H. COLL.

EJECTOR.

No. 110,205. Patented Dec. 20, 1870.

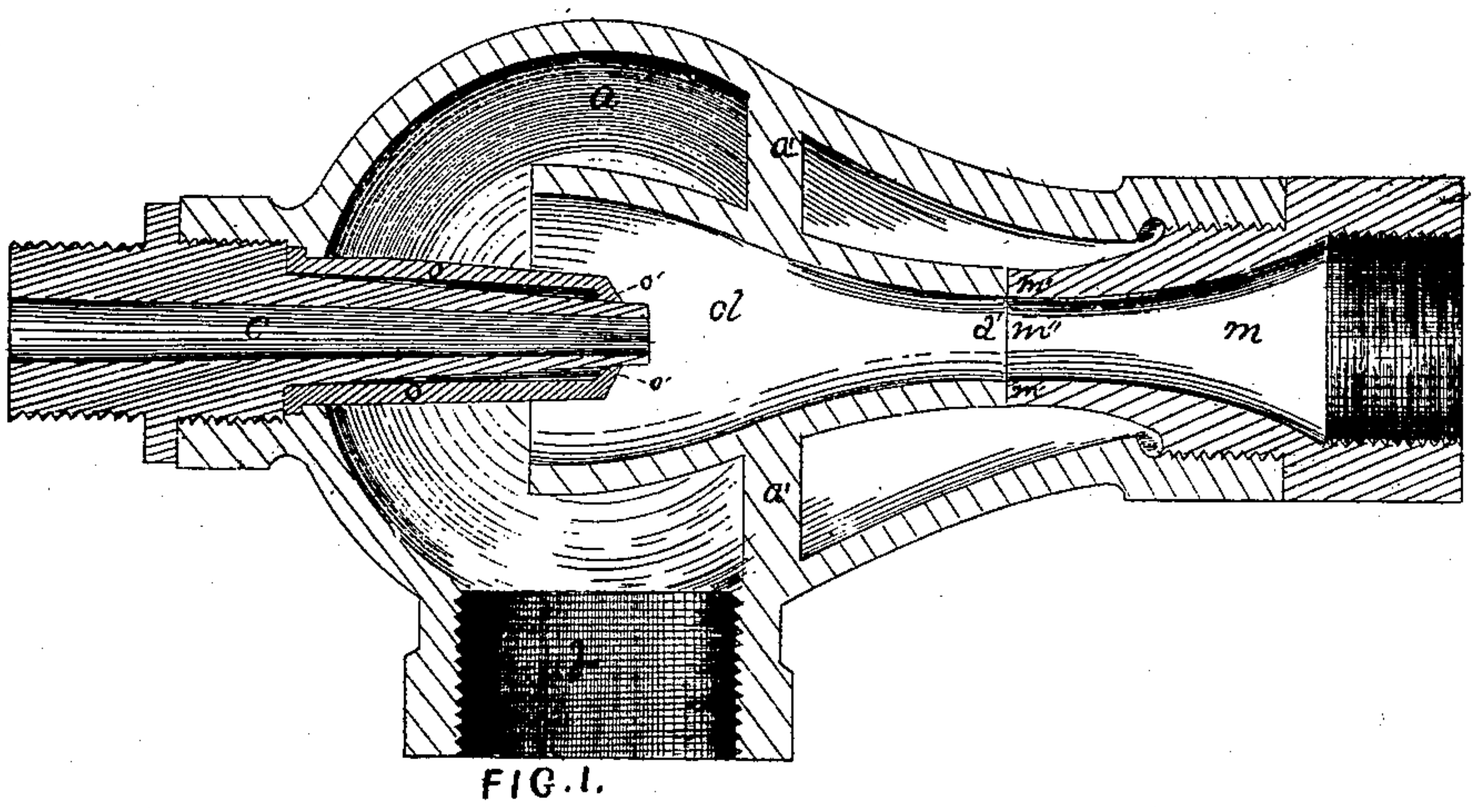

FIG. 1.

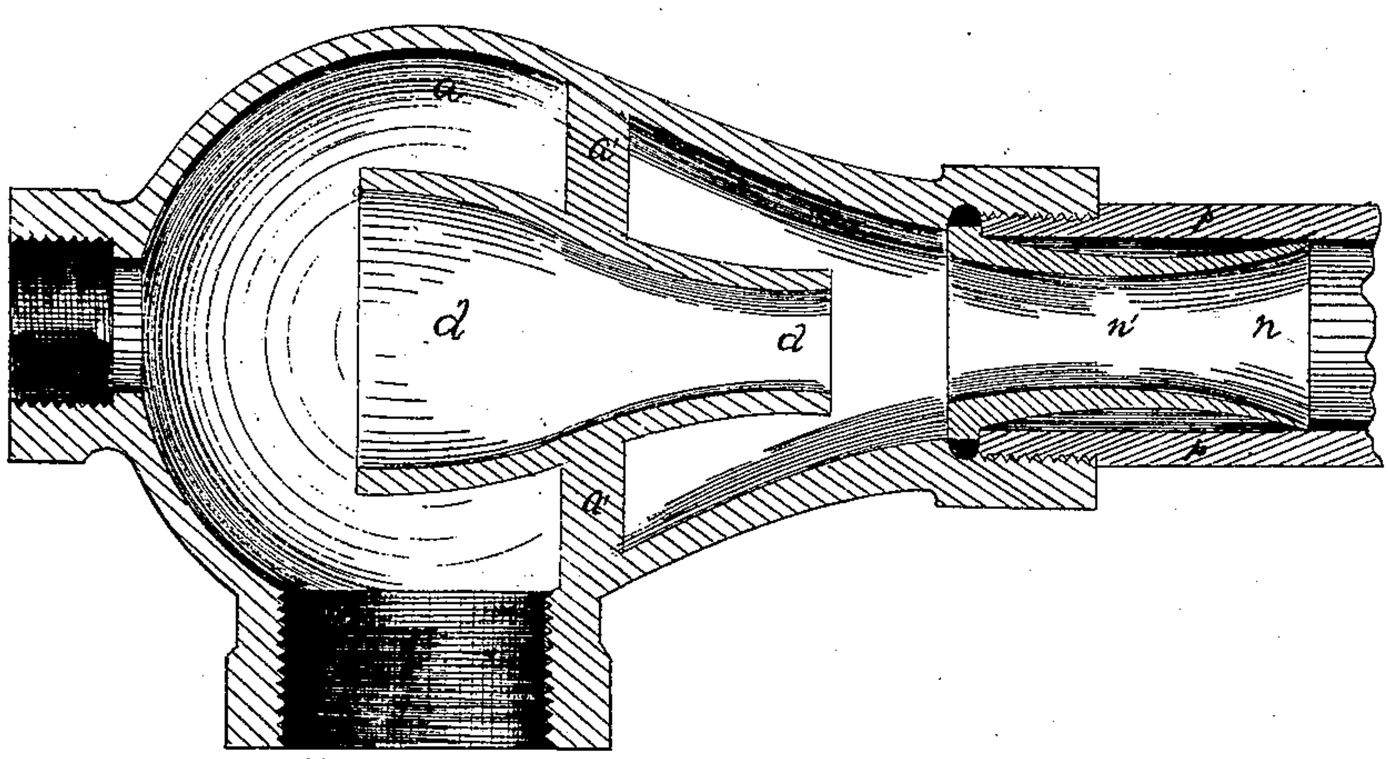

FIG. 2.

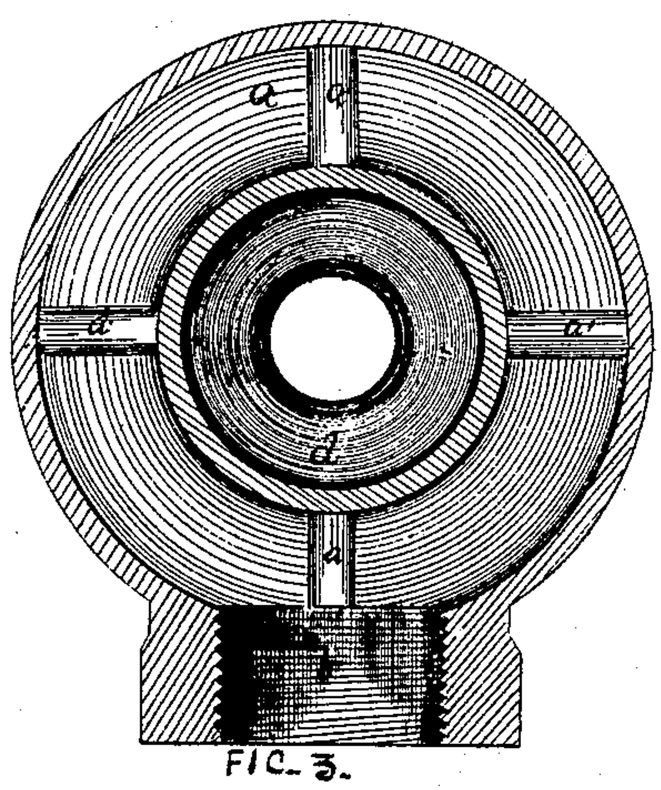

FIG. 3.

Witnesses

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HUGH COLL, OF MILLVALE BOROUGH, PENNSYLVANIA.

Letters Patent No. 110,205, dated December 20, 1870.

IMPROVEMENT IN EJECTORS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, HUGH COLL, of Millvale Borough, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvements in Siphon Pumps; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawing making a part of this specification, in which—

Figure 1 is a longitudinal vertical section of my improved pump;

Figure 2, by a like view, shows a modification thereof; and

Figure 3 is a vertical transverse section through *x x*, fig. 1.

Like letters of reference indicate like parts in each.

My present invention relates to certain improvements in the siphon pumps patented to me June 8, 1869, and consists in modifications of form and construction, whereby such pump is adapted to new uses, or to accomplish old results in a better manner.

To enable others skilled in the art to make and use my improvement, I will proceed to describe its construction and mode of operation.

The outer head *a* is of the usual construction, and has the usual water-inlet opening *b*, and an opening for the insertion of the steam injection-pipe *c*.

The base or blunt end of the inner pear-shaped head of the original patent, above referred to, is cut off at or near the broadest part, so as to give a head, *d*, open at the base, and with a bore diminishing toward its forward end, *d'*.

This head *d* is connected, in casting, to the outer head *a* by means of radial arms *a'*, in any desired number.

This inner head *d*, having a large, unobstructed opening at its base, I have devised more particularly for use in pumping or ejecting bilge-water, the water out of tan-vats, &c. As some tan-bark is necessarily carried up with the water, the holes or passages for the water are apt to become clogged, unless ample room be left for the flow of both. I thus adapt the double head to the uses described.

I have also effected further improvements by the construction of nozzle-pieces, which are interchangeable, and may be used with the same pump, according to the varying conditions under which the water is to be raised.

The nozzle-piece *m*, fig. 1, is designed for use in raising water to a considerable height, with a comparatively small amount of steam.

This nozzle-piece, at its rear end, *m'*, abuts against or is connected with the forward end *d'* of the inner head or tube *d*, so as to give a smooth joint inside and least resistance to the flow of water.

At its throat, *m''*, it is contracted somewhat, from which it opens into a larger pipe.

Another form of nozzle-piece, *n*, is shown in fig. 3, in which the size of the throat *n'* is reduced, and which does not abut against the end of the inner pipe *d'*, but leaves a space between it and the inner pipe *d'*, so that a flow of water can be kept up from the space between the two heads. This form is designed for raising a larger body of water to a less height with the same amount of steam.

The nozzle *n* may be set loosely in the end of the main discharge-pipe *p*, as shown, or otherwise attached at pleasure.

Having thus described my improvement,

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The inner head *d*, open at its rear end, so as to leave an unobstructed opening around the steam injection-pipe for the passage of such pieces of solid matter as may be brought up by the water, such inner head *d* being connected to the outer head *a* by means of radial arms *a'*, all arranged substantially as described.

2. The nozzle-piece *m*, abutting against and in combination with the inner head *d*, substantially as and for the purposes set forth.

In testimony whereof I, the said HUGH COLL, have hereunto set my hand.

HUGH COLL.

Witnesses:

JOHN GLENN,

G. H. CHRISTY.