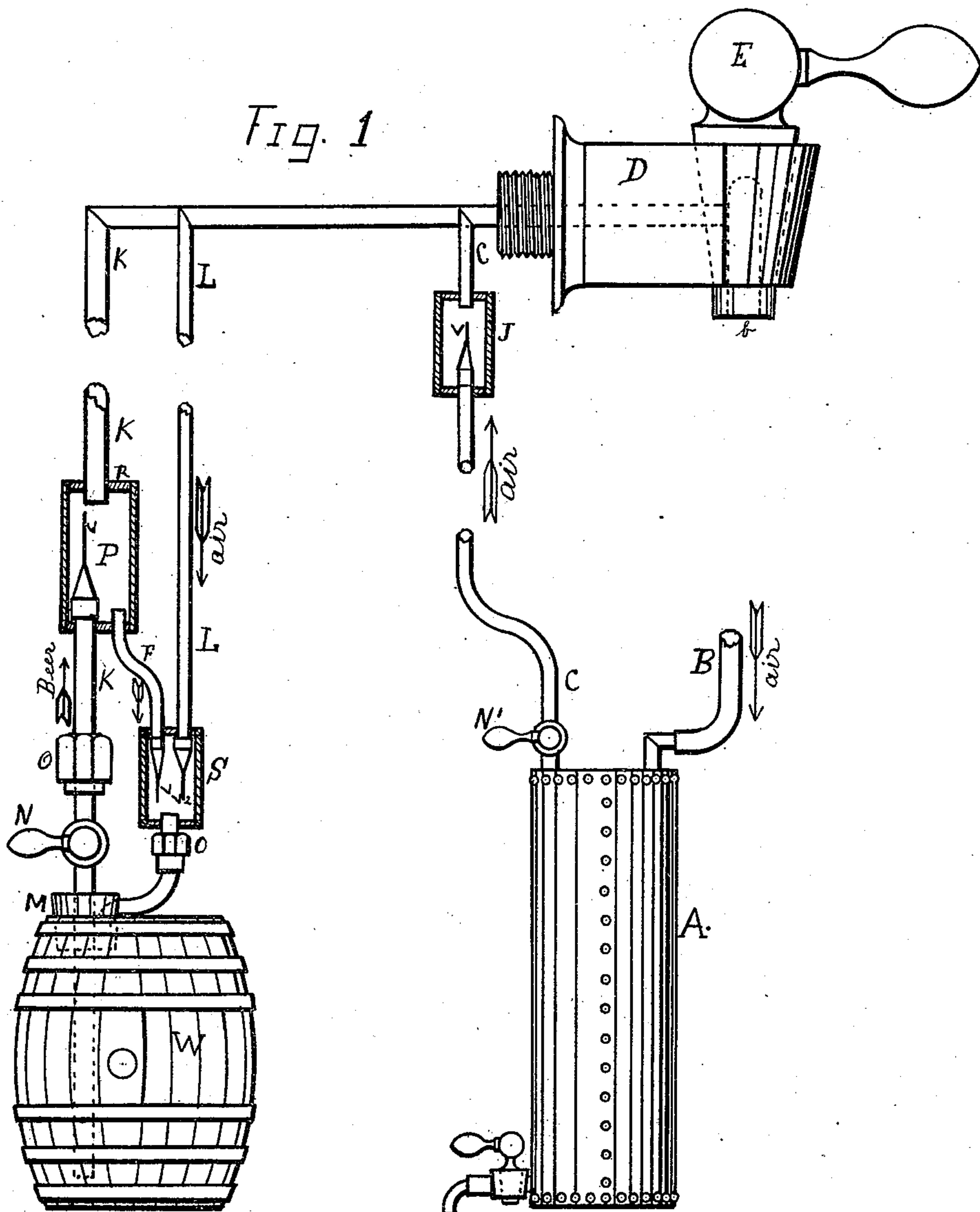


J. NATTER.

APPARATUS FOR FORCING BEER.

No. 355,464.

Patented Jan. 4, 1887.



WITNESSES.

Oliver M. Fagley
Edward R. Shinn

INVENTOR.

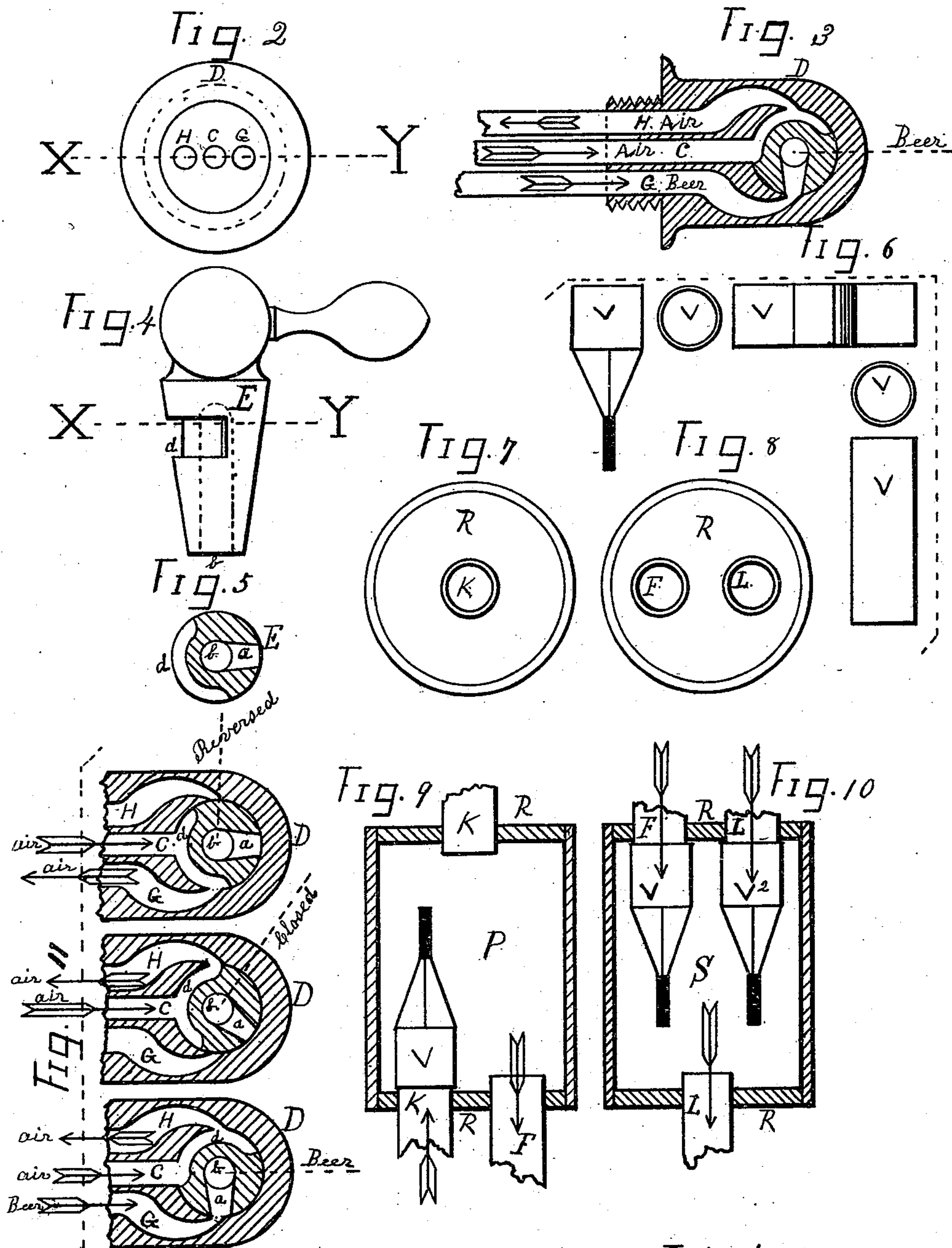
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UNITED STATES PATENT OFFICE.

JACOB NATTER, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO SAMUEL FAITH, OF SAME PLACE.

APPARATUS FOR FORCING BEER.

SPECIFICATION forming part of Letters Patent No. 355,464, dated January 4, 1887.

Application filed November 2, 1885. Serial No. 181,700. (No model.)

To all whom it may concern:

Be it known that I, JACOB NATTER, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented a new and useful Improvement in Apparatus for Forcing Beer, of which the following is a specification.

My invention relates to beer-forcing apparatus; and the object of my improvement is to force beer from a keg or barrel by air, and, at will, force the beer from the pipes back to the keg or barrel, so that a keg or barrel once tapped will have air on the beer at all times until all the beer is drawn from the keg or barrel.

The first part of my invention relates to a reversing faucet. The second part relates to an improved check-valve; and the first part of the improvement consists in the combination, with an air-pump and an air-accumulator, of pipes, check-valves, and a two-way or reversing faucet.

The second part of my improvement consists in the combination of pipes, valve-chambers, and a rubber tubing, said tubing being constructed and applied to the pipes in a peculiar manner to form a check-valve, all as will be hereinafter described, referring to the annexed drawings, making a part of this specification, in which—

Figure 1 is a plan of the entire machine excepting the air-pump. The valve-chambers are shown in section. Fig. 2 is an end view of the faucet. Fig. 3 is a cross-section of the faucet on the line X Y, Fig. 2. Fig. 4 is a view of the faucet stop-plug. Fig. 5 is a cross-section of the stop-plug, taken on the line X Y, Fig. 4. Fig. 6 shows several views of the rubber check-valve. Figs. 7 and 8 are top views of the check-valve chambers. Figs. 9 and 10 are vertical sectional views of the valve-chambers. Fig. 11 shows three views in section of the faucet, taken on the line X Y, Fig. 2.

Similar letters refer to similar parts throughout the several views.

The construction and arrangement of my improved beer-forcing apparatus are as follows:

A represents the air-accumulator, which is made of sheet-iron, galvanized by preference. This air-accumulator is fed or supplied through the pipe B from an automatic-operating hy-

draulic air compressor or pump. Such a pump is shown and described in Patent No. 262,157, dated August 1, 1882.

The air compressor and accumulator may be located at any convenient place. From the accumulator the air is carried by the pipe C to the faucet D, which faucet is supposed to be connected to an ice-box or some other suitable place. The faucet D is constructed with three passages, C, G, and H, to the stop-plug E. (See Figs. 2, 3, and 11.)

The air-pipe C is connected to the center passage, C. The pipes K and L are connected to passages G and H. The stop-plug E is constructed with an opening, *a*. This opening communicates with a vertical opening, *b*. (Shown by dotted lines in Fig. 4.) The stop-plug E is also constructed with a recess, *d*. The passages G and H of the faucet D are connected by pipes K and L to the keg W, which keg may be located at any convenient place. The pipe K is constructed to enter through a hollow plug, M, and continues down to nearly the bottom of the keg. To the bottom end of the pipe K is usually fitted a strainer. The pipe L is connected to the hollow plug M, and made to communicate with the inside top of keg W. The other end of pipe L is connected to faucet D at the passage H.

Connected to each of the pipes C, K, and L are valve-chambers J, S, and P. These chambers may be made of iron tubing. The heads R may be made of cast-iron and screwed in the ends of the tubes forming the chambers. The pipes C, K, and L, connecting the chambers, may also be screwed into the heads R. One part of the pipes is extended into the chambers farther than the other. On this extension is cut a screw-thread, and on this is screwed a vulcanized rubber tube, V. This rubber tube is prepared in a manner that it will have a tendency to flatten and close. One end of this tube V is screwed on the pipe extending into the chamber, and may be tied by a linen thread, so as to make it air-tight on the pipe. The other end of the tube will flatten and close, as shown in Figs. 1, 6, 9, and 10, it being understood that these gum tube check-valves offer no resistance to the passage of air or liquids in one direction, but in the opposite direction the force of air or liquids will

press tight together the flat ends of the tube, so as to make them air and water tight one way. The pipe C is provided with one of these check-valves, to prevent beer from getting in the accumulator A in case the pressure in the accumulator gets below that in the keg.

The pipes K and L are connected by a union-joint, O, Fig. 1, and the pipes C and K are provided with stop-cocks N and N'.

To the upper end of pipe K may be arranged a "coil," which may be located in an ice-box, to keep the beer cool. In place of an automatic air-pump a hand-pump may be used.

The operation of my improved beer-forcing apparatus is as follows: The accumulator A is supplied with air and kept at a uniform pressure, which pressure will be according to the height and distance the beer is to be forced.

The pipes K and L being connected to the keg, as shown in Fig. 1, the stop-cocks N and N' are then opened. The handle of the plug E of faucet D is turned, as shown in Fig. 1, and also indicated by dotted lines in Figs. 3 and 11, marked "Beer." This position of the stop-

plug E causes the air-pipe C to communicate, through recess *d* in plug E, with air-pipe L, and it carries the air down through the plug M into and on top of the beer in keg W, and the air-pressure will force the beer up through pipe K and passage G of the faucet D and out of the openings *a* and *b* of the stop-plug E. If the handle of the faucet be turned to the right, as indicated by dotted lines, marked "Closed," the flow of beer will stop, but the

passages C and H will be opened to and communicate, so as to allow the air-pressure to continue on, the beer in the keg. If the handle be turned to the extreme right—to the dotted lines marked "Reversed"—that will

close the passage H and connect the passages C and G with the air-accumulator, and the air-pressure will drive back the beer in pipe K to the check-valve chamber P, when the gum valve in that chamber will be closed by the back pressure. This will prevent the beer from being forced to the bottom of the keg, and it will be forced through the pipe F into chamber S and through the lower part of pipe L into and upon the top of the beer in the keg W. The valve V² in chamber S prevents the beer from rising in pipe L. When the beer has been driven back into the keg or barrel, the air will fill the pipe K and lower part of pipe L, and the air-pressure will be kept on the top of the beer in the keg until it is desired to draw beer again, when the faucet is turned for "Beer," as before described.

Having thus described the construction and operation of my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination of air-accumulator A, pipe C, faucet D, having three passages, C, G, and H, stop-plug E, having openings *a b* and recess *d*, pipes K and L, with chambers P and S, and tubular valves V, as shown, described, and for the purpose specified.

2. The combination of a beer-vessel, a valve-chamber, an inlet and outlet pipe, with a tubular gum valve to prevent the return of air or liquids, and a separate pipe leading from the valve-chamber to the beer-vessel, as shown and described.

JACOB NATTER.

Witnesses:

JOHN SHINN,
JOHN BAILEY.