(No Model.)

H. PARRY.

CHAIR.

No. 346,311. Patented July 27, 1886.

Fig. 1.

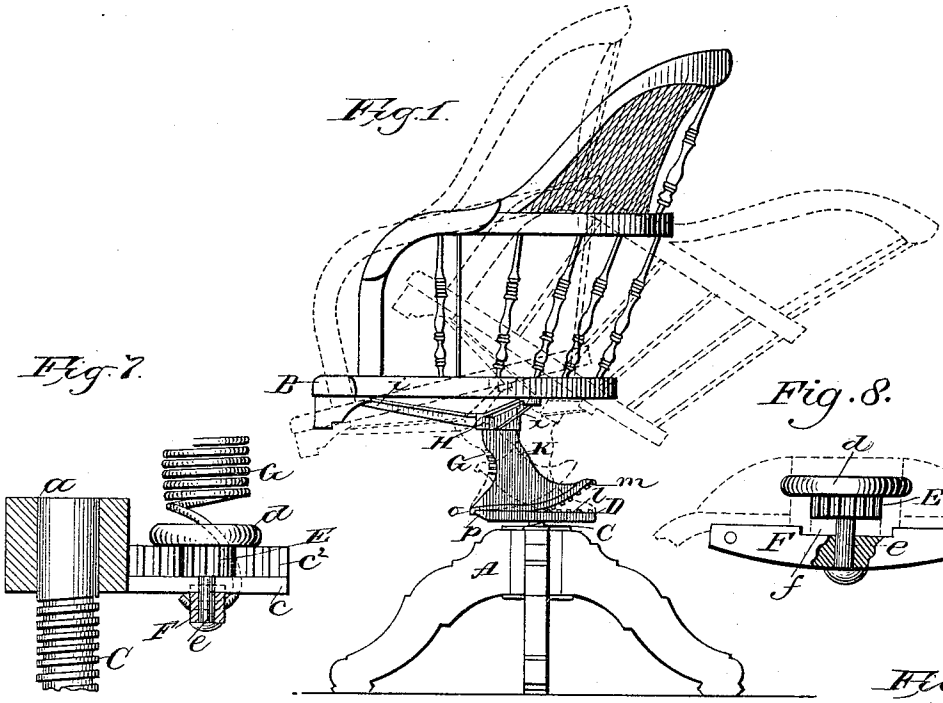


Fig. 7.

Fig. 8.

Fig. 3.

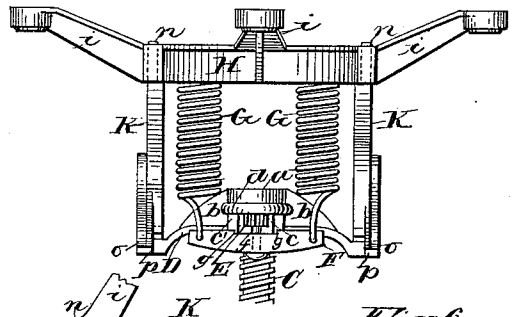


Fig. 2.

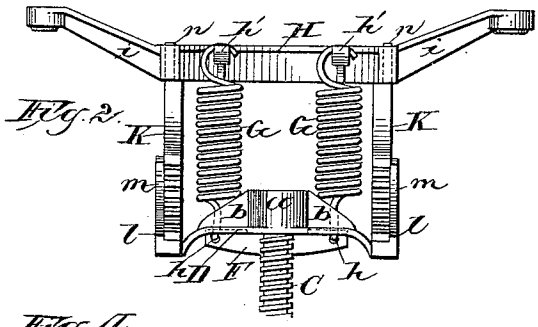


Fig. 4.

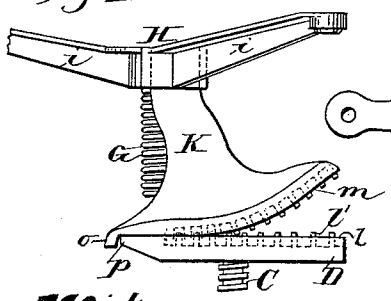


Fig. 5.

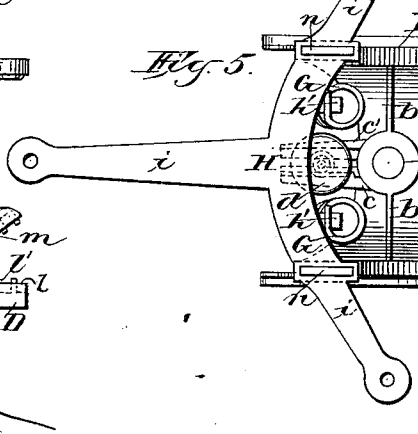
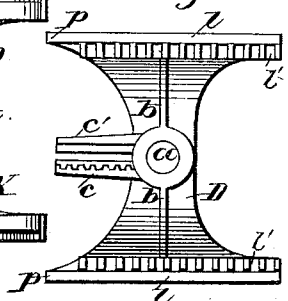


Fig. 6.



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UNITED STATES PATENT OFFICE.

HENRY PARRY, OF MILWAUKEE, WISCONSIN.

CHAIR.

SPECIFICATION forming part of Letters Patent No. 346,311, dated July 27, 1886.

Application filed October 23, 1885. Serial No. 180,698. (No model.)

To all whom it may concern:

Be it known that I, HENRY PARRY, of Milwaukee, in the county of Milwaukee, and in the State of Wisconsin, have invented certain new and useful Improvements in Chairs; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention relates to adjustable tilting-chairs; and it consists in certain peculiarities of construction, as will be hereinafter described.

In the drawings, Figure 1 represents a side elevation of my improved chair; Fig. 2, a rear elevation of the mechanism for connecting the stand and seat or body portion of the chair; Fig. 3, a front elevation; Fig. 4, a side elevation, and Fig. 5 a top plan view, of the same; Fig. 6, a top plan view of the base-plate; Fig. 7, a vertical longitudinal section of the latter, showing in elevation the means for regulating the tension of the springs; and Fig. 8 is a detail view of the horizontal recessed bar and the pinion journaled thereto.

The stand A and seat and body portion B of the chair are of the ordinary construction, the former being provided with the usual socket to receive a screw, C, by means of which latter said seat or body portion can be vertically adjusted, and at the same time permit the occupant to readily turn from one position to another within the radius of a circle. The screw C has its upper end rigidly secured in a socket, *a*, of a base-plate, D, said socket being strengthened by webs *b*, and extended from the front of the base-plate are arms *c c'*, recessed upon their inner upper faces, the one *c* being provided with teeth c^2, which form a rack for a pinion, E, while the one *c'* acts as a stay and guide for said pinion. This pinion E is preferably formed with a hand-wheel, *d*, though a crank or other equivalent may be employed, and the stem *e* of said pinion is suitably connected to a bar, F, having a central recess, *f*, adapted to come against the under side of the extended arms *c c'*, said arms being formed with shoulders *g*, to act as guides for the bar F and prevent it from being laterally displaced, this construction being illustrated in Fig. 3.

The bar F is provided with eyes *h*, in which are secured the lower ends of springs G, the upper ends of said springs being secured to ears *h'* of a suitable spider-frame, H, the arms *i* of which latter are adapted to be detachably united to the seat or body portion B of the chair by means of screws or other suitable fastenings.

It will be noticed that the springs G form the sole means for uniting and retaining in operative position those parts of the chair depending from its body portion B with the vertically-adjustable base-plate D. The springs G being normally in a vertical position, their tension may be increased by operating the pinion E so as to draw the spring-bar F and the lower ends of said springs toward the front of the chair. By this means of increasing the tension of the springs the chair is readily adjusted to suit persons of more than ordinary weight without stretching said springs, the increased tension of the springs being obtained by changing their fulcrums so as to increase their resistance.

The upper outer sides of the base-plate D are formed with bearing-faces *l*, and just inside these faces are located a series of teeth which form racks *l'*, for engagement with toothed segments K, said segments being provided with bearing-faces *m*, adapted to come in contact with those on the base-plate, and the upper ends, *n*, of these segments are tenoned in mortises in the spider-frame H, as shown by Fig. 5. The bearing-faces of the base-plate are on a horizontal plane, while those of the segments at their forward ends are on a similar plane for a certain distance toward their rear. The central portions of the latter bearing-faces are slightly curved and the extreme rear portions are at an angle, this construction being similar to the form of an ordinary chair-rocker.

When the chair seat or body B is in its normal position, the horizontal portion of the bearing-faces of the segments and the forward portion of the similar faces on the base-plate will be parallel or in direct contact, and as the occupant of the chair rocks or tilts back the center and rear portions of the former bearing-faces come in gradual contact with the horizontal faces of the latter until the limit of movement is reached, and at this point the extreme rear portions of the bearing-faces of the segments are parallel with and directly upon those of the base-plate, while the forward portions of said bearing-faces of the seg-

ments are at an angle, this movement and the relative position of the segments being shown by dotted lines, Fig. 1. The teeth of the segments and base-plate project beyond the bearing-faces of their respective parts, and the outer sides of the teeth of the former of said parts are designed to come upon the inside of the bearing-faces of the latter as the chair is either in its normal or tilted position. These teeth by their engagement act to retain the segments in operative position with relation to the base-plate by preventing any slipping or displacement in either a longitudinal or lateral direction. The power of the spring keeps the bearing-faces of the segments and those of the base-plate in operative contact, so that the rocking or tilting of the chair-body is accomplished by the movement of said segments upon the base-plate.

It will be understood that the teeth of the segments have no direct contact with the base-plate other than with the racks thereon, and this engagement is entirely for the purpose of retaining the parts at all times in operative position, and that the rocking or tilting movement of the chair-body is effected by the peculiar construction of the bearing-faces of said segments and their operative contact with the bearing-faces of the base-plate.

By the peculiar construction of the bearing-faces of the segments a forward movement of the chair-body is permitted after the horizontal portions of the bearing-faces of said segments have come into contact with the bearing-faces of the base-plate, and thus the occupant is permitted to have a greater rocking motion, or to bring himself nearer a desk without in any way tipping the stand portion A, this forward movement being entirely confined to said chair-body, as shown by dotted lines, Fig. 1. When this forward movement of the chair seat or body portion reaches its extreme limit, the teeth on the segment are drawn out of engagement with the racks on the base-plate, and to prevent any slipping of said segments in a rearward direction I turn their forward ends *o* down so as to come against the forward ends, *p*, of the base-plate, and at the same time these turned-down ends act as bearings to facilitate said forward movement of the chair seat or body portion from its normal or vertical position.

I am aware that chairs having the seat connected by springs to a cross bar or board provided with a depending screw operative in a bearing attached to the upper ends of the legs, but having no spider-frame with depending segments designed to bear upon a base-plate, are old; and I am also aware that chairs have been constructed that show a base or pedestal having horizontal bearing-faces for rocker-shaped lower portions of the seat-frame, correspondingly formed racks attached to these parts to come in operative engagement, and springs uniting said base and seat-frame, and such I do not claim, as these chairs necessarily have the seat-frame directly supported by the base or pedestal, and in consequence thereof these parts must be of the same dimensions as to width, while my invention relates to chairs that employ a spider-frame that can be applied to any form of seat, regardless of dimensions, and that have a depending screw capable of operative arrangement with relation to any suitable stand, the racks in my device being integral with the base-plate and segments depending from the spider-frame, instead of detachably connected thereto.

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

1. In a tilting-chair, a spider-frame provided with suitable mortises, depending segments having their upper ends tenoned in said mortises and their lower ends provided with bearing-faces and rack-teeth, and a vertically-adjustable base-plate having bearing-faces and rack-teeth designed to come in operative contact with those of said segments, as set forth.

2. In a tilting-chair, a base-plate formed with forwardly-extended arms, one of which latter is provided with teeth to form a rack, a pinion adapted to engage said rack, a bar secured to the pinion-stem, and springs having their ends secured to said bar and the spider-frame, substantially as and for the purpose specified.

3. In a tilting-chair, a base-plate formed with forwardly-extending arms recessed upon their upper and shouldered upon their lower faces, and one of these arms provided with teeth to form a rack, a pinion provided with a hand-wheel for operating the same and adapted to engage said rack, a bar secured to the pinion-stem and provided with a central recess designed to engage the shouldered faces of the base-plate arms, and also provided with eyes to receive the lower ends of springs having their upper ends connected to the spider-frame, substantially as set forth.

4. In a tilting-chair, a vertically-adjustable base-plate provided with horizontal bearing-faces, a spider-frame provided with depending segments having bearing-faces adapted to come in contact with those of the base-plate, and said parts operatively united by suitable springs, substantially as and for the purpose set forth.

5. In a tilting-chair, a vertically-adjustable base-plate provided with horizontal bearing-faces, and a series of teeth located immediately adjacent to said bearing-faces, a spider-frame provided with depending segments having bearing-faces, and teeth adapted to respectively come in contact with said bearing-faces and engage the teeth on the base-plate, substantially as set forth.

6. In a tilting-chair, a vertically-adjustable base-plate provided with horizontal bearing-faces, and a series of projecting teeth on the inside, immediately adjacent to said faces, a spider-frame provided with depending segments having bearing-faces, and projecting teeth adapted to respectively come in contact

with said bearing-faces and engage the teeth on the base-plate, the bearing-faces of the segments having a curved central portion, and their forward and rear portions at an angle to said central portion and adapted to alternately come in parallel contact with the horizontal bearing-faces of the base-plate, substantially as set forth.

7. In a tilting-chair, a vertically-adjustable base-plate provided with horizontal bearing-faces, two segments adapted to be connected to the chair-seat through the medium of a spider-frame, and having bearing-faces designed to come in operative contact with those on the base-plate, and the forward ends of said segments turned down and adapted to come against the forward ends of the base-plate, substantially as and for the purpose set forth.

8. In a tilting-chair, a spider-frame having ears h', a base-plate provided with arms c c', and the horizontal adjustable bar F, provided with eyes h, in combination with the springs G G, designed to have their terminals respectively secured to the base-plate ears and the eyes of said adjustable bar, as set forth.

In testimony that I claim the foregoing I have hereunto set my hand, at Milwaukee, in the county of Milwaukee and State of Wisconsin, in the presence of two witnesses.

HENRY PARRY.

Witnesses:

H. G. UNDERWOOD,

N. E. OLIPHANT.