

[54] CHAIR BASE CONSTRUCTION

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108/150

[51] Int. Cl. .... F16m 11/20; F16m 13/00

[58] Field of Search..... 248/188.7, 44, 158;  
108/150

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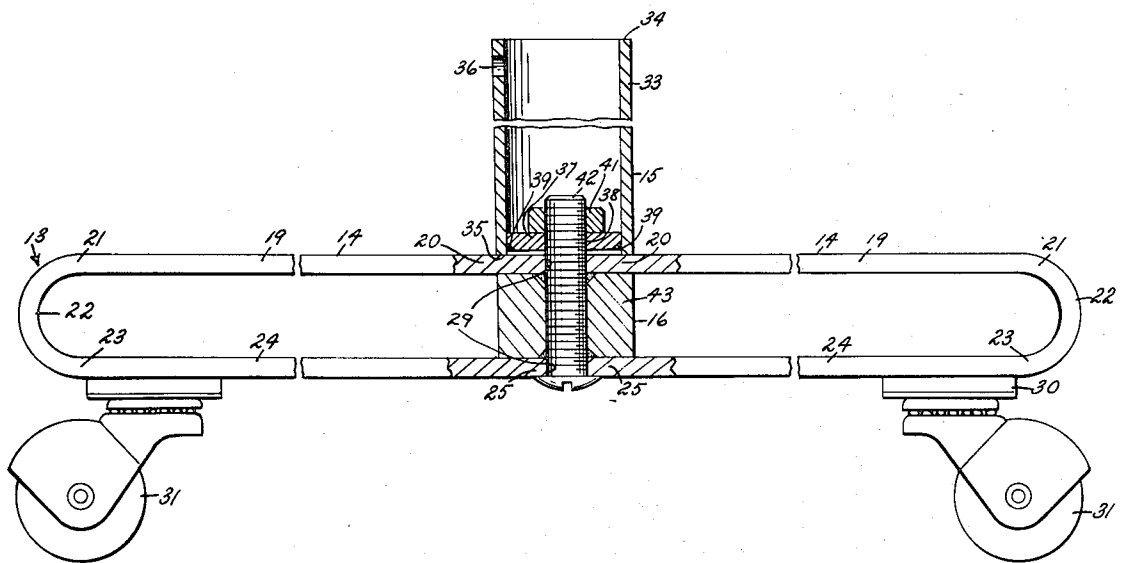
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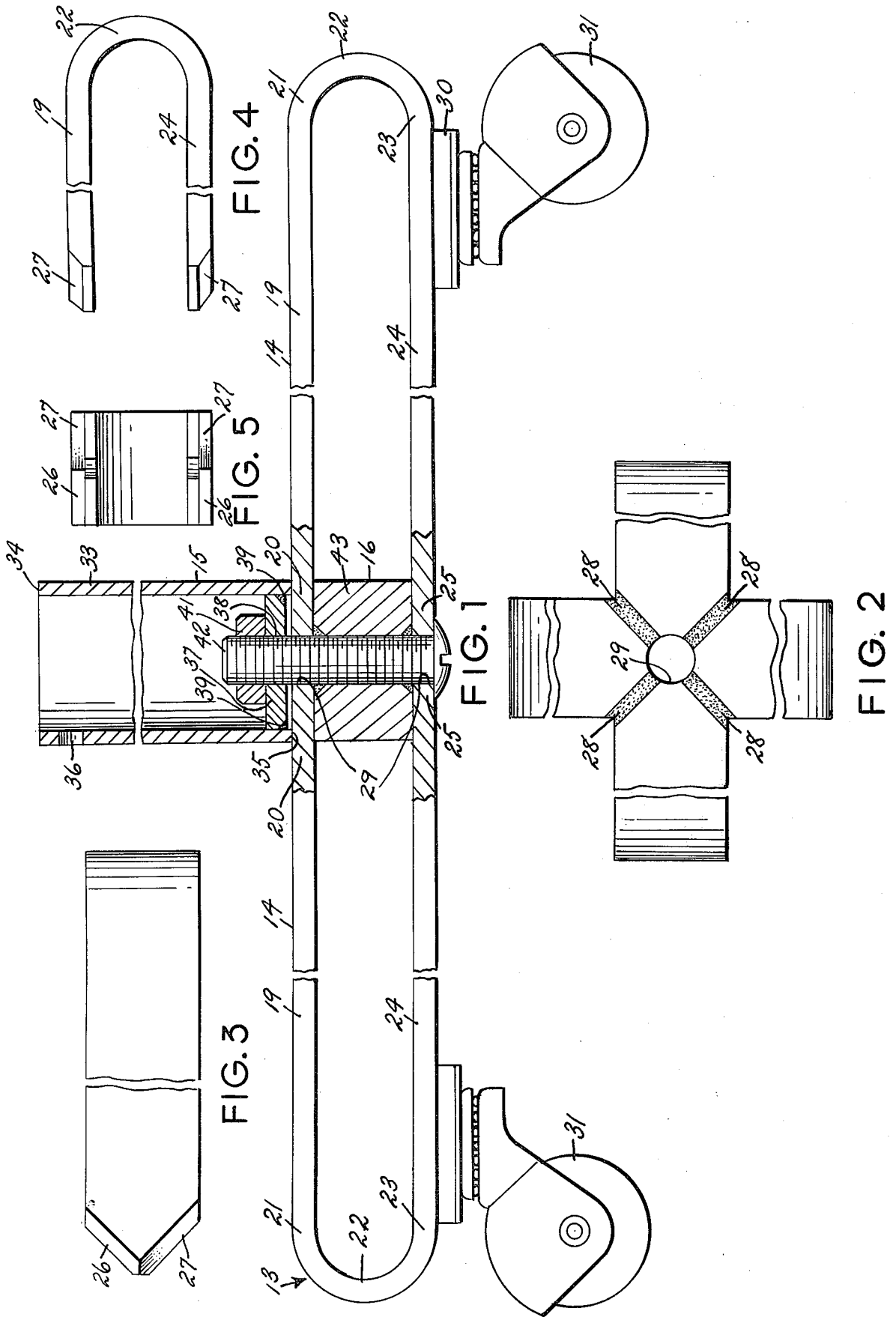
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[57] ABSTRACT

A metal base of a type particularly suitable for seating as a swivel chair, desk chair, or secretarial chair; equally suitable as a table base for supporting both small and large size table tops from a center column or post; and also suitable for supporting the ends and corners of tables and seating for rectangular tables and desks and for modular or tandem seating. The suitability of the same base for all of these applications gives a unified appearance of products which is a very desirable feature for furniture of this type. The base includes a plurality of horizontally disposed leg elements, each formed of a strip of metal bent upon itself to form an outer semi-circular end and a pair of parallel members, the inner ends of which are mutually interconnected at a centrally positioned location which supports a vertically oriented hollow socket element. The fabrication of each of the disclosed embodiments requires no casting operation, and several of the embodiments permit assembly without resort to welding operations.

11 Claims, 20 Drawing Figures





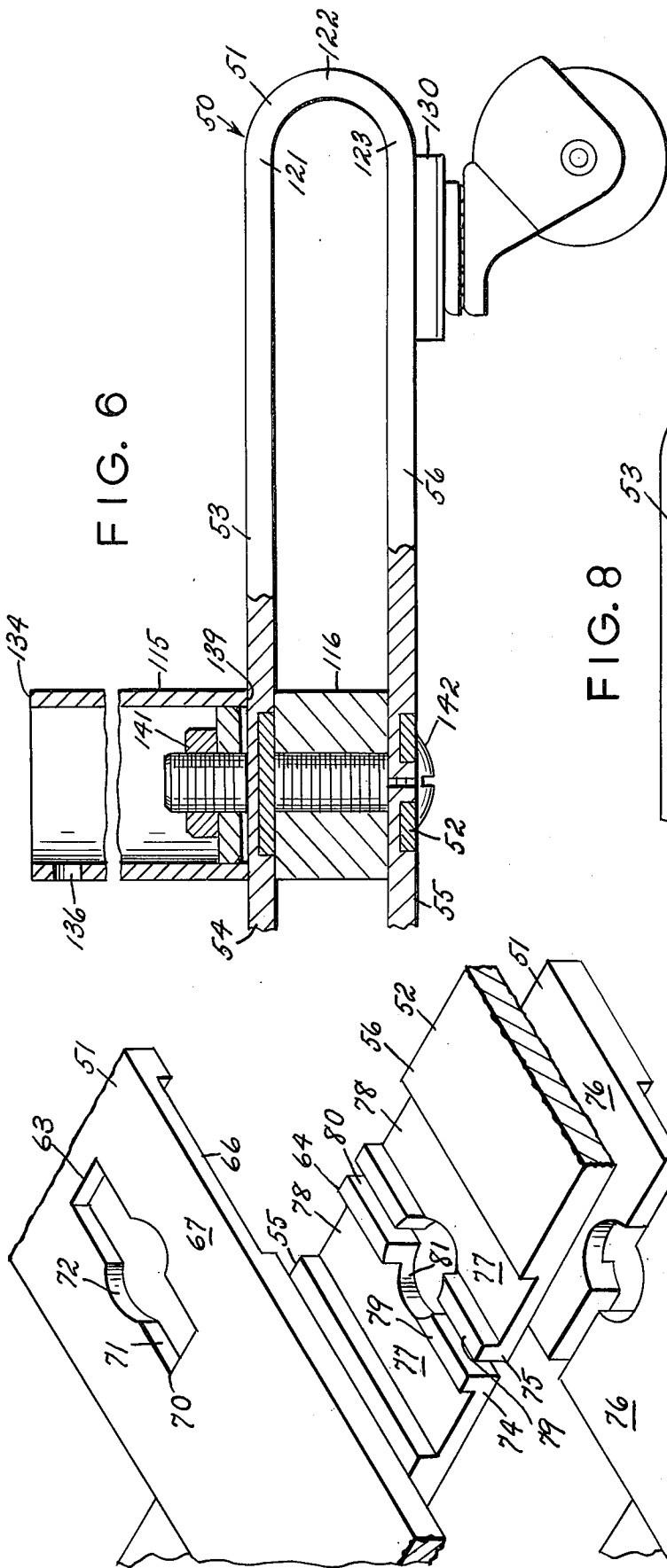


FIG. 6

FIG. 8

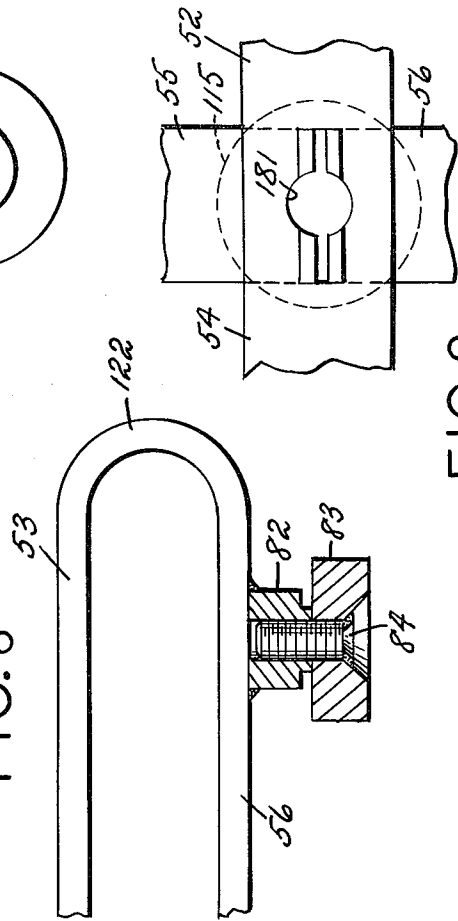
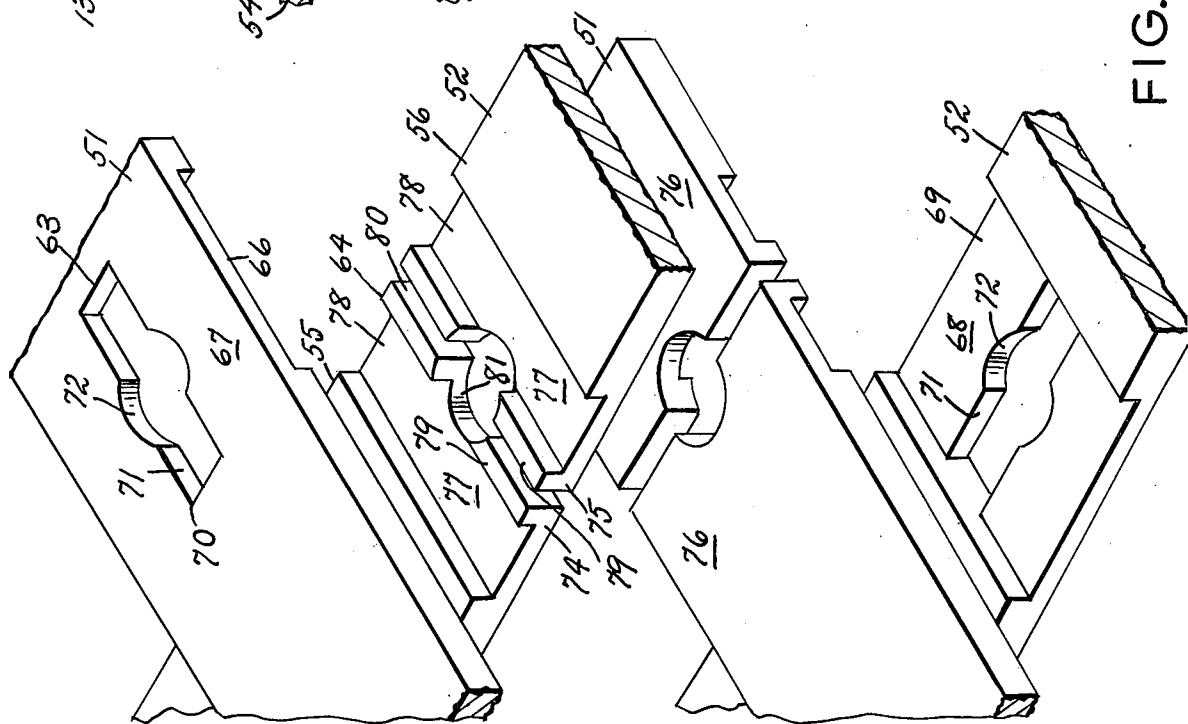


FIG. 9

FIG. 7



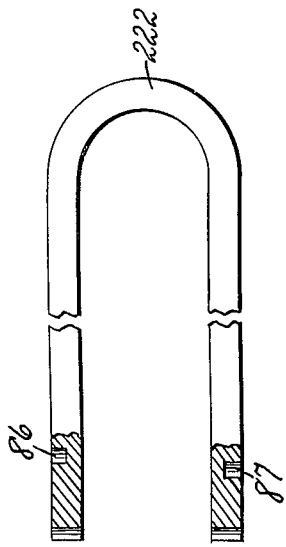


FIG. 14

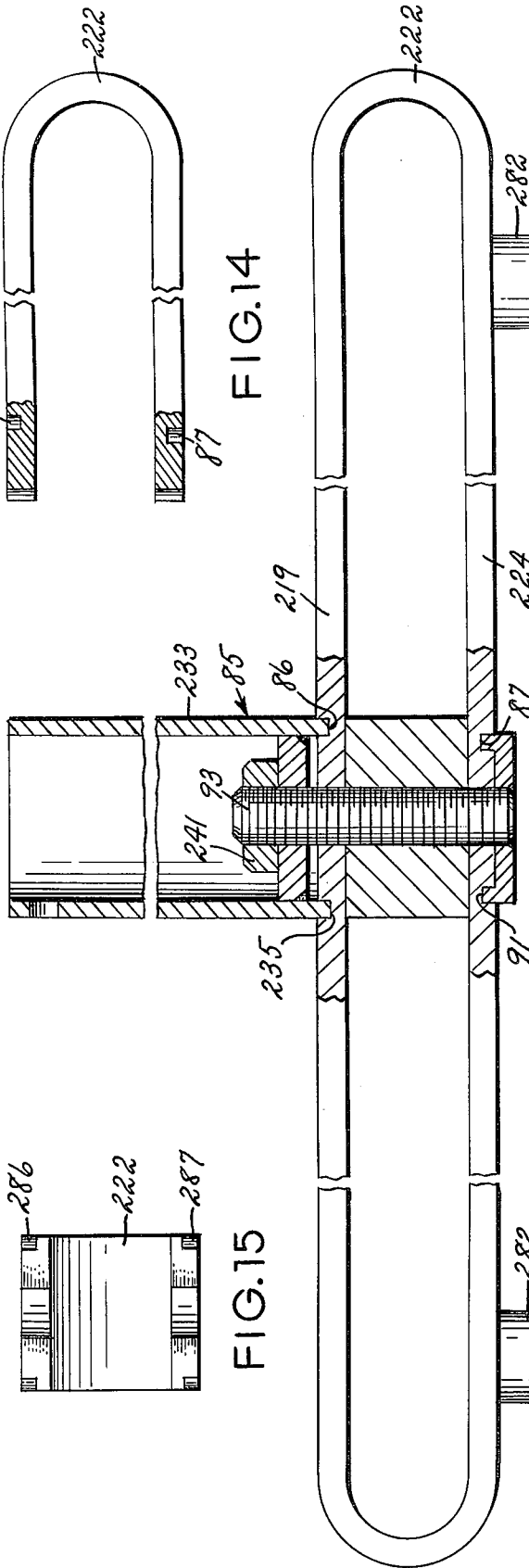


FIG. 10

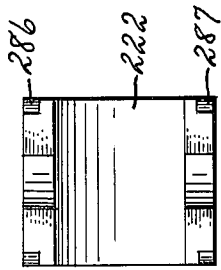


FIG. 15

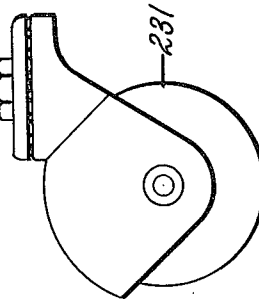


FIG. 12

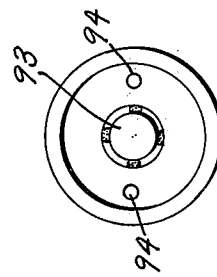


FIG. 17

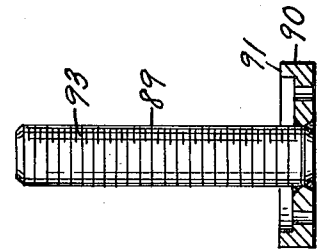


FIG. 11

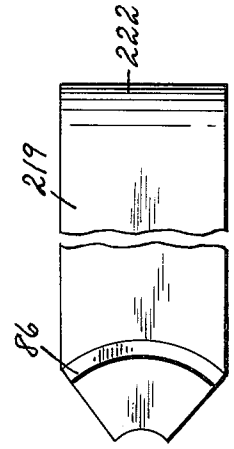


FIG. 13

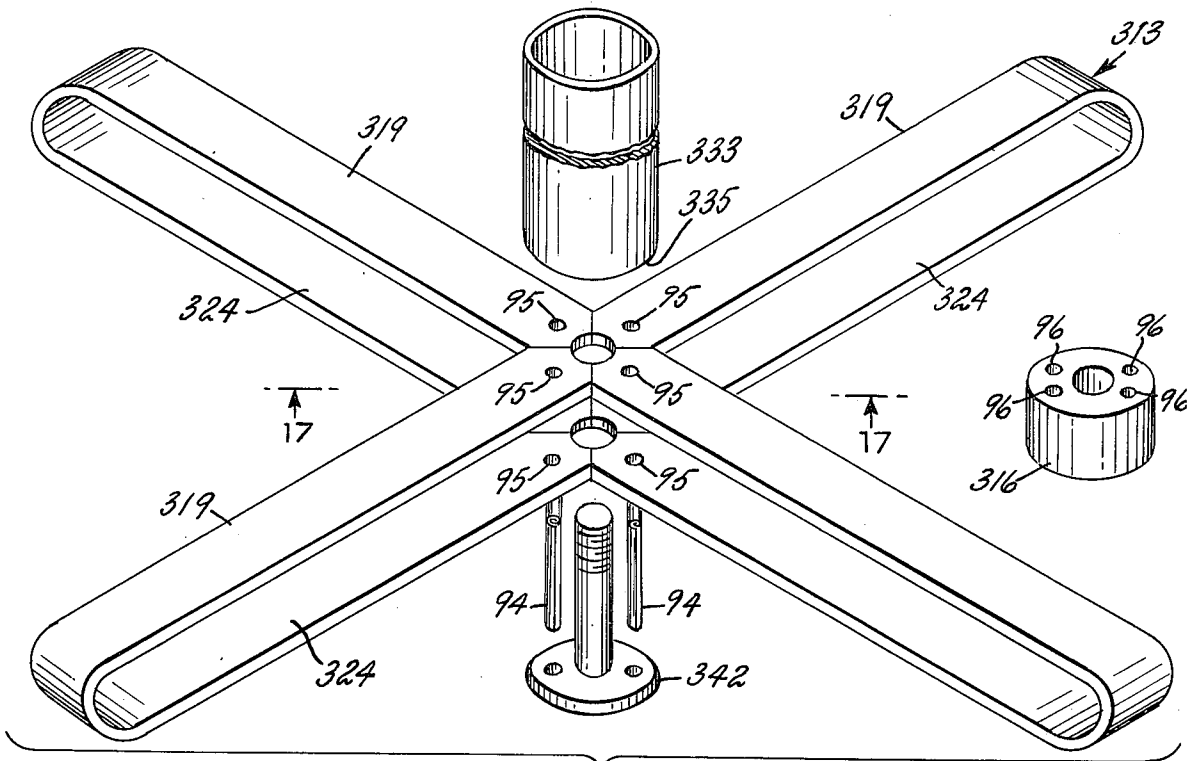


FIG. 16

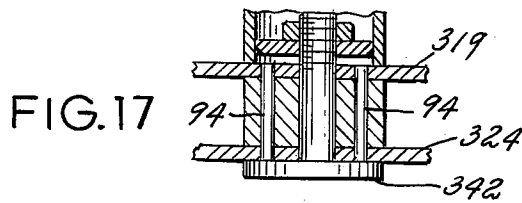


FIG. 17

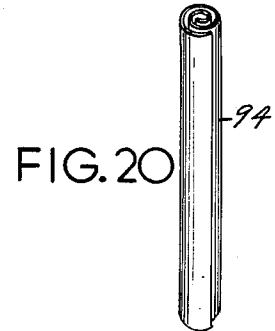


FIG. 20

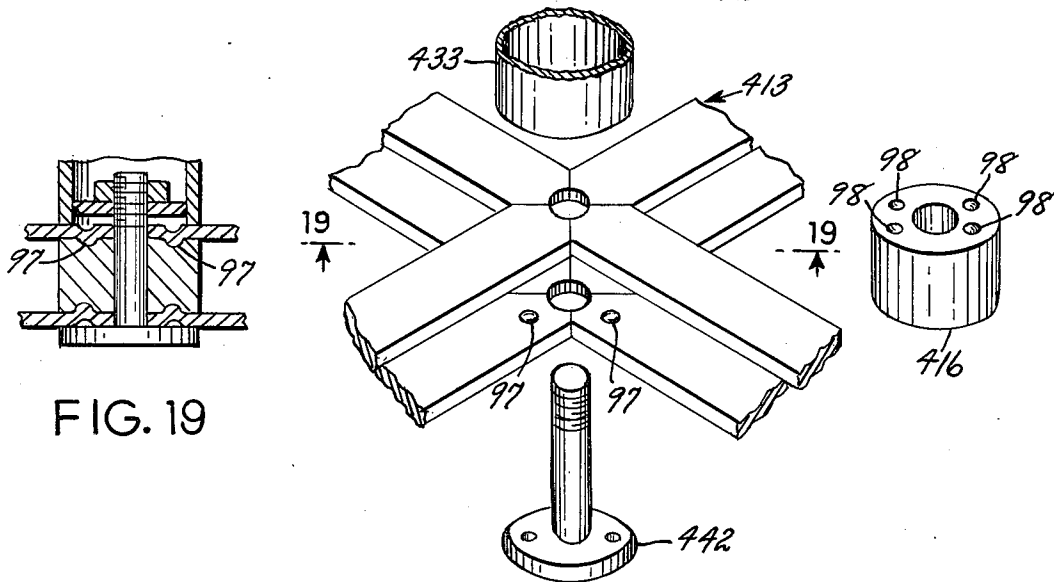


FIG. 19

FIG. 18

## CHAIR BASE CONSTRUCTION

### BACKGROUND OF THE INVENTION

This invention relates generally to the field of furniture construction, and more particularly to metal bases for supporting swivel chairs, tandem seating, tables, and the like.

### BRIEF DESCRIPTION OF THE PRIOR ART

The prior art includes metallic castings and welded constructions in a variety of decorative forms, as well as radially extending leg constructions of wood and metal. Bases of this type include centrally disposed upwardly extending sockets for receiving a shaft for mounting the seat. Casting operations require high volume to be economical, and the resultant product is often heavy looking. Welding operations must be followed by additional polishing to smooth the surface and remove the weld marks. In welding, the legs are usually welded to a center column which makes the subsequent finishing operation and shipping more costly compared to being able to finish the part separately and ship the product disassembled.

### BRIEF DESCRIPTION OF THE PRESENT INVENTION

Briefly stated, the invention contemplates the provision of a chair base or similar article in which the leg elements thereof are formed as U-shaped pieces of flat strap iron or similar materials to include an upper and a lower horizontally disposed leg member interconnected at the outer end thereof by a bend portion, and the inner end thereof to a vertically disposed socket element supporting the body of the chair. In one embodiment, the interconnection is by welding said inner ends. In other embodiments, the inner ends are interconnected by novel structure permitting assembly at the site of ultimate use, in which the structure is maintained in interconnected condition by threaded means.

### BRIEF DESCRIPTION OF THE DRAWINGS

In the drawings, to which reference will be made in the specification, similar reference characters have been employed to designate corresponding parts throughout the several views.

FIG. 1 is a view in elevation, partly in section of a first embodiment of the invention.

FIG. 2 is a fragmentary top plan view showing the location of welds employed in assembly of the first embodiment.

FIG. 3 is a fragmentary top plan view of an individual leg element prior to assembly.

FIG. 4 is a fragmentary side elevational view of a leg element.

FIG. 5 is an elevational view of a leg element.

FIG. 6 is a fragmentary view in section, partly in elevation of a second embodiment of the invention.

FIG. 7 is a fragmentary exploded view in perspective of the second embodiment.

FIG. 8 is a fragmentary side elevational view, partly in section showing a modified form of construction.

FIG. 9 is a fragmentary bottom plan view.

FIG. 10 is a side elevational view, partly in section, of a third embodiment of the invention.

FIG. 11 is a side elevational view, partly in section, showing a bolt element forming part of the third embodiment.

FIG. 12 is a bottom plan view as seen from the lower portion of FIG. 11.

FIG. 13 is a fragmentary top plan view of an individual leg element comprising the third embodiment.

FIG. 14 is a fragmentary side elevational view of a leg element, partly in section.

FIG. 15 is an end elevational view of a leg element comprising the third embodiment.

FIG. 16 is an exploded view in perspective showing a fourth embodiment of the invention.

FIG. 17 is a vertical fragmentary central sectional view as seen from plane 17—17 in FIG. 16.

FIG. 18 is a fragmentary exploded view in perspective showing a fifth embodiment of the invention.

FIG. 19 is a fragmentary vertical central sectional view of the fifth embodiment as seen from the plane 19—19 in FIG. 18.

FIG. 20 is a perspective view showing an alternate form of pintle forming a part of the fourth embodiment.

### DETAILED DESCRIPTION OF THE DISCLOSED EMBODIMENT

In accordance with the first embodiment of the invention, referring to FIGS. 1 to 5, inclusive, the device, generally indicated by reference character 13, comprises broadly: a plurality of leg elements 14, a socket element 15, and integrating means 16.

The leg elements 14 are illustrated as four in number, but it will be appreciated by those skilled in the art that this number may be reduced to as little as two, or enlarged to as many as desired, consistent with considerations of utility and esthetics. Each leg element is formed of a length of steel bar, or similar material, such as stainless steel, aluminum, and the like, and includes an upper leg member 19, having an inner end 20 and an outer end 21. The outer end 21 interconnects with a curved member 22 extending through an arc of substantially 180°, the curved member interconnecting with the outer end 23 of a lower member 24 terminating in a second end 25 which underlies the first end 20. Each of the ends 20 and 25 includes first and second chamfered edges 26 and 27 to facilitate welding operations.

Referring to FIG. 2, lines of welding 28 are employed to interconnect the ends 20 and 25 to each other to form a frame-like assembly shown in FIG. 1. A through opening 29 is drilled at the exact center of the interconnection of the leg elements, as best seen in FIG. 1. Welded to the undersurface of the lower leg member 24 is a plate 30 forming a base for a conventional caster 31 or glide (not shown).

The socket element 15 includes a tubular member 33 bounded by an upper edge 34 and a lower edge 35. A transversely extended opening 36 accommodates a conventional seat height adjustment member (not shown). A washer 37 is welded inwardly of the lower edge 35 to the inner surface of the tubular member 33 and defines a central bore 38 positioned in the center of the welded area 39.

The integrating means 16 includes a conventional nut and bolt 41—42 which extends through a spacing sleeve 43 positioned between the upper leg members 19 and the lower leg members 24. The upper end of the bolt penetrates the bore 38, so that when the nut 41 is tight-

ened, the tubular member 33 will be maintained rigidly erect and supported by the interconnected leg elements.

It will be observed that during use, the upper leg members are in compression, and the lower leg members in tension, so that distortion of the device requires a very substantial downward force, normally far in excess of that normally encountered in supporting the weight of a chair with an occupant.

Turning now to the second embodiment of the invention, generally indicated by reference character 50, parts corresponding to those of the first embodiment have been designated by similar reference characters with the additional prefix "1".

The second embodiment includes first and second leg elements 51 and 52, respectively, each of which perform the function of a pair of interconnected leg elements of the first embodiment. Thus, two leg elements give the appearance of four legs after assembly. The leg elements 51 and 52 are identical, and may be used interchangeably. Each includes a first pair of leg members 53 and 54 which are interconnected, and a second pair of leg members 55 and 56 which are separated at the inner ends thereof.

The interconnecting means 116 includes first and second elements 63 and 64 on each of the leg elements 51 and 52 which permit them to be interconnected by a conventional nut and bolt. As best seen in FIGS. 6 and 7, the first element includes a bridging member 66 which interconnects the first leg members, the bridging member having an outer surface 67 and an inner surface 68 forming a recess 69. The bridging member defines a longitudinally arranged opening 70 defined by rectilinear side walls 71 and arcuate walls 72.

The second element 64 is formed by the free inner ends of the second leg members 55 and 56, and includes first and second end portions 74 and 75, each bounded by an outer surface 76 and an inner surface 77 defining a recess 78. Angularly projecting flanges 79 define an interstice 80 on either side of a through opening 81 formed by a drilling operation.

Assembly involves the positioning of the leg elements 51 and 52 as shown in FIG. 6, and the engagement of nut and bolt means 141 and 142 as in the first embodiment. It will be observed that in the case of the second embodiment, no welding operation is required, and the device may be shipped in disassembled condition in a single elongated container (not shown) in which the two leg elements are placed in parallel juxtaposed condition.

FIG. 8 illustrates a welded pad 82 disposed on the undersurface of the lower leg members which permit the threaded engagement of a glide 83 by a screw 84 where caster operation is not desired.

Turning now to the third embodiment of the invention, illustrated in FIGS. 10 through 15, inclusive, parts corresponding to those of the first embodiment have been designated by similar reference characters, with the additional prefix "2". The third embodiment, generally indicated by reference character 85, is also of a form which permits assembly at the point of ultimate use, and requires no welding operations for such assembly. The leg members 219 and 224 are formed in a manner similar to that of the first embodiment, with the elimination of the chamfered edges 26 and 27, and the provision of arcuate grooves 86 and 87, the former of which are engaged by the lower edge 235 of the tubular

member 233, and the latter of which is engaged by a bolt element 89, the head 90 of which is provided with an upwardly facing annular flange 91. For convenience in manufacture, the head 90 is formed as a separate member, and is welded to a threaded shank 93. Tool engaging openings 94 are provided for engagement with a spanner type wrench (not shown) of well known type.

The assembly of the third embodiment necessitates only the positioning of each of the individual leg elements in radially arranged position, and the engagement of the bolt and nut through the central bore 238, as shown in FIG. 10.

Turning now to the fourth embodiment of the invention, parts corresponding to those of the first embodiment have been designated by similar reference characters with the additional prefix "3".

The fourth embodiment of the invention differs from the first embodiment in the elimination of the welded areas 28, and the provision of spring pintles 94 which resiliently engage bores 95 in the upper leg members 319 and lower members 324 on either end thereof, the medial portions engaging corresponding bores 96 in the spacing sleeve 343.

In the fifth embodiment of the invention, parts corresponding to those of the first embodiment have been designated by similar reference characters with the additional prefix "4".

The fifth embodiment is similar to the fourth embodiment, and substitutes for the pintles 94 stamped projections 97, which engage corresponding recesses 98.

We wish it to be understood that we do not consider the invention limited to the precise details of structure shown and set forth in this specification, for obvious modifications will occur to those skilled in the art to which the invention pertains.

We claim:

1. A chair base for swivel chairs and similar articles of furniture comprising: a plurality of generally horizontally disposed leg elements with each member having substantially free side edges, each including an upper planar member and a lower planar member in spaced parallel relation thereto, each of said upper and lower members being interconnected at the outer ends thereof, and at second inner ends thereof, said inner ends thereof being juxtaposed with those of other leg elements in radial relation relative to each other at a centrally disposed point; a single integrating means interconnecting said inner ends of said legs, such that the inner ends of said upper planar members are substantially coplanar and the inner ends of said lower planar members are coplanar, and an upwardly facing socket element supported by said inner ends of said leg elements.

2. Structure in accordance with claim 1, further characterized in said outer ends of said upper and lower leg members being interconnected by an integral bend portion of substantially 180°.

3. Structure in accordance with claim 1, further characterized in said inner ends of said leg members defining an opening, and bolt means extending through said opening and interconnecting a part of said socket element to said leg elements.

4. Structure in accordance with claim 1, in which said leg elements are interconnected by welding the abutted edges of said inner ends thereof.

5. Structure in accordance with claim 1, in which the inner ends of said leg elements are each provided with grooves extending into planar surfaces thereof, said single integrating means including corresponding projecting portions engaging said recesses, and means for maintaining said projecting portions in engaged condition within said grooves.

6. Structure in accordance with claim 5, said last mentioned means including a threaded component.

7. Structure in accordance with claim 1, in which said leg elements are interconnected in pairs at the inner ends of one member thereof, and are provided with means at the inner ends of the other member thereof for engaging the interconnected ends of a similar pair of leg elements.

8. Structure in accordance with claim 7, in which said single integrating means includes a threaded nut and bolt, and a spacer member penetrated by said bolt disposed between the upper and lower members of each of said interconnected pair of leg elements.

9. Structure in accordance with claim 8, in which each individual pair of interconnected leg elements includes a first pair of interconnected leg members defining a transversely extending recess and a through elongated opening in the plane thereof, and a second pair of leg members, the inner ends of which are in spaced relation, and include laterally extending terminals engageable with the elongated opening of another pair of interconnected leg elements disposed at a substantial

right angle thereto.

10. Structure in accordance with claim 2, further characterized in said inner ends of said leg members each defining an opening, a spacing sleeve positioned between abutted inner ends of said leg elements, said sleeve having an axially disposed bore and a plurality of peripherally positioned bores, the axes of which are parallel to said first mentioned bore, bolt and nut means extending through said first mentioned bore serving to clamp said inner ends of said leg members against said spacing sleeve, and means interconnecting said openings in said inner ends of said leg members with said peripherally disposed bores to prevent radial displacement of said inner ends relative to the axis of said spacing sleeve.

11. Structure in accordance with claim 2, further characterized in said inner ends of said leg members each having a laterally extending projection, a spacing sleeve positioned between abutted inner ends of said leg elements, said sleeve having an axially disposed bore, and a plurality of peripherally located detents on opposed surfaces thereof, the axes of which are parallel to said bore; bolt and nut means extending through said bore serving to clamp said inner ends of said leg members against said spacing sleeve, said projections thereby entering said detents to prevent radial displacement of said inner ends relative to the axis of said spacing sleeve.

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