

A. J. BLAKSLEE & G. C. WILLIAMS.
STEAM JET PUMP.

No. 110,110.

Patented Dec. 13, 1870.

Fig. 1

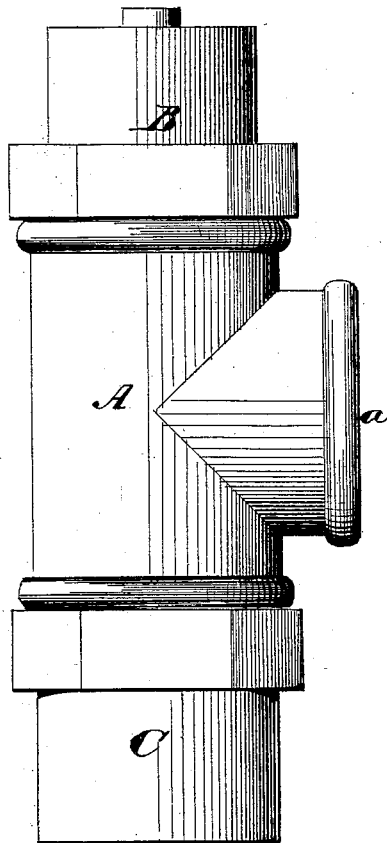


Fig. 2

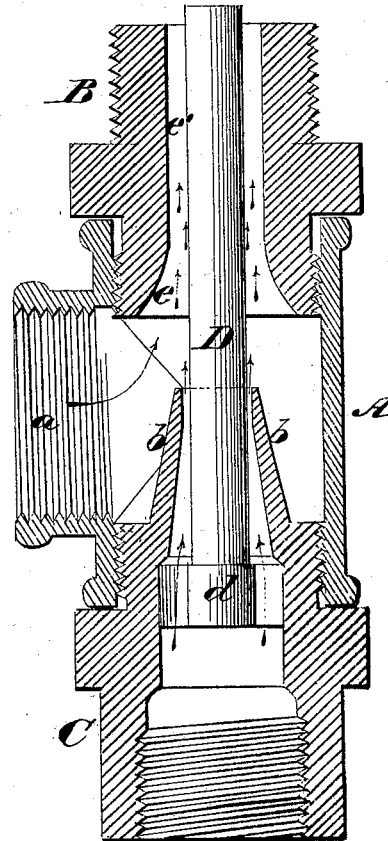


Fig. 3

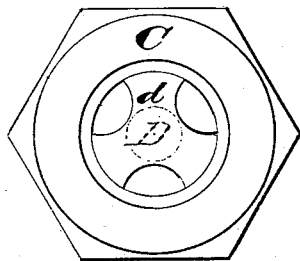
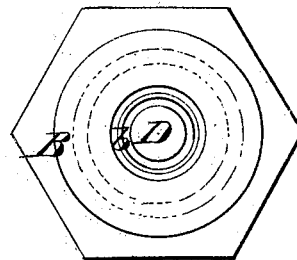


Fig. 4



Witnesses.

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ALBERT J. BLAKSLEE AND GARNER C. WILLIAMS, OF DU QUOIN,
ILLINOIS.

Letters Patent No. 110,110, dated December 13, 1870.

IMPROVEMENT IN STEAM-JET 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 we, ALBERT J. BLAKSLEE and GARNER C. WILLIAMS, of Du Quoin, in the county of Perry and State of Illinois, have invented an Improvement in Steam-jet Pumps; and we do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing making part of this specification, in which—

Figure 1 is an external view of the pump.

Figure 2 is a diametrical section through the same.

Figure 3 is a bottom view of fig. 1.

Figure 4 is a top view of fig. 1.

Similar letters of reference indicate corresponding parts in the several figures.

This invention relates to that class of steam-pumps wherein the flow of a column of water through the pump is produced by the direct action of a column or jet of steam.

The nature of our invention consists in the introduction of a stem within the steam-nozzle and the combining passage of the pump in such manner that the volumes of steam and water are more intimately and rapidly blended in said combining chamber, as will be hereinafter explained.

We are aware that in the year 1862, W. W. Marsh obtained Letters Patent on a method of raising water by steam, wherein he employed a cone in such manner as to spread the steam as it issued into the water-passage, and facilitate the expulsion of air from said passage.

We do not claim either the use of the steam-jet or the cone as our invention.

To enable others skilled in the art to understand our invention, we will describe its construction and operation.

In the accompanying drawing we have represented only those parts of the pump which are necessary to illustrate the invention herein claimed. Other parts of the pump may be constructed in the usual well-known manner, or in any other suitable manner.

We will further state that the device which we are about to describe may be duplicated at one or more points in the delivery-pipe, upon the principle set forth in our Letters Patent numbered 91,205.

A represents a T-shaped connection or socket,

adapted for having screwed into it three pipes, to wit: the steam inlet-pipe C, the delivery-pipe B, and the water inlet-pipe, which latter is screwed into the socket a.

The upper end of the steam-pipe C terminates in a contracted conical nozzle or jet b, which is centrally within the body of the portion A, and the axis of which coincides with the axis of the delivery-pipe B.

Directly above or opposite the contracted nose of the nozzle or jet b, is the combining passage c, in which the water and steam combine on their way to and through the delivery-pipe.

This passage c is made like an inverted funnel, that is to say, with its lower end flaring downwardly, so as to freely receive the volumes of water and steam at the confluence thereof.

D is a stem or cylindrical rod, which is secured at its lower end to the pipe C by a spider, d, or in any other suitable manner.

This stem rises centrally through the nozzle b, the body of the connection A, and the combining passage c, and terminates at any suitable point within or above the latter.

This stem D displaces the center of the jet of steam, and also the center of the water jet in the combining passage, and thus, by producing two annular ascending columns of water and steam, the two will be more rapidly and thoroughly mixed, and better results will be produced with an economy of steam than can be obtained by two solid columns of steam and water, or by a hollow column of steam impinging against a solid column of water.

The discharge-pipe may be of a uniform size throughout, that is to say, its lower portion need not be reduced, the diameter of the stem D, of course, being made in proper proportions to it.

Having described our invention,

What we claim as new, and desire to secure by Letters Patent, is—

A stem, D, arranged within the steam and water-passages, substantially as described.

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Witnesses:

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