L. C. McGUIRE.

MOTOR.

APPLICATION FILED DEC. 30, 1918.

1,355,235.

Patented Oct. 12, 1920.

2 SHEETS—SHEET 1.

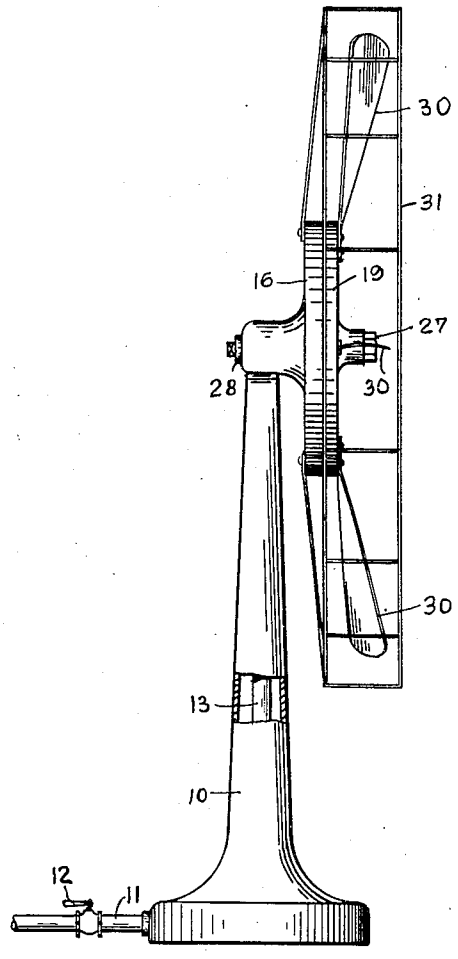


Fig. 1

Fig. 3

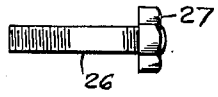


Fig. 4

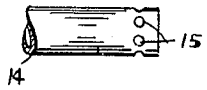
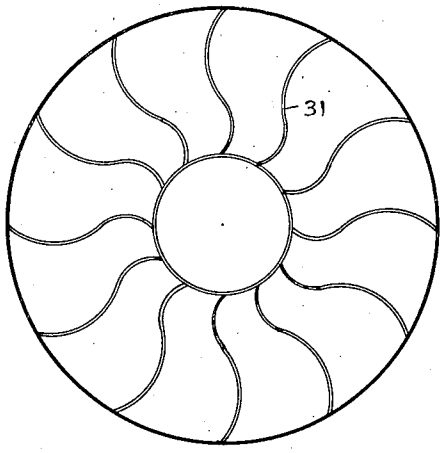


Fig. 2



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2 SHEETS—SHEET 2.

Fig. 5

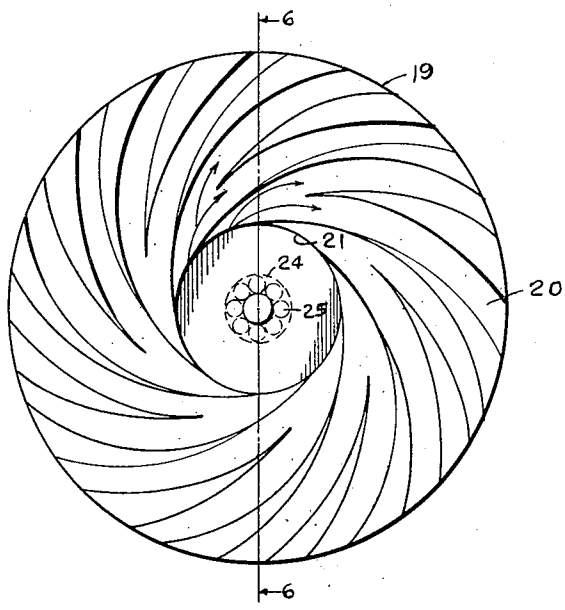


Fig. 6

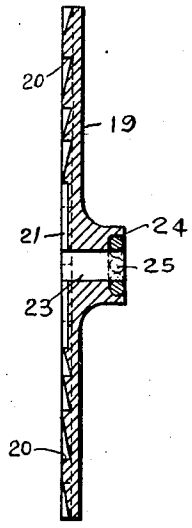


Fig. 7

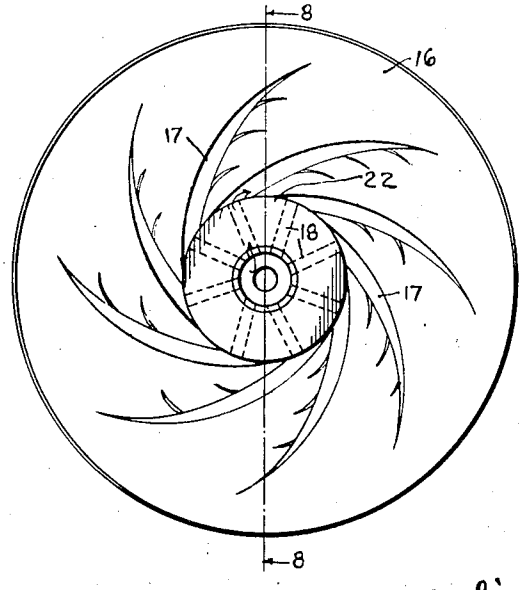
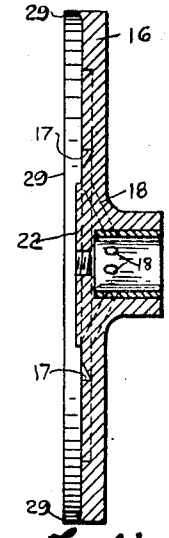


Fig. 8



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UNITED STATES PATENT OFFICE.

LESLIE C. McGUIRE, OF BROOKLYN, NEW YORK.

MOTOR.

1,355,235. Specification of Letters Patent. Patented Oct. 12, 1920.

Application filed December 30, 1918. Serial No. 268,789.

To all whom it may concern:

Be it known that I, LESLIE C. McGUIRE, a subject of the King of Great Britain and Ireland, and a resident of the borough of Brooklyn, in the city and State of New York, have invented certain new and useful Improvements in Motors, of which the following is a specification.

My invention relates to mechanical fans for keeping the air of rooms, &c., in motion, and particularly to a fan of that kind which shall be operated by compressed air, and in which the air, after operating the fan, shall exhaust into the room, thus contributing to the ventilation of the same.

The invention consists in the novel construction, arrangement and combination of various devices and parts, as hereinafter fully described and as shown in the accompanying drawings.

In the said drawings, Figure 1 is a side view of a fan constructed according to my invention, showing the same mounted upon a stand suitable for placing upon a desk or similar support; Fig. 2 is a front view of the protective guard around the fan; Figs. 3 and 4 are detail views hereinafter fully described; Fig. 5 is an elevation of the inner face of the rotating member of the fan and Fig. 6 is a section of the same on the line 6—6 of Fig. 5; Fig. 7 is an elevation of the inner face of the stationary member of the fan and Fig. 8 a section of the same on the line 8—8 of Fig. 7.

In carrying my invention into effect in the embodiment thereof which I have selected for illustration in the drawings and description in this specification, I provide a stand or base 10 having an inlet pipe 11 connected to any suitable source of compressed air and having a cock 12. A pipe 13 leads upward through the upright of the stand, and is continued by the lateral extension 14, shown in Fig. 4, which is provided with radial outlets 15. Surrounding the pipe 14 is the stationary operating part 16 of the fan, shown in Fig. 1 and on an enlarged scale in Figs. 7 and 8, the inner face of which is provided with air-channels 17 as shown in Fig. 7, each of which communicates through a bore 18 and one of the radial outlets 15 with the air in the tubes 13 and 14.

The outer and rotating member of the fan is designated 19 and is shown in Fig. 1 and on an enlarged scale in Figs. 5 and 6. The inner face of same, which when the parts are assembled lies nearly contiguous to the member 16, is provided with air-channels 20, as shown in Fig. 5. It will be observed that these air-channels 20, when the parts are assembled, curve in opposite directions to the air-channels 17 of the member 16. The member 19 is provided with a central depression 21 which engages with a corresponding elevation 22 on the member 16, and it is perforated at 23, and provided with a pocket 24 for the reception of ball-bearings 25. A bolt 26 secures the parts together, provided with a head 27 and a nut 28. The member 16 is provided with an annular flange 29, which lies outside of the member 19 when the parts are assembled.

It will be understood that instead of leading the air to the operative parts of the fan through the pipes 11 and 13, an opening may be provided in the upper part of the stand or at any convenient place by which air may be admitted to the pipe 14 for operating the fan. It will also be understood that a stand or base of different form may be employed, as a wall fixture or the like, and that various other modifications may be made in these un-essential parts of the apparatus, without departing from the spirit and scope of my invention.

The rotating member 19 is provided with fan vanes or blades 30, and may be also if desired provided with the usual guard 31. (See Fig. 2).

The operation of my invention is as follows: Air being admitted, from a suitable source of compressed air, into the pipe 14, passes out through perforations 15 and the bores 18 into the air-channels 17 of the member 16. The member 19 being held closely against the member 16, the air passes into the air-channels 20 of the member 19, and being forced radially therethrough, passes out at the circumference, thereby causing the member 19 to rotate, owing to the opposing curves of the air-channels in the said members. By these means therefore the fan is caused to operate, and at the same time a supply of fresh air is introduced into the room.

My invention can also be used as a motor for general purposes. It will be obvious that the employment of the same to operate a fan is only a particular case of the use of the same. By eliminating the fan and wire

guard, and providing a suitable pulley or gear on the rotating member, power may be communicated to devices which it is desired to drive. It will also be obvious that such a motor may be driven by steam or other power instead of compressed air.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is as follows:

1. A motor, comprising in combination a base, a stationary member provided with a channel in the face thereof, a rotating member provided with a channel in the face thereof, the channel in one of said members extending to the periphery thereof and the channel in the other of said members not extending to the periphery thereof, and means adapted to introduce a fluid under pressure into said channels, the channel in one of said members being curved, whereby when said fluid passes therethrough the rotating member is operated.

2. A motor, comprising in combination a base, a stationary member provided with a curved channel in the face thereof, a rotating member provided with a channel in the face thereof curved oppositely to the channel of the stationary member, the channel of one of said members extending to the periphery thereof, and the channel of the other of said members not extending to the periphery thereof, and means adapted to introduce a fluid under pressure into said channels, whereby when said fluid passes therethrough the rotating member is operated.

Signed at New York city, N. Y., this 24th day of December, 1918.

LESLIE C. McGUIRE.