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COMBINED TRUCK AND TOE STOP FOR ROLLER SKATES

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FIG. 1

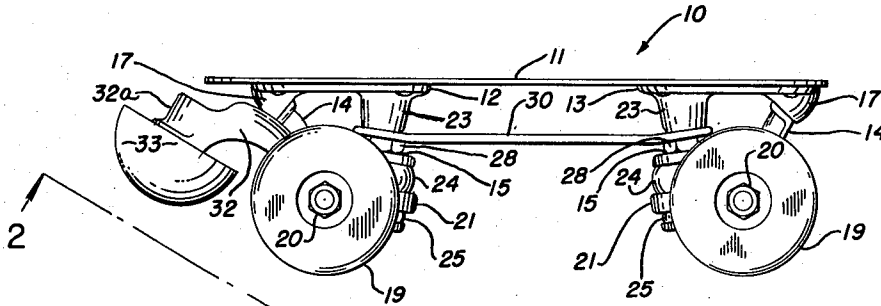


FIG. 2

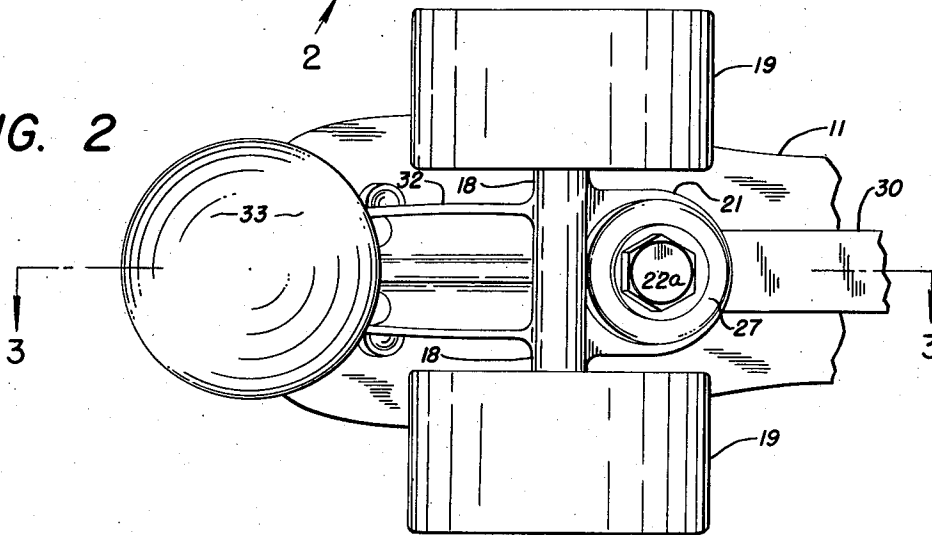
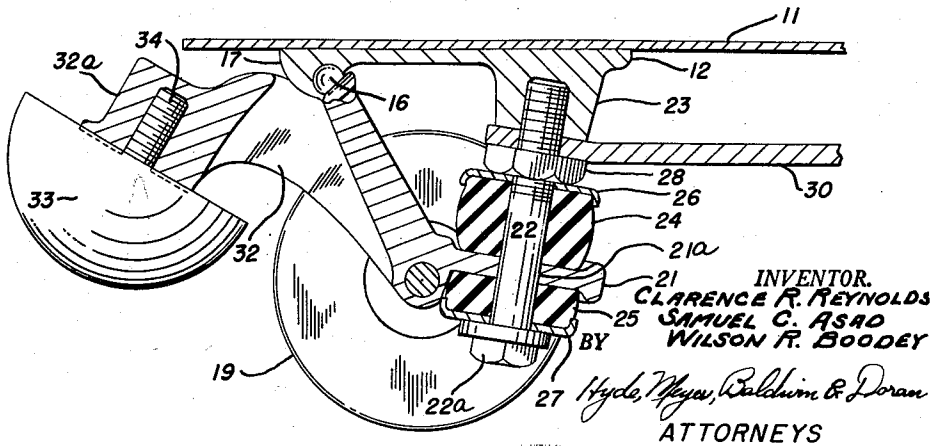


FIG. 3



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COMBINED TRUCK AND TOE STOP FOR
ROLLER SKATES

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1 Claim. (Cl. 280—11.2)

This invention relates to roller skates and more particularly to stop means on roller skates.

An object of this invention is to provide a roller skate having a combined truck and toe stop construction, capable of imparting a sudden braking action to the skate.

Another object of this invention is to provide the base plate of a roller skate with a pair of fore and aft rigidly connected trucks which rockably support pairs of rollers and a resilient stop which is integrally connected with the front truck and contacts the supporting floor by pivoting the skate about the axle of the foremost pair of rollers to effect a sudden braking action.

Still another object of this invention is to provide a stop for a roller skate wherein the stop becomes an integral part of the framework of the skate and thereby transmits any shock to the more rugged structure members of the skate to prevent excessive damage, when effecting a braking action.

Another object of the present invention is to provide a roller skate having combined truck and toe stop construction characterized by its structural simplicity, the ease of assembly of its parts, its strong and sturdy nature and its low manufacturing cost. Other features of this invention reside in the arrangement and design of the parts for carrying out their appropriate function.

Other objects and advantages of this invention will be apparent from the accompanying drawings and description and the essential features will be set forth in the appended claim.

In the drawings,

Fig. 1 is a side elevational view of a roller skate provided with my novel combined truck and resilient toe stop means.

Fig. 2 is an enlarged fragmental view of the front portion of the skate containing the resilient stop, taken along the plane of line 2—2 in Fig. 1.

Fig. 3 is an enlarged fragmental cross sectional view taken along the plane of line 3—3 of Fig. 2.

Roller skating has been developed to a point of high perfection; professional skaters tour the country and entertain the public by executing intricate precision maneuvers, heretofore unknown and believed impossible to perform. One of the more popular and widely acclaimed dance routines is the ballet, wherein a group of dancers use pantomime and conventionalized movements to tell a story. In order to portray a rhythmic movement of the feet and body, the skater must move lightly and gaily about and yet be capable of rapid, lively whirling movements, wherein the skater at times completely leaves the floor and is propelled through the air. In order for the skater to leave the floor, it is necessary for him to convert forward or horizontal motion into vertical or lifting motion. This action can be best achieved by effecting a sudden braking or stopping of the skate. The skate can be suddenly stopped by providing the skate with a resilient toe stop, which is brought into engagement with the supporting floor. The skater, having gained sufficient forward momentum, needs only

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to engage the resilient stop with the supporting floor and simultaneously give a slight springing or jumping movement with his legs and he will find himself propelled upwardly as well as forwardly through the air. The resilient stop also provides means for executing sudden stops and turns when performing acrobatic or symbolic dancing movements.

A fatal shortcoming of previous stopping means existed in the shearing force exerted upon the structural members of the skate. Prior to my invention, most toe stops were connected directly to the base plate of the skate and transmitted their full shearing force directly into the base plate and thence into the rivets or bolts which secured the skater's shoe to the base plate. In short order, the bolts or rivets were sheared off, resulting in expensive time-consuming repairs and at times in severe injury to the performer. In any case, the blow was transmitted uncushioned to the ball of the foot of the wearer through the base plate of the skate.

In Fig. 1, I have shown a roller skate 10 comprising a base plate 11 which normally has a supporting shoe, not herein shown, rigidly secured on its upper surface. The bottom of the base plate 11 is provided with a pair of fore and aft roller truck brackets 12 and 13 which are rigidly secured to the base plate by welding, riveting or other suitable means. Each of the truck brackets 12 and 13 is provided with a pair of depending structural support members or struts 14 and 15 which have their upper ends spaced apart and their lower ends inclined toward each other. The foremost and rearmost support members 14 of the skate have annular ball devices 16 on their upper ends as seen in Fig. 3. An annular socket member is formed in the depending boss 17 on the lower surface of each truck bracket 12 and 13 and rotatably and rockably receives the ball device 16 for universal movement, therein. The strut members 14 are inclined inwardly toward the center of the skate. The lowermost end of each of the strut members 14 is provided with laterally extending projections forming axle 18, as seen in Fig. 2, which supports rollers 19 on its end portions. The rollers 19 are secured to the axle by means of nuts 20, shown in Fig. 1. The inclined strut members 14 are secured to the innermost strut members 15 by means of an inwardly longitudinally extending flange portion 21 secured to the strut members 14 at a point adjacent the axle 18. The inwardly extending flange portion 21 has hollow-dished upper and lower surfaces and a central aperture 21a. The innermost struts 15 or remaining support members on each truck comprise a bolt 22 which extends upwardly through the hollow aperture of the inwardly extending flange portion 21 and threadably engages a depending boss member 23 on each truck member. Rubber cushioning blocks 24 and 25 are provided on the upper and lower surfaces respectively of the flange portion 21 and seat in the hollow-dished surfaces of said member. Metal caps 26 and 27 cover the outer exposed surface of the rubber blocks 24 and 25 respectively, and provide suitable bearing surfaces for the head 22a of bolt 22 which extends through the rubber block members and lock nut 28 which adjustably secures the resilient blocks 24 and 25 against the inwardly extending flange portion 21. A longitudinally extending reinforcing bar 30 is secured to bolt 22 at a zone located between the lock nut 28 and the lower surface of the boss 23 and extends between trucks 12 and 13. Thus, it will be seen that the innermost strut members 15 form yielding shock absorbers for the rollers 19 as they pivot about the ball and socket joint.

The foremost strut member 14 is provided with an upwardly and outwardly longitudinally extending bracket 32 which is integrally connected with said support member. The bracket 32 is seen to comprise a generally U-

shape channel member joining the foremost strut member at a zone beginning at the laterally extending axle 18 and extending upwardly along said strut member to a point adjacent the ball 16 located at the upper end of the strut member. The outermost end of the bracket 32 is provided with a solid end portion 32a containing a threaded bore on its lower surface. A resilient stop 33 bonded to a threaded screw member 34 engages the threaded bore of the solid end portion 32a. The resilient stop member has the shape of a half-sphere with a diameter somewhat less than that of rollers 19. The main body of the resilient stop member 33 is seen to lie forward and above the horizontal axle 18 and is disposed at an angle with the base plate 11 so that a line drawn through the center of the sphere in axial alignment with the threaded screw portion 34 would intersect the toe of skate 10.

The operation of my novel stop means should now be apparent. When the skater desires to effect a sudden braking action, he merely brings the resilient stop 33 into contact with the supporting floor by pivoting the entire skate about the foremost axle 18, as seen in Fig. 3. The impact of the sudden stopping action is transmitted directly from the stop member through bracket 32 to the foremost strut member 14 and directly into the resilient shock absorbing blocks 24 and 25 wherein the force is substantially absorbed. The remaining force which is not absorbed by the blocks 24 and 25 is transmitted into the boss 23 of truck member 12 and base plate 11, and also into the reinforcing longitudinally extending bar 30 where it is transmitted rearwardly to truck 13 located at the heel of the skate.

It should be further noted that the resilient stop 33 is responsive to horizontal turning movement or vertical pivotal movement of the rollers 19, through bracket 32, which is integrally connected with the foremost strut member 14.

In view of the foregoing description, taken in conjunction with the accompanying drawings, it is believed that a clear understanding of the construction, operation and advantages of the device will be quite apparent to those skilled in this art.

It is to be understood, however, that even though there is herein shown and described a preferred embodiment of the invention, the same is susceptible to certain changes fully comprehended by the spirit of the invention.

What we claim is:

A roller skate comprising a base plate, forward and rearward truck brackets secured to the bottom of said base plate, wheel means on said rearward truck bracket, said forward truck bracket having two rigid struts spaced one ahead of the other longitudinally of the skate at their upper ends and converging downwardly, the foremost of said struts having a ball-and-socket connection with its associated bracket, the rearward of said struts having a threaded connection with its associated bracket, wheel supporting axle means mounted at the lower end of said foremost strut, an integrally connected flange near the lower end of said foremost strut and extending rearwardly therefrom, there being an opening through said flange through which said rearward strut extends, there being an enlarged head on the lower end of said rearward strut, resilient cushioning means between said enlarged head and the lower face of said flange, an upwardly and forwardly extending rigid bracket integrally connected to said foremost strut, and a downwardly projecting resilient stop secured to the forward end of said bracket and extending down approximately to the level of said axle means, whereby said stop terminates the forward movement of the skate when the skate is pivoted about said axle means to cause said stop to strike a supporting floor, whereupon said resilient cushioning means absorbs some of the shock of stopping.

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