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R. A. CRAMER ET AL

2,490,210

CHAIR BASE

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FIG. 1.

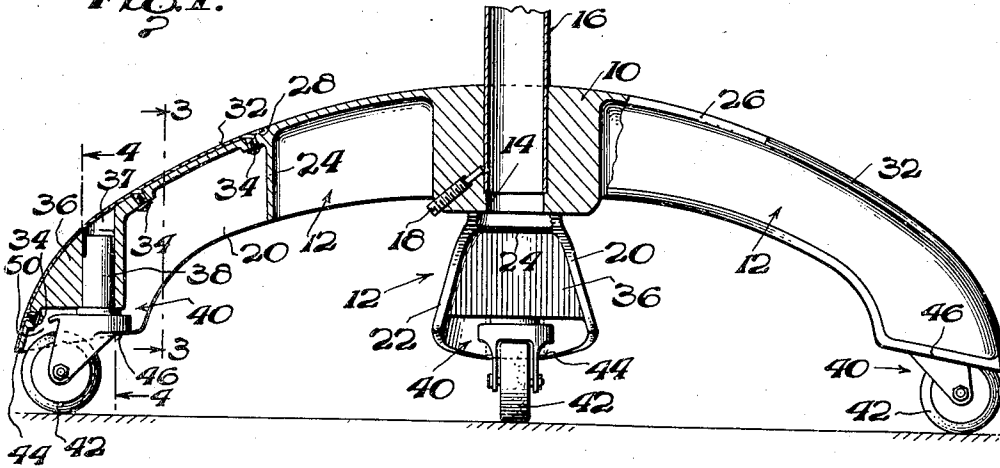


FIG. 2.

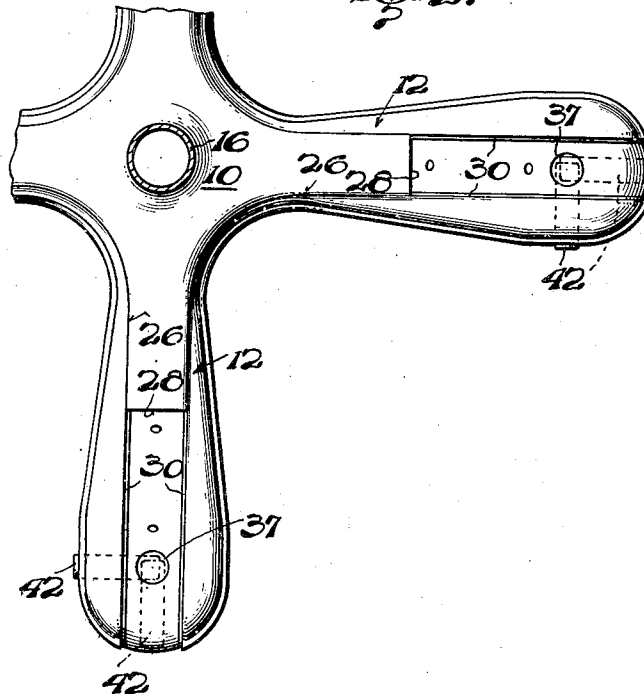


FIG. 3.

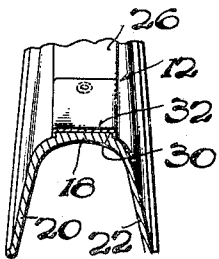
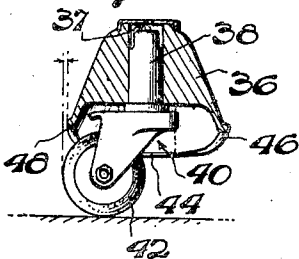


FIG. 4.



INVENTORS
Roy A. Cramer
Harold W. Cramer
BY Roy A. Cramer, Jr.

Scriveners + Parker
ATTORNEYS

UNITED STATES PATENT OFFICE

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CHAIR BASE

Roy A. Cramer, Harold W. Cramer, and Roy A.
Cramer, Jr., Kansas City, Mo.

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4 Claims. (Cl. 248—194)

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This invention relates to bases for chairs of the swivel type and more particularly to a chair base having a plurality of radially extending legs the outer extremities of which are provided with supporting casters.

Chairs of the type having swiveling seats and bases provided with radiating legs have long been provided adjacent the outer extremities of the legs, with supporting casters. However, such casters have heretofore been mounted in such a manner as to partially project beyond the surface of the ends of the legs, and thus have presented obstructions which mar, scuff or soil the shoes of the user. Such an arrangement of casters is especially objectionable when it is borne in mind that the caster rollers are generally made of rubber which rubs off and thus scuffs and soils white or cloth shoes of any color. Moreover, the caster rollers pick up dirt and dust from the floor which is transferred to the user's shoes, thus contributing to the soiling thereof whenever the shoes accidentally contact the casters. While the disadvantages referred to could be avoided by completely housing the casters within the chair legs, still such an arrangement would cause an excessively bulky structure and would materially detract from its appearance, attractiveness and sales value. In addition, a construction of the latter type would necessitate bringing the sides and ends of the legs down so close to the floor as to be undesirable for use with floor coverings such as thick rugs.

It is accordingly one of the objects of the present invention to provide a chair base having a plurality of radiating legs provided at their outer extremities with casters which are so constructed and arranged as to avoid the aforementioned objectionable features and disadvantages.

A further object is to provide a novel chair base construction of the above character wherein the casters are partially concealed by the chair legs in such a manner as to avoid any scuffing and soiling of the user's shoes.

Another object resides in the provision of a novel arrangement in a caster-mounted chair base wherein the casters are shielded from contact with the user's shoes and wherein complete swiveling of the casters is enabled without increasing the width of the chair legs, thus presenting a strong and sturdy base having a compact and attractive appearance.

A still further object includes a novel construction and arrangement of parts in a chair

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base of the foregoing type wherein protection of the shoes of the user is achieved without causing instability of construction or a bulky and unsightly appearance.

5 Other objects and novel features of the invention will appear more fully hereinafter from a consideration of the following detailed description when taken in connection with the accompanying drawing illustrative of a preferred form of the invention. It is to be expressly understood, however, that the drawing is employed for purposes of illustration only and is not designed as a definition of the limits of the invention, reference being had for this purpose to the appended claims.

Referring to the drawing wherein similar reference characters refer to similar parts throughout the several views:

Fig. 1 is a side view of a chair base constructed in accordance with the present invention, a portion of the base being shown in section to more clearly illustrate the leg structure;

Fig. 2 is a plan view of a portion of the base, the caster roller associated with the legs being shown in dotted lines in two positions at right angles to each other, certain parts having been omitted for clarity of illustration;

Fig. 3 is a vertical sectional view of one of the legs taken substantially along lines 3—3 of Fig. 1, and

Fig. 4 is a vertical sectional view taken substantially along lines 4—4 of Fig. 1 and showing the arrangement of the parts when the caster is moved to a position at right angles to that illustrated in Fig. 1.

Referring more particularly to Figs. 1 and 2, a chair base constructed in accordance with the present invention is illustrated therein as comprising a central hub portion 10 having a plurality of outwardly-extending legs 12 radiating therefrom, the latter being preferably four in number and being integrally formed with said hub portion. A desired method of manufacture is to provide an integral die-casting of magnesium or aluminum alloy which includes the hub and legs, but it will be understood that if desired, the legs may be made separately from the hub and secured to the latter in a convenient manner. As shown, the hub 10 is provided with a centrally arranged socket 14 for receiving a tubular member 16 which may be fixed in position by a screw 18, it being understood that a suitable seat structure, not shown, is mounted to swivel upon the upper end of member 16 in well-known manner.

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In order to provide a light-weight construction each leg is hollow and is roughly of inverted U-shaped section, as illustrated more particularly in Figs. 1 and 3. As shown, each leg is provided with a substantially rounded top section 18 and downwardly extending side sections 20 and 22, a brace or rib 24 being employed intermediate the leg ends to strengthen the hollow construction. Preferably, the top section 18 by each leg is provided with a longitudinally disposed rib 26, all of such sections merging into the base, as shown in Fig. 2, and extending the full length of each leg. Adjacent the outer ends of the legs, however, the ribs 26 are undercut at 28 and reduced in width at 30 in order to accommodate channel-shaped strips 32 which may be secured to each leg as by means of screws 34. Each of these strips, while preferably constructed of light-weight metal such as aluminum or magnesium alloy, may nevertheless be constituted of any suitable material, and may be of a different color than that of the chair legs, if desired, in order to present a pleasing and ornamental appearance.

One of the features of the present invention resides in the provision of a novel arrangement for mounting casters in the outer ends of the chair legs in such manner as to effectively prevent contact between the casters and the user's shoes while enabling complete rotation of the casters without increasing the chair leg width to a degree resulting in a bulky and unattractive appearance. To this end, each leg 12 is provided adjacent its outer extremity with a strengthening block 36, which is preferably formed integrally with the leg and curved or rounded in two planes at right angles as illustrated in Figs. 1 and 4. Each block 36 is provided with an opening 37 for receiving a support 38 for a caster 40, the latter being of the well-known trailing type and including a roller 42.

The novel and advantageous arrangement of caster and chair leg may be more particularly observed from a consideration of Figs. 1 and 4 of the drawings wherein it will be seen that the extreme outer and lower portion 44 of the leg is brought downwardly a substantial distance below the top of the roller 42, as defined by a horizontal plane tangent to the top of the roller. The extent to which the portion 44 conceals the roller 42 is sufficient to prevent contact between the roller and the shoes of the user, and in this connection it is pointed out that in the position shown in Fig. 1, where the roller extends forwardly its maximum amount, the forward portion of its periphery is positioned slightly inwardly of the portion 44.

In order that the caster 40 may swivel throughout 360 degrees, without necessitating an excessive width of the end of each chair leg, the outer and lower-most portions 46 and 48 of the side sections 20 and 22 respectively, instead of extending rearwardly from the portion 44 in a horizontal plane, are cut away in such a manner as to extend upwardly from a horizontal plane beginning at the lower lip of portion 44 and terminating at the junctures with the side sections 20 and 22, as illustrated. Thus, with such an arrangement, the portions 46 and 48 are sufficiently cut back at an angle as to allow complete rotation of the casters 40, without contact between the periphery of the rollers thereof and the said portions. While the roller 42 projects slightly beyond the exterior of the leg 12 when the roller is at right angles to the position occupied in Fig.

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1, as shown in Figs. 2 and 4, this is not objectionable since the roller is then positioned a substantial distance from the outer extremity of the chair leg and not in a position to be engaged by the user's shoes.

It will thus be observed from the foregoing that the present invention provides a novel chair base construction which is so arranged that contact between the caster rollers and the user's shoes is effectively prevented. The structure moreover is such that complete rotation of the casters may be effected without increasing the leg width, thus securing a stable and sturdy construction, and one which is not unduly bulky in appearance. The attractiveness and commercial sales value of the base is materially enhanced by the advantageous construction employed, it being particularly observed that practically the entire caster structure including a portion of the roller top is concealed from view, resulting in a streamlined appearance having the new and improved functional aspects hereinbefore referred to. It is to be particularly observed that by the construction including the outer and lower end portion 44 together with the portions 46 and 48, a pocket or recess 50 is provided at the outer and lower-most extremity of each leg which houses a substantial portion of the caster 40 as well as the upper part of the roller 42, the pocket being in effect, constituted by a base comprising the lower surface of the block 36 bounded by a curved wall which is cut back from the outer portion to the inner portion to permit the aforesaid complete rotation of the casters about their mountings 38.

While one embodiment of the invention has been shown and described herein with considerable particularity, it will be understood that various changes may be made therein without departing from the scope of the invention, as will now appear to those skilled in the art. Reference will therefore be had to the appended claims for a definition of the limits of the invention.

What is claimed is:

1. A chair base comprising a hub having a plurality of legs extending outwardly therefrom, the outer end of each leg being provided with downwardly extending outer end and spaced apart side walls defining a pocket, a caster mounted to swivel at the outer end portion of each leg, each caster including a frame housed within said pocket, and a roller mounted to rotate on the frame, the said outer end wall extending downwardly below the top of the roller and outwardly beyond the periphery of the roller when the latter is aligned with each respective leg, and the said side walls being spaced apart a distance such that the outer extremity of the periphery of the roller projects beyond the lower edges of the side walls when the roller is moved to either position at right angles to the axis of a leg, and said side walls having lower edges directed upwardly at an angle to a horizontal plane from the outermost to the innermost portions thereof to permit complete rotation of the casters without the rollers contacting said edges.

2. A chair base comprising a central support and a plurality of outwardly extending legs each of which is provided with a centrally disposed rib on its upper surface extending from one end to the other, a substantial portion of the outer end of the rib being reduced in width and thickness a slight amount, a caster-receiving opening extending through the outer end of each leg and through each rib, and a channel-shaped strip removably secured to said reduced portion of the

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rib and covering said opening, said strip having an intumed lip engaging the outer lower edge of the rib.

3. A chair base comprising a hub having a plurality of legs extending outwardly therefrom, the outer end of each leg being provided with a socket, a caster mounted to swivel in said socket, said caster being provided with a rotatably mounted roller, and each leg being provided with an integral extension projecting below the top of the roller and beyond the periphery of the latter when the roller is aligned with each respective leg, whereby the shoes of a chair user are protected from contacting the roller, each of said legs being also provided with a pair of integral side wall portions extending below the top of each roller and being spaced apart a distance such that the outer extremity of the periphery of the roller projects slightly beyond the lower edges of the side wall portions when the roller is moved to either position at right angles to the axis of a leg, the lower edges of said portions being cut away at an angle to the horizontal plane from the outermost to the innermost portions thereof, to allow free and complete rotation of the casters without the rollers contacting said edges.

4. A chair base comprising a unitary structure having a plurality of outwardly extending legs, the outer ends of each being provided with swivelling casters including frames having rollers rotatably mounted therein, and means to prevent contact between the shoes of the chair user and

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to allow complete swivelling of said casters comprising a housing for each caster, said housing including end and side walls formed integrally with each leg, the lower edges of said walls terminating above the rotatable axis of the roller and below the top of the roller, the lower edges of the side walls being spaced apart a distance such that the outer extremity of the periphery of the roller projects slightly beyond the lower edges of the side walls when the roller is moved to either position at right angles to the axis of a leg, and said side walls being cut away to provide lower edges sloping upwardly from the outer to the inner portions thereof whereby complete swivelling of the casters is permitted and the lower edges of the end and side walls are closely spaced from the periphery of the roller during such swivelling.

ROY A. CRAMER.
HAROLD W. CRAMER.
ROY A. CRAMER, JR.

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