

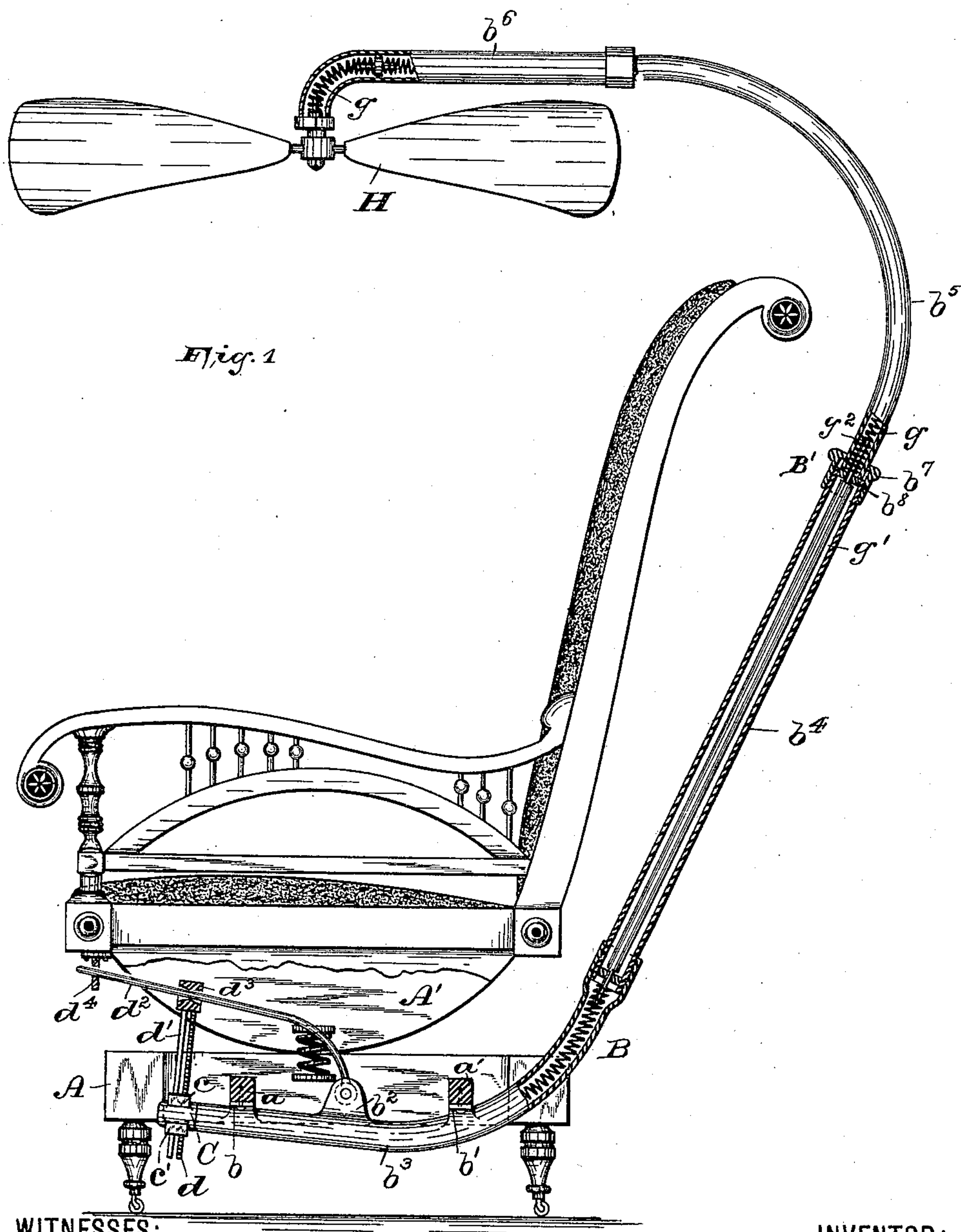
(No Model.)

2 Sheets—Sheet 1.

C. C. SPALSBURY.  
FAN ATTACHMENT FOR ROCKING CHAIRS.

No. 451,187.

Patented Apr. 28, 1891.



WITNESSES:

William H. Campfield.  
Henry J. Falk.

INVENTOR:

Charles C. Spalsbury,

BY Fred C. Fraentzel, ATTY.

(No Model.)

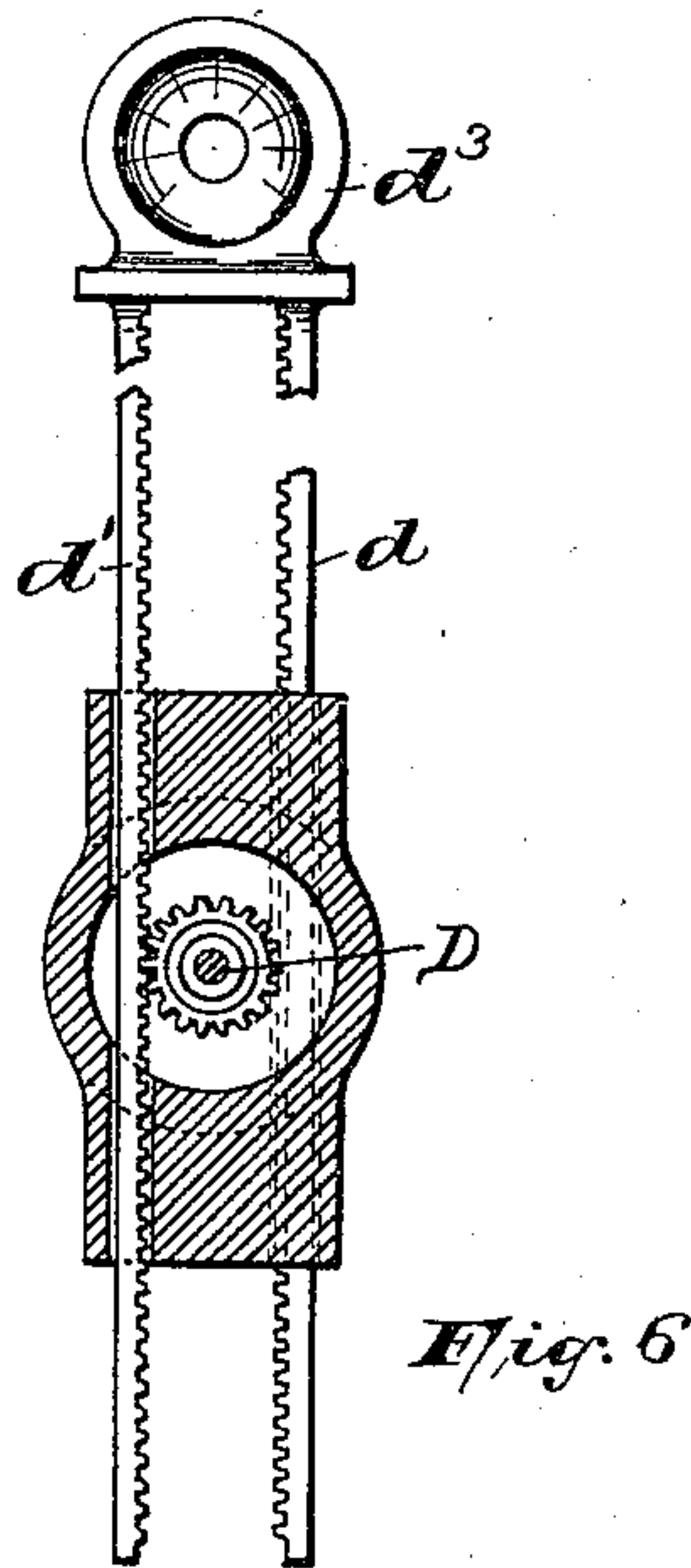
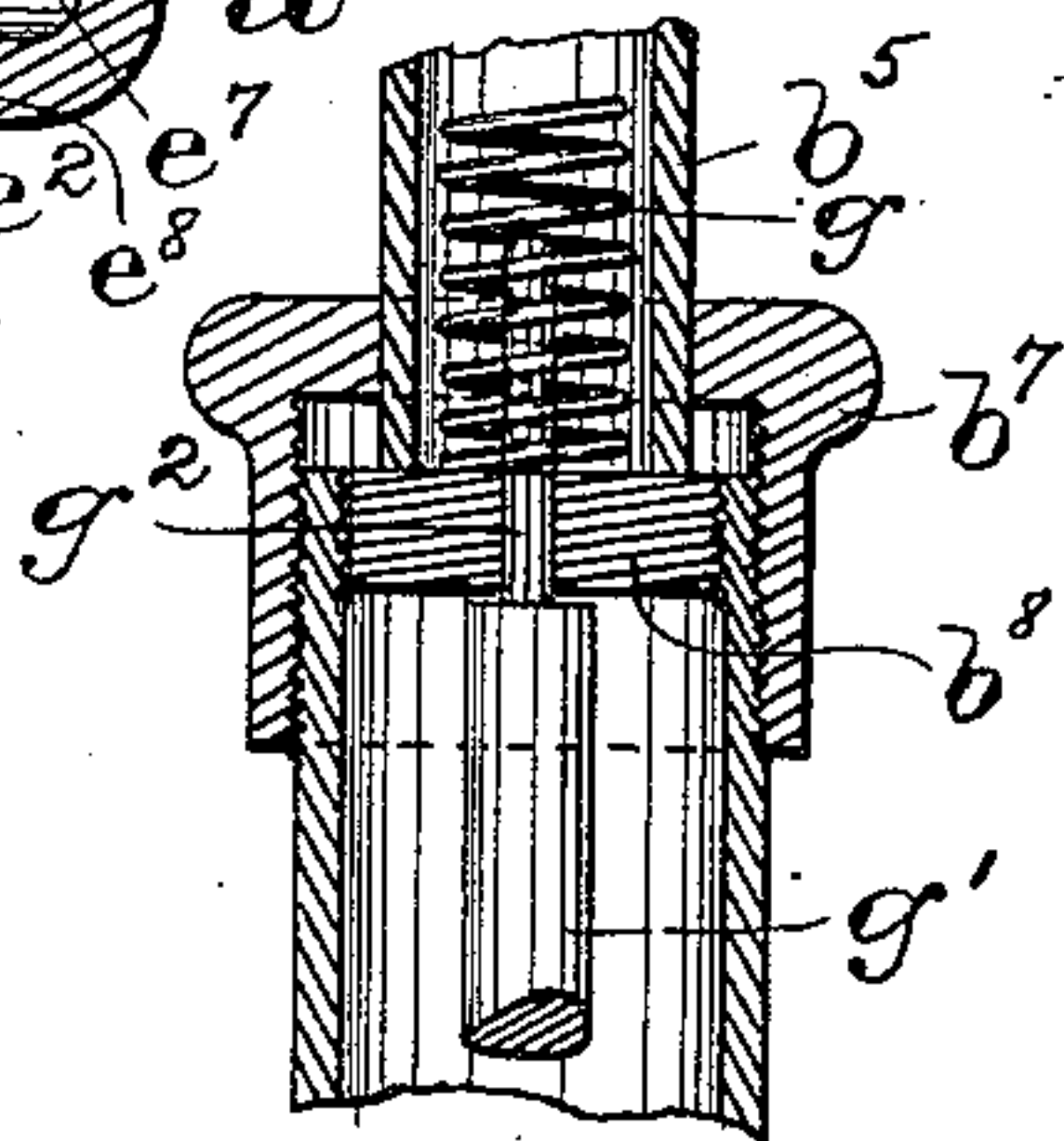
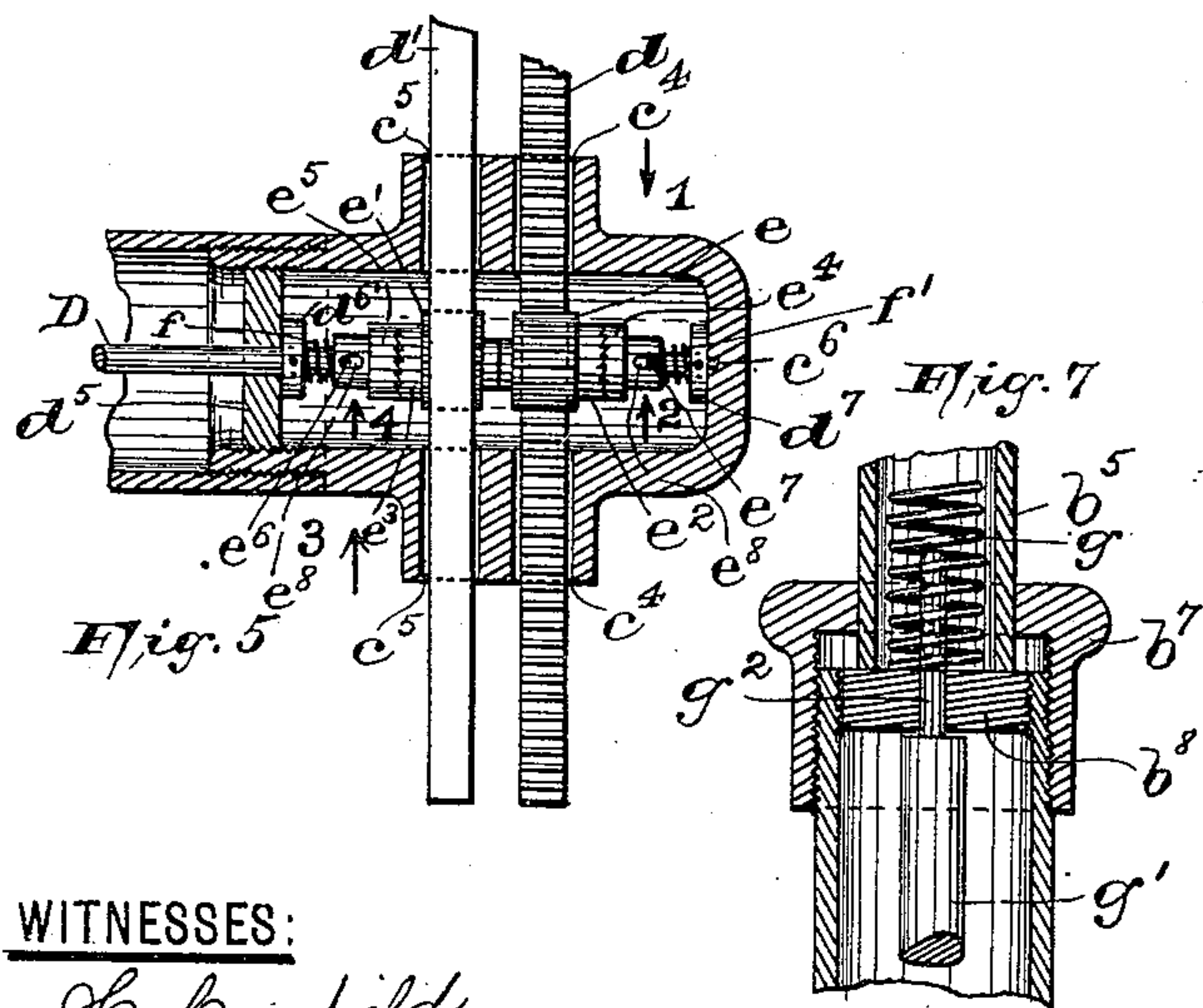
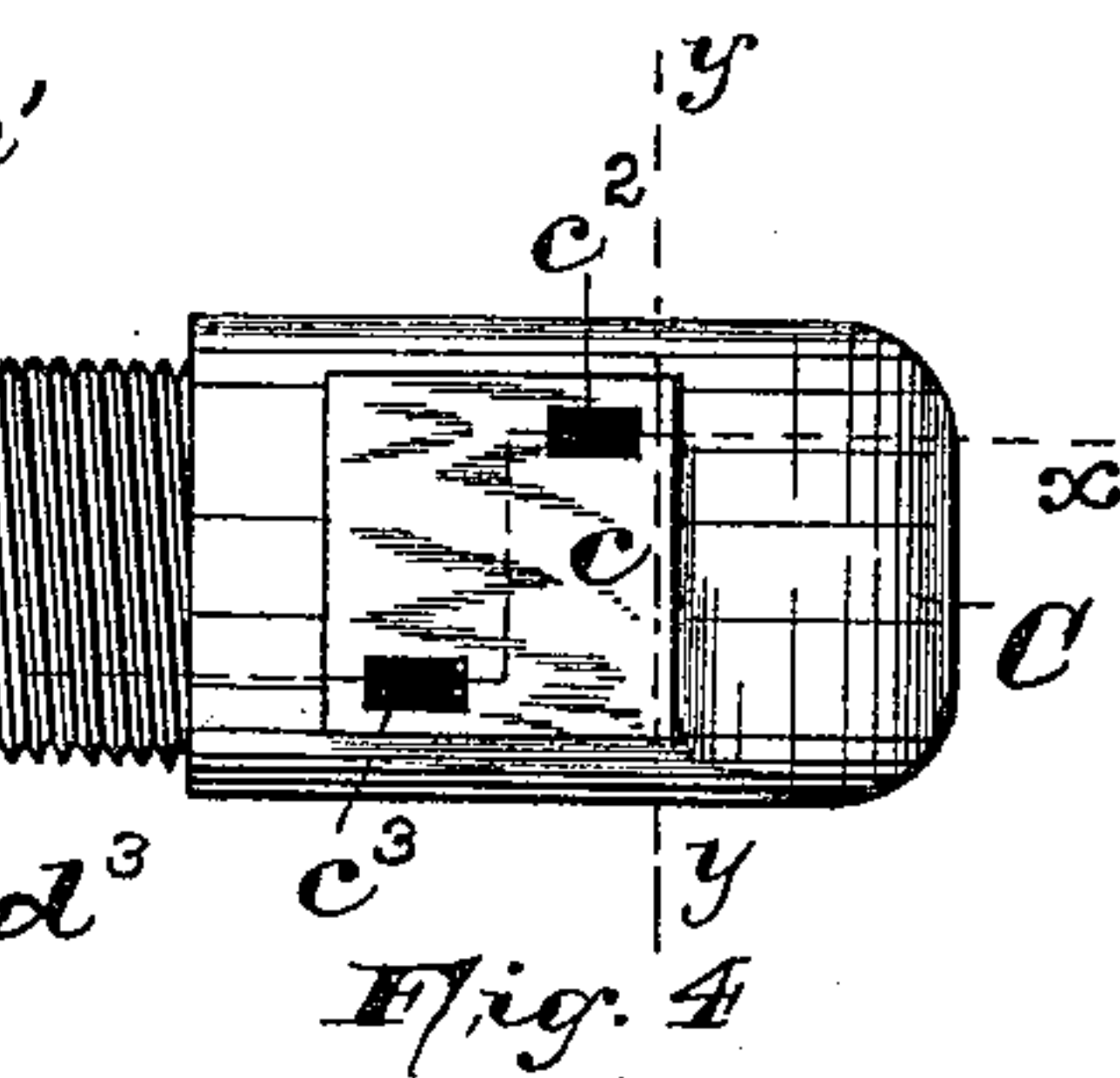
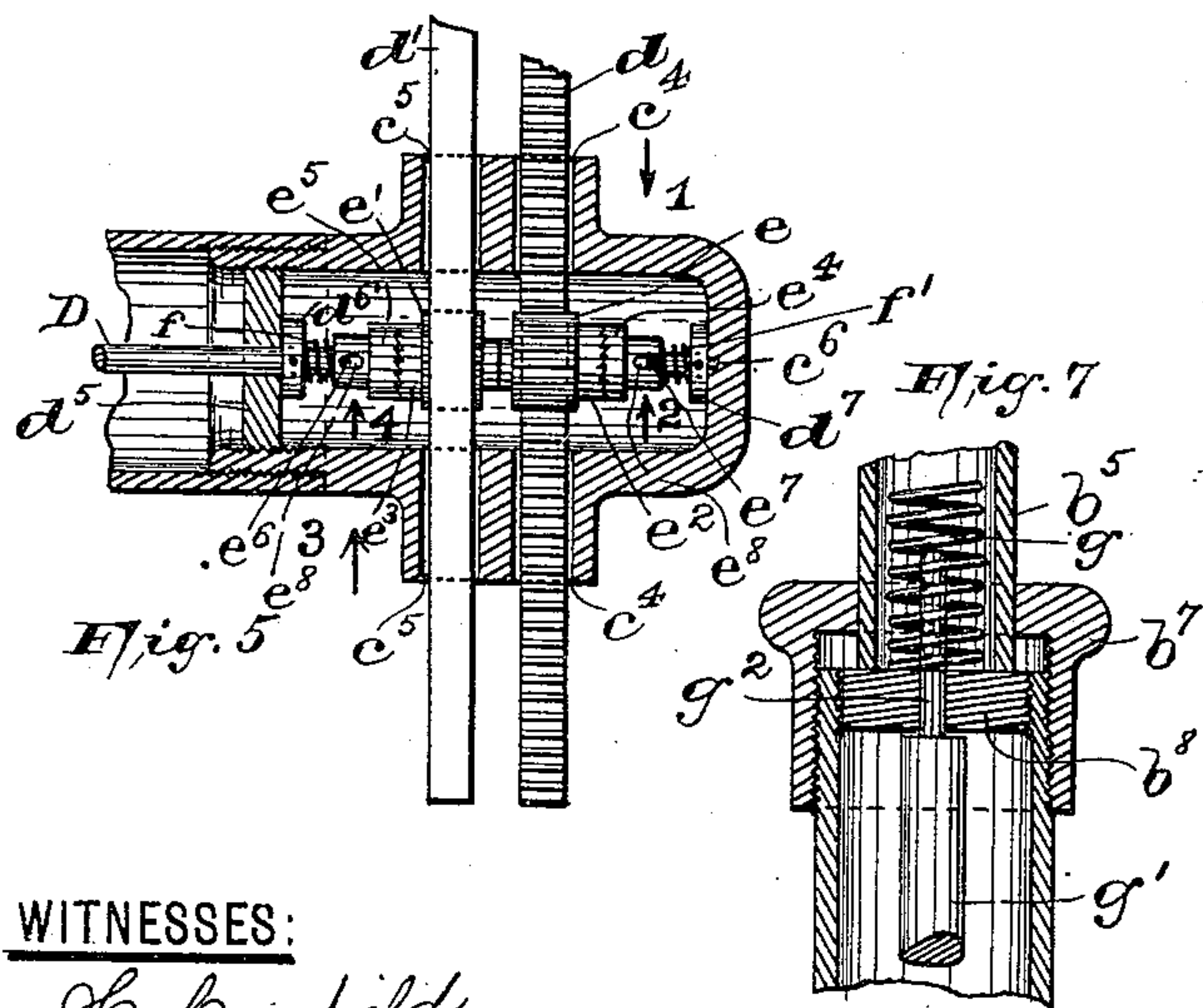
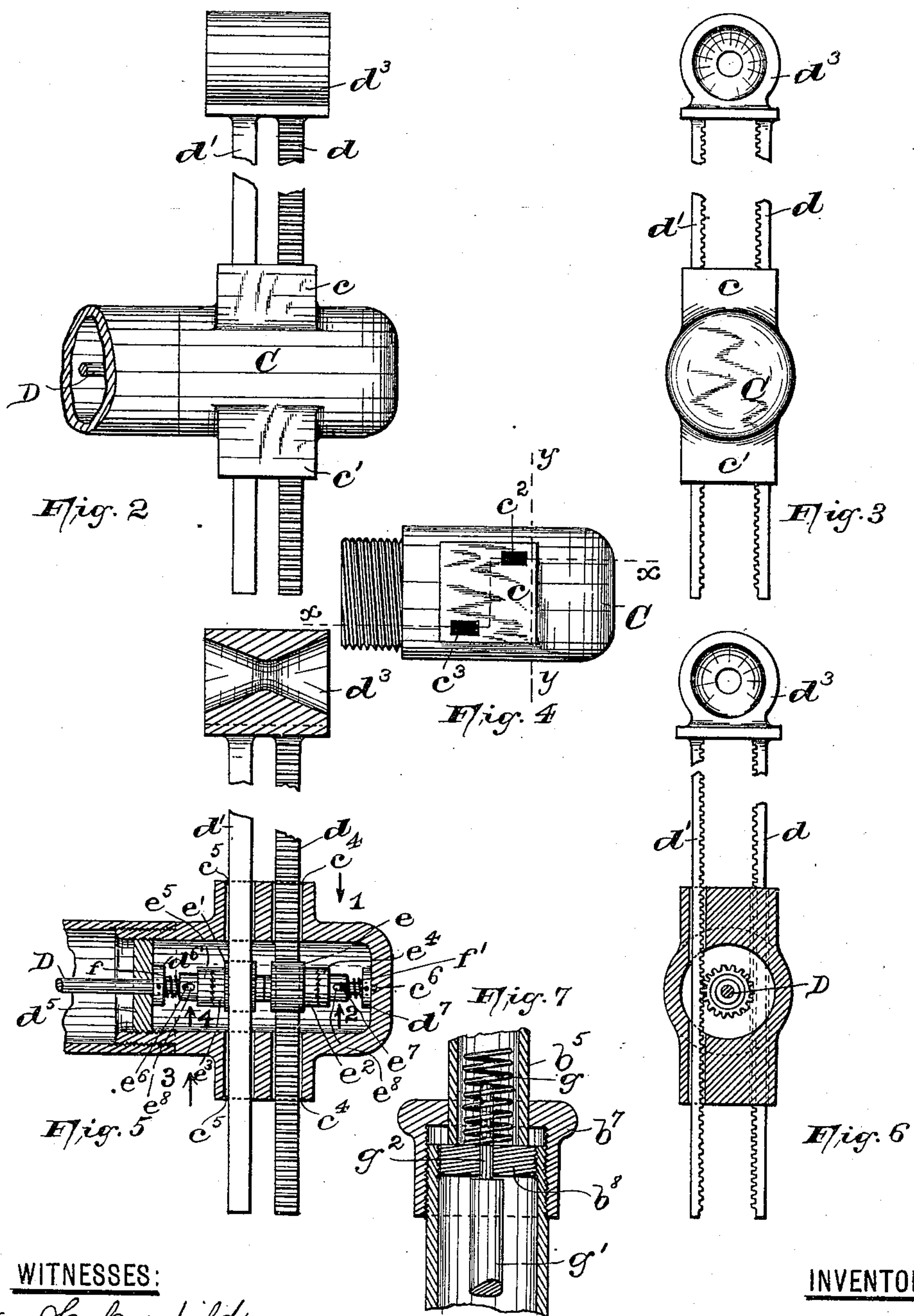
2 Sheets—Sheet 2.

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WITNESSES:

Wm. H. Bainfield.  
Henry J. Falk.

Henry J. <sup>W</sup>Falk.

INVENTOR:

*Charles C. Spalsbury.*

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# UNITED STATES PATENT OFFICE.

CHARLES C. SPALSBURY, OF EAST ORANGE, NEW JERSEY.

## FAN ATTACHMENT FOR ROCKING-CHAIRS.

SPECIFICATION forming part of Letters Patent No. 451,187, dated April 28, 1891.

Application filed May 17, 1890. Serial No. 352,182. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES C. SPALSBURY, a citizen of the United States, residing at East Orange, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Fan Attachments for Rocking-Chairs; and I do hereby 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, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form part of this specification.

This invention is designed to provide a rotary fan attachment for chairs, which, when in use, affords great comfort to the person operating the chair; and the invention is further designed to provide an effective and simply-constructed device which will at all times secure the desired end, and which may be readily applied to any description of chair, and when not in use, as in the winter, may be easily removed, thus restoring the chair to its ordinary condition.

The form of construction selected to embody the invention in an operative machine is illustrated in the accompanying two sheets of drawings, which show the novel features on my invention.

In said drawings, Figure 1 represents a side view of one form of chair, the lower part or the base of the same being represented in section, and to the cross-pieces of which is attached the mechanism for operating the rotary fan above the seat of the chair. Fig. 2 is a side elevation of the gear-operating mechanism attached to the fan-propelling shaft. Fig. 3 is a front view of the same, and Fig. 4 is a top view of the casing containing the gear mechanism. Figs. 5 and 6 are vertical sections taken through lines *x* and *y*, respectively, in Fig. 4; and Fig. 7 is a sectional view of one of the joints connecting the tubes containing the fan-propelling shaft.

Similar letters of reference are employed to indicate corresponding parts in each of the above-described views.

In the drawings, A indicates the base of a chair, upon which rocks the chair by means of the rockers A'.

To the cross-pieces *a* and *a'* is attached in any convenient manner a tube B, which is bent to conform with the back of the chair, being secured to the base in such a way as to allow the rocking of the chair without any danger of the back thereof interfering with or striking the tubing.

As shown in Fig. 1, the tube B is provided with projections *b* and *b'*, attached thereto in any well-known manner, whereby the tube can be attached to the cross-pieces by means of bolts or screws, as shown, or by means of ordinary clamps, as will be evident.

The forward end of that part of the tube B beneath the seat of the chair is provided with a cap C, containing the shaft-revolving mechanism, the construction of which will be more clearly understood from the figures illustrated on Sheet 2 of the drawings. Said cap C, which is hollow to form a chamber, is provided on its upper and under sides with enlarged portions *c* and *c'*, preferably square in plan, as shown in Fig. 4, which are provided with diagonally-arranged holes *c*<sup>2</sup> and *c*<sup>3</sup>, extending entirely through the casing and forming ways or guides *c*<sup>4</sup> and *c*<sup>5</sup>, in which reciprocate the racks *d* and *d'*, operated by the rocking motion of the seat-frame attached to the rockers A'.

The mechanism for producing the reciprocatory movement of the racks *d* and *d'* consists of a rod *d*<sup>2</sup>, pivotally arranged in lugs *b*<sup>2</sup>, formed on the tubing B between the projections *b* and *b'*, said rod or arm passing through a collar or sleeve *d*<sup>3</sup>, secured to the racks and ending in a perforated bearing *d*<sup>4</sup> beneath the seat, near the front thereof, as will be clearly seen from said Fig. 1.

When a person sitting in the chair is rocking to and fro, the rod or arm *d*<sup>2</sup> moves on its pivotal pin in the lugs *b*<sup>2</sup>, sliding back and forth in the sleeve *d*<sup>3</sup> and the perforated bearing *d*<sup>4</sup>, whereby the racks *d* and *d'* are caused to move reciprocally in their guides *c*<sup>4</sup> and *c*<sup>5</sup>. Within said casing C is arranged a small piece of shafting D, arranged in a bearing *c*<sup>6</sup> in the solid end of the casing and passing through a perforated plate *d*<sup>5</sup>, which is screwed upon the inner and threaded surface of the open end of the casing C, or which may be formed therein in any well-known manner. Collars *d*<sup>6</sup> and *d*<sup>7</sup> are employed to



retain the shaft in position between its bearings. On said shaft D directly beneath the guides or ways  $c^4$  and  $c^5$  are arranged two pinions  $e$  and  $e'$ , each of which is provided with an annular projection  $e^2$  and  $e^3$ , which is serrated or notched on the end, and which engage with correspondingly serrated or notched clutch-collars  $e^4$  and  $e^5$ , secured on the shaft D by means of pins  $e^6$  and  $e^7$ , working in slots  $e^8$ , whereby the clutch-collars have a free lateral movement on said shaft. Between said clutch-collars and the collars  $d^6$  and  $d^7$  spiral springs  $f$  and  $f'$  have been placed, which tend to force the teeth on the clutch-collars into holding engagement with the teeth or serrations on the sides of the pinions.

As will be clearly seen from Fig. 5, the teeth or serrations on the clutching devices on opposite sides of the pinions  $e$  and  $e'$  are formed at different angles to each other, so that when both racks  $d$  and  $d'$  are forced down through the casing C by the rocking motion of the chair-seat in the direction of arrow 1 the pinion  $e$  rotates directly opposite to the direction of movement of the racks, causing the serrated ends of the clutch-collar  $e^4$  and the projection  $e^2$  on said pinion to interlock and revolve the shaft D in the direction of arrow 2. During this operation, owing to the oppositely-formed angles of the serrations or teeth on the clutch-collar  $e^5$  and the projection  $e^3$ , said parts slide easily over one another, the pinion  $e'$  rotating loosely on its shaft in a direction opposite to that of the shaft. When the racks have reached the limit of their downward movement and the seat of the chair is moving upon its rockers in an opposite direction, the operation of the clutch mechanism is reversed, pinion  $e'$  meshing tightly with clutch-collar  $e^5$ , while pinion  $e$  and clutch-collar  $e^4$  are out of mesh. By this arrangement it will be seen that no matter in what directions the racks  $d$  and  $d'$  are moving the shaft D will always revolve in the same direction. The slots  $e^8$  in the clutch-collars allow the same to freely slide upon the shaft, whereby the serrations upon the several parts of the clutch mechanism can be forced into a locked or holding engagement or can freely slide over each other, according in which direction the racks are moving, while the springs  $f$  and  $f'$  at all times tend to force the several parts into their holding engagement.

The tube B, which may be made of one piece and bent, as illustrated in Fig. 1, contains the fan-operating shaft, which in the shape of a spring forms a spiral or flexible shafting  $g$ , one end of which is secured to the shaft D, while its opposite end is attached to the fan H, arranged below the elbow directly above the seat of the chair. Thus it will be seen that when the shaft D revolves in one direction the spiral shafting will similarly revolve, causing the fan H to rotate in the same direction in its plane of movement.

In lieu of constructing the tube B of one piece, the same can be put together of several pieces, as shown in Fig. 1, which are jointed by means of collars, as shown, or otherwise. As illustrated in said figure, the tube B is made up of several smaller pieces of tubing, as  $b^3$ ,  $b^4$ ,  $b^5$ , and  $b^6$ , the part  $b^3$  being curved and provided with the spiral shaft  $g$ , which is attached to the end of the shaft D at one of its ends, while at its other end it is secured to a straight and solid rod  $g'$ , which is arranged in suitable bearings within the collar upon the part  $b^4$ . Part  $b^5$ , which is curved, is provided with spiral or flexible shafting connected with a shaft in the part  $b^6$ .

By the construction described herein I have obtained a very simple device for applying a rotary motion to fans adapted for use on rocking-chairs, which device can be constructed with ease and little labor, being very light and serving as an ornament, as well as the comforts derived therefrom.

From Figs. 3 and 5 it will be seen that the collar  $d^3$ , to which are attached the racks, is funnel-shaped, whereby the rod  $d^2$  can freely move and slide through the same, and thereby allow the racks  $d$  and  $d'$  to reciprocate in the same plane of movement, and causing a free and easy motion of the several parts of the device.

In Fig. 7 is represented an enlarged sectional view of one of the collars or joints for securing the parts of tubing together. The construction represented is the collar shown at B' in Fig. 1, where the spiral or flexible shafting is connected or attached to the solid rod  $g'$ . This cap or collar  $b^7$  is screwed upon one end of the tube  $b^4$ , which is provided with a bearing  $b^8$  for holding the rod  $g'$  in place. Through a perforation in the top of the cap  $b^7$  is secured the tube  $b^5$ , the end of  $g^2$  of the rod  $g'$  projecting into said tube and the flexible shaft being attached to said end. Of course it will be understood that the parts  $b^3$ ,  $b^4$ ,  $b^5$ , and  $b^6$  can be secured together by any well-known means.

If desirable, the joint  $b^7$  can be constructed in such a manner that the upper part  $b^5$  of the tubing can be rotated upon said joint, and the fan thereby turned to one side, and the wind from the same can thus be thrown to either side of the chair, as is evident.

Having thus described my invention, what I claim is—

1. The combination, with the base of a rocking-chair, of a tube made up of sections, one of which, as  $b^5$ , is adapted to rotate within a joint  $b^7$  on the section  $b^4$ , flexible shafts or springs connected with a solid rod, said parts being arranged and adapted to rotate in said sections, means for securing said tube to the base, mechanism constructed and arranged to cause said shaft to revolve in bearings arranged in the sections of the tube, and a fan attached to said shaft, as and for the purposes set forth.

2. The combination, with the base of a rock-



ing-chair, of a tube B, attached to the cross-pieces of the base, a flexible shaft in said tube provided with a fan, as set forth, a casing on the forward end of said tube, provided with a shaft-propelling mechanism consisting of two pinions loosely arranged on said shaft, a pair of approximately - vertical racks working through said casing in engagement with said pinions, a sleeve or collar secured to the upper ends of said racks, and a spring-arm pivoted to the top of said tube B, loosely fitted in and passing through the collar or sleeve attached to the frame of the chair-seat, whereby during the rocking motion of the chair-seat the racks receive a reciprocatory movement and cause the rotation of the propelling-shaft and its fan, as and for the purposes set forth.

3. The combination, with the base of a rocking-chair, of a tube B, made up of parts or sections adapted to rotate upon each other and provided with means for fastening the same to the cross-pieces of the base, a flexible shaft in said tube provided with a fan, a casing C on the lower forward end of the tube beneath the seat of the chair, shaft-operating mechanism within said casing, racks receiving a reciprocal movement during the rocking motion of the chair and thereby operating said mechanism, and means secured to said tube and connected with the seat of the chair and said racks for producing the reciprocatory movement of the same and the rotary movement of the shaft and fan, as set forth.

4. The herein-described mechanism for operating the fan-propelling shaft, consisting of two pinions loosely arranged on said shaft at the extreme lower end thereof, clutch-collars adapted to engage with said pinions, all of said parts being arranged in a casing, substantially as described, in combination with a pair of approximately vertically - placed racks, a collar or sleeve to which the upper ends of said racks are secured, and a spring-arm secured to a tube inclosing the fan-propelling shaft, loosely fitted in and passing through said collar or sleeve attached to the frame of the seat, and whereby during the rocking motion of the chair-seat the racks receive a reciprocatory movement and cause the rotation of the propelling-shaft, as and for the purposes set forth.

5. The herein-described mechanism for operating a fan-propelling shaft, consisting of two pinions loosely arranged on said shaft, provided with teeth or serrations on opposite sides, clutch-collars also provided with teeth or serrations, said collars being secured to the shaft by pins working in slots, and springs adapted to force said collars into holding engagement with the serrations on the pinions, all of said parts being arranged within a casing, as set forth, in combination with a pair of racks working through openings diagonally arranged in opposite sides of said casing and attached to a collar or sleeve and operated by the frame of the seat during the rocking motion of the same, whereby the racks receive

a reciprocal movement and cause the rotation of the propelling-shaft, as and for the purposes set forth.

6. The combination of a rotary shaft D, arranged in bearings in a casing C and provided with pinions  $e$  and  $e'$ , fitting loosely thereon and having serrations or teeth on opposite sides, reciprocating racks moving in ways or guides in said casing on opposite sides of said pinions, and serrated clutch-collars  $e^4$  and  $e^5$ , provided with slots therein and secured to said shaft by means of pins, and springs  $f$  and  $f'$ , encircling said shaft, causing the locked engagement of the serrations on pinion  $e$  and clutch-collar  $e^4$  during the downward movement of rack  $d$  and throwing the clutch-collar  $e^5$  out of its locked engagement with pinion  $e'$ , and vice versa, during the upward movement of rack  $e'$ , causing the locked engagement of the clutch-collar  $e^5$  and pinion  $e'$  and throwing clutch-collar  $e^4$  and pinion  $e$  out of mesh, as and for the purposes set forth.

7. The combination, with the base of a rocking-chair, of a tube provided with means for attaching the same to the cross-pieces of the base, a flexible shaft having attached thereto at one end a fan and secured at its other end to a shaft D, arranged in bearings in a casing C, secured to said tube, pinions  $e$  and  $e'$  on said shaft, having serrated projections  $e^2$  and  $e^3$ , spring-actuated clutch-collars secured on said shaft and adapted to slide thereon and engaging with said serrated pinions, racks on opposite sides of said pinions sliding in ways in said casing C and provided with a collar  $d^3$ , and a rod  $d^2$ , passing through said collar, being pivotally secured at one end to the tube secured to the base and working through a perforated plate attached to the seat of the chair, whereby said racks are caused to reciprocate through said casing C and cause said shaft D to rotate at all times in the same direction, as and for the purposes set forth.

8. The combination, with a base of a rocking-chair, of a tube made up of jointed sections and provided with flexible shafts connected with a solid rod arranged in bearings in one of said sections, means for securing said tube to said base, mechanism constructed and arranged to cause said shaft to revolve in one direction during the rocking motion of the chair-seat, and a fan attached to said shaft above the chair, all of said parts being arranged substantially as and for the purposes set forth.

9. The herein-described fan attachment for rocking-chairs, consisting of a tube  $b^3$ , attached to the base of the chair and provided with a flexible shaft, a cap or casing on its forward end provided with a shaft D, rotating in bearings therein, and to which said flexible shaft is attached, pinions  $e$  and  $e'$ , having serrated projections  $e^2$  and  $e^3$ , spring-actuated clutch-collars secured on said shaft D and adapted to slide thereon and engaging with said serrated pinions, racks on opposite sides of the same sliding in ways in said casing and



provided with a collar  $d^3$ , a rod  $d^2$ , passing through said collar, being pivotally secured on said tube  $b^3$  and working in a perforated plate attached to the seat of a chair, whereby  
 5 said racks are caused to reciprocate through said casing and causing said shaft D to rotate in the same direction, as set forth, tube  $b^4$ , attached to said tube  $b^3$ , provided with a rod  $g'$ , arranged in bearings therein and connected  
 10 at its lower end with the flexible shaft in the tube  $b^3$ , tube  $b^5$ , connected with tube  $b^4$  by means of joint  $b^7$  and adapted to rotate therein, and the flexible shaft connected with the upper end  $g^2$  of rod  $g'$  and provided with a rotary fan  
 15 H, as set forth.

10. The combination, with the base of a rocking-chair, of a tube made up of jointed sections, one of which, as  $b^5$ , is adapted to rotate in a joint  $b^7$  in the section  $b^4$ , as set forth,  
 20 flexible shafts or springs connected with a solid rod, all of which are arranged and adapted to rotate within said sections, the forward and lower end of said tube beneath the chair-seat being provided with a casing  
 25 containing a shaft-operating mechanism, racks receiving a reciprocatory movement during the rocking motion of the chair, and thereby operating said mechanism, and means secured to said tube connected with the seat  
 30 of the chair and said racks for producing a reciprocatory movement of the latter and a rotary movement of the shaft and a fan attached to said shaft, as and for the purposes set forth.

35 11. The combination, with the base of a rocking-chair, of a tube made up of jointed sections, one of which, as  $b^5$ , is adapted to rotate in a joint  $b^7$  in the section  $b^4$ , as set forth, flexible shafts or springs connected with a  
 40 solid rod, all of which are arranged and adapted to rotate within said sections, and a fan on said shaft, in combination with the herein-described mechanism for rotating said fan-propelling shaft, consisting of two pin-  
 45 ions loosely arranged on the lower end of said shaft, clutch-collars adapted to engage therewith, said parts being arranged within a casing having diagonally-placed openings therein, racks working through said openings and  
 50 engaging with the pinions in said casing and provided with a collar or sleeve, and an arm

passing through the same operated by the chair-seat during the rocking motion of the same, whereby said racks are caused to reciprocate through said casing and thereby rotate  
 55 the propelling-shaft, as and for the purposes set forth.

12. In a rocking-chair or other seat, the combination, with the base thereof, of a tube secured to said base and extending up above  
 60 the seat of the chair, a flexible shaft within said tube, provided with a fan, said tube having secured thereto a pivoted rod extending up therefrom, which passes through a perforated plate secured to the bottom of the chair-  
 65 seat, and mechanism operated by said rod to cause said shaft and its fan to revolve in one direction, as and for the purposes set forth.

13. In a rocking-chair or other seat, the combination, with the base thereof, of a tube  
 70 secured to said base and extending up above the seat of the chair, a flexible shaft within said tube, provided with a fan, said tube having secured thereto a pivoted rod extending up therefrom, which passes through a perforated plate secured to the bottom of the chair-  
 75 seat, and mechanism operated by said rod to cause said shaft and its fan to revolve in one direction, consisting, essentially, of two racks attached at one end to a collar through which  
 80 said pivoted rod moves, and whereby said racks receive a reciprocatory movement during the rocking motion of the chair, said racks entering openings in a casing secured on the end of the shaft-tube having pinions  
 85 therein, as and for the purposes set forth.

14. In combination with the fan H, arranged above the chair, a tube containing a flexible shaft, racks and pinions operating said shaft, collar  $d^3$  on said racks, and a spring-rod  $d^2$ ,  
 90 working through said collar of the chair-seat, and the other end of said rod being pivotally secured to the tube, as and for the purposes set forth.

In testimony that I claim the invention set  
 95 forth above I have hereunto set my hand this 13th day of May, 1890.

CHARLES C. SPALSBURY.

Witnesses:

EMMA A. SPALSBURY,  
 FREDK. C. FRAENTZEL.