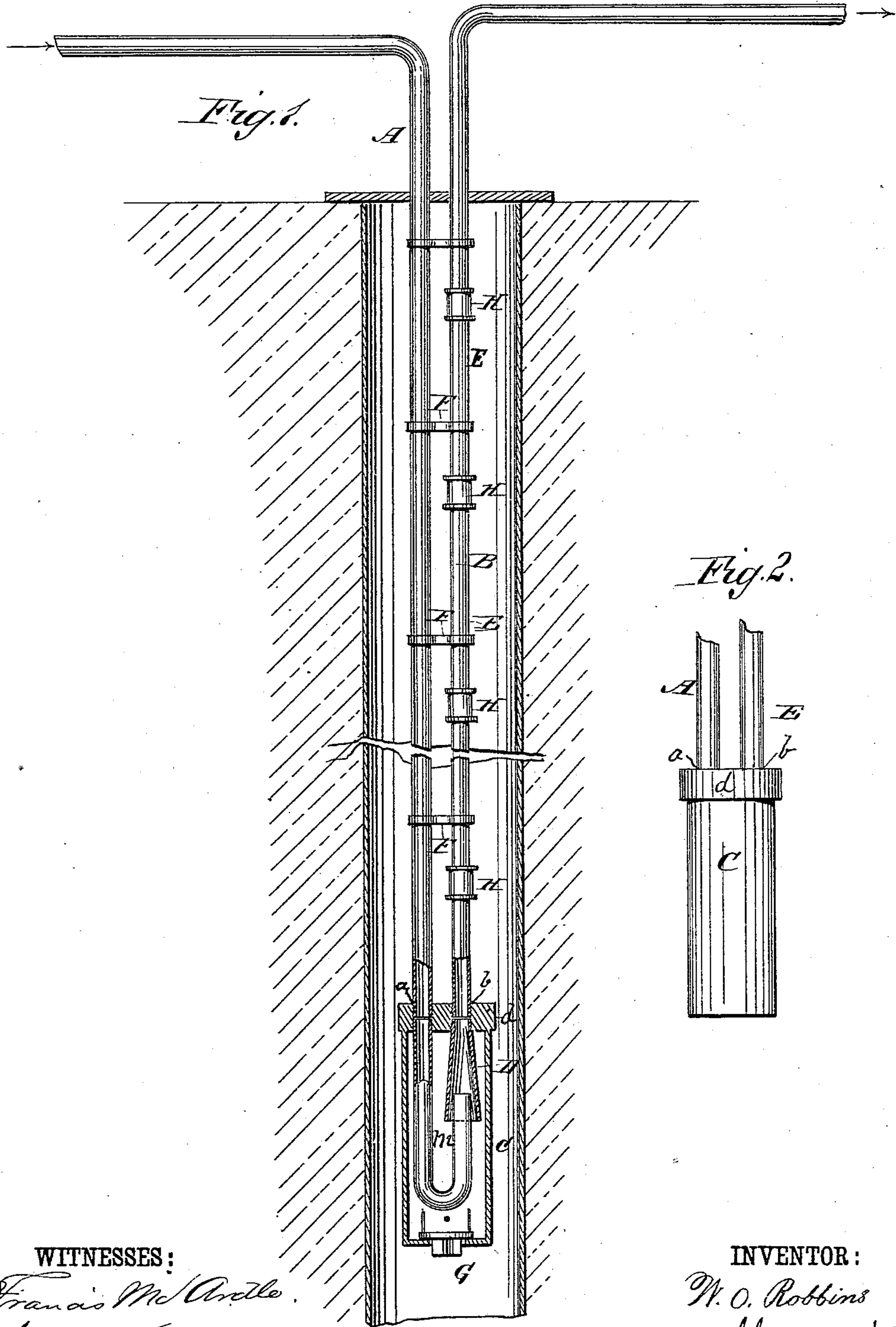


(No Model.)

W. O. ROBBINS.  
EJECTOR FOR WELLS.

No. 277,346.

Patented May 8, 1883.



WITNESSES:  
*Francis McArthur*  
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# UNITED STATES PATENT OFFICE.

WILLIAM O. ROBBINS, OF NEW YORK, N. Y.

## EJECTOR FOR WELLS.

SPECIFICATION forming part of Letters Patent No. 277,346, dated May 8, 1883.

Application filed August 31, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM O. ROBBINS, of the city, county, and State of New York, have invented a new and useful Improvement in Ejectors for Wells, of which the following is a full, clear, and exact description.

My invention relates to improvements in that class of ejectors employed to raise liquids out of wells by means of compressed air; and it consists in the peculiar construction and arrangement of the parts, as hereinafter more fully set forth, and pointed out in the claim.

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

Figure 1 is a vertical sectional elevation of a well provided with my improved ejector. Fig. 2 is an external view of the lower part of the ejector.

A feed-pipe, A, for the compressed air extends from the compressed-air reservoir down to the bottom of the well B, and passes partly through a hole, *a*, in the top *d* of a cylindrical or like closed vessel, C, in the bottom of the well.

*m* represents a bent pipe, having the end of its longer leg inserted in the lower end of the hole *a* in the top *d*, so that the pipes A and *m* will register with each other, the latter lying within the vessel C.

A lengthened funnel, D, is placed over the apertured end of the pipe A, the smaller end of the funnel being secured in the lower end of the hole *b* in the top *d* of the vessel C. From the smaller end of the funnel a stand-pipe, E, passing partly through the hole *b* in the top *d*, extends upward, which leads to the tank or reservoir. The pipes A and E are united and braced by bands or clips F. The vessel C is provided in its bottom with an opening, which is closed by an inwardly-opening valve, G. The stand-pipe E is provided with a series of upwardly-opening check-valves, H, which are arranged at suitable intervals, according to the density of the liquid to be raised, and according to the pressure of the compressed air.

The operation is as follows: The compressed

air is forced down through the pipe A, and issues from the lower upturned end of the same into the funnel D and draws the liquid in the vessel C into the funnel D, and from there into the pipe E, in which the liquid rises. The compressed air is very apt to bubble through the liquid without raising the same, and for that reason I have provided the check-valves H. They afford such resistance to the compressed air that the same cannot rush through the pipe E without affecting the liquid, but force the air to act on the solid cylinder of liquid and raise the same. The check-valves H also prevent the liquid that has been raised from flowing back again. The check-valve G prevents the liquid from flowing out of the vessel C. The check-valves used may be of any desired type, the usual puppet-valves being preferred. The pipes A and E are preferably made one inch in diameter, as with pipes of such size the apparatus will be most advantageous in all respects.

I am aware that one check-valve has been used in the suction-tubes of pumps; but the said valve is not used for the purpose for which I use the series of valves, and I do not broadly claim a check-valve in combination with a suction-pipe of a pump, &c.

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

The combination, with the air-pipe A and stand-pipe E, having a series of check-valves, H, of the vessel C, provided with the upwardly-opening valve G in its bottom, and holes *a* *b* in its top to receive the air and stand pipes, funnel D, having its upper end inserted in the lower end of the hole *b* and lying within the vessel C, bent pipe *m*, lying within the vessel, and having its longer leg inserted in the lower end of the hole *a* and its shorter leg projecting upwardly into the funnel, said bent pipe and funnel forming a continuation of the air and stand pipes, substantially as described.

WM. O. ROBBINS.

Witnesses:

OSCAR F. GUNZ,  
W. O. ROBBINS.