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BASE FOR SWIVEL CHAIRS
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Fig. 7.

Fig. 8.

Fig. 9.

Fig. 10.

Fig. 11.

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This invention relates to chairs, and has particular reference to an improved base for swivel chairs. Generally speaking, the object of the invention is to provide a swivel chair base which may be produced economically and with facility from sheet metal, and which is strong and durable and otherwise thoroughly satisfactory in use.

With the foregoing and other objects in view, which will be more fully apparent as the nature of the invention is better understood, the same consists in the novel features of construction, combination and arrangement of parts as will be hereinafter more fully described, illustrated in the accompanying drawings and defined in the appended claims.

In the drawings, wherein like characters of reference denote corresponding parts in the different views:

Figure 1 is a top plan view of a chair base constructed in accordance with one practical embodiment of the invention.

Figure 2 is a side elevation.

Figure 3 is a vertical section on the line 3—3 of Fig. 1.

Figure 4 is a section on the line 4—4 of Fig. 1.

Figure 5 is a section on the line 5—5 of Fig. 1.

Figure 6 is a section on the line 6—6 of Fig. 1.

Figure 7 is an enlarged top plan view of the reinforcing plate structure for the center of the chair base according to one embodiment of the invention.

Figure 8 is a section on the line 8—8 of Fig. 7.

Figure 9 is a vertical section through the tube element of the chair base, prior to the same being operatively incorporated in the base.

Figure 10 is a plan view of one of the caster sockets.

Figure 11 is an end view of one of the caster sockets.

Figure 12 is a view similar to Fig. 3 illustrating a slightly modified form of the reinforcing plate structure for the center of the chair base.

Figure 13 is a view similar to Fig. 4 through the structural embodiment of the invention illustrated in Fig. 12; and

Figure 14 is a plan view of the reinforcing plate shown in Figs. 12 and 13.

According to the present invention, a blank of sheet metal of suitable gauge and of proper size and shape from which to produce the chair base, is pressed or otherwise formed to comprise a central portion A having radiating therefrom a plurality of legs B. The legs B, which are duplicates of one another, are of substantially inverted U-shape in cross section and are formed to extend downwardly at a suitable slight inclination towards their outer ends, where they terminate in more abruptly downturned terminal portions b.

Each leg is inclusive of a top wall 10 and a pair of side walls 11, 11 and, as shown, the adjacent side walls of adjacent legs are formed as curved continuations of one another at the central portion A of the structure, these curved continuing or connecting portions, designated as 12, defining the width of the central portion A between the legs B. Preferably, the top wall 10 of each leg B is pressed to form a plurality of longitudinally extending scuff ribs 13 at the outer end thereof to prevent marring of the surface between said ribs and to avoid the necessity of using a separate scuff plate to cover the outer end portion of each leg as has heretofore been common practice. These ribs serve in addition to stiffen and reinforce the outer ends of the legs B, and within the thus stiffened and reinforced outer end portion b of each leg is suitably secured, as by welding, a caster socket 14.

At its bottom, each side wall 11 of each leg B is bent inward to provide a stiffening flange 15 of any suitable width, and, as shown, these stiffening flanges extend from the outer ends of the respective side walls 11 inward approximately to the points where said side walls 11 meet the curved continuing or connecting portions 12 of related pairs of said walls. Inward from these points, that is,
inward of the inner edges of the flanges 15, the curved side wall portions 12 are unflanged and are stepped upward slightly above the flanged lower edges of the side walls 11, 11; i.e., the lower edges of the curved portions 12 terminate slightly above the lower edges of the side walls 11, as indicated at 16 in Fig. 2 of the drawings.

Referring now particularly to Figs. 7 and 8 of the drawings, C designates generally a spacing and reinforcing plate structure for the lower part of the central portion A of the chair base, this structure comprising, according to one practical embodiment of the invention, a pair of nested plates 17 and 18 conforming, as viewed in plan, to the horizontal contour of the lower part of the central portion A and, as viewed in side elevation, conforming to the vertical contour of the lower part of said central portion A. These plates are provided with upturned marginal flanges 19 and 20, respectively, and, as shown, the flanges 19 of the outer or lower plate are substantially equal in height to the distance from the unflanged lower edges of the curved portion 12 of the legs sides to the lower edges of the flanged portions 11 of said leg sides, while the flanges 20 of the inner or upper plate extend a suitable distance above the flanges 19.

The plate structure C is adapted to be inserted into the lower central portion A of the chair base, and when thus properly inserted, the upper edges of the flanges 19 of the lower or outer plate 17 abut the lower edges of the curved side walls 12 of said central portion and said flanges form substantial flush continuations of said curved walls in a downward direction, while the bottom of said plate 17 is disposed flush with the leg flanges 15, and the flanges 20 of the inner or upper plate 18 telescope within the curved side wall portions 12 with their outer faces snugly engaged against the inner faces of said curved walls 12.

Central openings are formed in the top wall of the central portion A and in the nested plates 17, 18, and prior to inserting the plate structure C into the respective central portion A, a sleeve D is aligned with said openings so that its ends will extend respectively through said openings above the top of the central portion A and below the bottom of the plate structure C when said plate structure is inserted as heretofore described.

Formed adjacent to the ends of the tube D are outwardly directed annular ribs 21 and 22, one of which is adapted to abut the inner face of the top wall of the central portion A and the other of which is adapted to abut the inner face of the inner plate 17 when the plate structure C is operatively engaged with the central portion A.

With the tube D and the plate structure C operatively assembled with the central portion A as described, the seams between the abutting edges of the curved side wall portions 12 and the flanges 19 are welded, as indicated at 23, and the ends of the tube D are rolled outward or spun over against the top of the central portion A and against the bottom of the lower plate 12, respectively, as indicated at 24, which thus results not only in stiffening and reinforcing the central portion A to such an extent that said portion is rendered stiff and rigid and capable of sustaining heavy loads without distortion, but at the same time provides, through the instrumentality of the tube D, means whereby the swivel pin of a chair bottom may readily be connected with the chair base.

Preferably, but not necessarily, the top wall of the central portion A is centrally dished upward, as at 25, and the plates 17, 18 are centrally dished downward, as at 26, to further increase the stiffness and the rigidity and strength of the central portion A.

Instead of the plate structure C comprising a pair of nested plates as heretofore described, said structure may consist of only a single plate C' as illustrated in Figs. 12 to 14 of the drawings, in which event said plate preferably is formed of greater thickness than either of the plates 17 or 18 and of a size to abut the lower edges of the curved side wall portions 12 to which it is adapted to be welded. In other respects it is substantially the same and operates in the same manner and for the same purposes as the plate structure C.

A chair base constructed as herein described and as shown in the drawings, wherein the central portion A and the legs B are pressed or otherwise formed from a single blank of sheet metal, and which comprises in addition the tube D and the central reinforcing plate structure C or C', may be produced economically and is strong and durable and is thoroughly satisfactory in use.

Without further description it is thought that the features and advantages of the invention will be readily apparent to those skilled in the art, and it will of course be understood that changes in the form, proportion and minor details of construction may be resorted to, without departing from the spirit of the invention and scope of the appended claims.

We claim:—
1. A base for swivel chairs comprising a central portion and a plurality of legs formed in one piece with said central portion, the legs being of inverted U-shape in cross section and each comprising a top wall and a pair of side walls, the adjacent side walls of adjacent legs being connected with and forming integral continuations of one another, and a reinforcing plate structure secured at the bottom of said central portion, said plate structure having side portions disposed flush.

2. A base for swivel chairs comprising a central portion and a plurality of legs formed in one piece with said central portion, the legs being of inverted U-shape in cross section and each comprising a top wall and a pair of side walls, the adjacent side walls of adjacent legs being connected with and forming integral continuations of one another, and a reinforcing plate structure secured at the bottom of said central portion, said plate structure having side portions disposed flush.
with the outer faces of the connecting portions of the side walls of said legs.

2. A base for swivel chairs comprising a central portion and a plurality of legs formed in one piece with said central portion, the legs being of inverted U-shape in cross section and each comprising a top wall and a pair of side walls, the adjacent side walls of adjacent legs being connected with forming integral continuations of one another, and a reinforcing plate structure secured at the bottom of said central portion, said plate structure having side portions disposed flush with the outer faces of said connecting portions and constituting downward extensions of said connecting portions, said plate structures further having other side portions extending upwardly into snug overlapping engagement with the inner faces of the connecting portions of the side walls of the legs, and the bottom face of said plate structure being disposed flush with the bottom edges of said legs.

3. A base for swivel chairs comprising a central portion and a plurality of legs formed in one piece with said central portion, the legs being of inverted U-shape in cross section and each comprising a top wall and a pair of side walls, the adjacent side walls of adjacent legs being connected with forming integral continuations of one another, and a reinforcing plate structure for said central portion cooperating with the lower parts of said leg side wall connecting portions, said structure comprising a pair of inner and outer nested plates having upturned marginal flanges, the flanges of the outer plate having their upper edge disposed in abutting relation to the lower edges of said leg side wall connecting portions, and the flanges of said inner plate extending upward in overlapping snug engagement with the inner faces of said leg side wall connecting portions.

4. A base for swivel chairs comprising a central portion and a plurality of legs formed in one piece with said central portion, the legs being of inverted U-shape in cross section and each comprising a top wall and a pair of side walls, the adjacent side walls of adjacent legs being connected with forming continuations of one another, a reinforcing plate structure conforming in contour to said central portion and secured to lower portions of the connecting or continuing parts of the side walls of said legs, and a vertical tube extending through said central portion upwardly through the top wall of the latter and downwardly through said plate structure, said tube having abutments respectively engaging the under face of the top wall of said central portion and the upper face of said plate structure and having its ends rolled over against the upper face of the top wall of said central portion and the under face of said plate structure, respectively.

5. A base for swivel chairs comprising a central portion and a plurality of legs formed in one piece with said central portion, the legs being of inverted U-shape in cross section and each comprising a top wall and a pair of side walls, the adjacent side walls of adjacent legs being connected with and forming integral continuations of one another, a reinforcing plate structure secured at the bottom of said central portion, said plate structure having side portions disposed flush with the outer faces of said connecting portions and constituting downward extensions of said connecting portions, said plate structures further having other side portions extending upwardly into snug overlapping engagement with the inner faces of the connecting portions of the side walls of the legs, and the bottom face of said plate structure being disposed flush with the bottom edges of said legs.