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2,252,132

ANTIFRICTION ROLLER FOR SKATES AND THE LIKE

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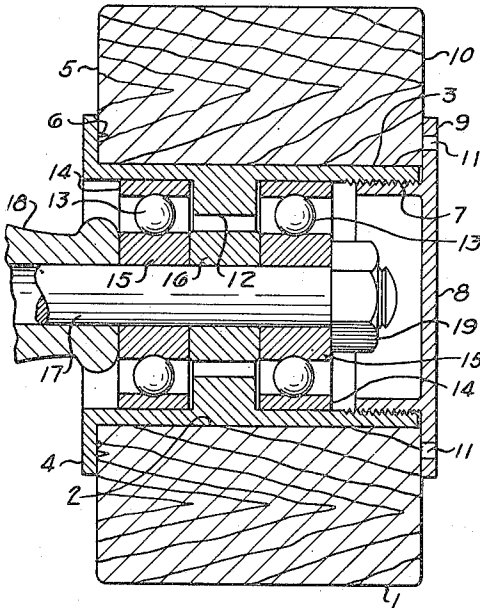


Fig. 1

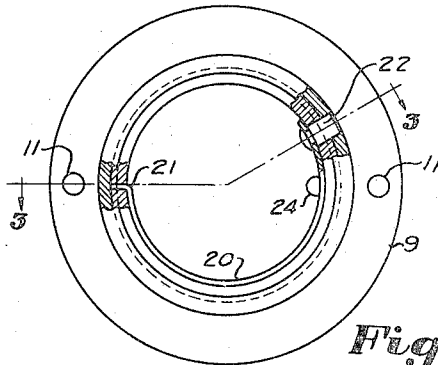


Fig. 2

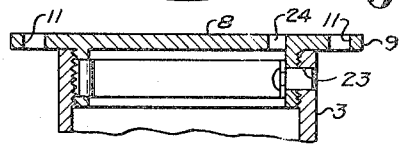


Fig. 3

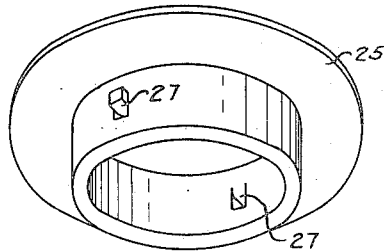


Fig. 4

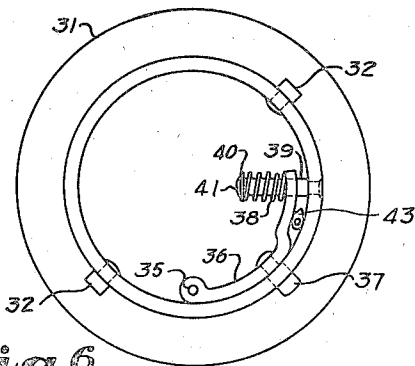


Fig. 6

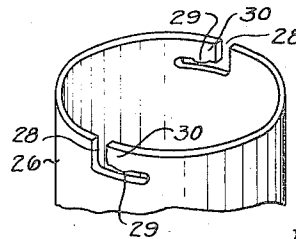


Fig. 5

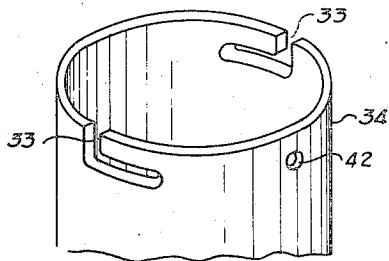


Fig. 7

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ANTIFRICTION ROLLER FOR SKATES AND
THE LIKEFrank G. Mazveskas and Victor A. Mazveskas,
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Application August 20, 1940, Serial No. 353,364

1 Claim. (Cl. 301-108)

This invention relates as indicated to an anti-friction roller for skates and the like.

Anti-friction rollers for skates and the like are usually characterized by a rather complicated construction, in which breakage of the tread or other part of the roller requires replacement of the entire roller:

A primary object of the present invention is to provide a roller of the character described, in which the tread or other parts of the roller which become damaged or worn, can be readily replaced without replacing other parts of the roller which are not worn out or broken.

Another object of the invention is to provide a roller of the character described, consisting of a minimum number of parts of rugged construction, and containing anti-friction elements which are effectively concealed and free from attack by dirt and dust.

A further object of the invention is to provide a roller of the character described, in which means are incorporated for effectively locking certain parts to other parts, but in which unlocking can be effected with ease and certainty.

To the accomplishment of the foregoing and related ends, said invention, then, consists of the means hereinafter fully described and particularly pointed out in the claim; the annexed drawing and the following description setting forth in detail certain structure embodying the invention, such disclosed means constituting, however, but one of various mechanical structures in which the principle of the invention may be used.

In said annexed drawing:

Fig. 1 is a fragmentary cross-sectional view through a skate roller embodying the principal features of the invention;

Fig. 2 is a view, partly in elevation, and partly in section, showing means for locking the end cap to the bearing retainer sleeve;

Fig. 3 is a cross-sectional view, taken on the line 3-3 of Fig. 2;

Figs. 4 and 5 are perspective views of an end cap and bearing retainer sleeve, respectively, showing a modified form of means for securing the end cap to the sleeve;

Fig. 6 is an elevation of an end cap, having incorporated therein, a further modification in means for locking the end cap to the bearing retainer sleeve, and

Fig. 7 is a perspective view of the sleeve with which the end cap of Fig. 6 is adapted to cooperate.

Referring more particularly to Fig. 1, there is

disclosed a skate roller comprising a tread 1, which may be formed of wood, fibre, composition, or other suitable material, preferably of a non-metallic character and having a central aperture 2 within which is disposed a metallic sleeve 3, having a press-fit in the tread. The sleeve 3 has an outwardly extending flange 4 at one end which engages the inner face 5 of the tread and has a plurality of embossments 6 which extend into the tread 1 to thereby prevent relative rotative movement between the sleeve and tread.

The opposite end of the sleeve 3 is interiorly threaded as at 7 for the reception of a metallic end cap 8 having an outwardly extending flange 9 which engages the outer face 10 of the tread 1. Extending through the flange 9 is a pair of diametrically opposed openings 11 for engagement by a wrench to facilitate removal of the cap, when access to the interior of the roller is desired.

The sleeve 3 is provided intermediate its ends with a relatively wide radially inwardly extending flange 12, which, as shown, is preferably formed integrally with the sleeve.

Disposed at the opposite sides of the flange 12 are ball-bearings 13, the outer races 14 of which have a press-fit in the sleeve, and the inner races 15 of which are spaced apart by means of a spacer or bushing 16.

The axle 17 projects from the axle housing 18 of the skate and through the inner races 15 of the bearings and the spacer 16, being threaded at its end for the reception of a nut 19.

It is thus seen that the bearings are effectively maintained in spaced relation by means of the spacer 16 and the flange 12 of the sleeve 3, and are also maintained against axial movement by such flange, as well as by the engagement of the axle housing with the inner bearing and the engagement of the nut 19 with the outer bearing. The end cap 8 is effective to preclude the entrance of dirt and dust into the bearings and to conceal the inner elements of the wheel from view, as well as to impart to the wheel a highly desired finish appearance. At the same time, the end cap can be readily removed for inspection and cleaning of the inner elements of the wheel, or for repair or replacement of parts.

For ordinary usage to which a skate is subjected, the threaded engagement of the end cap with the sleeve is sufficient to preclude any possibility of its becoming loosened and falling off the sleeve.

In some cases, however, it is desirable to in-

corporate in the roller means for locking the end cap to the sleeve, and such means is shown in Figs. 2 and 3. Such means comprises a more or less semi-circular strip 20 of spring steel conforming in shape to and disposed within the end cap 8 and having one end 21 thereof permanently secured to the end cap. The other end of the spring 20 has riveted thereto a locking pin 22, which, when the end cap has been screwed in place, enters an aperture 23 in the sleeve 3, and is thereby effective to lock the end cap to the sleeve. When it is desired to remove the end cap, a pointed instrument is inserted through an opening 24 in the end cap and under the spring 20 in order to withdraw the pin 22 from the opening 23, after which the end cap may be unscrewed from the sleeve.

In Figs. 4 and 5, means for locking the end cap 25 to the sleeve 26 is shown, consisting of lugs 27 pressed outwardly from the metal of the end cap, and adapted to enter bayonet slots 28 in the sleeve. As the end cap is turned to bring the lugs 27 into the arcuate portions of the bayonet slots, the lugs 27 engage cam-like portions 29 on the tongues 30 which result from the formation of the bayonet slots, spring these tongues sufficiently to permit the lugs to pass such cam-like portions 29, and thereby effectively locking, or at least, latching, the end cap to the sleeve. In this form of the invention, the end cap can, of course, be removed from the sleeve without the aid of any instruments.

In that form of the invention disclosed in Figs. 6 and 7, the end cap 31 is provided with a pair of diametrically opposed pins 32 which are adapted to enter bayonet slots 33 in the sleeve 34. Pivotally secured to the end cap, as at 35, is a dog 36 having a locking pin 37 riveted thereto intermediate its ends. The dog 36 is normally maintained in the position shown in Fig. 6 by means of a compression spring 38 mounted on a

pin 39 which is riveted to the end cap. The spring 38 is interposed between a washer 40 adjacent the head 41 of the pin 39 and the free end of the dog 36, and when the dog is in this position, the pin 37 will enter an aperture 42 in the sleeve 34 after the end cap has been turned on the sleeve, thereby effectively locking the end cap to the sleeve. It will be noted that the free end of the dog 36 is spaced somewhat from the wall of the end cap, so that a key 43 may be inserted through an opening in the end cap and into the space between the dog and end cap, and turned to engage the dog and withdraw the pin 37 from the aperture 42, permitting the end cap to be removed from the sleeve.

The forms of the invention shown in Figs. 4 to 7 inclusive are advantageous in that they do not require threading of the sleeve or end cap.

Other modes of applying the principle of our invention may be employed instead of the one explained, change being made as regards the structure herein disclosed, provided the means stated by the following claim or the equivalent of such stated means be employed.

We therefore particularly point out and distinctly claim as our invention:

In a bearing, a tubular metallic sleeve having bearings therein, a metallic end cap for said sleeve comprising a portion fitting into said sleeve and having an opening therein, means for locking said cap to the sleeve, said means including a curved arm secured interiorly to the portion of the cap that extends into said tube and lying against the inner wall thereof, and a pin projecting from said arm through the opening in the end cap, said sleeve having an opening registering with the opening in the end cap and receiving the end of said pin to lock the end cap in place.

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