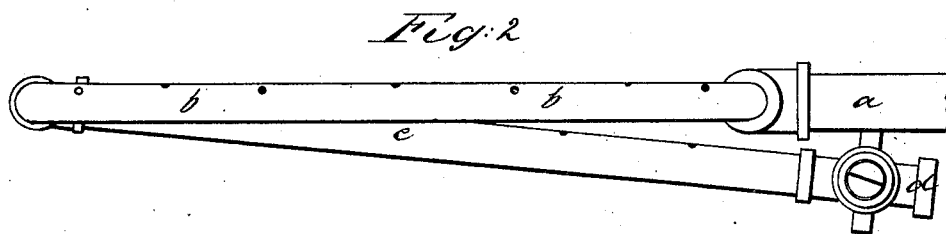
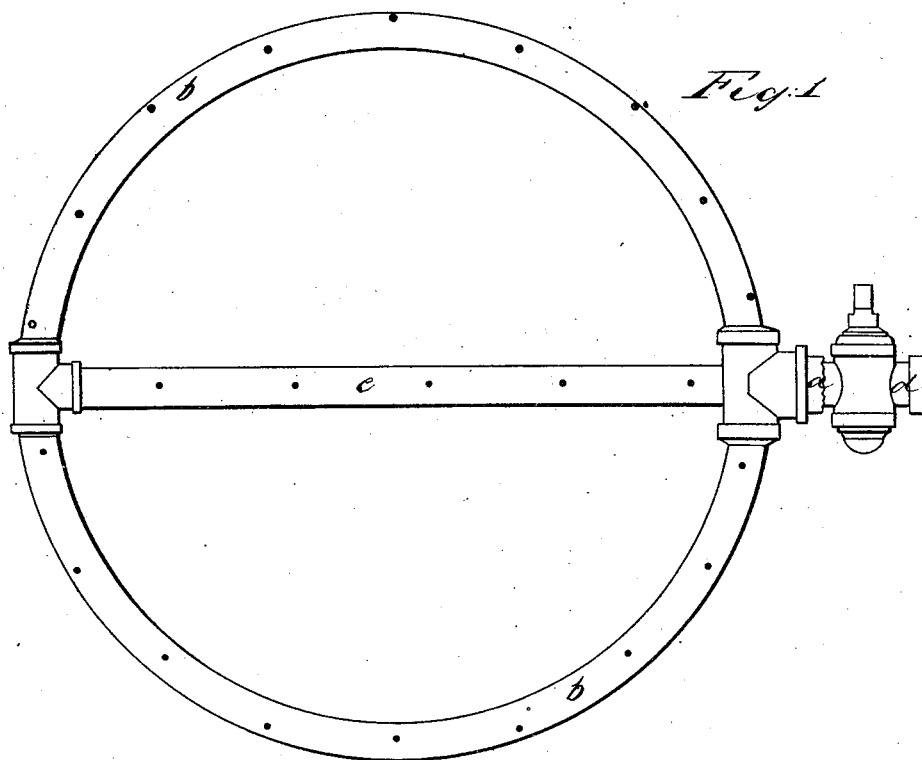


No. 48,850.

PATENTED JULY 18, 1865.

J. W. STEVENS.  
STEAM BLOWER.



*Witnesses*  
*Francis Gould*  
*W B Gleason*

*Inventor*  
*John W. Stevens.*

# UNITED STATES PATENT OFFICE.

JOHN W. STEVENS, OF SOUTH DANVERS, MASSACHUSETTS.

## IMPROVEMENT IN STEAM-BLOWERS.

Specification forming part of Letters Patent No. 46,850, dated July 18, 1865.

*To all whom it may concern:*

Be it known that I, JOHN W. STEVENS, of South Danvers, in the county of Essex and State of Massachusetts, have invented an Improved Steam-Blower; and I do hereby declare that the following, taken in connection with the drawings which accompany and form part of this specification, is a description of my invention sufficient to enable those skilled in the art to practice it.

In the use of such steam-blowers as are placed outside of the ash-pits of steam-boiler furnaces to maintain, urge, and increase combustion of the fuel it is found very difficult, if not impossible, to maintain or improve combustion in furnaces in which bagasse, wet tan, coal-dust, sawdust, and like fine substances are employed for fuel, the reasons for which it is not herein necessary to specify; and in the use of such steam-blowers as are placed within the ash-pit a frequent cause of imperfect action is found in the tendency of the steam-jet holes to clog with ashes and fine fuel.

The blower constructed by me is intended to and does obviate these difficulties. It is placed within the ash-pit, with the holes in the pipe so arranged that the steam is driven upward directly into the incandescent fuel; and my invention consists in the application thereto of a blow-off cock, by which the direction of the steam-current may be changed, issuing in a jet so much larger than the diameter of the blower-holes that all deposits of ashes and other fine substances may be blown from the pipe, whenever necessity may require it, by simply opening this blow-off cock under pressure of the steam.

A blower embodying this improvement is shown in plan in Figure 1, and in side view in Fig. 2.

*a* denotes the steam-pipe from the boiler; *b*, the blower, which is shown as composed of a circular pipe and a return-pipe, *c*, which are placed horizontally in the ash-pit under the grate-bars, these blower-pipes having holes through their upper surfaces, through which the steam issues in jets to urge the combustion of the fuel. The pipe *c* at its front end is provided with a stop-cock, *d*, the eduction-orifice of which is preferably just without the ash-pit door.

It will be evident that if the cock *d* is closed the steam will be forced directly into the body of fuel, and that whenever the pipes *b* and *c* become clogged with ashes or other deposit, by simply opening the cock *d* with full pressure of steam, or such pressure as may be necessary, such deposit will be blown through the pipes, leaving the blower entirely or practically freed therefrom. In the use of fine fuel this cleansing from deposit needs to be quite frequently effected, but is necessary at times with any steam-blower which is placed directly in the ash-pit, and the construction makes a much more efficient and useful blower than is afforded by other arrangements, especially in the combustion of fuel in finely-divided condition.

I claim—

Combining with the steam-blower pipe *b* *c* and its jet-holes a cock, *d*, in the manner and for the purpose substantially as set forth.

In witness whereof I have hereunto set my hand this 12th day of April, A. D. 1865.

JOHN W. STEVENS.

Witnesses:

FRANCIS GOULD,  
W. B. GLEASON.