

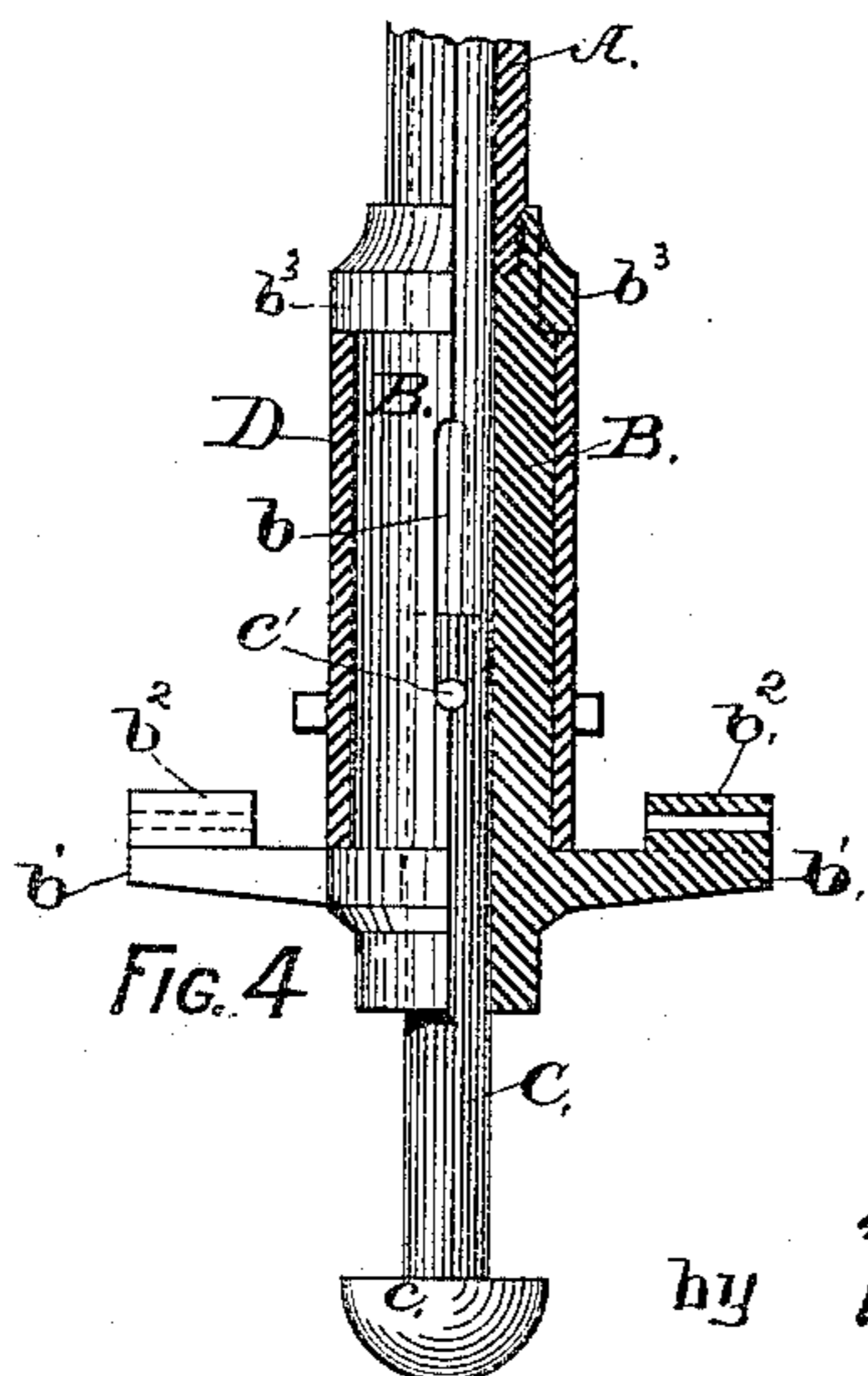
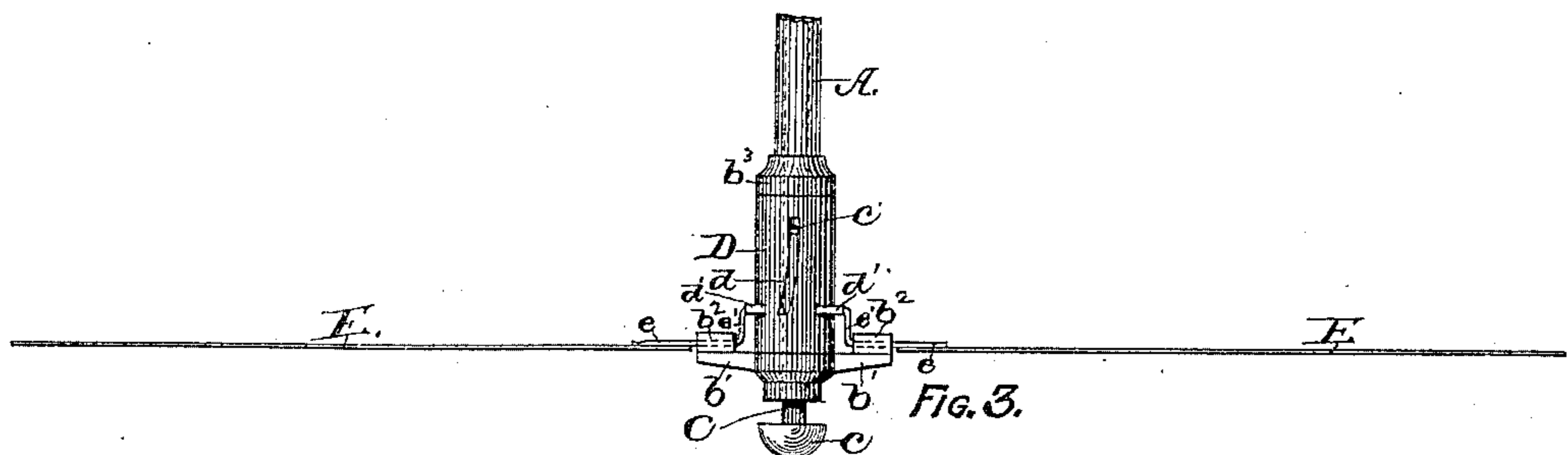
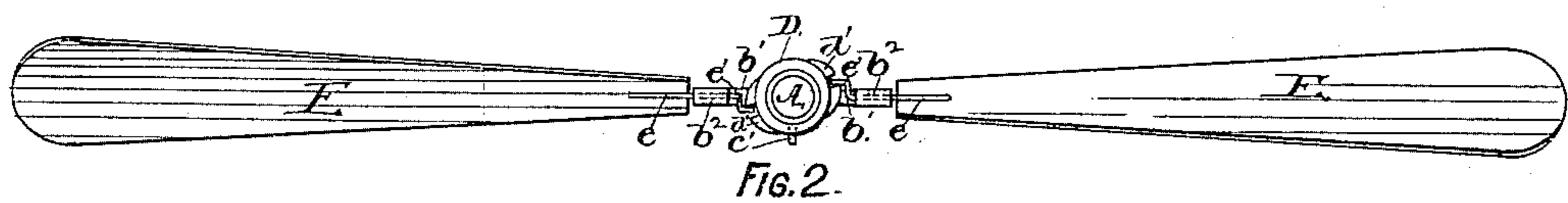
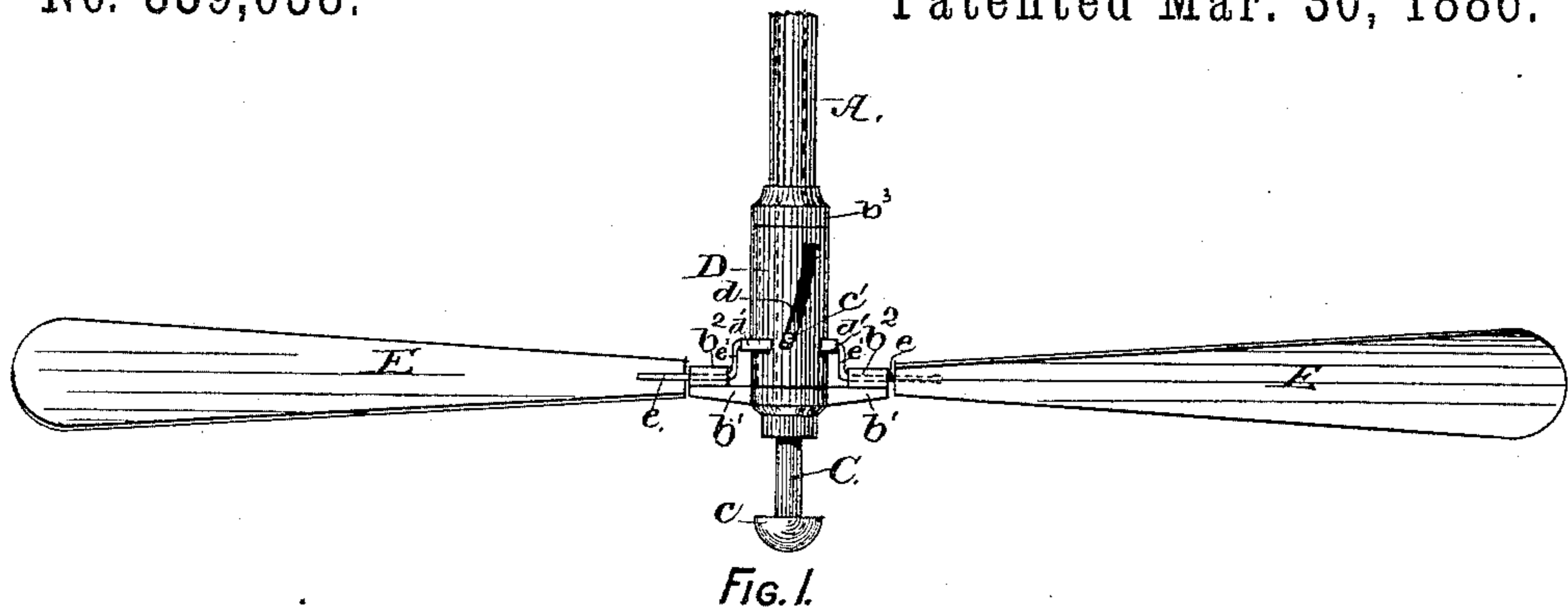
(No Model.)

E. ANTHONY.

ROTARY FAN.

No. 339,038.

Patented Mar. 30, 1886.



Witnesses:

S. B. Brewster,  
H. V. Scattergood.

Inventor:

EDMOND ANTHONY,  
by William N. Low,  
Attorney.

# UNITED STATES PATENT OFFICE.

EDMOND ANTHONY, OF CASTLETON, ASSIGNOR OF ONE-HALF TO WILLIAM  
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## ROTARY FAN.

SPECIFICATION forming part of Letters Patent No. 339,038, dated March 30, 1886.

Application filed January 18, 1886. Serial No. 188,825. (No model.)

*To all whom it may concern:*

Be it known that I, EDMOND ANTHONY, of Castleton, in the county of Rensselaer and State of New York, have invented new and useful  
5 Improvements in Rotary Fans, of which the following is a specification.

My invention relates especially to that class of rotary fans which revolve in a horizontal plane; and the object of my improvements is  
10 to provide means for adjusting the blades of the fans to any required angle without stopping their rotations. This object I attain by means of the mechanism illustrated in the accompanying drawings, which, being herein  
15 referred to, form a part of this specification, and in which—

Figure 1 is a front elevation of my fan with the blades in their inclined position; Fig. 2, a plan view of the same; Fig. 3, a front elevation with the blades thrown in a horizontal  
20 plane, and Fig. 4 an enlarged detail of construction of the central hub for carrying the blades and the sleeve for altering the angular position of said blades.

As shown in the drawings, A is the vertical shaft for carrying a pair of the fan-blades. Said shaft I preferably make tubular, for the purpose of obtaining sufficient strength with  
25 but little weight. One or more of said vertical shafts may be employed and located at such places where a fan may be required, and such shafts may be rotated by means of belts, gearing, or other appliances commonly employed for such purposes. To the lower end  
30 of said shaft a central hub or sleeve, B, is secured to range in line with said shaft. Said sleeve is provided with a straight slot, *b*, which is in line with its central axis. One part of said slot is shown by a full line and the balance indicated by a dotted line in Fig. 4. Radial  
40 arms *b'* project from opposite sides of the lower end of said sleeve, which arms are provided with bearings *b<sup>2</sup>* for receiving the shafts attached to the fan-blades. A sliding pin, C, is fitted to slide freely in the bore of the sleeve  
45 B, and has a head, *c*, that projects from the lower end of said sleeve sufficiently to permit a ready hold of the hand thereon. A radial stud, *c'*, projects from one side of the sliding  
50 pin C, and extends through slot *b* in the sleeve B. An outer sleeve, D, is fitted to turn easily

on the sleeve B between the arms *b'* and collar *b<sup>3</sup>*. Said outer sleeve is provided with a spiral or inclined slot, *d*, in which the outer end of the stud *c'* engages; and said sleeve is also  
55 provided at its diametrically-opposite sides with pairs of parallel snugs *d'*, so arranged as to receive the crank-pin of the shafts on which the fan-blades are attached.

The hub B and sleeve D have a rotatory motion that is common to both; but the latter has a slight rotative movement that is independent of said hub—that is to say, a movement of said sleeve produced by the action of the stud *c'* of the sliding pin C in the inclined  
60 slot *d* in said sleeve—the rotatory motion of said sleeve being momentarily retarded by moving the sliding pin C vertically in one direction and correspondingly accelerated by moving said pin in the opposite direction.  
70

The fan-blades E may be made substantially in the form shown, or in any other form that may be preferred. Said blades are attached to the shafts *e*, which are fitted to rock in the bearings *b<sup>2</sup>*, and each of which is provided  
75 with a crank, *e'*, whose projecting pin engages in a pair of the snugs *d'* in such manner that a partial rotative movement of the outer sleeve, D, will produce a corresponding rocking movement of the shaft and its attached fan-blade.  
80

The operation of my invention is as follows: The fan-blades E being in the inclined position shown in Fig. 1, and it is required to adjust said blades so that they will not act to produce any currents of air, the sliding pin C  
85 is pushed inwardly, as shown in Fig. 3. In performing this the stud *c* will be moved in the slot *b* directly in line with the shaft A; but by reason of the angularity of the slot *d* in the outer sleeve, D, the vertical movement of the stud *c* will cause said outer sleeve to  
90 make a partial rotation around the hub B, as hereinbefore described, and by the said partial rotation of the sleeve D the snugs *d'* will move the cranks *e* to shift the position of the fan-blades E in respect to a horizontal plane, so that they will lie edgewise to the course in which they are moving. Where desired, the blades E may be adjusted in the same manner at any intermediate point between that of their  
100 greatest angularity and a horizontal position.

While I have shown and described my in-

vention as applied to fans depending from an overhead plane, it is obvious that without further invention it can be used on fans which are arranged in a reversed position by being  
5 erected on standards fixed to a floor or other plane below the fans.

I claim as my invention—

The combination, with a central hub provided with radial bearings carrying shafts to  
10 which the fan-blades are attached, the inner ends of said shafts being provided with cranks,

as herein described, of an outer sleeve provided with parallel snugs which engage with the pins of said cranks, the said outer sleeve being adapted to receive a partial rotative  
15 movement that is independent of the rotations of the fan-blades, as and for the purpose herein specified.

EDMOND ANTHONY.

Witnesses:

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