June 24, 1930. H. W. BOLENS 1,767,166

CHAIR IRON

Filed Feb. 11, 1929 2 Sheets-Sheet 1

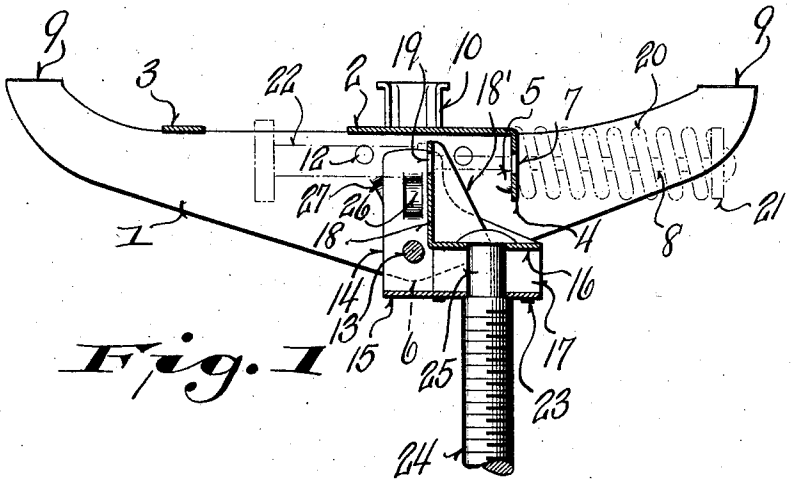


Fig. 1

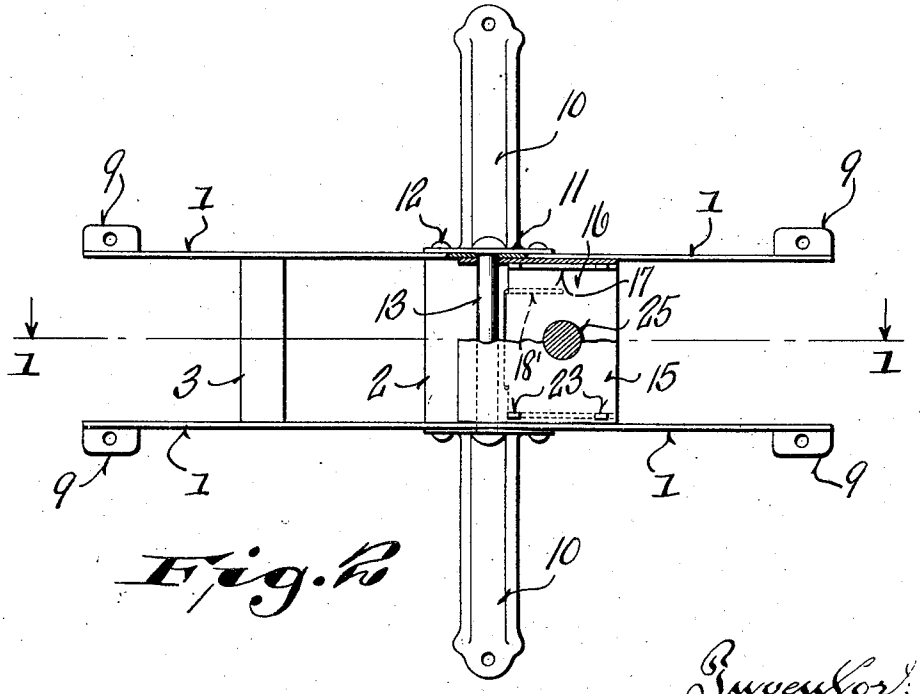


Fig. 2

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CHAIR IRON

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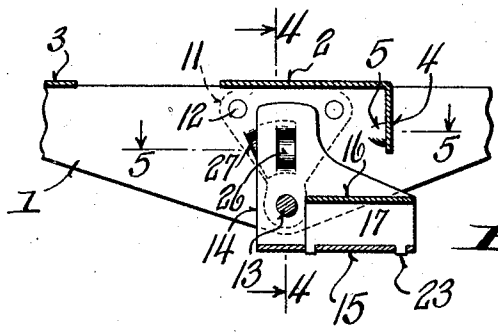


Fig. 3

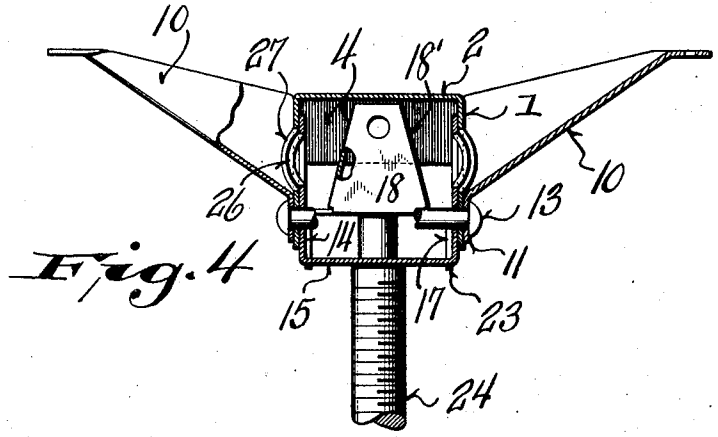


Fig. 4

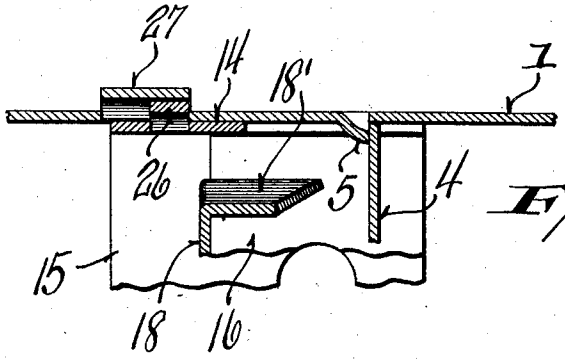


Fig. 5

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Patented June 24, 1930 1,767,166

UNITED STATES PATENT OFFICE

HARRY W. BOLENS, OF PORT WASHINGTON, WISCONSIN

CHAIR IRON

Application filed February 11, 1929. Serial No. 339,223.

This invention relates to chair irons.

Objects of this invention are to provide a novel form of chair iron in which the parts are formed from pressed metal, in which no casings are employed, and in which the spider arms, saddle and spring plate are integral.

Further objects are to provide a chair iron in which a sheet metal yoke is provided and formed of two members, with spaced bearing points for the spindle and yoke, and with the parts of the yoke, and interlocked and held in interlocked relation by the riveted spindle.

Further objects are to provide a novel form of construction in which the limiting means for limiting the swinging of the spider, and consequently of the seat of the chair, is obtained by striking out portions of the sheet metal members so that no additional fasteners, stops, or other members of this type are required.

Further objects are to provide a novel form of chair iron construction of sheet metal and so made that the spider may be either a two or six-arm spider.

Further objects are to provide a construction in which no riveting is required for the spider arms, saddle or spring plate, and in which a very simple, cheaply produced and highly practical structure is provided.

An embodiment of the invention is shown in the accompanying drawings, in which:

Figure 1 is an elongated sectional view through the chair iron, such view being taken on the line 1—1 of Figure 2.

Figure 2 is a view from the underside of the chair iron, with parts broken away and in section.

Figure 3 is an elongated sectional view showing a portion of the structure.

Figure 4 is a transverse, sectional view, such view being taken on line 4—4 in Figure 3.

Figure 5 is an enlarged sectional view, taken on line 5—5 of Figure 3.

Referring to the drawings, it will be seen that the device comprises a sheet metal spider having a pair of longitudinally extending substantially vertical arms 1. These arms are joined by an integral plate 2 and preferably by a spaced bearing member or plate 3. The plate 2 is provided with an outwardly extending tongue 4, which is bent down as indicated in Figure 1. This tongue bears against a pair of lugs or projections 5, which are struck inwardly from the vertical side walls of the spider. The spider continues downwardly as indicated in dotted lines 6 in Figure 1, to form a saddle which is pivotally joined to the yoke, as will hereinafter appear. The plate 4 is apertured as indicated at 7 for the passage of the spring rod, indicated at dotted lines 8.

It is to be noted also that the spider is provided with outwardly turned terminal lugs 9 which are apertured for the reception of screws by means of which the seat of the chair may be attached.

It is also to be noted that if desired the spider may have six projecting arms instead of four, as thus far described. These additional arms are formed by chanel-shaped members 10, which are provided with flanges 11, riveted as indicated at 12, to the arms 1 of the spider.

Also, it is to be noted that the pivot bolt or pintle pin 13 passes through the flanges 11 and through the spider arms 1, and thus additionally secures the arms 10 in place. Thus it is not necessary to alter the design of the structure of the device in order to make it a four-arm or six-arm spider.

The yoke is formed of a pair of vertical arms or plates 14, provided with an integral transverse base 15. In addition to this, the yoke is also formed of a transverse upper plate 16, which is provided with integral, vertical, downwardly extending walls or members 17, and with integral, upstanding walls, or plates 18, preferably reinforced by

means of side webs 18′, as shown in Figure 1.

These side webs 18′ are integrally formed with the plate 18 and are turned forwardly so that their bottom edges rest upon the transverse plate 16, as may be seen from Figures 1 and 2.

This plate 18 is also apertured, as indicated at 19, for the passage therethrough of the spring bolt or rod 8. The aperture 19 may be of sufficient size to permit the free shifting or rocking of the rod on bolt 8 when the chair is rocked. A spring 20, loosely surrounds the rod 8 and bears at one end against a washer 21 carried by the rod, and at the other end, against the spring plate 4, the spring plate 4 being reinforced against rearwardly motion by means of the lugs 5. The adjusting nut 22 of the spring bolt or rod bears against the rear face of the wall or plate 18 of the yoke.

It is to be noted that no rivets are used in securing the two parts of the yoke together. Instead, the transverse bottom plate 15 of the yoke is apertured for the reception of a plurality of lugs 23, integrally formed at the lower edge of the side plates 17 of the upper yoke member.

The threaded spindle 24 is shouldered and has a reduced portion 25 passing through the plates 15 and 16 and riveted at its upper end. This construction secures spaced bearing points for the spindle and yoke, as is apparent from Figure 1. Further, the riveting of this spindle holds the parts of the yoke interlocked and thus avoids the use of any of the ordinary securing means.

The side plates 14 of the yoke are provided with outwardly struck or bulged portions 26 (see Figures 1 and 5), which fit within outwardly bulged portions 27 of the side arms 1 of the spider. This construction, as is apparent from Figures 1, 3 and 5, limits the rocking motion of the chair and provides positive stops therefor.

It is to be noted particularly that the construction is such that all of the parts of the chair iron may be formed from pressed sheet metal with the utmost cheapness. Further, it is to be noted that the assembling of the device is most easily accomplished and that a minimum amount of work is required.

The construction of the device is such that maximum strength and minimum weight are obtained.

Although the invention has been described in considerable detail, such description is intended as illustrative rather than limiting, as the invention may be variously embodied and as the scope of such invention is to be determined as claimed.

I claim:

1. A chair iron comprising a spindle, a sheeet metal yoke formed of an upper part and a lower part having interlocking portions, said spindle passing through said upper and lower parts and riveted in place and holding said portions interlocked, the lower of said parts having upwardly extending arms, a spider pivoted to said arms, the upper of said parts having an upwardly extending plate apertured for the reception of a spring bolt.

2. A chair iron comprising a spindle, a sheet metal yoke formed of an upper part and a lower part having interlocking portions, said spindle passing through said upper and lower parts and riveted in place and holding said portions interlocked, the lower of said parts having upwardly extending arms, a spider pivoted to said arms, the upper of said parts having an upwardly extending plate apertured for the reception of a spring bolt, said upwardly extending plate having rearwardly projecting integral webs.

3. A chair iron comprising a yoke formed of an upper part and a lower part having interlocking portions, means for holding said portions in interlocked relation, upwardly extending arms on the lower part, a spider pivoted to said arms, and an upwardly extending plate on the lower part having an aperture for the reception of a spring bolt.

4. A chair iron including a yoke formed of an upper part and a lower part having interlocking portions, means for holding said portions in interlocked relation, upwardly extending arms on the lower part, a spider pivoted to said arms, a depending apertured plate on said spider, an upwardly extending plate on the lower part having an aperture for the reception of a spring bolt, said bolt extending through the aperture in the depending plate on the spider.

5. A chair iron including spaced vertical arms, a plate connecting said arms at their upper edges, an apertured tongue extending downwardly from one edge of said plate and positioned between said arms, channel shaped arms having their inner ends secured to the outer faces of the vertical arms intermediate their ends whereby the channel arms are disposed between the side edges of the plate.

6. A chair iron comprising a spindle, a sheet metal yoke formed of upper and lower members having interlocking portions, said spindle passing through said upper and lower members and being riveted in place to secure said members together, one of said members having upwardly extending arms, the other of said members having an upwardly extending plate apertured for the reception of a spring bolt, and a spider pivoted to said arms.

7. A chair iron comprising a sheet metal yoke formed of upper and lower members having interlocked portions, said spindle passing through said members and being riveted in place to secure said portions in interlocking relation, one of said members having

upwardly extending arms, the other of said members having an upwardly extending plate apertured for reception of a spring bolt, said upwardly extending plate having rearwardly projecting integral reenforcing webs, and a spider pivoted to said arms.

In testimony that I claim the foregoing I have hereunto set my hand at Milwaukee, in the county of Milwaukee and State of Wisconsin.

HARRY W. BOLENS.