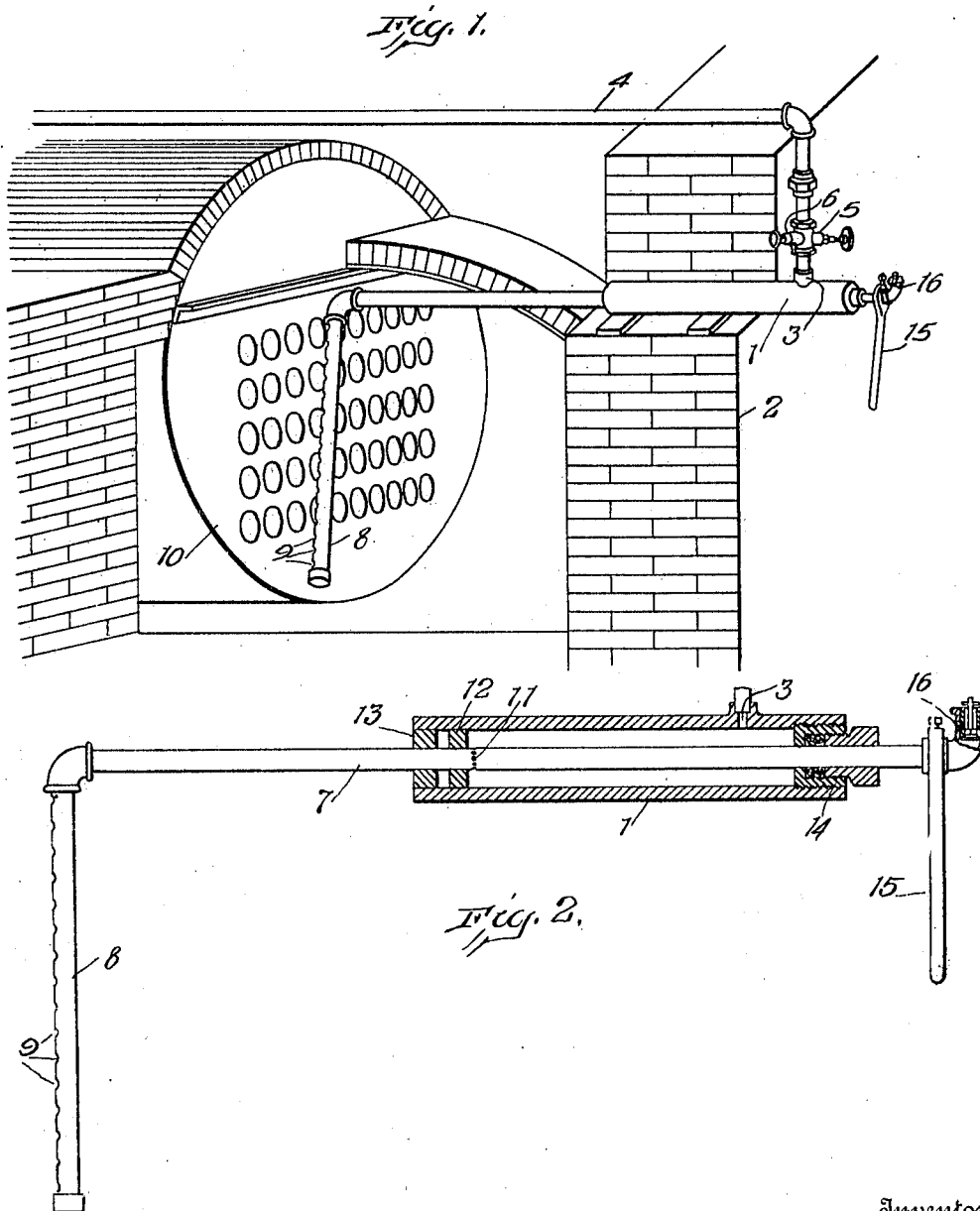


S. H. LIMBERT.
BOILER FLUE CLEANER.
APPLICATION FILED DEC. 27, 1910.

993,847.

Patented May 30, 1911.



Witnesses

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UNITED STATES PATENT OFFICE.

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BOILER-FLUE CLEANER.

993,847.

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To all whom it may concern:

Be it known that I, SAMUEL H. LIMBERT, a citizen of the United States, residing at Springfield, in the county of Clark and State of Ohio, have invented certain new and useful Improvements in Boiler-Flue Cleaners, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to boiler flue cleaners and more particularly to that type of cleaner commonly known as a flue blower and comprising a steam nozzle carried by a pipe which is rotatably and slidably mounted in a fixed support, such as the furnace wall, adjacent to the boiler head and communicates with a suitable source of steam supply. This nozzle usually extends laterally to the pipe which carries the same, and, by rotating this pipe, the nozzle can be moved into alinement with each of the flues. When the device is not in use the pipe is moved longitudinally to draw the nozzle away from the boiler head.

The object of the invention is to provide suitable means for connecting this rotatory and reciprocatory pipe with a fixed steam pipe in such a manner as to afford a free communication between the two without interfering with the movements of the pipe carrying the nozzle.

It is a further object of the invention to provide connecting means of this character which will be simple in its construction, inexpensive to manufacture and which will be highly efficient in operation.

In the accompanying drawings, Figure 1 is a perspective view, partly in-section, of a portion of a boiler and a furnace wall showing a flue blower applied thereto; and Fig. 2 is a detail view, partly in section, of a flue blower embodying my invention.

In these drawings I have illustrated one embodiment of my invention and have shown the same as comprising a fixed casing 1 which is mounted in a suitable fixed support, such as the furnace wall 2, and has a steam inlet 3, by means of which it is connected with a fixed steam supply pipe 4 having a cut-off valve 5 and a drain cock 6. Rotatably and slidably mounted in the casing 1, which is preferably cylindrical in shape, is a nozzle pipe 7 having its opposite ends extending beyond the adjacent ends of the casing 1. The inner end of the pipe 7

is provided with a discharge nozzle which preferably comprises a pipe 8 connected to the end of the pipe 7 and extending transversely thereto and having a series of discharge apertures 9 along one side thereof. The amount of reciprocatory motion permitted the pipe 7 is sufficient to enable the angle 8 to be moved into a position close to the head of the boiler 10 and to be withdrawn to a position close to the furnace wall 2 where it will be subjected to the heat to a less degree. The pipe 7 is of a diameter somewhat smaller than the internal diameter of the pipe 1 and communicates with the interior thereof by means of a series of openings 11 formed therein.

The casing 1 is provided at its opposite ends with bearings which may be of any suitable character. In the present instance the pipe 7 is provided adjacent to the inlet openings 11 with a piston 12 which fits snugly within the casing 1, and, consequently, the forward bearing is subjected only to the pressure of such steam as may seep about the edges of the piston 12. I have, therefore, shown the bearing in this end of the casing as comprising a plug 13 rigidly mounted in the end of the casing and having an opening of a size to receive the pipe 7. The opposite or outer end of the casing 1 is subjected to full steam pressure and is preferably closed by means of a stuffing box 14 of ordinary construction. A suitable manipulating device, such as a handle 15, is secured to the pipe 7 beyond the outer end of the casing 1. It is also desirable to admit air to the pipe 7 and nozzle 8, when the steam has been cut off, to prevent the nozzle from becoming overheated. I have, therefore, provided the outer end of the pipe 7 with an air inlet which is controlled by a check valve 16 so arranged that when there is no steam pressure in the pipe 7 it will drop of its own weight, and, when in its open position, will permit air to enter the pipe. As soon as the steam is admitted to the pipe 7 the pressure will close the check valve which will effectually prevent the passage of steam from this end of the pipe.

The operation of the device will be readily understood from the foregoing description and it will be apparent that the nozzle pipe 7 is in free communication with the fixed supply pipe 4 and is freely movable rela-

tively thereto; that the construction is a very simple one, involving but a small amount of expense in manufacture and effectually preventing the escape of steam about the bearings for the nozzle.

I wish it to be understood that I do not desire to be limited to the details of construction shown and described, for obvious modifications will occur to a person skilled in the art.

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

1. The combination, with a casing having both ends closed and provided with a steam inlet, of a pipe of less diameter than the interior of said casing rotatably and slidably mounted in said casing, communicating with the interior thereof and having both ends extending beyond the corresponding ends of said casing, a discharge nozzle secured to one end of said pipe, and means secured to the other end of said pipe for manipulating said nozzle.

2. The combination, with a cylindrical casing having both ends closed and provided with a steam inlet, of a pipe of less diameter than the interior of said casing rotatably and slidably mounted therein and extending beyond the opposite ends thereof, a piston secured to said pipe and fitting within said casing, said pipe having an inlet connecting the same with the interior of said casing, a discharge nozzle secured to one end of said pipe, and a manipulating device secured to the other end of said pipe.

3. The combination, with a casing having both ends closed and provided with a steam inlet, of a pipe of less diameter than the interior of said casing rotatably and slidably mounted in said casing, communicating with the interior thereof and having its ends extending beyond the corresponding ends of said casing, a discharge nozzle se-

cured to one end of said pipe, a manipulating device secured to the other end of said pipe, and means for admitting air to said pipe.

4. The combination, with a casing having both ends closed and provided with a steam inlet, of a pipe of less diameter than the interior of said casing, rotatably and slidably mounted therein and extending beyond the opposite ends thereof, a piston secured to said pipe and fitting within said casing, said pipe having an inlet connecting the same with the interior of said casing, a discharge nozzle secured to said pipe beyond one end of said casing, and a manipulating device secured to said pipe beyond the other end of said casing, and means to admit air to said pipe at that end of said casing adjacent to said manipulating device.

5. The combination, with a furnace wall, and a boiler mounted within the same, of a cylindrical casing mounted in said wall, a plug closing one end of said casing, a stuffing box closing the other end of said casing, a pipe of less diameter than the interior of said casing extending through the same and rotatably and slidably mounted in said plug and said stuffing box, a discharge nozzle carried by that end of said pipe adjacent to said boiler, a piston secured to said pipe and fitting within said cylindrical casing, a steam supply pipe communicating with said casing, said first-mentioned pipe having openings connecting the same with the interior of said casing on that side of said piston opposite said nozzle, and a handle secured to said first-mentioned pipe beyond the outer end of said casing.

In testimony whereof, I affix my signature in presence of two witnesses.

SAMUEL H. LIMBERT.

Witnesses:

HARRIET L. HAMMAKER,
E. O. HAGAN.