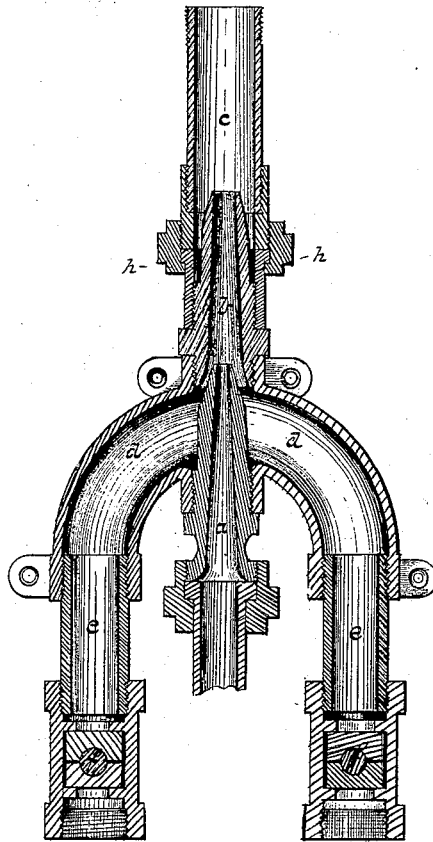


T. HARRINGTON.
STEAM PUMP.

No. 110,850.

Patented Jan. 10, 1871



Witnesses:

Thos B Kern

R. C. Orenskall

Inventor:

Thomas Harrington

by his attorneys

Bakewell Christy

United States Patent Office.

THOMAS HARRINGTON, OF PITTSBURG, PENNSYLVANIA.

Letters Patent No. 110,850, dated January 10, 1871.

IMPROVEMENT IN STEAM-PUMPS.

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, THOMAS HARRINGTON, of the city of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Steam-Pump; 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, which is a vertical sectional view of my improved steam-pump.

My invention relates to that class of pumping apparatus whereby, by the force of steam, water or other liquid is elevated and discharged.

To enable those skilled in the art to make and use my invention, I will proceed to explain its construction and mode of operation.

In the drawing—

a is the steam-injection pipe, the nozzle of which tapers down or is reduced so as to allow it to enter the mouth of the water-nozzle *b*.

The nozzle *b* is screwed into the discharging end of the shell *d*, and discharges into the pipe *c*.

The width of the open space between the two nozzles *a b*, where the nozzle *a* enters the nozzle *b*, is equal to about one-fourth the distance the nozzle *a* extends into the nozzle *b*. Although this proportion may be varied somewhat, it has been found to produce the greatest amount of power.

Opening into the shell *d* are two pipes, *e e*, for supplying the water. If so desired these may be used for supplying both hot and cold water, by putting a

stop-cock *f* in each of them, so that the flow from one may be stopped when the other is being used.

My improvement is also especially useful on board of steamboats, in the culinary department or elsewhere, where both hot and cold water are continually needed.

In raising a column of water in the tube *c* the weight of the column rests in part upon the seat *h* and the tapering sides of the nozzle *b*, thus increasing the effective power of the steam by diminishing the resistance.

A great loss of power, which is common in many of the pumps heretofore in use, arises from the spreading of the steam through the chamber of the pump and its reaction upon the inflowing water. This I overcome by inserting the nozzle of the injection-pipe *a* into the mouth of the nozzle *b*. Here the steam cannot spread because of the inclosing sides of the nozzle *b*, and so its force is all exerted in the right direction.

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

The cocks *f*, branching pipes *e e*, uniting in the common shell *d*, in connection with cones *a b* and pipe *c*, all arranged substantially as described.

In testimony whereof I, the said THOMAS HARRINGTON, have hereunto set my hand.

THOMAS HARRINGTON.

Witnesses:

JOHN GLENN,

THOS. B. KERR.