

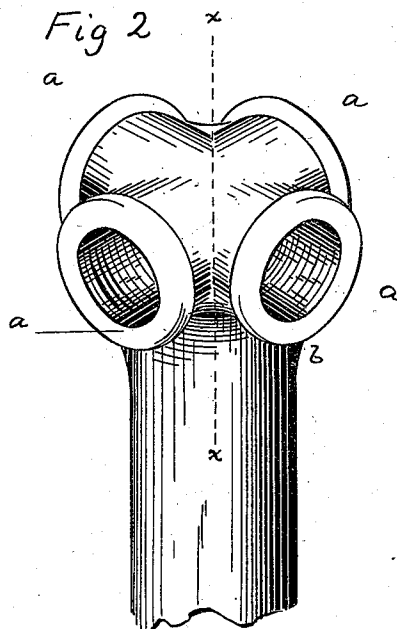
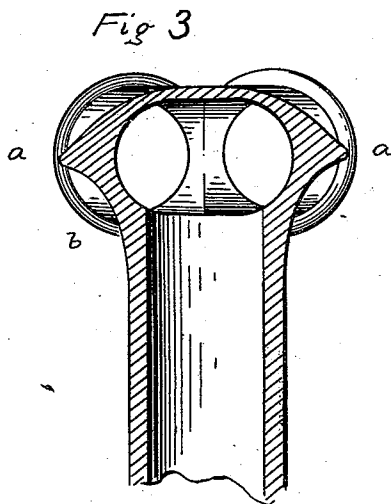
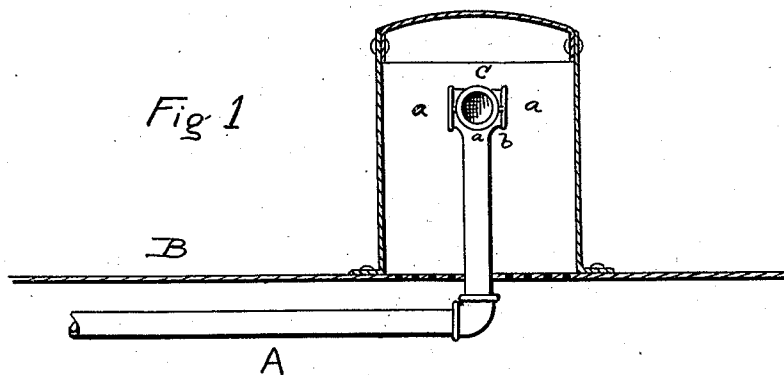
(No Model.)

E. D. VANNESS & A. L. SMITH.

HOOD FOR STEAM FEED PIPES.

No. 548,934.

Patented Oct. 29, 1895.



WITNESSES

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UNITED STATES PATENT OFFICE.

ELMER DANIEL VANNESS AND ADAM LOUIS SMITH, OF PORT HURON, MICHIGAN, ASSIGNORS TO THE PORT HURON ENGINE AND THRESHER COMPANY, OF SAME PLACE.

HOOD FOR STEAM FEED-PIPES.

SPECIFICATION forming part of Letters Patent No. 548,934, dated October 29, 1895.

Application filed May 21, 1895. Serial No. 550,091. (No model.)

To all whom it may concern:

Be it known that we, ELMER DANIEL VANNESS and ADAM LOUIS SMITH, citizens of the United States, residing at Port Huron, in the county of St. Clair and State of Michigan, have invented certain new and useful Improvements in Hoods for Steam Feed-Pipes; and we do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

The objects of our invention are to provide a superheating steam feed-pipe of peculiar construction which prevents the choking of an engine from the foaming of the boiler and allows a greater height of water to be used in the boiler when making steam.

As generally constructed feed-pipes terminate in the boiler simply by being cut off at the height desired, the end being left without protection. It has been found that this construction is objectionable, for when the water rises in the boiler through the action known as "foaming" and also by momentum when the boiler is subjected to sudden oscillation, as in the case of a locomotive or traction engine boiler, the water readily enters the feed-pipe, choking the engine and frequently damaging the cylinder by the strain caused. The water is found to enter the pipe in a solid stream or "rope" not easily broken. Further, when the water suddenly rises through foaming or concussion it follows the metallic sides of the boiler and the feed-pipe and enters the pipe. It is then rapidly sucked and drawn through the pipe to the engine.

In our construction the steam is drawn from the boiler in four directions at once. The top of the pipe is protected by a suitable hood, and the orifices are further protected from incursions of water by means of a reversed-hood construction beneath the orifices, by which water is projected from the feed-pipe upon reaching the steam-entrances and is thrown back and prevented from entering.

By our construction the following advantages are secured:

First. A greater height or head of water can be carried in the boiler.

Second. In case the boiler foams the ascending bulk is thrown from the orifices by the reversed hood, the top being at the same time covered and protected, and is prevented from entering the pipe.

Third. If the boiler foams to such an extent that the water begins to enter the pipe, the stream is broken into four divisions and so cannot hold together with the cohesion of a solid body of water and is so prevented from roping.

Fourth. In case of a sudden lurch of the boiler the feed-pipe is not so apt to be fouled by the water thrown against it, for it takes steam from four directions at once.

We attain these objects by the construction shown in the drawings, in which—

Figure 1 shows the steam-dome and location of feed-pipe. Fig. 2 is an enlarged and detailed view of the improved feed-pipe head, showing covering, reversed hood, and steam-orifices. Fig. 3 is a sectional view of the head, taken on a line which is marked *xx* in Fig. 2. Similar letters refer to similar parts throughout the several views.

In Fig. 1 B represents a steam-boiler, in which is set the steam feed-pipe A for conveying the made steam from the boiler. C represents our improved steam-feed-pipe hood, showing three orifices *a a a* of the four provided and the reversed hood *b*.

In Fig. 2 an enlarged view is given, in which it is seen that the water, if following up the pipe A, will be thrown away from the steam orifices or ways by the reversed hood *b*.

In Fig. 3 the sectional view shows the shape of the reversed hood *b*, protecting the steamways from below, and also the hood construction protecting the feed-pipe from above.

In practice the reversed hood and the protecting-hood above the steamways prevent water from entering the pipes from above and below, while the four channels provided for the feed-steam break the steam into four currents and prevent the water from roping or

entering the pipe in a solid body, and a greater height of steam-making water can be carried than was possible with feed-pipes constructed in the method which has been the common
5 practice.

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

1. In a feed pipe, a receiving device consisting of a reversed hood below multiple
10 steam-ways, surmounted by a hood or covering.

2. In a feed steam pipe, a reception device dividing the pipe into several orifices for reception of steam and protected above and below.

In testimony whereof we affix our signatures in presence of two witnesses.

ELMER DANIEL VANNES.

ADAM LOUIS SMITH.

Witnesses:

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THOS. GEORGE.