

M. Alden,
Fan Blower.
N^o 5,513. Patented Apr. 18, 1848.

Fig: 1.

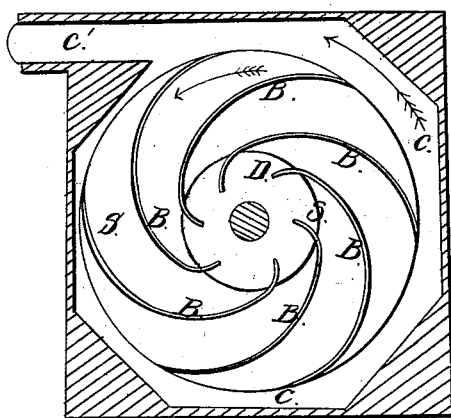


Fig: 2.

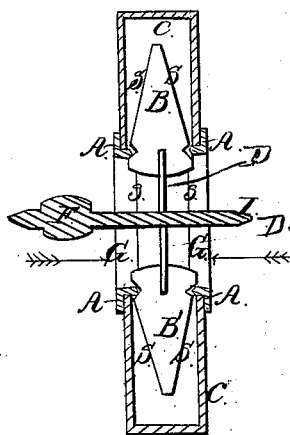


Fig: 3.

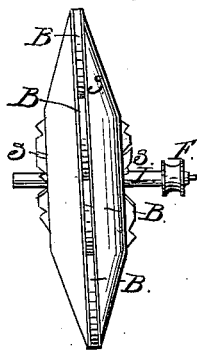


Fig: 4.

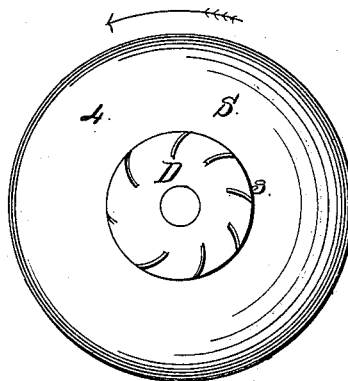


Fig: 5.

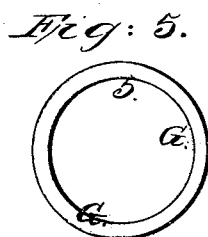


Fig: 6.

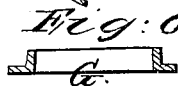
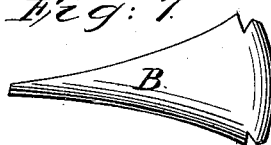


Fig: 7.



UNITED STATES PATENT OFFICE.

MANOAH ALDEN, OF RALSTON, PENNSYLVANIA.

IMPROVEMENT IN BLOWERS FOR FURNACES.

Specification forming part of Letters Patent No. 5,513, dated April 18, 1848.

To all whom it may concern.

Be it known that I, MANOAH ALDEN, of Ralston, in the county of Lycoming and State of Pennsylvania, have invented a new and useful Improvement in Blowers for Blacksmiths' Forges and other Uses, which is described as follows, reference being had to the annexed drawings of the same, making part of this specification.

Figure 1 is a vertical section through the center of the blower. Fig. 2 is a transverse section through the center of the blower. Fig. 3 is an edge view of the wheel detached from the case. Fig. 4 is a side view of the wheel detached from the case. Fig. 5 is a plan of the circular guard detached from the case. Fig. 6 is a section of the same. Fig. 7 is a plan of one of the wings detached from the wheel. Fig. 8 is an edge view of the same.

Similar letters refer to corresponding parts in the several figures.

The arrows show the direction in which the wheel turns.

This blower consists of a revolving wheel of a peculiar and novel form, being composed of a number of curved tapering wings, B, placed between two frustums of hollow cones or sections of hollow funnels S, arranged with their bases or larger ends toward each other, and as far apart as the width of the smaller ends of the aforesaid wings B, and affixed to a central shaft, I, by means of a central circular plate or diaphragm, D, whose diameter is a little larger than the diameter of the smaller ends of the frustums of hollow cones, said diaphragm being affixed permanently to the shaft I and to the wide ends of the wings B at the center of the wheel. This diaphragm performs a very important office in the operation of the blower, beside that of securing the wings to the shaft. It prevents the two currents of air that rush through the openings *s* at the center of the wheel from coming in contact at the center and producing that disagreeable humming noise experienced in the use of the common fan-blower. It also causes the currents to enter the wheel separately until they pass the pe-

riphery of the said circular diaphragm, D, when they unite and pass between the curved wings B, which compress or condense the air in the case by their rapid rotary motion, and do not strike the air in the manner of the radial wings of the ordinary blower, and thus is prevented that disagreeable thumping noise which is caused by the manner in which the radial wings of the common fan-blower strike the air. The wings B being made curved and tapered from the outer to the inner ends, and surrounded by a smooth continuous shrouding, S, are caused to receive and force the air gradually from the center to the periphery of the wheel, from which it is made to escape into the surrounding stationary case *c* in a thin continuous circular sheet, wherein the air is condensed to the required degree of density without producing any violent concussions or blows similar to those produced by the wings of the ordinary fan-blower, which are not inclosed between such shrouding for preventing the wings beating against the condensed air in the case.

The external case, *c*, for confining the air, and the tangential tube *c'*, for directing it to the place where it is to be applied, are made in the usual manner; also, the guard G, for preventing the escape of the air at the central openings of the case, between it and the wheel.

I do not claim to be the original inventor of a revolving fan-blower with curved or straight wings, as this is in common use; but

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

The combination and arrangement of the circular diaphragm D, with the curved tapered wings B, and hollow frustums of cones S, and rotary shaft I, for the purpose herein-after set forth.

I make no claim to any other part of the blower.

MANOAH ALDEN.

Witnesses:

W. MCINTYRE,

CHRIS. CUNNINGHAM.