H. W. BOLENS.

CHAIR IRON.

APPLICATION FILED DEC. 11, 1906.

908,730.

Patented Jan. 5, 1909.

2 SHEETS—SHEET 1.

Fig. 1.

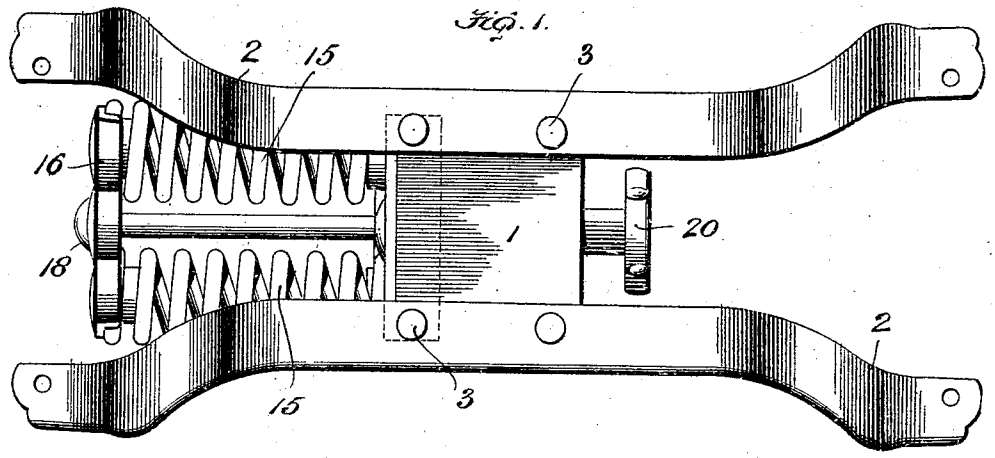
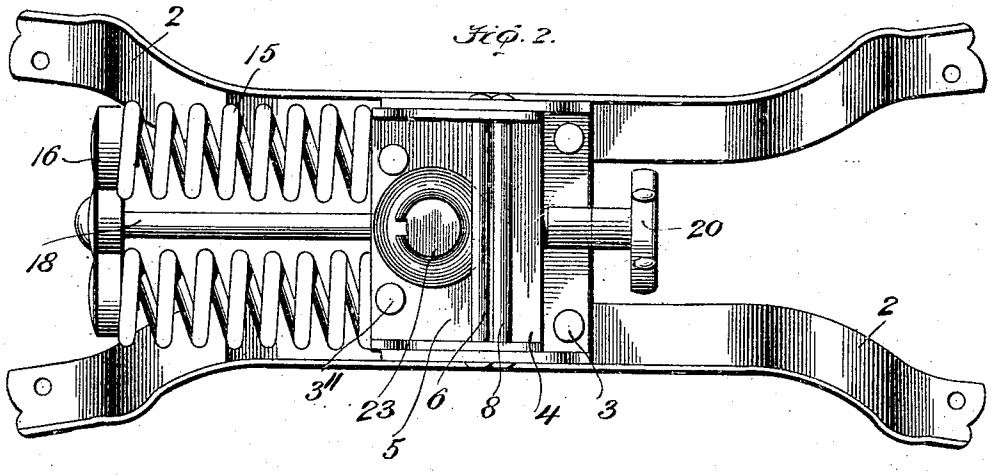


Fig. 2.



Inventor

Harry W. Bolens,

By W. Duvall

Attorney.

Witnesses

Wm. C. Dashiell.

C. F. Duvall.

THE NORRIS PETERS CO., WASHINGTON, D. C.

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2 SHEETS—SHEET 2.

Fig. 3.

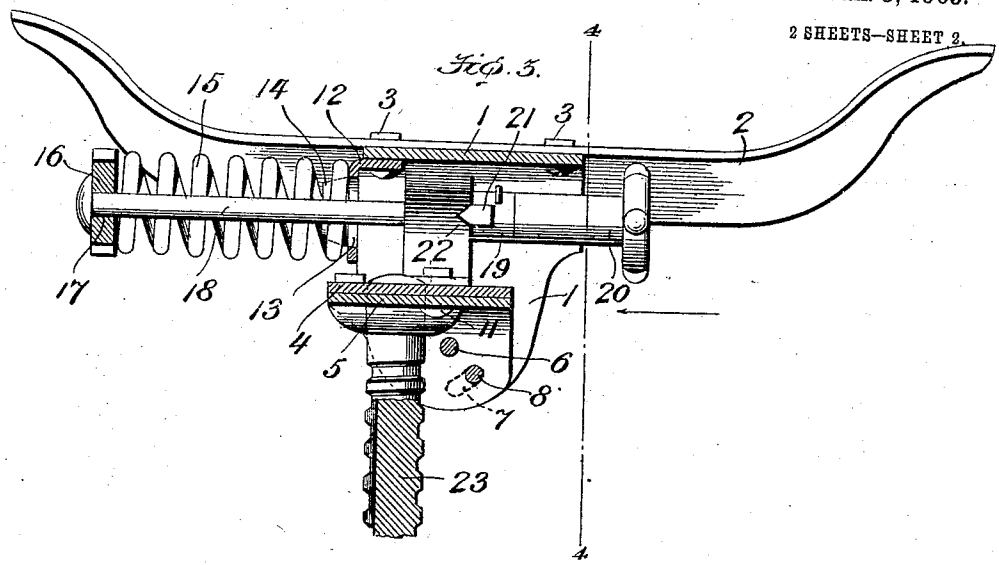
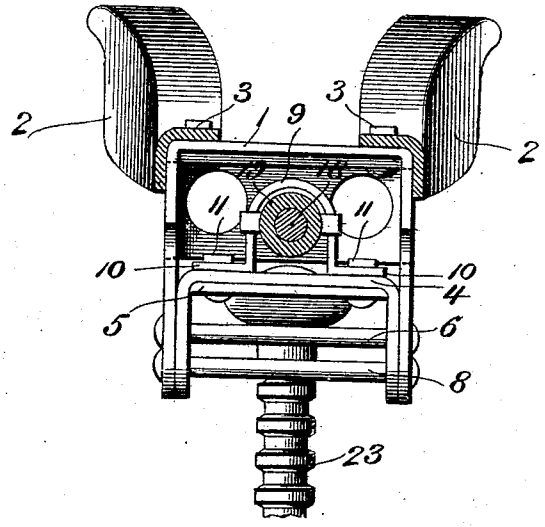


Fig. 4.



Witnesses

Wm. C. Dashiell.

C. F. Duvall.

Inventor

Harry W. Bolens,

By W. J. Duvall.

Attorney

THE NORRIS PETERS CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

HARRY W. BOLENS, OF PORT WASHINGTON, WISCONSIN.

CHAIR-IRON.

No. 908,730. Specification of Letters Patent. Patented Jan. 5, 1909.

Application filed December 11, 1906. Serial No. 347,244.

To all whom it may concern:

Be it known that I, HARRY W. BOLENS, a citizen of the United States, residing at Port Washington, in the county of Ozaukee and State of Wisconsin, have invented new and useful Improvements in Chair-Irons, of which the following is a specification.

This invention relates to improvements in chair-irons employed in revolving and tilting chairs, and to that particular class and style thereof constructed of sheet-metal and commonly termed in the trade as "low fulcrumed."

The objects and advantages of the invention, together with the novel features thereof, will hereinafter appear and be particularly pointed out in the appended claims.

Referring to the drawings—Figure 1 is a plan view of a chair-iron embodying my invention; Fig. 2 is a bottom plan view thereof; Fig. 3 is a central longitudinal sectional view; and, Fig. 4 is a transverse sectional view on the line 4—4 of Fig. 3.

Similar numerals of reference indicate similar parts in all the figures of the drawings.

As suggested at the beginning, with the exception of the usual tension-device and the supporting screw or swivel, the parts comprising the chair-iron are of sheet-metal, the same being bent and riveted together in a manner hereinafter apparent.

In carrying my invention into practice, I employ an inverted U-shaped sheet-metal spreader 1, the depending terminals of which are somewhat reduced. Arranged along the opposite sides and embracing the latter and the top of the spreader, are the usual angular sheet-metal spider-arms 2, the ends of which are preferably upwardly and outwardly disposed and perforated for attachment to the underside of a chair-seat. The arms form no important part of the present invention, and, hence, their disposition and location may be varied from that shown. The horizontal portions of the arms overlap the top of the spreader and these parts are securely riveted together, as at 3.

Between the depending terminals of the spreader 1, is located an inverted U-shaped bridge-piece 4. The terminals of the bridge-piece 4 are considerably shorter than the terminals of the spreader 1, so that the two horizontal portions of these members combine to form an intermediate space. This bridge-piece, in order to give it ample strength and rigidity, may be reinforced by the application to the underside of its horizontal portion of a reinforcing-plate 5.

The opposite terminals of the bridge-piece and those of the spreader are coincidentally perforated, and through the two is passed a transverse pintle 6, whereby the spreader becomes horizontally pivoted upon the bridge-piece and is capable of a tilting or rocking motion. At a point at one side of and below the pintle 6, the terminals of the spreader are provided with short segmental slots 7 (see dotted lines, Fig. 5), and passed through the terminals of the bridge-piece and resting in the aforesaid slots of the spreader are the ends of a transverse stop-rod 8, whereby, as will be obvious, the tilting or rocking movement of the spreader on the bridge-piece is limited.

An inverted U-shaped sheet-metal standard 9, the terminals of which form securing-plates 10, surmounts the bridge-piece, and these securing-plates, the horizontal portion of the bridge-piece and the reinforcing-plate 5, are all securely bolted together by bolts or rivets 11.

At the rear of the spreader is located an inverted L-shaped or angular cross-plate 12, the upper horizontal portion of which extends under the corresponding part of the spreader, to which it is secured by the rivets 3 at that end of the spreader. The depending portion of this cross-piece is a trifle wider than its upper horizontal portion, and therefore at its two vertical edges overlaps the rear edges of the terminals of the said spreader. In this manner the edges of the depending terminals of the spreader reinforce the cross-piece. (See dotted lines, Fig. 4.) The cross-piece is furthermore provided with a central opening 13, and at each side thereof with helical spring engaging-hubs 14, against which latter the ends of the usual compression-springs forming a part of the tension-device bear. These springs are indicated at 15, and at their outer ends are confined by the compression-plate 16. The latter plate is centrally perforated, as at 17, and through the same extends the usual tension-rod 18. The rod 18 at its front end is extended through and beyond the inverted U-shaped standard 9, and beyond the front edge of the same is threaded and provided with the usual washer 19 and hand-wheel or nut 20, these parts serving their usual function and operating in the well-known manner. The washer is provided at opposite sides with

lugs or extensions 21, slightly beveled at their rear sides, and the same rest in notches 22, formed in the opposite front edges of the standard 9.

23 designates the supporting swivel or screw, the lower end of which is designed to enter the socket (not shown). The upper end of the swivel or screw is reduced in the usual manner, or may be otherwise finished, and is let into openings formed in the bridge-piece 4 and its reinforcing-plate, above the former of which it is headed in the customary manner.

This completes the construction of the invention, the operation being well understood.

The structure will be found very rigid, strong and durable, as well as light and capable of cheap production.

Having described my invention, what I claim, is:

1. In a chair-iron, the combination with an inverted U-shaped spreader carrying spider-arms, and a cross-piece connecting the terminals of the spreader, of an inverted U-shaped bridge-piece located between the terminals of the spreader, a standard rising from the bridge-piece, a tension-device carried by the standard and having its springs bearing against the said cross-piece, a pintle passing through the terminal portions of the bridge-piece and those of the spreader, and a stop-rod passing through the terminals of the spreader and bridge-piece and having its ends terminating in segmental slots formed in the terminals of the spreader.

2. In a chair-iron, the combination with an inverted U-shaped spreader, the terminals of which are at their lower ends provided with curved slots, an inverted U-shaped bridge-piece located between the terminals, a transverse stop-rod passing through the terminals of the bridge-piece and terminating in the said slots, and a pintle passed through the terminals of the bridge-piece and spreader concentric with the slots, of a cross-piece at the rear side of the spreader, an inverted U-shaped standard rising from the bridge-piece and provided with notches in its front edges, a rod extending through the standard and the cross-piece, a nut and washer at the front end of the rod, the said washer having lugs engaging the aforesaid notches, a compression-plate at the rear end of the rod, and helical springs arranged between the compression-plate and the cross-piece.

3. I a chair-iron, the combination with a swivel or screw, of an inverted U-shaped bridge-piece connected at its center to said swivel or screw and having its terminals depending below said point of connection, an inverted U-shaped spreader carrying spider-arms and having its terminals embracing those of the bridge-piece and pivoted thereto below said point of connection, and stops for limiting the movement of said spreader.

4. In a chair-iron, the combination with a swivel or screw, an inverted U-shaped bridge-piece connected at its center to said swivel or screw and having its terminals depending below said point of connection, of an inverted U-shaped spreader carrying spider-arms and having its terminals embracing those of the bridge-piece, a pintle connecting the two terminals of the bridge piece and spreader at a point below said point of connection, and a transverse stop-rod passed through the terminals of the bridge-piece and spreader and terminating in segmental slots formed in the terminals of the spreader concentric with the pintle.

5. In a chair-iron, the combination with a swivel or screw, an inverted U-shaped bridge-piece connected at its center to said swivel or screw and having its terminals depending below said point of connection, of an inverted U-shaped spreader, a rear-cross-piece connecting the terminals thereof, which latter embrace and are coincident with those of the bridge-piece, an inverted U-shaped standard rising from the bridge-piece, a tension-rod passed therethrough and the said cross-piece, a washer carried by the rod and bearing against the standard, a nut on the rod beyond the washer, a compression-plate at the rear end of the rod, helical springs interposed between the latter and the rear cross-piece, a transverse pintle connecting the terminals of the bridge-piece and the spreader below the said point of connection between the former and the swivel or screw, and a transverse stop-rod connecting said terminals and having its ends lying in segmental recesses formed in the terminals of the spreader concentric with the pintle.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HARRY W. BOLENS.

Witnesses:
EDWARD BARELMAN,
T. A. BOERNER.