

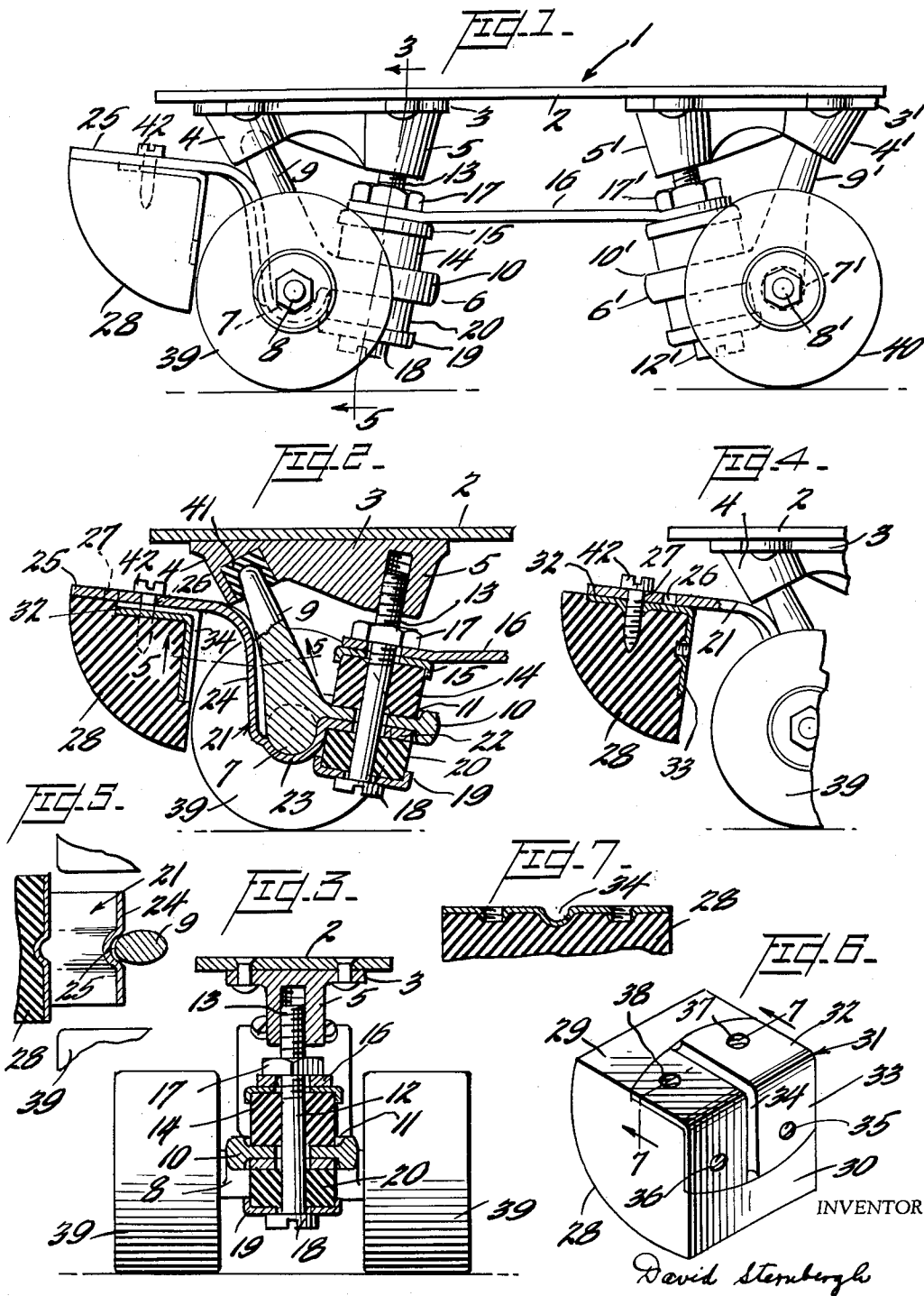
May 8, 1956

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2,744,759

TOE BRAKE FOR ROLLER SKATES

Filed May 8, 1953



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2,744,759

TOE BRAKE FOR ROLLER SKATES

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Application May 8, 1953, Serial No. 353,793

10 Claims. (Cl. 280—11.2)

The present invention relates to an attachment for roller skates and more particularly to an improved toe stop or toe brake attachment.

A great strain is placed on toe stop attachments by skaters who use them as an aid in jumping, spinning, and quick stopping. It is therefore a primary object of the present invention to provide a novel and improved toe stop which is of sturdy and durable construction and which is adapted to be rigidly attached to and supported by the front wheel truck of a conventional roller skate. The attaching of the toe stop to the wheel truck results in a particular advantage over the stops now in general use, which are attached to the underside of the sole plate of a skate, in that the stop of the present invention turns or otherwise moves with the wheel truck. It follows, therefore, that when the stop comes in contact with the floor, it engages the floor squarely whereas were it attached to the sole plate, it would strike the floor at an angle likely causing the skater to be thrown off balance or suffer a fall.

Heretofore another disadvantage of many toe stops has been the fact that they wear so rapidly. It is therefore another object of the present invention to provide a stop member which can be attached to a toe-plate member in a plurality of positions to thereby present a number of successive surface positions for contact with the floor as the originally presented surfaces wear down.

Another object of the present invention is to provide a toe-stop attachment comprising an elongated plate member having a transverse portion adjacent one end with an opening therein for receiving a king-pin for attachment to a roller skate, a portion forward of this opening having a substantially U-shaped bend for abutting relationship with the wheel axle housing of the front wheel truck, an inclined portion extending from the forward arm of the U-shaped portion extending substantially the length of the inclined brace member of the front wheel truck for abutting relationship therewith, and a transverse portion forward of this inclined portion having a stop member selectively attached to an underside thereof.

Other objects and advantages will appear from the following detailed description in which:

Figure 1 is a side elevation of a skate with a toe-stop attachment embodying the principles of the invention applied thereto;

Figure 2 is a vertical longitudinal section through the forward portion of the skate;

Figure 3 is a vertical transverse sectional view along line 3—3 of Figure 1;

Figure 4 is a view partly in side elevation and partly in section showing the forward portion of the skate, with the brake block in a different position than that illustrated in Figure 2;

Figure 5 is a fragmentary detail sectional view taken on line 5—5 of Figure 2;

Figure 6 is a perspective view of the brake block; and

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Figure 7 is a fragmentary cross-section through the brake block on line 7—7 of Figure 6.

Referring now to the drawings, and more particularly to the skate itself, it can be seen that the skate herein illustrated is a conventional one designated generally by the reference numeral 1. The skate comprises a sole plate 2 with hangers 3, 3' attached to the under side of plate 2 adjacent the forward and rearward ends thereof. These hangers may be attached to the plate in any conventional manner, such as with rivets. The hangers 3, 3' have two tubular extensions 4, 4' and 5, 5' for purposes hereinafter described, the extensions 5, 5' being internally threaded.

The skate has front and rear wheel trucks designated generally 6, 6'. These truck members have axle housings 7, 7' which carry wheel axles 8, 8'. Pairs of wheels 39 and 40 are carried by the front and rear axles respectively. The wheel trucks are also provided with two arms or braces 9, 9' and 10, 10' angularly displaced with respect to each other. The arms 9, 9' are supported in socketed rubber blocks 41 positioned within the cupped recesses of hanger extensions 4, 4' while the arms 10, 10' terminate in dish-shaped portions 11. A central opening through these dish-shaped portions 11 receives a threaded king-pin or king-pin bolt 12. The threaded portion 13 of the king-pin is screwed into the threaded sockets of extensions 5 of hanger 3.

The king-pin 12 carries, between the dish-shaped extension 10 of the wheel truck, a resilient cylindrical member or bushing 14 which may be made of rubber or a rubber-like composition, and a dish-shaped cap or washer 15, both containing openings through which the king-pin 12 extends. A brace 16 extends between the front and rear king-pins 12, 12' and has an opening adjacent each end to receive the king-pins. A lock nut 17 is carried by the threaded portion 13 of the king-pin between brace member 16 and the internally threaded extension 5 of the hanger. The king-pin 12 has an enlarged head 18 and carries between this enlarged head and the dish-shaped wheel truck extension 10 another dish-shaped member or washer 19 and a second resilient member 20, both having openings through which the king-pin extends. It can be seen therefore that because of these resilient members 14 and 20 and the clearance between the bolt 12 and the walls of the opening in the part 10, the plate member can be rocked from side to side with respect to the truck member. The freedom of rocking or turning movement can be adjusted by loosening the lock nut 17 and drawing the enlarged head of king-pin 12 into tighter or looser engagement with the resilient members.

The improved toe-stop attachment of the present invention comprises an elongated relatively rigid member 21 made of sheet metal stamping of rather heavy gauge or of like construction, having a portion 22 adjacent its rearward end lying in a generally horizontal plane, disposed snugly adjacent the dish part 10 of the wheel mounting, and having an opening therein through which the king-pin 12 extends. The member 21 has a substantially U-shaped bend 23 forward of the substantially horizontal portion 22 to embrace the wheel axle housing 7 of the front wheel truck. The forward leg of the U-shaped portion is extended upwardly and forwardly in the form of an extension 24. The extension 24 has a reinforcing bend or convolution forming a rib 25 running the length thereof, the ribbed extension 24 being disposed in abutting relation with the inclined brace 9 of the front wheel truck. As can be seen best in Figures 1 and 2, the brace 9 rests in the groove formed in the ribbed extension adjacent the upper end thereof and thus helps prevent sidewise movement between the attaching plate 21 and the skate. The member 21 terminates

in a portion 25 also lying in an approximately horizontal plane. The forward portion 25 of the plate contains pairs of apertures 26 and 27 for purposes hereinafter described.

The brake or toe block itself comprises a block 28 of hard rubber or a similar material and is made in the form of a cylindrical sector, which in the illustrated embodiment is a quadrant. The radial faces 29 and 30 of this sector have a portion cutaway therefrom on both sides of the junction of said faces and an angular plate member 31 is imbedded in the recess thus formed. The plate member 31 is secured in place as by vulcanizing or bonding the rubber to the plate. As can be seen, the angular plate member 31 has sides 32 and 33 with the included angle of these sides being substantially the same as the included angle of faces 29 and 30 of the toe block. The plate member 31 also contains an inwardly struck central groove 34 extending the length of the plate. This groove acts as a strengthening rib as well as an aid in holding the plate imbedded in the block. A plurality of apertures 35, 36, 37 and 38 are also provided in the plate member 31.

It can be readily understood that with the double apertures 26 and 27, the toe block 28 can be adjusted forwardly or rearwardly with respect to the front of the skate by positioning the holding screws 42 in the apertures 26 or the apertures 27. It can also be readily seen that the block can be attached with either of the faces 32 or 33 in abutting relationship with plate 21 by the alternative use of the respective pairs of apertures 37, 38 and 35, 36. Thus with this double adjustment, a skater can get four times the wear that he would normally get were there but one set of apertures 26 or 27 and were the block 28 itself only attachable in one position.

The toe-stop attachment as illustrated and described above is by way of example only, and any changes which might occur to one skilled in the art are contemplated by the present invention, within the scope of the following claims.

Having thus described and illustrated the invention, what I claim is:

1. A toe-stop attachment for roller skates having a sole plate and a front wheel truck connected therewith by means of a king-pin, said wheel truck including an axle housing and an inclined brace member extending from the axle housing to the sole plate; said attachment comprising an elongated plate terminating at each end in a generally horizontal portion, one of said end portions having an opening for receiving the king-pin for connection to the skate, the other end having means for securing a stop member, and said plate member having an inclined portion intermediate said ends for abutting relationship with said inclined brace member.

2. A toe-stop attachment as set forth in claim 1 in which said means comprises a plurality of openings for selectively attaching said stop member.

3. A toe-stop attachment as set forth in claim 2 in which said stop member is a block in the form of substantially a quadrant of a cylinder with the radial faces of said cylinder having a plurality of openings for selective engagement by said attaching means.

4. A toe-stop attachment for roller skates having a sole plate and a front wheel truck connected therewith by means of a king-pin, said wheel truck including an axle housing and an inclined brace member extending from the axle housing to the sole plate; said attachment comprising an elongated plate member having an opening adjacent one end for receiving the king-pin for connection to a roller skate, means adjacent the other end for securing a stop member thereto, and a portion intermediate said ends having a central groove extending sub-

stantially the length thereof for receiving in abutting relation therewith said inclined brace member.

5. A toe-stop attachment for roller skates having a sole plate and a front wheel truck connected therewith by means of a king-pin, said wheel truck including a wheel axle housing and an inclined brace member extending from the axle housing to the sole plate; said attachment comprising an elongated plate member having a generally horizontal portion adjacent one end having an opening for receiving the king-pin for connection to the skate, said plate having a substantially U-shaped portion forward of said opening for said wheel axle housing, an inclined portion extending upwardly and forwardly from the forward arm of said U-shaped portion for abutting relation over a substantial length of said inclined brace member, and said plate member terminating in a generally horizontal portion forward of the aforementioned extension, said terminating horizontal portion having secured thereto a stop member.

6. A stop member for a roller skate comprising a resilient block in the form of substantially a quadrant of a cylinder, an angular plate member having its included angle substantially equal to that angle formed by the radial faces of said cylinder and imbedded in the block, each of the corresponding faces of said plate and said block having a plurality of holes whereby the block can be selectively attached to a roller skate toe-stop attachment plate at either of said radial faces to present different portions of said arcuate surface to the floor for braking purposes.

7. A stop member as described in claim 6 in which said angular plate member has a centrally located reinforcing rib.

8. As an article of manufacture, a toe stop for roller skates, which comprises an elongated plate member terminating at either end in a substantially flat portion, a floor engaging block, means adjacent one end of said plate for securing said block member thereto, connecting means adjacent the other end of said plate, a generally U-shaped portion intermediate said flat portions having one leg longer than the other, said longer leg having a central groove extending substantially the length thereof the upper end of said longer leg extending from the block attaching flat portion and the shorter leg extending from the other flat portion.

9. A toe stop as set forth in claim 8 in which said securing means comprises a plurality of openings, and said floor engaging block is substantially a quadrant of a cylinder with the radial faces thereof each having securing means whereby the block can be selectively positioned with respect to the plate member.

10. A toe stop attachment for a roller skate comprising a member secured to the skate, said member including a forwardly projecting generally horizontal plate, a stop member comprising a generally resilient block in the form of substantially a quadrant of a cylinder having an arcuate floor contacting surface and two relatively angularly disposed radial faces, and means on said plate for selectively attaching each of the faces of the block thereto in a plurality of positions.

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