

W. J. SHERRIFF.

Ejectors.

No. 148,251.

Patented March 3, 1874.

Fig. 1.

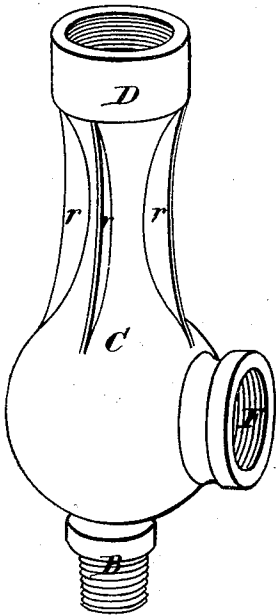


Fig. 2.

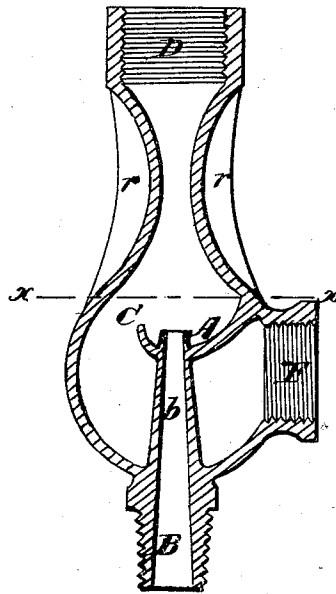
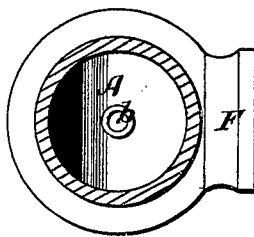


Fig. 3.



WITNESSES

*E. H. Brown.*  
*Melville Church.* By

INVENTOR

*W. J. Sherriff.*

*Roll & Allen*  
his Attorneys.

# UNITED STATES PATENT OFFICE.

WILLIAM J. SHERRIFF, OF PITTSBURG, PENNSYLVANIA.

## IMPROVEMENT IN EJECTORS.

Specification forming part of Letters Patent No. **148,251**, dated March 3, 1874; application filed October 11, 1873.

*To all whom it may concern:*

Be it known that I, WILLIAM J. SHERRIFF, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and Improved Ejector; and I do hereby declare the following to be a full and exact description of the same, reference being had to the accompanying drawings forming part of this specification, in which--

Figure 1 is a perspective view of my invention. Fig. 2, a vertical section of the same. Fig. 3 is a section through line *x x*, Fig. 2.

Similar letters of reference in the accompanying drawings denote the same parts.

This invention relates to that class of pumps known as "ejectors," wherein the elevation of water or other fluid is effected by the condensation of a steam-jet; and it consists, first, in the method of constructing the apparatus with a semi-diaphragm all made in one piece; second, in the internal arrangement of the parts, whereby the entering current of water is conducted upon the steam-jet nozzle more directly than heretofore, a partial support afforded to the ejected column, and a back flow into the inlet-pipe obstructed.

That others may fully understand my improvement, I will now particularly describe it.

I make the shell C substantially in the form of a pear, to the upper or neck portion, D, of which the outlet or ejection pipe is coupled. At the larger or bottom end of the shell D there is a projection or stud, B, to form the coupling for the steam-pipe, said projection being perforated longitudinally to permit the passage of the steam. At the side near the bottom end of the case there is a lateral opening, F, for the admission of the water, a suitable pipe being coupled thereto for that purpose. The projection B has an internal prolongation, *b*, extending axially into the cavity of the shell C to a point opposite the upper edge of the inlet F, or thereabout, and said internal projection *b* is joined at its upper end to the shell C by a curved partition or semi-diaphragm, A, which veils the inlet F and causes the entering water to pass to the oppo-

site side of the shell C before it ascends toward the outlet. The partition A curves upward toward its edge, and extends to a point slightly more elevated than the nozzle or upper end of *b*, so that the water-current is directed to and caused to flow over upon the steam-nozzle, whereby a more rapid condensation of the steam is effected.

It will be observed that the partition A in addition to its action in directing the flow of the water, as specified, also serves as an abutment or partial support for the ejected column of water above it, and presents a resistance to the back flow into the inlet-pipe.

As above set forth, these several parts are cast in a single piece, and the labor of fitting is confined to the couplings for the three pipes named and the reaming of the nozzle *b* and neck D.

The neck D may be strengthened by external ribs *r r*, as shown.

I am aware that other forms of ejectors have heretofore been made in one piece, and I, therefore, do not claim, broadly, the construction of an ejector made in one piece; but desire to cover only my particular form of ejector when made in one piece.

I claim as my invention--

1. An ejector constructed with an internal steam-nozzle joined at or near its upper end to the outer case of the ejector by a semi-diaphragm or partial partition, which conducts the water upon the steam-nozzle more directly, and also affords a partial support to the column of water above it, and thereby resists the back flow of the water, substantially as described.

2. The ejector constructed with the semi-diaphragm, as described, when made in one piece, as set forth.

3. In combination with the nozzle *b*, the semi-diaphragm A, curved upward at its edge, substantially as and for the purpose set forth.

WILLIAM J. SHERRIFF.

Witnesses:

MELVILLE CHURCH,  
NATHAN K. ELLSWORTH.