R. B. PUE.

CHAIR.

APPLICATION FILED MAY 15, 1914.

1,237,956.

Patented Aug. 21, 1917.

2 SHEETS—SHEET 1.

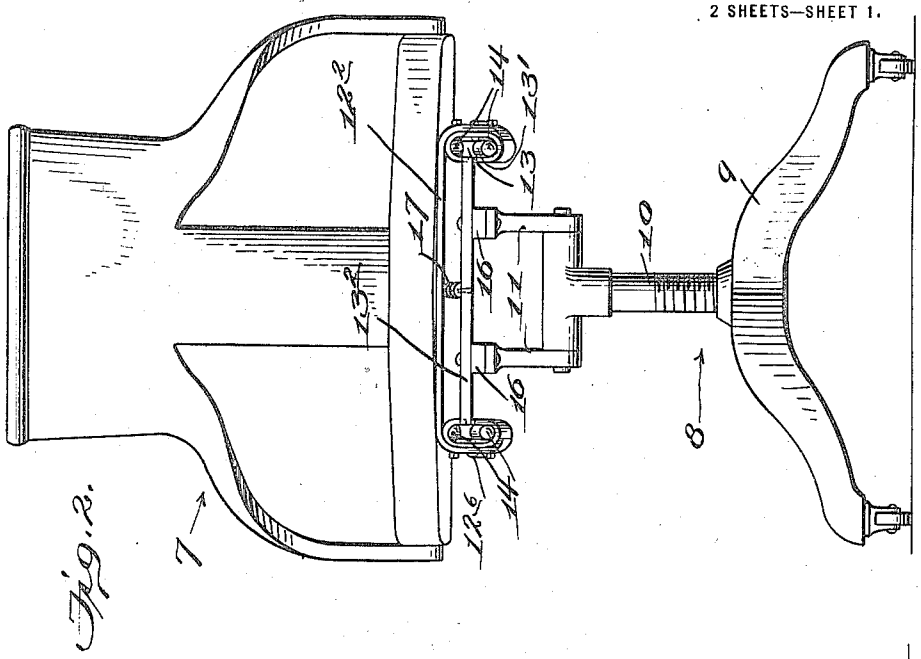

Fig. 2.

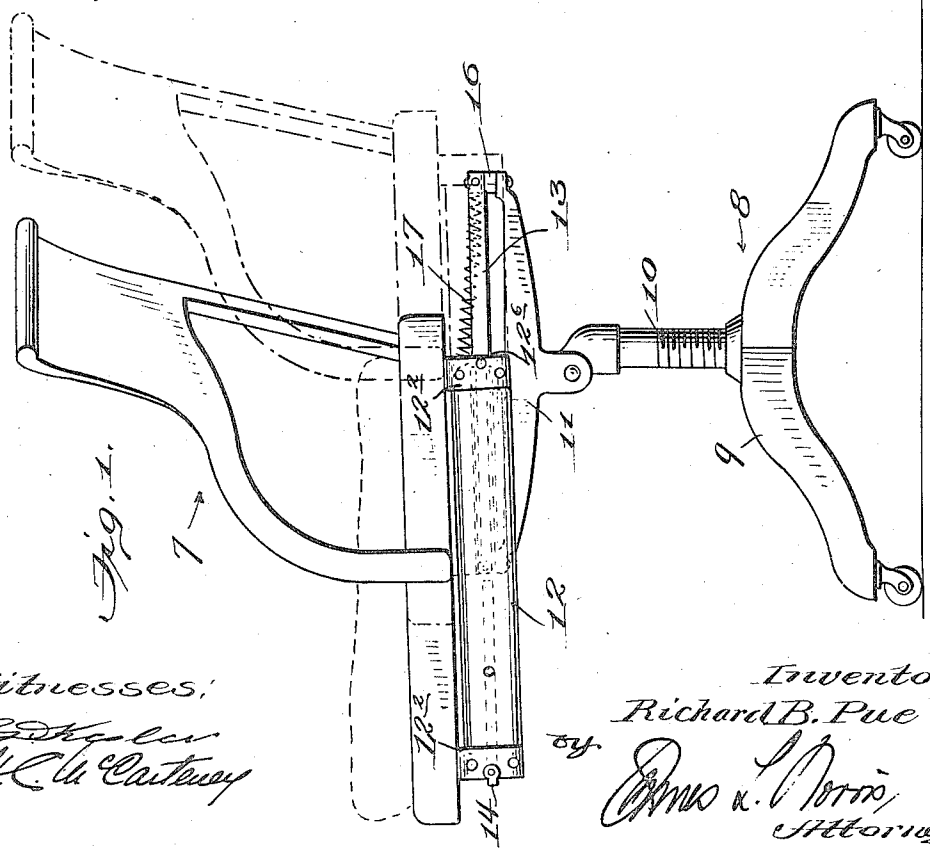

Fig. 1.

Witnesses:

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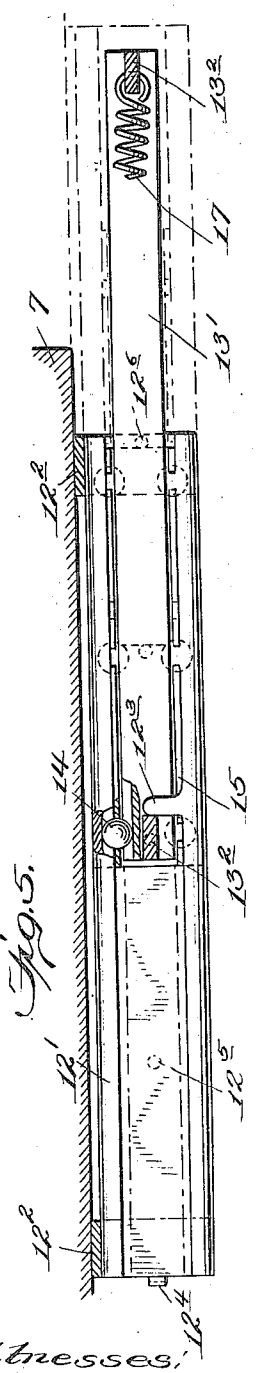

Fig. 5.

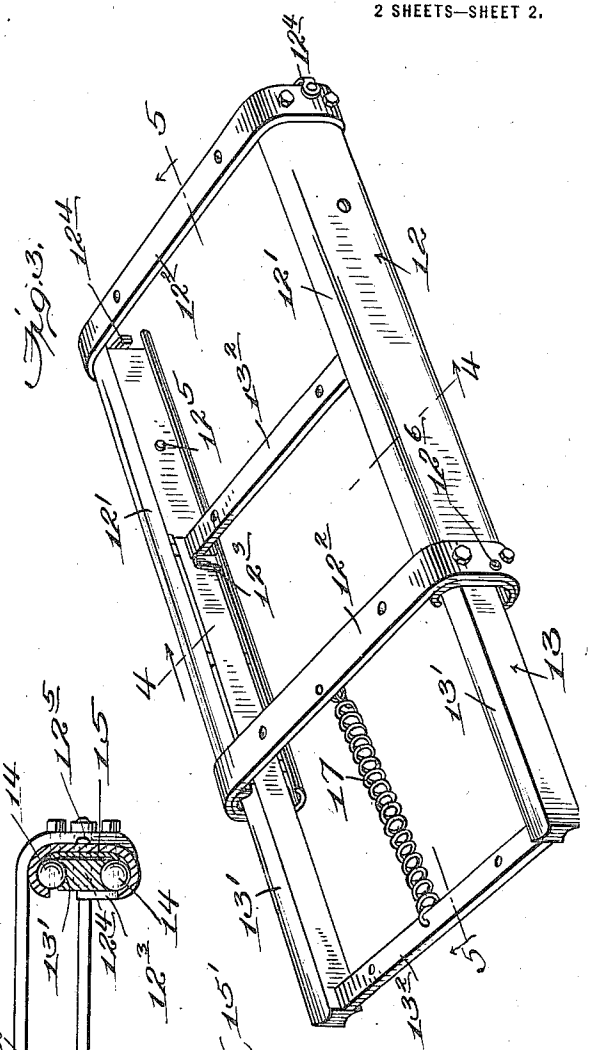

Fig. 3.

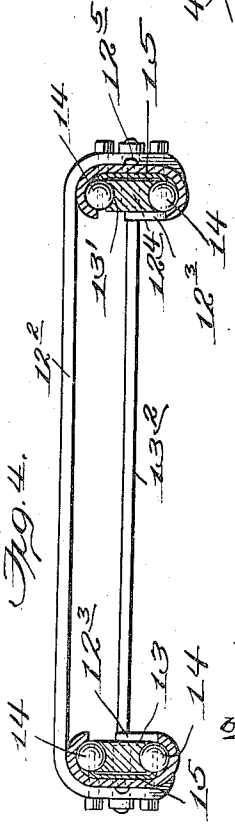

Fig. 4.

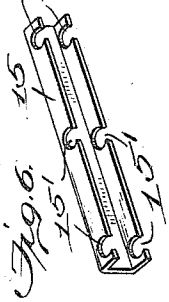

Fig. 6.

Witnesses,

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UNITED STATES PATENT OFFICE.

RICHARD B. PUE, OF BALTIMORE, MARYLAND.

CHAIR.

1,237,956. Specification of Letters Patent. Patented Aug. 21, 1917.

Application filed May 15, 1914. Serial No. 838,800.

To all whom it may concern:

Be it known that I, RICHARD B. PUE, a citizen of the United States, residing at Baltimore, in the State of Maryland, have invented new and useful Improvements in Chairs, of which the following is a specification.

The present invention has reference to chairs, and it proposes an article of furniture of the class or character specified which is designed primarily for office or desk work, and which embodies certain hereinafter described improvements in or relating to the mounting of the seat, whereby the latter is enabled to slide forward automatically on its stand, under the weight of the occupant, thus bringing the said occupant closer to the desk or table at which he happens to be working without effort on his part, and, also, increasing his range of reach on all sides.

The invention further proposes an office or desk chair of the general type above described in which the seat is automatically returned to its original position as soon as the occupant rises, and it contemplates, above all, a mounting which may be readily applied to any conventional form of chair without requiring rearrangement of parts, or the employment of additional parts other than those comprehended in the mounting itself, and which will in no way interfere with the ordinary revolving and tilting movements of the seat.

With the above and other objects in view, the invention consists in the construction, combination and arrangement of parts, as hereinafter described and claimed, an embodiment of the said invention being illustrated in the accompanying drawing, whereof:—

Figures 1 and 2 are side and rear elevations, respectively, of the improved chair, the latter appearing in full lines, (Fig. 1), in its forward or advanced position, and in dotted lines in its normal position;

Fig. 3 is a perspective view of the mounting, *per se;*

Figs. 4 and 5 are enlarged transverse and longitudinal sections of said mounting, respectively, taken on lines 4—4 and 5—5, Fig. 3; and

Fig. 6 is a perspective view of one of the cages for the anti-friction bearings.

Referring more particularly to said drawing, 7 and 8 designate, respectively, the seat and stand elements of a revolving and tilting desk-chair of conventional type, the second-named element embodying the usual base 9 and adjusting screw 10, to which latter is pivoted the forked bracket 11 that supports the seat and is directly affixed thereto.

According to the present invention, however, there is interposed between the chair seat and the aforementioned bracket 11 a pair of coacting frames 12 and 13 which constitute the improved mounting and which are designed for relative movement, one frame being fastened to said bracket and the other to the chair seat, in consequence whereof provision is made for the desired forward and backward movement of said seat. Both frames are of rectangular shape and, substantially, of the same general dimensions, and they are so constructed and arranged that one of them incases, so to speak, and thus acts as a carrier for the other. Either frame may be attached to the bracket 11, and the other to the chair seat, but in the preferred form of the invention, which, for all practical purposes, is that illustrated, the outer or casing frame 12 is attached to the seat, and the inner frame 13 to the bracket. The former frame may, therefore, be considered as the movable or sliding member of the mounting, and the latter frame as the fixed member.

From Fig. 3, wherein the two frames 12 and 13 are best shown, it will be seen that each comprises a pair of longitudinal side bars or rails, and front and rear cross-pieces connecting the corresponding ends thereof. The bars 13′ of the fixed frame 13 are solid and have their upper and lower faces concaved throughout their entire extent, thereby providing tracks in which the spherical anti-friction rollers 14 travel, the rollers associated with each of such bars being mounted in a cage 15. The cross-pieces 13^2 of this frame are likewise solid. The bars 12′ of the sliding frame 12 each consists of connected top and bottom members, between which the bars 13′ are slidably fitted, and these bars 12′, as shown, are preferably constructed of steel tubes which are slit longitudinally and slightly flattened into elliptical shape in section, by reason of which construction it will be seen that their curved top and bottom portions will project over and under the concave faces of the bars 13′, so as to constitute the complemental parts

of the races for the bearings. The cross-pieces 12^2 are in the nature of straps, which extend across the tops of the bars 12′ and are bent downward at their ends and secured to the sides of said bars, and it is to these straps or cross-pieces that the chair seat is directly fastened. The two sides or arms of the bracket 11 are fastened at their terminals to the cross-pieces 13^2 of frame 13.

In consequence of the arrangement above described, it will be apparent that the seat of the chair is capable of a forward movement bodily, irrespective of the direction in which the chair is facing, and in order to effect such movement automatically, when the chair is occupied, the rear end of the stationary frame 13 may be raised slightly above its front end by means of suitable lifter blocks 16, which are interposed between the rear cross-piece 13^2 and the bracket arms, as depicted in Fig. 1. Accordingly, as soon as the chair is occupied, the seat will be caused to move forward solely by the weight of the occupant, friction being practically eliminated by the bearings 14. In this way, the occupant, when working at a desk, table or the like, is drawn toward the same without effort on his part, and thus caused to assume a more nearly correct position for the work with which he may happen to be busied, and in like manner, his range of reach is increased and he is enabled to reach objects which would otherwise require his leaving the chair. It is intended, however, to restrict the forward movements of the chair seat to times when it is actually occupied, and, moreover, to return the seat to its original position as soon as the occupant rises, this being effected by a suitable retractile spring or springs 17, here shown as connected at opposite ends to the rear cross-pieces 12^2 and 13^2 of the frames 12 and 13, respectively.

To limit the movements of the sliding frame in opposite directions, stops are made use of, these stops being here represented as located both at the front ends of the side bars 12′ of the frame mentioned, and intermediate the front and rear ends. The latter, or intermediate stops 12^3 are designed to terminate the forward movement of the frame, and effect such termination by engaging the forward cross-piece 13^2, while the end stops 12^4 similarly engage the forward ends of the frame bars 13′ and are constituted by horizontal lugs or fingers which are secured directly to the down-turned ends of the cross-pieces 12^2, the said intermediate stops 12^3 being formed by upstanding lugs or fingers constructed upon the lower longitudinal edges of bars 12′ and lined or faced, if desired, by suitable cushioning material.

The cages 15, which carry the bearing rollers 14, are preferably made of sheet metal bent into C-section, as shown in Fig. 6, this construction enabling them to clasp the bars 13′, and their upper and lower wings to extend across the corresponding concave faces of said bars, the seats 15 wherein the rollers are disposed being formed by openings 15′ in said wings. Stops are also provided in connection with these cages to prevent their displacement from bars 13′, front and rear pairs of screws 12^5 and 12^6, which are set laterally into said bars at the proper points, being preferably employed. Consequently, when the sliding frame reaches the end of its forward movement, the stops 12^6 will contact with the rear ends of the side walls of the cages, and, similarly, the stops 12^5 will contact with the forward ends of said walls at the conclusion of the return movement of the frame.

It is to be understood that the invention will find its application not only in connection with revoluble chairs, as above set forth, but also with automobile seats, car seats, dining chairs for steam ships, etc.

The invention, its complete construction and manner of operation, and its advantages are believed to be apparent from the foregoing, and, accordingly, to require no further description.

It may be stated, however, that the arrangement of the two frames may be reversed and the outer frame attached to the arms of bracket 11 while the inner frame is attached to the chair. In such instance, the outer frame will be fixed and the inner frame movable, but as in all other respects the arrangement is exactly identical with that shown and described, additional showing and description is deemed unnecessary.

I claim:—

1. An extension mounting for sliding chairs or seats, adapted to be interposed between the seat proper and the stand of the chair or seat, and comprising co-acting, slidably-engaged fixed and movable rectangular frames, each composed of a pair of longitudinal side members and front and rear cross-pieces connecting the corresponding ends thereof, one of said frames incasing the other and acting as a carrier therefor; a pair of stops provided on the side members of the movable frame intermediate the ends thereof and arranged for engagement with the front cross-piece of the fixed frame, to limit the forward movement of the movable frame; and a separate pair of stops provided upon one end of the aforesaid side-members and arranged for engagement with the front end of the side members of the said fixed frame, to limit the rearward movement of the movable frame.

2. An extension mounting for sliding chairs or seats, adapted to be interposed between the seat proper and the stand of the

chair or seat, and comprising co-acting slidably engaged, fixed and movable rectangular frames, each composed of a pair of longitudinal side members and front and rear cross-pieces connecting the corresponding ends thereof, the movable frame incasing the fixed frame and acting as a carrier therefor; a pair of oppositely-located upstanding stops provided upon the lower edges of the side members of the incasing frame intermediate the ends thereof and arranged for engagement with the front cross-piece of the fixed frame, to limit the forward movement of the movable frame; and a separate pair of stops provided upon the front ends of the said side members of the incasing frame and projecting laterally inward into position for engagement with the front ends of the side members of the said fixed frame, to limit the rearward movement of the movable frame.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

RICHARD B. PUE.

Witnesses:
FRANCES T. BANNON,
SARAH E. BAKER.