(No Model.)

R. STEEL.

AUTOMATIC FAN.

No. 585,131. Patented June 22, 1897.

Fig. 2.

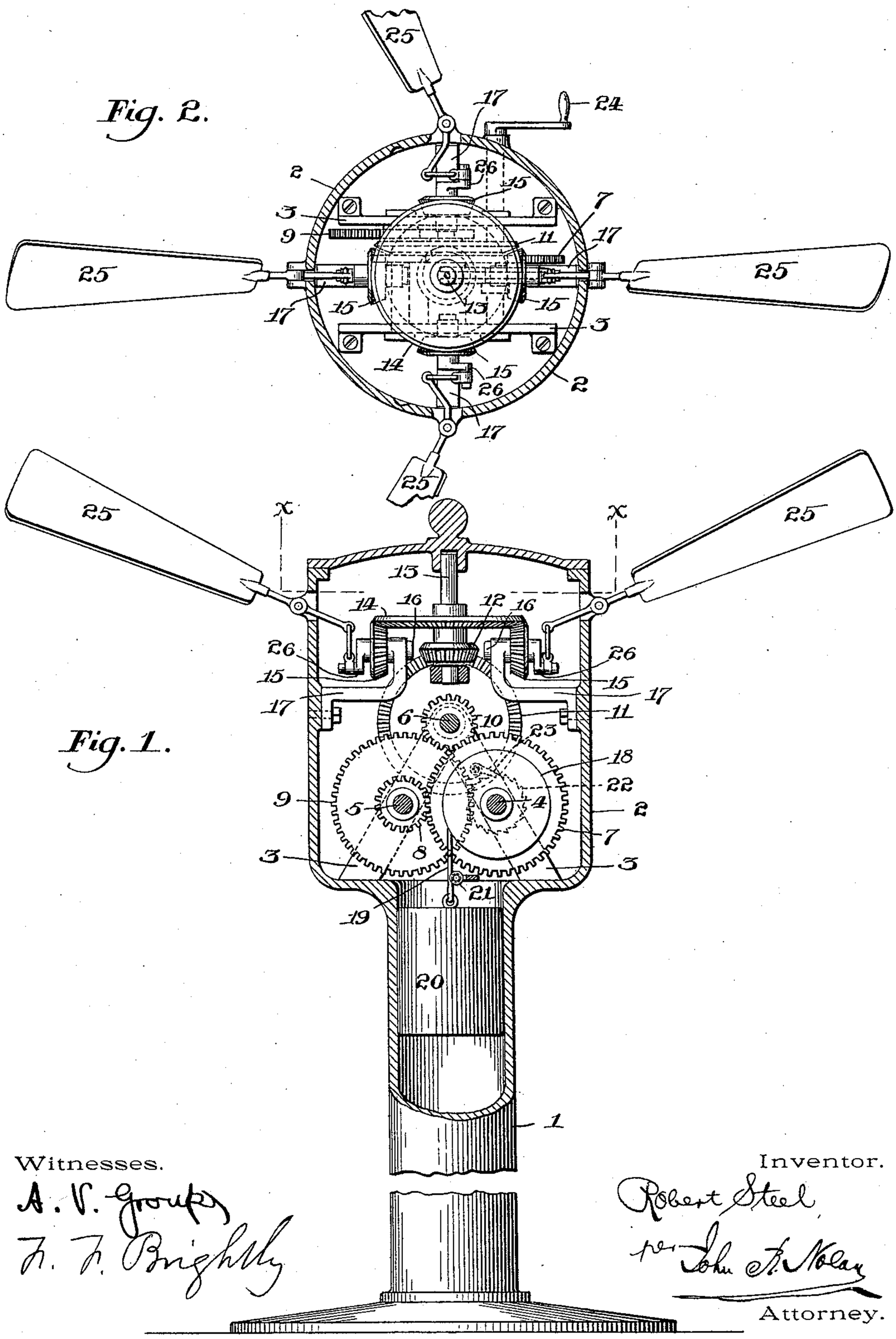

Fig. 1.

Witnesses.

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AUTOMATIC FAN.

SPECIFICATION forming part of Letters Patent No. 585,131, dated June 22, 1897.

Application filed October 24, 1896. Serial No. 609,876. (No model.)

To all whom it may concern:

Be it known that I, ROBERT STEEL, a citizen of the United States, residing at the city and county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Automatic Fans, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

The object of this invention is to provide an automatic fan of simple and efficient construction for use, more especially during warm weather, in offices, &c.

To this end the invention, as generally stated, comprises a hollow column surmounted by a casing containing a weight-actuated motor, whereof the weight is fitted to and guided in the column in combination with a series of fan-blades mounted in or on said casing and so connected with the motor as to be oscillated thereby in different directions, as will hereinafter appear.

In the drawings, Figure 1 is a sectional elevation of a fan embodying my invention. Fig. 2 is a transverse horizontal section thereof, as on the line *x x* of Fig. 1.

The numeral 1 designates a tubular column the base of which is adapted to be bolted or otherwise secured to the floor. This column is surmounted by an appropriate casing 2, in which is supported a frame 3. In this frame are mounted a series of relatively arranged horizontal shafts 4, 5, and 6, carrying a gear-train, whereof 7 is the main or primary wheel on the shaft 4; 8, a pinion mounted on the shaft 5 and engaged by the wheel 7; 9, a spur-wheel mounted on the latter shaft and driven thereby, and 10 a pinion fixed on the shaft 6 and driven by the wheel 9. On shaft 6 is mounted a bevel-wheel 11, which gears with a bevel-pinion 12 on a vertical shaft 13, having its bearings in the frame 3 and in the cap of the casing. On this shaft 13 is a large bevel-wheel 14, with which engages a series of bevel-pinions 15, mounted on horizontal stud-shafts 16, which are supported by lateral brackets 17 in the casing. By this construction it will be seen that when the main wheel is driven the wheels 15 are simultaneously run at an increased rate of speed.

On the main shaft 4 is a flanged drum 18, upon which is wound a cord 19, carrying on its free end a weight 20, which is fitted to and guided in the tubular column to the end that when the cord is wound upon the drum the weight descending in the column will unwind the cord and thus revolve the main shaft and effect the actuation of the gear-train. The distance between the flange of the drum is equal to the thickness of the cord, or substantially so, to the end that the coils will be imposed one on the other. The cord runs over a pulley 21, arranged directly above the column, to the end that the weight will descend vertically and thus exert a direct action on the cord.

The drum is loosely mounted on the shaft, and is provided with a ratchet-wheel 22, with which coacts a pawl 23 on the side of the gear-wheel 7, so that the drum may be freely turned (by means of a suitable crank 24) to wind the cord thereon, yet when the drum is turned in the reverse direction by the unwinding of the cord the ratchet and pawl will coact to effect the actuation of the gear-train.

Pivoted on the sides of the casing at points adjacent to the respective gear-wheels 15 are the arms of fan-blades 25, such arms extending through slots in the sides of the casing and being linked with cranks 26 on the ends of the respective stud-shafts 16 in such manner that during the rotation of the latter the fan-blades will be simultaneously oscillated. In the present instance there are two pairs of oppositely-disposed blades, one pair being arranged to swing vertically and the other pair horizontally, so as thereby to secure an effective agitation of the air.

I claim—

1. In a fan, the combination of the vertical supporting and guiding column, the casing supported thereby, a train of gear-wheels in said casing, a series of fan-blades pivoted at intervals apart on said casing, means connecting said blades with the gear-train, a drum

connected with the primary gear-wheel, a cord on said drum, and a weight on said cord fitted to and guided in the column, substantially as described.

2. In a fan, the combination of the vertical supporting and guiding column, the casing supported thereby, a train of gear-wheels in said casing, a plurality of sets of fan-blades pivoted on said casing, means connecting said blades with the gear-train whereby one set is oscillated vertically and another set horizontally, and means for actuating said gear-train, substantially as described.

3. In a fan, the combination of the vertical supporting and guiding column, the casing thereon, a train of gear-wheels in said casing, fan-blades operatively connected with the gear-train, a drum connected with the primary gear, and actuating means fitted to and guided in said column, substantially as described.

4. In a fan, the combination of the column, the casing thereon, the series of bevel-wheels 15, the common driving-wheel 14 therefor, means for actuating said latter wheel, the cranks on the shafts of said series of bevel-wheels, the fan-blades pivoted to said casing, and the links connecting the arms of said blades with the said cranks, substantially as described.

In testimony whereof I have hereunto affixed my signature in the presence of two subscribing witnesses.

ROBERT STEEL.

Witnesses:
ANDREW V. GROUPE,
JOHN R. NOLAN.