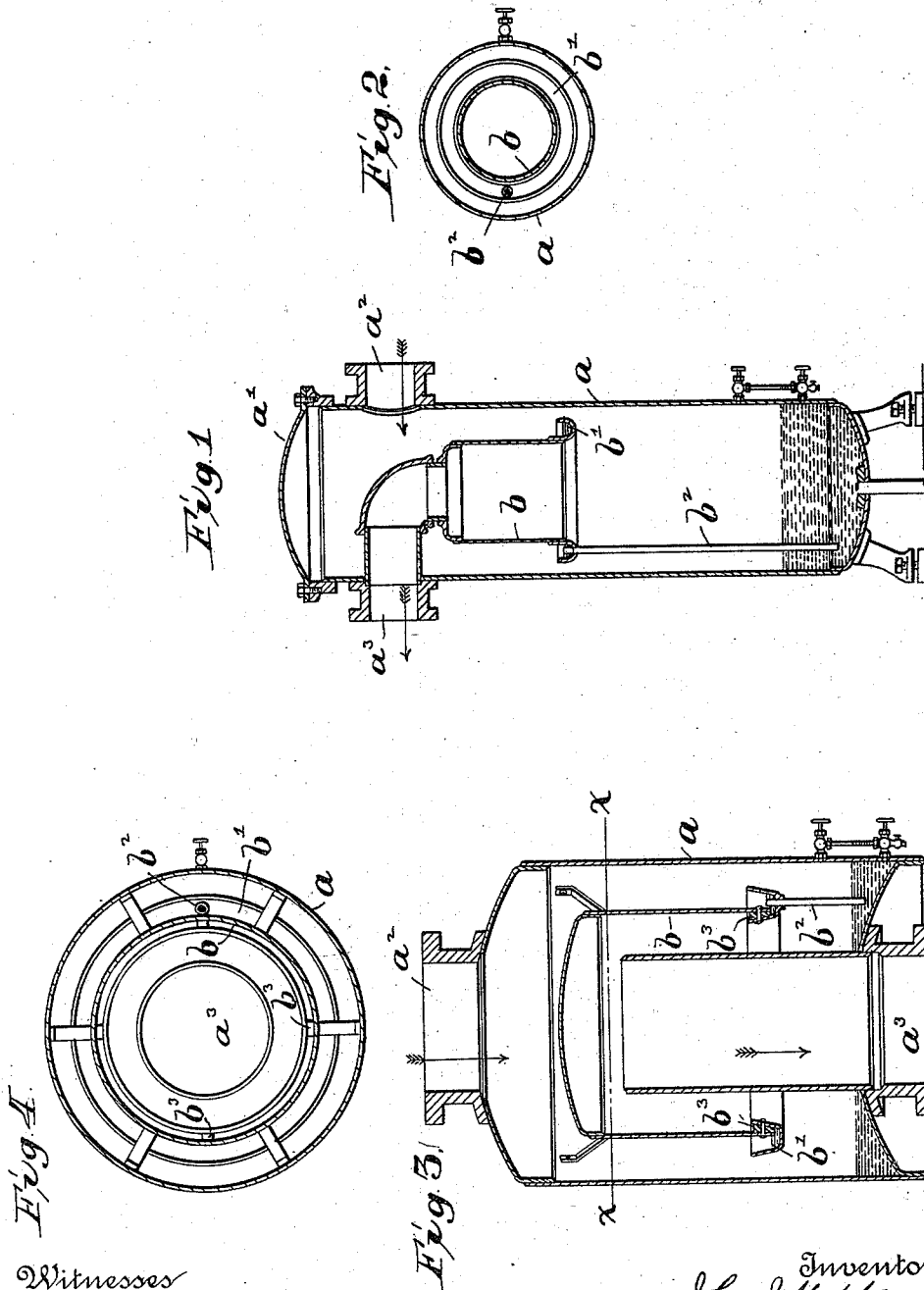


(No Model.)

J. J. HOPPES.
STEAM SEPARATOR.

No. 573,878.

Patented Dec. 29, 1896.



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UNITED STATES PATENT OFFICE.

JOHN J. HOPPES, OF SPRINGFIELD, OHIO.

STEAM-SEPARATOR.

SPECIFICATION forming part of Letters Patent No. 573,878, dated December 29, 1896.

Application filed August 12, 1896. Serial No. 602,511. (No model.)

To all whom it may concern:

Be it known that I, JOHN J. HOPPES, a citizen of the United States, residing at Springfield, in the county of Clark and State of Ohio, have invented certain new and useful Improvements in Steam-Separators, of which the following is a specification.

My invention relates to improvements in devices for separating the entrained water from steam in its passage through pipes or conduits; and my invention consists in the constructions and combinations of parts hereinafter described, and set forth in the claims.

In the accompanying drawings, Figure 1 is a longitudinal sectional view of a device embodying my invention. Fig. 2 is a transverse sectional view of the same. Fig. 3 is a longitudinal sectional view of the same, showing a modification in the construction. Fig. 4 is a transverse sectional view of the construction shown on the line *xx* in Fig. 3.

Like parts are represented by similar letters of reference in the several views.

In the said drawings, *a* represents an outer casing, which may be cylindrical or any other suitable shape, and may, if desired, be provided with a removable cover *a'*, by means of which access may be obtained thereto. This casing is provided with inlet and outlet openings *a²* *a³*. Within the casing *a* and adapted to surround the outlet-opening *a³* is an enlarged reservoir *b*, preferably cylindrical in form and adapted to form a chamber from which the outlet-opening leads. This reservoir *b* is arranged in a vertical position and is provided at the bottom with a drip-trough or pan *b'*, from which leads a drain-pipe *b²* to the bottom of the casing *a*, in which the water of condensation is received.

In the operation of the device the steam entering at *a²* fills the outer casing, and the water carried by entrainment coming in contact with the sides of the casing or reservoir trickles down the same and is deposited in the bottom of the casing or in the trough *b'*. By this construction no projecting edges are formed, from which the water can drop into or be carried off by the moving steam.

The drip-trough *b'* is preferably made to extend on each side of the reservoir *b*, as shown in Figs. 3 and 4, spacing-blocks *b³* being employed at the points where the trough is attached to the edge of the reservoir, so that a space is left on each side of the lower

edge of the reservoir and between said reservoir and the edges of the trough, so that any water which trickles down on either side of the reservoir will find its way into the trough. The drain-pipe *b²* is also preferably extended into the trough so as to project upwardly from the bottom thereof, so that the water in the trough will have to rise therein to a definite point before it passes out through the drain-pipe, thus retaining at all times a certain amount of water in the drip-trough. Water is also retained in the bottom of the outer casing to a certain point, and this accumulated water assists in catching and retaining the water which trickles down the sides of the casing and reservoir and which would otherwise be carried on by entrainment.

Having thus described my invention, I claim—

1. The combination with the outer casing having outlet and inlet openings, a depending reservoir, of a drip-trough depending from and below the bottom edge of said reservoir, with the sides of said trough on opposite sides of the edge of said reservoir, and a drain-pipe extending from said trough to the bottom of the casing, substantially as specified.

2. The combination with the outer casing having outlet and inlet openings, and a depending reservoir surrounding the outlet-opening, of a drip-trough secured to the lower edge of said reservoir by spacing-blocks so as to stand below the same with the sides of said trough on opposite sides of the lower edge of said reservoir, substantially as specified.

3. The combination with the outer casing, outlet and inlet openings, a depending reservoir having a drip-trough at the lower edge thereof, said drip-trough being secured to the edge of said reservoir by spacing-blocks, and a drain-pipe from said drip-trough to the bottom of said casing, said drain-pipe being extended into said trough so as to project above the bottom thereof, substantially as and for the purpose specified.

In testimony whereof I have hereunto set my hand this 10th day of August, A. D. 1896.

JOHN J. HOPPES.

Witnesses:

JAMES A. TOWNSEND,
CHAS. I. WELCH.