(No Model.)

H. A. GAGE & H. E. HERRICK.

CHAIR.

No. 443,913. Patented Dec. 30, 1890.

Fig. 1.

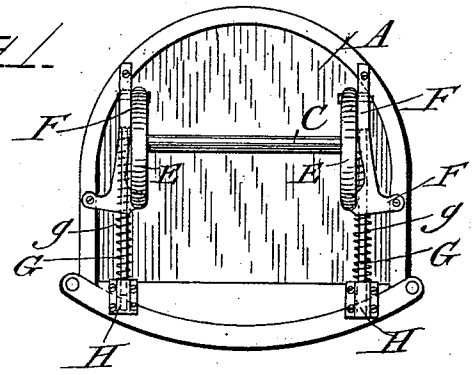


Fig. 2.

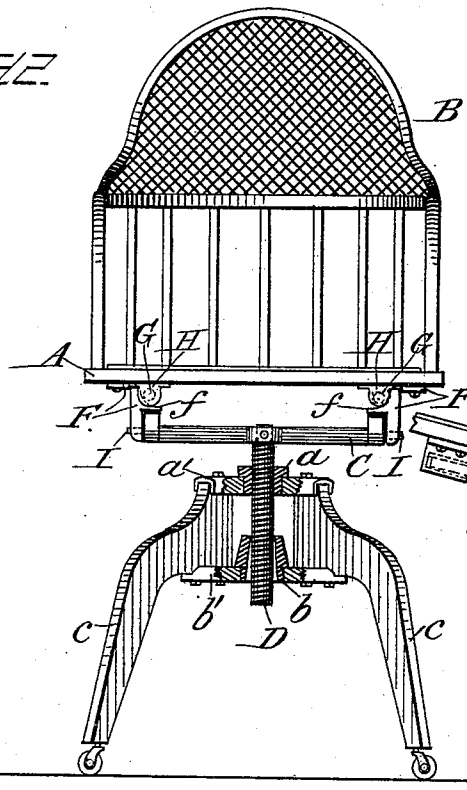


Fig. 4.

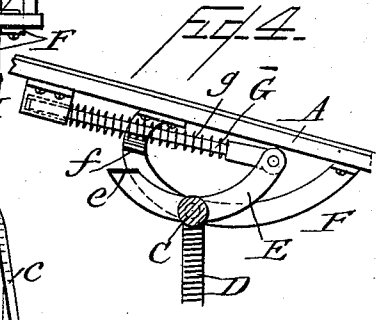
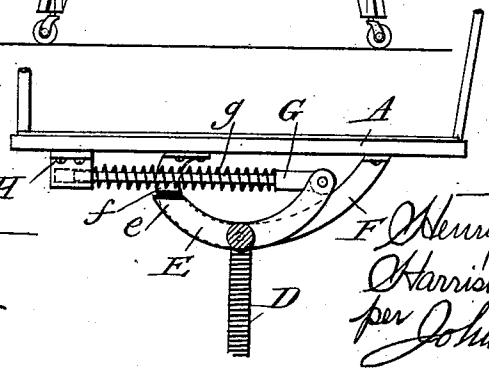


Fig. 3.



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UNITED STATES PATENT OFFICE.

HENRY A. GAGE, OF MANCHESTER, AND HARRISON E. HERRICK, OF MERRIMAC, NEW HAMPSHIRE.

CHAIR.

SPECIFICATION forming part of Letters Patent No. 443,913, dated December 30, 1890.

Application filed June 18, 1890. Serial No. 355,866. (No model.)

To all whom it may concern:

Be it known that we, HENRY A. GAGE and HARRISON E. HERRICK, citizens of the United States, residing, respectively, at Manchester and Merrimac, in the county of Hillsborough and State of New Hampshire, have invented certain new and useful Improvements in Chairs; and we 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.

Our invention relates to an improvement in chairs for office or other use, the same being of the swivel and spring-rocker type or kind, the object of the invention being to provide a simple, cheap, and strong chair having many improved features of construction; and the invention therefore consists in the construction, arrangement, and combination of parts, substantially as will be hereinafter described and claimed.

In the annexed drawings, illustrating our invention, Figure 1 is a bottom plan view of our improved chair. Fig. 2 is an elevational view of the same with certain parts shown in section. Fig. 3 is an enlarged detail side view of the spring-rocker mechanism. Fig. 4 is a similar view to Fig. 3, showing the position of the parts of said mechanism when the chair-seat is inclined instead of being horizontal, as shown in Fig. 3.

Like letters of reference designate corresponding parts throughout the different figures of the drawings.

A denotes the chair seat or bottom, and B the chair-back. These parts may have any suitable and preferred construction. Those given here are for example only.

ccc designate the legs or supports, of which there may be any number, made in any desirable form. They are connected together at the top by a cap-plate *a'*, at the center of which is the bearing *a*, which is internally threaded and holds the vertical chair-screw D. The legs or supports *c* are also secured together by means of the under plate *b'*, which has at its center the smooth bearing *b*, through which the chair-screw D also passes, but which is not internally threaded, like bearing *a*, but serves rather as a brace or support to keep the screw in correct position without becoming loose or shaking in its socket.

The vertical chair-screw D is of suitable length and size. The upper screw-threaded bearing *a* and the lower smooth bearing *b* keep the screw in place, preventing vibration and allowing the vertical adjustment thereof in order to locate this chair-seat at the desired height.

The rocker-shaft C is firmly connected to the upper end of the screw D. Said shaft has at each end the curved rocker-arm E E. Each rocker E has at one end, preferably that end nearest the front edge of the chair, a flat face or stop *e*, preferably horizontal, or approximately so, against which face a corresponding flat face on each of the curved hinge-rods is adapted to be seated at times, as will be presently set forth.

F F designate the hinge rods or bars. They are securely bolted or otherwise fastened to the under side of the chair-bottom. They are of any desirable form. We prefer to make them curved, as shown in Figs. 3 and 4, where they are seen as curving in a vertical plane and being bolted at each end to the chair-bottom. They are formed with an offset face or stop *f*, adapted to bear on face *e*, and which has already been referred to. The faces *e* and *f* are preferably provided with rubber cushions to make the bearing easy and noiseless when the faces come in contact. These hinge rods or bars are pivotally connected to the ends of the rocker-shaft C by means of pins or pivots I, which enter the hinge-rods and project rigidly from the rocker-shaft. They are clearly seen by reference to Fig. 2.

Near the front edge of the chair-bottom sockets or bearings H H are firmly secured to the under side thereof, which receive loosely the ends of the rods G, whose other ends are pivoted to the rear ends of the rockers E E. Said rods G G thus occupy a general horizontal position, moving from the position shown in Fig. 3, of complete horizontality, to the slightly-inclined position shown in Fig. 4. Coiled around these rods G G, sufficiently loose to be easily compressible, are springs *g g*, which lie between the sockets H and shoulders on the rods G. The sockets may be furnished with an internal rubber stop.

The operation and use of the chair may be described as follows: When the person who is seated therein leans backward, the hinge-rods F F rock upon their pivots, and at the same time the pivotal rods G G are more or less lifted and the bearings or sockets H H thrown against the springs *g g*, compressing the latter, the outer ends of the rods G G thus entering farther into the sockets H, until they strike, if desired, against the inner ends of said sockets and thus prevent any further backward movement of the chair. When the chair is at rest in its normal horizontal position, the ends of the rods G rest within the sockets H, as shown in Fig. 3, only entering a part of the distance, which leaves room for the free movement of the rods during the rocking motion of the chair. When the chair is at rest, the faces *f f* rest upon the faces *e e*. Fig. 3 shows clearly the position of parts when the chair is at rest, and Fig. 4 their position when the chair is being tipped backward.

Thus it will be seen that we are enabled to provide by our construction a chair having superior advantages in every way. The chair-screw is so held by being closely fitted, as has been described, as to obviate all the vibration usually incident to such screws, and the general arrangement of all the parts of the chair is such that a strong, serviceable, and useful article is produced, each of the parts contributing to mutually produce the best result.

Many changes may be made in the precise structure and arrangement of parts without departing from the spirit of the invention, which is broad enough to include all such minor changes dictated by experience and which are oftentimes suggested in the practical use of the invention.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a chair, the combination of the seat having sockets, the rocker-shaft, the hinge-rods pivoted to said shaft, the rockers E, and the rods pivoted to the ends of the rockers and having their forward ends entering the sockets, together with the springs coiled around said rods, substantially as described.

2. The combination of the seat having sockets near the front edge, the rockers, the rocker-shaft, the hinge-rods pivoted to said shaft and having flat bearing-faces adapted to rest on similar flat faces on the rocker-arms, the rods pivoted to the rear ends of the rockers and having their forward ends entering loosely the sockets, and the springs coiled around the rods, all operating substantially as described.

3. The combination, with the chair-seat A and screw D, of shaft C, having rockers E E, with seats *e*, the rods F, secured to the under side of seat, pivoted to shaft C, and having seats *f*, the sockets H, and the pivoted rods G, with springs *g*, substantially as described.

In testimony whereof we affix our signatures in presence of two witnesses.

HENRY A. GAGE.
HARRISON E. HERRICK.

Witnesses:
CHAS. H. BARTLETT,
JAMES P. TUTTLE.