

June 9, 1925.

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D. B. REPLOGLE

SPRING ATTACHMENT CASTER

Filed Aug. 1, 1924

Fig. 1.

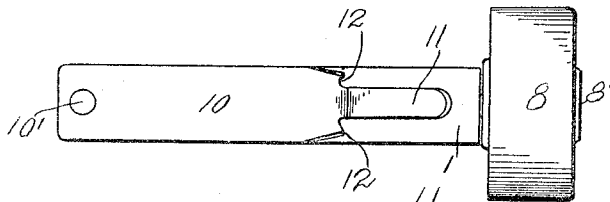


Fig. 2.

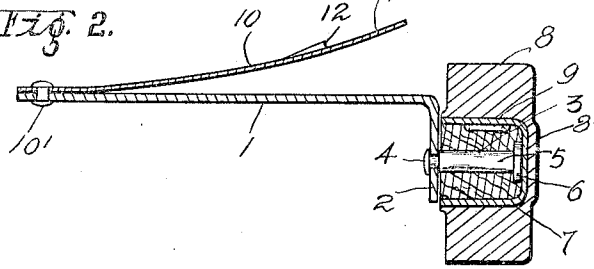


Fig. 4.

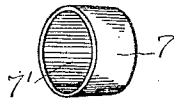


Fig. 3.

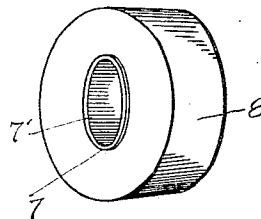


Fig. 6.

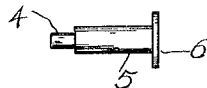


Fig. 5.

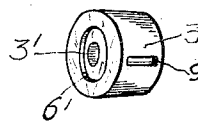
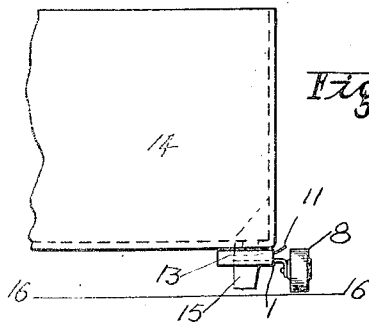


Fig. 7.



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UNITED STATES PATENT OFFICE.

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SPRING ATTACHMENT CASTER.

Application filed August 1, 1924. Serial No. 729,418.

To all whom it may concern:

Be it known that I, DANIEL B. REPLOGLE, a citizen of the United States, residing at Berkeley, in the county of Alameda and State of California, have invented certain new and useful Improvements in Spring Attachment Casters, of which the following is a specification.

This invention relates to rollers or casters such as are suitable for attaching to hassocks, carpet sweepers or articles of furniture which are customarily subject to being slid about over the floors of living apartments.

The objects of the invention are: to render noiseless service, as to both squeaking and rattling, in such casters; to combine the qualities of a buffer, with such casters; and to prevent them from fouling, scratching or tearing clothing, marring base boards or other articles of contact; and other objects, as may appear.

To these ends, the invention consists of the construction, arrangement and combination of elements, as herein set forth, and illustrated in the accompanying drawing, in which:

Fig. 1 is a top plan view of one of my casters ready mounted upon a spring-attachment shank. Fig. 2 is a cross section, centrally, vertically and lengthwise of the same, excepting the rivet and spindle. Fig. 3 is a view of the removed cap or tire. Fig. 4 is a view of the removed thimble or cap-centre, preferably pressed from sheet metal. Fig. 5 is a view of the removed bearing-hub, preferably constructed from strong porous wood or composite material. Fig. 6 is a view of the spindle before assembly with the other parts. Fig. 7 is a view suggesting manner of attaching to a movable screen, in this case, but also suggesting more general use.

This caster is not designed to swivel as those set to the ends of furniture legs, in vertical sockets, but is set into a horizontally secured rectangular socket, arranged so that the roller may extend from under the article supported, and permit of spring action vertically. The flat metallic strip serving as a shank 1, has one end bent over to form the lug 2 whereon the hub 3 is rotatably mounted, by a riveted end 4 securing the spindle 5, which extends thru the bore 3' of the hub 3. A flat retaining head 6 which is received into

the counter-bore 6' is designed to permit free revolution without end friction on the bottom of the cap 7.

In assembling the parts, obviously riveting at 4 should precede placing of the thimble 7, or the same when placed within the cap-shaped tire 8, permanently upon the hub 3. The cap-shaped tire 8 is molded of rubber and fits either contractingly over the cap or thimble 7, or the thimble may be made of brass, or other such metal having an affinity for plastic rubber, and be centered within the tire as an insert when it is molded. Firm rubber should be used as it constitutes the main body of the roller. A novel part of this construction is the buffer 8' which is a web of rubber configuring a hub end, but deeply and completely covering the hub end over with resilient rubber attached to a well secured metallic base, the rounded outer surface of the thimble 7.

The flat spring 10 is riveted to the opposite end of the shank 1 by a rivet 10', and is provided with a thumb lug 11, for depressing the spring when inserting it into its socket or removing therefrom; and also with retaining hooks 12, 12 adapted to hold it within its socket. It is evident this spring might be integrally constructed with the shank or secured in any suitable way; but it is designed both to hold the device in place, and to contribute resilient or spring action to the caster, as a supplement to the rubber of the tire body or roller thereof.

The hub 3 may be made from any suitable anti-friction material to journal the steel spindle 5; but tough, strong, porous wood, turned and bored transverse of its grain, then impregnated with a suitable hard grease is preferred. Impregnation can be effected by heating the grease and the wooden hubs separately and simultaneously in a vacuum receiver, with provision to immerse the wood into the melted grease, after it has given off its content of air and moisture under the vacuum and heating. This thoroly effects the impregnation required, as air pressure upon re-exposure to it drives the grease into the pores of the wood. In addition to the impregnation a provision for further supply of grease, to add to the life of the bearing, may be had by first cutting a small pocket 9 on the external convex surface of the wood, and al-

lowing it to remain filled with the grease before it is inserted into the thimble 7 designed to encase it permanently. In this manner I secure a squeakless bearing that requires no further attention, as to lubrication.

In attaching for service, a suitable horizontally placed socket 13 secured to the underside or on the end of an article 14, is arranged to receive the shank 1 with its spring 10 upwards; and the socket is to provide room for expansion of the spring so that it may be compressed downwards by the weight of the article, or other pressure. Overstrain may be prevented by any suitable stop 15 designed to come into contact with the floor 16. Where a pair of the casters are applied, one on either end of a sweeping floor tool, for example, the face or mouth of the tool extending along between the casters, serves as a sufficient stop, as would also the bottom of any hassock having a plurality of the sockets set sufficiently high, in its sides above the floor.

Having now set forth the construction of the device, and the nature and manner of its use, I do not desire to restrict the same to

these exact details, but claim more broadly as follows:

1. A caster attachment comprising a free end spindle, a resilient roller journaled thereon, a shank extending parallel with the axis of said spindle, and to which an end of said spindle is secured, and a spring on said shank arranged to supplement the resiliency of the roller.

2. The roller of a caster of the kind described, comprising a one end supported spindle, a hub journaled thereon, a thimble covering the unsupported end of the spindle and fitting over the hub; together with a cap-shaped tire of resilient material integrally forming a cap for the roller and the main body thereof.

3. In a caster of the kind described, spring actuated attachment means in combination with a hub, a main body of rubber encasing said hub and constituting a tire having an integral central web, forming a buffer upon and completely covering an end of the hub, and a spindle secured to the attachment means, journaled within the hub.

In testimony whereof I affix my signature.
DANIEL BENSON REPLOGLE.