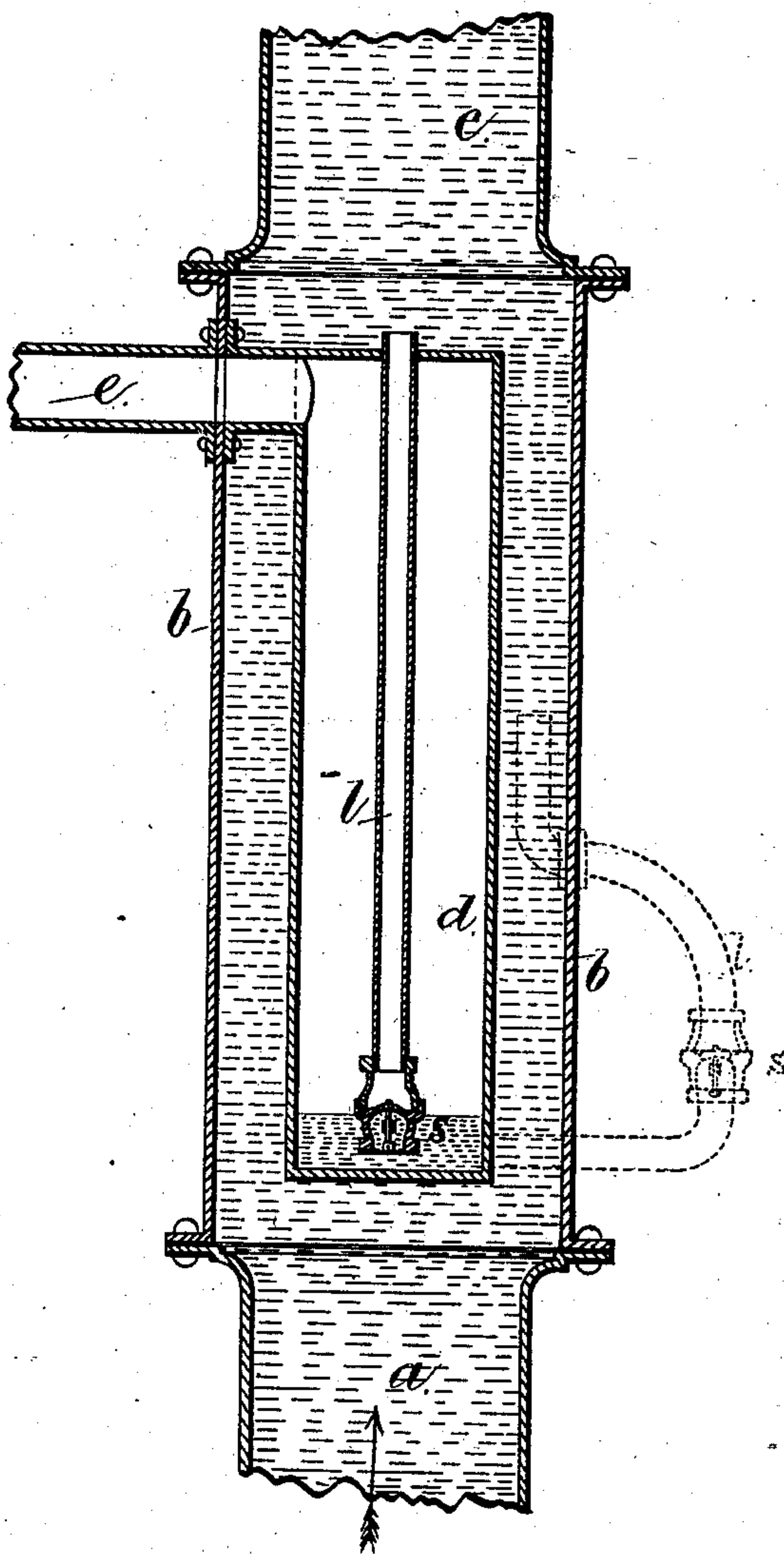


(No Model.)

W. A. MILES.
CONDENSER FOR STEAM PUMPS.

No. 272,457.

Patented Feb. 20, 1883.



Witnesses
Harold Ferrell
Chas. H. Smith

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UNITED STATES PATENT OFFICE.

WILLIAM A. MILES, OF COPAKE IRON WORKS, NEW YORK.

CONDENSER FOR STEAM-PUMPS.

SPECIFICATION forming part of Letters Patent No. 272,457, dated February 20, 1883.

Application filed December 26, 1882. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM A. MILES, of Copake Iron Works, in the county of Columbia and State of New York, have invented an Improvement in Condensers for Steam-Pumps, of which the following is a specification.

This invention relates to that class of steam-pumps in which the exhaust-steam is discharged into a chamber in the suction water-way. In the devices heretofore constructed there is difficulty in removing the water of condensation and in freeing the condenser from atmosphere. My present invention is made for overcoming this difficulty.

In the drawing I have represented the improvement by a sectional view.

The water is drawn from its supply through the pipes *a b c* to the pump in the direction of the arrow. The pipe *b* is sufficiently enlarged to receive the condenser-vessel *d* within it without obstructing the suction water-way. This vessel *d* is preferably a long tube with its ends closed and the exhaust-steam pipe *e* passing into its upper end. The object of this is to cause the steam to displace the air by accumulating in the upper part of the vessel *d* and driving down the air, which is heaviest; and in order to draw off this air, and also to remove the water of condensation, I make use of the pipe *l*, passing from the bottom of the vessel *d* and opening in the direction in which the water is flowing through the suction water-way, so that the vacuum action of the pump may free the condenser from air and from the water of condensation. It is preferable to place a check-valve, *s*, at the bottom of the pipe *l* to prevent water being drawn into the vessel *d* when the vacuum therein is greater than that in the suction-pipe.

It is advantageous to introduce the condenser-vessel as high as possible in the suction water-way to obtain the vacuum action due to the column of water, and I remark that a siphon may be employed in cases where the water is drawn up but a small distance by the pump. This feature, however, is set forth in other applications of mine heretofore made.

I remark that if it is desirable to provide easy access to the check-valve it may be placed outside the pipe *b*, and the pipe be led out from the vessel *d* to such check-valve, and then back again into the water-way, as represented by dotted lines.

I claim as my invention—

1. In a condensing apparatus for steam-pumps, the combination, with the water-way pipes, of a condensing-vessel within the water-way, an exhaust-steam pipe opening into the top part of the condensing-vessel, and a pipe from the lower part of the condensing-vessel opening into the suction water-way, substantially as set forth.

2. In a condensing apparatus for steam-pumps, the combination, with the water-way pipes, of a condensing-vessel within the water-way, an exhaust-steam pipe opening into the top part of the condensing-vessel, a pipe from the lower part of the condensing-vessel opening into the water-way, and a check-valve, substantially as set forth.

Signed by me this 21st day of December, A. D. 1882.

WILLIAM A. MILES.

Witnesses:

GEO. T. PINCKNEY,
WILLIAM G. MOTT.