

(No Model.)

P. E. MALMSTRÖM.

APPARATUS FOR CARBONATING AND DISPENSING BEVERAGES.

No. 475,128.

Patented May 17, 1892.

Fig. 1.

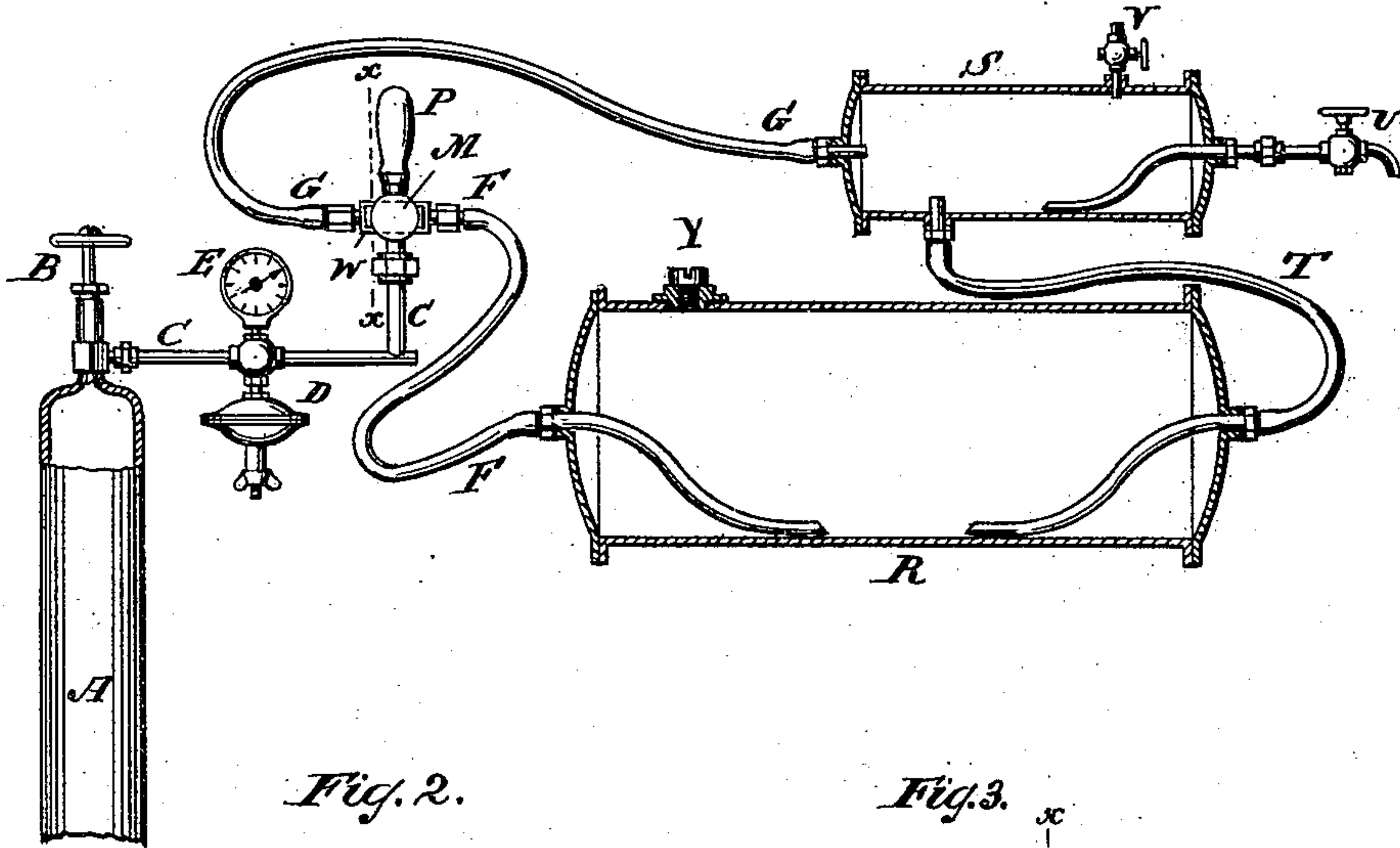


Fig. 2.

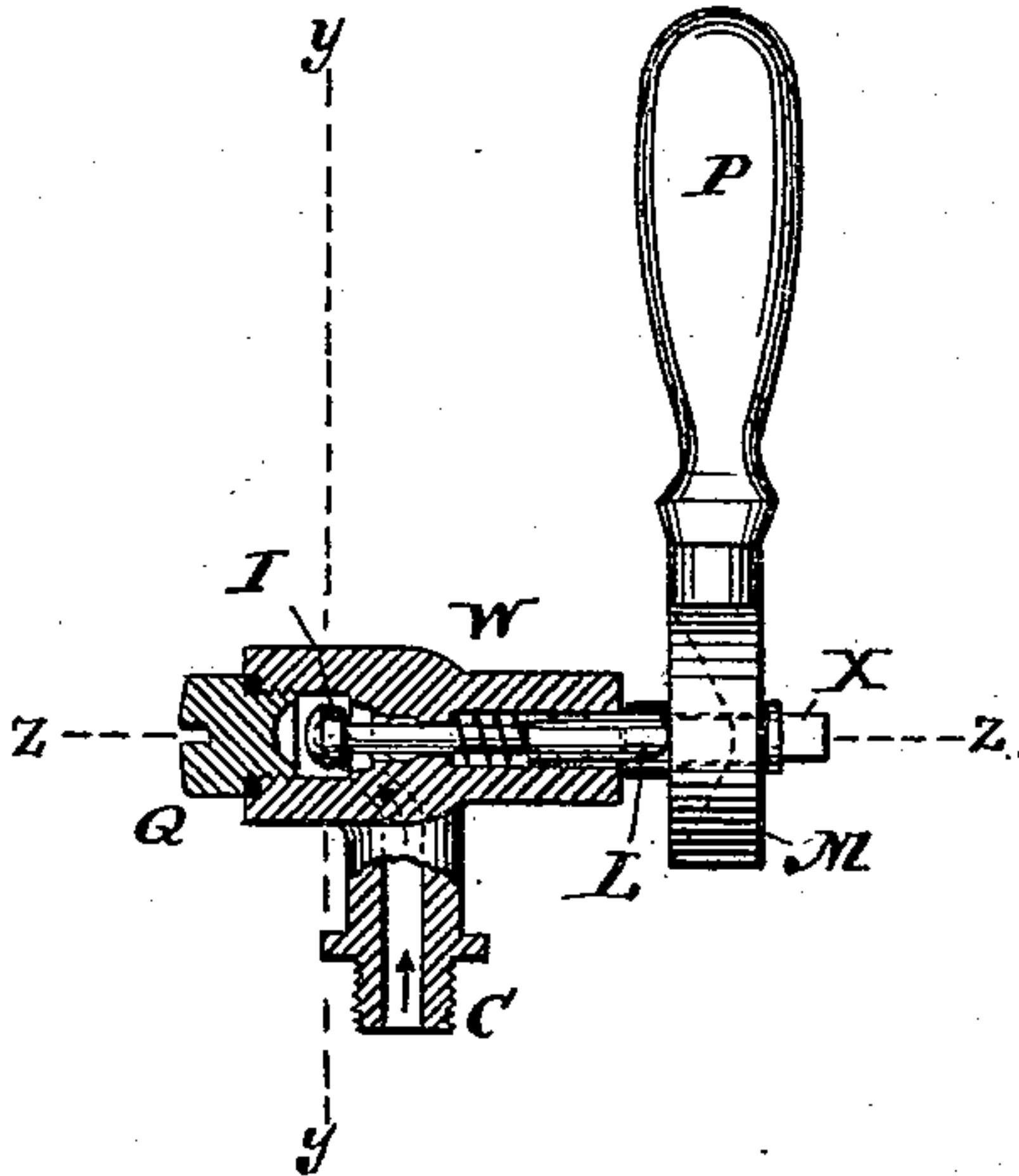


Fig. 3.

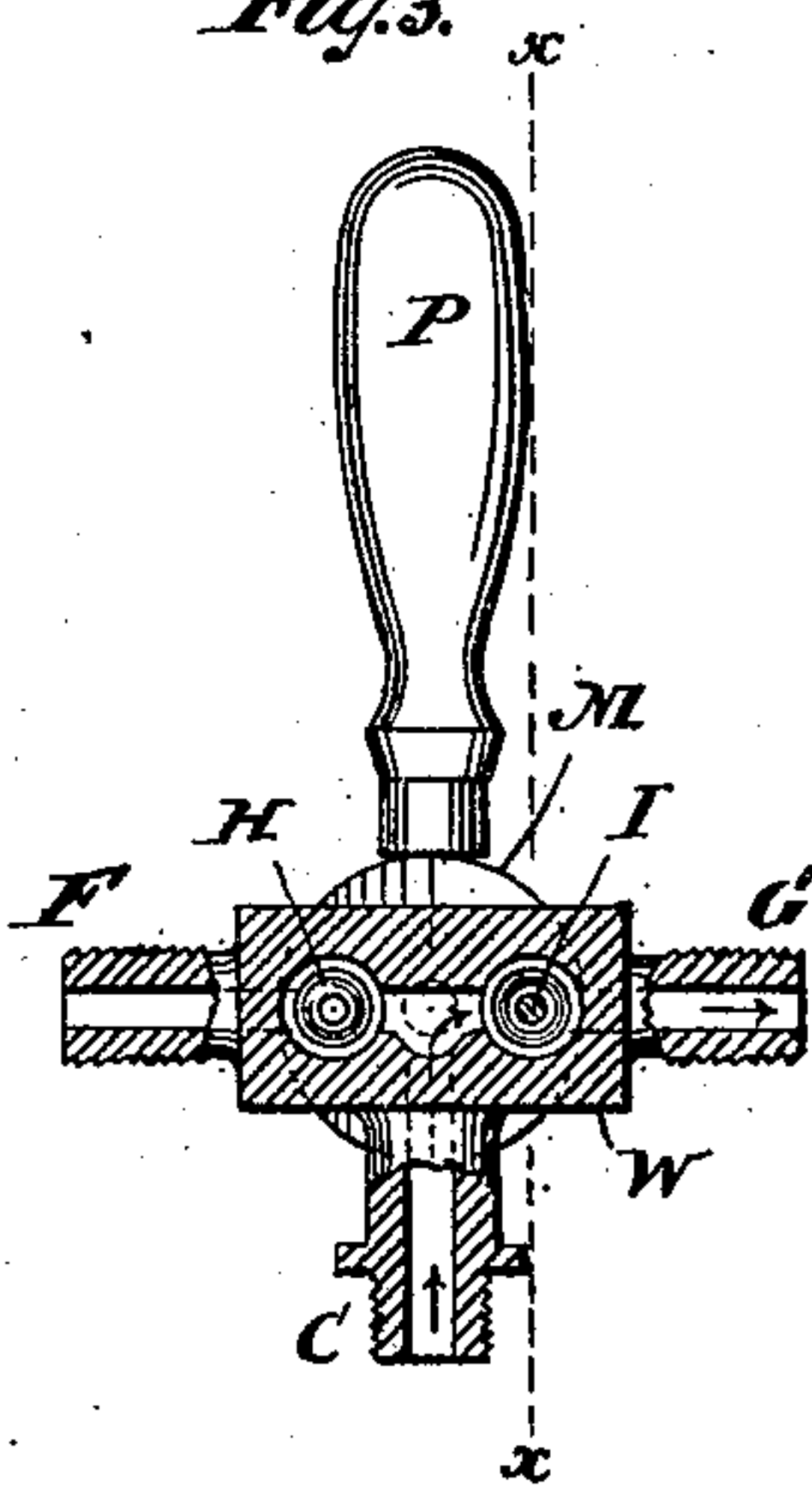
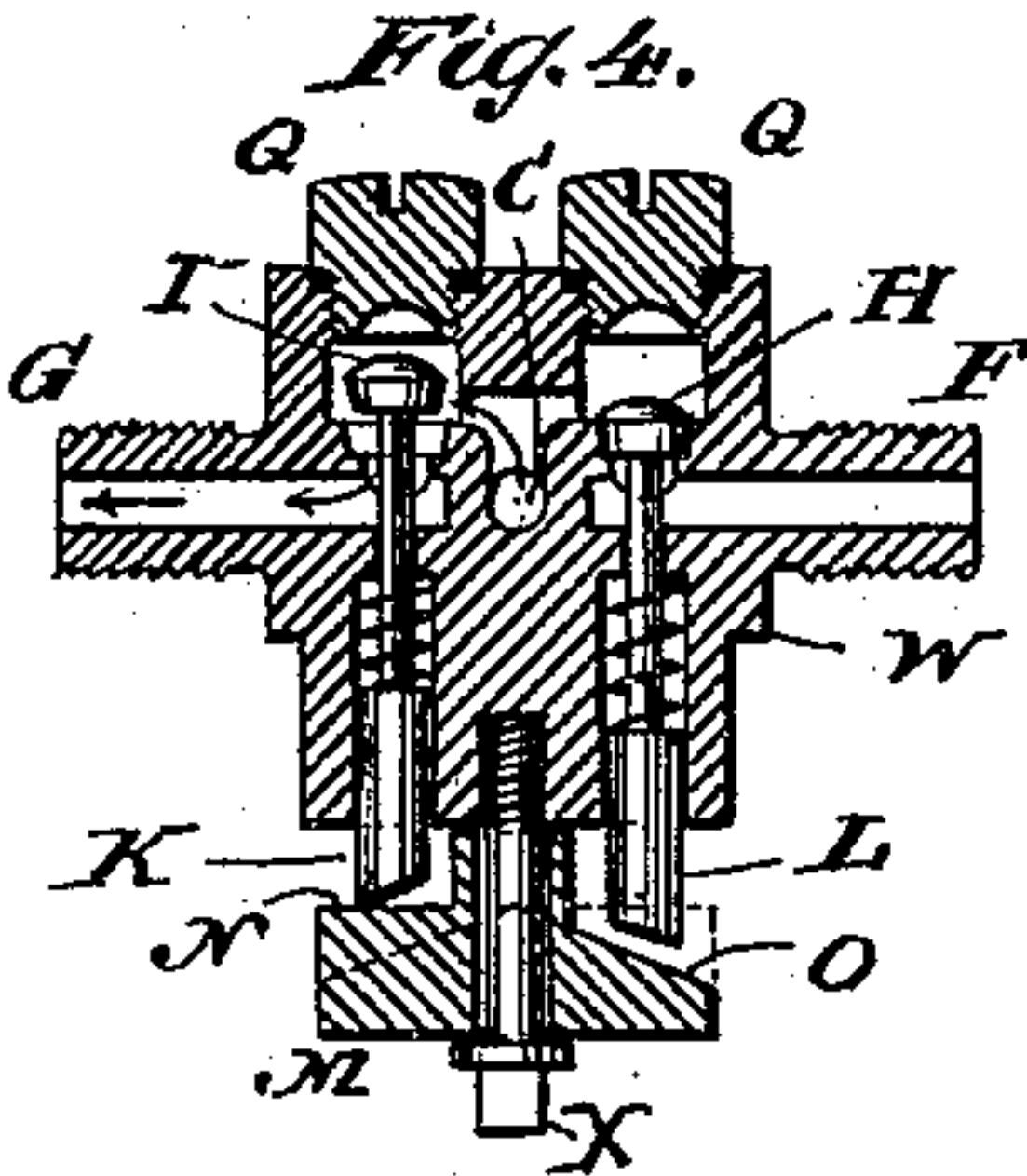


Fig. 4.



WITNESSES:

Edward Wolff.
William Miller.

INVENTOR:

Peter E. Malmström.

BY

Van Santvoord & Hauff
his ATTORNEYS.

UNITED STATES PATENT OFFICE.

PETER E. MALMSTRÖM, OF NEW YORK, N. Y.

APPARATUS FOR CARBONATING AND DISPENSING BEVERAGES.

SPECIFICATION forming part of Letters Patent No. 475,128, dated May 17, 1892.

Application filed January 28, 1892. Serial No. 419,590. (No model.)

To all whom it may concern:

Be it known that I, PETER E. MALMSTRÖM, a citizen of the United States, residing at New York, in the county and State of New York, have invented new and useful Improvements in Apparatus for Carbonating and Dispensing Beverages, of which the following is a specification.

This invention relates to an apparatus for carbonating and dispensing beverages; and it consists in certain novel features set forth in the following specification and claims, and illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation, partly in section, of the apparatus. Fig. 2 is a section of the valve along $x x$, Figs. 1 and 3. Fig. 3 is a section along $y y$, Fig. 2. Fig. 4 is a section along $z z$, Fig. 2.

In the drawings, the letter A indicates a bottle or metallic vessel in which liquefied carbonic acid is supplied to the trade. On opening valve B the carbonic acid passes through the tube or connection C. The equalizing-valve D and gage E are of any suitable well-known construction. The tube or connection C alternately supplies the carbonic acid to the tube F or tube G as the alternating valves H I are operated. The valves H I have stems K L extending toward a rotary or oscillating head M, having a raised or operating portion N and a depression or cut-away part O. On swinging or moving the head M by handle P the actuating portion N strikes first one stem K and then the other stem L, so that the valves H I alternately open and shut. The valves are shut by suitable springs, and said valves may be of any suitable form; but the construction is such that one of the valves is always seated, this being rendered possible by the arrangement of the depression O of the oscillating head M relatively to the elevation N thereof, so that whenever the elevation opens a valve the depression permits the other valve to close by the action of its spring. The tube C, which connects with the carbonic-acid vessel A, opens into the valve-casing at a point between the two valves, as best shown in Fig. 4, and communicates by suitable passages with the valve-chambers, which latter are closed by suitable plugs or screws Q. The tube or connection

F leads to a vessel R and the tube or connection G to a vessel S. A tube or connection T is also made to connect said vessels. The vessel R being filled with water and the vessel F being left empty and the valve I being opened, carbonic acid will enter vessel S through the connection or tube G. On moving the head M so as to open valve H and allow valve I to close carbonic acid will enter vessel R and will force part of the water from vessel R through tube T into vessel S, previously supplied with carbonic acid, as stated. On closing valve H and opening valve I the water is partly driven back again from vessel S through tube or connection T into vessel R. By thus alternating the valves H I a sufficient number of times the water is thoroughly agitated and impregnated by the carbonic acid.

The vessel S is adapted to be placed into a receiver or marble fountain, such as seen in drug-stores and other places, and by surrounding the vessel S with ice or other refrigerant the contents of vessel S are kept cool and can be drawn off through valve or faucet U to be served to customers. If found desirable, a valve or blow-off V may be provided for vessel S. The valves H I are arranged in a valve-casing W, from which extends the tubes F and G, and a pivot or support X for the oscillating head or actuator M. The vessel R may have a filling-opening, closed by a plug or stopper Y, and either the vessel R or S, or both, may have safety-valves, if desired.

It will be observed that in my invention the valve-casing is provided with a triple-tube connection so constructed and arranged that one branch tube C connects with the carbonic-acid vessel A, while the other two branch tubes F and G connect, respectively, with two communicating vessels S and R, whereby liquid, while exposed to the pressure of carbonic acid, is caused to travel back and forth between the two communicating vessels. In this respect my invention differs substantially and materially from prior apparatus of this type of which I am aware.

An efficient way of operating the device is as follows: Set the valve D to a pressure of, say, for example, ten pounds, and then charge the vessel S with carbonic acid, as stated. Then close the valves H I and set the valve D

for an increased pressure—say, for example, twelve pounds—and open the valve leading to tube F, so that the consequent increased pressure in vessel R will force water through tube T into vessel S against the pressure already existing in vessel S. Then close the valves H I and again set valve D to an increased pressure—say, for example, fourteen pounds—and on then allowing the carbonic acid to enter vessel S some water will be forced from vessel S through tube T into vessel R in spite of the pressure existing in vessel R. By thus gradually increasing the pressure of the carbonic acid until the required degree is reached the proper agitation and carbonating is effected.

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination of a valve-casing having a pair of valves provided with stems, a tube opening into the valve-chamber at a point between the two valves and adapted to connect with a carbonic-acid vessel, a pair of tubes leading, respectively, from the valve-chambers and adapted to connect with a pair of communicating vessels for the purpose of causing liquid therein to flow from one to the other, and a movable head mounted on the valve-casing and having means to alternately open one valve and close the other, substantially as described.

2. The combination of a valve-casing having a pair of valves provided with stems, a tube opening into the valve-casing at a point between the two valves and adapted to connect with a carbonic-acid vessel, a pair of

tubes leading, respectively, from the valve-chambers and adapted to connect, respectively, with a pair of communicating vessels for causing liquid therein to flow from one to the other, and an oscillating head mounted on the valve-casing between the valves and having a depressed portion and an elevated portion, so that whenever one valve is opened by the elevated portion the depressed portion permits the other valve to close, substantially as described.

3. The combination of a valve-casing having a pair of valves provided with stems, a tube opening into the valve-casing at a point between the two valves and adapted to connect with a carbonic-acid vessel, an equalizing-valve D, arranged on said tube between the valve-casing and the carbonic-acid vessel, a pair of tubes leading, respectively, from the valve-chambers and adapted to connect with a pair of communicating vessels for causing liquid therein to flow from one to the other, and an oscillating head mounted on the valve-casing between the valves and provided with an elevation and a depression, so that whenever the elevation opens one valve the depression permits the other valve to close, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

PETER E. MALMSTRÖM.

Witnesses:

CHAS. A. SCHORK,
E. F. KASTENHUBER.