United States Patent

[11] 3,617,023

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[54] **SUPPORT**
38 Claims, 5 Drawing Figs.

[52] **U.S. Cl.** **248/188.7,** 29/451, 29/525, 29/526
[51] **Int. Cl.** **F16m 11/20**
[50] **Field of Search** 248/164, 188, 188.7; 29/451, 525, 526

[56] **References Cited**

UNITED STATES PATENTS

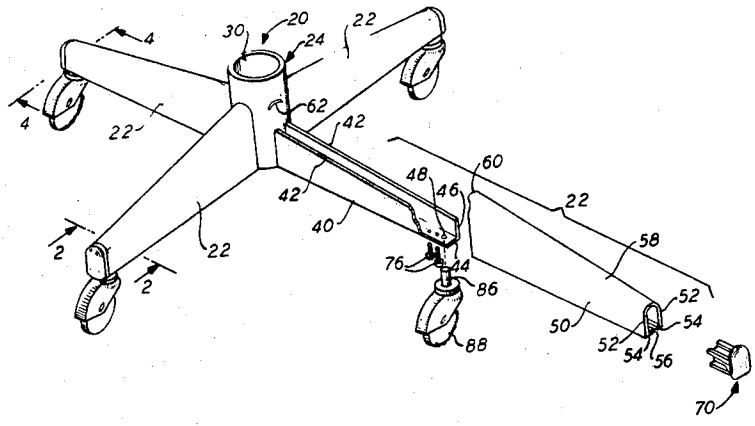
2,217,754	10/1940	Johnson	248/188.7
2,913,208	11/1959	McKinley	248/188.7
2,954,637	10/1960	Scherer	248/188.7

FOREIGN PATENTS

795,603	4/1968	Canada	248/188.7

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ABSTRACT: A pedestal is formed by providing a centrally disposed hub with a plurality of radially extending members of channel configuration opening upwardly. A sleeve of leglike configuration is slid onto each channel member until a lip formed at one end of the sleeve seats in a notch formed in the hub. A plug is then set into the open end of the sleeve and channel member. The plug and sleeve may be positioned by insertion of the pintle portion of a caster or glide through a hole formed in the bottom of the channel member and the journaling of said pintle in an aperture appropriately formed in the plug, or by screws or both.



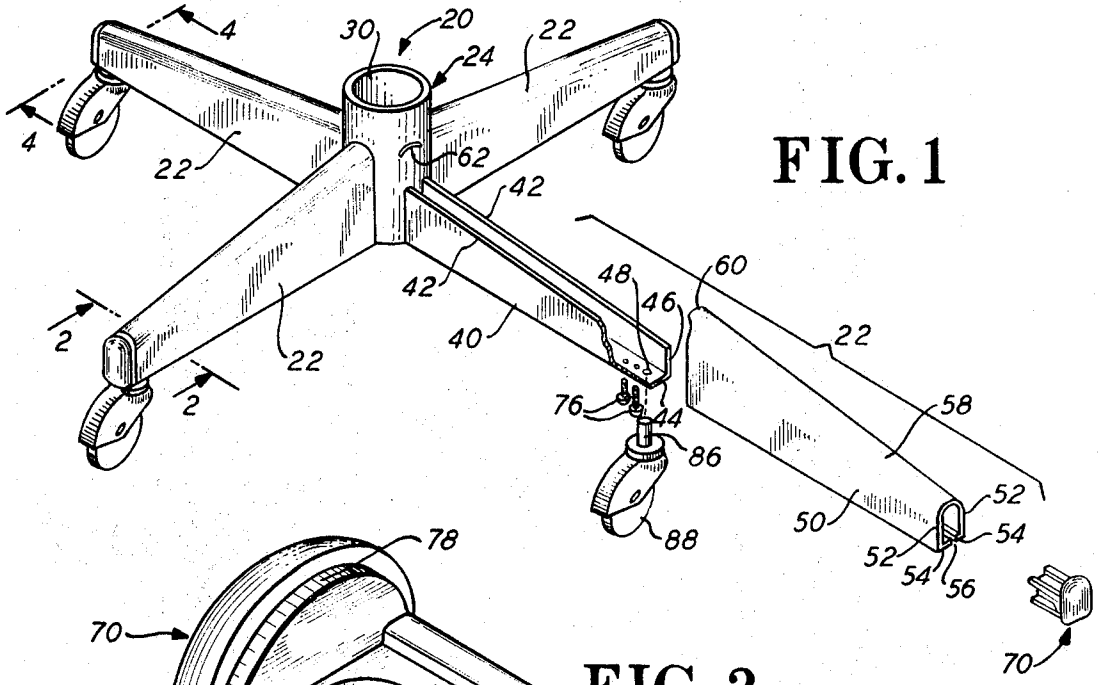


FIG. 1

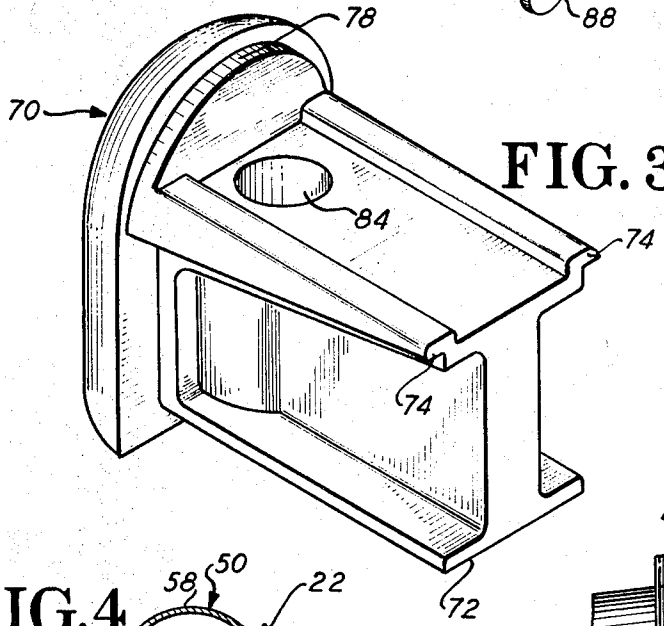


FIG. 3

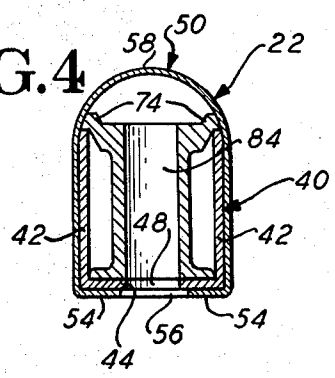


FIG. 4

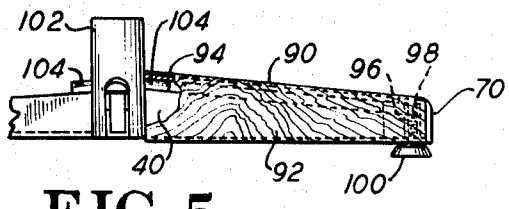


FIG. 5

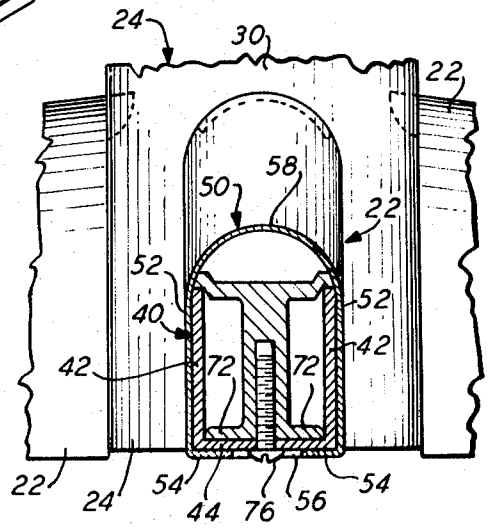


FIG. 2

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SUPPORT

BACKGROUND OF INVENTION

1. FIELD OF APPLICATION

This invention relates to supports, and, more particularly, to supports having a plurality of legs radiating from a centrally disposed hub.

2. PRIOR ART

Plural leg supports, such as those commonly used as pedestals for tables, or as bases for chairs, are often formed with a plurality of legs extending radially out from a centrally disposed hub.

Some of the existing plural leg supports are integrally formed by casting the hub and radiating legs as a unit; while others are manufactured from sheet material formed into a unitary plural leg arrangement mounting a hub. These manufacturing techniques, however, require complex and expensive tooling. If a selection of leg configurations and different materials are to be offered to the trade large numbers of bulky supports must be stored, resulting in higher costs due to the expenses incurred in such storage. Moreover damage to any single leg often requires scrapping of the entire support whether it be at the manufacturers, in the showroom, or with the purchaser.

OBJECTS OF INVENTION

It is therefore an object of this invention to provide an improved support.

It is a further object to provide an improved support having a plurality of legs extending from a central hub.

A still further object is to provide an improved support hub adapted to receive and properly position a plurality of radially disposed legs.

Another object is to provide an improved support hub which is simple to fabricate, easy to assemble, and provides great versatility in the configuration and materials for the individual leg members.

Still another object is to provide an improved method of fabricating and assembling a support.

This invention involves plural leg supports of the type used for chair bases, table bases, and the like, wherein a plurality of legs extend radially from a centrally disposed hub, and contemplates providing a tubular hub member with a number of radially extending leg-mounting members each adapted to receive a sleevelike leg element, an end plug, and the pintle of a glide or caster, in such a way that the sleeve, plug and glide or caster are securely held in place.

In carrying out the invention, according the a preferred embodiment thereof, the support is formed from a substantially cylindrical, vertically disposed, hollow hub member with four leg-mounting members, of open top channel configuration, fixedly secured and equally spaced thereabout so as to extend radially therefrom. A hollow leg sleeve, formed to the desired leg configuration, is slid over each leg-mounting member to fit snug against the sides thereof and so that the upper portion of the sleeve end adjacent the hub is supported. The other end of the sleeve is capped by a plug, formed to journal the pintle of a caster or glide; with the pintle, plug, sleeve and leg-mounting member thus cooperating to form a secure but easily assembled and disassembled unit.

Other objects, features, and advantages of the invention in its details of construction and arrangement of parts, will be seen from the above, from the following description of the preferred embodiment when considered in conjunction with the drawings and from the appended claims.

BRIEF DESCRIPTION OF THE DRAWINGS

In the drawings:

FIG. 1 is a perspective view, exploded and cut away in part to better show the details thereof, of a plural leg support embodying the present invention.

FIG. 2 is a partial sectional view taken on line 2—2 of FIG. 1;

FIG. 3 is an enlarged perspective view of an end plug of the support of FIG. 1;

FIG. 4 is a sectional view taken on line 4—4 of FIG. 1; and

FIG. 5 is a partial elevational view, cut away in part, of a modified form of the support of FIG. 1.

BRIEF DESCRIPTION OF THE PREFERRED EMBODIMENT

For convenience, the invention will be described as applied to a support of the type used as a base for a chair, table, or the like; it being understood, nevertheless, that, without departing from the scope of this invention, that subject support may be utilized for any other item requiring a plural leg support such as a coat rack, display rack, or the like, and which are to be provided with a plurality of legs radially projecting from a centrally disposed hub.

With reference to FIG. 1 there is generally shown at 20 a support of the type commonly used as a base for swivel chairs, and the like, consisting of four legs 22 extending radially from a hub member 24 (FIGS. 1 and 2) and spaced substantially equally thereabout.

Hub member 24 includes a vertically disposed, hollow, cylindrical tube 30 adapted to receive a bearing member (not shown) of the type that usually serves as a journal for the post of a swivel chair or the like. In the alternative tube 30 may be extended upwardly to any predetermined height to support a table or the like. It should be obvious that tube 30 need not necessarily be hollow and that it may be of square, rectangular, or any other convenient cross-sectional configuration.

A leg-mounting member 40 is appropriately secured to tube 30, as by welding, in each position to be occupied by a leg 22. In this particular instance four leg-mounting members 40 (only one shown) are equally spaced about tube 30. A larger or smaller number of leg-mounting members 40 may however be used depending upon the number of legs 22 desired. Each leg-mounting member 40 is of channellike configuration and includes a pair of sidewalls 42 interconnected by a bottom wall 44. Sidewalls 42 taper from the end of leg-mounting member 40 that is attached to tube 30 towards the free end 46 (FIG. 1) of member 40. A hole 48 (FIGS. 1 and 4) is formed in bottom wall 44 proximate free end 46 thereof. The taper is provided to accommodate the configuration of leg 22 it being understood that leg-mounting member 42 need not be tapered at all. In the same way it should be kept in mind that the channel configuration of member 40 is but one of many available configurations suitable to mount leg 22.

A leg sleeve 50 (FIGS. 1 and 2) is formed of sheet material, such as steel, and to the desired leg configuration. Sidewalls 52 of sleeve 50 are formed to fit snugly against sidewalls 42 of leg-mounting member 40 (FIG. 2) and terminate in bottom edges 54 separated by a slot 56 running the length thereof. An upper ridge 58 of leg sleeve 50 terminates near the tube end in a lip 60 (FIG. 1) which seats in a notch 62 formed in tube 30 to provide support and rigidity for leg sleeve 50.

An end plug 70 (FIGS. 1 and 3), is formed from suitable material, such as zinc or plastic, with a bottom wall 72 adapted to rest upon bottom wall 44 of leg-mounting member 40 and between sidewalls 42 thereof. Upper shoulders 74 of plug 70 seat upon the upper edges of sidewalls 42 and are drawn down thereagainst when threaded members 76 (FIGS. 1 and 2) are tightened in place. A ledge 78 (FIG. 3) is formed on plug 70 to support the free end of leg sleeve 50. zinc

A bore hole 84 (FIGS. 3 and 4) is formed in plug 70 to receive the pintle 86 (FIG. 1) of a wheel or caster 88. Pintle 86 is inserted up through hole 48 in bottom wall 44 of leg-mounting member 42 and into bore hole 84 to be journaled therein. The disposition of pintle 86 in bore hole 84 helps to

secure plug 70 in place at free end 46 of leg-mounting member 40, which in turn secures leg sleeve 50 in place.

It should be obvious from the above description that legs 22 may be easily placed upon hub member 24 by merely sliding leg sleeve 50 onto leg-mounting member 40, inserting end plug 70, and pushing pintle 86 of wheel 88 through hole 48 and into bore hole 84. Threaded members 76 may be used if additional means of securing plug 70 and sleeve 50 in place are required.

Removal of a leg 22 to repair same, or to replace a part damaged beyond repair, and replacement of all legs 22 by legs of another configuration or material may be just as easily accomplished. If threaded elements 76 have been used they are first removed. Pintle 86 is then withdrawn. Plug 70 is extracted and leg sleeve 50 slid off of leg-mounting member 40.

It should thus be seen that the single basic hub member 24, with its radiating leg-mounting members 40, can easily accommodate many different leg sleeves 50. Sleeves 50 may taper, as shown in FIG. 1, be of uniform dimension (not shown) or of any other suitable shape. Sleeves 50 may be formed from steel, plastic or other suitable material and may be finished in chrome, bronze, or if desired covered by a suitable material such as vinyl with a wood grain appearance as shown at 90 in FIG. 5.

Sleeve 90 (FIG. 5) is provided by covering a basic sleeve element 92 which may be metal or plastic with a cover material 94 of vinyl or any other suitable material. In the embodiment of FIG. 5 the free end of sleeve 90 is supported on a plug 70 in a manner similar to that described above for the embodiment of FIG. 1. An internally threaded sleeve 96 is inserted up through a hole (not shown) in the bottom wall of leg-mounting member 40 and into plug 70 to receive an externally threaded post 98 carrying a glide 100. The other end of sleeve 90 is supported adjacent tube 102 on a shoulder 104 which may either be struck therefrom or otherwise secured thereto. Plug 70 may be further secured in place by threaded elements (not shown) in a manner similar to that described above for the embodiment of FIG. 1.

From the above description it will thus be seen that a novel and improved support has been provided for chairs, tables, and the like which permits the attachment, to a centrally disposed hub equipped with radially extending leg-mounting members, of leg sleeves in such a manner that an infinite variety of leg materials and configurations may be easily fabricated and stocked.

It is understood that although there has been shown the preferred form of the invention, that various modifications may be made in the details thereof without departing from its scope.

I claim:

1. A support comprising:
   a. hub means;
   b. a plurality of leg-mounting means carried by said hub means;
   c. a leg sleeve means disposed on each of said leg-mounting means;
   d. a cap means disposed proximate an end of said leg sleeve means for associating said leg sleeve means with its respective leg-mounting means; and
   e. locating means positioning said cap means on said leg-mounting means.

2. The support of claim 1 wherein: said cap means is formed from material different from the material of said leg sleeve means and is furthermore separable therefrom.

3. The support of claim 2 wherein: each leg sleeve means is disposed on its respective leg-mounting means between said hub means and said cap means.

4. The support of claim 3 wherein each of said leg sleeve means are supported at their ends adjacent said hub means through coaction with said hub means.

5. The support of claim 4 wherein said coaction between said leg sleeve means and said hub means results from said leg sleeve means having formed thereon an extension seating in a notch formed in said hub means.

6. The support of claim 4 wherein said coaction between said leg sleeve means and said hub means results from a shoulder extending from said hub means contacting a portion of said sleeve means so as to support same.

7. The support of claim 1 wherein: said locating means includes postlike means, extending through said leg-mounting means and into said cap means, and carrying foot means through which said support may rest upon a surface.

8. The support of claim 7 wherein: said foot means comprises a caster.

9. The support of claim 7 wherein said locating means also includes at least one fastening device for securely fastening said cap means to said leg-mounting means.

10. The method of constructing a support comprising:
   a. forming a hub means of predetermined cross-sectional configuration and extending a predetermined distance;
   b. radially extending from said hub means a plurality of leg-mounting means;
   c. providing a separate leg sleeve of predetermined configuration for each of said leg-mounting means;
   d. sliding onto each of said leg-mounting means one of said leg sleeves; and
   e. associating each of said leg sleeves with its respective leg-mounting means so as to prevent inadvertent removal of said leg sleeve from said leg-mounting means.

11. The method of claim 10 wherein said associating is accomplished by:
   a. providing a cap means at the free end of each of said leg sleeve means; and
   b. positioning said cap means against displacement with respect to its respective leg-mounting means.

12. The method of claim 11 including
   a. forming each of said leg sleeves of sheet material and of a leglike configuration having sidewalls spaced a distance to provide a snug fit against the sides of the leg-mounting means; and
   b. further forming each of said leg sleeves to be open at opposite ends.

13. The method of claim 12 including
   a. positioning one open end of each leg sleeve adjacent said hub means for coaction therewith; and
   b. positioning the other open end of each leg sleeve for coaction with said cap means so that said leg sleeve is disposed between said hub means and said cap means.

14. The method of claim 13 including supporting said leg sleeve adjacent said hub means by providing a means of coaction therebetween.

15. The method of claim 14 wherein said coaction between said leg sleeve and said hub means is accomplished by
   a. forming an extension on said leg sleeve;
   b. forming a notch in said hub means; and
   c. seating said leg sleeve extension in said notch.

16. The method of claim 11 including:
   a. positioning in said cap means foot-carrying means for mounting the support on a surface;
   b. utilizing said foot-carrying means to position said cap means on said leg-mounting means.

17. A pedestal or the like comprising:
   a. a hub of predetermined cross section having ends and sides;
   b. a plurality of leg-mounting member disposed about said hub;
   c. each of said leg-mounting members having a first end secured to said side of said hub and a second end extending radially out from said hub in cantilever fashion;
   d. a leg sleeve disposed on each of said leg mounting members so as to have a first end disposed adjacent said hub and a second end disposed proximate said second end of said leg-mounting member;
   e. an end cap positioned proximate said second ends of said leg sleeve and said leg-mounting member; and
   f. positioning means locating said end cap so as to prevent inadvertent movement of said leg sleeve with respect to said leg-mounting member.

18. The pedestal of claim 17 wherein said hub is tubular and of circular cross section open at the ends.

19. The pedestal of claim 17 wherein said leg-mounting members are formed from channel stock and are attached to said hub with the channel opening upwardly.

20. The pedestal of claim 17 wherein said leg-mounting members are spaced uniformly about said hub.

21. The pedestal of claim 17 wherein said leg sleeves are formed of sheet material and to a hollow tubular leglike configuration open at both ends and having sidewalls which fit snug against said leg-mounting member.

22. The pedestal of claim 17 wherein said leg sleeve is covered by nonmetallic sheet material.

23. The pedestal of claim 22 wherein said sheet material is finished to simulate wood.

24. The pedestal of claim 22 wherein:

a. one open end of said leg sleeve is supported adjacent said hub; and

b. the other open end of said leg sleeve coacts with said end cap.

25. The pedestal of claim 24 wherein; said one end of said leg sleeve is supported by extending same into a notch formed in said hub.

26. The pedestal of claim 17 wherein said positioning means includes a postlike element passing through said leg-mounting member and into said end cap.

27. The pedestal of claim 26 wherein said postlike member mounts a glide.

28. The pedestal of claim 26 further including securing means for attaching said end cap to said leg-mounting means.

29. A furniture support comprising:

a. a vertically disposed hub;

b. a plurality of leg-mounting members equally spaced about said hub and extending radially therefrom in cantilever fashion;

c. a sleeve of sheet material, formed to a hollow tubular leglike configuration open at both ends and with sidewalls spaced a distance to provide a snug fit against opposed sides of said leg-mounting members, for each of said leg-mounting members;

d. each of said sleeves, when disposed on a respective one of said leg-mounting members, having one of its open ends supported adjacent said hub;

e. an end cap for each sleeve, formed to a configuration to be received within the other open end of said sleeve and to support same in such a manner that the sleeve edge is hidden by the end cap with at least a portion of said sleeve resting thereon; and

f. foot-carrying means for each leg-mounting member passing up through said leg-mounting member and into the end cap disposed thereon to locate said end cap and thereby prevent inadvertent removal of said sleeve.

30. The furniture pedestal of claim 29 wherein said foot-carrying means carries a caster.

31. The furniture pedestal of claim 29 wherein said foot-carrying means carries a glide.

32. The furniture pedestal of claim 29 wherein securing means interconnect each of said end caps to their respective leg members.

33. The furniture pedestal of claim 29 wherein said leg-mounting member are open-topped channels.

34. The furniture pedestal of claim 33 wherein said end caps are each formed with a bottom wall seating snugly in said channel and top shoulders resting upon the upper edges of said channels.

35. The furniture pedestal of claim 29 wherein each leg sleeve has adhered to it a sheet of material.

36. The furniture pedestal of claim 35 wherein said sheet of material has an exposed finish simulating wood.

37. The furniture pedestal of claim 29 wherein said foot-carrying means carries a wheel;

38. The support of claim 7 wherein said foot means comprises a glide.