

No. 656,597.

Patented Aug. 21, 1900.

O. H. CHAMPAGNE.
VENTILATOR.

(Application filed June 5, 1900.)

(No Model.)

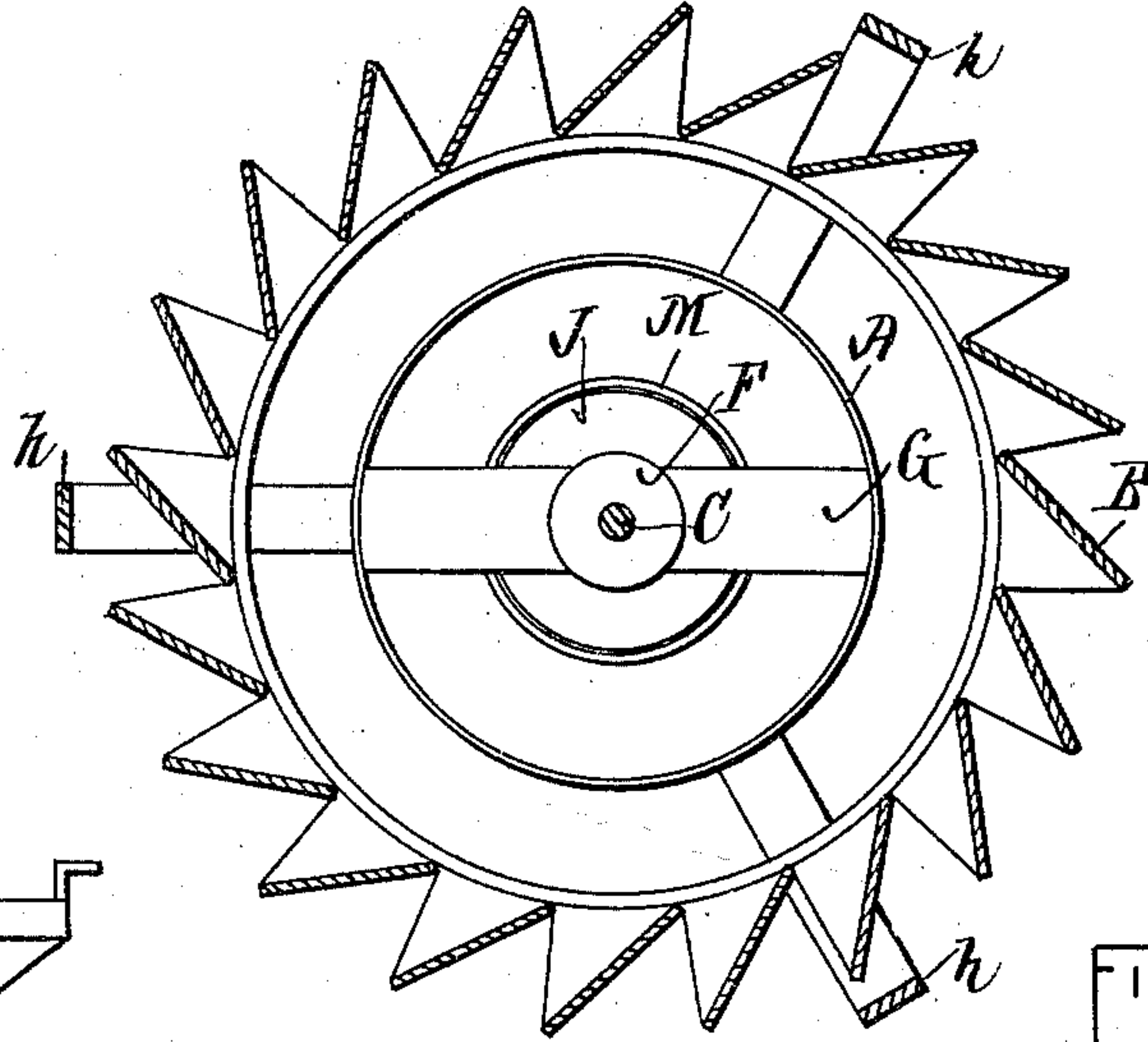


FIG. 2.

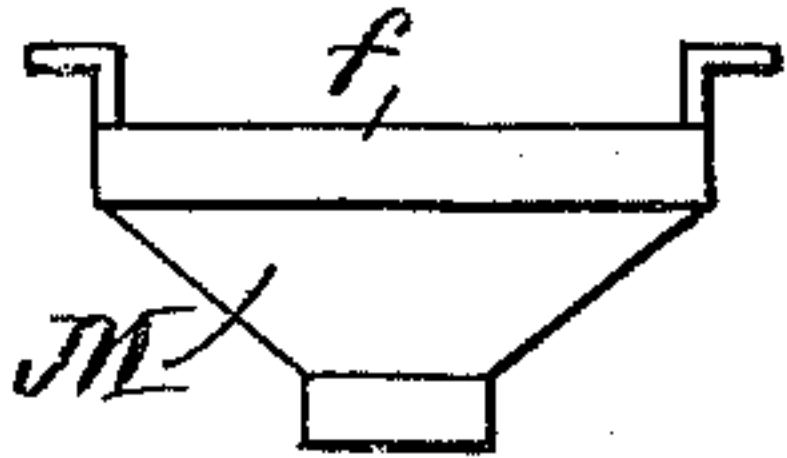


FIG. 5.

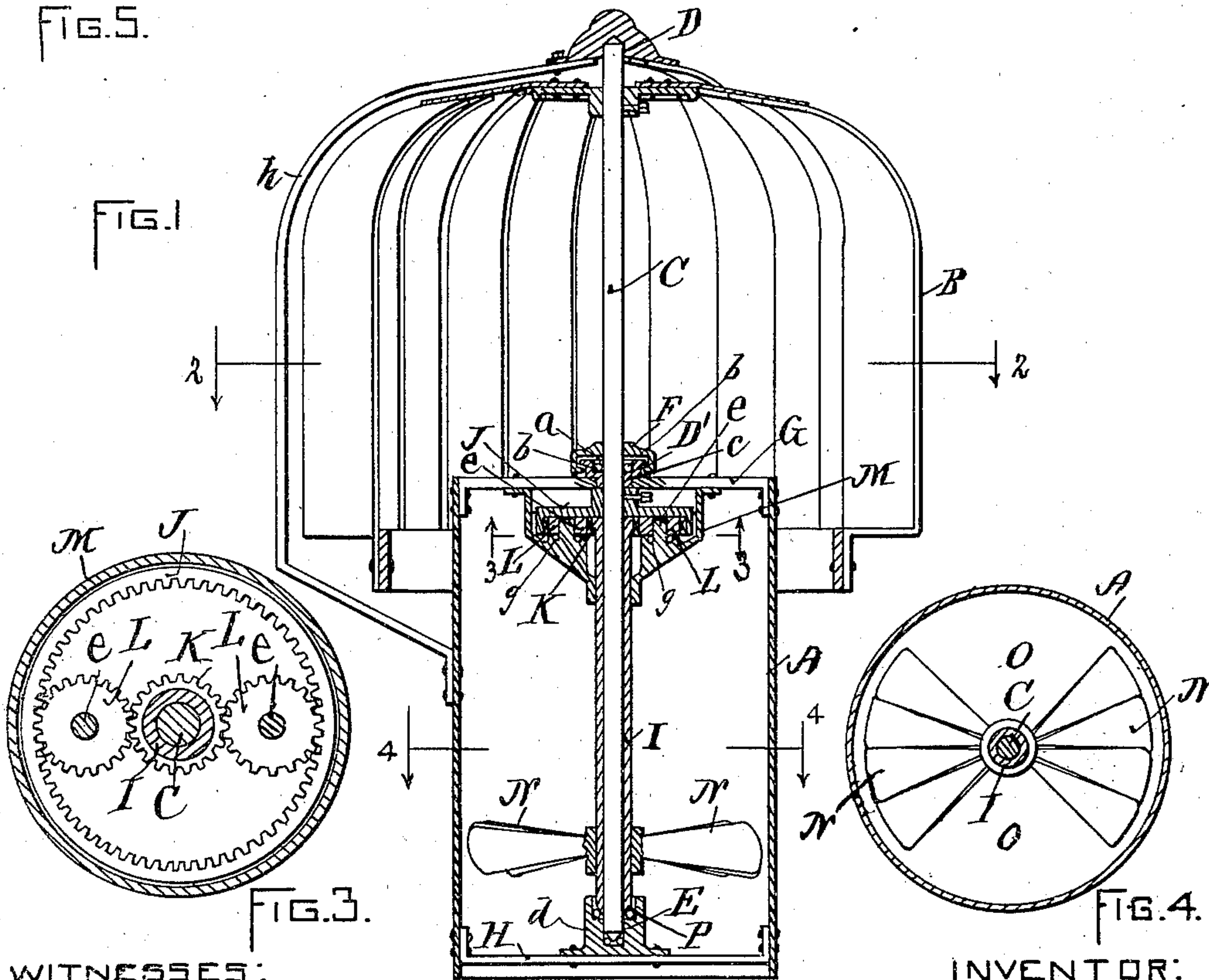


FIG. 3.

FIG. 4.

WITNESSES:

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ONESIME H. CHAMPAGNE, OF PROVIDENCE, RHODE ISLAND, ASSIGNOR OF
ONE-HALF TO JOHN BA. TANGUAY, OF SAME PLACE.

VENTILATOR.

SPECIFICATION forming part of Letters Patent No. 656,597, dated August 21, 1900.

Application filed June 5, 1900. Serial No. 19,175. (No model.)

To all whom it may concern:

Be it known that I, ONESIME H. CHAMPAGNE, a subject of the Queen of Great Britain, residing at Providence, in the State of Rhode Island, have invented a new and useful Improvement in Ventilators, of which the following is a specification.

My invention consists in the improved construction and arrangement of parts whereby the passage of the air through a chimney-flue will be accelerated, as hereinafter fully set forth.

In the accompanying drawings, Figure 1 represents a vertical section of my improved ventilator. Fig. 2 represents a horizontal section taken in the line 2 2 of Fig. 1. Fig. 3 represents an enlarged horizontal section taken in the line 3 3 of Fig. 1. Fig. 4 represents a section taken in the line 4 4 of Fig. 1. Fig. 5 represents an edge view of the conical case for holding the gears.

In the drawings, A represents a tube which constitutes the flue-pipe at the top of the chimney, and B the revolving windmill-ventilator, which is secured to the upright shaft C, the said shaft being supported in the elevated bearing D, connected to the tube A by means of the flat bars *h h h*, the ball-bearing D', and also in the ball-bearing step E, the ball-bearing D' being provided with the cover F, by means of which the dust or ashes will be prevented from entering the annular chamber *a*, in which the antifriction-balls *b b* are held. The ball-bearing D' is formed in a casting *c*, screwed into the cross-bar G, which extends across the upper end of the flue-pipe A, and the bearing-step E is formed by a casting *d*, secured to the cross-bar H, which extends across the lower end of the tube A. Upon the upright shaft C is placed the loose tubular shaft I, which is driven from the shaft C by means of the internal gear J, secured to the shaft C, the pinion K, secured to the upper end of the tubular shaft I, and the intermediate gears L L, or either one of them, the said gears being held to revolve upon the studs *e e*, held in the conically-shaped case M, which is bolted to the under side of the cross-bar G, the edge *f* of the said case being made to extend upward, so as to inclose the edge of the gear J, and thus tend to prevent

the entrance of dust to the teeth of the gears. The intermediate gears L L are caused to bear upon the antifriction-balls *g g*, and the lower end of the tubular shaft I rests in the annular ball-bearing P, whereby the said shaft may be easily rotated. To the lower portion of the tubular shaft I are secured the sets of inclined fan-blades N N, which are arranged on opposite sides of the shaft and overlapping each other at their edges and having the opposite vacant spaces O O between the said sets of fan-blades, as shown in Fig. 4, so that the natural draft of the chimney through the said spaces O O will be unobstructed. Currents of wind from any direction will cause the rotation of the windmill-ventilator B and its shaft C, from which a threefold rapidity of revolution will be imparted to the tubular shaft I, the rapidly-revolving fan-blades N N of which will serve to impart a greater velocity to the upward current of air and smoke through the chimney-flue, and when the wind is too light to cause the rotation of the windmill B the products of combustion in the flue will pass freely through the spaces O O, left between the opposite sets of fan-blades N N.

I claim as my invention—

1. The combination of the windmill B and its shaft C, with the flue-pipe A, provided with the bearing cross-bars G and H, and ball-bearings D and E, the tubular shaft I, and its ball-bearing P, the inclosing case M, the intermediate gear L, the internal gear J, secured to the shaft C, the pinion K, secured to the shaft I, and the sets of fan-blades N N, arranged at opposite sides of the shaft I, with the vacant spaces O O, between the opposite sets of blades, substantially as described.

2. The combination of the windmill B, and its shaft C, with the flue-pipe A, provided with the bearing cross-bars G and H, the tubular shaft I, the multiplying-gears between the shaft C, and the shaft I, and the separated sets of fan-blades secured to the shaft I, substantially as described.

ONESIME H. CHAMPAGNE.

Witnesses:

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