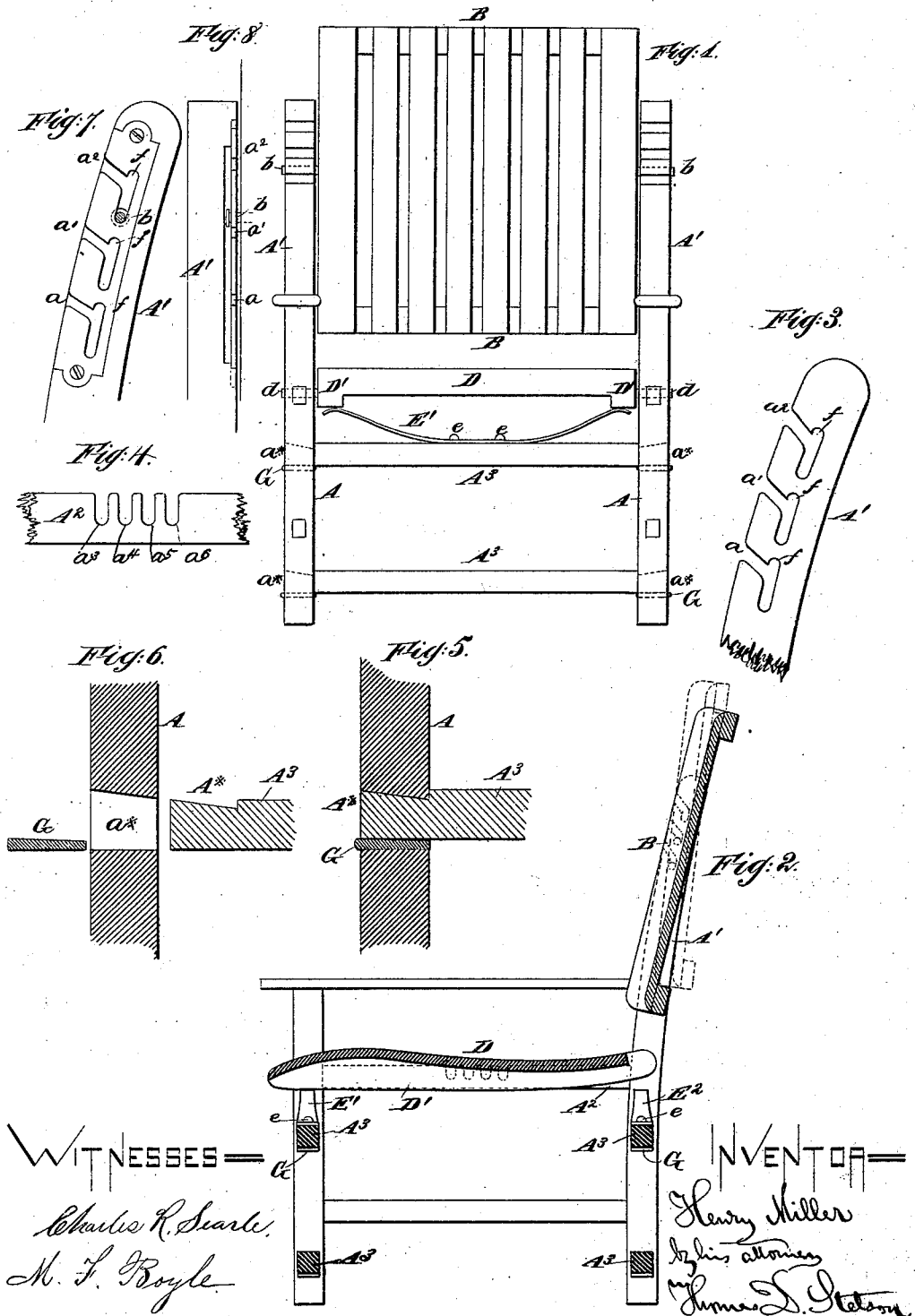


(No Model.)

H. MILLER.
CHAIR.

No. 301,913.

Patented July 15, 1884.



UNITED STATES PATENT OFFICE.

HENRY MILLER, OF CHAPPAQUA, NEW YORK.

CHAIR.

SPECIFICATION forming part of Letters Patent No. 301,913, dated July 15, 1884.

Application filed August 13, 1883. (No model.)

To all whom it may concern:

Be it known that I, HENRY MILLER, of Chappaqua, Westchester county, in the State of New York, have invented certain new and useful Improvements in Chairs, of which the following is a specification.

Portions of my improved chair are self-adjusting to a certain extent. The back adjusts itself at various inclinations, being pivoted on a horizontal axis. The seat adjusts itself by tilting on a transverse axis, which finds bearings in the fixed frame-work on each side. The adjusting motion of the seat is modified by springs. Both the back and the seat are further adjustable at will, the axis of the back being changeable to different levels and the axis of the seat being changeable forward and backward. The wedge principle is made available in the connecting and disconnecting parts of the rigid frame-work.

The accompanying drawings form a part of this specification, and represent what I consider the best means of carrying out the invention.

Figure 1 is a front view, and Fig. 2 a vertical section, through the entire chair. The succeeding figures represent portions on a larger scale. Fig. 3 is a side view of the upper portion of the rigid framing. Fig. 4 represents that portion of the framing which supports the seat. Fig. 5 is a section through one of the legs and one of the cross-sections firmly connected. Fig. 6 is a corresponding view showing the same parts detached. Figs. 7 and 8 show modifications. Fig. 7 is a front view, and Fig. 8 a side view.

Similar letters of reference indicate like parts in all the figures where they occur.

A is a rigid frame-work of a chair, made of oak wood or other suitable material. Certain portions are designated, when necessary, by additional marks of reference, as A' A².

B is my tilting or self-adjusting back, provided with a rigid transverse axis, *b*, projecting at each end to form trunnions, which are supported on uprights A', which extend up at each side of the back. The uprights A' are provided with deep recesses *a a'*, formed as indicated in Figs. 2 and 3. The axis *b* may be supported in either of these recesses. By lifting the back B a little, and moving it forward, it can be taken out of one pair of re-

cesses, *a'*, and after raising and lowering, it may, by a reverse movement, be placed either in the recesses *a* above it, higher, or in the recess *a'*, lower, than before.

D is my tilting seat. It is mounted on a transverse axis, *d*, which extends out on each side and forms trunnions, by which the seat may be supported on the side pieces, A². These latter are deeply notched, as indicated by *a³ a⁴ a⁵ a⁶*. (See Figs. 2 and 4.) The seat may be supported by means of the trunnions *d* in either of the notches. By raising it out of one pair and shifting it to another, it may be adjusted forward or backward. The seat is self-adjusting by tilting on the axis *d*. The tilting motion is allowed within certain limits, but is gently restrained. The restraint is due to springs E' E². (See Figs. 1 and 2.) These are secured, respectively, by means of screws *e*, on the uppermost of the front and back cross-bars, A³, which lie a little below the level of the seat. They should be of such form and tension that the seat may tilt but little, if at all, without coming into forcible contact with one of the springs, and its tilting motion being restrained thereby. The seat may be tilted to a considerable extent, but only by a forcible compression of one of the springs E' or E². The springs abut against the side pieces, D', which form part of the seat D, and extend smoothly forward and backward thereon, parts being so formed that the axis *d* may be shifted to the extreme extent forward or backward without interfering with the action of either spring E' or E². The axis *b* of the back and the axis *d* of the seat may be each a bar of round iron or steel, firmly held in the back and seat, respectively, and turning smoothly in the bearings provided in the fixed parts, as described. Both the upper and the lower of the transverse braces at the front and the same at the back are designated by similar marks, A³. Each is formed at each end with a dovetailed tenon, A*. (See Figs. 5 and 6.) The uprights of the frame-work are formed with corresponding dovetailed mortises, *a**, (see Figs. 1 and 6,) corresponding in width and taper to the tenon A*, but sufficiently deeper to allow the wide part of the dovetail A* to be inserted in the small end of the hole or mortise *a**. When the tenon is inserted, it is forced into its highest position, and

a key, G, is driven in the lower part of the mortise a^* . This holds the parts rigidly together. The key is driven out whenever it is desired to separate the parts again, in order
 5 to pack the chair in a small compass. The uprights A' may be strengthened in the vicinity of the recesses $a' a^2$ and pockets f by malleable cast-iron or other sufficient metallic pieces either on the outer or inner sides, or both.
 10 These are let into the wood, as indicated by dotted lines in Figs. 7 and 8, and secured by screws. The highest recess, a^2 , in the uprights A' is provided with a pocket, f , on its upper side, which receives the trunnions b whenever
 15 a lifting-force is exerted thereon, and holds the back engaged with the chair, so that the chair may be conveniently carried by means of the back. The importance of this provision will be obvious.
 20 Modifications may be made in the forms and proportions shown. The springs $E' E^2$ may be held by other means than the screws indicated. The parts D' of the seat may be shod with brass or other suitable metal, to avoid wearing or
 25 cracking by the action of the springs. Parts of the invention may be used without the whole. Additions may be made. I propose to add

casters or rockers. I propose to add a headrest extending above the back with any ordinary or suitable means for adjusting it. The
 30 arms can be dispensed with, if desired, in any case. Pockets f may be provided in the upper side of each of the recesses $a' a^2$ in the uprights A' .

I claim as my invention—

1. The tilting seat $D D'$, pivoted on its trunnions d , and the frame A , having notches $a^3 a^4$, &c., combined with cross-bars A^3 , and
 35 double springs $E' E^2$, secured to said cross-bars by screws or bolts $e e$, as and for the purposes set forth.

2. The frame $A A'$, having recesses $a^3 a^4$, &c., and notches $a a' f$, in combination with the back B , having trunnions b , the seat $D D'$, having trunnions d , and the springs $E E^2$, as
 45 and for the purposes set forth.

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

HENRY MILLER.

Witnesses:

CHARLES R. SEARLE,
 ACLAND BOYLE.