

(No Model.)

2 Sheets—Sheet 1.

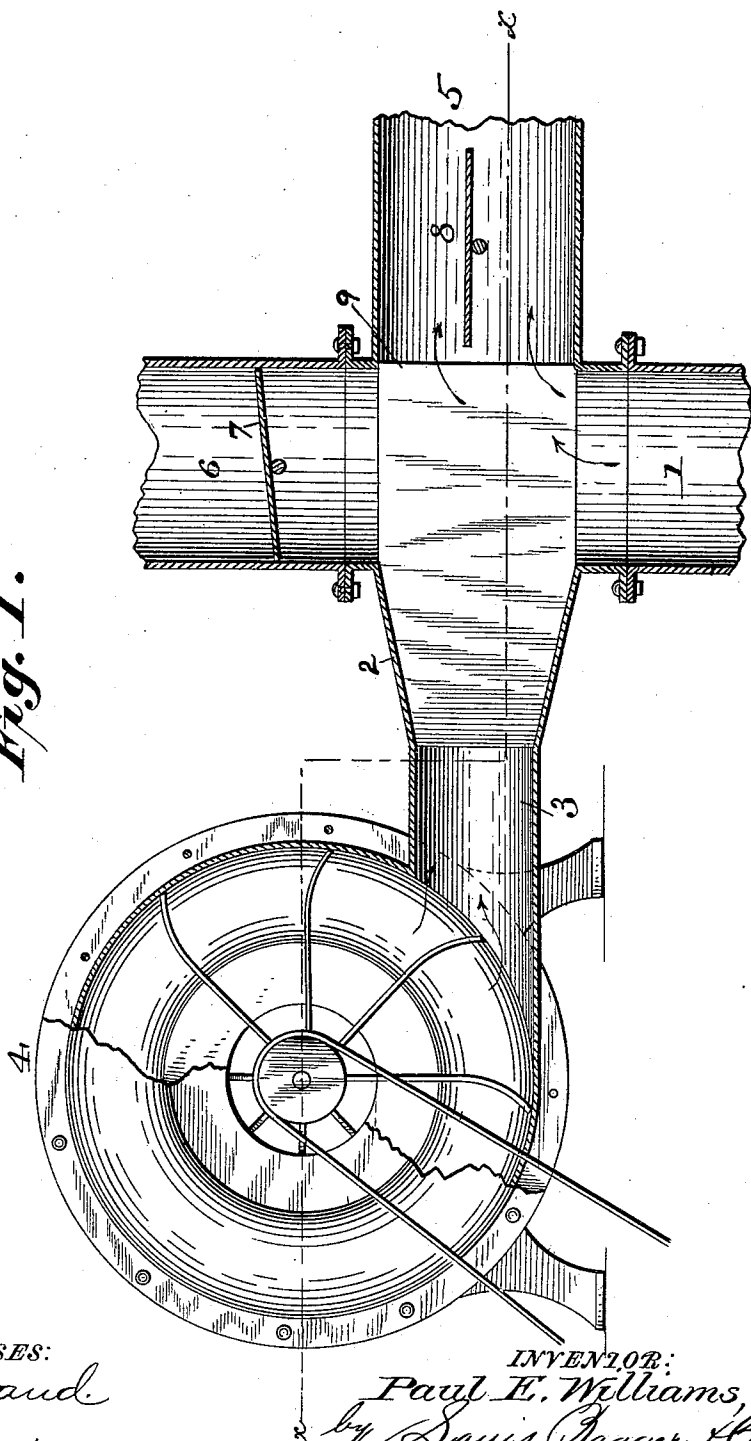
P. E. WILLIAMS.

DEVICE FOR INCREASING THE DRAFT IN STEAM BOILER FURNACES.

No. 469,620.

Patented Feb. 23, 1892.

Fig. 1.



WITNESSES:
F. L. Curand.
J. L. Coombs

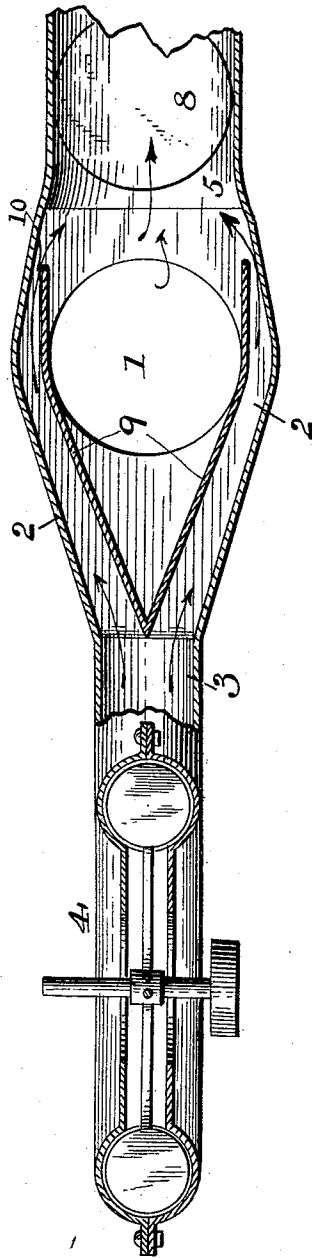
INVENTOR:
Paul E. Williams,
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(No Model.)

2 Sheets—Sheet 2.

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Fig. 2.



WITNESSES:
F. L. Curand.
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INVENTOR:
Paul E. Williams,
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UNITED STATES PATENT OFFICE.

PAUL E. WILLIAMS, OF LEEDS, ALABAMA.

DEVICE FOR INCREASING THE DRAFT IN STEAM-BOILER FURNACES.

SPECIFICATION forming part of Letters Patent No. 469,620, dated February 23, 1892.

Application filed October 6, 1891. Serial No. 407,905. (No model.)

To all whom it may concern:

Be it known that I, PAUL E. WILLIAMS, a citizen of the United States, and a resident of Leeds, in the county of Jefferson and State of Alabama, have invented certain new and useful Improvements in Devices for Increasing the Draft in Steam-Boiler Furnaces; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to an improved device for increasing the draft in steam-boiler or other furnaces and conveying away the cinders, sparks, and other products of combustion.

The invention consists in the novel construction and combination of parts hereinafter fully described and claimed.

In the accompanying drawings, Figure 1 is a view, partly in section and partly in elevation, of a device constructed in accordance with my invention. Fig. 2 is a horizontal section on the line *x x*, Fig. 1.

In the said drawings the reference-numeral 1 indicates the smoke-stack of a steam-boiler or other furnace and may be of any ordinary construction. At its upper end this stack is connected and communicates with a box 2, provided with a pipe 3, connected with an ordinary fan-blower 4. At its opposite end the box is provided with a pipe 5, equal in area to stack 1, and leads to any point it is desired to convey the products of combustion. In the upper end of the box and in line with stack 1 is a pipe 6, provided with a damper 7. This pipe is the natural draft-pipe and is not used when the forced draft is employed, as will hereinafter appear. The pipe 5 is also provided with a damper 8.

In the box 2 are located two inclined plates 9 9, equal in height to the height of the box.

These plates meet at the end of the box adjacent to the blower and flow outwardly and extend a short distance beyond the smoke-stack 1.

It will be seen that the box 2 is contracted at each end when it is connected with pipes 3 and 5 and is bulged outwardly intermediate of said ends.

The operation is as follows: When the fire in the furnace is started, damper 8 in pipe 5 is closed and damper 7 in pipe 6 opened, so that the draft will be from furnace through stack 1, box, 2, and pipe 6. After sufficient steam is generated to drive the blower damper 7 is closed and damper 8 opened. The blast from the blower will then pass between the plates 9 9 and the sides of box 2 and escaping at the points marked 10 into and through the pipe 5, the tendency of which will be to create a vacuum in the stack 1, thereby causing the draft in the furnace to be increased or accelerated and the smoke, cinders, sparks, &c., to be carried away through pipe 5 to any point desired.

From the above it will be seen that my invention is exceedingly simple and economical in construction and will be found very efficient in operation.

Having thus described my invention, what I claim is—

The combination of the smoke-stack, the box communicating therewith and with a fan-blower, the pipe having a damper connected with said box and aligned with the stack, the conveyer-pipe provided with a damper, and the inclined plates meeting at one end of said box and flaring outwardly and extending past the smoke-stack, substantially as described.

In testimony that I claim the foregoing as my own I have hereunto affixed my signature in presence of two witnesses.

PAUL E. WILLIAMS.

Witnesses:

E. S. GILLESPIE,

J. H. ABERCROMBIE.