(No Model.) 2 Sheets—Sheet 1.

P. A. BREDSVOLD.

ADJUSTABLE CHAIR OR STOOL.

No. 483,777. Patented Oct. 4, 1892.

Fig. 1.

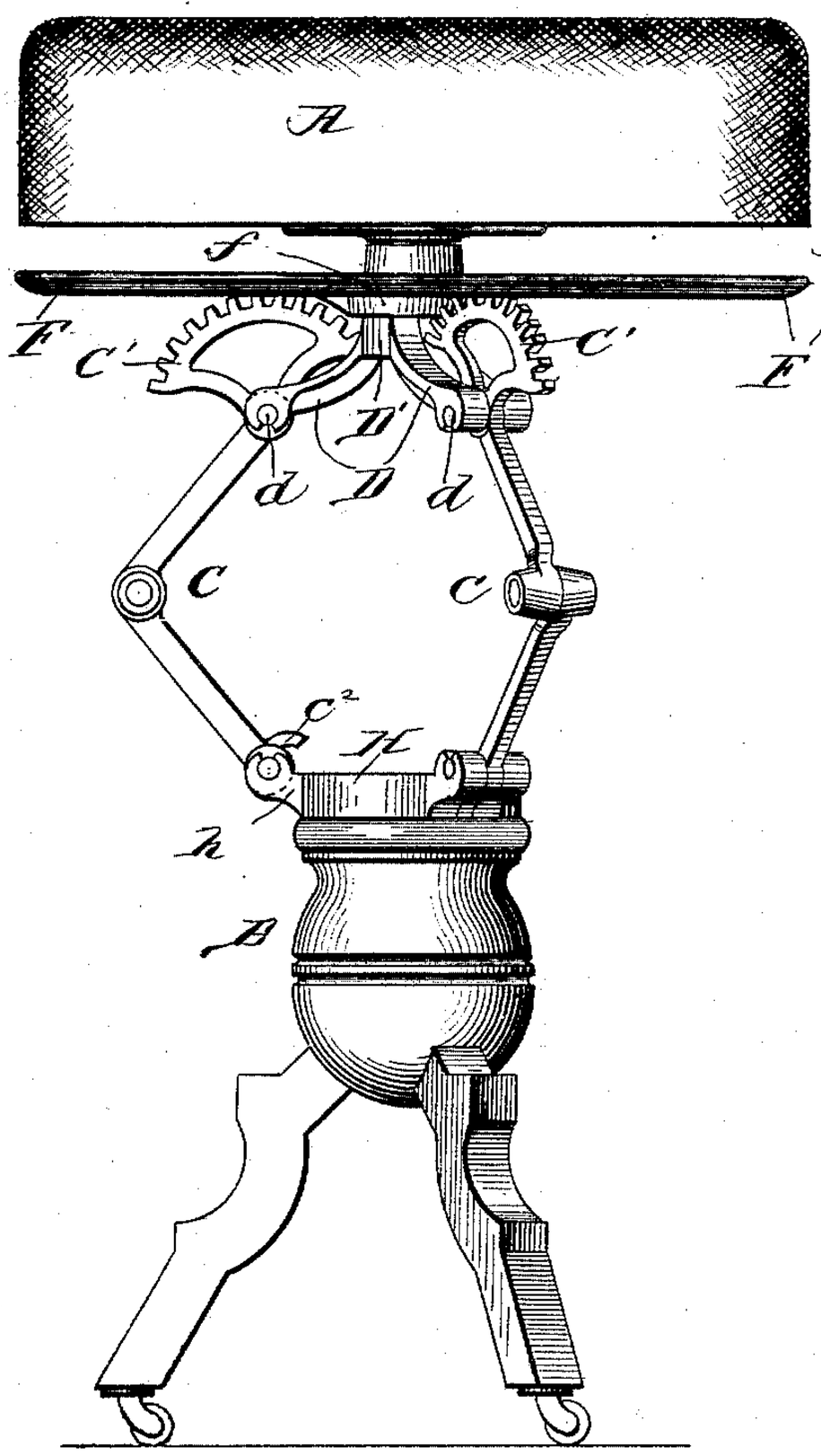


Fig. 2.

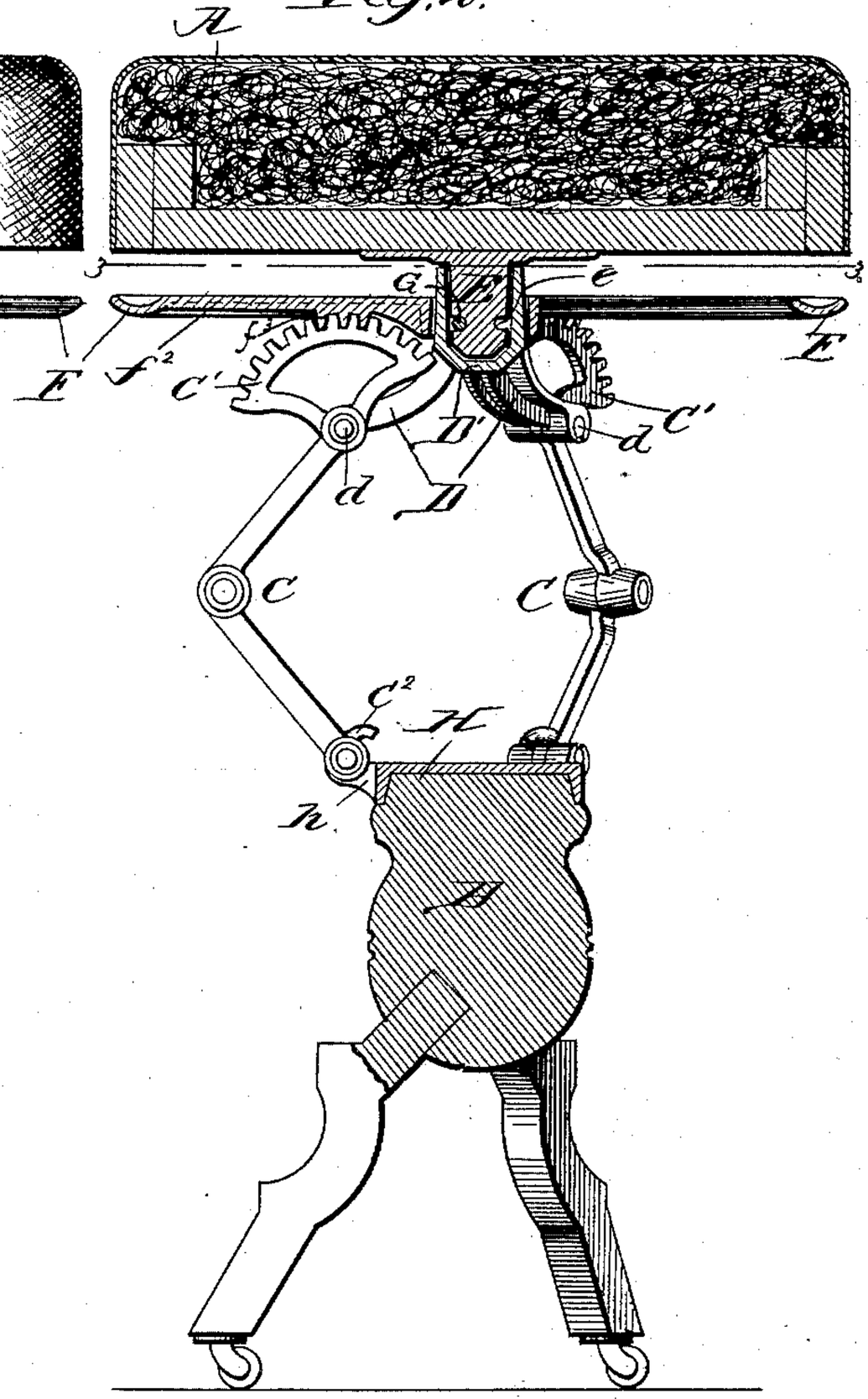
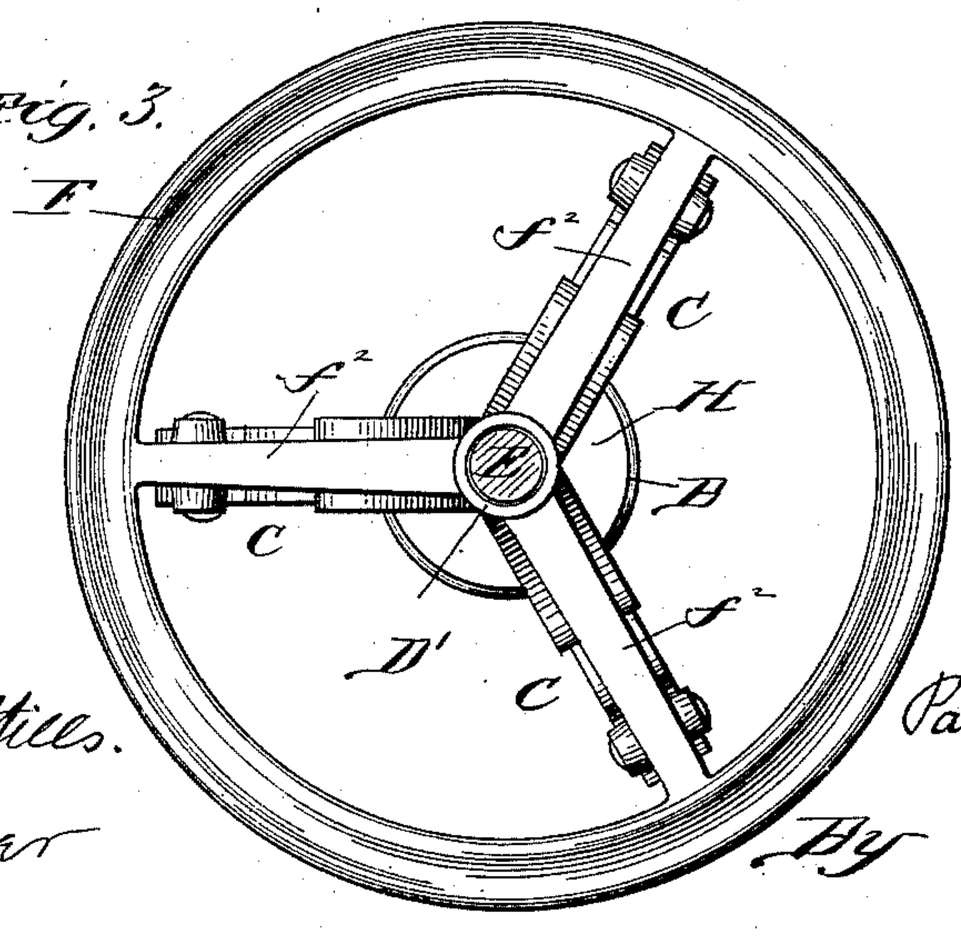


Fig. 3.



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(No Model.) 2 Sheets—Sheet 2.

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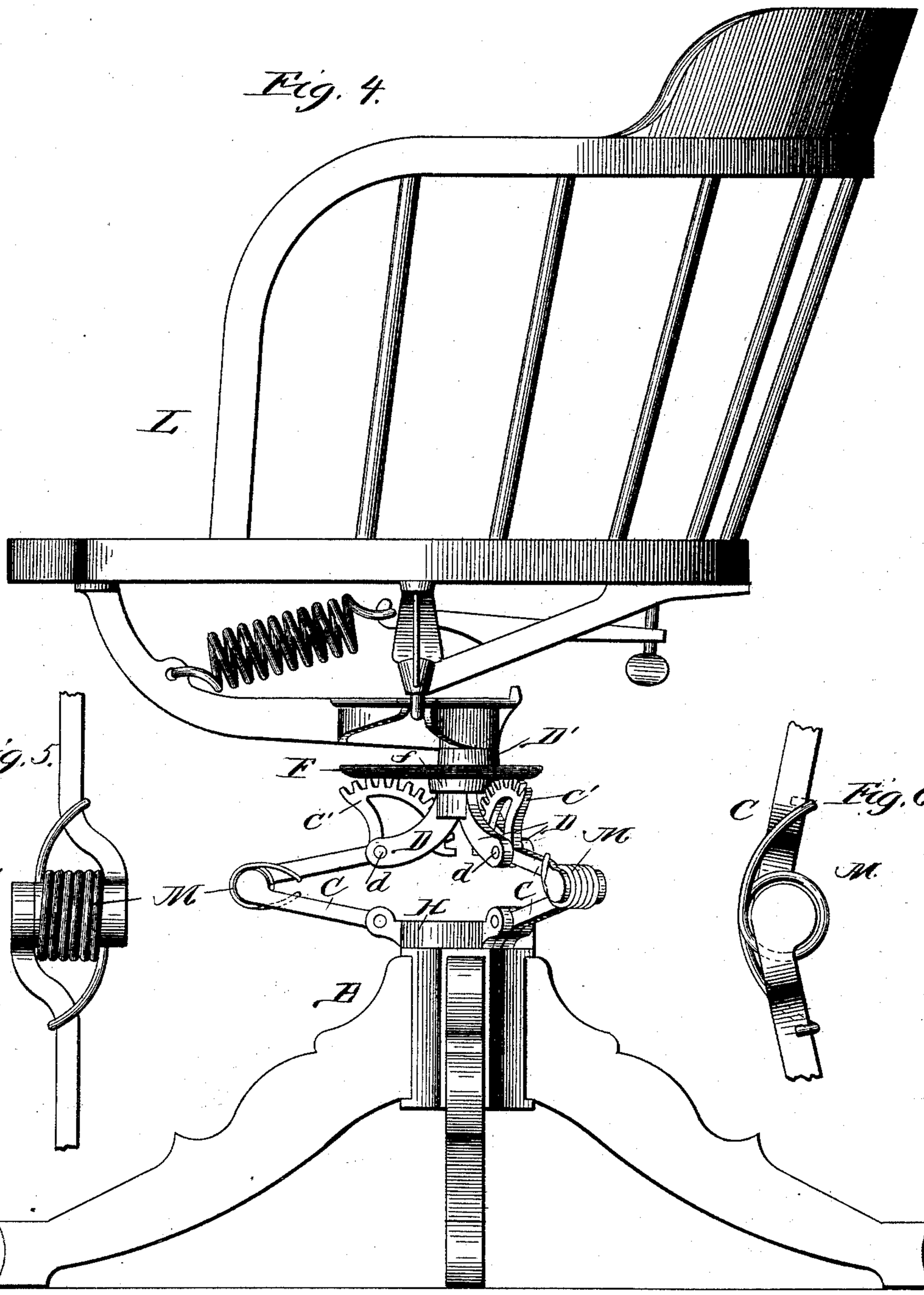
Fig. 4.



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UNITED STATES PATENT OFFICE.

PAUL A. BREDSVOLD, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF TO LOUIS H. BOURRET, OF SAME PLACE.

ADJUSTABLE CHAIR OR STOOL.

SPECIFICATION forming part of Letters Patent No. 483,777, dated October 4, 1892.

Application filed June 29, 1891. Serial No. 397,775. (No model.)

To all whom it may concern:

Be it known that I, PAUL A. BREDSVOLD, a subject of the King of Sweden and Norway, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Adjustable Chairs or Stools, of which the following is a specification.

My invention relates to chairs or stools which are adjustable in height, and has for its object to provide reliable and efficient means for locking and holding the seat in its vertical adjustment and for permitting such adjustment to be effected by a quick easy movement.

To the attainment of the foregoing and other useful ends, my invention consists in matters hereinafter set forth.

My invention is applicable to chairs or stools of all descriptions and can be used in connection with rotary and non-rotary chairs or stools and also employed in connection with chairs which are tilting or non-tilting.

In carrying out my invention I support the seat of a chair or stool by a set of adjustable toggles, which are at their lower ends pivotally supported upon a suitable base and at their upper ends pivotally connected with the seat, so that by adjusting (opening or closing) the toggles the seat can be raised and lowered at will.

As a means for locking the toggles in their adjustment I provide their upper ends with toothed portions, (which may be termed "rack-segments,") and in connection with such toothed portions or segments I provide a movable stop, which can be raised to free the segments and lowered to engage the same.

Certain details constituting matters of further improvement are hereinafter more particularly set forth.

In the accompanying drawings, Figure 1 represents in elevation a stool embodying my invention. Fig. 2 is a vertical central section of the same. Fig. 3 is a sectional plan, the section being on line 3 3 in Fig. 2. Fig. 4 represents in elevation a chair embodying my invention. Figs. 5 and 6 are detail views illustrating the application of springs M to the toggle-joints.

Referring to the first three figures of the drawings, A indicates the seat, and B a base from which the seat is supported by a set of elbow-jointed toggles C, arranged to bend outwardly from a common center or vertical line passing centrally through the base. The toggles are at their lower ends hinged to the upper portion of the base and at their upper end portions hinged to a holder having bearings D for the upper pivots for the toggles, said bearings formed by arms which extend downwardly and outwardly from a socket D′. The socket D′ receives a short stem E, which is secured to the under side of the seat and fitted to turn within said socket, in order that the seat can be revolved at pleasure. The toggles are extended above the points at which they are hinged to the bearings D by pivots *d*, and have their upper end portions, which are thus extended above the pivots, provided with gear or rack segments C′. The height of the seat is determined by the extent to which the toggles are adjusted, it being understood that their adjustment comprehends their opening and closing movements, and as a means for locking the toggles in any desired adjustment I provide a movable stop or locking plate F, having teeth with which the rack-segments can engage. The plate is fitted about the socket D′, so that it can be raised and lowered upon the same, and to such end the plate is provided with a central aperture, through which the socket extends. The socket constitutes a guide for the locking-plate, and in order to more effectively steady the latter the wall of its centrally-arranged opening is extended to form a neck *f*, which fits as a sleeve upon the socket.

While the locking-plate could be formed by a centrally-apertured disk provided with sets of teeth upon its under side, I prefer to form said locking-plate by a ring, which is united to the neck *f* by radially-arranged arms f^2, Fig. 3, and in such case I provide said arms with teeth upon their under sides, as in Fig. 2, wherein a set of teeth f^3 is shown upon the under side of one of the arms. When the rack-segments on the upper ends of the toggles are in engagement with the locking-plate the toggles will be held rigid, and hence the seat which is supported by the toggles will be properly upheld. In order to lower

the seat, it is only necessary to lift the locking-plate to an extent to free it from the rack-segments and then depress the seat, after which, by liberating the locking-plate, the same will drop into engagement with the rack-segments and again lock the toggles. An upward adjustment of the seat can be effected by raising the locking-plate free from the rack-segments and lifting the seat, which when thus drawn up will operate the toggles in a direction tending to straighten them out, it being observed that where the seat is non-revolving the arms D can be rigid with the seat, and that where the seat is adapted to revolve connection between the seat A and socket D′ can be made in any suitable way—for example, by a pin G, having its bearing in the socket and arranged to engage in an annular groove *e* in the stem E, whereby while the seat can revolve independently of the socket the result is otherwise the same as though the arms D, which form bearings for the pivots *d*, were secured to the seat. Where the base B is of wood, it can have a cap-plate H, provided with lugs *h*, for the pivots I at the lower ends of the toggles, or if the base is of metal the lugs can be cast with it.

The arms or bearings D are preferably arranged in pairs, or, what is the same thing, the socket is provided with laterally-arranged notched bearings, so that the toggles can be pivoted between the sides of the notches.

To prevent the toggles from being drawn out perfectly straight, I provide their lower ends with stops C^2, which will strike the top of the base B before the toggles can reach a straightened-out condition.

The locking-plate can be allowed to drop by gravity after it has been raised and liberated, or I could, obviously, use a spring as a means for insuring its drop and engagement with the rack-segments.

In Fig. 4 I have illustrated my invention applied to an office-chair L, which is understood to be an otherwise ordinary tilting and revolving chair. In said figure the parts corresponding with the parts in preceding figures are correspondingly lettered and will be understood without further description. In connection, however, with the toggles shown in Figs. 4, 5, and 6 I have provided springs M, which can also be applied to the toggles illustrated in the first three figures. The springs have a tendency to open the toggles, so that when the locking-plate is lifted free from the rack-segments the seat will be automatically raised by the springs, which are then free to open the toggles. The springs M are, however, more desirable in a chair such as shown in Fig. 4 than in connection with a stool such as shown in Figs. 1 and 2, for the reason that in the stool the locking-plate lies under so close to the seat that a person desiring to raise the same can upon taking the edge of the seat at opposite sides between the palms of his hands take the locking-plate with and lift it by his fingers and then easily raise the seat.

What I claim as my invention is—

1. A chair or stool comprising a seat, a set of elbow-jointed toggles C for the purpose set forth, arranged to bend outwardly from a common center and having their upper end portions pivoted to a holder, whereon the seat is sustained, and provided above the points whereat they are thus pivoted with toothed segments, a base whereon the lower ends of the toggles are pivotally supported, and a movable locking device arranged within reach of an occupant of the seat and applied for engaging and locking the toothed segments on the upper ends of the toggles, substantially as described.

2. The combination of the seat, its supporting elbow-jointed toggles C, arranged substantially as set forth and having their upper ends provided with toothed segments and pivoted to a holder whereon the seat is sustained, a base whereon the lower ends of the toggles are pivotally supported, and a vertically-movable locking-plate F, adapted for engaging and locking the toothed segments on the upper ends of the toggles, substantially as described.

3. The combination, substantially as hereinbefore set forth, of a seat provided with a stem E on its under side, a socket in which the stem is arranged to turn, arms D on the socket, a base, elbow-jointed toggles C, supported upon said base and pivoted to said arms, rack-segments C′ on the upper ends of the toggles, and a toothed locking-plate for engaging and locking the rack-segments.

4. The combination of the seat and a holder for the same, a base, the set of outwardly-bending elbow-jointed seat-supporting toggles C, pivotally supported at their lower ends upon the base and having their upper end portions pivotally connected with the holder for the seat and arranged for engagement with a locking-plate, and the vertically-movable locking-plate arranged under the seat in position for engaging the upper ends of the toggles and provided with toothed portions with which said upper ends of the toggles engage when the locking-plate is lowered into position to thus engage and lock the toggles, substantially as described.

5. The combination of the seat, the seat-holder comprising a socket in which the seat is swiveled, and a set of arms arranged to radiate from said socket, the locking-plate constructed with a centrally-arranged sleeve fitted to slide upon the socket and arms which radiate from said sleeve, a base, and a set of elbow-jointed toggles pivotally supported at their lower ends upon the base and having their upper ends pivoted to the arms on the socket and arranged for engagement with the arms of the locking-plate, substantially as described.

PAUL A. BREDSVOLD.

Witnesses:
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MARGARET M. WAGNER.