

(No Model.)

2 Sheets—Sheet 1.

W. W. FERGUSON.  
BEER COOLER.

No. 475,548.

Patented May 24, 1892.

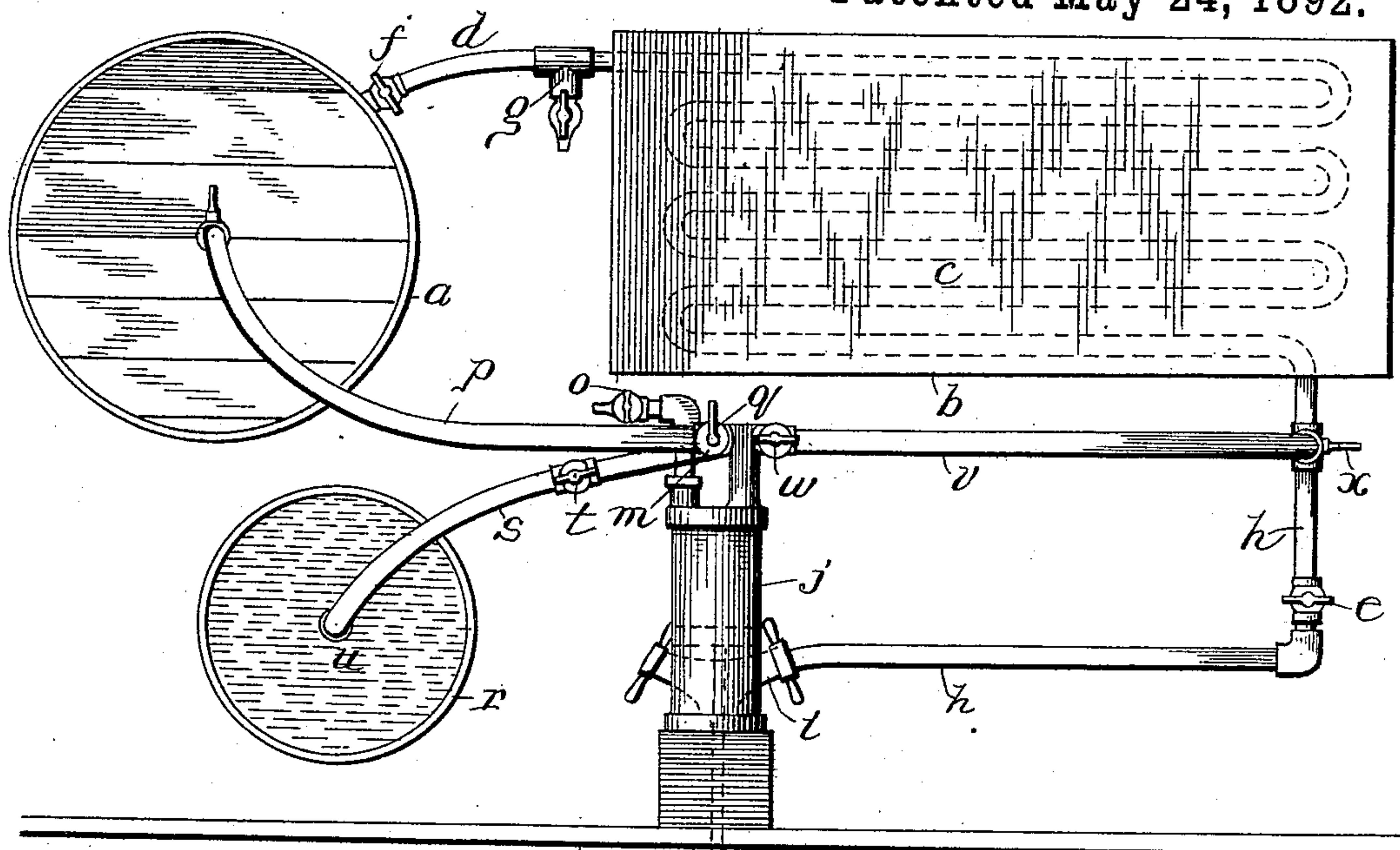


Fig 1

Fig 3

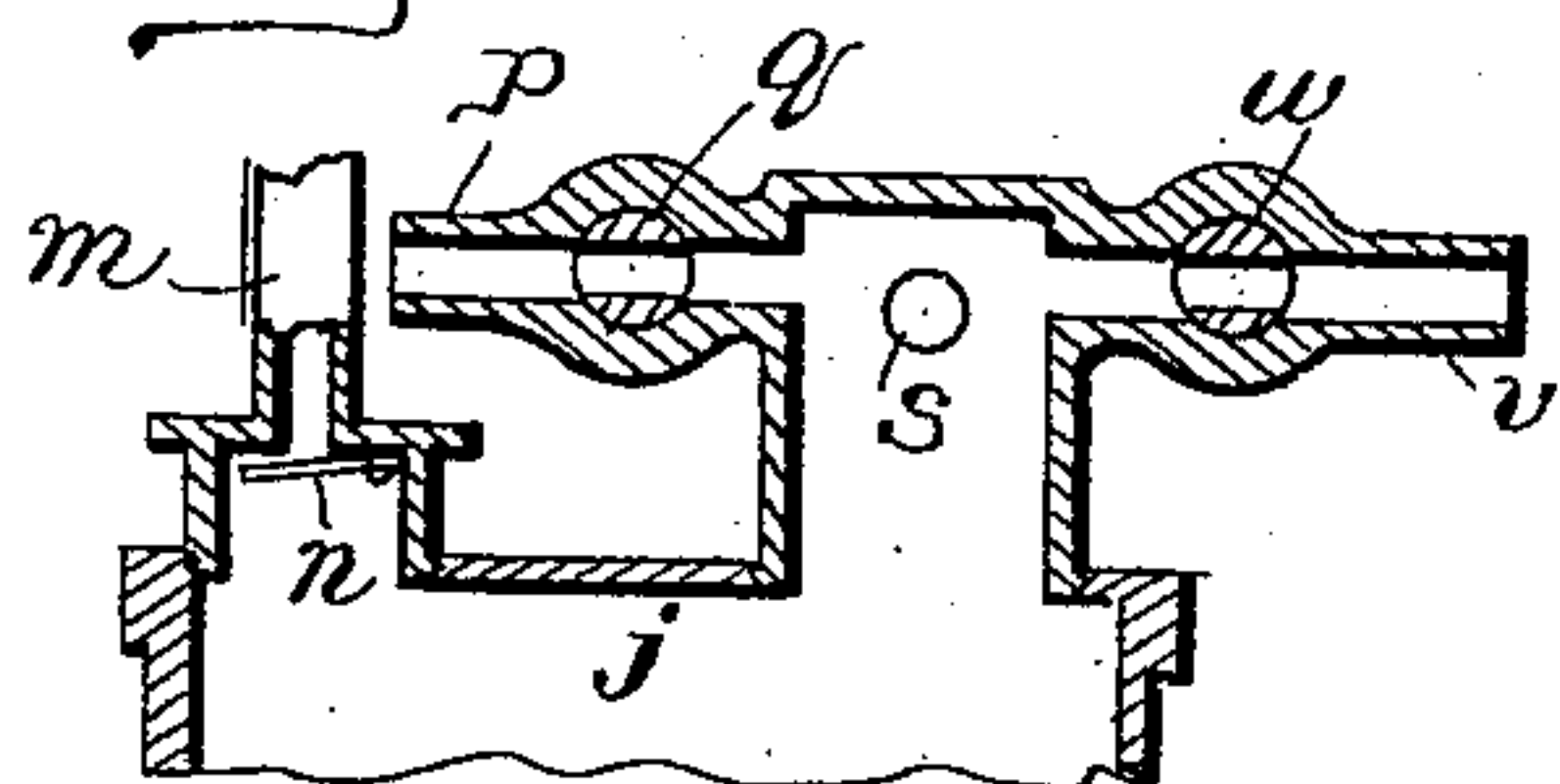


Fig 4

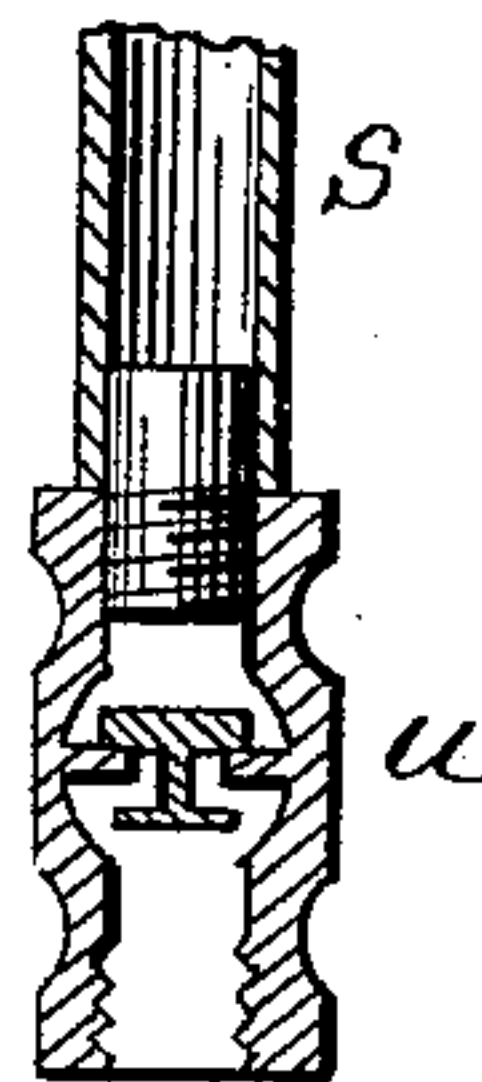
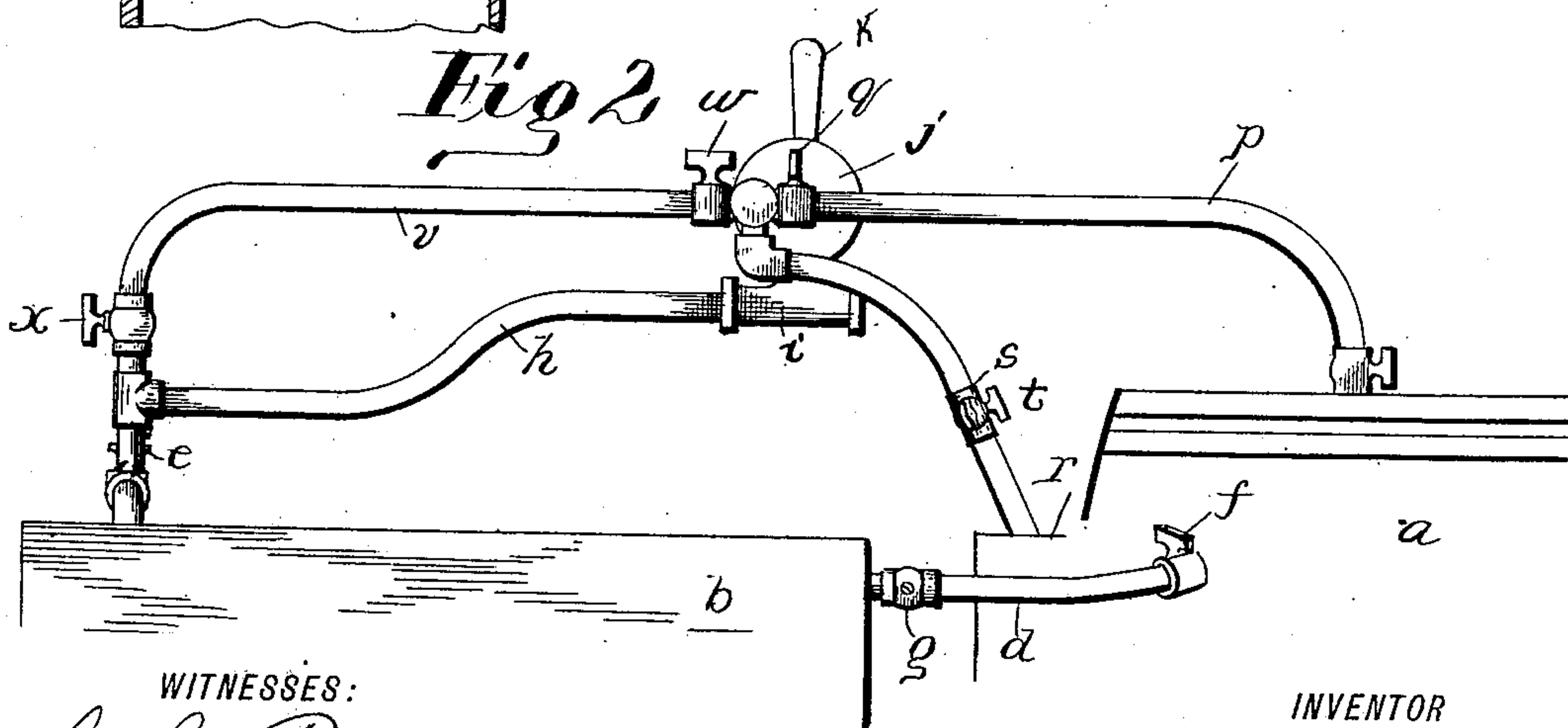


Fig 2



WITNESSES:

C. C. Burdine  
J. E. Peck

INVENTOR

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BY O. E. Duff  
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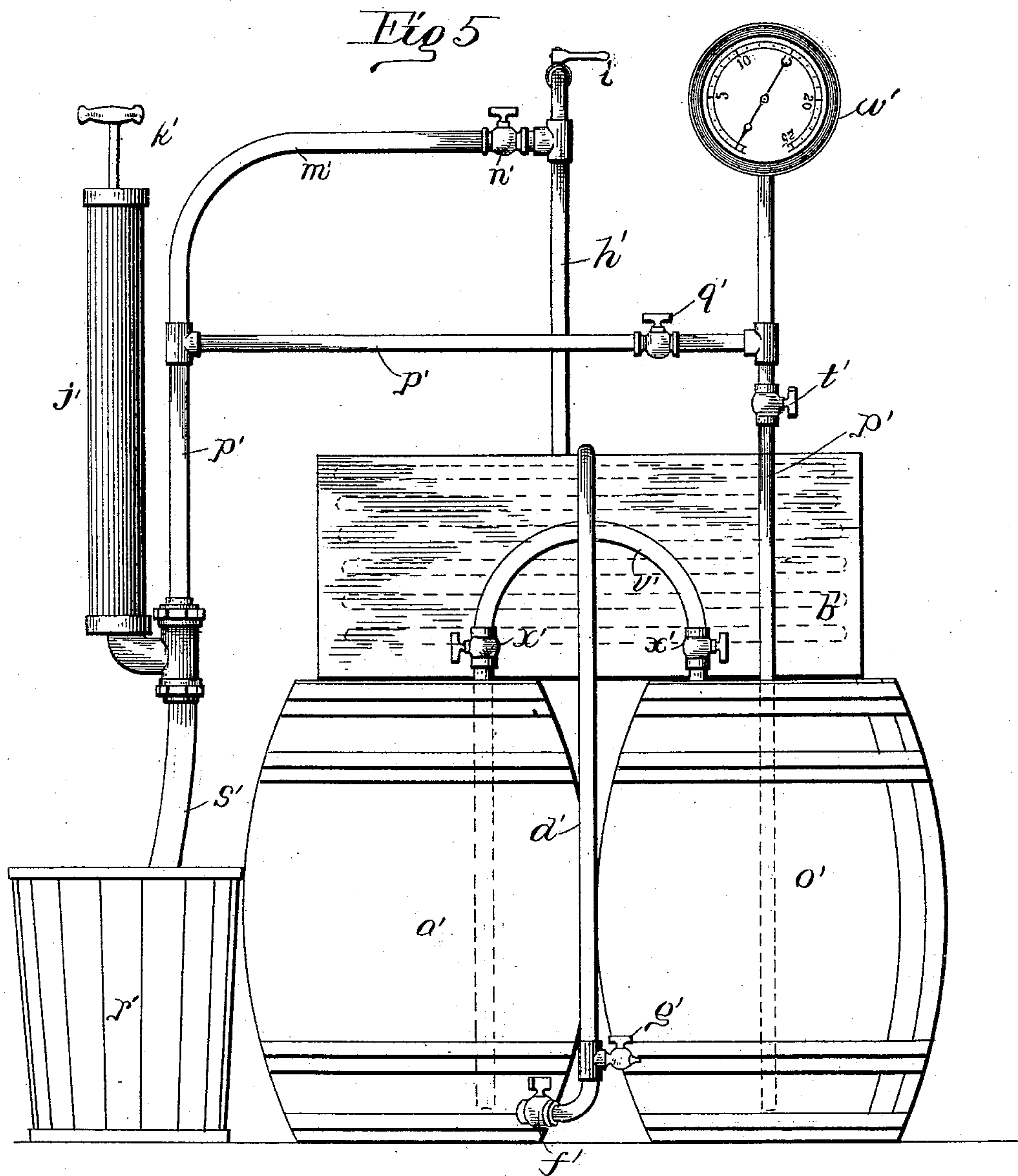
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# UNITED STATES PATENT OFFICE.

WILLIAM W. FERGUSON, OF BLOOMDALE, OHIO.

## BEER-COOLER.

SPECIFICATION forming part of Letters Patent No. 475,548, dated May 24, 1892.

Application filed July 7, 1891. Serial No. 398,640. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM W. FERGUSON, of Bloomdale, in the county of Wood and State of Ohio, have invented certain new and useful Improvements in Beer-Coolers; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form part of this specification.

This invention relates to certain improvements in beer-coolers.

The use of certain constructions of beer-coolers is attended with great disadvantages, as the cooling-coils soon become very foul and clogged with sediment from the beer; and if the beer continues to flow through the coils it will become contaminated and poisoned. To clean the coil, it usually has to be disconnected from the pipes and removed and the coil rotated in water to force the water through the coil. It is very difficult to thoroughly clean the coils even in this way and is almost impossible to dry the interior of the coil. A great amount of labor and time is expended in cleaning the coils in this manner, yet they have to be cleaned in some way or the beer drawn through the same after continued use will become unhealthy and will sicken the consumer.

The object of my invention is to provide a beer-cooling apparatus so constructed and arranged that when desired the pump used to force air or gas into the beer can be employed to force water through the cooling-coils, and thereby wash them and discharge the water, and also to force air through such coils to dry the same. These objects are accomplished by and this invention consists in certain novel features of construction and in combinations of parts more fully described hereinafter, and particularly pointed out in the claims.

Referring to the accompanying drawings, Figure 1 is a plan view of a beer-cooler embodying my invention. Fig. 2 is an elevation showing the pump and faucet in end elevation. Fig. 3 is a detail sectional view showing the check-valve in the end of the water-

suction pipe in the cleaning connections. Fig. 4 is a sectional view of the head of the pump-cylinder, showing the connections and valve. Fig. 5 is an elevation showing my invention applied to a different construction and arrangement of parts embodying beer cooler and preserver.

In the drawings, reference-letter *a* indicates the beer-keg or closed receptacle.

*b* indicates the box containing cooling-coils *c*. The pipe *d* extends from the beer-keg to one end of the cooling-coils and is provided near the beer-keg with the stop-cock *f*, and between said stop-cock and the end of the cooling-coils a discharge-faucet *g* is located in said pipe. A pipe *h* extends from the opposite end of the cooling-coils to the faucet *i*, which faucet is suitably located at the bar or other locality, or, in fact, wherever desired. The pipe *h* is provided with the stop-cock *e*.

*j* indicates the air-pump, of any suitable construction, operated by the lever *k*, connected with the piston-rod *l*. This air-pump has the air-inlet pipe *m* into the pump-cylinder provided with the check-valve *n* to allow air to flow into the cylinder, but to prevent it flowing out of the same. This air-inlet pipe *m* is also provided with the stop-cock *o*. An air-pipe *p* extends from the pump-cylinder into the upper portion of the beer-keg, and this air-pipe is provided with the stop-cock *q*, located near the pump-cylinder. It is obvious that when the stop-cocks *o*, *e*, *f*, and *q* are open and the pump is operated air will be forced by the pump into the beer-keg and will exert suitable pressure on the beer therein, so that the beer will be forced through the cooling-coils and into the faucet *i* and can be drawn in quantities, as desired.

In order to provide means for cleansing the cooling-coils without removing the same through the ice-box, I provide the following constructions and connections:

*r* is any suitable vessel containing water or other cleansing liquid.

*s* is a flexible or other pipe extending into the vessel *r* and extending therefrom and opening into the outer end of the cylinder of the pump *j*. This water-pipe *s*, near the cylinder, is provided with stop-cock *t*. The lower end of the pipe *s*, which is normally lo-



cated within the receptacle *r*, is provided with the check-valve *u*, as shown in Fig. 4, permitting the upflow of water from the pipe *s*, but preventing the water flowing out of said pipe into the vessel or tank *r*. A pipe *v* opens into the pump-cylinder, and from thence extends to and opens into the pipe *h* near the end of the cooling-coils. This pipe *v*, near the pump-cylinder, is provided with the stop-cock *w*, and near its junction with the pipe *h* is provided with the stop-cock *x*.

When it is desired to wash out the cooling-coils, the stop-cock *f* is closed, the faucet *g* is opened, the stop-cock *x* is opened, stop-cock *e* is closed, stop-cock *w* is opened, stop-cocks *q* and *o* are closed, and stop-cock *t* is opened. Thus when the pump is operated the water is drawn from tank *r* through the water-pipe *s* into the pump and is forced through the pump under suitable pressure through the pipes *v* and portion of pipe *h* into the cooling-coils *c*, and through the same at the faucet *g*. This operation is kept up until the cooling-coils *c* are thoroughly cleansed, all of the water from the coils being discharged through the faucet *g*.

Any suitable chemicals desired can be placed in the water in the tank *r* to assist in cleansing the coils *c*. When the coils have been thoroughly cleaned, the stop-cock *t* is closed and the faucet *o* is opened and the operation of the pump continued, thereby drawing air through the air-suction pipe *n* into the pump and forcing the air through the pipe *v* and the coils *c* and out at faucet *g*, thereby forcing all of the water out of the coil *c* and thoroughly drying the same.

When the parts are connected so that water is pumped through the coils *c*, the valve *u* in the water-pipe *s* prevents the pump forcing water back through pipe *s* and causes it to pass through pipe *v*, as before described.

It will be observed that the connections are such that when it is desired to clean the cooling-coils the beer-keg and faucet are entirely cut off, and after the coils have been thoroughly cleansed and dried the beer-keg and faucet can be thrown into connection again with the cooling-coils and pump by opening stop-cock *f*, closing faucet *g*, closing stop-cock *x*, opening stop-cock *e*, closing stop-cocks *w* and *t*, and opening stop-cocks *q* and *o*.

Fig. 1 shows the parts in position to cleanse the cooling-coils.

Fig. 5 shows my invention applied to a somewhat different construction of beer apparatus. In this figure, *a'* indicates the beer-keg. *b'* indicates the ice-box containing the cooling-coils shown in dotted lines. *d'* indicates the pipe from the lower portion of the beer-keg to the cooling-coils provided with the stop-cock *f'* near the beer-keg, with the faucet *g'* between the cooling-coils and the stop-cock *f'*. *h'* indicates the pipe from the opposite end of the cooling-coils to the faucet *i*. *r'* indicates the water-tank. *s'* indicates the suction-pipe from said water-tank extending into the lower

end of the pump *j'*. This pump *j'* is operated by suitable means, as a handle *k'*. *o'* indicates the closed receptacle, which is adapted to contain a suitable quantity of whisky or alcohol. A pipe *p'* extends from the pump *j'* into the lower portion of the closed vessel *o'*, so as to extend beneath the surface of the liquid therein. This vessel *o'* is provided with a suitable pressure-gage *w'*. The pipe *p'* is provided with the stop-cocks *t'* and *q'*. The pipe *v'* extends from the upper end of the vessel *o'* into the beer-keg, and this pipe *v'* is provided with suitable stop-cocks *x'*. The pipe *m'* extends from the pipe *p'* near the pump into the pipe *h'*, and within its length between the pipes *h'* *p'* this pipe *m'* is provided with the stop-cock *n'*. When this present device is in use to cool and force beer, the stop-cock *n'* is closed and the faucet *g'* is closed and the stop-cocks *q'*, *t'*, and *x'* are all open. When the pump *j'* is operated, air is forced through the pipe *p'* and through the liquid in the closed vessel *o'*, and through pipe *v'* into the keg *a'*, where it exerts pressure on the beer. The object of the extra vessel *o'* and alcoholic liquid therein is to preserve the beer by carrying the fumes of the alcohol into and through the beer. The pressure of air in the beer-keg forces the beer through the pipe *d'* and the cooling-coils, so that the beer can be drawn out any time from the faucet.

When it is desired to wash the cooling-coils, the stop-cocks *q'*, *t'*, and *f'* are closed and the stop-cock *n'* is opened and the faucet *g'* is also opened and the pump is operated, thereby forcing water from the tank *r'* through pipes *s'*, *p'*, *m'*, and *h'* to the cooling-coil, and through the cooling-coil and out from the cooling-coil through pipe *d'* and faucet *g'*. The coils can thus be thoroughly washed and can be dried, as before described.

It is evident that my invention is not limited to the peculiar construction of beer-coolers and force apparatuses herein set forth and can be used in any apparatus employing a cooling-pipe and pump.

It is evident that various changes might be made in the form, constructions, and arrangements of the parts described without departing from the spirit and scope of my invention. Hence I do not wish to limit myself to the peculiar construction herein set forth; but

What I claim is—

1. In combination, a beer-keg, a cooling-coil, a connection from the beer-keg to the cooling-coil, provided with a valved discharge and with a stop-cock, a connection from the other end of the cooling-coil to the faucet, a pump, connections from the pump to the beer-keg, provided with a stop-cock, a valved air-inlet for said pump, a water-vessel and connections from the water-vessel to the pump, having a check-valve, a stop-cock and connection from the pump to the end of the cooling-coil connected with the faucet, and a stop-cock in such connection, said connec-



tions and valves and stop-cocks being arranged to operate substantially as described, as and for the purposes set forth.

2. In combination, a beer discharge or faucet, a beer-supply vessel, a cooling-coil, an air-pump having an air-supply and means for cutting off the air, an air connection from the pump to said vessel, provided with closing means, beer connections from said vessel through said coils to the faucet, provided with means for shutting said coils out from said connections, a water-discharge from one end of said coils, provided with closing means, a water connection provided with closing means from the pump to the opposite end of the coil, and a water-supply pipe for the pump, having a check-valve.

3. In a beer-cooler, the combination of a beer-supply vessel, a cooling-coil having a beer-discharge from one end, a beer connection from said vessel, provided with cut-off means and with a discharge-faucet, the air-pump having an air connection to said vessel and provided with cut-off means, a water-

supply connection for said pump, and a water-discharge connection from said pump to the end of said coil opposite said faucet and provided with cut-out means, substantially as described.

4. In a beer-cooler, the combination of a beer-vessel, a cooling-coil, beer connections from the vessel to said coil, said coil being capable of disconnection from the beer-vessel, the air-pump having an air connection to said vessel capable of being cut off, a water connection from the pump to the end of the coil opposite the discharge connection therefrom, said water connection capable of being cut off, and the water-supply pipe for the pump, having a check-valve, substantially as described.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

WILLIAM W. FERGUSON.

Witnesses:

O. E. DUFFY,  
C. M. WERLE.