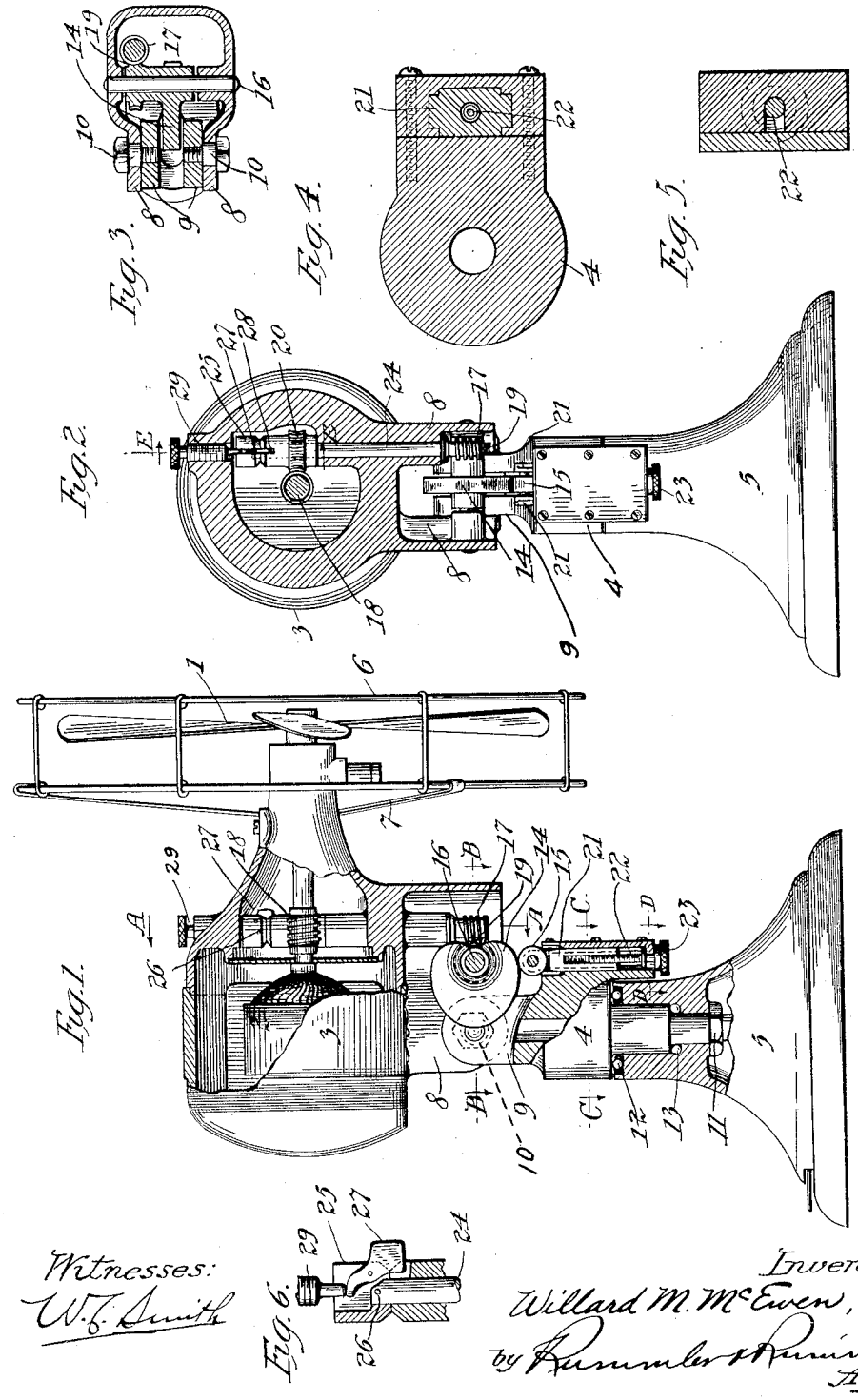
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OSCILLATING FAN.

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UNITED STATES PATENT OFFICE.

WILLARD M. McEWEN, OF CHICAGO, ILLINOIS.

OSCILLATING FAN.

1,189,273. Specification of Letters Patent. Patented July 4, 1916.

Application filed July 17, 1915. Serial No. 40,397.

To all whom it may concern:

Be it known that I, WILLARD M. McEWEN, a citizen of the United States of America, and a resident of Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Oscillating Fans, of which the following is a specification.

The main objects of this invention are to provide improved mechanism for causing electric fans to vary the direction of the air current simultaneously in two different planes, as for example, oscillating the fan in a horizontal plane and at the same time tilting it up and down in a vertical plane; to provide improved mechanism of the general type described in my copending applications, Serial No. 29,129, filed May 19, 1915, and Serial No. 34,025, filed June 15, 1915, for electric fans, whereby the horizontal oscillatory movement is due to gyratory forces brought into play by the tilting movement; and to provide improved means for adjusting said mechanism so as to vary the vertical tilting of the fan.

An illustrative embodiment of this invention is shown in the accompanying drawings, in which—

Figure 1 is a side elevation partly sectional of an electric fan equipped with the improved mechanism. Fig. 2 is a front elevation partly sectional of the fan as viewed from the plane of the line A—A of Fig. 1. Fig. 3 is a transverse sectional detail taken on the line B—B of Fig. 1. Fig. 4 is a transverse sectional detail taken on the line C—C of Fig. 1. Fig. 5 is a sectional detail taken on the line D—D of Fig. 1. Fig. 6 is a detail of the locking pawl for connecting the fan motor to the tilting mechanism.

In the construction shown in the drawings, the blower mechanism comprises a fan 1, connected to a motor 2 rotatably mounted in a casing 3 which is tiltably supported on a member or shaft 4 journaled in a supporting member or base 5. The fan 1 and motor 2 may be of any desired construction, the fan being provided with the usual protecting guard 6 supported on the motor casing 3 by means of arms 7.

The motor casing 3 is connected to the shaft 4 by a pair of lugs 8 formed on the under side of the casing 3, which are pivotally connected to the bifurcated head 9 of the member 4 by means of stud pins 10. The blower mechanism is thereby supported so as to be tilted in a vertical plane. A suitable connection 11 is attached to the inner end of the member 4 for securing it against upward longitudinal movement in the base 5. Ball bearings 12 and 13 are interposed between the member 4 and the base 5 so as to reduce friction and support the member 4 to rotate as free as possible.

The mechanism for tilting the fan in a vertical plane comprises a cam 14 journaled on the motor casing 3 and engaging a roller 15 carried on a member 4. The cam 14 is secured to a shaft 16 which, through the medium of worms 17 and 18 and worm wheels 19 and 20, is positively driven by the motor 2. The roller 15 is journaled on a block 21 slidably mounted on the member 4. A threaded pin 22 engages the block 21 and by means of a head 23 is turned for the purpose of shifting the block 21 to move the roller 15 up and down on the member 4. The shape of the cam determines the angular range and character of the vertical tilting, and the position of the block determines the position of the limits of the angular movement.

The shaft 24 which carries the worm 17 has a collar 25 secured thereto by a pin 26. The worm wheel 20 is loosely mounted on the shaft 24 and is adapted to be connected in driving relation thereto by means of a pawl 27 pivoted on a collar 25 and normally urged by gravity to enter a notch 28 formed in the hub of the worm wheel 20. A pin 29 is threaded into the motor casing 3 in such position that the inner end thereof engages the pawl 27 and may be shifted to retract the pawl from engagement with the slot 28 and thereby disconnect the motor 2 from the cam 14. This allows the fan to operate in any fixed angular position.

Although but one specific embodiment of this invention has been herein shown and described, it will be understood that numerous details of the construction shown may be altered or omitted without departing from the spirit of this invention as defined by the following claims.

I claim:—

1. The combination of a support, a member journaled on a vertically disposed axis on said support, motor-driven mechanism mounted to tilt vertically on said member and comprising parts rotatable on a horizontally disposed axis, coacting means on said motor-driven mechanism and said member

for tilting said motor-driven mechanism vertically and thereby through gyratory forces cause the horizontal oscillation of said member and motor-driven mechanism, and means for varying the vertical position of the limits of said vertical tilting.

2. In an air circulating device, the combination of a support, a member journaled on a vertical axis thereon, blower mechanism rotatable on a horizontally disposed axis and mounted to tilt vertically on said member, a cam carried by said blower mechanism and engaging said member so as to tilt said blower mechanism in a vertical plane whereby said blower mechanism will oscillate horizontally on said support.

3. In an air circulating device, the combination of a support, a member journaled on a vertical axis thereon, blower mechanism rotatable on a horizontally disposed axis and mounted to tilt vertically on said member, a cam carried by said blower mechanism, a roller carried by said member and positioned for engagement with said cam, and means operated by said blower mechanism for rotating said cam so as to tilt said blower mechanism in a vertical plane and thereby cause said blower mechanism to oscillate relative to said support.

4. In an air circulating device, the combination of a support, a member journaled on a vertical axis thereon, blower mechanism rotatable on a horizontally disposed axis and mounted to tilt vertically on said member, a cam carried by said blower mechanism, a roller carried by said member and positioned for engagement with said cam, means operated by said blower mechanism for rotating said cam so as to tilt said blower mechanism in a vertical plane and thereby cause said blower mechanism to oscillate relative to said support, and means for adjusting said roller vertically on said member.

Signed at Chicago this 15th day of July 1915.

WILLARD M. McEWEN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents. Washington, D. C."