No. 786,150. PATENTED MAR. 28, 1905.

J. J. POWERS.

SIPHON.

APPLICATION FILED JUNE 11, 1904.

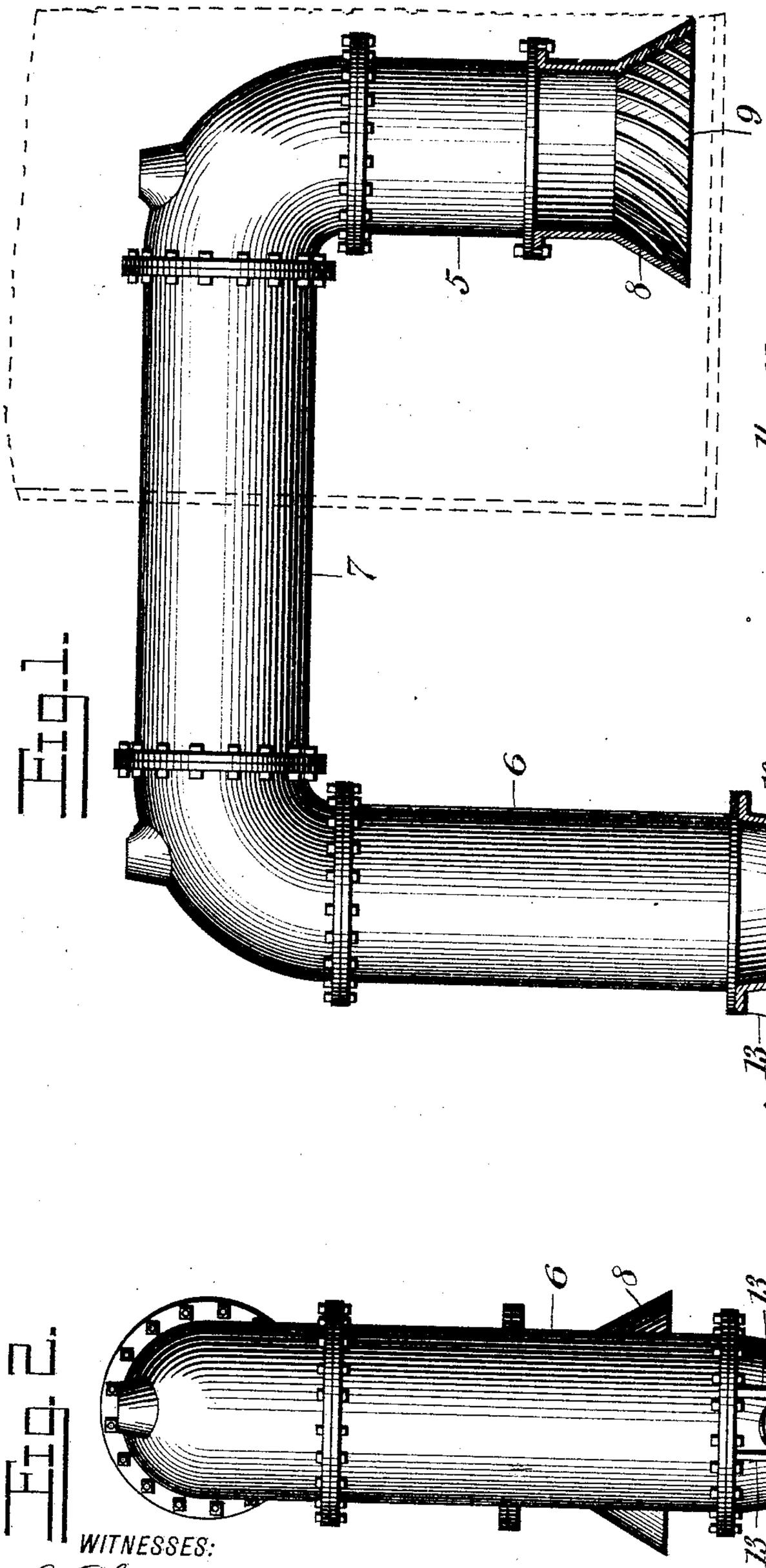

Fig. 1.

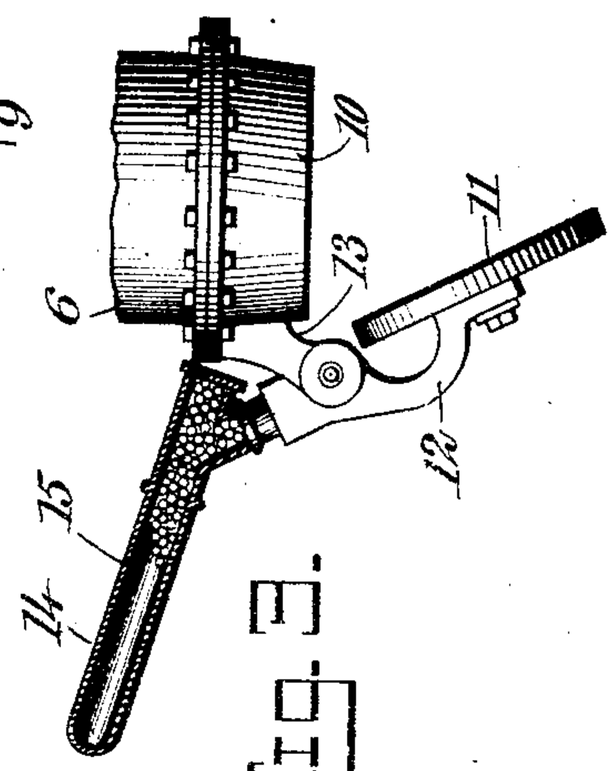

Fig. 3.

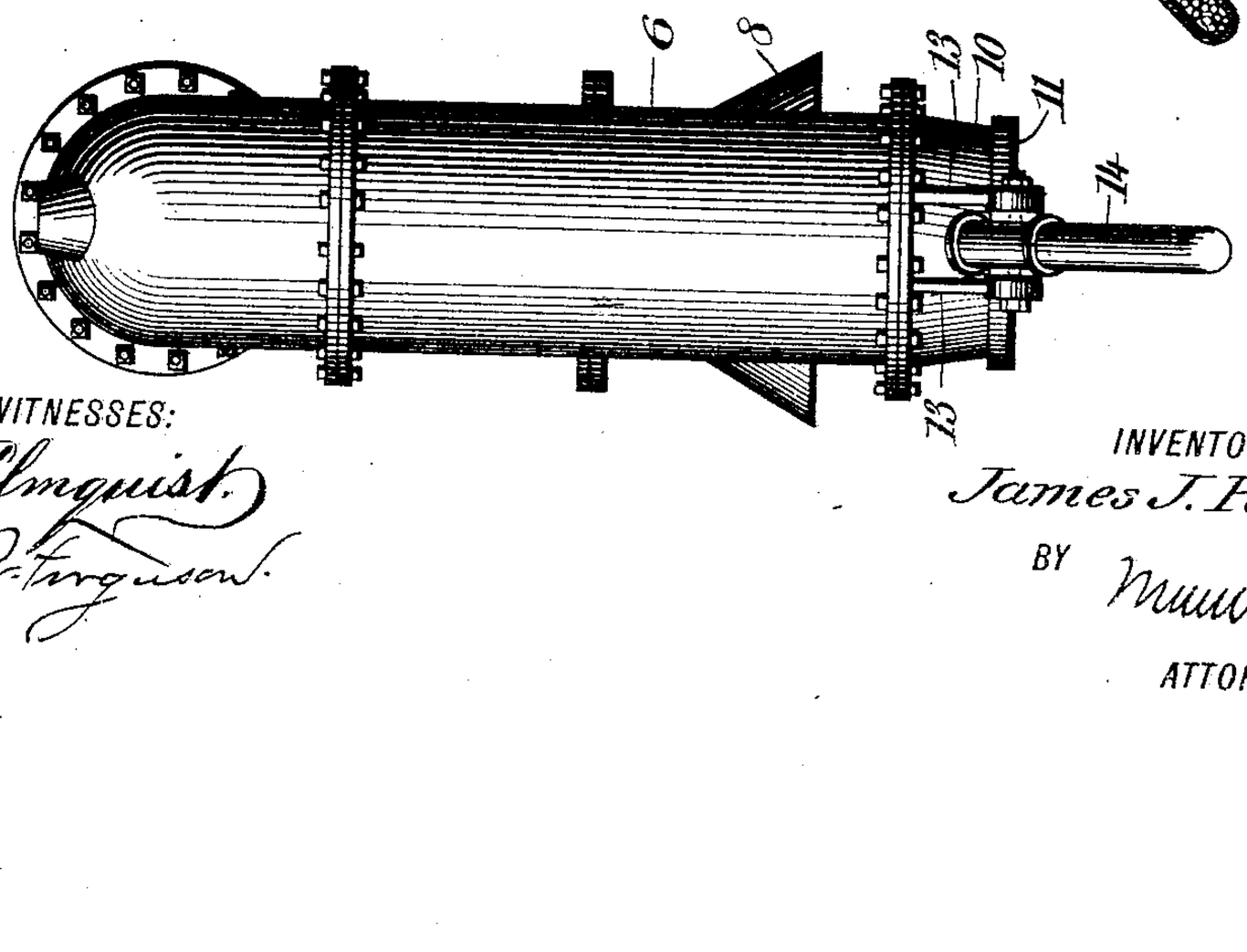

Fig. 2.

WITNESSES:

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No. 786,150. Patented March 28, 1905.

UNITED STATES PATENT OFFICE.

JAMES J. POWERS, OF CENTRALPARK, NEW YORK, ASSIGNOR TO JOSEPH G. POWERS AND GEORGE V. POWERS, OF CENTRALPARK, NEW YORK.

SIPHON.

SPECIFICATION forming part of Letters Patent No. 786,150, dated March 28, 1905.

Application filed June 11, 1904. Serial No. 212,120.

To all whom it may concern:

Be it known that I, JAMES J. POWERS, a citizen of the United States, and a resident of Centralpark, in the county of Nassau and State of New York, have invented a new and Improved Siphon, of which the following is a full, clear, and exact description.

This invention relates to improvements in siphons for drawing liquids from tanks, an object being to provide a self-charging siphon with a novel means for causing a quick action of the valve at the outlet end.

A further object is to provide at the inlet end of the siphon a simple means for causing a rotary motion of the liquid while passing through the siphon, thus by centrifugal force causing the liquid to impinge closely against the interior of the siphon at all parts and effectually preventing the entrance of air when the device is in operation, permitting a constant and rapid flow.

Other objects of the invention will appear in the general description.

I will describe a siphon embodying my invention and then point out the novel features in the appended claim.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all figures.

Figure 1 is a side elevation, partly in section, of a siphon embodying my invention. Fig. 2 is a front elevation thereof, and Fig. 3 is a detail, showing the controlling-valve as open.

Referring to the drawings, 5 designates the short or inlet arm of the siphon, and 6 the long or outlet arm, the two arms being connected together by a horizontal pipe 7. At the end of the short arm 5 is an outwardly-flared portion 8, having ribs 9 formed on its inner side, the said ribs having a spiral trend which will cause the water flowing through the siphon to have a rotary motion. The outlet end of the long arm 6 is contracted, as indicated at 10, and this contracted end, in connection with the enlarged or bell-shaped inlet, insures the breaking of suction in the siphon at the proper moment regardless of the flow. The outlet is controlled by a plate-valve 11, connected to an arm 12, mounted to swing in lugs 13, attached to the contracted portion. In connection with the valve I employ an automatically-shifting weight. As shown here, the arm 12 outward of its pivotal point has connected to it a tubular lever 14, in which a movable weight in the form of shot 15 is shown. Instead of the shot, however, it is obvious that quicksilver may be employed, and, in fact, I contemplate using any counterbalancing-weight for the valve that will automatically shift from one end of the lever to the other. The resistance of the valve to the weight of column on the inlet side of the siphon may be regulated by varying the amount of weight of the counterweight.

In operation the resistance caused by the counterweight closes the valve 11 and creates an air-lock in the siphon, the said counterweight being proportioned to balance the resistance until the fluid on the short arm side has risen above the top of the siphon to any desired height, and when the desired point is reached the valve resistance is overcome by the air-compression in the siphon, and the valve yields or opens, thus allowing the fluid to enter the siphon in full volume, thereby insuring a thorough charging of the siphon. The shifting of the movable weight toward the fulcrum-point lessens the resistance of the valve to the descending fluid and permits free delivery. The shifting is aided by the lever 14 being inclined with relation to the plane of the valve.

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

A siphon having the end of its short arm flared or bell shape, and provided on its inner face with spiral ribs and the end of its long arm contracted, and provided with lugs projecting below the same, an arm pivoted between its ends to the lugs of the long arm of the siphon, a plate-valve secured to one end of the pivoted arm and adapted to seat on the con-

tracted end of the long arm to close the same, a tubular lever having at one end an angular member secured to the other end of the pivoted arm, whereby the tubular lever is inclined to the plane of the valve, and shot in the said tubular arm, as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JAMES J. POWERS.

Witnesses:
JNO. M. RITTER,
C. R. FERGUSON.