

G. J. TRAVERS.
SPRING BACK FOR CHAIRS.
APPLICATION FILED JULY 8, 1904.

Fig. 1.

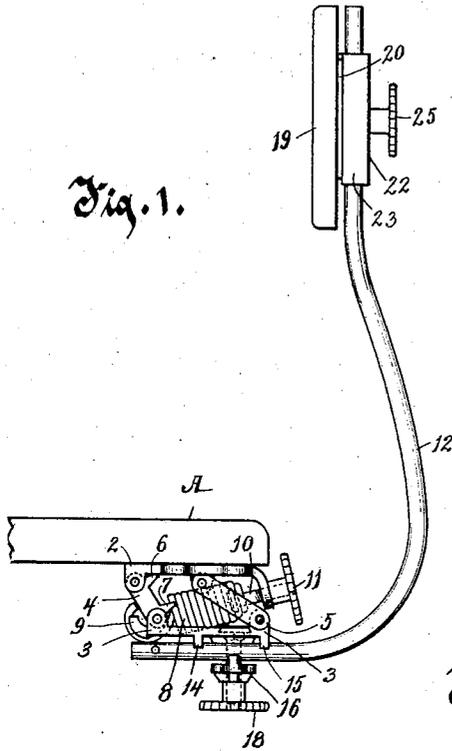


Fig. 2.

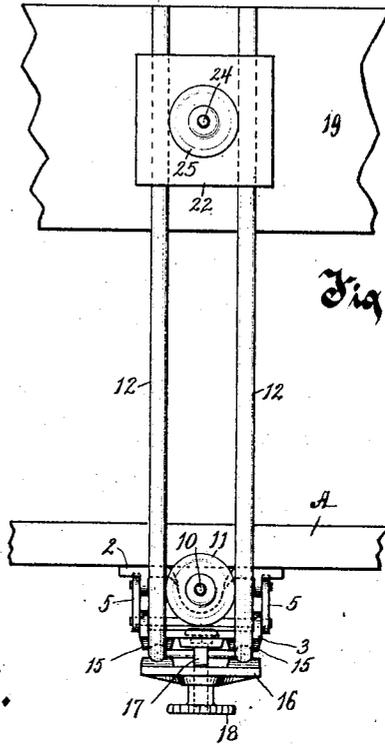


Fig. 6.

Fig. 3.

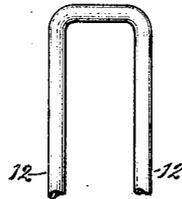
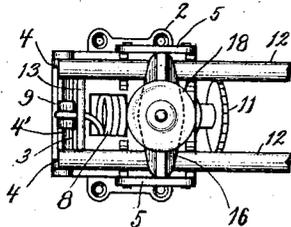


Fig. 4.

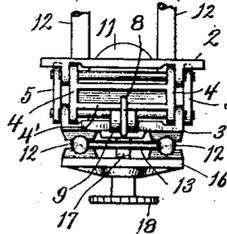
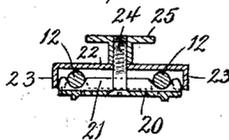


Fig. 5.



Witnesses:

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UNITED STATES PATENT OFFICE

CHARLES J. TRAVERS, OF MILWAUKEE, WISCONSIN.

SPRING-BACK FOR CHAIRS.

SPECIFICATION forming part of Letters Patent No. 786,326, dated April 4, 1905.

Application filed July 8, 1904. Serial No. 215,753.

To all whom it may concern:

Be it known that I, CHARLES J. TRAVERS, residing in Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented new and useful Improvements in Spring-Backs for Chairs, of which the following is a description, reference being had to the accompanying drawings, which are a part of this specification.

My invention relates to improvements in a chair of a kind adapted to be used by a person operating a type-writer, a calculating-machine, or engaged in any employment that requires or results in movement of the back or upper portion of the body of the person at or above the waist.

The object of the invention is to provide a back for the chair that will yield in the direction and corresponding with the movements of the person so employed who is using the chair, and thus obviate the rubbing of the chair-back against the person that occurs with those chair-backs that are rigid or that do not have a yielding movement that corresponds in direction and amount with the movement of the body of the person against which the chair-back bears.

The invention consists of the spring-back chair, its parts, and combinations of parts, as herein described and claimed, or the equivalents thereof.

In the drawings, Figure 1 is an elevation of my improved spring-back shown as attached to a fragment of a chair-seat. Fig. 2 is an elevation of the improvement as seen from the rear. Fig. 3 is an under side view of the means for attaching the spring-back to the seat of a chair and for securing the yielding or spring action of the back. Fig. 4 is a front view of that portion of the construction shown in Fig. 3. Fig. 5 is a detail, partly in section, of the means for clamping the spindles to the supporting devices. Fig. 6 shows spindles connected integrally.

In the drawings, A indicates a chair-seat. A plate 2 of suitable size and form is adapted to be secured to the under side of the chair-seat A by screws, for which holes are provided in the plate, or the plate may be secured to the chair-seat by any other means adapted

for such purpose. A spindle-plate 3 is suspended from the plate 2 by means of a pair of short links 4 at the front and a pair of longer links 5 at the rear, the links being pivoted at their ends, respectively, to lugs on the plates 2 and 3. The long links 5 are pivoted to the plate 2 at a little distance at the rear of the pivoting of the short links 4 thereto, and at their lower ends the long links 5 are pivoted to the spindle-plate 3 at a greater distance from the transverse line of the pivoting of the links 4 to the plate 3 than the distance at which the links 5 are pivoted to the plate 2 from the links 4. The result of this construction is that the plate 3 at its front end is adapted to swing through a small arc about the axis of the pivoting of the links 4 to the plate 2, while at its rear end the plate 3 is adapted to swing through a greater arc about the axis of the pivoting of the links 5 to the plate 2, whereby a certain downward and backward movement of the back of the chair is secured, which is a chief object of my invention. The short links 4, which are located opposite each other and are connected together by a cross-bar, are provided with laterally-projecting stops 6 at the top, adapted to contact against the plate 2 and prevent further rearward movement of the spindle-plate 3, and the links 4 are also provided near their lower ends with the laterally-projecting stops 7, adapted to contact with the plate 3 when that plate swings toward the front, and thus prevent further movement of the plate in that direction.

For holding the spindle-plate 3 yieldingly in the initial position shown in Fig. 1 a coiled-wire spring 8 is employed, which spring at its front end is anchored to a suitable tie-piece 9, forming a part of the spindle-plate 3 at its front end, and a screw 10, passing through a depending portion of the plate 2, is provided with a head that engages the rear end of the spring 8, and this screw is provided with a milled nut 11, turning on it against the depending part of the plate 2, whereby by turning the nut the tension of the spring can be adjusted.

The spindle-plate 3 is intended and adapted to support back spindles 12, of which there

are advisably two, and there may be more. These spindles are advisably constructed of round steel-rods so formed that their lower ends are disposed horizontally, while at the rear of the chair-seat they are turned and extend upwardly substantially parallel to each other. At their front ends these spindles may be secured to each other at a distance apart by a transverse rod 13. On the under side of the spindle-plate 3 there are two sets of transversely-disposed ribs 14 15, the ribs of each set being in alinement endwise and located near the respective edges of the plate, while the sets of ribs are separated from each other, the rear set 15 being located near the rear end of the plate 3. These ribs are provided with sockets adapted to receive bearing upwardly therein the spindles 12. A clamping-plate 16, located underneath the spindles 12 and between the sets of ribs 14 and 15, bears upwardly against the spindles and clamps them to the ribs of the plate 3 firmly by means of a screw 17, the head of which screw fits in a socket therefor in the upper surface of the plate 3 and extending through the plate 3 passes also through the clamping-plate 16 and is provided with a milled nut 18, that turns thereon against the plate 16.

The back 19 is mounted adjustable vertically on the spindles 12 by means of a back plate 20, that is secured to the back by any suitable means. This back plate is provided with transverse ribs 21, which are recessed or socketed to receive therein the spindles 12, and a clamping-plate 22, provided with projecting side walls or flanges 23, which fit loosely about the edges of the plate 20 and which upper and lower flanges are provided with recesses to fit on and about the spindles 12, is held to the plate 20, thereby clamping the spindles 12 securely but releasably, so as to be adjustable thereon by means of a screw 24, the head of which fits to the surface of the plate 20 and passes through the plate 20 and through the clamping-plate 23 and is provided with a milled nut 25, which turns thereon against the plate 24.

It will be understood that while the back 19 is held in the initial position (shown in Fig. 1) by means of the swinging links 4 and 5 and the spring 8 under such strain thereon as is likely to be applied thereto by the person sitting on the chair and bearing against the back while that person is operating a type-writer or other machine in a similar manner the back by the yielding of the spring 8 could be forced downwardly and rearwardly, the movement of the back being controlled by the movement permitted to it by the swinging of the shorter links 4 and the longer links 5. Such movement of the back of the chair will be found to harmonize very closely with the movement of the back of the person while engaged in manipulating a type-writer or analogous machine.

The spindles may be connected together as shown in Fig. 6, if desired, and in such case the transverse rod 13 may be omitted.

What I claim as my invention is—

1. A spring-back for a chair, comprising a back, a plurality of spindles on which the back is mounted, means for holding the lower ends of the spindles, short front links and longer rear links supporting movably the means for holding the lower ends of the spindles, and a spring adapted to hold the spindle-holding means in its initial upper and rearward position yieldingly.

2. In a spring-back for a chair, a plate adapted to be secured to a chair-seat, a set of short links depending therefrom, a set of longer links also depending from said plate at the rear of the short links, a spindle-plate pivoted and supported on the short and the long links, means for clamping spindles to the spindle-plate, and a spring adapted to hold the spindle-plate yieldingly in its upper and rearward position.

3. In a spring-back for a chair, a plurality of back-carrying spindles, a spindle-plate provided with sockets for the spindles, a clamping-plate bearing against the spindles, means for holding the clamping-plate to the spindle-plate and clamping the intermediate spindles, a supporting-plate, short links suspending the spindle-plate from the supporting-plate at the front, longer links suspending the spindle-plate from the rear of the short links, and a spring holding the spindle-plate to its upper and rearward position yieldingly and adapted to permit it to go down and forward on strain applied rearwardly on the upper portion of the spindles.

4. In mechanism for supporting a spring-back for a chair, a supporting-plate adapted to be secured to the under side of a chair-seat, a spindle-plate, front short links pivoted to the supporting-plate and to the supported spindle-plate and provided with stops adapted to contact with said plates and limit the swing of the links and the movement of the spindle-plate, longer rear links pivoted to the supporting-plate and to the spindle-plate, and a spring interposed between the supporting-plate and the spindle-plate adapted to hold the spindle-plate in its upper and rearward position yieldingly.

5. In mechanism for supporting a spring-back for a chair, a supporting-plate adapted to be secured to the under side of a chair-seat, a spindle-plate, front short links pivoted to the supporting-plate and to the supported spindle-plate, longer links pivoted at a distance at the rear of the short links to the supporting-plate and pivoted to the supported spindle-plate at a greater distance to the rear than the distance at which these longer links are pivoted on the supporting-plate at the rear of the short links, and a spring inter-

posed between the supporting-plate and the spindle-plate adapted to hold the spindle-plate yieldingly in its upper and rearward position and horizontally parallel with the supporting-plate.

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6. In mechanism for a spring-back for a chair, a plate adapted to be secured to a chair-seat, a set of short links depending therefrom, a set of longer links depending from said plate at the rear of the short links, a spindle-plate pivoted and supported on the short and the long links, means for clamping spindles to the

spindle-plate, a spring secured to and interposed between the supporting-plate and the supported spindle-plate adapted to hold the spindle-plate yieldingly to its upper and rearward position, and means for adjusting the tension of the spring. 15

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES J. TRAVERS.

Witnesses:

ANNA F. SCHMIDTBAUER,
ALMA KLUG.