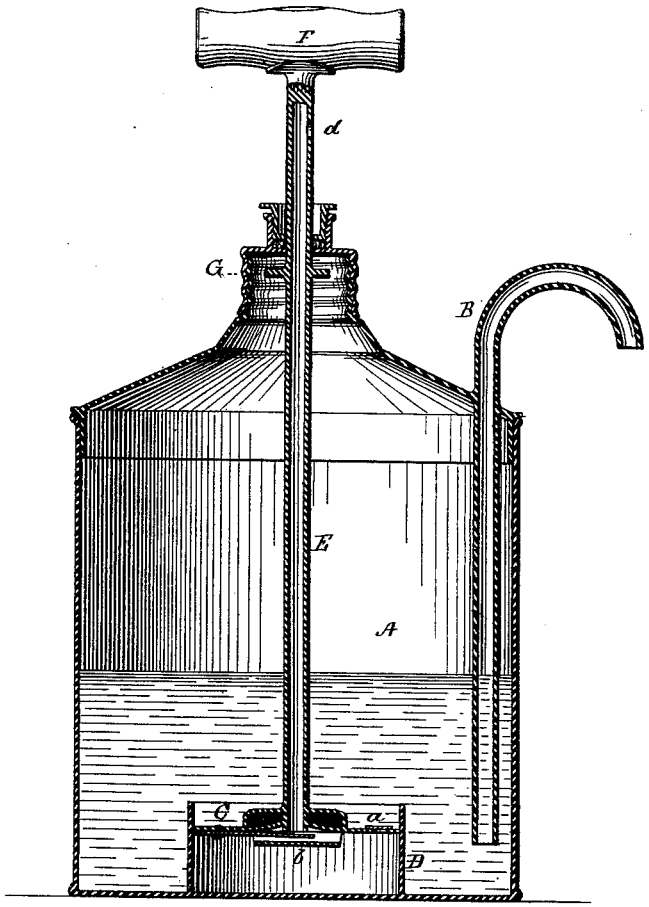
J. NEIL.

Beer-Pump.

No. 197,049. Patented Nov. 13, 1877.



John Neil

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UNITED STATES PATENT OFFICE.

JOHN NEIL, OF CHICAGO, ILLINOIS.

IMPROVEMENT IN BEER-PUMPS.

Specification forming part of Letters Patent No. **197,049**, dated November 13, 1877; application filed October 13, 1877.

To all whom it may concern:

Be it known that I, JOHN NEIL, of Chicago, State of Illinois, have invented a new and useful Improvement in Pumps for Emptying Tanks and other Closed Vessels of Liquids, of which the following is a clear, full, and exact description, reference being had to the accompanying drawing, which represents a vertical section of a tank or can with my improved pump attached.

My invention relates to that class of pumps used for emptying cans of oils and other liquids by atmospheric pressure; and it consists of the combination and arrangement of devices hereinafter explained and claimed.

To enable others skilled in the art to make and use my invention, I will proceed to describe the exact manner in which I have carried it out.

In the drawing, A represents a tank or can, in which the liquid is held, and B is an ordinary discharge-pipe. The piston C works in the short cylinder D, and is provided with the hollow piston-rod E, to which is attached the handle F. This handle answers the double purpose of working the piston and lifting the can, as just below the mouth of the can the piston-rod is provided with the rigidly-attached stop G, which controls the vertical stroke of the piston-rod, and thus prevents the piston C from being entirely withdrawn from the cylinder D. The piston is made just large enough to work freely in the cylinder, and without much friction, and is provided with the valve *a*, to admit the air upward into the vessel on the downward stroke of the piston. The hollow piston-rod E is provided at its lower end with the check-valve *b*, through which the air passes into the cylinder beneath the piston, to be pumped into the vessel. The upper portion of the hollow piston-rod has an opening at *d* for the ingress of atmospheric air to the pump.

From the above description it is evident that when the piston is drawn upward, the cylinder beneath the piston will be filled with air passing through the hollow piston-rod. Then, as the piston moves on its downward stroke, the check-valve *b* closes, and the air is forced through the valve *a* into the vessel, and also between the cylinder and the piston. As no packing is necessary in this construction, an important point is gained in vessels containing oils and acids, which are very destructive to all kinds of packing.

For convenience, the pump may be placed either at top or bottom of the vessel. In large vessels it would facilitate the operation to place the pump at or near the top of the vessel. The cylinder would require to be somewhat longer than the stroke of the piston, in order to keep the piston submerged.

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

The combination, with the can or vessel A and discharge-pipe B, of the cylinder D, piston C, provided with the valve *a*, and hollow piston-rod E, provided with the check-valve *b* and opening *d*, and handle F, all constructed to operate substantially as and for the purpose set forth.

JOHN NEIL.

Witnesses:
JULIUS KATZ,
WILLIAM NEIL.