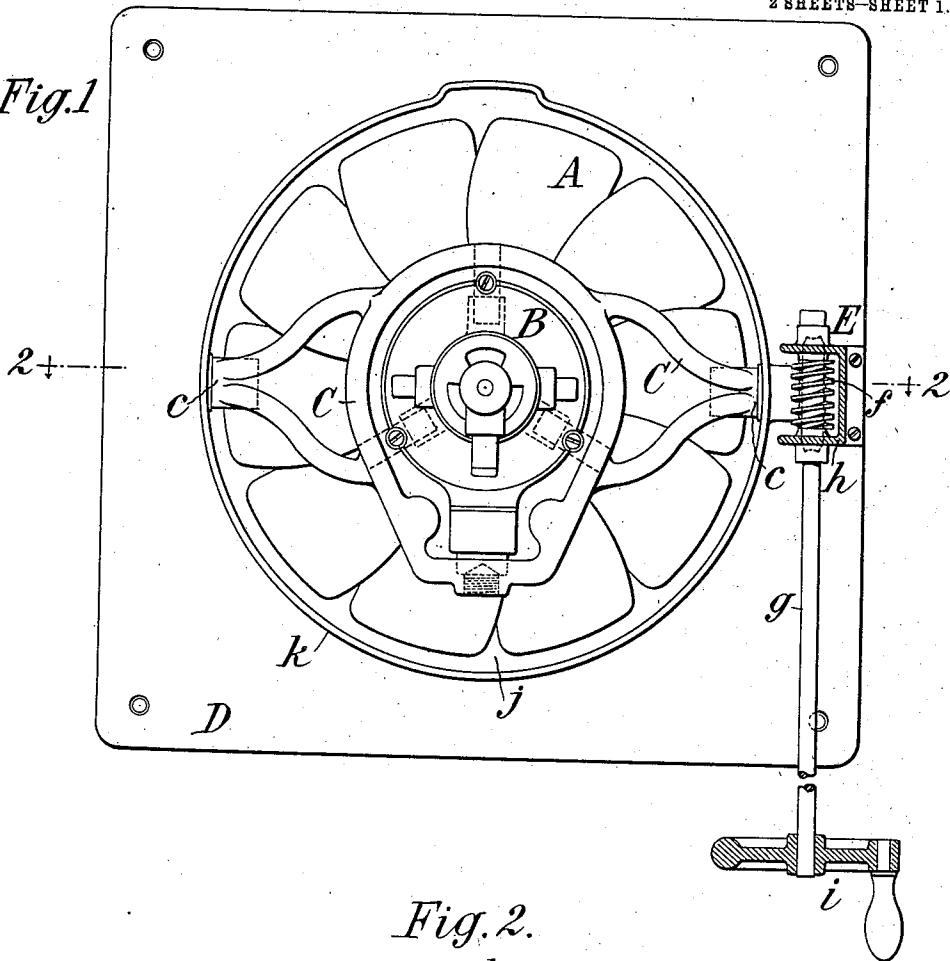
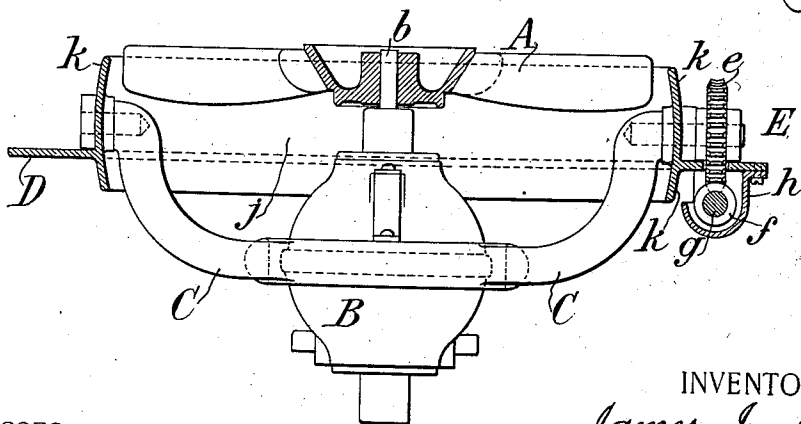


1,011,799.

2 SHEETS—SHEET 1.



*Fig. 2.*



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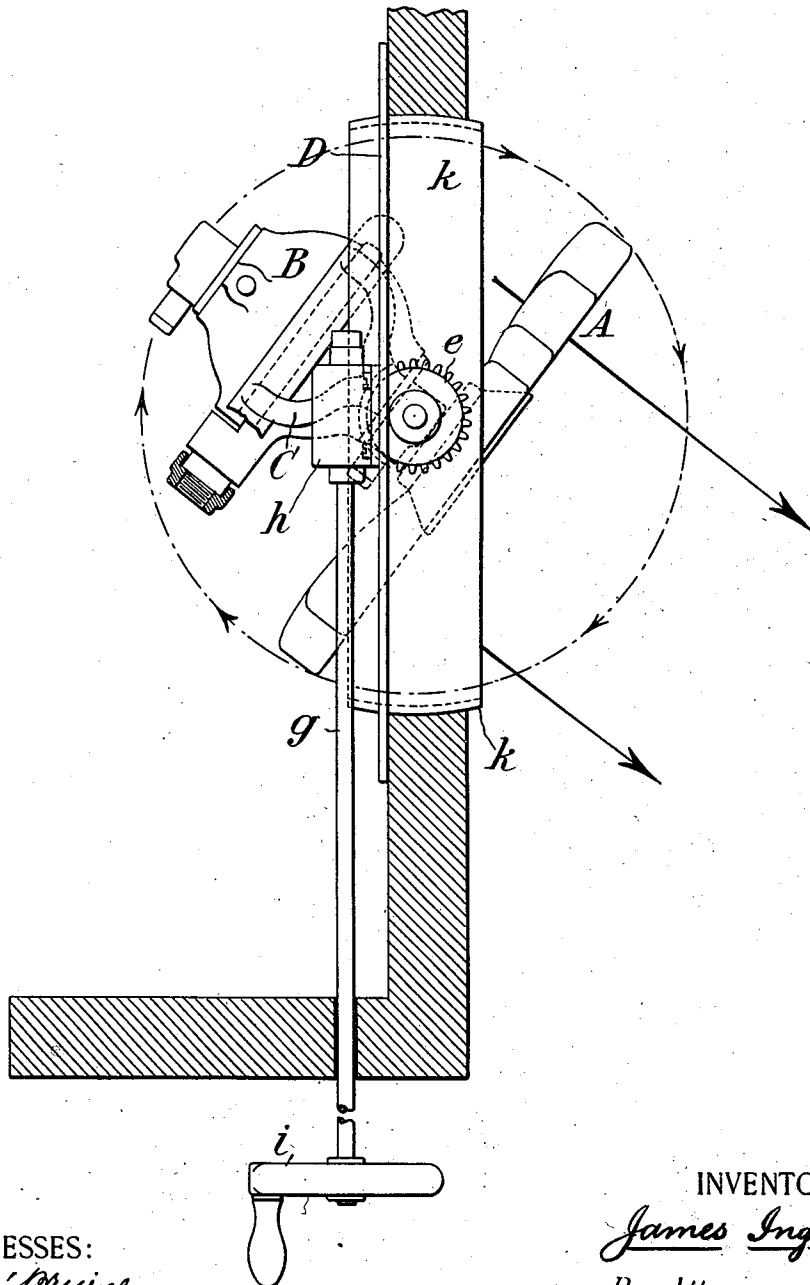
J. INGLIS.  
ROTARY FAN.  
APPLICATION FILED MAR. 14, 1911.

1,011,799.

Patented Dec. 12, 1911.

2 SHEETS—SHEET 2.

*Fig. 3.*



WITNESSES:

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# UNITED STATES PATENT OFFICE.

JAMES INGLIS, OF DETROIT, MICHIGAN, ASSIGNOR TO AMERICAN BLOWER COMPANY,  
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## ROTARY FAN.

1,011,799.

Specification of Letters Patent.

Patented Dec. 12, 1911.

Application filed March 14, 1911. Serial No. 614,416.

*To all whom it may concern:*

Be it known that I, JAMES INGLIS, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Rotary Fans, of which the following is a specification.

The invention relates to rotary fans, and especially to such as are used for ventilating purposes.

The object of the invention is to provide an improved means of this character adjustable to direct the current of air produced by it at different angles, or even to reverse the direction of the current of air.

A further object is to provide such a device adapted for use in the walls of buildings, or with a window-board placed in the window frame above or below the window sash.

An embodiment of the invention is illustrated in the accompanying drawing, wherein—

Figure 1 is a rear elevation of the fan with parts broken away; Fig. 2 is a transverse section, with parts in elevation, and Fig. 3 is a side elevation showing the fan tilted.

In said drawing A indicates a fan-wheel of suitable form, and B any suitable motor for driving the fan-wheel. Preferably an electric motor is employed, as shown, on the shaft *b* of which the fan-wheel is mounted.

In order to provide for the adjustment of the fan-wheel to direct the current of air produced thereby in different directions, it is mounted in a frame C journaled upon any suitable support D, and preferably provided with suitable means E for moving it to its adjusted positions. As shown, one of the journals *c* of the frame has attached thereto a gear *e* meshing with a worm *f* upon a rod or shaft *g* journaled in a bracket *h* projecting from the support D, which bracket also preferably forms a cover for the gears. The rod *g* may be suitably lengthened, depending upon the height of the fan above the floor of the room in which it is located, to be conveniently reached, and is preferably provided on its end with a hand-wheel *i*, by which it may be manipulated.

An important feature of the invention lies in the compactness of construction of the fan and support whereby neither the fan wheel nor the motor projects an undue dis-

tance beyond the support D. To this end in the preferred construction the pivotal axis of the fan and motor is so located that the distance from its point of intersection with the fan shaft to the rear of the motor is substantially the same as the distance from such point to the periphery of the fan wheel. By this means the tips of the fan blades and the rear of the motor describe substantially the same circle when the device is swung around its pivotal axis, as will be clear from Fig. 3. The circular opening *j* in the support D through which the air is driven or drawn by the fan wheel may hence be of a diameter which is not materially larger than the diameter of the fan wheel, and yet permit the fan to be tilted as illustrated in Fig. 3 so that it occupies a position partly on one side and partly on the other side of the opening. Or with a minimum size of opening the fan may be entirely reversed if desired. This construction not only provides the minimum degree of projection on each side of the opening but also reduces the size and weight of the support D. The support is preferably provided with annular flanges *k k* which when the fan wheel is running on a horizontal axis provide a housing for the fan wheel. The pivotal axis of the frame C is preferably located at a point between the fan wheel and the motor in order to best secure these results. It is desirable, however, to support the device from the motor casing, and for this purpose the frame C is preferably bowed rearwardly, and is connected with the motor casing at or near the middle of the latter.

The frame for the fan-wheel may be mounted at any angle on its support, and the gears and rod provide a convenient means for adjusting the fan-wheel and frame, especially when the fan is located out of reach. These means are also especially advantageous when the support for the frame and fan-wheel is in the form of a wall plate and located in the wall or window of a building. By manipulating the hand-wheel the fan-wheel may be adjusted to direct the current of air blown from it at different angles, and by turning it far enough the fan may be reversed so as to direct the current of air in the opposite direction. For instance, if the fan be located in the wall or window of a building, it may be manipulated to blow

the air into the building instead of drawing it out, or vice versa.

While I have illustrated and described one embodiment of my invention, it is not to be understood as limited thereto, as modifications may be made therein without departing from the spirit of the invention.

What I claim is:—

1. In a fan, the combination of a support having an opening, a fan wheel mounted in said opening, a tilting frame having bearing for said fan wheel and means for driving said fan wheel, said opening being as large as the diameter of the fan wheel, and said fan wheel being adapted to pass into said opening when tilted.

2. In a fan, the combination of a support having an opening, a motor, a fan wheel mounted upon the motor shaft, a tilting frame having bearings for said fan wheel and motor and pivoted in said opening, and said opening being as large as the diameter of the fan wheel.

3. In a fan, the combination of a support having an opening, a motor, a fan wheel mounted upon the motor shaft, and a tilting frame carrying said motor and fan wheel, the pivotal axis of said frame being transverse to said opening and located approximately between the fan wheel and motor.

4. In a fan, the combination of a support having an opening, a motor, a fan wheel mounted upon the motor shaft, and means for pivoting said motor and fan wheel in said opening, the distance from the point of intersection of said pivotal axis with the motor shaft to the rear of the motor being substantially equal to the distance from such point to the periphery of the fan wheel.

5. In a fan, the combination of a support having an opening, a motor, a fan wheel mounted upon the motor shaft, means for

pivoting said motor and fan wheel in said opening on a transverse axis, the distance from the point of intersection of said pivotal axis with the motor shaft to the rear of the motor being substantially equal to the distance from such point to the periphery of the fan, and a hand-operable means for tilting said fan and holding it in its adjusted positions.

6. In a fan, the combination of a support, a motor, a fan wheel driven by said motor, a bracket, and means for pivoting said bracket in said support, said bracket being bowed rearwardly and connected with the motor casing.

7. In a fan, the combination of a plate having an opening therein, a motor, a fan wheel driven by said motor, and means for pivoting said motor and fan wheel in said opening, said opening being of substantially the same diameter as the fan wheel, and said fan wheel and motor being adapted to be tilted within said opening to a position in which the fan wheel extends partly on one side and partly on the other side of said opening.

8. In a fan, the combination of a support having an opening, a motor, a fan wheel driven by said motor, a tilting frame on which said motor and fan wheel are pivoted in said opening, said opening being as large as the diameter of the fan wheel, and said motor and fan wheel being adapted to be tilted completely over through said opening whereby the fan may operate in a reverse direction.

In witness whereof, I have hereunto signed my name in the presence of two subscribing witnesses.

JAMES INGLIS.

Witnesses:

I. B. COE,  
F. E. DREM.