

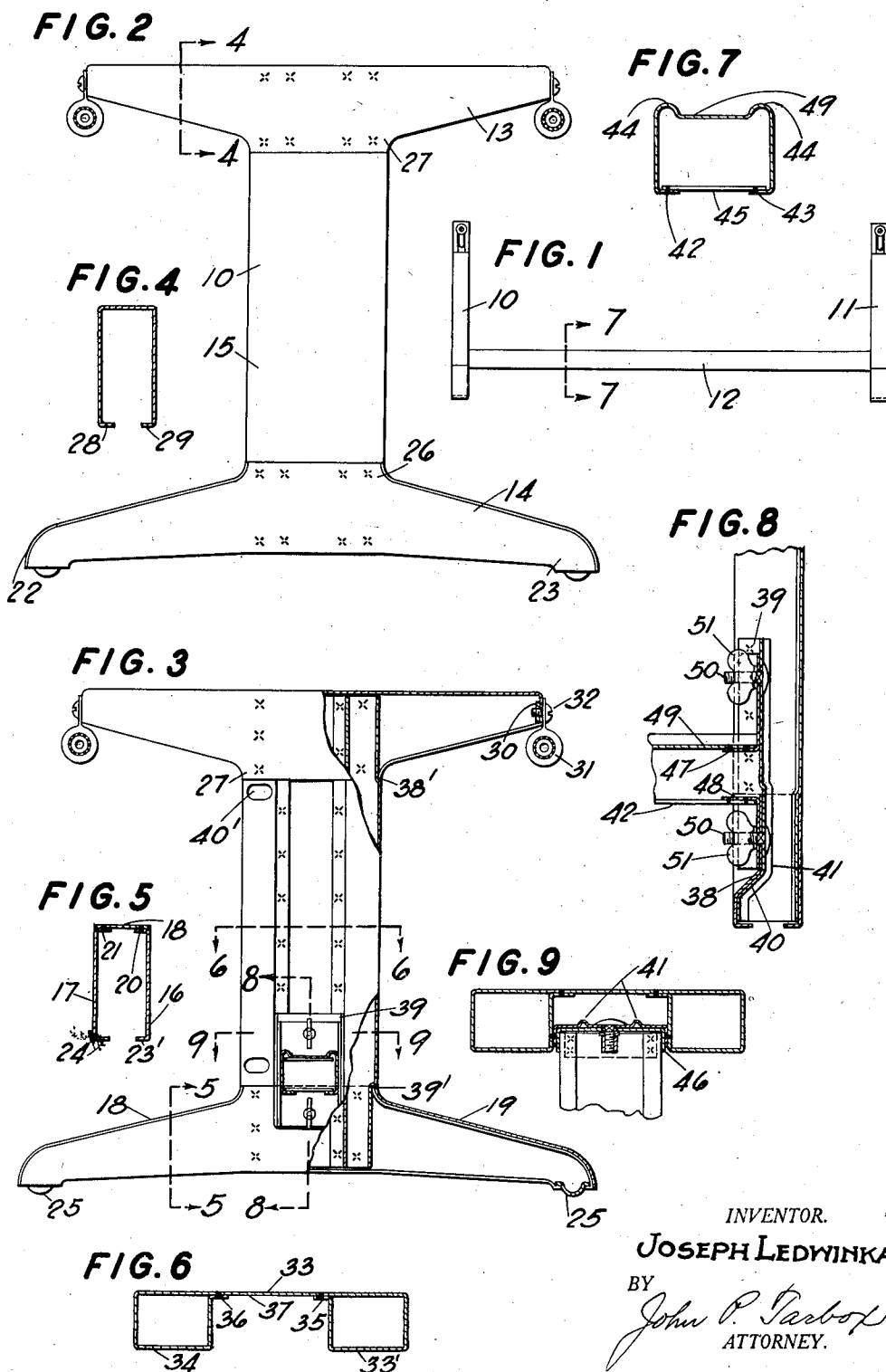
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FRAME STRUCTURE FOR PORCH SWINGS OR THE LIKE

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FRAME STRUCTURE FOR PORCH SWINGS
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The invention relates to porch swing frames or the like, and particularly to such frames fabricated out of sheet metal.

Heretofore, such frames have commonly been constructed of flat or angle section rolled stock, riveted or bolted together and comprising vertical and horizontal members braced together by diagonal braces. Such frames had the objection that they lacked the rigidity required for such service, were liable to develop squeaks and noises, due to looseness in the joints, and were generally more or less unsightly in appearance.

It is a main object of the invention to overcome these objections, and I attain this object by constructing the parts of such frame of light gauge sheet metal so formed and integrally joined together as to adequately interbrace the vertical and horizontal parts, the structure of the frame being generally of hollow cross section to insure great strength with a minimum of weight, and the sheet metal lending itself to variety of design, by embossing or otherwise, and producing in the finished product, particularly after painting or enameling, a very attractive appearance, a very desirable feature in a piece of furniture of this kind. The sheet metal frame lends itself further to the decoration in designs harmonizing to the furniture associated with it, and also to the integral joinder of the various stampings of which it is composed by that simplest and most facile method of joinder, namely, spot welding. This integral joinder produces smooth joints requiring little or no cleaning operations and renders the structures so joined very rigid, strong and durable, and free from the development of squeaks or other noises with use.

In the accompanying drawing forming a part of this specification I have indicated a specific form of construction according to my invention, but it will be obvious to those skilled in the art that modifications and variations may be made without departing from the spirit of the invention, as defined by the claims appended hereto.

In the drawing,

Fig. 1 is a side elevational view of a swing frame according to the invention.

Fig. 2 is an end elevational view on an enlarged scale of the outside face of one of the unitary end frame members.

Fig. 3 is a corresponding view of the inside face of one of the end frame members, parts being broken away to show the interior.

Figs. 4, 5, 6, 7, 8 and 9 are detail sectional views taken, respectively, on the correspondingly numbered section lines indicated in Figs. 1, 2 and

3 and seen in the direction indicated by the arrows at the ends of the section lines.

The frame of the invention comprises unitary end frame members or standards designated generally by the numerals 10 and 11 and a connecting member 12 detachably but rigidly interconnecting the unitary end frame members adjacent their lower portions. The detachable connection is for the purpose of knock-down and storage or shipment in compact form. Since the end frame members or standards 10 and 11 are alike in all respects except that they face in opposite directions, the detailed description of one of them will suffice.

Each standard comprises upper and lower cross members 13 and 14 and a vertical column 15 interconnecting them.

The lower cross member 14 forms the base of the standard and is somewhat wider than the top member 13 to give a firm and stable foundation. The base is of hollow cross section and is conveniently formed of two side stampings 16 and 17 extending from end to end and separate cover strips 18, 19, one for each lateral extension of the base spot welded to the inwardly extending flanges 20 and 21 formed on the respective side stampings and forming with the side stampings a generally downwardly presenting channel section. The lateral extensions of the base are tapered from the central portion outwardly and have their top formed of a reverse curvature to produce a pleasing appearance and to effectively brace the ends of the base to the central column 15. At their extreme ends the lateral extensions of the base are preferably provided with shallow downward extensions 22, 23 forming feet through which the standards rest upon the floor. The side stampings are flanged inwardly at 23', 24 along their lower edges, to strengthen the section and to provide means at the ends for the securing of suitable floor contacting devices, such as sheet metal plates 25, spot welded to the flanges 23' and 24 and having downwardly projecting domes 25 pressed into them.

Centrally the base 14 is formed with a shallow upward extension 26 forming a flange around an opening in the bottom of the channel section of the base. This upward extension provides a flange around the opening adapted to telescopically receive the column 15 and the outer face of this flange forms a smooth extension of the outer face of the column, as will presently appear.

The upper cross member 13 from the ends of which the swing is suspended, is formed out of

a single stamping of downwardly presenting channel cross section, having tapered lateral extensions and a downwardly extending flange 27 around a central opening adapted to telescopically receive the top of the column 15.

This member 13 has its top substantially flat and the lower walls of the lateral extensions thereof inclined downwardly and inwardly, the side walls being provided with, at their lower edges, inwardly extending flanges 28 and 29. The base of the channel is flanged downwardly at its ends and the side walls are correspondingly inwardly flanged at the ends and to these flanges may conveniently be secured as by spot welding, a tapped plate 30 to which the bearing brackets 31 may be secured by screws 32.

By reason of the openness of the section of the top and bottom members 13 and 14 on their lower sides, access can be readily had for spot welding the parts together.

The central column 15 interconnecting the top and bottom cross members is made very strong and rigid against compressional and torsional strains and of very simple construction by constituting it, in effect, of a double box section construction, as shown in Fig. 6. It is made of a single stamping having its outer face 33 flat, or substantially so to conform with the flat outer faces of the end cross members and its side edges bent around to form the box sections 33' and 34 and secured through the lateral edge flanges 35 and 36 to the outer face portion 33. By this construction there is provided between the box section portions 33' and 34, an inwardly facing channel 37 which is utilized for securing the end frame members together as will presently appear.

The ends of the column 15 which are telescopically received within the flanged openings provided in the top and bottom cross members are offset inwardly at 38' and 39' to the depth equal to the thickness of the metal so that the outer faces of the column and cross members flow smoothly the one into the other, and the parts are strongly interconnected throughout their overlapping portions by spot welding. Access for spot welding these parts together may be had through the openings 40' provided in the inner wall of the box section portions 33' and 34 of the column 15, where these openings are not objectionable and do not show when the swing is in place.

By providing a generous overlap between the column and end members a very secure and rigid joinder can be had through making a sufficient number of spot welds.

To continue the channel 37 downwardly a distance sufficient to give a wide bearing seat for the securement of the cross connecting member 12, the inner stamping 16 of the base member 14 is formed with a depressed portion 38 of substantially the width of the channel in the column. A reinforcing and securing channel 39 is spot welded to the side walls of the channel 37 and its base extended down by an extension 40 inside the stamping 16 and spot welded thereto. For additional stiffness and strength this reinforce is provided with ribs 41.

The transverse connecting member 12 may also be of a downwardly presenting channel section, as clearly indicated in Figs. 3 and 7 having inwardly extending flanges 42 and 43 along the edges of its side walls. For additional stiffness and strength the edges of its base wall may be beaded as shown at 44, and the flanges 42 and 43 are connected at spaced points by transverse strips

45, which gives the structure in effect, a box section. To form a wide base for connecting the cross member 12 to the end frames or standards 10 and 11, a channel 46 is telescoped over each end of the member and spot welded to its side walls. Portions of the base wall of the channel are turned in at 47 and 48 and spot welded respectively to the base wall 49 and the flanges 42 and 43 of the channel. In securing the cross member 12 detachably to the end frames 10 and 11, its channel reinforced end is telescoped within the channel 39 and the depressed seat formed in the stamping 16 and secured above and below the channel by the bolts 50 and wing nuts 51. The bolts can be prevented from turning by having squared shank portions engaging a corresponding hole in the reinforcing member 39. This construction provides a very rigid and strong interconnection between the parts, and one which permits ready assembly and dis-assembly of the end frames and cross members when desired.

What I claim is:

1. A light gauge sheet metal end frame for porch swings or the like comprising a widened base portion of downwardly presenting channel section having a central opening therein, an up-turned flange around said opening, and a hollow section column of double box section telescoped within said flanged opening and integrally secured to said flange.

2. A relatively light weight sheet metal end frame for porch swings or the like comprising a widened upper cross member of downwardly presenting channel form and having a short central downward extension of its side walls, and a central hollow column of inwardly facing hollow flanged channel section telescoped within the central downward extension and integrally secured to said side walls.

3. A cross member for an end frame member of a porch swing or the like, comprising a light gauge sheet metal structure of downwardly presenting channel cross section, the side walls of said channels being inwardly flanged, and a central flanged opening formed in the bottom wall of the channel for telescopically receiving a vertical columnar member.

4. A top cross member for an end frame member of a porch swing or the like comprising an integral stamping of downwardly presenting channel having tapered ends and a central portion of uniform depth, the side walls of the central portion being extended down and the tapered end portions having their side walls flanged inwardly, the inwardly extending flanges and the downward extension forming a flanged opening to telescopically receive the upper end of a supporting column.

5. An end frame member for porch swings or the like comprising upper and lower hollow sheet metal cross members of downwardly presenting channel form having tapered end portions and a vertically deepened central portion between said tapered end portions, the vertically deepened central portion of the lower member having its bottom wall removed, and a sheet metal columnar member having inwardly facing hollow box section flanges joining said cross members and having its ends in telescoping relation with the side walls of said channel cross members and integrally secured thereto.

6. An end frame member for porch swings or the like having an upper cross member from the ends of which the swing or the like is suspended, said cross member being formed adjacent its ends

of downwardly presenting channel cross section, and integral flanges from the base and side walls of said channel and a reinforcing block secured to certain of said flanges and from which the swing is adapted to be suspended.

7. An end frame member for porch swings or the like having a transverse base member having its ends formed of downwardly presenting channel section, the side walls of said channel being flanged inwardly, and a domed foot plate secured to the flanges.

8. A cross member for connecting the end frames or standards of a porch swing or the like comprising a sheet metal stamping of generally

downwardly presenting channel section, and a channel section end plate secured through its flanges to the side walls of said stamping and through a tab from its web to the bottom wall of the channel.

9. A frame for porch swings or the like having an end standard of generally hollow cross section provided with an inwardly presenting channel, and a channel reinforce telescoped within said first-named channel and spot welded to its side walls, said channel reinforce being adapted to receive the end of a cross member, and means for securing the cross member to said reinforce.

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