ABSTRACT

A toe stop assembly for a roller skate, comprising a pair of holding members disengageably mounted by a tightening bolt on a wheel axle mounting means (truck) provided on the body plate of said roller skate in such a manner that the holding members intersect one another, and a toe stop rubber mounted on the intersecting portion of said holding members.
ROLLER SKATE TOE STOP ASSEMBLY

BACKGROUND OF THE INVENTION

1. Field of the Invention
The present invention relates to a toe stop assembly for a roller skate.

2. Description of the Prior Art
A conventional toe stop which has been provided at the forward end of a roller skate to suddenly stop said roller skate or turn the moving direction thereof, comprises a rubber body secured to the forward end of the body plate of said roller skate by a tightening screw. However, it has suffered from the following disadvantages: First, such a toe stop was impossible to mount on a roller skate which had not been designed so as to accept it, and secondly, in the case of stopping the roller skate while it was sharply turning, by touching the rubber body to the floor or ground, the rubber body did not touch on the advancing axis of the wheels (they were turning left or right relative to the body plate), but touched it on the point laterally displaced from said axis, because such rubber body was mounted directly on the body plate, thus resulting in loss in brake efficiency as well as difficulty in stopping operation.

The present invention has been made in order to eliminate the above-mentioned disadvantages.

SUMMARY OF THE INVENTION
A first object of the present invention is to provide a toe stop for a roller skate which has not originally been provided with a toe stop, comprising a pair of holding members on which a rubber toe stop body is integrally mounted, which is disengagably secured to a truck provided under the body plate of said roller skate.

A second object of the present invention is to provide a toe stop for a roller skate which is adapted to be mounted on said roller skate without particularly modifying the truck.

A third object of the present invention is to provide a toe stop assembly for a roller skate, which can be integrally mounted on the truck of said roller skate, thereby being able to turn in the running direction of the wheels.

A fourth object of the present invention is to provide a toe stop assembly for a roller skate of which the mounting and removal on and off the truck of said roller skate is simply made by means of a tightening bolt penetrating through the bodies of holding members of said assembly.

A fifth object of the present invention is to provide a toe stop assembly for a roller skate which is adapted to be mounted on said roller skate and tightened by said bolt in such a manner that the embracing arms of said holding members and the gripping arms thereof are supported by the truck at the wheel axle bearing portion and the rod portion thereof respectively.

A sixth object of the present invention is to provide a toe stop for a roller skate in which said holding members intersect at the forward ends thereof for mounting said rubber toe stop body on the intersecting portion.

BRIEF DESCRIPTION OF THE DRAWING
The accompanying drawings show a preferred embodiment according to the present invention, in which:

FIG. 1 is a top plan view showing the essential part of the preferred embodiment;
FIG. 2 is a bottom plan view showing the same of FIG. 1;
FIG. 3 is a sectional plan view taken along A — A of FIG. 1; and
FIG. 4 is a sectional view taken along B — B of FIG. 2.

DESCRIPTION OF THE PREFERRED EMBODIMENT
Description will hereunder be made with reference to the drawings: In the drawings, the reference numeral 1 represents a body plate adapted to be secured to the sole of a roller skate shoe (not shown) by an ordinary means. And 2 and 10 are a protuberance and a bearing bore, respectively, which are provided on a hanger 9 affixed to the underside of the body plate 1 near the front end thereof by rivets or the like. The reference numeral 4 is a wheel axle mounting member, that is, a truck which is secured to the hanger 9 in such a manner that a rod portion 11 of the truck is received within the bearing bore 10 and a shock absorbing member 5 is interposed between the protuberance 2 and the rearwardly projecting lower end annular flange 27 of the truck 4 and through which a tightening screw 6 is inserted. The reference numeral 3 designates a reinforcing plate which is suspended under the body plate 1 with one of its ends engaged with the hanger 9 for the forward truck 4 and the other end thereof engaged with a complementary, like hanger (not shown) affixed to the body plate 1 near the rear thereof for the rearward truck (not shown) and its middle portion affixed to the underside of the body plate 1. 7 is a wheel axle penetrating through a wheel axle bearing portion 25, on the both ends of which are rotatably mounted wheels 8 via bearings. 16 and 17 represent a pair of holding members which constitute the main feature of this invention. These holding members 16 and 17 are each integrally formed with respective embracing arms 20 and 21 adapted to embrace the bearing portion 25 from below, and gripping arms 18 and 19 for gripping the rod portion from both sides, respectively. These holding members 16 and 17 intersect at the forward ends thereof, forming an intersecting portion 22 through which a tightening screw 26 is screwed. 24 is a tightening bolt penetrating through a bore formed in the bodies of the holding members 16 and 17 for preventing the opening of the holding members 16 and 17 about the tightening screw 26, by which bolt the securement of the holding members 16 and 17 to the truck 4 is maintained. 23 is a rubber toe stop body secured to the intersecting portion 22 of the holding members 16 and 17 by the tightening screw 26. 12 is an arcuate surface formed on the outer surface of the rod portion, and 14 and 15 are shoulders formed on the reverse side of the arcuate surface and extending along the length of the rod portion 11 between which is intervened a ridge 13 also extending along the length of the rod portion. The interiors of the aforementioned gripping arms are shaped so as to complementarily engage with the so-configured exterior of the rod portion 11.

In the drawings, the holding members 16 and 17 are shown in engagement with the rod portion 11. To disengage these holding members from the rod portion, you have only to unscrew the tightening bolt 24 and rotate the holding members 16 and 17 away from one an-
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other about the tightening screw 26. Then, the holding members 16 and 17 will be detached from the rod portion and at the same time the embracing arms 20 and 21 will get separated from the bearing portion 25. Thus, the whole toe stop assembly is disengaged from the roller skate. Reversely, in order to mount the toe stop assembly on the roller skate, you have only to place the embracing arms 20 and 21 in contact with the underside of the bearing portion 25, grip the rod portion 11 with the gripping arms 18 and 19, and then screw the tightening bolt 24 through the bore.

Since a toe stop assembly according to this invention has a construction as described in the foregoing, it will be clearly understood that this toe stop assembly is mountable on any roller skate without a toe stop in general. Further, this invention has another advantage that this toe stop assembly does not necessitate any modifications to the roller skate in mounting the toe stop on the roller skate. Still further, according to this invention, since the toe stop rubber body 23 is fixed to the truck 4 via the holding members 16 and 17 it always turns left and right with the wheels 8 and exactly turns in the turning direction of the wheels 8 so that it touches the ground on the advancing axis of the wheels 8, thus exhibiting a strong braking function as well as an excellent maneuverability. Further, this toe stop assembly has a very simple construction enough to be mountable onto a roller skate just by means of a tightening bolt.

While description has been what we believe to be the best embodiment of the present invention, we desire to have it understood that obvious changes thereof may be made within the scope of the appended claims without departing from the spirit of the present invention.

What we claim is:

1. For mounting on a roller skate structure that includes a body plate affixed to a roller skate shoe, a hanger secured to the underside of said body plate near the front end thereof and provided with a bearing bore at the front end thereof, and a wheel axle mounting truck comprising an inclined rod portion of non-circular cross-section and having an upper, forward end thereof received within said bearing bore, and a laterally leftwardly and rightwardly extending wheel axle bearing portion formed at the lower, rear end of the rod portion; toe stop assembly comprising:
   a pair of holding members disengageably securable to said truck to project upwardly and forwardly therefrom and intersecting each other at forward ends thereof, each holding member having an upwardly facing embracing arm at the downward and inward end thereof for embracing said wheel axle bearing portion from below and further having a laterally facing gripping arm projecting therefrom suprajacent the embracing arm thereof, and respectively disposed for gripping engagement with said rod portion at opposed sides of said rod portion, said holding members each having the gripping arm thereof provided with an interior face of a non-circular configuration generally corresponding to the non-circular cross-sectional rod portion;
   a through bore transversely extending through each of the respective holding members from lateral sides thereof in front of said rod portion;
   a tightening bolt threaded in the through bores of both said holding members;
   means hinging the holding members together at their intersecting forward ends; and
   a rubber toe stop body mounted at the intersecting forward ends of said holding members.

2. The roller skate toe stop assembly of claim 1, wherein the hinging means comprises a tightening screw threaded into means defining aligned threaded bores in the forward ends of holding means; and wherein said tightening screw also secures said rubber toe stop body onto said holding member forward ends.

3. The roller skate stop assembly of claim 1 wherein the interior face of each gripping arm includes a first rearwardly facing concave portion, a shoulder extending inwardly from the rear of the first concave portion and a second, forwardly facing concave portion extending from the inner extent of the shoulder.