

C. R. MESTON & H. I. FINCH.
 OSCILLATING ELECTRIC FAN.
 APPLICATION FILED APR. 23, 1909.

952,458.

Patented Mar. 22, 1910.

2 SHEETS—SHEET 1.

FIG. 2.

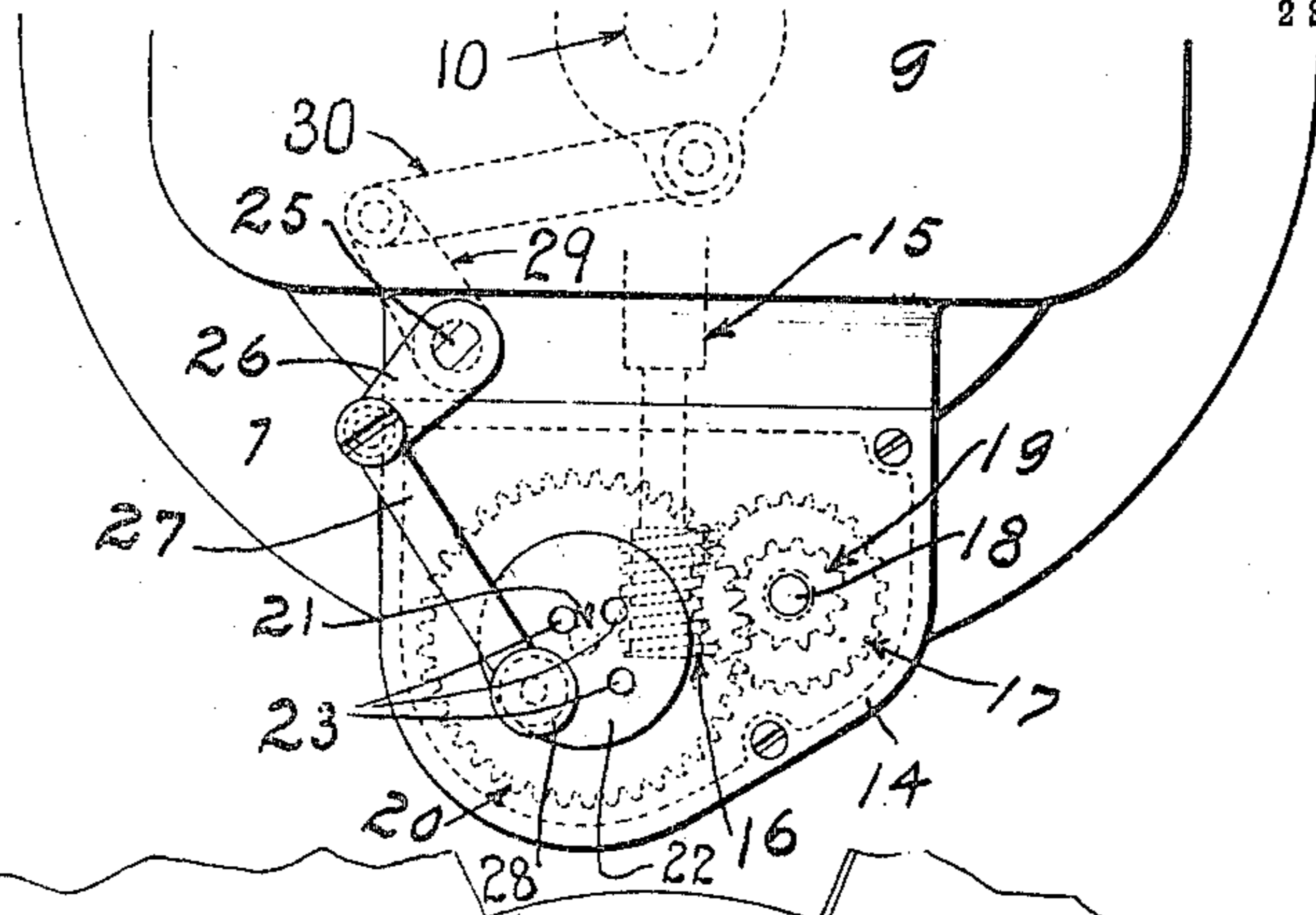
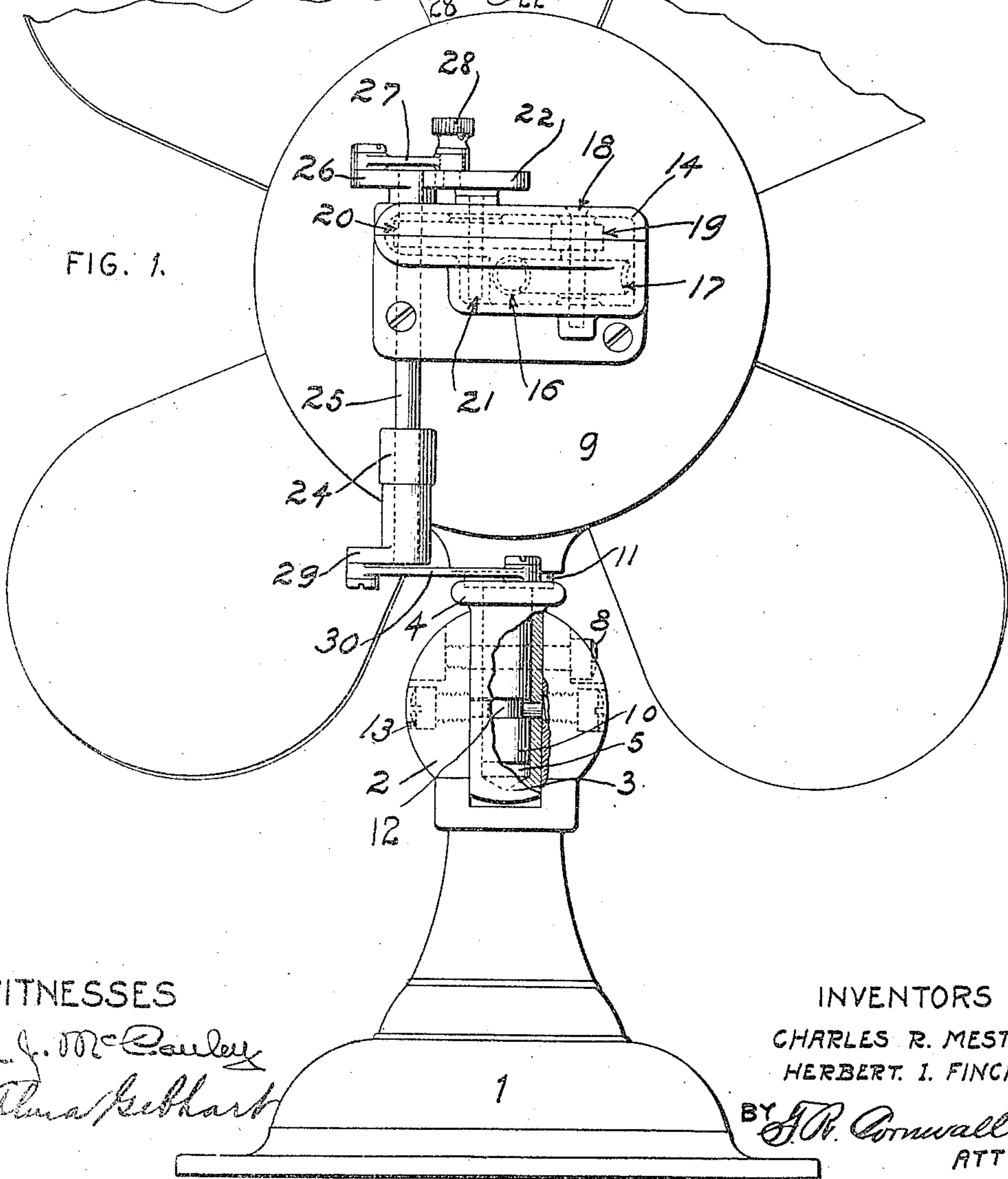


FIG. 1.



WITNESSES

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2 SHEETS—SHEET 2.

FIG. 5.

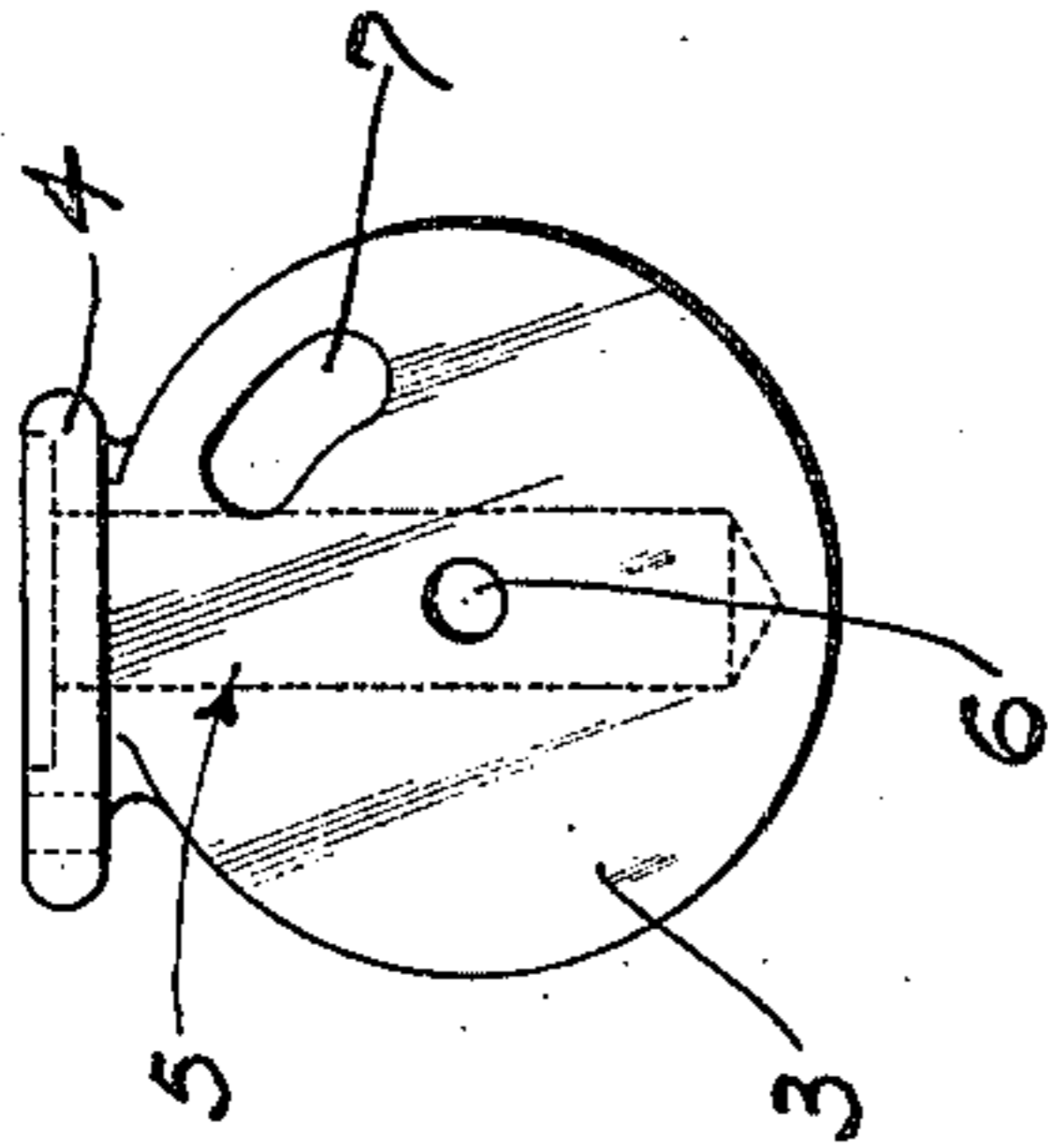


FIG. 4.

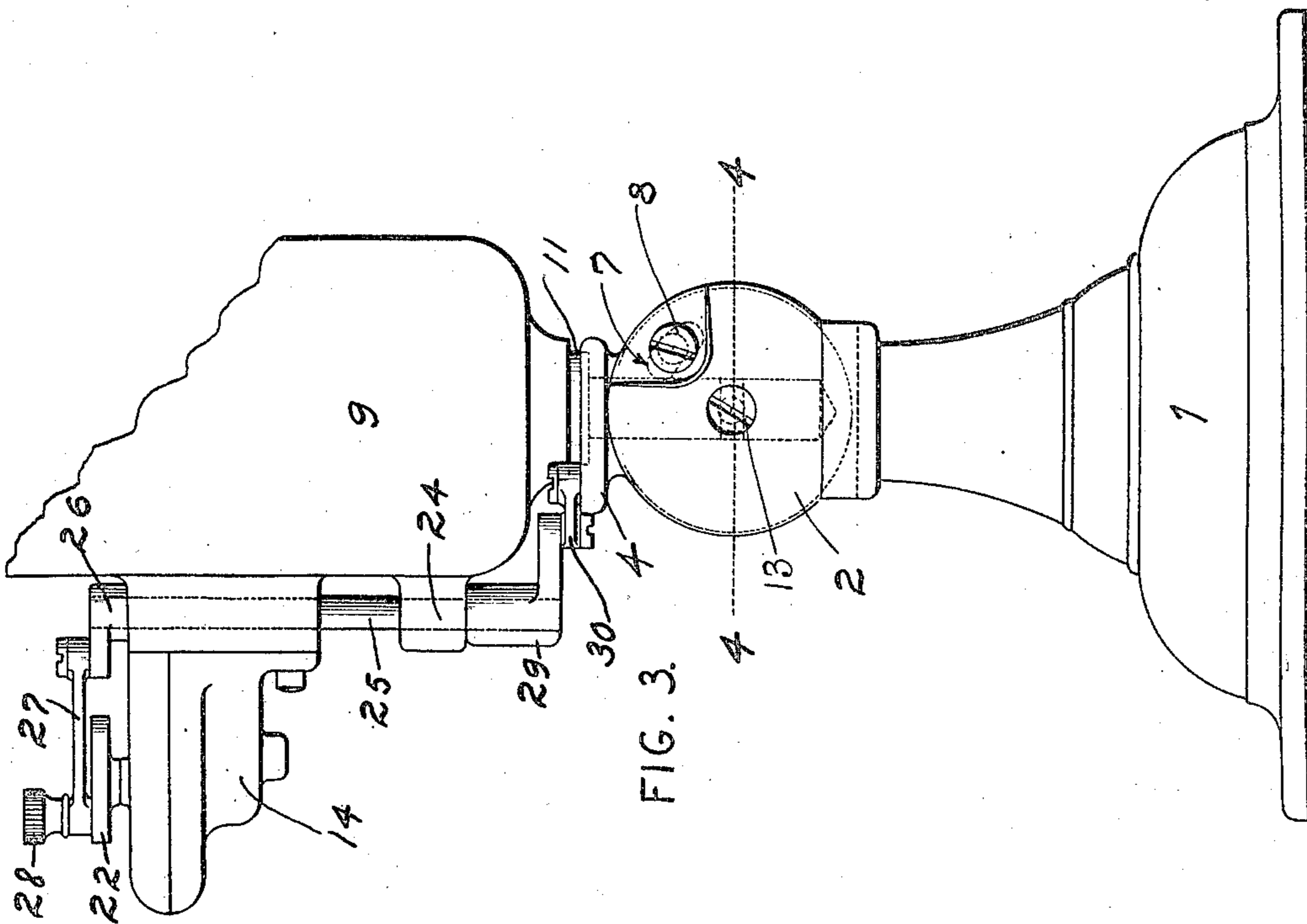
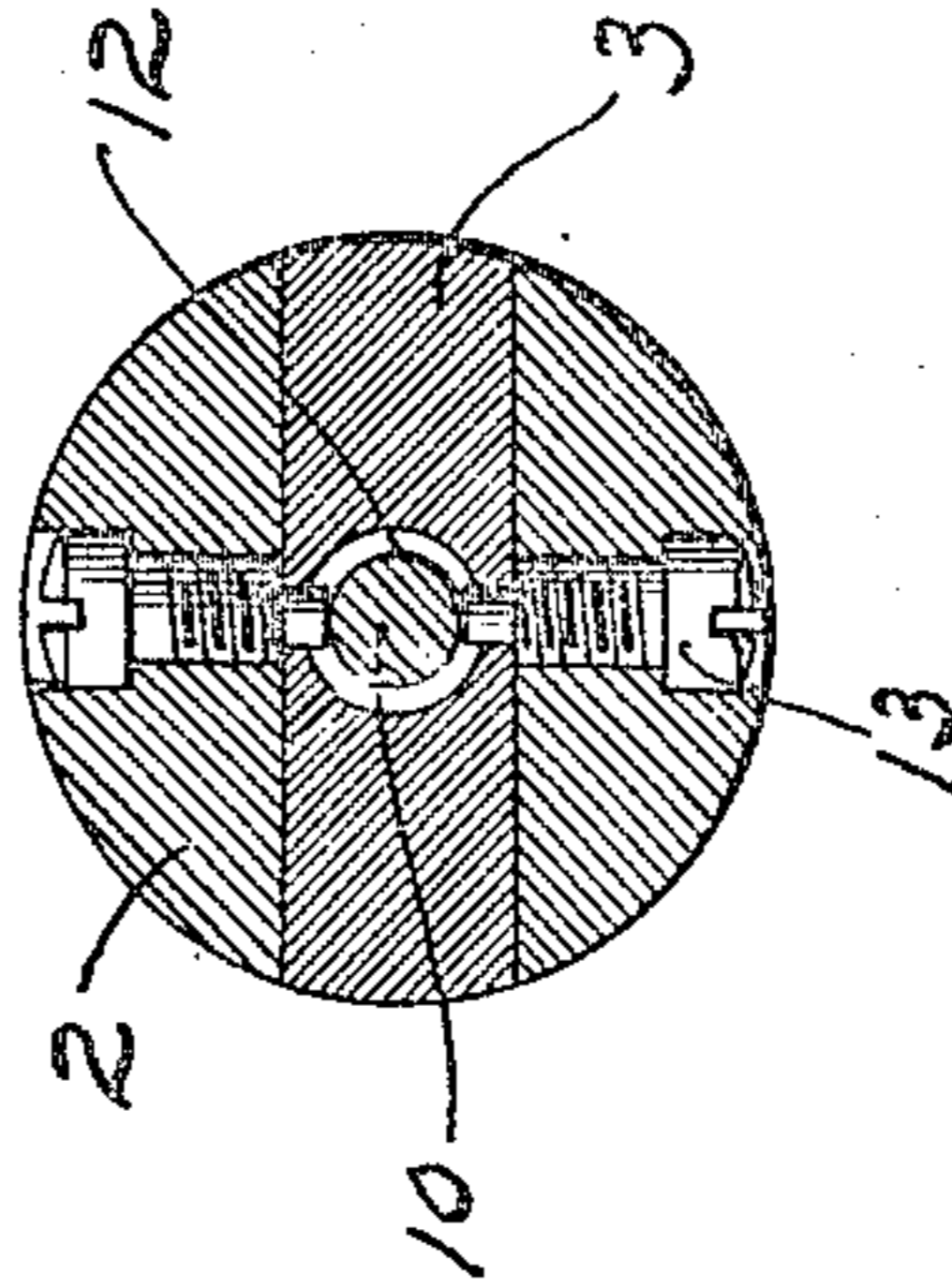


FIG. 3.

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UNITED STATES PATENT OFFICE.

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OSCILLATING ELECTRIC FAN.

952,458.

Specification of Letters Patent. Patented Mar. 22, 1910.

Application filed April 23, 1909. Serial No. 491,635.

To all whom it may concern:

Be it known that we, CHARLES R. MESTON and HERBERT I. FINCH, citizens of the United States, residing at St. Louis, Missouri, have
5 invented certain new and useful Improvements in Oscillating Electric Fans, of which the following is a full, clear, and exact description, such as will enable others skilled
10 in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a rear elevation of our improved fan with parts broken away. Fig. 2
15 is a plan view of the rear portion of the motor-housing. Fig. 3 is a side elevation of a fan of our improved construction with a portion of the motor-housing broken away.
Fig. 4 is a horizontal section taken on the
20 line 4—4, Fig. 3. Fig. 5 is an elevation of an adjustable plate which forms a connection between the fan base and the motor-housing.

Our invention relates generally to electric
25 fans, and more particularly to that class of fans wherein the motor-housing and fan blades oscillate or swing in order that the current of air created by the fan blades will
30 be delivered throughout the arc of a circle, and the particular object of our invention is to provide simple means driven by the fan motor for automatically bringing about the oscillating or shifting movement.

A further object of our invention is to
35 provide a simple connection between the fan base and motor housing, which connection permits the housing and fan blades to be adjusted slightly, either backward or forward, and which connection also permits the
40 motor housing to oscillate or swing upon the base.

To the above purposes, our invention consists in certain novel features of construction, hereinafter more fully described and
45 claimed.

Referring by numerals to the accompanying drawings, 1 indicates the fan base which is of ordinary construction and provided at
50 its upper end with a head 2. Coöperating with this head is a plate 3, having a seat or bearing 4, in the center of which is formed an opening 5, extending downward into the plate 3. Formed through the center of plate

3 and communicating with the opening 5 are
apertures 6 for the trunnion screws. Formed
55 through the plate 3 is a short curved slot 7, through which passes a screw 8, the same being seated in the head 2, and said screw, when tightened, firmly locks the plate 3 to the head 2.

9 indicates the motor housing, from the under side of which depends a post 10, which, when the parts are assembled, is located in the opening 5. The upper portion of said post is provided with a shoulder 11,
60 which bears on the bearing seat 4. Formed in the post 10 is an annular groove 12 which receives the reduced inner ends of a pair of trunnion screws 13, which are seated in the sides of the head 2, and extend through the
65 openings 6, thus providing means for retaining the post 10 in the opening 5, and at the same time permitting said pin to rotate freely in said opening. The trunnion screws 13 also form pivots or trunnions about which
70 the motor housing moves when it is adjusted, the screw 8 locking the housing in its adjusted position.

Fixed to the rear side of the motor housing 9 is a housing 14, and extending there-
75 into is the armature shaft 15 of the motor, which shaft is provided on its end with a worm-thread 16. This worm-thread engages the teeth of a worm-wheel 17, mounted upon a shaft 18, which is arranged for
80 rotation in the housing 14. Conjoined to the worm-wheel 17 is a pinion 19. Meshing with this pinion 19 is a gear-wheel 20 carried by a shaft 21, journaled for rotation in the housing 14, and fixed on the upper end
85 of this shaft 21, above the housing 14, is a crank disk or arm in which is formed a series of apertures 23 arranged at varying distances from the axis of rotation.

Journaled for rotation in the housing 14, immediately adjacent the housing 9, and in
90 a bearing 24 formed on, or fixed to the rear side of the housing 9, is a rock shaft 25, on the upper end of which is fixed an arm 26. Pivotal-ly connected to the outer end of this
95 arm is one end of a pitman, the opposite end of which is connected to the crank disk 22 by means of a pin or screw 28, the lower end of which is adapted to enter any one of the apertures 23 formed in said disk.

Fixed on the lower end of the rock shaft

25 is a crank arm 29, to the outer end of which is pivotally connected one end of a link 30, the opposite end of which is pivotally connected to an ear extending from the bearing plate 4.

When our improved device is in operation, the worm 16 on the end of the armature shaft 15 drives the worm-wheel 17 carried by the shaft 18, which also carries the pinion 19. This pinion 19 drives the gear-wheel 20 and thus the disk 22 carried by the upper end of the shaft 21 is driven, and as a result the pitman 27 is reciprocated, thus imparting a rocking movement to the shaft 25. As the shaft 25 rocks in its bearings, the crank arm 29 carried by the lower end thereof, bears upon the end of the link 30, and as the opposite end of this link is pivotally connected to the bearing plate 4, which is practically a fixed part of the base 1, said link 30 acts as a movable fulcrum with the result that the motor-housing 9, together with the parts carried thereby, and the fan blades oscillate or swing about the post 10 as a center.

The movement of the motor housing and fan blades can be regulated by adjusting the pin or screw 28 in any one of the various apertures 23 in the disk 22. The motor-housing 9 and the fan blades can be tilted or adjusted backward or forward as desired, by loosening the screw 8, thus permitting the plate 3 to shift slightly between the two parts of the head 2, moving upon the trunnion screws 13, and after the proper adjustment is obtained, the screw 8 is tightened.

A fan of our improved construction is very simple, can be easily and quickly adjusted, and the oscillation or lateral swing of the motor and fan blades is accomplished by means of positively operating mechanical devices driven by the fan motor.

Having thus described our invention, what we claim is:

1. The combination with a fan base, of a motor-housing pivotally mounted therein, a post mounted on said motor-housing, constituting a rock shaft, arms carried by said post and links connected to said arms, one of said links being connected to the base and

the other to a driving member actuated by the armature shaft of the motor.

2. The combination with a fan base, of a motor housing pivotally mounted thereon, an upright rock shaft journaled on the motor housing, crank arms on the ends of said rock shaft, a link connecting the crank arm on the lower end of the rock shaft to the base, a rotating member arranged for operation on the motor housing, and operated by the motor within said housing, and a link connecting the crank arm on the upper end of the rock shaft with said rotating member.

3. The combination with a fan base, of a motor housing pivotally mounted thereon, an upright rock shaft journaled on the motor housing, crank arms on the ends of said rock shaft, a link connecting the crank arm on the lower end of the rock shaft to the base, a rotating member arranged for operation on the motor housing, a link connecting the crank arm on the upper end of the rock shaft with said rotating member, and there being an adjustable connection between said link and rotating member.

4. The combination with a fan base, of a motor housing pivotally mounted thereon, an upright rock shaft journaled on the motor housing, crank arms carried by said rock shaft, a link connecting the crank arm on the lower end of the rock shaft with the base, a disk arranged for rotation on the motor housing, and driven by the motor within said housing, which disk is provided with openings at varying distances from its axis of rotation, and a link pivotally connected to the crank arm on the upper end of the rock shaft at one end, and a pin carried by the opposite end of said link, which pin is adapted to be positioned in one of the openings in the disk.

In testimony whereof we hereunto affix our signatures in the presence of two witnesses, this 19th day of April, 1909.

CHARLES R. MESTON.
HERBERT I. FINCH.

Witnesses:

F. R. CORNWALL,
LENORE CLARK.