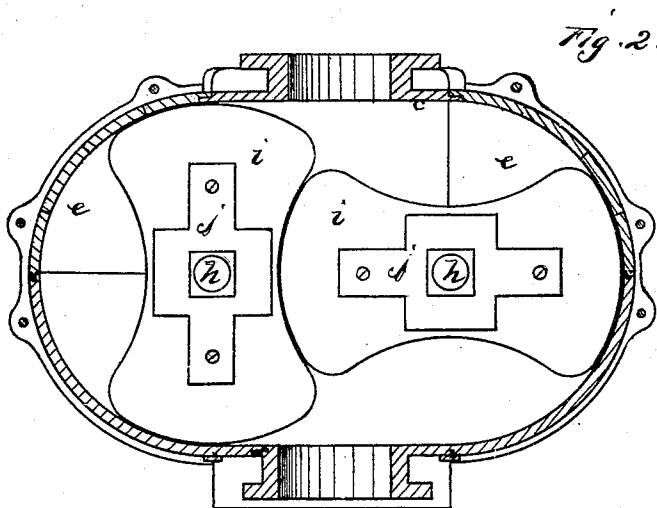
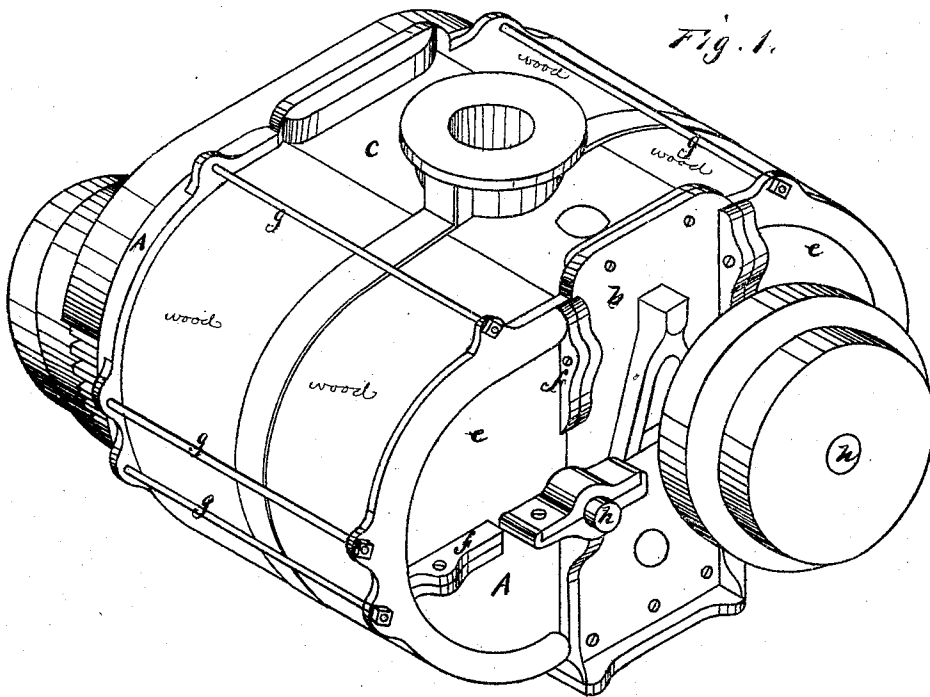


R. F. KNOX.
Rotary-Blowers.

No. 140,509.

Patented July 1, 1873.



Witnesses

J. L. Boone
C. M. Richardson

Richard F. Knox
per Sewery & Co
attys

UNITED STATES PATENT OFFICE.

RICHARD F. KNOX, OF SAN FRANCISCO, CALIFORNIA, ASSIGNOR TO PALMER,
KNOX & CO., OF SAME PLACE.

IMPROVEMENT IN ROTARY BLOWERS.

Specification forming part of Letters Patent No. **140,509**, dated July 1, 1873; application filed
December 20, 1872.

To all whom it may concern:

Be it known that I, RICHARD F. KNOX, of San Francisco city and county, State of California, have invented Improvements in Blowers; and I do hereby declare the following description and accompanying drawings are sufficient to enable any person skilled in the art or science to which it most nearly appertains to make and use my said invention or improvement without further invention or experiment.

My invention relates to improvements in that class of blowing apparatus in which two double elliptical rotary pistons or arms are revolved in contact with each other inside of a case for the purpose of producing a blast of air or suction. My improvement consists principally in constructing the ends of the case with removable sections, so that the interior of the apparatus can be examined or repaired without taking the entire case apart, as heretofore. My invention also includes a novel and superior arrangement for securing the pistons or arms upon the shafts so as to insure stability.

In order to more fully illustrate and explain my invention, reference is had to the accompanying drawing forming a part of this specification, in which—

Figure 1 is a perspective view of my machine. Fig. 2 is a transverse section, showing the ends of the pistons.

A A are the two ends of an oval case such as is used for this class of blowers. These ends I construct in three pieces, one of which forms the main portion, while the other two pieces serve as removable sections. The main portion of each end consists of the entire lower half of the end and an upward-extending middle portion, *b*, leaving a triangular portion to be fitted upon each side of the upright *b*. The upright middle portions *b* of the two ends are united by a metal cross-plate, *c*, to which the hose or pipe attachment is secured, and a similar metal cross-plate unites the two ends of the case at the bottom opposite the plate *c*, in which the ingress-opening for the air is made. The quarter-sections *ee* are triangular in form, with their upper edges curved to correspond with the oval form of the sides when they are fitted into the rectangular openings. These sections are secured in place by means of screws, which pass through the two meet-

ing-flanges *ff* on the outside of the case. The remaining face or rim of the case, in this instance, is made of wooden staves or jointed boards, which are held in place by a groove in the edge of the end pieces, in which their ends are fitted. Tightening-rods *gg* are then employed to draw the ends together so as to bind the parts. The portion of the face or rim which unites the removable sections is detachable from the remainder of the face of the case, and proper packing is inserted between the meeting-edges to render them air-tight. When these sections are removed the interior of the case is exposed upon each side of the upright, and the shafts *h h*, upon which the double elliptical pistons *i i* are secured, rest in boxes secured to the outside of the case, so that the shafts will lie almost in the angle of the opening in the sides.

By constructing the case with the removable section, much time and trouble will be saved in case the blower should require repairs, as the interior can be readily exposed, whereas in the usual manner of constructing the case the entire machinery must be disconnected and the case taken completely apart to adjust or repair any part of the interior apparatus.

This blowing apparatus is especially applicable for use in connection with quicksilver furnaces and other places where the acid, sulphurous, or mercurial character of the fumes which pass through it are liable to act upon the iron and soon destroy or eat away the metal. By using the wooden semicircular sides this action is, in a great measure, obviated. The ends can be made of wood also; or, if made of iron, are of sufficient thickness to save them from destruction by acids.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

A blower constructed with the ends of the casing having removable sections, substantially as described.

In witness whereof I hereunto set my hand and seal.

RICHARD F. KNOX. [L. S.]

Witnesses:

J. L. BOONE,
C. M. RICHARDSON.