

(Model.)

J. A. MARSH.

STEAM JET PUMP.

No. 334,597.

Patented Jan. 19, 1886.

Fig. 1.

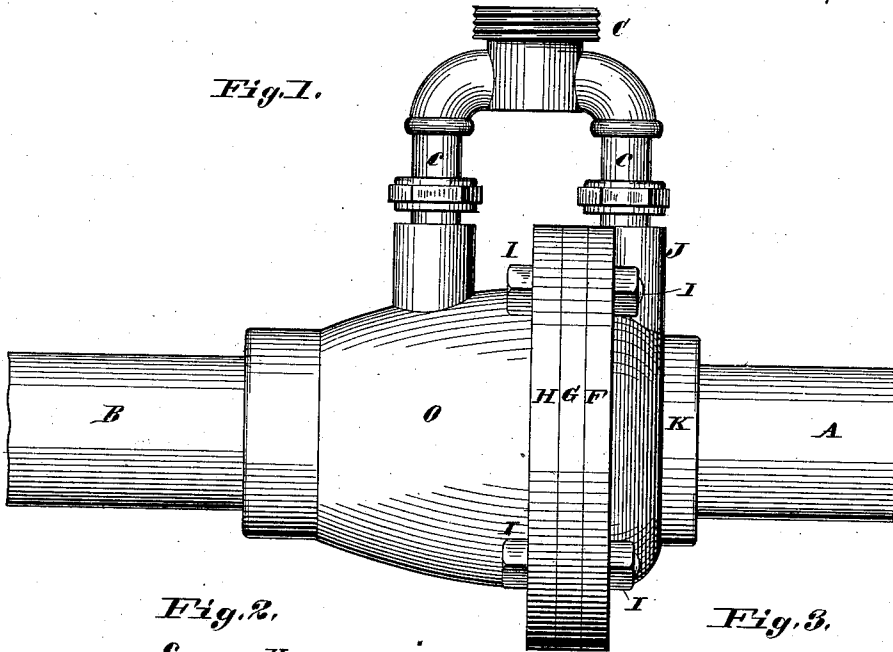


Fig. 2.

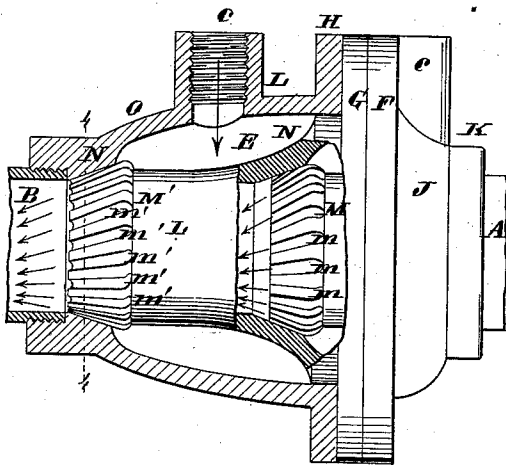


Fig. 3.

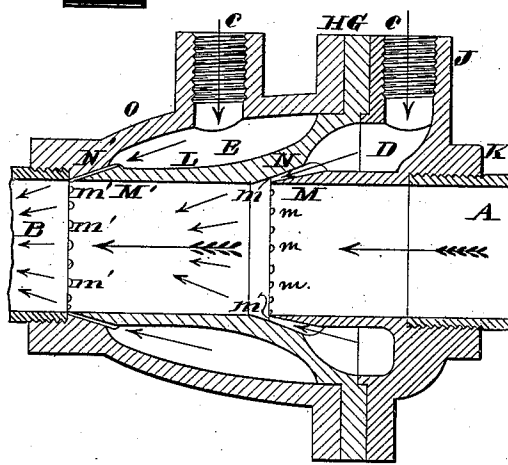
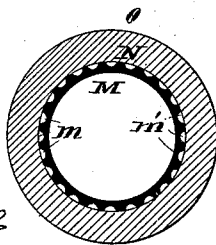


Fig. 4.



Attest:

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UNITED STATES PATENT OFFICE.

JOHN A. MARSH, OF LONG LAKE, ILLINOIS.

STEAM-JET PUMP.

SPECIFICATION forming part of Letters Patent No. 334,597, dated January 19, 1886.

Application filed March 30, 1885. Serial No. 160,621. (Model.)

To all whom it may concern:

Be it known that I, JOHN A. MARSH, of Long Lake, Madison county, State of Illinois, have invented a certain new and useful Improvement in Steam-Jet Pumps, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

Figure 1 is a side view of the improvement. Fig. 2 is part in side view and part in axial section. Fig. 3 is an axial section. Fig. 4 is a transverse section at 4 4, Fig. 2.

A is the suction-pipe. B is the discharge-pipe. These may be bent or connected with other pipes or appendages in any suitable manner.

C is the steam-pipe, which is branched at c, and connects with two annular steam-chambers, D and E.

The case consists of three castings connected together by their flanges F, G, and H, secured together by bolts I. The flange-joints are made tight by rubber or other gaskets. The casting J has a screw-socket, K, into which the end of the suction-pipe A is screwed, and both it and the middle casting, L, have a bore of the same diameter as the inside of the suction and discharge pipes A and B. The casting J has a tapering jet-nozzle, M, fitting in a flaring socket, N, of the casting L. In the circumference of the nozzle M are a number of inclined grooves, *m*, through which the steam from the chamber D passes into the bore with a spiral movement, so that its centrifugal force will tend to make it hug the

outside of the bore and prevent in a great degree the friction of the water against the sides of the bore. These jet-passages *m* are shown as about semicircular in section; but I do not confine myself to this shape. I have shown the passages as varying about twenty degrees from a line parallel with the axis as to their spiral direction. It will be seen that they must also incline toward the axis of the bore, as they lead from an annular chamber surrounding the bore; but their spiral inclination is sufficient to carry the steam to the outside of the bore, (as before explained.) The nozzle or end M' of the casting L is similar to that M of casting J, and has similar grooves for the passage of steam, these grooves being marked *m'*. The nozzle or end M' fits in the socket N' of the casting O, into which the discharge-pipe B is screwed.

It will be seen that as the bore is of equal diameter in the supply-pipe, the pump, and the discharge-pipe, there is no possibility of the pump getting clogged, as any object entering the supply-pipe would pass through without obstruction.

I claim as my invention—

A steam-jet pump having a uniform bore throughout, surrounded by one or more annular steam-chambers, with series of jet-passages leading from said chamber or chambers to the bore.

JOHN A. MARSH.

In presence of—

BENJN. A. KNIGHT,
GEORGE D. KNIGHT.