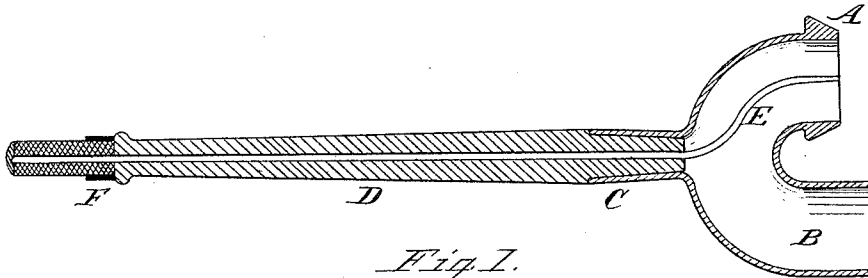


(No Model.)

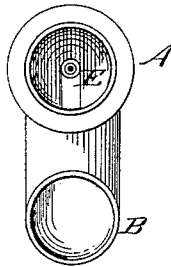
L. I. SEYMOUR.  
FLUE CLEANER.

No. 433,100.

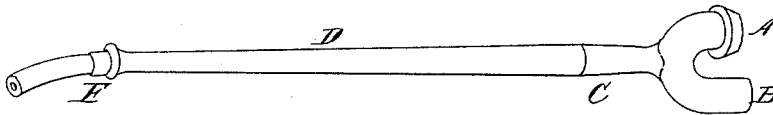
Patented July 29, 1890.



*Fig. 1.*



*Fig. 2.*



*Fig. 3.*

Witnesses:  
Martha J. Jackson.  
Geo. W. White

Inventor:  
Louis I. Seymour.  
by Alban Audrean  
his atty.

# UNITED STATES PATENT OFFICE.

LOUIS I. SEYMOUR, OF PLYMOUTH, ASSIGNOR TO ALEXANDER A. SANBORN,  
OF SOMERVILLE, MASSACHUSETTS.

## FLUE-CLEANER.

SPECIFICATION forming part of Letters Patent No. 433,100, dated July 29, 1890.

Application filed December 4, 1889. Serial No. 332,537. (No model.)

### *To all whom it may concern:*

Be it known that I, LOUIS I. SEYMOUR, a citizen of the United States, and a resident of Plymouth, in the county of Plymouth and State of Massachusetts, have invented new and useful Improvements in Flue-Cleaners, of which the following, taken in connection with the accompanying drawings, is a specification.

My invention relates to improvements in flue-cleaners for boilers, such as the ordinary steam-flue boiler for generating steam; and the objects of my invention are, first, to provide the mechanism that will produce a strong blast that may be sent through the flues with sufficient force to clean them, and that shall also be perfectly dry and of the same high temperature as that of the air and gases at the time passing through the flues, and, second, to avoid cooling the flues or destroying or straining them by contraction and rust produced by the ordinary steam and air blast.

Heretofore such flues have been cleaned by passing through them a blast produced by a steam-jet and atmospheric air, in which the air condenses a portion of the steam and leaves a coating of rusty scales on the inner surface of the flues, which soon destroys them, while the cooling of the flues by such a blast contracts and strains them and soon wears them out. To avoid these bad results, I form the blast from the air and gases in the heated flues at the time and at the rear end of the boiler and in the fire-box.

I attain the objects of my improvement by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a longitudinal section of the apparatus. Fig. 2 is an end view of the same; Fig. 3, a detailed view of the apparatus in perspective.

Similar letters refer to similar parts throughout the several views.

My invention consists of a hollow return-bend or V-shaped tube A B, of cast-iron or other material, whose inside diameter is about the same as that of the flue to be cleaned, or a little smaller. To the outer curve of this return-bend is attached a socket C for receiving a wooden handle D, through which is passed a small steam-pipe E, one end of which is connected at F with a hose, which supplies

steam from the boiler, and the other end terminates in the aperture of one leg of the return-bend and is drawn down to a small nozzle, through which the steam issues to create the blast. This end A of the return-bend may be enlarged, as shown, to a conical shape, so that it shall not enter the flue, but shall completely close its orifice, or may be of other convenient shape. The other leg B may be left as shown, so as to slip into an adjacent boiler-flue, or it also may be enlarged like the leg A, or it may be of any other convenient shape.

A stop-cock may be placed in the steam-pipe E, though I have not shown it in the drawings.

The operation of my improvement is as follows: Steam being turned on through the small pipe E, the apparatus is placed against the boiler end, so that the leg A of the blower projects into or covers and closes the open end of the flue to be cleaned and the other leg B projects into or covers and closes the open end of an adjacent flue. The steam-jet from the nozzle at A creates a strong draft through one flue into the blower and a strong blast from the blower through the other flue, with the incidental advantage of cleaning two flues at once; but the more important value of my invention lies in this, that both the draft and the blast are dry and hot throughout. The hot gases are drawn through the one flue, are precisely the same to which the flues are subjected at the time, and on coming in contact with the steam-jet the steam is superheated and thoroughly dried, so that the blast will not cool, contract, or strain the flue, or leave within it a coating of rusty scales, as do all other forms of blowers which draw their supply of air from the outer atmosphere.

To attain the best results, my invention should be used while the boiler-fires are burning.

I am aware that prior to my invention flue-cleaners have been used creating a blast by a steam-jet. I therefore do not claim that feature of my apparatus separately; but

What I do claim as my invention, and desire to secure by Letters Patent, is—

1. A flue-cleaner consisting of a V-shaped

tube or return-bend A B, having a small  
steam-pipe E fitted within it, as shown, so as  
to produce a hot and dry blast in which the  
air and gases from the flues and furnace are  
5 drawn through one flue of a boiler and blown  
through another flue with sufficient force to  
clean both flues, all substantially as set forth.  
2. The combination, in flue-cleaners, of a  
V-shaped tube or return-bend with a steam-  
10 pipe within it, so as to produce a hot and dry

blast for the purposes stated, all substantially  
as set forth.

In testimony whereof I have signed my  
name to this specification, in the presence of  
two subscribing witnesses, on this 30th day 15  
of November, A. D. 1889.

LOUIS I. SEYMOUR.

Witnesses:

ALBAN ANDRÉN,

MARTHA J. JACKSON.