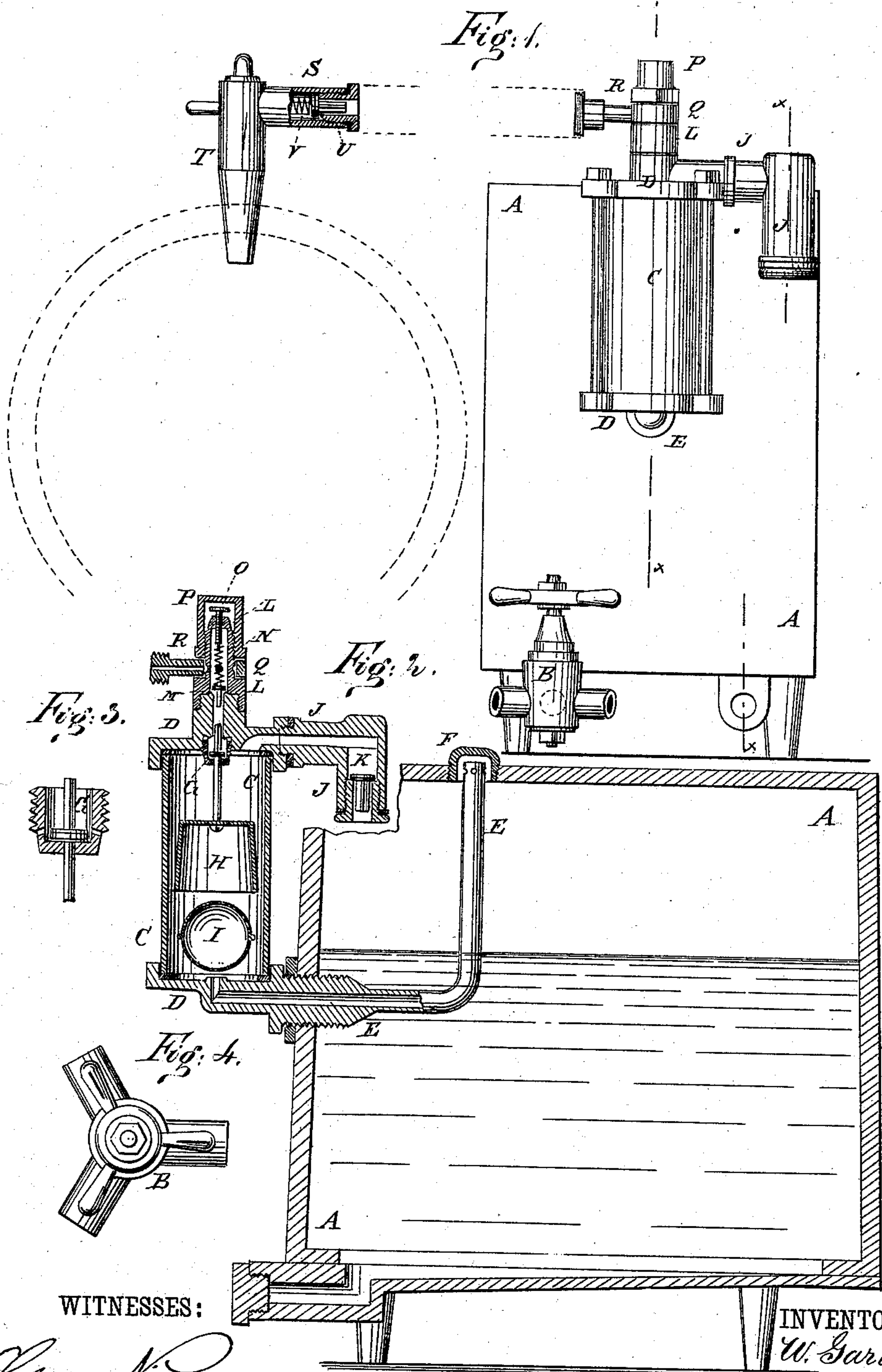


W. GARDNER.
Air-Compressor.

No. 221,802.

Patented Nov. 18, 1879.



WITNESSES:

Chas. Mearns
C. Sedgwick

INVENTOR:

W. Gardner

BY

Munn & Co
ATTORNEYS.

UNITED STATES PATENT OFFICE.

WILLIAM GARDNER, OF NEW YORK, N. Y.

IMPROVEMENT IN AIR-COMPRESSORS.

Specification forming part of Letters Patent No. **221,802**, dated November 18, 1879; application filed September 29, 1879.

To all whom it may concern:

Be it known that I, WILLIAM GARDNER, of the city, county, and State of New York, have invented a new and useful Improvement in Air-Compressors for keeping lager-beer, &c., fresh, of which the following is a specification.

Figure 1 is a front view of my apparatus, part being broken away to show the construction. Fig. 2 is a detail section of the same, taken through the broken line *x x x*, Fig. 1. Fig. 3 is a detail section of the float-valve, enlarged. Fig. 4 is a detail top view of the three-way cock.

The object of this invention is to furnish an improved apparatus for keeping lager-beer, ale, porter, cider, &c., fresh and lively from the time it is tapped until the contents of the cask are exhausted, and which shall be simple in construction, inexpensive in manufacture, not liable to get out of order, and will use water economically.

The invention consists in the combination of the indicator, the valve, the floats, either or both, the bent pipe, and the tank, with each other, for forcing air into a cask by water-pressure; in the combination of the air-inlet pipe and valve with the indicator, for admitting air as the water is withdrawn from the tank; in the combination of the pipe, the valve, the spring, and the adjusting-screw with the indicator for regulating the air-pressure; in the combination of the sleeve and the pipe with the vent and the indicator for applying the air-pressure to the cask; and in the combination of the three-way cock with the water-tank, with which the indicator and air-compressor are connected, as hereinafter fully described.

Similar letters of reference indicate corresponding parts.

A represents a tank, which may be made of any convenient size, and which should be made air and water tight. With an opening in the lower part of the tank A is connected an arm of a three-way cock, B, a second arm of which is designed to be connected with a water-supply pipe. The third arm serves as a faucet for drawing water from the tank A when it is desired to exhaust the apparatus and when water is required for use. With

this construction the passage from the supply-pipe to the tank is always left open when the apparatus is in use.

By turning the plug of the cock B into another position the passage to the supply-pipe will be closed, and water will flow from the tank. By turning the plug of the cock B into a third position the passage to the tank A will be closed, and water may be drawn directly from the supply-pipe.

Several holes may be formed in the tank A to receive the three-way cock B, so that the tank A may be adjusted as the fitting-up of the bar may require, and the cock B still be in a convenient position.

To one end of the tank A, or to a support attached to the said tank, is secured the indicator and air-compressor, which consists of a glass case or chamber, C, secured in a metal frame, D, and made air and water tight. From the lower end of the indicator C D a pipe, E, passes through a hole in the tank A, and is curved upward so that its end may enter a recess in the top of the tank A, or into the cavity of a screw-cap, F, screwed into a hole in the top of the said tank A, to bring the inlet-openings of the said pipe above the inner surface of the top of the tank, so that all the air may be forced out of the tank A before any water can enter the pipe E.

In the upper end of the indicator C D is formed an opening, in which is placed a valve, G, opening downward. To the stem of the valve G is attached a float, H, which is made in the shape of an inverted cup, so that as water enters the indicator C it may raise the float H and close the valve G, to prevent the possibility of any water passing through the valve G and finding its way into the beer. To make the valve G doubly secure, I use a second float, I, made in the form of a ball, of such a size that it cannot enter the cup H, but will rest against it and raise it, closing the said valve G as the water rises in the indicator C D. The indicator C, being made of glass, allows the position of the ball and cup I H to be seen, so that the barkeeper can see at a glance the condition of the apparatus, and can know when it may be necessary to draw off the water from the tank A.

With an opening in the upper end of the

indicator C D is connected the end of a bent pipe, J, to allow air to enter the said indicator to take the place of the water being withdrawn, and, by its pressure, to force the water in the indicator C D back through the pipe E into the tank A, and then fill the said tank with air. In the downwardly-projecting end of the pipe J is placed a valve, K, opening upward, to prevent the air from escaping through the said pipe J from the indicator C D, while allowing it to pass in freely.

Upon the upper end of the frame D is screwed a short pipe, L, closed at its upper end, and into the cavity of which opens the passage or opening in which the valve G is placed. Within the pipe L is placed a valve, M, which opens upward, and is held down to its seat by a spiral spring, N, the lower end of which rests upon the said valve M. The upper end of the spring N rests against the end of the screw O, which passes in through a screw-hole in the upper end of the pipe L, so that by adjusting the screw O the amount of air-pressure applied to the beer may be regulated as desired.

The upper end of the pipe L and the screw O are covered by a screw-cap, P, to prevent the said screw O from being tampered with. Upon the pipe L is placed a sleeve, Q, with which is connected, or upon it is formed, a short pipe, R. The part of the pipe L beneath the sleeve Q has a groove formed in it, from which a hole leads through the said pipe, so that the air may pass freely to the pipe R.

With the outer end of the pipe R is designed to be connected the end of a rubber hose, the other end of which is designed to be connected

with the end of the arm S of the vent-plug T, attached to the cask. In the arm S is placed a valve, U, opening inward, and which is held closed by a spiral spring, V. The valve U prevents any air that has entered the cask from returning, and also prevents any beer from being forced out through the vent, and thus entering the air-pipe.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination of the indicator C D, the valve G, the floats H I, either or both, the bent pipe E, and the tank A, with each other, for forcing air into a cask by water-pressure, substantially as herein shown and described.

2. The combination of the pipe J and valve K with the indicator C D, for admitting air as the water is withdrawn from the tank A, substantially as herein shown and described.

3. The combination of the pipe L, the valve M, the spring N, and the adjusting-screw O with the indicator C D, for regulating the air-pressure, substantially as herein shown and described.

4. The combination of the sleeve Q and the pipe R with the vent S T and the indicator C D, for applying the air-pressure to the cask, substantially as herein shown and described.

5. The combination of the three-way cock B with the water-tank A, with which the indicator C D is connected, substantially as herein shown and described.

WILLIAM GARDNER.

Witnesses:

JAMES T. GRAHAM,
C. SEDGWICK.