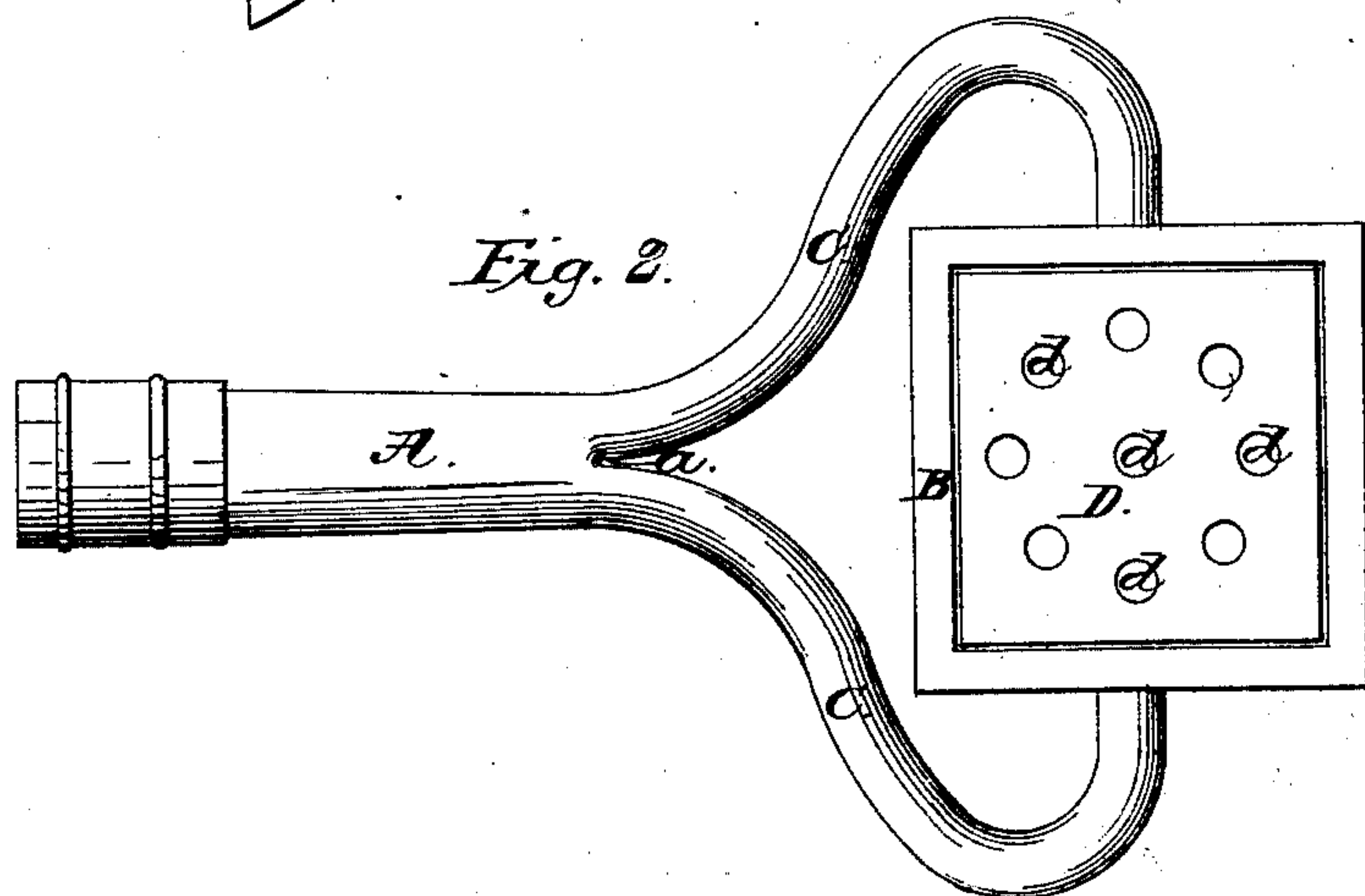
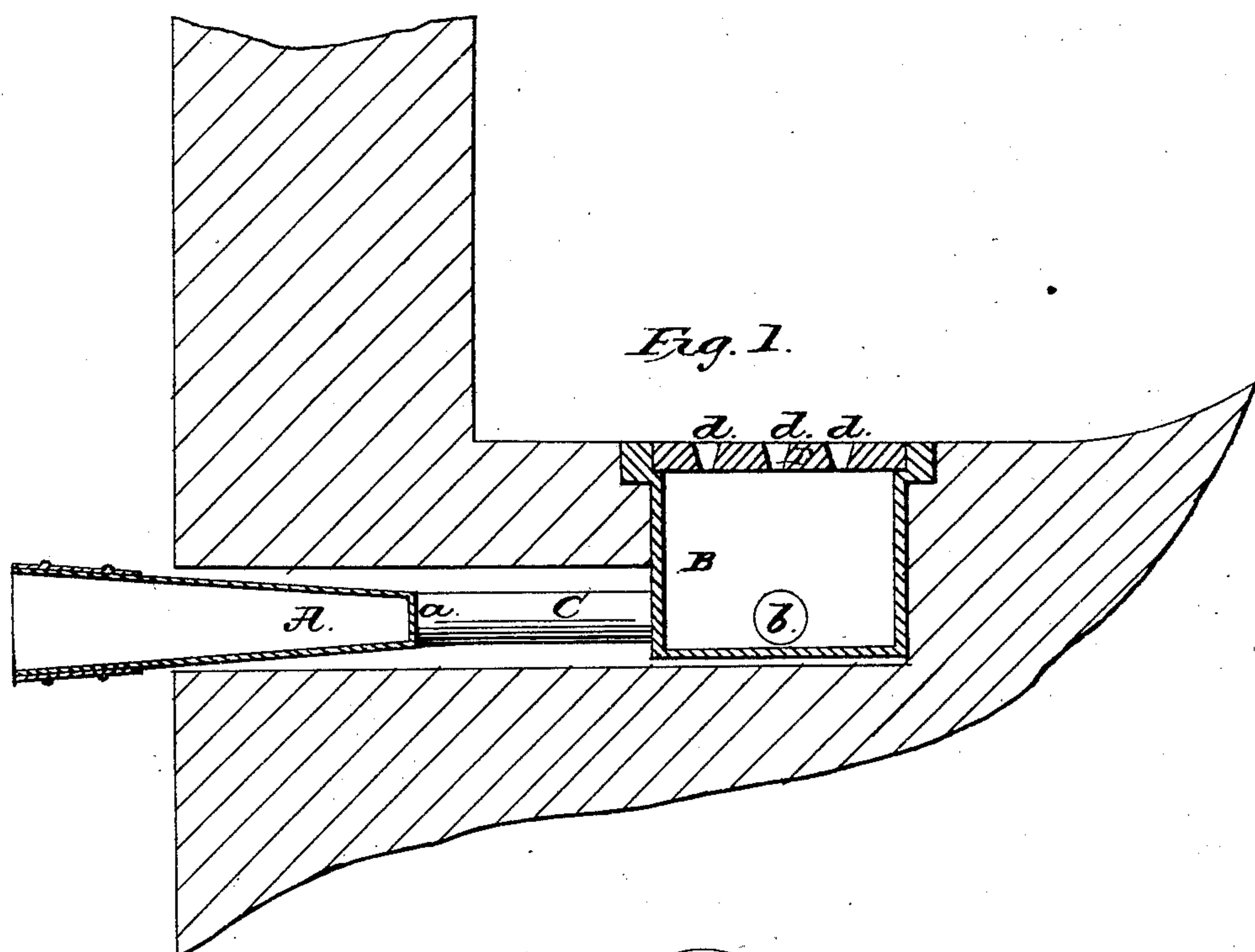


*S. L. Bond,*

*Tuyere*

*N<sup>o</sup> 24,852.*

*Patented July 26, 1859.*



*Witnesses:*

*Ino R. Tarrant*  
*Jacob. Stroman*

*Inventor:*

*S. L. Bond.*

# UNITED STATES PATENT OFFICE.

S. L. BOND, OF GREENWOOD, SOUTH CAROLINA.

TWYER.

Specification of Letters Patent No. 24,852, dated July 26, 1859.

*To all whom it may concern:*

Be it known that I, S. L. BOND, of Greenwood, in the district of Abbeyville and State of South Carolina, have invented a new and  
5 Improved Twyer; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making part of this specification, in which—

10 Figure 1, represents a vertical central section of a twyer constructed according to my invention, and Fig. 2, is a plan or top view of the same.

Similar letters of reference indicate corresponding parts in the two figures.

To enable others skilled in the art to fully understand use and construct my invention I will proceed to describe it.

A, represents a pipe leading from the bel-  
20 lows or from some other draft creating source to the fire place. This pipe is made conical in order to compress the air and so as to give the same when it escapes a stronger blast. With my arrangement however the  
25 effect would be the same if the pipe would be made cylindrical. At a point *a*, and not far from an air-chamber B, this pipe divides into two branches C, C, which terminate in the sides of the air chamber, and  
30 these sides are provided with openings *b*, corresponding in size to the branches C, C, of the pipe A, so that the air from this pipe has free access to the air chamber. The top or cover D, of the air chamber is provided  
35 with a series of apertures *d*, which may be arranged in a circle as represented in Fig. 1, or in any other manner dividing the air over as large an area as possible, and it, (the cover) is so arranged that it can easily  
40 be taken out.

The air chamber is embedded in the brick work of the fire place, which is indicated by red outlines in Fig. 1, so that the cover D,  
45 lies flush with the upper surface of the fire place, and the fire is kindled right over the cover D, so that the air escaping from the apertures *d*, strikes all that part of the coal lying immediately on the cover. The draft created by the air as it escapes through the  
50 apertures *d*, prevents the ashes and the cinders from getting down into the air chamber and if these apertures are burned out so that they become too large, the cover D, can easily be taken out and be replaced by a new

one. In order to get a very good effect with  
55 this twyer, it is necessary to make the openings *b*, through which air is introduced to the air-chamber in such proportion to the apertures *d*, through which it escapes that the air in the chamber is compressed to a  
60 certain degree, so that it escapes with considerable force through every one of the apertures *d*, and this force is regulated by the air chamber, so that with this twyer a more uniform blast can be effected than with  
65 any other one now in use.

The object of having the air-pipe A, divided at (*a*) into two pipes C, is to cause the air to be introduced into the air-chamber B, in two streams upon opposite sides of the  
70 chamber, so that the said streams of air shall meet and oppose each other midway in the chamber and thence be driven and scattered uniformly throughout the chamber, whereby an even and easy escape of the air  
75 through the apertures of the cover D, is always secured.

In those twyers that have but a single air-pipe, the air on entering the chamber is driven over to one side of the box, and there  
80 is always a greater pressure and greater escape of air through the series of apertures on that side of the chamber than at the remaining portions. But, in my improvement, the pressure and consequently the escape of the  
85 air is, by my peculiar arrangement of air-pipes rendered always uniform; the escape of the air through all of the apertures in the cover being also steady and alike in all.

I do not claim as my invention any part  
90 or portion of the device patented to J. Pawling Jany. 22, 1850; nor of the rejected device of H. Howard, Dec. 2, 1855. But

Having described my invention, I claim as my invention and desire to secure by Let-  
95 ters Patent,

The arrangement and combination of the two pipes C, C, having their orifices opposite to each other, with the air-chamber B, so that the two currents of air on entering  
100 the chamber will oppose each other, and thus uniformly diffuse the air, as herein shown and described.

S. L. BOND.

Witnesses:

JNO. R. TA VRANT,  
JACOB STROMAN.