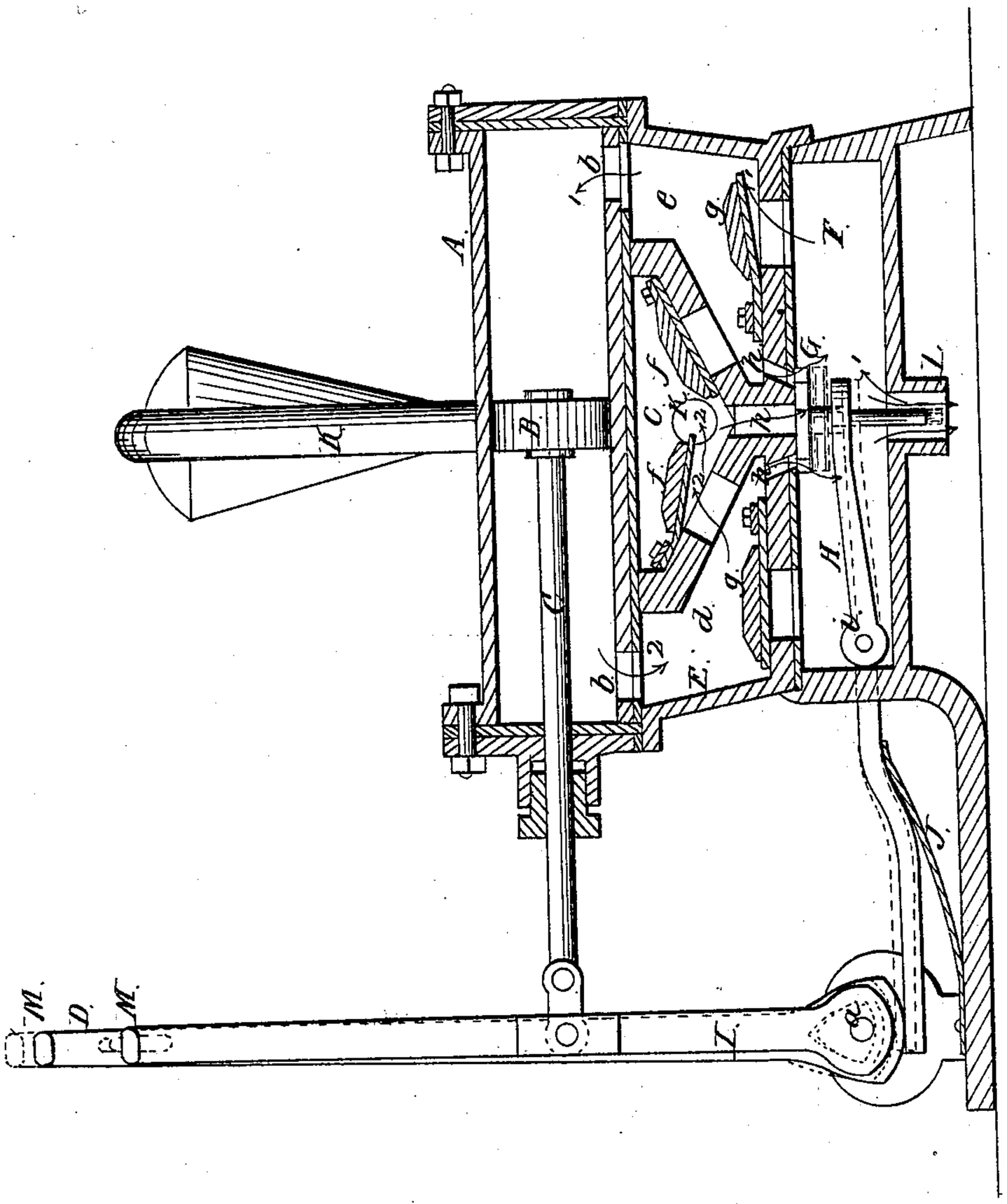
J. E. Cronk.

Double-Acting Pump.

No. 13,214. Patented July 10, 1855.



UNITED STATES PATENT OFFICE.

JAS. E. CRONK, OF POUGHKEEPSIE, NEW YORK.

DEVICE TO ALLOW ESCAPE OF WASTE WATER FROM PUMP-BARRELS.

Specification of Letters Patent No. 13,214, dated July 10, 1855.

To all whom it may concern:

Be it known that I, JAMES E. CRONK, of Poughkeepsie, in the county of Dutchess and State of New York, have invented a new and Improved Double-Acting Force-Pump; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawing, making a part of this specification, said drawing being a longitudinal vertical section of my improvement.

The nature of my invention consists in the peculiar construction of the pump whereby the waste water is allowed to pass from the chambers by the operation of a valve arranged as will be presently shown and described.

To enable others skilled in the art to fully understand and construct my invention, I will proceed to describe it.

A, represents a horizontal cylinder, in which a piston B, works, the rod C, of said piston being attached to a lever or handle D, the lower end of which is attached by a pivot (*a*) to the base of the pump. The cylinder A, is secured over a box E, and communicates with it by openings (*b*), (*b*), one at each end of the cylinder, the piston working between the two openings. The box E, is equal in length to the cylinder and is divided into three chambers or compartments (*c*), (*d*), (*e*), as plainly shown in the drawing. The chamber (*c*) is of three sided form, the two lower sides being inclined and each provided with a valve (*f*) one of which covers an opening leading into the chamber (*d*) and the other valve covers an opening leading into the opposite chamber (*e*). Each of the chambers (*d*), (*e*) is provided with a valve (*g*). These valves work over openings which lead into a chamber or box F, underneath the box E. Each of the chambers (*c*), (*d*), (*e*), is provided with an outlet passage (*h*) underneath which a valve G, is fitted. The valve G, is at the end of a lever H, which has its fulcrum at (*i*). The outer end of this lever is underneath a sliding rod I, which is fitted to the side of the lever or handle, D, and underneath the lever H there is a spring J, which tends to keep the valve G, depressed and consequently the outlet passage (*h*) open, as shown in red.

K, is a pipe which communicates with the chamber (*c*). This is the eduction or force pipe.

L, is the suction pipe which communicates with the box F.

The upper end of the lever or handle D, and rod I, are provided with handles M, M, which are at right angles with the rod and lever.

The pump is operated by grasping the handles M, M, and the sliding rod I, is thereby depressed and the outlet passages (*h*) of the chambers (*c*), (*d*), (*e*) closed, the lever D, is then vibrated or oscillated and the piston B, creates alternately a vacuum in the chamber (*e*), (*d*), and when the water passes up through the chamber (*e*) into the suction end of the cylinder as shown by the arrows 1, the water in the forcing end of the cylinder passes through the chamber (*d*) into (*c*) and into the eduction or force pipe K, as shown by arrows 2. The motion or direction of the water is reversed upon the return motion of the piston, the water passing through the chamber (*a*) into the suction end of the cylinder and the water in the forcing end previously drawn up passing through the chamber (*e*) into (*c*) and thence into the eduction or force pipe K. When the handles M, M, are freed from the hand the spring J, opens the valves G, and the waste water within the cylinder and chamber is allowed to escape down through the passages (*h*) into the suction pipe.

By the above invention no trouble nor care is required in order to allow the water to escape from the pump. I am aware that valves have been previously arranged to effect the same object, but they require to be separately operated and the pump if operated by a careless person would often be found inoperative and ice bound in winter.

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

The valve G, placed over the outlet passages (*h*) leading from the chambers (*c*), (*d*), (*e*), said valve being attached to a spring lever H, which is acted upon by a sliding rod I, arranged substantially as herein shown so that said valve will be closed by merely grasping the handles M, M, of the sliding rod I, and lever D, in operating the pump, the valve being opened when the handles M, M, are freed from the hand by the action of the spring J, as herein shown and described.

JAMES E. CRONK.

Witnesses:

CYRUS K. CORLISS,

WILLIAM WALLER.