

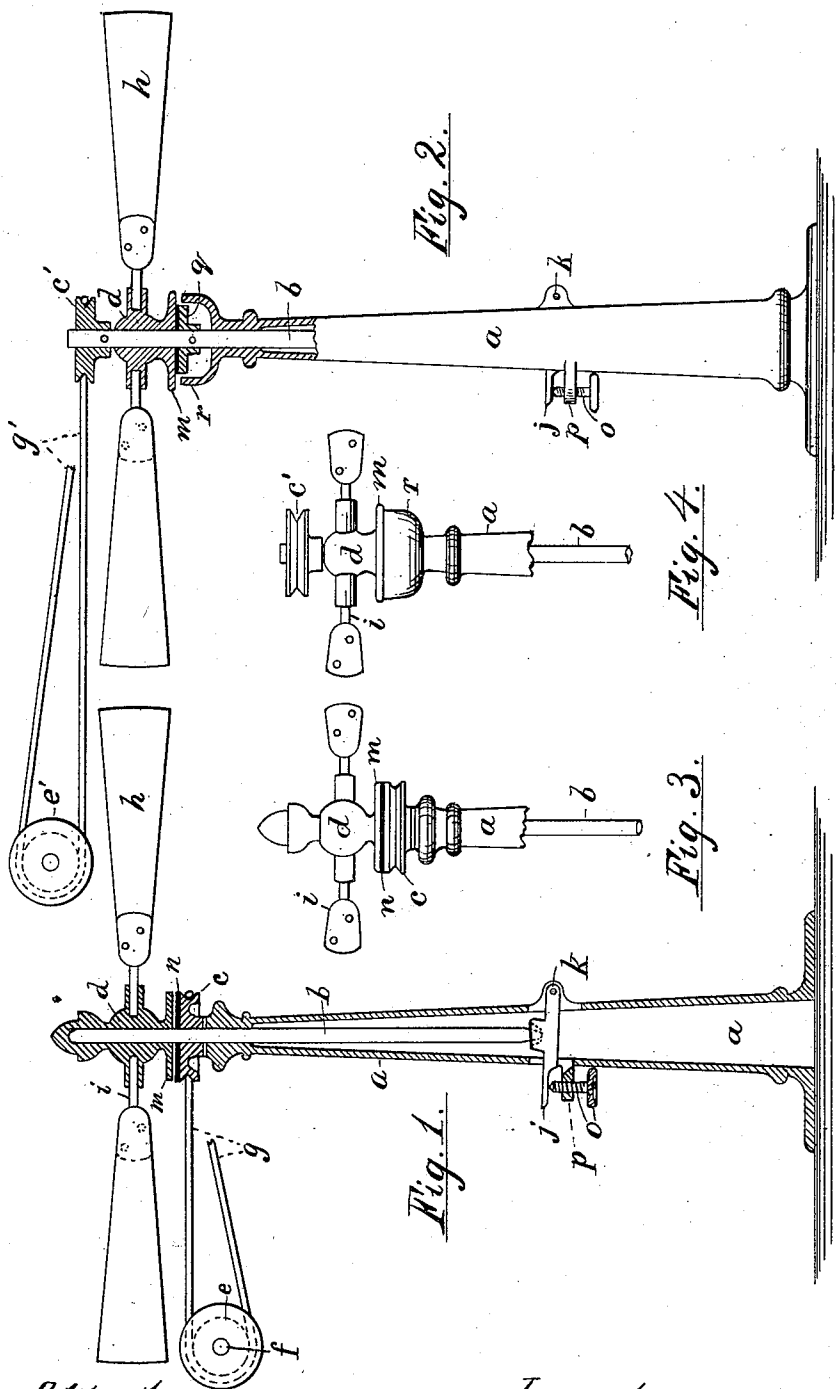
(No Model.)

J. M. SEYMOUR.

FAN.

No. 333,349.

Patented Dec. 29, 1885.



Attest:

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Crane & Miller, Attys.

# UNITED STATES PATENT OFFICE.

JAMES M. SEYMOUR, OF NEWARK, NEW JERSEY.

## FAN.

SPECIFICATION forming part of Letters Patent No. 333,349, dated December 29, 1885.

Application filed August 22, 1885. Serial No. 175,039. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES M. SEYMOUR, a citizen of the United States, residing in Newark, Essex county, New Jersey, have invented certain new and useful Improvements in Standard Fans, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

The object of this invention is to furnish a support for a rotary fan in situations where the driving-power is located above the floor, and where a suspended hanger is not admissible for supporting the fan-shaft; and the construction therefore consists in a vertical column or standard having a shaft projecting above its upper end, and having both the pulley and fan-hub applied thereto and provided with means for clutching them together.

It also consists in a construction for the clutching mechanism whereby the fan is lifted by moving the shaft vertically, and the weight of the fan, when lowered, suffices to press frictional clutching surfaces with sufficient force to rotate the fan. In such construction it is immaterial whether the shaft be constructed to revolve or not, as the pulley and fan-hub may be provided with adjacent frictional surfaces, and arranged to turn freely upon the upper end of the shaft projected above the top of the column.

In the drawings I have shown two forms for my construction Figure 1 representing a standard fan having the pulley in contact with the top of the column, and the column, the pulley, and the fan-hub being shown in section. Fig. 2 represents a standard fan with the pulley applied to the shaft above the fan-hub, the top of the column, the pulley, the fan-hub, and its frictional driving-plate being shown in section, and the fan-hub being raised from the collar *r*, which projects from the top of the column. Fig. 3 represents the head of the column, shown in Fig. 1, with only the shanks of the fan-blades attached to the fan-hub; and Fig. 4 shows the head of the column in Fig. 2, with the fan-hub resting upon the collar *r*, and only the shanks of the fan-blades.

In Figs. 1 and 3, *a* is the column, shown of hollow tapering form.

*b* is a shaft fitted to the center of the same.

*c* is the fan-pulley applied beneath the fan-hub and resting upon the top of the column.

*d* is the fan-hub shown fitted to the extreme upper end of the shaft, whose top supports its weight, so that the fan may be raised and lowered by a vertical movement of the shaft.

*e* is a driving-pulley mounted upon a line-shaft, *f*, and connected with the pulley *c* by belt *g*, so as to rotate the latter continuously when the pulley *e* revolves.

*h* are the fan-blades secured in the pulley-hub by shanks *i*, and *m* is a friction-disk formed upon the lower end of the fan-hub, to rest upon the upper surface of the pulley *c*, which latter is preferably faced with leather *n*.

*j* is a lever pivoted transversely in the column across the bottom of the shaft *b*, as at *k*, and provided with a step, *l*, for the shaft. A screw, *o*, provided with a hand-wheel, is fitted to an ear, *p*, upon the column, and adjusted to raise and lower the lever *j* to elevate the shaft *b*. The shaft is shown thus elevated in Fig. 1, thus raising the fan-hub and disk *m* from contact with the revolving pulley *c*, so that the pulley has no effect in rotating the fan; but in Fig. 3 the shaft is represented as lowered, so that the weight of the entire fan presses the disk *m* upon the pulley and effects the rotation of the fan by frictional contact therewith. In lowering the shaft the screw *o* may be adjusted to press the fan-hub upon the pulley with more or less force, and to thus regulate the rotary speed of the fan within certain limits.

In this construction for my invention it is obviously immaterial whether the shaft be attached to the pulley *c* or the hub *d*, or to neither, as the operation of the friction-clutch is the same whether the fan-hub be fastened to the shaft or not.

To secure the required pressure to transmit the maximum speed to the fan by frictional contact with the pulley, the hub *d* may be weighted by increasing its bulk to any desired extent, or the shaft may be secured therein, to increase its weight.

In the construction just described the clutch is actuated by lowering the shaft; but in Figs. 2 and 4 a construction is shown in which a friction-plate, *q*, is applied to the shaft below the fan-hub, so as to be pressed upward to clutch

it to the latter, and the disk *m* is constructed to project over the margin of the plate *q*, so as to rest upon a collar, *r*, affixed to the top of the column when the shaft is lowered. The pulley *c'* is affixed to the top of the shaft above the fan-hub, and the plate *q* is also secured to the shaft, so as to revolve continuously when the pulley is driven, as by belt *g'* and pulley *e'*. When the lowering of the shaft permits the disk to rest upon the collar, the plate *q* obviously ceases to drive it, and the motion of the fan is entirely stopped. In this construction the fan-hub is fitted loosely to the shaft between the pulley and plate *q*, so as to slide freely up and down, being supported when at rest by the collar *r*, and by the plate *q* when in motion.

Fig. 4 shows the same parts when the fan is at rest, with the disk *m* resting upon the collar. The adjusting-screw *o* and lever *j* are of the same construction in Fig. 2 as in Fig. 4, although partly concealed in the former figure.

It is obvious that teeth might be substituted for the frictional surfaces shown in the drawings, and that the longitudinal movement of the hub *d* or plate *q* would suffice to clutch and unclutch such teeth, as well as to separate frictional surfaces from contact with one another.

I do not claim herein the combination in a standard fan of a clutch secured to the shaft above the pulley-hub, and means for lifting the hub to engage it with the clutch-plate, as I have made such claim in my patent application No. 171,941, which shows the driving-power applied to the lower end of the shaft.

My present invention differs from the same in having the pulley arranged at the top of the shaft to receive the driving-power, by which construction I am enabled to mount the fan in apartments where the driving-power is above the floor and where the fan cannot be conveniently suspended from the ceiling.

From the above description it will be seen that my invention does not consist in a special means for operating the fan by means of a rotating pulley applied to the top of the col-

umn therewith; but in the combination of a rotating pulley and a fan-hub with the end of the shaft projecting above the top of the column, and means for clutching the rotating pulley to the fan, whether directly, as shown in Fig. 1, or indirectly through the medium of the shaft, as shown in Fig. 2. It will also be noticed that my invention may be practiced without attaching either the fan-hub, the pulley, or the clutch to the shaft, as has been stated in describing Fig. 1.

Having thus set forth the essential features of my invention, what I claim is—

1. In a standard fan, the combination, with a supporting-column and a vertical shaft sustained by the column and projecting above the top of the same, of a fan-hub and a rotating pulley applied to the shaft above the top of the column, and clutching mechanism for connecting the fan and pulley to rotate together, substantially as herein set forth.

2. In a standard fan, the combination, with a supporting-column and a vertical shaft sustained by the column and projecting above the top of the same, of a fan-hub and a rotating pulley applied to the shaft above the top of the column, clutching mechanism actuated by an end movement of the shaft for connecting the fan and pulley, and means for shifting the shaft endwise to operate the clutch, substantially as shown and described.

3. In a standard fan, the combination, with the column *a*, of the shaft *b*, mounted thereon and projected from its upper end, the rotating pulley *c*, applied to the shaft and resting upon the top of the column, the fan-hub *d*, sustained by the shaft above the pulley, and a screw arranged and operated to raise and lower the shaft for clutching the fan and pulley together, substantially as herein set forth.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

JAMES M. SEYMOUR.

Witnesses:

THOS. S. CRANE,  
L. LEE.