

March 20, 1951

M. FOX
SWIVEL CHAIR IRON

2,545,950

Filed Dec. 6, 1946

2 Sheets-Sheet 1

Fig. 1.

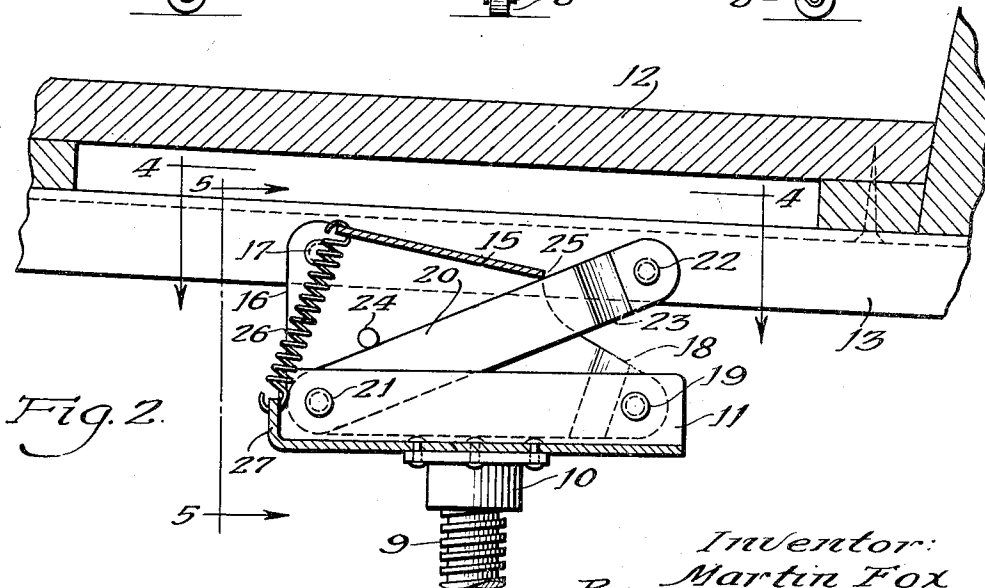
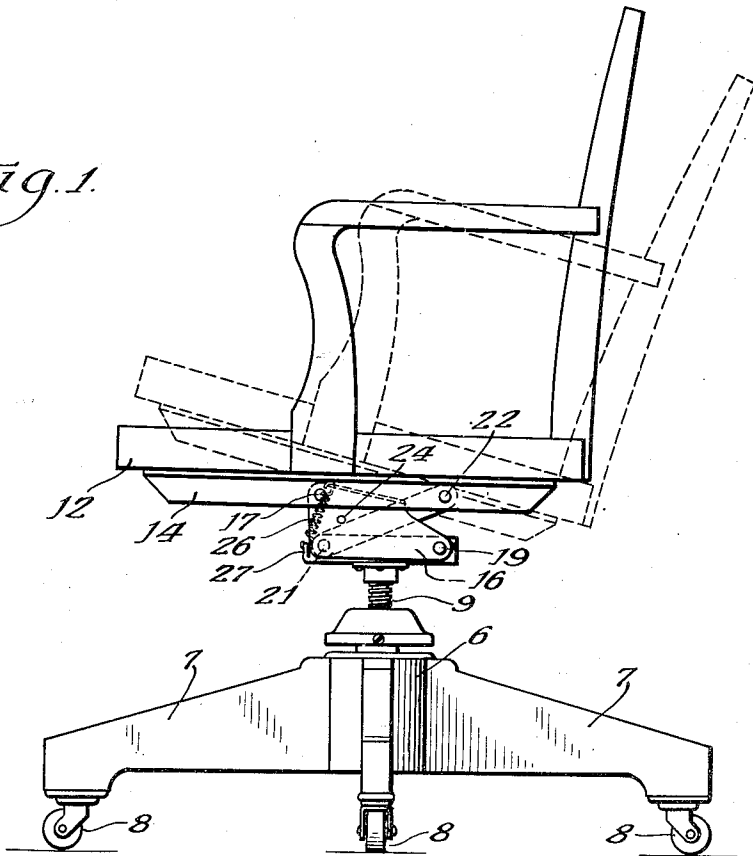


Fig. 2.

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Fig. 3.

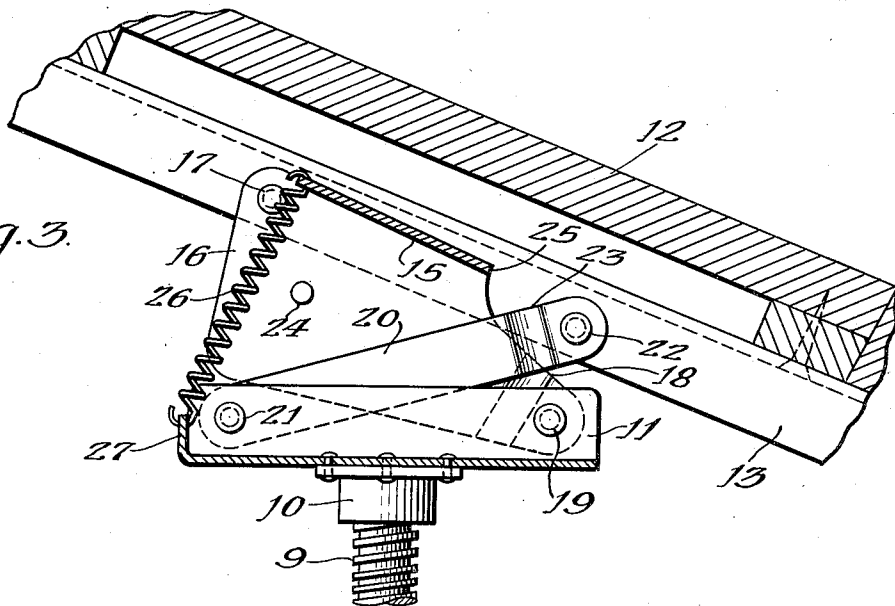


Fig. 4.

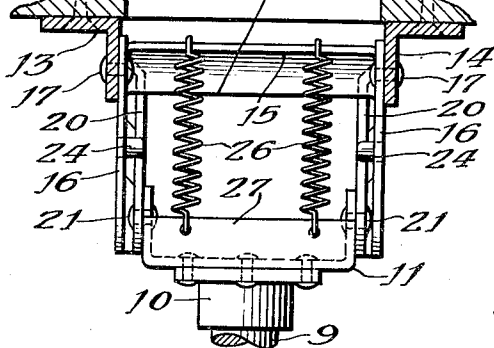
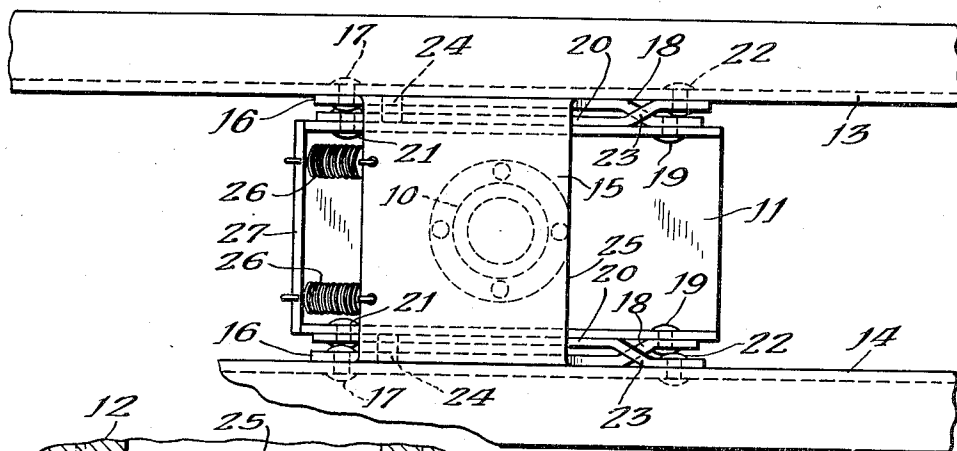


Fig. 5.

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UNITED STATES PATENT OFFICE

2,545,950

SWIVEL CHAIR IRON

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2 Claims. (Cl. 155—71)

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This invention relates to swivel chairs, and more particularly to an improved chair iron in which the tilting seat structure does not tilt around a fixed pivot.

The primary object of the invention is to provide an improved chair iron wherein a heavy counterbalancing spring is not needed. In a conventional tilting swivel chair, the seat structure is pivoted for tilting around a pintle at the top of the swivel post, and as the chair is turned rearwardly the center of gravity moves rearwardly with respect to the pivot. As a result, the structure has a marked tendency to fall over backwards and heavy adjustable springs are usually provided to resist this tendency to fall backward. In the present structure, the seat is supported by two or more links which are arranged so that the chair is easily tilted to a desired angle and there is an inherent stability which is not dependent on springs.

The invention is illustrated in a preferred embodiment in the accompanying drawings, in which—

Figure 1 is a side elevational view of a tilting swivel chair embodying the invention, with the dotted lines indicating a tilted position; Fig. 2 is a fragmentary vertical sectional view of the chair iron mechanism with the chair in upright position; Fig. 3 is a view similar to Fig. 2, but showing the chair in tilted position; Fig. 4 is a fragmentary plan view, taken as indicated at line 4—4 of Fig. 2; and Fig. 5 is a fragmentary front sectional view, taken as indicated at line 5—5 of Fig. 2.

In the embodiment illustrated, a conventional base 6, provided with legs 7 and casters 8, is adapted to receive and provide vertical adjustment for a swivel post 9. The post has a crown-piece 10 to which is riveted a U-shaped head-piece 11, whose upwardly extending arms serve as supports for the tilting mechanism. A seat structure 12 is carried by a seat-iron, shown in the form of a pair of forwardly and rearwardly extending angle irons 13 and 14.

An inverted U-shaped link member has a top plate 15 with downwardly extending arms 16, which are pivotally connected at their upper front ends, as indicated at 17, to the angle irons of the seat iron. The lower rear portions of the arms 16 are offset inwardly, to provide stop-shoulders 18, and are pivotally connected to the rear portion of the head-piece, as indicated at 19. A pair of links 20 are pivotally connected to the front of the head-piece, as indicated at 21, and extend upwardly and rearwardly to make a pivotal connection at 22 with the rear portion of the seat iron. The upper end portions of the links 20 are offset outwardly, as indicated at 23, to provide stop-shoulders to engage the shoulders 18 and limit the rearward tilting of the seat-member 12.

The arms 16 are provided with inwardly ex-

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tending studs 24, which are adapted to be engaged by the links 20 and limit the forward tilting of the seat structure. Preferably, the links 20, while engaging studs 24, also engage the rear portion of the plate 15, as indicated at 25, which also acts as a stop, as indicated in Fig. 2.

As indicated above, no counterbalancing spring is required with this structure, but in order to keep the chair iron in upright position when unoccupied, a pair of small tension springs 26 are preferably provided between the top plate 15 and an upward extension 27 of the head-piece 11.

The relative movement between the parts is similar to that shown in my Patent No. 2,270,430, issued January 20, 1942. When the occupant of the chair leans back there is movement about four pivot centers, with the result that the seat portion does not swing about a fixed center, but actually moves about a moving center. The parts are so proportioned that the tendency of the chair to swing over backwards is greatly reduced, and the occupant automatically is swung in the chair to a desired angle.

The foregoing detailed description is given for clearness of understanding only, and no unnecessary limitations should be understood therefrom, for some modifications will be obvious to those skilled in the art.

I claim:

1. A chair iron for a tilting swivel chair, comprising: a swivel post adapted to fit into a supporting base; a head-piece fixed to said post; seat iron means adapted to be secured to the bottom of a tilting seat-member; an inverted U-shaped link pivotally connecting the rear portion of said head-piece to a front portion of said seat iron means; a pair of upwardly and rearwardly extending links pivotally connecting the front portion of the head-piece to a rear portion of the seat iron means; and spring means between the U-shaped link and said head-piece urging the front of said seat iron means downwardly.

2. A chair iron as specified in claim 1, in which the U-shaped link has offset stop-shoulders near its lower pivot, the pair of links have offset stop-shoulders to engage said stop-shoulders on said U-shaped link and limit the rearward tilting of the seat iron means, and the U-shaped link has a stop to engage one of said links and limit the forward tilting of said seat iron means.

MARTIN FOX.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
585,422	Boenning	June 29, 1897
891,222	Bolens	June 16, 1908
2,270,430	Fox	Jan. 20, 1942