May 18, 1926.

1,584,944

A. J. JOHNSON

BLOWER CONSTRUCTION

Filed May 28, 1921

2 Sheets-Sheet 1

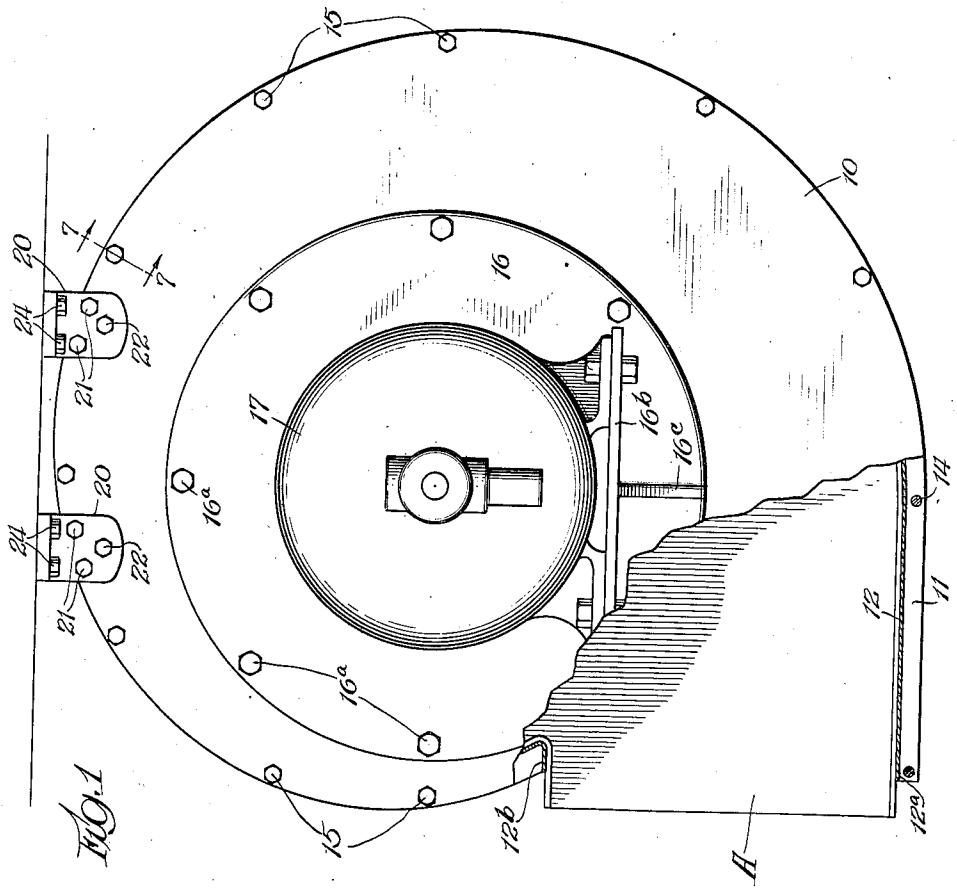


Fig. 1

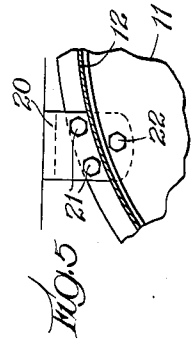


Fig. 5

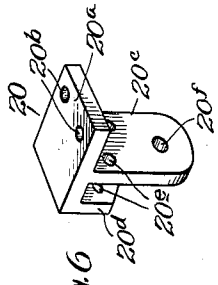


Fig. 6

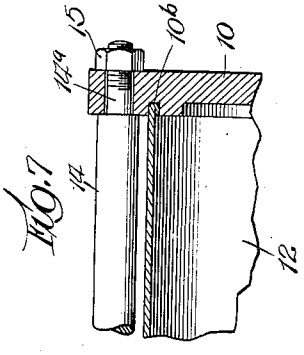


Fig. 7

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FIG. 2

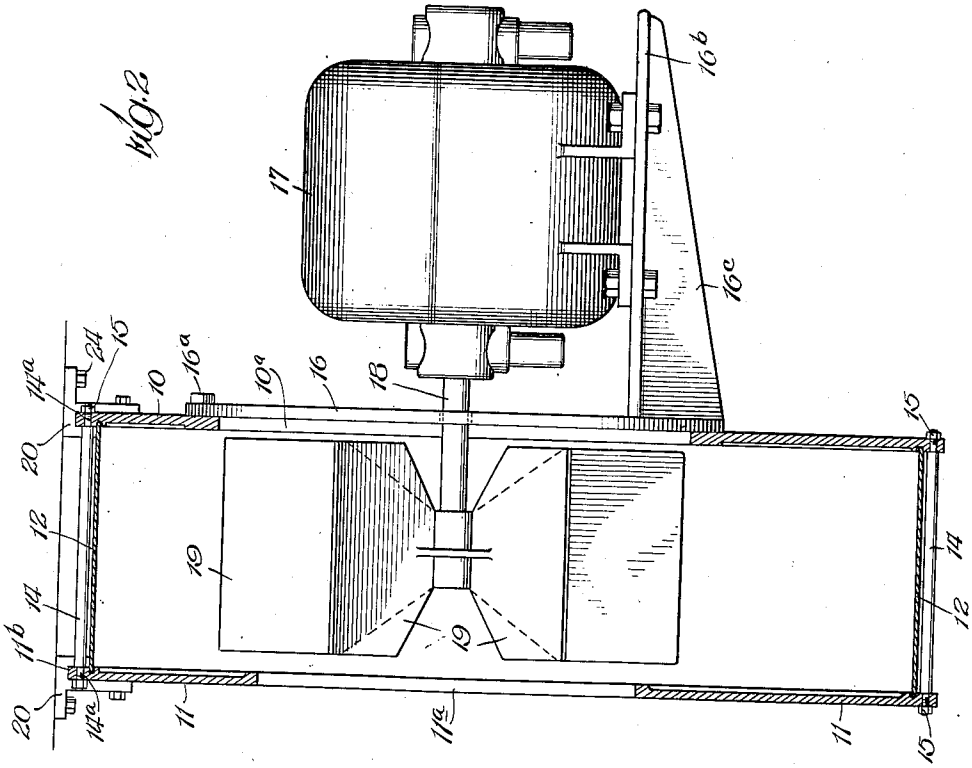


FIG. 3

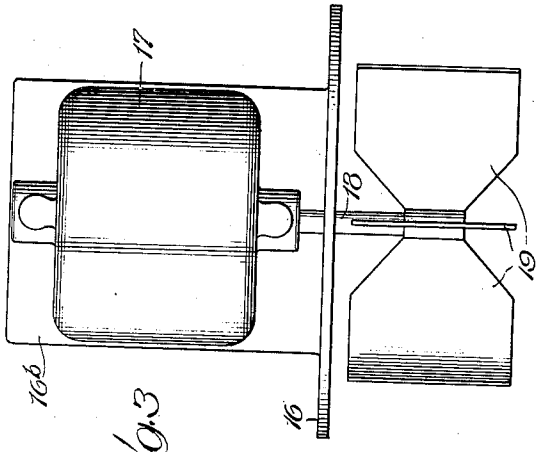
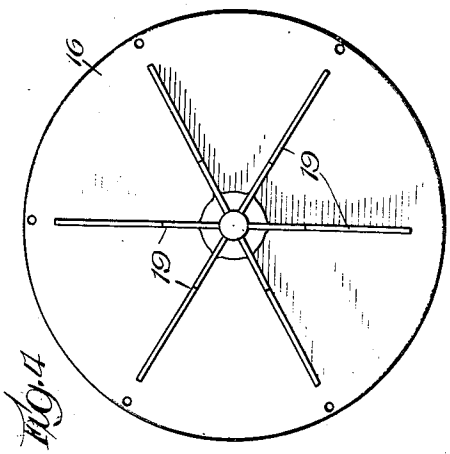


FIG. 4



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Patented May 18, 1926. 1,584,944

UNITED STATES PATENT OFFICE.

ARTHUR J. JOHNSON, OF CHICAGO, ILLINOIS.

BLOWER CONSTRUCTION.

Application filed May 28, 1921. Serial No. 473,490.

This invention relates to improvements in blower construction, and has for its object to provide a new and improved construction by which blowers may be readily and quickly assembled and disassembled, while at the same time providing a compact and efficient structure especially adapted for use in ventilating.

Another object consists in the provision of an improved construction comprising side plates and an included scroll, the latter being of relatively soft metal and the former being grooved or recessed to seat the latter, together with means for holding them in assembled relation.

Still another object consists in the provision of a motor mounting and side plate for quick attachment to and detachment from the blower housing.

Another object consists in the means of supporting or attaching the housing to a support.

These and other objects of the invention will be more fully described hereinafter in the following specification, and shown in the accompanying drawings, in which—

Figure 1 is a side elevation of an embodiment of my invention, showing a portion of the housing broken away for clearness;

Fig. 2 is a vertical section, the impeller or fan and motor being shown in elevation.

Fig. 3 is a plan view, drawn to a reduced scale, of the motor, side plate, and impeller;

Fig. 4 is an end elevation of the structure shown in Fig. 3;

Fig. 5 is a detail of the housing attachment;

Fig. 6 is a perspective view of one of the securing brackets; and

Fig. 7 is a section taken on the line 7—7 of Fig. 1, showing a detail of the fastening mechanism.

Like numerals refer to like elements throughout the drawings.

My improved construction comprises a pair of side plates 10 and 11, the former having a central intake opening 10^a and the latter a central opening 11^a. These plates are, preferably, constructed of rigid material, such as cast iron, steel, or the like, and are each grooved or recessed, as indicated at 10^b and 11^b, these grooves being provided to form seats for the edges of the scroll 12, which is preferably constructed of lighter and softer metal. The plates are provided with extensions A, which, with the ends of the scroll 12, form a discharge outlet. The scroll terminates in the ends 12^a and 12^b,—see Fig. 1—the latter being angularly bent to conform to the discharge opening.

Extending across between the plates 10 and 11, and outwardly thereof, are the securing bolts 14, reduced and threaded at their extremities 14^a. These reduced portions extend through the side plates, the body portions forming spacing members to maintain said plates in proper spaced relation. An auxiliary plate 16 covers the opening 10^a, being secured to the side plate around such opening by suitable bolts 16^a or the like. Carried by this auxiliary side plate 16 is the outwardly projecting table 16^b having a reinforcing rib 16^c therebeneath.

A suitable motive element, such as an electric motor, indicated by numeral 17, is bolted or otherwise secured upon the table and a rotatable shaft 18 extends therefrom through a suitable aperture in the plate 16. This shaft has secured thereto the impeller or fan 19 within the housing formed by the side plates and scroll—see Fig. 2.

For attachment to the wall, ceiling, or floor, I provide brackets 20 having a base flange 20^a with suitable apertures 20^b therethrough. Depending from the base flange is a long flange 20^c and a short flange 20^d. A pair of bolting apertures 20^e extend through both depending flanges, and an additional bolting aperture 20^f extends through the longer flange 20^c, as shown in Fig. 6. The depending flanges are spaced apart a sufficient distance to embrace the side plates 10 and 11, the shorter flange being located at the inner sides of the side plates to accommodate the scroll 12, while the longer flanges 20^c are located at the outer sides of the side plates. Suitable bolts 21 extend through the apertures 20^e, while an additional bolt 22 extends through the long flange 20^c, all of these bolts being carried through the side plates. The brackets 20 are then attached to any suitable supporting surface by means of bolts through the apertures 20^b—see Figs. 1 and 2 for example.

In the assembly of this construction the scroll 12 is bent to shape with one edge fitting in the groove of one of the side plates. The other side plate is then superimposed, with the other edge of the scroll fitting in its groove, the bolting members 14 being

thereafter assembled, the width of the scroll being preferably such that it will be forced tightly into the grooves 10^b and 11^b and, being of softer metal, will upset or curl to conform to the desired width, thus also serving to seal the housing more securely against leakage. The motor and side plate are then attached to the housing—the opening 10^a being slightly larger than the fan 19—after which the assembled construction may have the brackets 20 attached in the proper location. The entire housing may then be secured to the wall, ceiling, or floor, as desired, and is ready for use.

It is obvious that by my construction the structure may be readily assembled and disassembled, and that it is practical and convenient to ship and transport the same in knock-down condition, in contradistinction to other present day structures. Furthermore, the motor and impeller may be readily and quickly removed to permit access to the interior of the housing for cleaning or inspection purposes, thus obviating the necessity for disassembling the entire structure. Further, the attachment to or detachment from the main support is rendered simple by the use of the brackets described, as will be obvious.

It will also be obvious that my construction is susceptible of modification and improvement, and I do not, therefore, wish to be restricted to the form shown and described herein except as defined in the appended claims.

I claim:—

1. In a device of the class described, side plates, a scroll carried therebetween and located inwardly of the outer periphery thereof, bracket members having spaced flanges, and means to secure said flanges to the extending portion of said side plates.

2. In a device of the class described, side plates, a scroll carried therebetween and located inwardly of the outer periphery thereof, bracket members having spaced flanges, and means to secure said flanges to the extending portion of said side plates, one flange of each of said brackets being relatively shorter than the other and said shorter flange being located at the inner side of the adjacent side plate.

3. In a device of the class described, side plates, a scroll carried therebetween and located inwardly of the outer periphery thereof, bracket members having spaced flanges, means to secure said flanges to the extending portion of said side plates, and means to attach said brackets to a support.

4. A device of the class described comprising side plates each having a groove on the inner face thereof, a scroll member having its edges fitting in said grooves and formed of relatively soft material, and means to secure said side plates and scroll in assembled relation.

In testimony whereof, I have subscribed my name.

ARTHUR J. JOHNSON.