(No Model.)

# O. WEBER & F. ABEL.

## APPARATUS FOR FORCING BEER, &c.

No. 263,003. Patented Aug. 22, 1882.

*Fig. 1.*

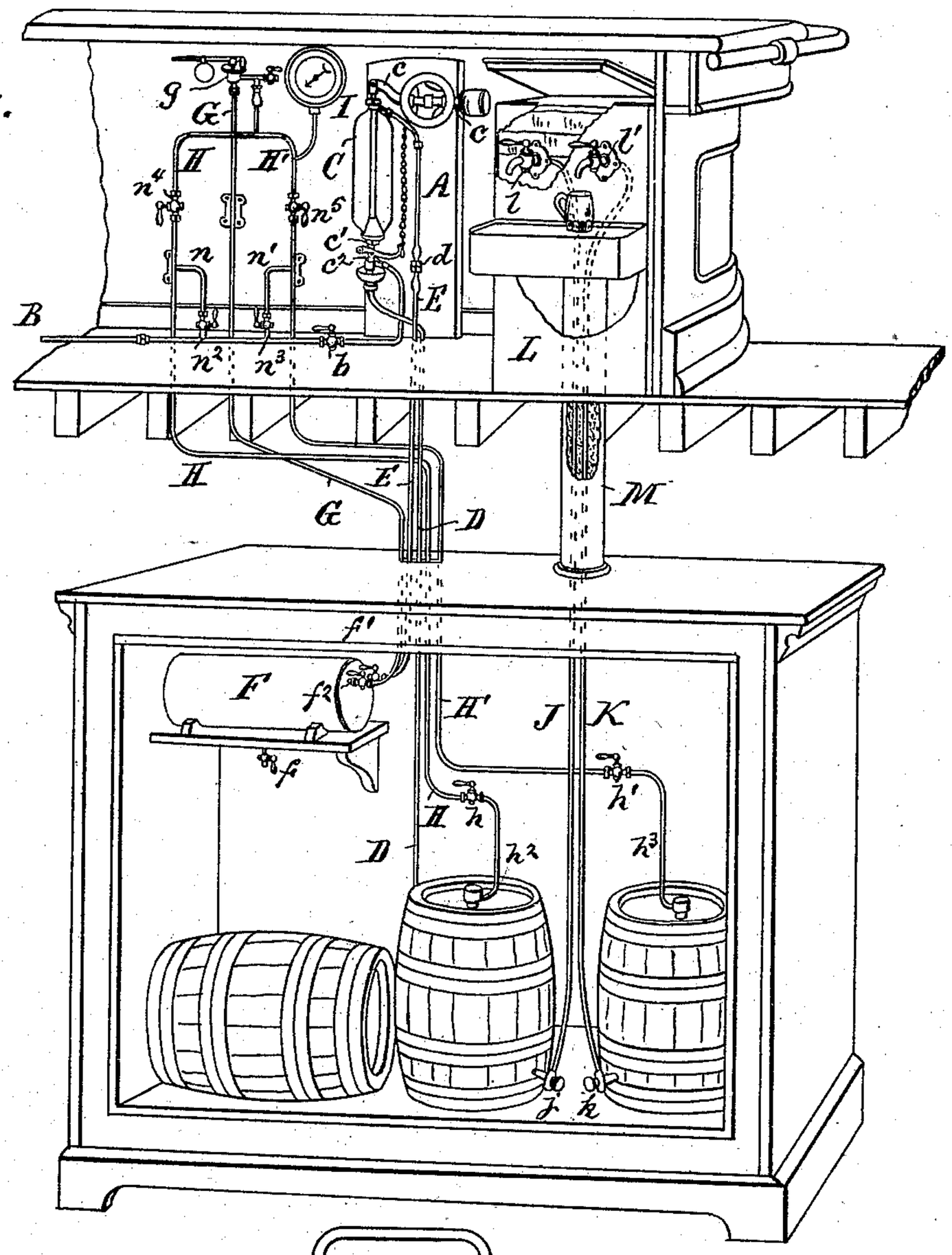
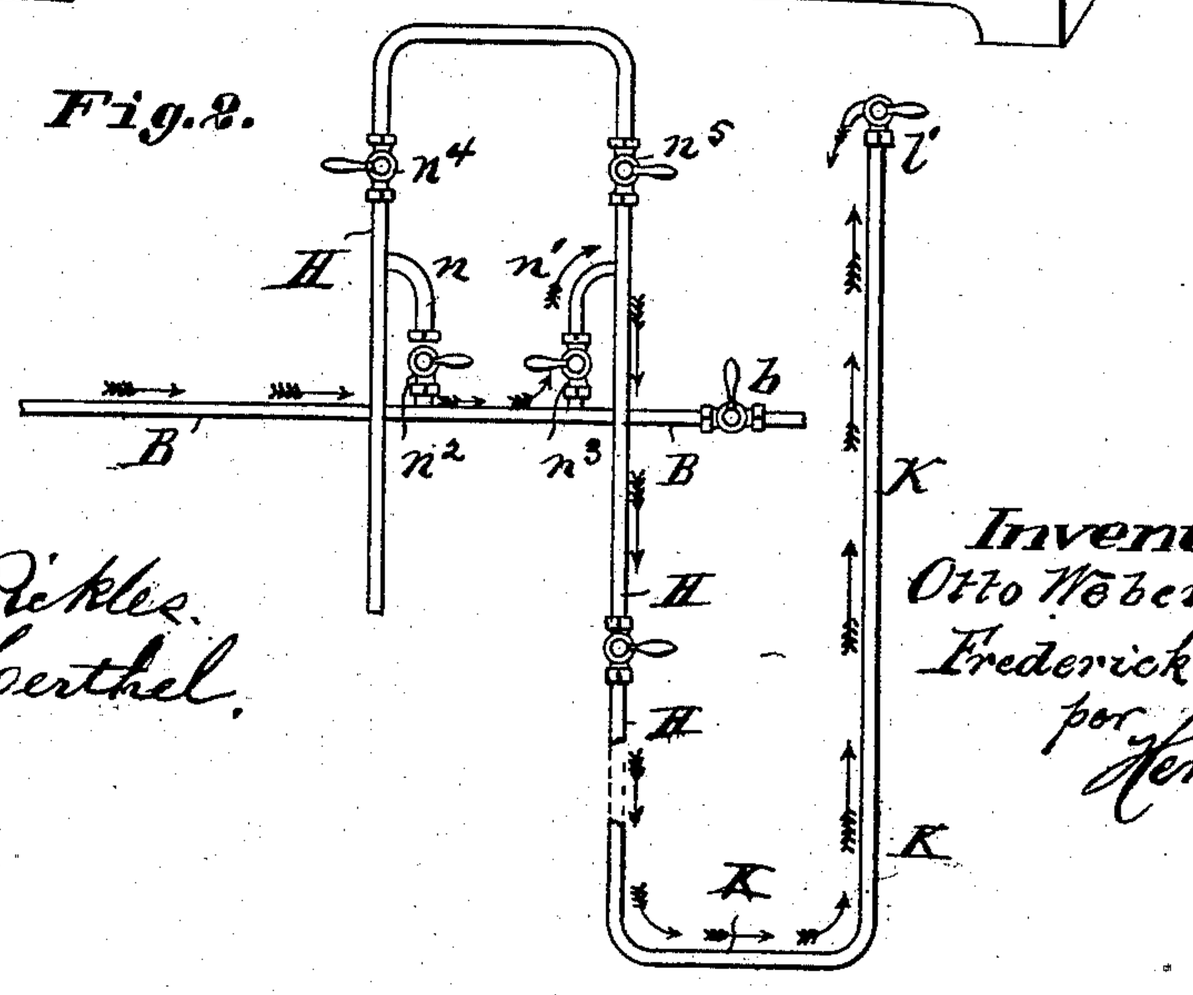



*Fig. 2.*

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# UNITED STATES PATENT OFFICE.

OTTO WEBER AND FREDERICK ABEL, OF ST. LOUIS, MISSOURI.

## APPARATUS FOR FORCING BEER, &c.

SPECIFICATION forming part of Letters Patent No. 263,003, dated August 22, 1882.

Application filed June 6, 1882. (No model.)

*To all whom it may concern:*

Be it known that we, OTTO WEBER and FREDERICK ABEL, citizens of the United States, and residents of St. Louis, and State of Missouri, have invented a new and useful Apparatus for Forcing Beer, &c., of which the following is a specification.

This invention relates to improvements in the class of apparatuses for automatically pumping, drawing, or forcing beer, ale, mineral water, and other liquids that are kept on draft, and as such is therefore specially serviceable for saloon-keepers, druggists, &c.

The chief objects of our said invention are to enable the said liquids, while on draft, to be preserved in a fresh, wholesome, and natural condition, at the same time to provide a constant and uniform pressure upon the said liquids, so that the same can be at all times properly forced, drawn, or discharged; also, to provide means to "wash out" or cleanse the essential parts and pipes of the apparatus, and otherwise, by the use of the entire apparatus, to facilitate the handling of the said liquids on draft to suit the purposes of retailing or sale and use. We accomplish the said objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 represents the entire apparatus as applied ready for use or operation. In the said figure the upper parts of the apparatus, notably the air-compressor, gage, upper ice-chest, its discharge-cocks, from which the liquid is drawn, main, water, and wash-out pipes, are shown arranged behind a counter, while the remaining parts of the various pipes (shown passing through the floor) connect with the compressed-air reservoir. Beer-kegs from which the liquid is to be drawn (shown as contained in a refrigerator below) are located in the cellar. Fig. 2 represents that part of our improvement which we term the "wash-out," being the arrangement of branch pipes with stop-cocks, in connection with the main water-supply pipe and the air-pipe, which leads down and connects to a beer-keg, and upward from the same to the discharge-faucet, from which the liquid on draft is finally discharged. The arrows in said figure indicate the direction of the flow of water through said pipes in order to wash out the pipe and to convey the compressed air on top of the liquid on draft, also at same time wash out the keg and its final discharge-pipe.

Similar letters refer to similar parts throughout the several views.

A represents the automatic hydraulic air-compressor patented to Geo. W. Harvey and Wm. D. Seal, No. 210,943, dated December 17, 1878, and which we prefer to employ in conjunction with our improvements, although any other hydraulic air-compressor or air-pump can be substituted.

As we disclaim any part or parts of the air-compressor A, we shall here only describe the operation of same when used in connection with our improvements.

B represents the main water-supply pipe, which connects to the air-compressor apparatus, being controlled by stop-cock *b*.

The water, being under a heavier pressure than the air in the glass cylinder C of the compressor A, will rise and compress the air in said cylinder, and when the same is filled with water its weight will overbalance the weight at the end of the lever *c*, causing said lever to tilt and the glass cylinder to drop a short distance, which movement automatically closes or "shuts off" the water-supply, at same time opens a small air-valve at $c'$ and waste-valve at $c^2$, when the glass cylinder will become empty, the water passing down waste-pipe D. As soon as the glass cylinder becomes thus empty of water and refilled with air the lever-weight, dropping, will return the said cylinder to original position—that is to say, with the air and waste valves closed, supply-valve open, and the compressor parts A will repeat the said operation just described. The compressed air from the cylinder C passes down the pipe E, the lower end of which connects to the compressed-air reservoir or chamber F, which is placed on a shelf in the ice-box, as shown. The air that is compressed in the chamber F is prevented from returning to the glass cylinder, when the latter is emptying, by a check-valve, *d*. The compressor apparatus A will keep on working until the air in the air-chamber F has the same or equal pressure as that of the water-supply or water-works.

The chamber F we provide with three stop-cocks, $f, f'$, and $f^2$. The cock $f$ acts as a drain.

To the cock $f'$ we attach the lower end of the air-pipe E, the upper end of which, by a rubber tube or branch, communicates with the glass cylinder C, and receives therefrom the air-supply to be stored in the chamber F, as before described. To the cock $f^2$ we connect the lower end of the pipe G, which we lead up underneath the counter. Further, on the pipe G we provide an ordinary weighted diaphragm, $g$, by means of which the proper pressure on the beer can be obtained—that is to say, a pressure of forty to fifty pounds may exist in the air-chamber F, and the desired pressure of five or six pounds act on the beer or liquid in the kegs. After leaving the diaphragm $g$, the pipe G we provide with one or one or more branches, H H′, on either one of which we place an ordinary air-gage, I, so that the operator can see the amount of pressure exerted on the beer. The air-pipes H H′ we lead down through the flooring into the ice-box to communicate with the beer-kegs or liquid on tap. Near the lower end of each air-pipe H H′ is a stop-cock, $h$ $h'$, and to these are attached short rubber hose $h^2$ $h^3$, which finally connect with the air-ferrules, that are driven into the beer-kegs set on end, in manner indicated.

The beer from the respective kegs, illustrated in the drawings, is forced, drawn, or pumped up into the discharge-pipes J and K, the lower end of which connects by the respective cocks $j$ and $k$ with the sides of the respective kegs. The upper end of each discharge-pipe J and K conveys the liquid through the upper small ice-chest, L, under the counter, from whence the liquid can be drawn through the draw-cocks $l$ $l'$, as indicated.

We surround the upper part of the discharge-pipes J and K with a cast-iron pipe or housing, M, closed at its bottom end and filled inside with gravel or suitable refrigerating material. The upper end of the housing M extends within the upper ice-chest, in which broken ice is stored, the object being to permit the "drippings" or water to trickle down inside of the housing M, and thus keep the discharge-pipes J and K cold and the liquid passing through same fresh and wholesome.

It is very important that the discharge-pipe J or pipes, also the air-pipe H or pipes, can be kept clean, free from slime and other impurities. To accomplish this end we have provided the following means, which we term a "wash-out:" To the main supply-pipe B we add two branch pipes, $n$ $n'$, each controlled by a proper stop-cock, $n^2$ $n^3$. The remaining end of these branches connect to the air-pipes H H′ respectively, and immediately above these junctions are placed stop-cocks $n^4$ $n^5$, as shown in the figures.

To operate the wash-out, suppose that the keg or kegs are empty and it is desired to cleanse the air-pipes H or H′, also the kegs said pipes connect with, and the discharge-pipes J K. Then close both stop-cocks $n^4$ $n^5$, open the cocks $n^2$ $n^3$, and water will pass from the main supply-pipe B up the branches $n$ $n'$, down the respective air-pipes H H′, through their kegs and up through the discharge-pipes J K, and finally discharge out of the draw-cocks $l$ $l'$. Thus either one or all of the air-pipes that lead the compressed air on top of the liquid can be cleansed, also the kegs can be washed out, and also the final discharge-pipes.

What we claim is—

1. In combination with the main supply-pipe B, the wash-out consisting of branch pipes $n$ $n'$, having stop-cocks $n^2$ $n^3$, the air-pipes H H′, having stop-cocks $n^4$ $n^5$, the keg or kegs, the discharge pipe or pipes J K, and the faucets $l$ $l'$, by means whereof the said air-pipes, also the kegs, and the final discharge pipe or pipes can be cleansed from impurities in the manner and for the purposes set forth.

2. In combination with the discharge-pipes J or K, the vessel or housing M, containing gravel or material for refrigerating purposes, the upper ice-chest, L, by means whereof the drippings from the latter can permeate the contents in the housing M and keep the said discharge-pipes cool, as and for the purposes set forth.

3. The improved apparatus for forcing or drawing liquids on draft, consisting essentially of the air-compresser A, its waste-pipe D, main supply water-pipe B, having stop-cock $b$, the air-pipes E G, compressed-air reservoir F, having stop-cocks $f$ $f'$ $f^2$, the air-pipes H H′, provided with an ordinary diaphragm and gage, the keg or kegs containing the liquid on draft, the final discharge-pipes, J K, the housing M, containing material to keep said discharge-pipes cool, the ice-chest L, and discharge-faucets $l$ $l'$, all combined and operating substantially as set forth.

4. The improved apparatus for forcing liquids on draft, and wash-out to cleanse the air-pipes and discharge-pipes combined, consisting essentially of air-compressor A, its waste-pipe D, supply-pipe B, its stop-cock $b$, the air-pipes E G, compressed-air reservoir F, having cocks $f$ $f'$ $f^2$, the further air-pipes H H′, having ordinary diaphragm and gage, the branch pipes $n$ $n'$, the stop-cocks $n^2$ $n^3$ $n^4$ $n^5$, the keg or kegs containing the liquid on draft, the final discharge-pipes J K, the housing M, containing material to keep said discharge-pipes cool, the ice-chest L, and discharge-faucets $l$ $l'$, all said parts operating substantially in the manner and for the purposes set forth.

In testimony of said invention we have hereunto set our hands.

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FREDERICK ABEL.

Witnesses:
WILLIAM W. HERTHEL,
JOHN W. HERTHEL.