

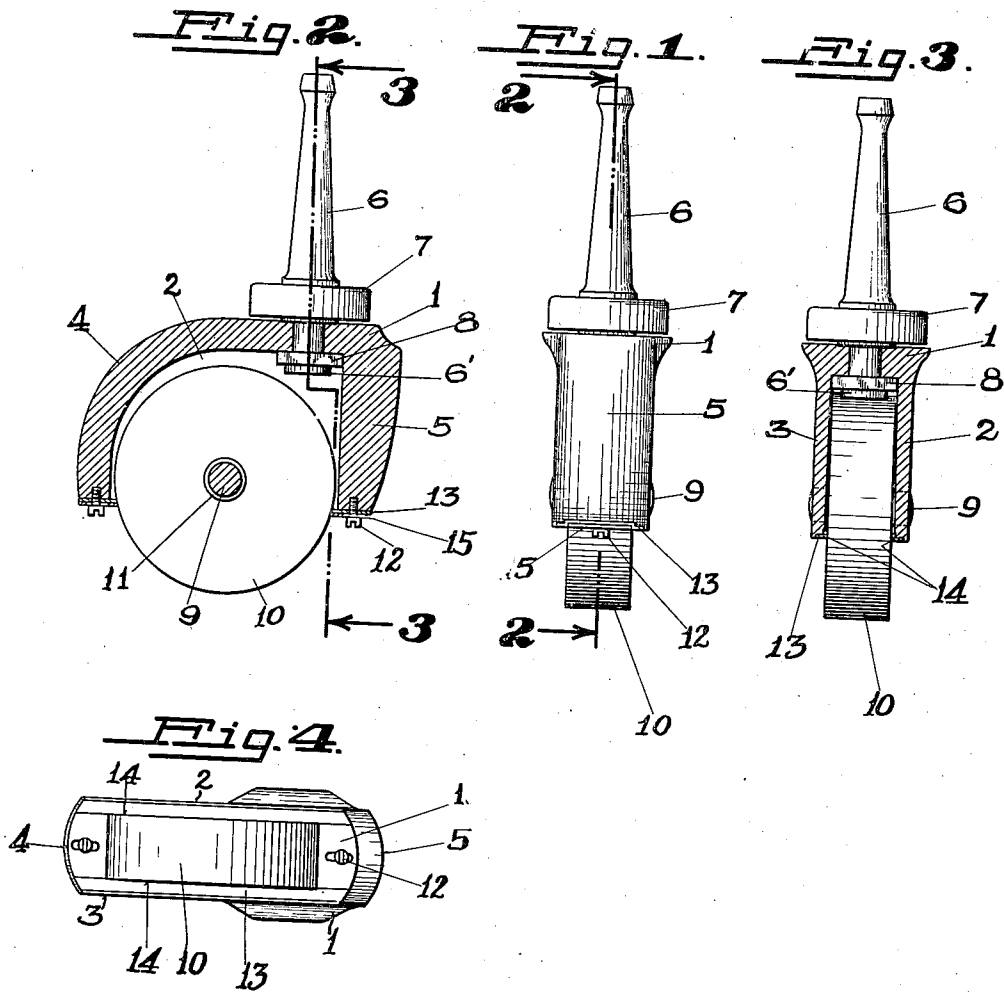
Sept. 9, 1941.

C. K. GREENLEAF

2,255,113

CASTER

Filed Nov. 2, 1940



INVENTOR
Carl K. Greenleaf
BY
J. E. Trabucco
ATTORNEY

UNITED STATES PATENT OFFICE

2,255,113

CASTER

Carl K. Greenleaf, Palo Alto, Calif.

Application November 2, 1940, Serial No. 364,065

2 Claims. (Cl. 16—41)

This invention relates to improvements in casters.

The primary object of my invention is to provide an improved caster for use on furniture and various kinds of machines, embodying a novel construction capable of automatically cleaning the track surfaces and sides of the caster wheel as the latter rotates, whereby hair, lint, threads and other foreign material is prevented from winding on and otherwise fouling the wheel and its axle.

Another object of my invention is to provide an improved self-cleaning caster of the type characterized, having a construction which is less noisy in its operation than those now commonly used.

Other and further objects of my invention will be pointed out hereinafter, will be indicated in the appended claims, or will be obvious to one skilled in the art upon an understanding of the present disclosure. For the purpose of this application, I have elected to show herein certain details of a self-cleaning caster representative of my invention; it is to be understood, however, that the embodiment of my invention herein shown and described is for the purpose of illustration only, and that therefore it is not to be regarded as exhaustive of the variations of the invention.

The invention is illustrated in the drawing in which:

Fig. 1 is an end view of the caster shown in Fig. 2.

Fig. 2 is a sectional view on line 2—2 of Fig. 1.

Fig. 3 is a view similar to Fig. 1 but taken on line 3—3 of Fig. 2, and

Fig. 4 is a bottom plan view of the caster.

Referring to the drawing, the numeral 1 designates a chambered casing open at its lower end and comprising opposite side walls 2 and 3, a combined top and end wall 4, and a substantially vertical end wall 5, all of which are integrally joined together to form a one piece streamlined body. Suitably secured to the top wall 4 of the casing is a shank or spindle 6 which is adapted to be mounted in the usual manner in the leg of an article of furniture or machine. The shank 6 is provided in the usual manner with a circular housing 7 for ball bearings which enables the caster to rotate freely about a vertical axis independently of the particular part of the machine or the article of furniture to which the shank 6 is attached. The lower end of the shank 6 extends through a vertical opening provided in the top wall 4 at a point adjacent the vertical

wall 5, and a rectangular shaped steel washer 8 is interposed between the flattened lower end 6' of the shank and the lower surface of the top wall. One end of the steel washer 8 bears against the inner surface of the vertical end wall 5, thereby preventing the shank from damaging or disfiguring the top wall 4 of the casing at points adjacent the vertical opening when abnormal downward pressures are applied through the shank.

Journaled on an axle 9 which is secured at its opposite ends to the side walls 2 and 3 of the casing is a caster wheel 10 having a bushing 11 secured axially thereto. The axle 9 is secured to the side walls 2 and 3 at points somewhat below the centers thereof, thereby enabling a considerable part of the wheel 10 to project beneath the lower edges of the casing.

The inner surfaces of the opposite side walls 2 and 3 of the casing are inclined slightly toward each other, thereby providing but a very slight clearance between the upper opposite sides of the wheel and the adjacent areas of the side walls. An increased clearance between the opposite sides of the wheel and the inner surfaces of the side walls 2 and 3 is provided at the lower edge of the casing. The restricted clearance at points near the upper areas of the wheel tends to steady the latter when it is rotated within the casing, and while there is some slight friction at these points it does not interfere to any appreciable extent with the free rotation of the said wheel.

Secured to the bottom edge of the casing as by screws 12, which are threaded into suitable openings in the end walls 4 and 5, is a thin elongated scraper plate 13 having a substantially rectangular shaped opening through which the wheel 10 projects. The parallel edges 14 provided on the scraper plate 13 at opposite sides of the rectangular shaped opening constitute scraper elements and they are preferably sharp, the said edges or scraper elements being positioned in very close proximity to the opposite sides of the wheel 10. The clearance between the parallel edges 14 of the scraper plate 13 and the opposite sides of the wheel 10 is sufficient to permit the free rotation of the said wheel, but it is not wide enough to allow hair, threads or foreign material of the usual kind to be carried up into the casing 1 where it can interfere with the normal operation of the device. The opposite ends of the scraper plate 13 are each provided with a channel or groove within which is adjustably positioned a slotted end scraper 15. The end

scrapers are sharpened or beveled at their inner ends, and the screws 12 serve to adjustably maintain the said end scrapers in positions in which their sharpened ends are in close proximity to or in contact with the periphery of the wheel 10. 5 The end scrapers are so positioned with respect to the periphery of the wheel 10 that the latter's operation is not materially interfered with, but at the same time the relationship is such that hair, threads, gum and other foreign material 10 cannot be carried up into the casing when the wheel is rotated over a floor or other supporting surface.

By reason of the fact that the scraping edges or elements 14 on the scraper plate 13 and the end scrapers 15 automatically remove foreign material from the exposed surfaces of the wheel 10 when the latter is rotated, the axle 9 rarely becomes fouled. With the axle free of undesirable accumulations, the caster wheel 10 may freely rotate without danger of jamming or otherwise becoming ineffectual as a rotatable member. 20

Having described my invention, what I claim is:

1. In a caster, a casing having its lower side open, a caster wheel rotatably mounted in the casing and positioned with a part thereof projecting downwardly through the open lower side of the casing, a pair of scraper elements secured 30

to the lower side of the casing and positioned in close proximity to the opposite sides of the caster wheel, and another pair of scraper elements adjustably positioned at ends of the lower side of the casing and positioned to engage with the wheel's periphery.

2. In a caster, a casing having an opening in its lower side, the said casing having a combined curved upper side and end wall, substantially vertical opposite side walls, and a substantially vertical end wall, the inner surfaces of the opposite side walls being slightly inclined toward each other, means carried by the casing for attaching it to an article of furniture or machine, 15 a caster wheel rotatably mounted in the casing and positioned with a part thereof projecting downwardly through the opening in the lower side of the casing, the wheel and the opposite side walls of the casing being so positioned with respect to each other that the areas of the inner surfaces of the said side walls located opposite the upper edge of the said wheel are in close proximity to the said upper edges of said wheel, whereby the periphery of the wheel adjacent said 25 inner surfaces is confined against lateral deflection as the wheel rotates in the casing, and scraper elements carried by the casing and positioned in close proximity to the opposite sides of the wheel and adjacent the wheel's periphery.

CARL K. GREENLEAF.