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LEG-ELEVATING BALL CASTERS

Original Filed March 18, 1954

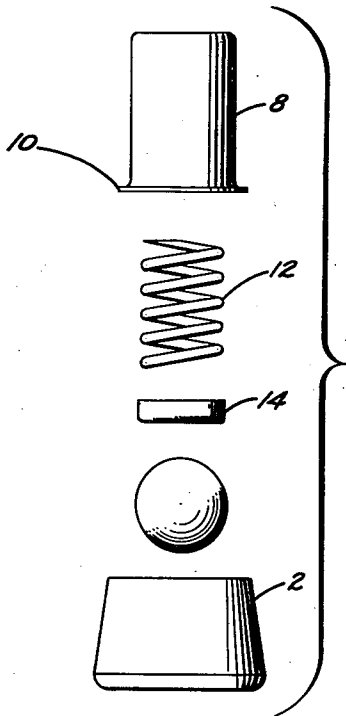


Fig. 1

Fig. 3

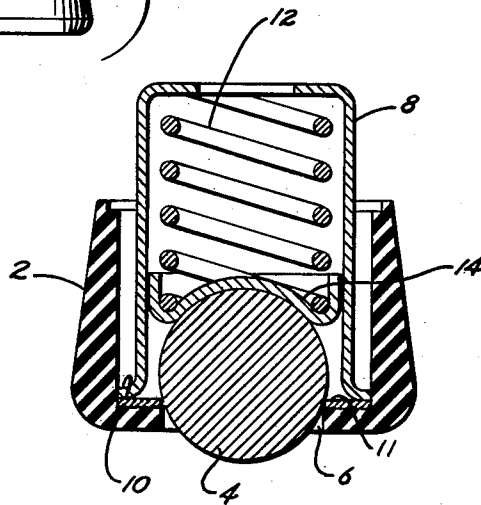
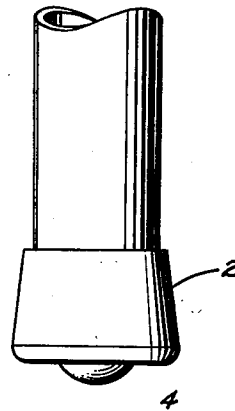


Fig. 2

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LEG-ELEVATING BALL CASTERS

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Original application March 18, 1954, Serial No. 417,091, now Patent No. 2,707,301, dated May 3, 1955. Divided and this application October 26, 1954, Serial No. 464,735

1 Claim. (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 instance, without the use of tools of any kind.

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 applied to the chair, the ball caster will recede into the assembly, so that the end of the carrying sleeve will then contact the floor. The sleeve above referred to is adapted, as noted above, to be slipped over the end of the leg of an article of furniture and be held thereon by friction. The assembly itself comprises a concave, cup-shaped disc for engaging the inner face of the ball caster, a sleeve, and a coil spring within the inner end of the sleeve for the spring of the caster-engaging, cup-shaped disc.

In the accompanying drawings,

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

Fig. 2 is a sectional view on an enlarged scale of the parts shown in Fig. 1 when assembled; and

Fig. 3 shows my invention as it appears when applied to the leg of a chair, for example.

Referring to the drawings in detail, 2 designates a carrying sleeve of rubber, plastic, or other suitable material and 4 a ball caster. The sleeve 2 is provided with a through-bore 6, which is smaller in diameter than the ball caster 4 so that, when the ball caster is dropped in place in the sleeve 2, it may project beyond the face of the sleeve but without being forced from the sleeve entirely.

8 designates a sleeve which is adapted to be inserted into the carrying sleeve 2 from the top, and it is to be noted that the outer diameter of this sleeve 8 is substantially less than the internal diameter of the sleeve 2. It should be noted also that the sleeve 8 is preferably flanged at its inner end, as shown at 10, this flange resting upon an apertured disc or washer 11 lying in the bottom of the carrying sleeve 2. The aperture in the disc 11 is smaller in diameter than the diameter of the ball caster 4. By reason of the fact that the outer diameter of the sleeve 8 is less than the inside diameter of the sleeve 2 a substantial annular space is provided between the sleeve 8 and the carrying sleeve 2, so that, when the assembly is pushed onto a hollow chair leg, for instance, the chair leg will lie between the inside of the carrying sleeve 2 and the outside of the inner sleeve 8 and bottom upon the flange 10.

Within the sleeve 8 is a coil spring 12, and secured to the lower end of this spring, that is to say, the end adjacent the caster 4 and contacting the caster, is a disc

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14, concaved to the general curvature of the caster 4. The upper end of the spring 12 bears against the inside of the roof of the sleeve 8, which is wholly or partially closed. The spring 12 is under compression and under normal conditions will hold the ball caster 4 against the disc 11 and projecting beyond the lower end of the sleeve 2, as illustrated in Figs. 2 and 3.

In use the assembly of Fig. 2 is simply applied to the leg of an article of furniture, as for example the leg of a chair, by pushing the sleeve 2 over the end of the chair leg and allowing the sleeve 8 and the remainder of the caster assembly to be pushed up into the chair leg. The walls of the bore in the chair leg will, of course, enter between the two sleeves 2 and 8 until the end of the chair leg bottoms upon the flange 10 of the sleeve 8, which prevents further inward movement of the sleeve 8 relative to the furniture leg. The sleeve 8 will rest upon the disc 11, which in turn rests upon the inner face of the bottom of sleeve 2. The spring 12 is so designed that it will support an unloaded article of furniture with the caster 4 projecting through disc 11 and sleeve 2 and resting upon the floor or other surface, thereby facilitating movement of the furniture about the floor. When a load is applied to the chair, for example, then the spring 12 will yield, permitting the caster 4 to be retracted to an extent where the ends of the carrying sleeve 2 will rest upon the floor.

This application is a division of my co-pending application Serial No. 417,091, filed March 18, 1954, now Patent No. 2,707,301, dated May 3, 1955.

What I claim is:

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 upon the leg of an article of furniture, the bottom of the said sleeve being provided with a central bore; an apertured disc lying in the bottom of said carrying sleeve; a ball caster resting upon the said disc, the diameters of the bores in said sleeve and disc being less than that of the ball caster but sufficiently large to permit the ball caster to extend through the said bores beyond the outer face of the sleeve bottom; a tubular member within said sleeve spaced from the wall of the sleeve and surrounding said ball, said tubular member at its lower end being provided with an outwardly extending annular flange; a coil spring under compression within the tubular member above the ball caster; and a concaved disc carried at the lower or outer end of said spring and contacting said ball caster; the upper end of said tubular member being at least partially closed to provide an abutment for the inner end of the spring; the said annular flange of the tubular member constituting a seat for the end of the leg of furniture when the carrying sleeve and caster assembly are applied to the leg, thereby holding the tubular member against movement inwardly of the leg under action of the spring; said spring yielding when load is applied to the leg, to permit sufficient upward movement of the ball to bring the outer face of the sleeve bottom into engagement with the floor or other supporting surface for the furniture.

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