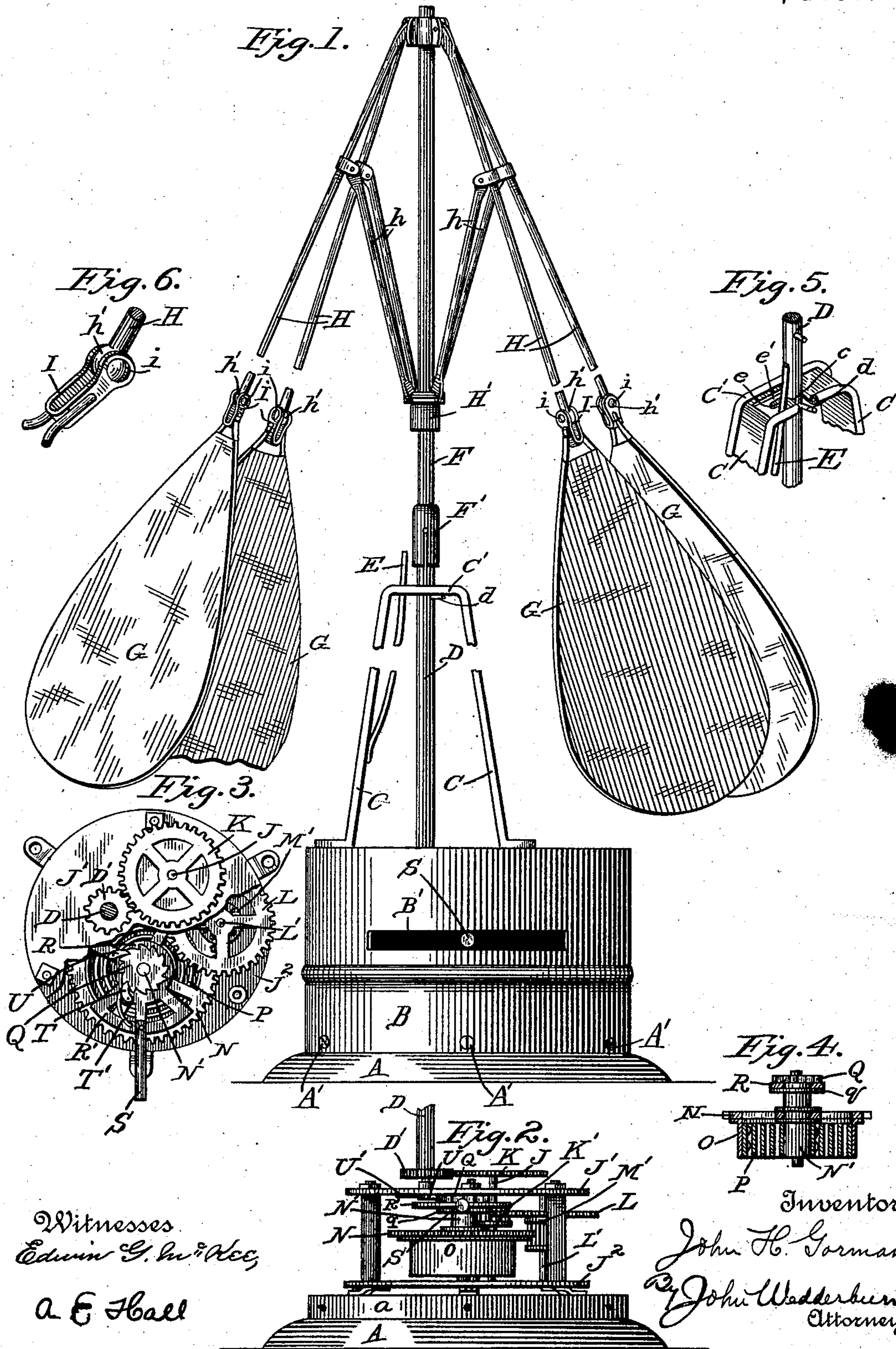


(No Model.)

J. H. GORMAN.
FLY FAN.

No. 577,132.

Patented Feb. 16, 1897.



UNITED STATES PATENT OFFICE.

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FLY-FAN.

SPECIFICATION forming part of Letters Patent No. 577,132, dated February 16, 1897.

Application filed August 28, 1895. Serial No. 560,752. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. GORMAN, a citizen of the United States, residing at Danville, in the county of Pittsylvania and State of Virginia, have invented certain new and useful Improvements in Fly-Fans; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to certain new and useful improvements in fly-fans; and it has for its objects, among others, to provide a simple and cheap fan in which the operating parts are compactly arranged, so as to occupy the minimum of space, the construction being such that I obtain the full and direct power of the mainspring, thus securing greater force and providing a fan that will run much longer than heretofore. I provide an improved winding mechanism, dispensing with the employment of a key and employing in its stead a double ratchet device actuated by a lever extending through a slot in the case therefor.

The fans are four in number and are connected to their supporting-arms by novel means permitting of their being easily adjusted to change the angle and to govern the speed of the same.

The fans are mounted for movement simultaneously to place them at any desired distance apart or to raise or lower them, and each fan can be adjusted independently of the others when desired.

Other objects and advantages of the invention will hereinafter appear, and the novel features thereof will be specifically defined by the appended claim.

The invention in this instance resides in the peculiar combinations and the construction, arrangement, and adaptation of parts, all as more fully hereinafter described, shown in the drawings, and then particularly pointed out in the claim.

The invention is clearly illustrated in the accompanying drawings, which, with the letters of reference marked thereon, form a part of this specification, and in which—

Figure 1 is a perspective view of my improved fly-fan. Fig. 2 is a vertical section through the main shaft to show the ratchet

winding mechanism. Fig. 3 is a top plan of the operating mechanism with the cap thereof removed. Fig. 4 is a side elevation of the spring and ring.

Like letters of reference indicate like parts throughout the several views.

Referring now to the details of the drawings by letter, A designates the base, which may be of any suitable design and material, with an annular vertical flange *a*, over which is designed to fit and to which is secured in any suitable manner, as by the screws A', the case B, although the screws may sometimes be omitted and the case held detachably in position by frictional engagement with the said flange. This case is simply a housing or covering for the working part of the device and is provided at one side with a horizontal slot B', through which projects the lever employed in winding up the spring. Mounted upon the top of this case are the uprights C, connected at their upper ends by the cross-piece C', which may, if preferred, be integral therewith, and in this cross portion is a hole *c*, through which works the vertical shaft D, which works loosely through an opening in the top of the case and upon its lower end carries a small pinion D', as shown. This shaft is provided near its upper end with a lateral projection or pin *d*, while secured at the lower end of one of the uprights C is a spring-arm E, which has its upper and free end normally resting in a notch *e* and out of contact with the shaft or its projection or pin, but when it is desired to stop the shaft from revolving this free end of the spring-arm is allowed to enter the slot *e'*, which communicates with the opening in the cross-piece through which the shaft works, and, engaging the said shaft and projection, prevents the further rotation of the shaft.

F is an arm having at its lower end a tubular portion F', adapted to receive the upper end of the main shaft and to be held thereto in any suitable manner, by friction, if desired, and this arm carries the fans G, which in this instance are shown as four in number, although this number may be varied as occasion may require.

The fan-supporting arms H are held to the runner H', which is fitted to slide on the arm

F, and are braced by the brace-arms *h*, connected to the runner *H'*, whereby the fans may all be raised or lowered when desired, similar to the ribs of an umbrella.

5 The fans are attached to the ends of their arms by means of the substantially U-shaped pieces *I*, the free ends of which are cup-shaped, as seen at *i*, and which are sprung over the balls *h'* on the ends of the arms *H* and frictionally held in any adjusted position. When
10 it is desired to change the angle of the fan, it may be easily done by simply moving this U-shaped piece upon the ball, and the frictional engagement is such that it will be held
15 in such adjusted position.

J is a shaft journaled in suitable bearings in the cap *J'* and in the plate *J²*, secured to the base *A*, and fast upon this shaft above the said cap is a gear-wheel *K*, meshing with the
20 pinion *D'* on the shaft *D*, as shown. All of the rest of the mechanism is arranged below this cap. On this shaft *J* below the said cap is a small pinion *K'*, which meshes with a large gear-wheel *L*, carried by the vertical shaft
25 *L'*, and which shaft in turn carries the small pinion *M'*, with which meshes the large gear-wheel *N*, loosely mounted on the main shaft *N'*, which is suitably journaled, and depending from the outer edge of this gear-wheel *N*
30 is the ring *O*, which forms a housing for the mainspring *P*, one end of which is secured to said casing or ring and the other end to the said shaft *N'*. Fast on this main shaft just beneath the cap is a ratchet-wheel *Q*, while
35 loosely sleeved upon the said shaft between the said ratchet and a collar *q* on the shaft is a sleeve *R*, from which projects the segment *R'*, to which is affixed a lever or handle *S*, which projects through the horizontal slot of
40 the casing, as shown, within convenient reach.

This segment carries a pawl *T*, which is designed to engage the ratchet and which is held to its work by a spring *T'*, secured to the segment and having one end bearing on the said pawl, as shown. *U* is a pawl engaging the
45 ratchet to prevent retrograde movement.

The operation will be readily understood from the foregoing description, especially when taken in connection with the annexed drawings, and a further detailed description
50 thereof is not deemed necessary.

Modifications in detail may be resorted to without departing from the spirit of the invention or sacrificing any of its advantages.

What is claimed as new is—

55 The combination with the base and a vertically-disposed arm having a tubular portion at its lower end, the main shaft having its upper end received in said tubular portion, a pivotally-mounted fan-supporting arm
60 having an integral ball at its outer end, a U-shaped piece of spring metal, the free ends of which are cup-shaped and oppositely disposed and adapted to spring over said ball to hold the U-shaped piece thereon and friction-
65 ally adjustable and frictionally held in its adjusted position, a fan-supporting frame having its ends secured to the outer faces of the parallel portions of the U-shaped piece, and a fan having its frame secured to said
70 U-shaped piece, all substantially as herein shown and described.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

JOHN H. GORMAN.

Witnesses:

JAMES P. LONON,
J. L. C. BIRD.