F. P. Dimpfel,

Fan Blower,

No. 1,448, Patented Dec. 28, 1839.

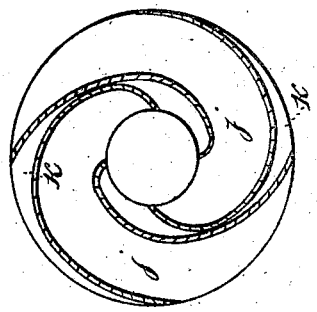

Fig. 3.

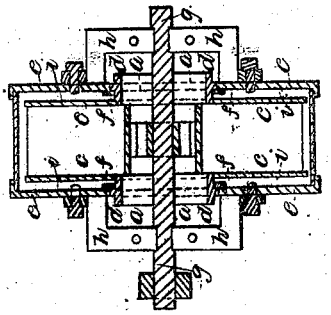

Fig. 2.

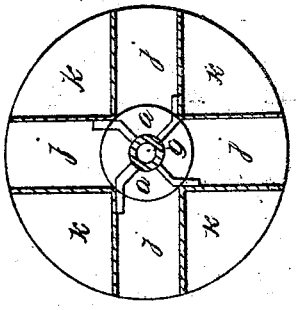

Fig. 4.

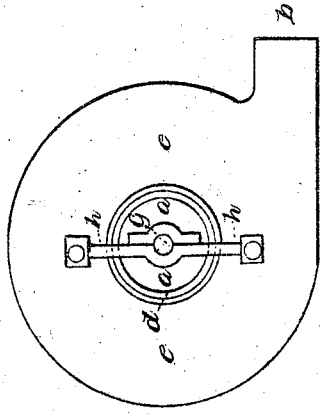

Fig. 1.

UNITED STATES PATENT OFFICE.

FREDK. P. DIMPFEL, OF NEW YORK, N. Y.

CONSTRUCTION OF FAN-BLOWERS.

Specification forming part of Letters Patent No. 1,448, dated December 28, 1839; Reissued January 25, 1848, No. 106.

To all whom it may concern:

Be it known that I, FREDERICK P. DIMPFEL, of the city of New York, State of New York, have invented certain new and useful Improvements in the Manner of Constructing Revolving Fan-Wheels or Blowing Apparatus for Furnaces and for other Purposes; and I do hereby declare that the following is a full and exact description thereof.

Figure 1, in the accompanying drawing is an outside view of my fan wheel, *a*, *a*, being the opening through which the wind is to enter, and is to escape at its mouth at *b*, in the ordinary way. Fig. 2 is a section of the blowing wheel from side to side, through the axis of the wheel.

In each of the figures where like parts are represented they are designated by the same letters of reference.

I do not confine myself to any particular form of vane, intending sometimes to allow them to extend out from the axis toward the periphery, in the ordinary manner, and sometimes to curve them in any degree which I may think proper, as shown in the section Fig. 3; but in all cases I inclose the sides of my fan wheel, excepting at the part *a*, *a*, where the air is admitted.

c, *c*, in Fig. 2, show the heads, or circular rims, by which the vanes are inclosed. From these heads extend necks, or collars, *d*, *d*, which extend out through the opening in the outer case *e*, *e*, of the apparatus; the edge of one of these is seen at *d*, Fig. 1. These collars are to run air-tight against the case *e*, *e*, for which purpose they have attached to them flat rings of leather *f*, *f*, which cover the opening between the collars and the case, which they close by the pressure of the air when the instrument is in action. Other analogous devices may be employed for closing this part, but that above named is simple and efficient. The shaft *g*, *g*, of the fan wheel has its bearings in the pieces *h*, *h*, attached to the outer case for that purpose. A space *i*, *i*, is left between the wind wheel and the outer case, which space may be denominated the air chamber; in this space, as also within and around the wind wheel, generally, the air will become condensed by the rapid motion of the wheel, and not being able to escape through the opening *a*, *a*, in consequence of the closure of the junction between the collar and the outer case, as described, it may be made to exert a pressure of several pounds to the square inch, by regulating the escape opening at *b*.

I have already stated that the vanes of the wind wheel may be varied in form, and have referred to Fig. 3, as an example of the curved form which I intend sometimes to give them. In Fig. 4, I have represented another manner of constructing the apertures through which the wind is to pass from the center openings *a*, *a*, to the periphery, and out at the aperture at *b*.

Fig. 4 is a section through the wheel, and *j*, *j*, are the apertures from its center to its periphery, these apertures being inclosed at the sides. The sections *k*, *k*, may be closed entirely, and it is believed that a wind wheel so constructed will operate equally well with those of other forms, but it is given here merely as an exemplification of the various modes in which it may be made.

In some cases, I intend to make the opening *a*, *a*, for the entrance of air, on one side of the case and wind wheel only, there being then one collar only, and the head *c*, *c*, which incloses the vanes at that side, will then be continued to the shaft *g*. When thus constructed, an aperture may be made in the side of the outer case, near its center, or elsewhere, for the escape of the blast, instead of the ordinary opening at *b*.

Having thus fully described the construction and operation of my revolving fan-wheel, or blowing apparatus, what I claim as my invention and desire to secure by Letters Patent, is—

The inclosing the vanes of the wind wheel with circular sides, or rims, between which and the outer case there is a space *i*, *i*, left, as described, and the attaching a collar to said sides, or rims, to admit air to the revolving vanes, as shown at *d*, *d*, said collars being made to run air-tight, in the manner set forth, to prevent the escape of air from the space *i*, *i*; the whole being constructed and arranged substantially in the manner herein set forth.

F. P. DIMPFEL.

Witnesses:
THOS. P. JONES,
GEORGE WEST.

[FIRST PRINTED 1914.]