(No Model.)

R. B. CISSEL.

ROTARY FAN.

No. 364,751. Patented June 14, 1887.

Fig. 1.

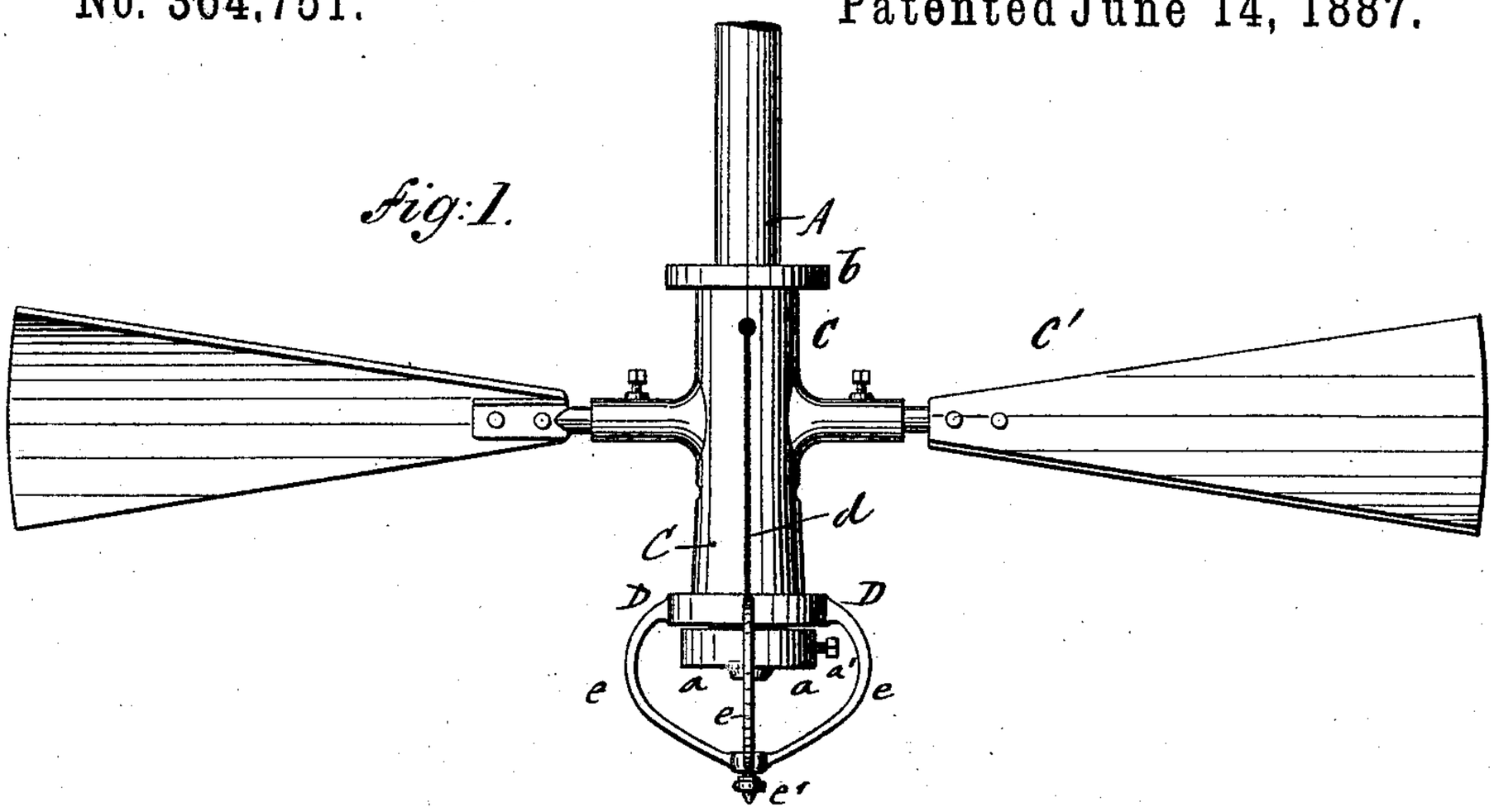
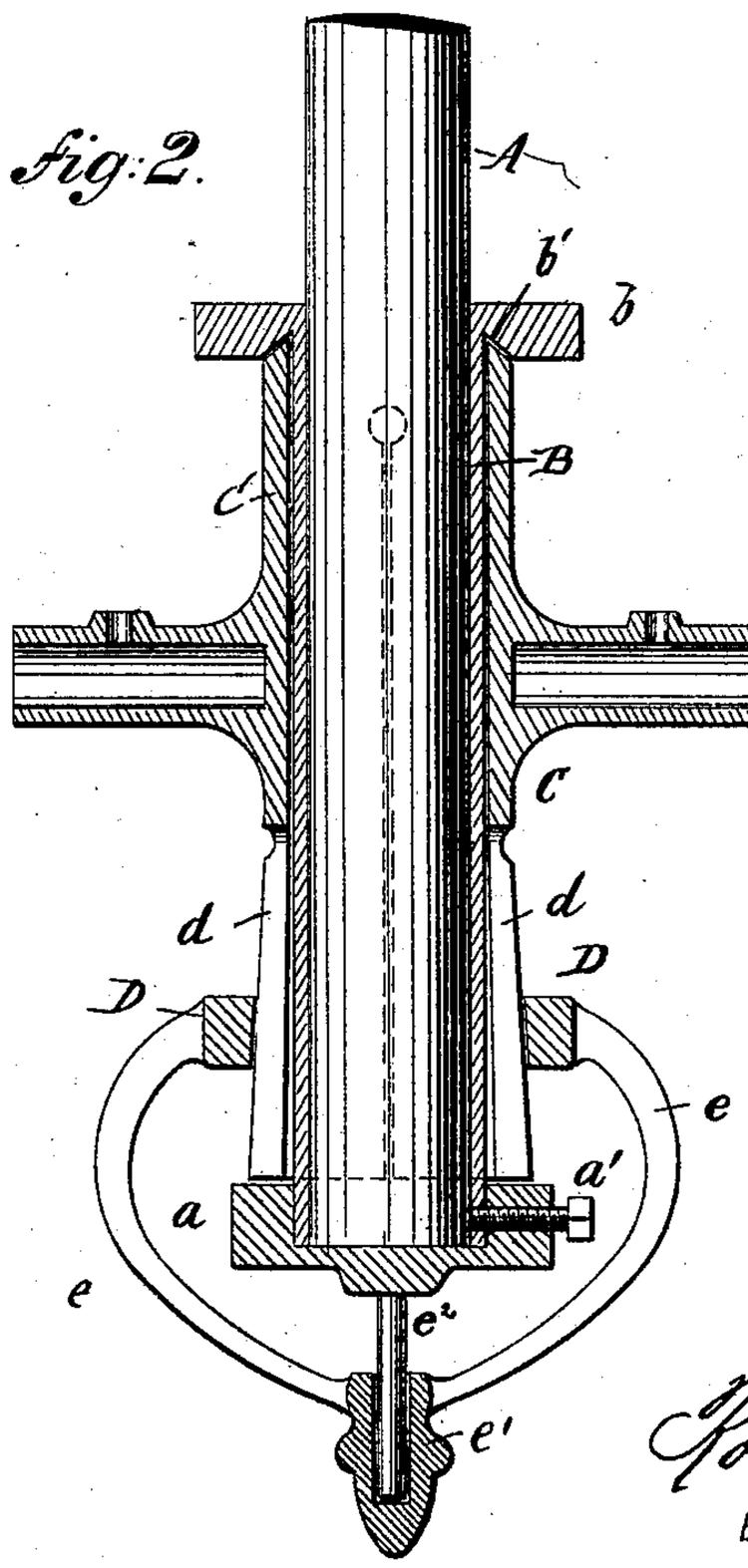


Fig. 2.



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ROTARY FAN.

SPECIFICATION forming part of Letters Patent No. 364,751, dated June 14, 1887.

Application filed March 31, 1887. Serial No. 233,131. (No model.)

To all whom it may concern:

Be it known that I, ROBERT B. CISSEL, of Elizabeth, in the county of Union and State of New Jersey, have invented certain new and useful Improvements in Rotary Fans, of which the following is a specification.

This invention relates to an improved clutch mechanism for rotary fans of that class which are suspended from the ceiling and used for agitating the air and cooling and ventilating thereby the rooms in which the fan is arranged; and the invention consists of the combination of a rotary driving-shaft, a fixed sleeve on said shaft, a fan-hub placed loosely on said sleeve, said fan-hub being longitudinally slitted, so as to form clamping spring-sections, which gradually increase toward the lower end of the hub, and a slide-ring for clamping said sections, said slide-ring being guided by an eye or sleeve on a central guide-stem attached to a collar at the lower end of the driving-shaft.

In the accompanying drawings, Figure 1 represents a side elevation of a rotary fan with my improved clutch device, and Fig. 2 is a vertical transverse section of the clutch device drawn on a larger scale.

Similar letters of reference indicate corresponding parts

Referring to the drawings, A represents a rotary driving-shaft, which is supported in bearings of a suitable hanger-frame, (not shown in the drawings,) said hanger-frame being suspended from the ceiling in the usual manner. To the lower end of the driving-shaft A is applied a sleeve, B, which is supported by a collar, *a*, that is attached to the lower end of the shaft A by a set-screw, *a'*, the sleeve B being also clamped to the shaft by the set-screw *a'*, as shown in Fig. 2. The sleeve B is provided at its upper end with a collar, *b*, having a tapering groove, *b'*, at its under side. On the collar *a* rests the loose hub C of a rotary fan, C', said hub being fitted by its beveled upper edge to the groove *b'* of the collar *b*, as shown in Fig. 2.

The hub C is provided, preferably, with four longitudinal slits, *d*, two of which extend from the lower edge of the hub to near the sockets of the fan-blades, while the remaining two slits *d* extend from the lower edge nearly to the upper end of the hub, as shown in Fig. 1. The four slits *d* divide the hub into four quadrantal sections, which spring in outward direction away from the shaft A. The lower part of the hub C increases in thickness toward the lower end and serves to guide a correspondingly-tapered clamping-ring, D, that is fitted to the lower part of the hub C and provided with downwardly-extending arms *e*, that are united at their lower end by a socket, *e'*. The socket *e'* is guided on a fixed center pin, e^2, of the bottom collar, *a*, of the shaft, so that the clamping-ring is prevented from wabbling when moved up and down on the lower part of the hub. The socket *e'* is made in the shape of a button, and is taken hold of in raising the clamping-ring. When the clamping-ring D is lifted, the sections of the hub spring away from the sleeve B on the shaft so as to clear the sleeve, whereby the fan is but slowly rotated, owing to the friction between the sleeve and hub. If, on the other hand, it is desired to rotate the fan C' with the driving-shaft A, the clamping-ring D is pulled in downward direction, so that it forces the spring-sections of the hub tightly against the fixed sleeve of the driving-shaft A, whereby the fan is taken along with the shaft and rotated at the same speed therewith. By guiding the lower part of the clamping-ring on the stem e^2 of the collar *a*, the ring binds always equally on the circumference of the slitted lower part of the hub, and exerts thereby an effective clamping action on the same. As the hub is confined between the fixed lower collar and the collar *b* at the upper end of the sleeve B, it is prevented from following the motion of the clamping-ring either in upward or downward direction.

In this manner a reliable and easily-operated clutch mechanism for rotary fan-shafts is obtained which can be conveniently operated so as to cause the rotating or stopping of the fan, as required.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination of a rotary driving-shaft, a sleeve attached to the lower end of the driving-shaft, a collar applied to the lower end of the sleeve and driving-shaft, a fan having a hub placed loosely on said sleeve and provided

with longitudinal slits, and a clamping-ring applied to the lower slitted part of the fan-hub, substantially as set forth.

2. The combination of a rotary driving-shaft, a collar attached to the lower end of the driving-shaft and provided with a central guide-stem, a sleeve attached to the lower end of the shaft and provided with a collar at the upper end, a loose fan-hub having longitudinal slits and an outward taper at the lower part, and a clamping-ring applied to the lower slitted part of the hub and provided with arms and with a socket at the lower ends of the arms, said socket being guided on the stem of the lower collar, substantially as set forth.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

ROBERT B. CISSEL.

Witnesses:

CARL KARP,

SIDNEY MANN.