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J. P. URSO

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LEG ELEVATING BALL CASTER

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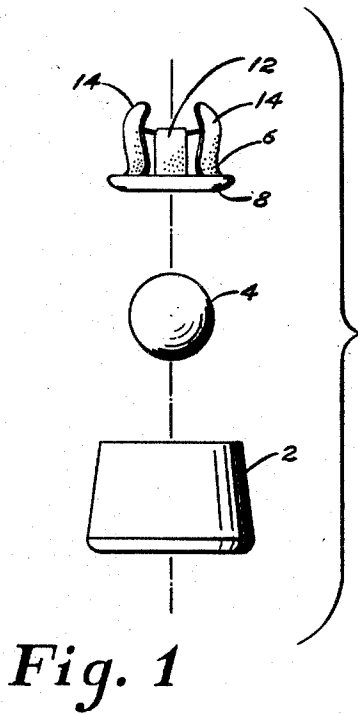
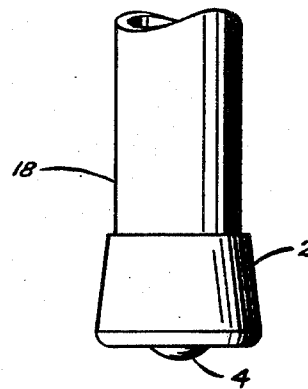
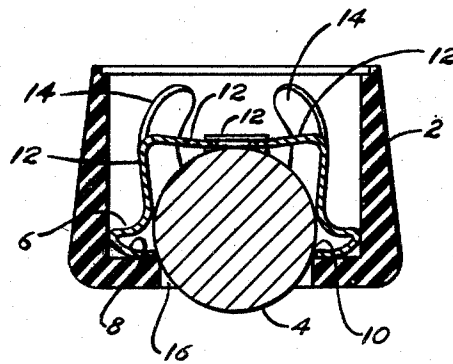


Fig. 3



INVENTOR.
JOHN P. URSO
BY
James G. Beehler,
Attorney

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LEG ELEVATING BALL CASTER

John P. Urso, New York, N. Y.

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3 Claims. (Cl. 16—24)

My invention relates to an improvement in casters for furniture and the like and has for one of its objects to provide casters which may be applied to the furniture, such as the legs of a chair, for example, without the use of tools of any kind.

A further object of my invention is to provide casters for furniture which are relatively inexpensive, and, while my improved casters may be applied to wooden furniture, they are particularly well adapted for application to furniture of metal tubing, being so constructed and arranged that they simply may be slipped upon the furniture.

In general, my invention comprises a sleeve which is adapted to be slipped over the end of a chair leg, for instance, this sleeve containing a caster assembly, comprising a rotatable ball caster, so constructed and arranged that the ball of the assembly normally will rest upon the floor to support the chair and provide a rotatable element upon which the empty chair may readily be moved about the floor. However, when a weight is placed upon the chair, the ball caster recedes or is depressed into the assembly, so that the end of the carrying sleeve will then contact the floor.

As above noted, the caster assembly is enclosed within a sleeve, which is adapted to be slipped over the leg of an article of furniture and be held thereon by friction. The assembly itself comprises a cage or annulus having a hole in the end thereof which receives the ball caster. The hole in the cage is slightly smaller in diameter than the ball caster, so that, when the two are assembled, the equator of the ball lies just above the upper face of the cage. This permits the ball to roll at all times, and yet it cannot fall out of the cage.

In one embodiment of my invention, the upper face of the cage is provided with a plurality of spring arms, some of which are bent over toward the center of the cage, to provide a spring abutment against which the ball caster normally rests, the tension of these bent-over spring arms being sufficient to hold the lower face of the ball caster extended beyond the outer face of the cage sufficiently to project beyond the face of the caster-carrying sleeve, so as to support the unloaded chair or other article of furniture. The other arms of the cage stand erect relatively to the cage face, and these arms, which are in the nature of prongs, will frictionally engage the interior of the furniture leg, assuming, for example, that the same is of metal, to aid in holding the assembly in place on the leg of the chair or other article of furniture without the aid of screws, pins, or other holding devices.

In the accompanying drawings I have illustrated one embodiment of my invention:

Fig. 1 is an exploded view of one embodiment of my invention;

Fig. 2 is a sectional view on an enlarged scale of the caster assembly and carrying sleeve; and

Fig. 3 is an elevational, fragmentary view showing my device applied to the leg of a chair or other article of furniture.

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Referring to the drawings in detail:

2 designates a carrying sleeve, 4 a ball caster, and 6 a caster cage.

The caster cage 6 comprises a head or base 8 with a through-bore 10. This bore is smaller in diameter than the ball caster 4, and while in manufacture the ball caster may be pressed through the bore 10 from the outer surface of the cage head 8, the equator of the ball caster will lie above the bore 10, so that the caster is prevented from dropping out of the cage.

The upper face of the cage head 8, as viewed in the drawings, is provided with a plurality of spring arms or prongs. There are two sets of these arms, one set, of which the arms are designated 12, and another set, of which the arms have been designated 14.

The spring arms 12, as will be seen from the drawings, extend upwardly from the cage head 8 and then are bent inwardly so as to overlie and contact the ball caster 4. These arms are so designed that they will exert sufficient pressure upon the ball caster 4 to hold the same in projected position when the chair or other article of furniture is without load.

The spring arms 14 simply stand upright with respect to the face of the cage head 8 and, as will be brought out hereinafter, are inserted into the furniture leg when the device is in use.

The caster assembly, viz., the ball caster and cage, are inserted within the carrying sleeve 2, the lower end of which is provided with a through-bore 16, directly in line with the bore 10 in the cage head 8 and with the ball caster 4.

In use, with the caster assembly in place within the carrying sleeve 2, the sleeve is pushed over the end of a chair leg 18 or the leg of some other article of furniture. I prefer to make the sleeve 2 of rubber or other elastic plastic, so that it will grip the leg 18 and securely hold the assembly in place. In applying the sleeve 2 to the leg 18, the prongs 14 of the caster cage will be pushed into the leg 18, which, in the case of metal furniture, is of metal tubing, and these prongs or arms 14, being of spring material, will grip the interior of the leg, further to aid in holding the entire assembly in place against accidental removal or displacement.

As above pointed out, the tension of the spring arms 12, which always contact the ball caster 4, is sufficiently high to hold the ball caster 4 with its face projecting through the end of the sleeve 2. The tension in the spring arms 12 is also sufficient to hold the ball caster in this extended position so long as the chair or other article of furniture is unloaded, yet the ball caster is free to roll within the cage, so that the unloaded furniture may readily be moved about without raising it from the floor and without marring the floor. However, when a load is placed upon the chair, the spring arms will yield, permitting the ball caster to retract within the cage sufficiently to permit the end of the sleeve 2 to rest upon the floor, the ball caster being projected outwardly again into the position shown in Figs. 2 and 3 so soon as the furniture is relieved of its load.

It is to be understood that changes may be made in the details of construction and arrangement of parts hereinabove described within the purview of my invention.

What I claim is:

1. In a caster for articles of furniture and the like, the combination of a cup-shaped carrying sleeve, adapted to be slipped upon and frictionally held to a leg of said article of furniture, the bottom of the sleeve being provided with a through-bore; and a caster assembly within said sleeve and adapted to be inserted into said leg, said assembly comprising a cage having a head resting upon the bottom of said sleeve, the said head being provided with a through-bore in register with the bore first men-

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tioned; a plurality of spring prongs carried by said head and upstanding therefrom; and a ball upon said head surrounded by said prongs, some of said prongs being bent over upon the upper surface of the ball for yieldingly holding the ball in position where a portion of the ball projects through said bores to beyond the outer end of the carrying sleeve to provide a rotatable support for the said article of furniture, the tension in the ball-engaging prongs being such that, when a load is applied to the article of furniture, the ball will be retracted until flush with the outer end of the carrying sleeve.

2. In a caster for articles of furniture and the like, the combination of a cup-shaped carrying sleeve, adapted to be slipped upon and frictionally held to a leg of said article of furniture, the bottom of the sleeve being provided with a through-bore; and a caster assembly within said sleeve and adapted to be inserted into said leg, said assembly comprising a cage having a head resting upon the bottom of said sleeve, the said head being provided with a through-bore in register with the bore first mentioned; a plurality of spring prongs carried by said head and upstanding therefrom; and a ball upon said head surrounded by said prongs, some of said prongs extending into the said article of furniture when the said sleeve is slipped thereupon, the remaining prongs being bent over upon the upper surface of the ball for yieldingly holding the ball in position where a portion of the ball projects through said bores to beyond the outer end of the carrying sleeve to provide a rotatable support for the said article of furniture, the tension in the ball-engaging prongs being such that, when a load is applied to the article of furniture, the ball will be retracted until flush with the outer end of the carrying sleeve.

3. In a caster for articles of furniture and the like, the combination of a caster assembly, comprising a cage

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and a ball, said cage comprising a head with a central bore of shorter diameter than the diameter of the ball, said ball resting upon said head and projecting through said bore for a substantial distance beyond the outer face of the head, and a plurality of spring prongs disposed about the periphery of said head and upstanding therefrom, some of said spring prongs being bent over upon said ball yieldingly to hold the same in position upon the head; and a cup-shaped carrying sleeve into which the caster assembly is frictionally fitted, the bottom of said sleeve having a central bore which registers with the cage bore to accommodate the said projecting portion of the ball, whereby normally the ball projects beyond the bottom of the sleeve to provide a rotatable support for the article of furniture, the remaining prongs extending upwardly within said sleeve in spaced relation thereto, to provide an annular space for the reception of the article of furniture when the carrying sleeve and caster assembly are applied thereto, the tension in the bent-over prongs being such that the ball will sustain the article of furniture when unloaded, the ball receding and the carrying sleeve supporting the article of furniture upon the application of a load to the article of furniture.

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