

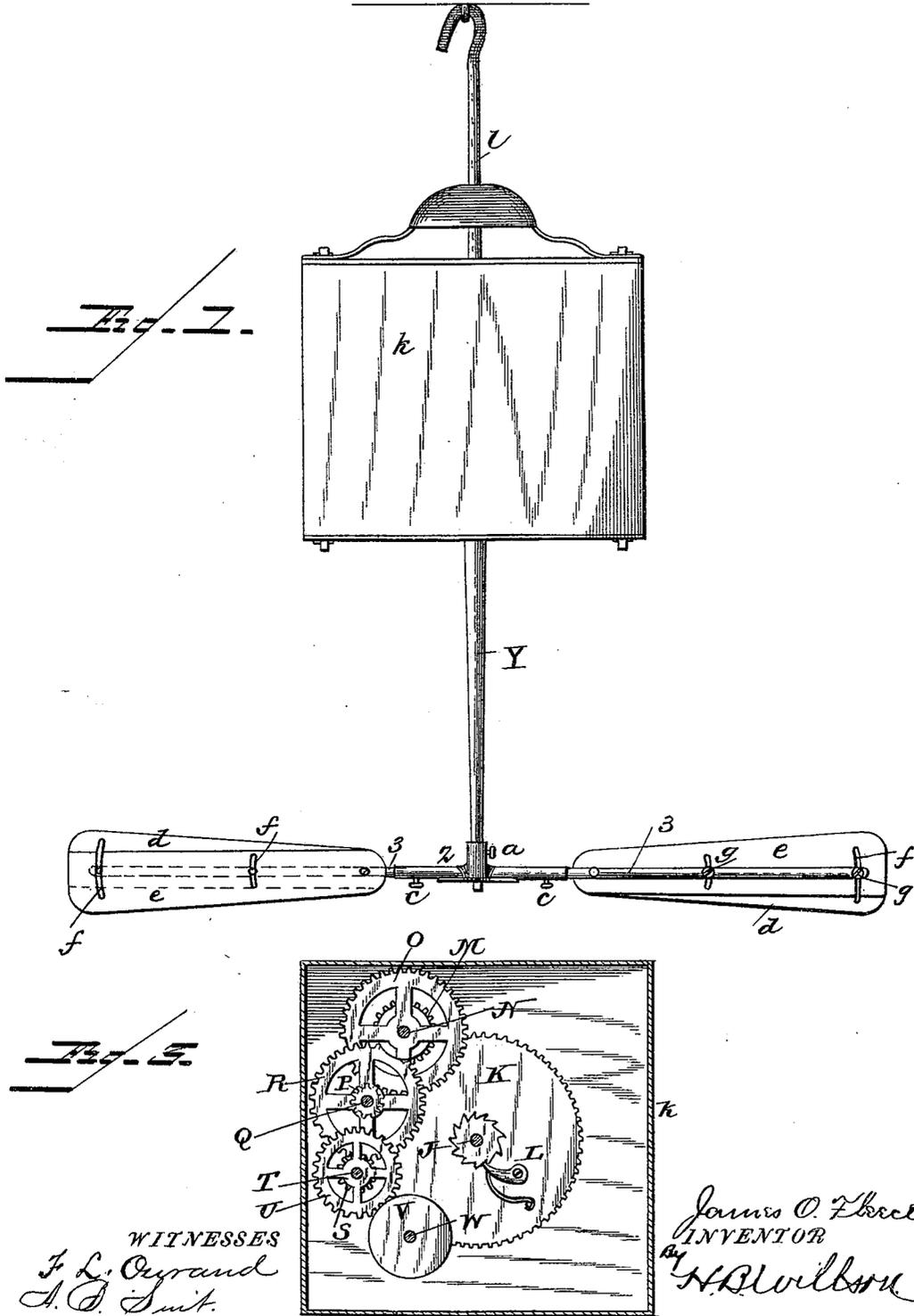
(No Model.)

2 Sheets—Sheet 1.

J. O. FLEECE.
MECHANICAL FAN.

No. 544,405.

Patented Aug. 13, 1895.



WITNESSES
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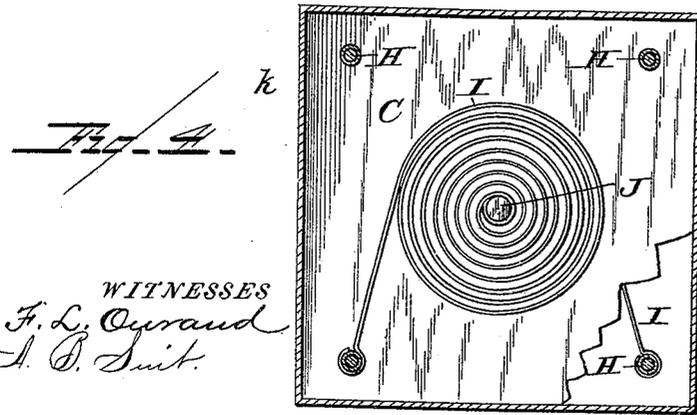
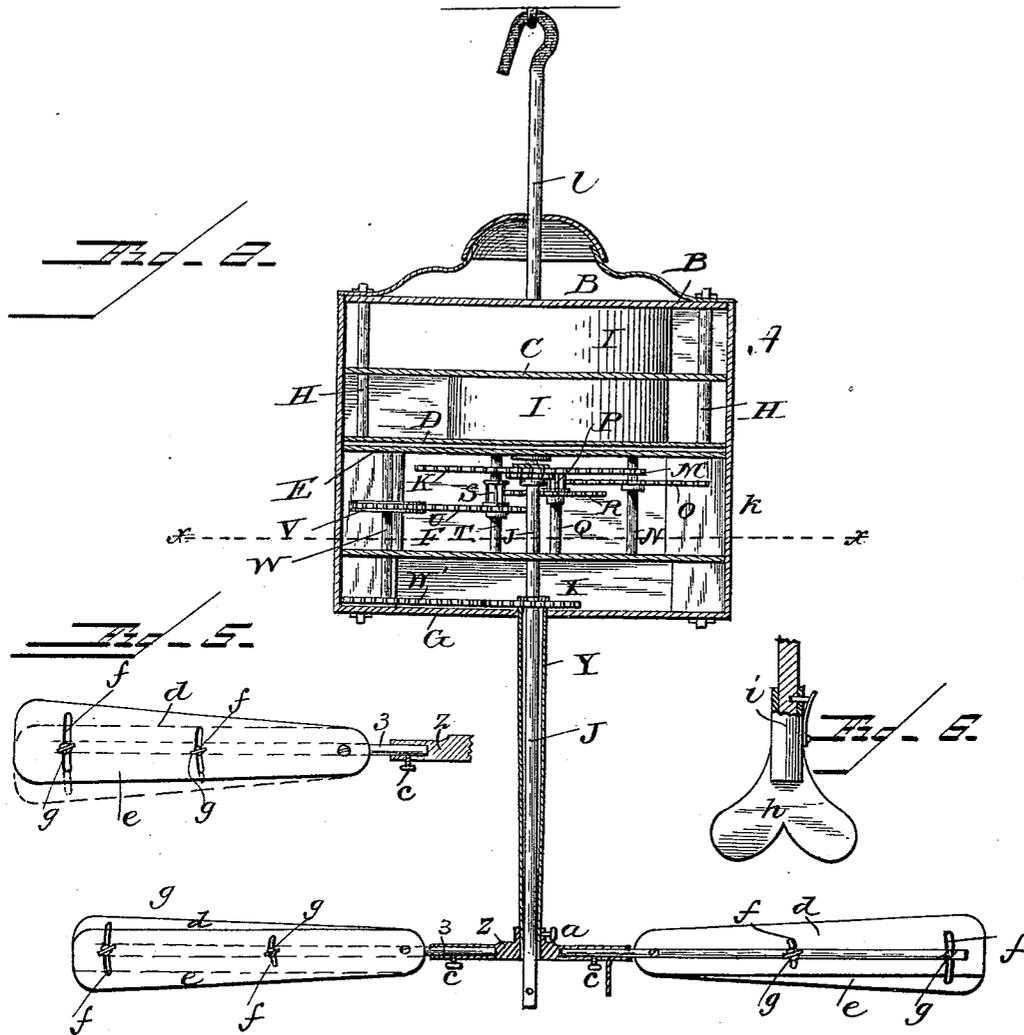
(No Model.)

2 Sheets—Sheet 2.

J. O. FLEECE.
MECHANICAL FAN.

No. 544,405.

Patented Aug. 13, 1895.



WITNESSES
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UNITED STATES PATENT OFFICE.

JAMES O. FLEECE, OF WILDWOOD, FLORIDA.

MECHANICAL FAN.

SPECIFICATION forming part of Letters Patent No. 544,405, dated August 13, 1895.

Application filed February 15, 1895. Serial No. 538,551. (No model.)

To all whom it may concern:

Be it known that I, JAMES O. FLEECE, a citizen of the United States, residing at Wildwood, in the county of Sumter and State of Florida, have invented certain new and useful Improvements in Mechanical Fans; and I do 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.

My invention relates to fans of that character adapted to be suspended from a ceiling and operated by a train of gearing.

The object of my invention is to provide a fan of this type which shall be simple of construction, durable in use, and well adapted for the purpose to which it is applied.

With these objects in view the invention consists in certain features of construction and combination of parts, which will be hereinafter fully set forth.

In the accompanying drawings, Figure 1 is a side elevation showing the fan suspended from a ceiling and its train of gearing inclosed within a casing. Fig. 2 is a longitudinal vertical sectional view of the fan with the casing removed to more clearly show the train of gearing. Fig. 3 is a section on line *xx*, Fig. 2. Fig. 4 is a cross-sectional view through the springs and mainspring-post. Fig. 5 is a detail of one of the fans, showing several adjustments in dotted lines. Fig. 6 is a detail of the winding-key.

In the drawings, A denotes the frame for supporting the train of gearing and consists of the plates B, C, D, E, F, and G, which are spaced apart and connected at their corners by posts H. Located between and supported by the plates E, F, and G are two mainsprings I, each having one end fixed to one of the corner-posts and its other end secured to the mainspring-post J, which projects downward through the plates and quite a distance below.

The train of gearing consists of the drive-gear K, loosely mounted on the mainspring-post, and a ratchet-wheel fixed to said post and locked to the drive-gear by a spring-actuated dog L, carried by the drive-gear. The drive-gear meshes with a pinion M, supported on an arbor N, which carries a gear O, which in turn meshes with a pinion P on an arbor Q, which carries a gear R. This gear R meshes with a

pinion S on an arbor T, which carries a gear-wheel U, which meshes with a flanged pinion V on an arbor W, which carries a gear-wheel W'. This gear-wheel W' in turn meshes with a gear-wheel X. Upon the lower end of the mainspring-post is a sleeve Y, to which is secured the gear-wheel X. A cross head Z is secured to the lower end of sleeve Y by a set-screw *a* and has tubular ends in which the blade-carrying arms 3 are longitudinally adjustably secured by set-screws *c*.

Pivoted to each arm near its inner end is a blade consisting of two parts *d e*, having registering curved slots *f*, through which pass thumb-screws *g*, which enter the arms 3. When it is desired to retard or diminish the rotary movement of the blades the thumb-screws are loosened and the two parts composing each blade are opened or separated the desired distance, thus presenting a greater surface to the air and thereby diminishing the speed of rotation of the blades.

To wind the mainsprings I employ a key *h*, having a socket *i*, which fits the lower end of the mainspring-post and is locked removably thereto by a spring-actuated stud carried by the key, and which projects through a hole in the body of the key and engages a socket or hole *j* in the lower end of the post.

In operation, the springs having been wound up they will exert their energy and through the gearing rotate the blades. Should the blades agitate the air too much they may be adjusted, as hereinbefore described, until their speed is diminished to the desired extent.

Should it be desired for any cause to stop the fan I provide the cross-head with a depending arm, which, while the key is locked to the post, will abut against one of the arms of the key. It will therefore be seen that after the springs have been wound up the blades will be prevented from rotating until the key is removed from the post, and that while rotating the blades may be stopped and held against rotation by slipping the key into the post.

I desire to inclose the gearing and thereby protect it from the dust, &c., and for this purpose I employ a casing *k*, which entirely surrounds the gearing and which may be of any desired form or ornamentation. A hook or rod *l* is secured to the casing and affords

means for the suspension of the fan from the ceiling or any other desired point.

From the foregoing description, taken in connection with the accompanying drawings, the operation and advantages of my invention will be readily seen. When suspended from a ceiling it will be within convenient reach to wind and will effectually ventilate the room.

In the drawings I have shown two main-springs; but I would have it distinctly understood that I contemplate as coming within the scope of my invention the employment of one or as many springs as I may deem necessary without departing from the spirit of my invention.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. The combination with a train of spring actuated gearing, of the main spring post, a sleeve loosely carried by said post and actuated by the gearing, a cross head carried by said sleeve and provided with a downward projected arm, blades supported by said cross head, and a key removably secured to the main spring post and having portions thereof

extending within the path of rotation of the arm carried by the cross head, whereby the fan is locked against operation while the key is on the post.

2. In combination, a supporting frame, a main spring, a post secured to the free end of said spring and projecting downward below the frame, a drive wheel loosely mounted on said post, a pawl and ratchet connection between the post and drive wheel, a sleeve on the lower end of the post, a gear wheel fixed to said sleeve, interposed gearing for transmitting the motion of the drive gear to the sleeve carrying gear, a cross head secured to said sleeve and provided with a downward projected arm, blades supported by said cross head, and a key removably secured to said post within the path of movement of the arm carried by the cross head, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

J. O. FLEECE.

Witnesses:

EDW. BU. FLEECE,
J. H. DAVIS.