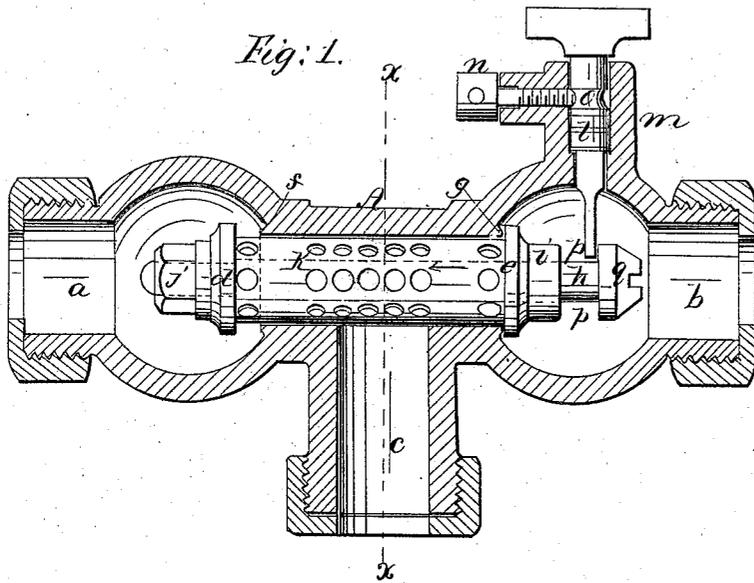


*H. J. Vaessen,*

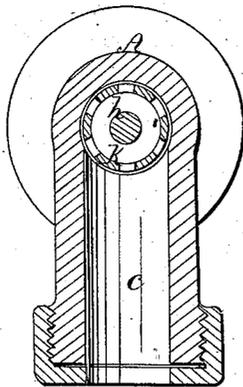
*Steam Trap.*

*No. 43,167.*

*Patented June 14, 1864.*



*Fig: 2.*



*Witnesses;*  
*C. S. Pfluff*  
*John Reed*

*Inventor;*  
*H. J. Vaessen*  
*per J. M. [Signature]*  
*Attorney*

# UNITED STATES PATENT OFFICE.

HUBERT JOS. VAESSEN, OF LUTTICH, BELGIUM, ASSIGNOR TO BERNHARD SCHAFFER AND CHRISTIAN BUDENBERG, OF NEW YORK, N. Y.

## IMPROVEMENT IN STEAM-TRAPS.

Specification forming part of Letters Patent No. 43,167, dated June 14, 1864.

*To all whom it may concern:*

Be it known that I, HUBERT JOS. VAESSEN, of Luttich, (Liege,) in the Kingdom of Belgium, have invented a new and Improved Self-Acting Double Valve for Steam-Cylinders; and I do hereby declare that the following a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 represents a longitudinal central section of my invention. Fig. 2 is a transverse vertical section of the same, taken in the line *x x*, Fig. 1.

Similar letters of reference indicate like parts.

The object of this invention is to free a steam-cylinder from the water condensing in the same.

The invention consists in the employment or use of two valves so arranged in relation to each other and to a steam-cylinder that if said cylinder takes steam on one end by the action of the steam itself the valve communicating with the said end of the cylinder will be closed and the other opened, and vice versa, and by these means the condensed water accumulating on the exhausting end of the cylinder is allowed to escape without obstruction.

A represents a T-shaped case, made of cast iron or any other suitable material, and provided with three outlets, *a b c*, one in the end of each of its shanks, as clearly shown in Fig. 1 of the drawings. The outlets *a b* communicate by suitable pipes with the opposite ends of a steam-cylinder, and the outlet *c* is connected to a suitable waste-pipe intended to carry off the condensed water which is liable to accumulate in the cylinder.

The communication between the outlets *a* and *c* and *b* and *c* can be opened and closed by valves *d e*, which close up against the seats *f g* in the interior of the case A. Said valves consist of simple disks, which fit easily on the central stem *h*, and are confined between the collar *i* and nut *j*, a perforated tube, *k*, being placed between them, as clearly shown in Fig. 1. This tube fits nicely in the passage which forms the communication between the outlets *a* and *b*, and it is somewhat longer than the distance between the valve-seats *f g*. So that it projects beyond one or beyond the other of these seats. If that end of the cylinder which communicates with the outlet *b* takes steam, the stem together with the valve and the tube

*k*, are thrown in the direction of the arrow marked thereon in Fig. 1, so that the valve *e* closes and the valve *d* opens, and the condensed water that may have accumulated in the exhaust end of the cylinder is free to escape through the outlet *a*, opening in the end of the tube *k*, next to the valve *d*, and waste-pipe *c*. If the steam in the cylinder changes, the valves *d e* change automatically by the action of the steam, and the communication between the outlet and waste-pipe *c*, is opened.

The amount of motion allowed to the tube *k* in its socket is regulated by the plug *l*, which extends through a stuffing-box, *m*, into the chamber *b*, being prevented from dropping out spontaneously by the screw *n*, the point of which projects into a groove, *o*, turned in the plug. The lower or inner end of this plug is flat and catches in a groove, *p*, between the collar *i* and head *g* of the stem *h*, and in Fig. 1 it is shown in such a position that its flat sides face the inner surfaces of the head and collar. In this position the tube *k* has its maximum amount of motion; but if the plug *l* is turned so that the edges of its inner end bear against the inner surfaces of the head and collar of the stem the motion allowed to the tube *k* is reduced to its minimum.

I do not wish to confine myself, however, to this precise arrangement of the valves *d e* and tube *k*. Said valves may be connected in various ways and the perforated tube *k* might be dispensed with altogether, the sole object being to connect the valves so that if one closes the other is compelled to open, and vice versa.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

The employment or use of two valves, A B, so arranged in relation to each other and to a steam-cylinder that if said cylinder takes steam on one end by the action of the steam itself the valve communicating with said end of the cylinder is closed and the other opened, and vice versa, and by these means the condensed water accumulating on the exhausting end of the cylinder is allowed to escape without obstruction.

VAESSEN.

Witnesses:

DEPPE,  
MARSHALL TALBOT.