Nov. 19, 1935. A. R. LAFFERTY 2,021,187

CHAIR BASE

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Fig.1.

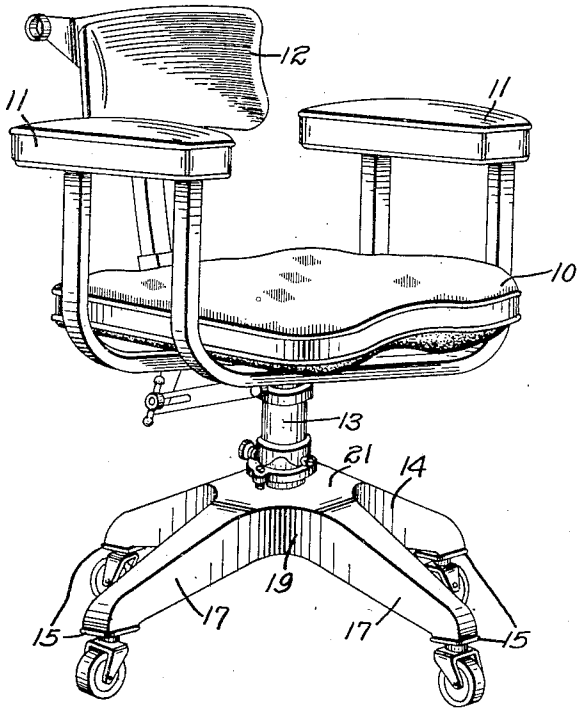
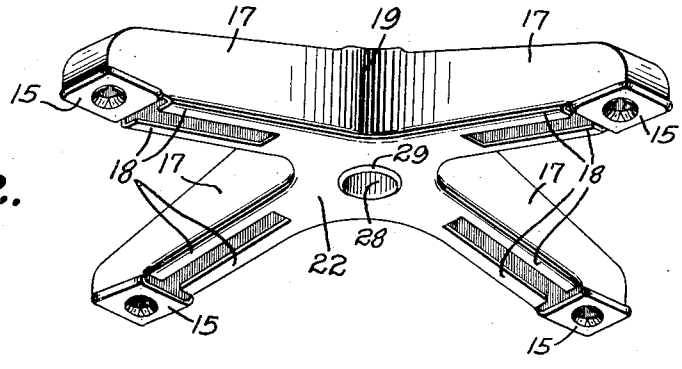


Fig.2.



INVENTOR
Arthur R. Lafferty
BY
Rector, Hibben, Davis & Macauley
ATTORNEYS

155. CHAIRS AND SEATS.

CHAIR BASE

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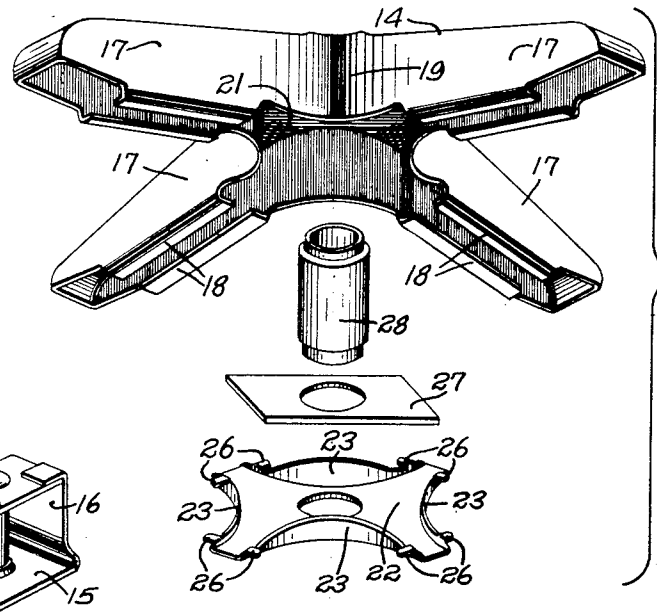


Fig. 3.

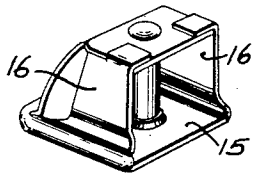
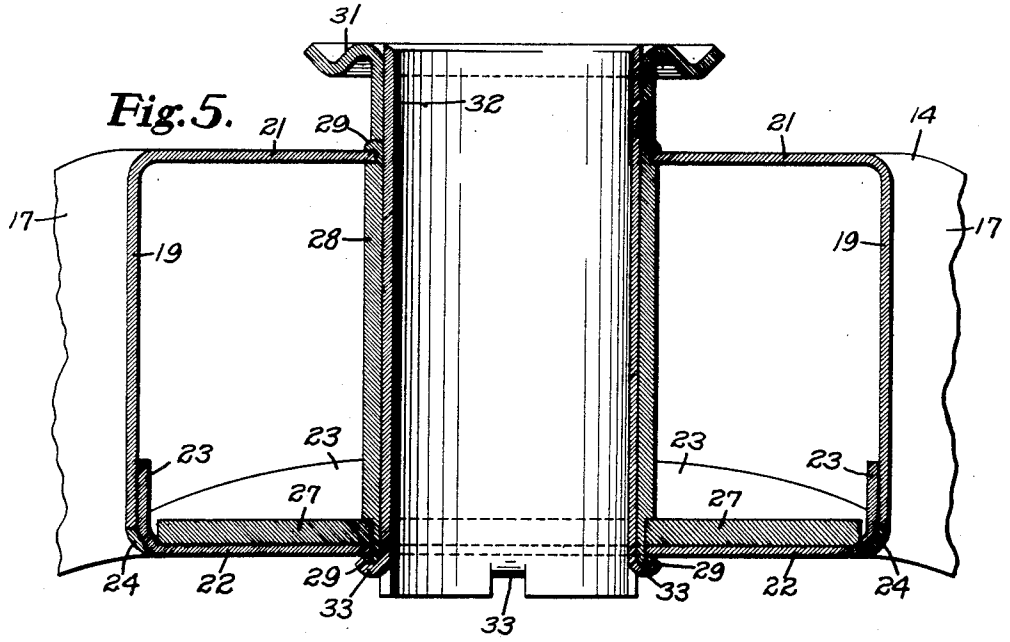


Fig. 4.

Fig. 5.



INVENTOR
Arthur R. Lafferty
BY
Rector, Hibben, Davis & Macauley
ATTORNEYS

Patented Nov. 19, 1935

2,021,187

UNITED STATES PATENT OFFICE

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CHAIR BASE

Arthur R. Lafferty, Detroit, Mich., assignor to Burroughs Adding Machine Company, Detroit, Mich., a corporation of Michigan

Application January 2, 1934, Serial No. 704,840

5 Claims. (Cl. 155—138)

This invention relates to a chair and is particularly concerned with a base therefor.

It is desirable to construct the chair base of sheet metal because of its rigidity, durability and relative lightness. From a manufacturing viewpoint it is preferable to form the leg structure from a single piece of sheet metal formed in a minimum number of stamping operations and held in shape by a minimum number of auxiliary parts.

Accordingly, one of the objects of this invention is to provide an improved sheet metal chair base.

A more particular object is to provide a sheet metal chair base constructed mainly of one member formed to provide the legs and which when assembled may be retained in form by a minimum number of auxiliary parts.

In constructing a chair base of metal it is not only desirable to have the construction and assembly as simple as possible but at the same time to have the chair base present a pleasing appearance. The present invention has been directed to the provision of such a construction.

Another object is therefore to provide an improved sheet metal chair base which is pleasing in appearance.

Other objects of the invention will appear from the following specification and drawings.

An embodiment of the invention is shown in the accompanying drawings in which—

Figure 1 is a perspective view of an office chair illustrating the novel construction of the chair base.

Fig. 2 is a perspective of the chair base from the underside.

Fig. 3 is a spread perspective of parts comprising the complete chair base with the parts separated to show the manner in which the parts are assembled.

Fig. 4 is a detail perspective of the caster retainer used in the chair base legs.

Fig. 5 is a sectional view through the center of the chair base showing the details of construction and the method of fastening the different parts together.

The illustrated chair is of the "executive" type and embodies a seat 10 from the sides of which arms 11 and a back 12 extend. The seat is mounted upon a swivel post 13 carried by the base indicated generally by the reference character 14. The complete chair may be conveniently disassembled and shipped to any point where it may be readily assembled by the purchaser.

The main member of the chair base which constitutes the subject matter of this invention is formed from a single sheet of flat steel cut the proper size and formed or stamped to provide four spaced supporting legs. The flat sheet of steel from which the chair base legs are formed is so cut and shaped that after the stamping and forming operations have been completed, to provide four equally spaced legs substantially U-shaped in cross section, the only trimming necessary is at the outer ends of each leg, to provide a flat uniform surface for receiving the caster retainer 15 (Fig. 4). These retainers are also formed from sheet metal and are provided with slightly resilient or yielding side walls 16 which will permit the retainers to be sprung into openings in the ends of each base leg, after which they may be spot welded thereto.

The lower edges of the side walls 17 of the legs are flanged inwardly for a portion of their length to provide strengthening flanges 18 which add rigidity and strength to the leg member. The opposed side walls 17 of adjacent legs are connected by integral curved side wall portions 19 and are further joined by an integral top wall 21.

A star-shaped lower plate 22 is provided and is formed with four crescent shaped upwardly extending curved flanges 23 which flanges when the plate is in position fit snugly within, i. e., underlap the curved wall portions 19 of the legs as best shown in Fig. 5. The flanges 23 are welded to the curved wall portions 19 throughout substantially their entire contacting surfaces and the surplus welding material 24 which extends beyond the shoulder of the outer overlapping wall portion 19 is ground off to form a rounded surface as is clearly shown in Fig. 5 to provide a smooth join— ture between the curved wall 19 and the flanges 23. This prevents scuffing of the user's shoes and perhaps damaging their wearing apparel, and also presents a smooth, rounded, finished surface after the base is painted.

To support and position the lower plate 22 during assembly and while it is being welded to the main base element, plate 22 is provided at each point with a pair of laterally projecting lugs 26 which engage the edges of the leg walls 17 of the four legs and support the plate in position while it is being assembled and welded. The lugs are preferably of such thickness that during the welding process they are burned away or they may be ground off so as to leave no projections.

A reinforcing plate 27 (Figs. 3 and 5), shown as a rectangular plate, may be placed immediately above the upper surface of the lower plate 22 to give further rigidity and strength to the assembly. This reinforcing plate or member dis-

tributes the thrust over a larger area and substantially throughout the entire leg structure.

A bushing 28 is employed to further bind the elements together which bushing is reduced in thickness at its two ends, which reduced ends project through suitable apertures in the upper wall 21, reinforcing plate 27 and lower plate 22. The outer extremities of the bushing are peened over as at 29 (Fig. 5) to both retain and strengthen the leg structure together as one unit.

When a swivel action is desired as in the case of the illustrated executive chair, a swivel race 31 rests upon the upper end of bushing 28 and is secured to the upper end of a sleeve 32 which is inserted within the bushing 28, the sleeve being of sufficient length to project below the lower end of the bushing where tongues 33 are struck outwardly therefrom and peened over the lower end of bushing 28 to prevent withdrawal of sleeve 32 and race 31.

From the foregoing description it will be apparent that there has been provided a sheet metal chair base of simple construction and exceedingly few parts although the assembly and construction are such as to provide for absolute rigidity and durability over long and hard usage.

It will be apparent to those skilled in the art that minor changes may be made in the details of construction without departing from the spirit and scope of the invention as defined in the appended claims.

I claim:

1. A sheet metal chair base comprising a single piece of sheet metal formed to provide a plurality of spaced legs substantially U-shaped in cross section joined by integral and connecting side walls and a top wall, a lower plate bridging the open central portion of said legs beneath said top wall having portions lapping and welded to the connecting side walls, the welding metal at the lower end of the side wall and plate providing a smooth joint between said plate and side wall, a reinforcing plate of a thicker gauge than said base and lower plate overlying said lower plate, and a tubular member extending through said top wall, said reinforcing plate and said lower plate securing them together.

2. A sheet metal chair base comprising a single piece of sheet metal formed to provide a plurality of spaced legs substantially U-shaped in cross section joined by integral and connecting side walls and a top wall, a lower plate bridging the open central portion of said legs beneath said top wall having portions lapping and welded to the connecting side walls, the welding metal at the lower end of the side wall and plate providing a smooth joint between said plate and side wall, a tubular member extending through and secured to said top wall, an inner sleeve extending through said tubular member and lower plate, and a swivel race secured to the upper end of said sleeve and resting upon the upper end of said tubular member, said inner sleeve extending below the lower end of said tubular member and having outwardly struck tongues engaging said member.

3. A sheet metal chair base comprising a single piece of sheet metal formed to provide a plurality of spaced legs joined by integral and connecting side walls and a top wall, and a lower plate underlying the top wall and having portions lapping and secured to the connecting side walls, said plate also having positioning lugs arranged to engage said legs to support and position said lower plate during assembly of the chair base.

4. A sheet metal chair base comprising a single piece of sheet metal formed to provide a plurality of spaced legs joined by integral and connecting side walls and a top wall, and a lower plate underlying said top wall and having portions underlapping and welded to the connecting side walls, said plate also having positioning lugs arranged to engage said legs to support and position said plate during assembly, said lugs being sufficiently thin to burn away during welding.

5. A sheet metal chair base comprising a single piece of sheet metal formed to provide a plurality of spaced legs substantially U-shaped in cross section joined by integral and connecting side walls and a top wall, each leg having an opening through its underside at its outer extremity adapted to receive a caster retainer, a lower plate bridging the open central portion of said legs beneath said top wall and having portions lapping and welded to the connecting side walls, the welding metal at the lower end of the side wall and plate providing a smooth joint between said plate and side wall, and a sheet metal caster retainer having slightly resilient side walls sprung into said openings on the outer extremities of said legs and retained by welding.

ARTHUR R. LAFFERTY.