

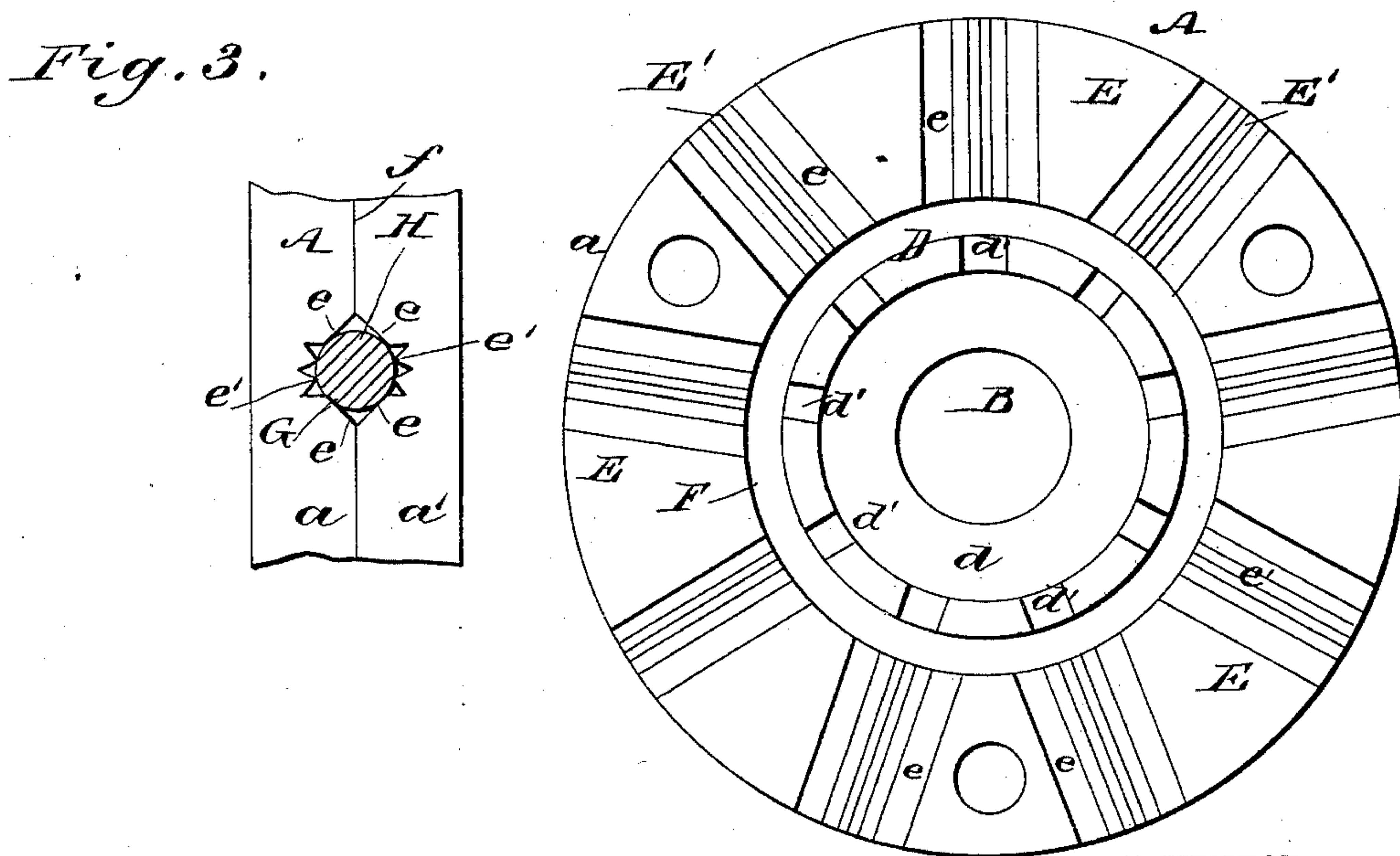
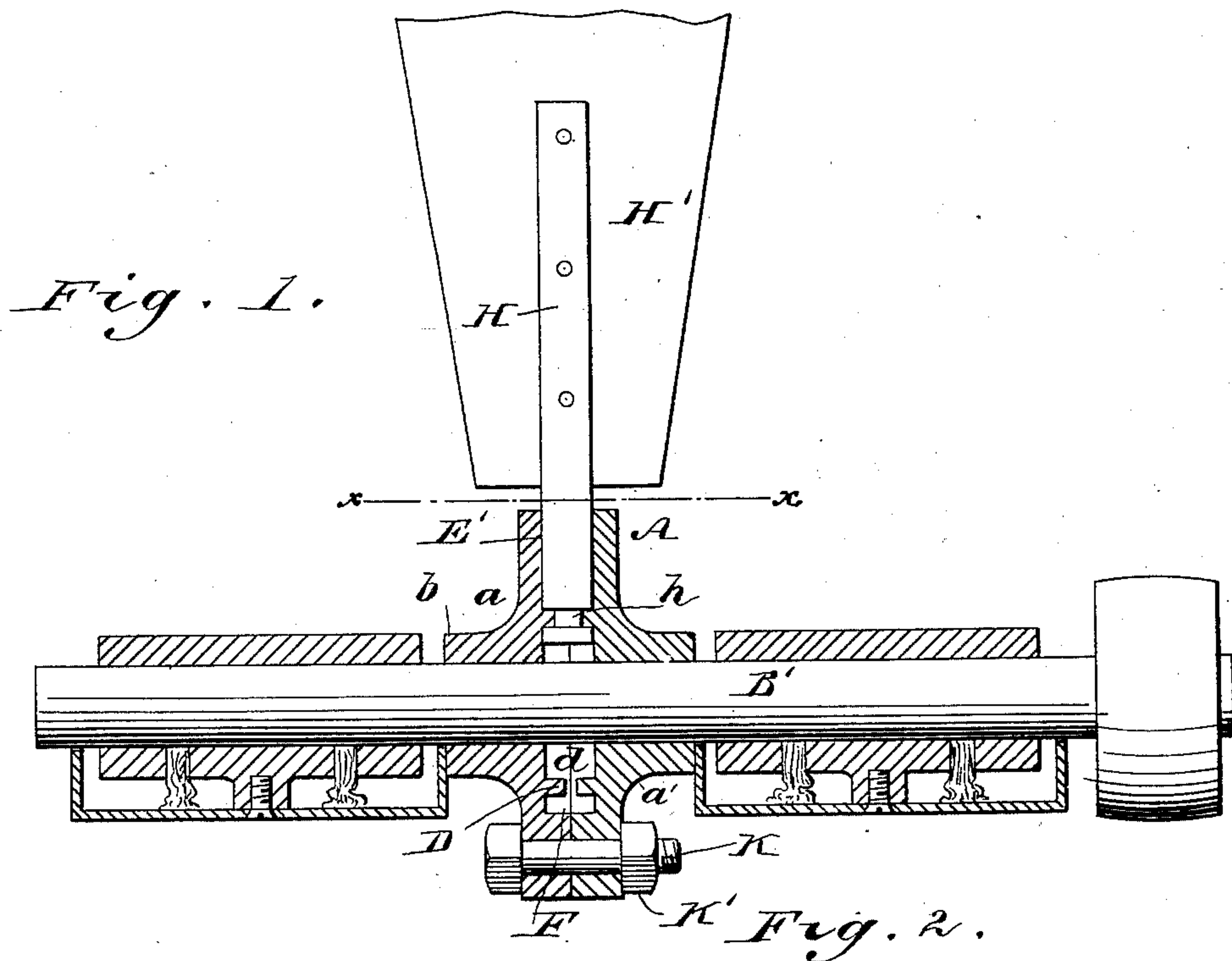
(No Model.)

G. P. CLARK.

ADJUSTABLE HUB FOR VENTILATING FANS.

No. 367,595.

Patented Aug. 2, 1887.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

GEORGE P. CLARK, OF WINDSOR LOCKS, CONNECTICUT.

## ADJUSTABLE HUB FOR VENTILATING-FANS.

SPECIFICATION forming part of Letters Patent No. 367,595, dated August 2, 1887.

Application filed March 23, 1887. Serial No. 232,100. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE P. CLARK, of Windsor Locks, in the county of Hartford and State of Connecticut, have invented a new and Improved Adjustable Hub for Ventilating-Fans, of which the following is a full, clear, and exact description.

My invention relates to an adjustable hub for ventilating-fans, and has for its object to provide a hub wherein the fans of a ventilator may be readily and quickly adjusted to any desired angle of inclination.

The invention consists, essentially, in the novel construction and arrangement of the hub, and in the combination of the hub and fans, whereby provision is made for adjusting the fans to various positions, as will be hereinafter more specifically set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a central vertical and longitudinal section through a hub having a fan attached. Fig. 2 is an inner side elevation of one section of the hub. Fig. 3 is a partial edge view of the complete hub, the fan-rod being sectioned through line *x x*, Fig. 1.

The hub is divided into two vertical sections, *a a'*, of equal dimensions, provided with a central aperture, *B*, to receive the shaft *B'*, and an integral collar, *b*, whereby the hub may be secured to said shaft.

The inner surface of each section is provided with an embossed ring, *D*, concentric with the central aperture, *B*, a space, *d*, being made to intervene the said ring and aperture, and at equidistance apart in the upper edge of the ring *D* a series of semicircular recesses, *d'*, are cut, as illustrated in Fig. 2.

To the rear of the recessed ring *D* a series of equidistant triangular integral projections, *E*, are provided, extending to and forming a part of the outer edge of the hub-sections. The said projections are widest at their outer edge, and have a flat inner surface in substantially the same plane with the non-recessed portion of the ring *D*. The sides *e* of the opposing projections are inclined toward each other, as shown in Figs. 2 and 3, and the

intervening angular spaces, *E'*, thus formed are provided with longitudinal ribs *e'*. The angular spaces *E'* are in vertical alignment with the recesses of the ring *D*. Intervening the ring *D* and the inner ends of the projections *E* an annular recess, *F*, is produced, which recess is below the plane of the longitudinal ribs *e'*.

When the two sections are united upon an axle, as shown in Fig. 1, the flat surfaces of the projections *E* and the ring *D* come in contact, forming a close joint, *f*, as shown in Fig. 3, and a series of irregular openings, *G*, in the edge formed by the registering angular spaces *E'*.

The rods *H*, carrying the fans *H'*, are made circular, as shown in Fig. 3, with an annular groove, *h*, cut therein near the base end, as shown in Fig. 1.

In operation, the hub is slid upon the shaft, as above stated, and the fan-rods entered in the irregular openings *G*, the groove *h* in the rod being made to engage a concavity in the ring *D*. They may then be given any desired inclination by turning the rods more or less to the right or left, in which position they will be held by the engagement of the lower portion of the rods with the ring *D*, the inner circular portion of said rods being held in a vise-like grip by the V-shaped grooves intervening the longitudinal ribs *e'*. The two sections are when the fans have been positioned held in positive yet detachable connection by a series of bolts, *K*, passing through said sections, and nuts *K'* entered upon said bolts.

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

1. A hub for ventilator-fans, divided in two vertical sections, provided with opposing integral rings *D*, having a series of recesses, *d'*, a series of triangular projections, *E*, and angular spaces *E'* between said projections, and an annular recess, *F*, separating the said ring and projection of each section, substantially as shown and described, and for the purpose herein set forth.

2. A hub for ventilator-fans, divided into two vertical sections, and said sections provided with opposing integral embossed rings

- D, having a series of concave recesses,  $d'$ , a series of triangular projections, E, angular spaces  $E'$  between said projections in alignment with the recesses  $d'$ , and provided with  
5 longitudinal ribs  $e'$ , and annular recesses F, separating the said rings and projections, and means for clamping the said sections, substantially as shown and described, and for the purposes herein set forth.
- 10 3. The combination, with a divided hub provided with opposing embossed rings D, having concave recesses  $d'$ , a series of triangular projections, E, and intervening angular recesses,  $E'$ ,  
having longitudinal ribs  $e'$  in alignment with the said ring-recesses  $d'$ , and an annular re- 15  
cess, F, separating the ring D and projections E, of a fan carrying rod, H, provided with a lower annular recess,  $h$ , substantially as shown and described, whereby the fans may be ad-  
justed to various positions in said hub, as set 20  
forth.

GEORGE P. CLARK.

Witnesses:

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JAMES C. GOURLEY.