May 30, 1950 E. VAN HORN 2,509,324

ROLLER SKATE TRUCK

Filed Feb. 5, 1946

Fig. 1.

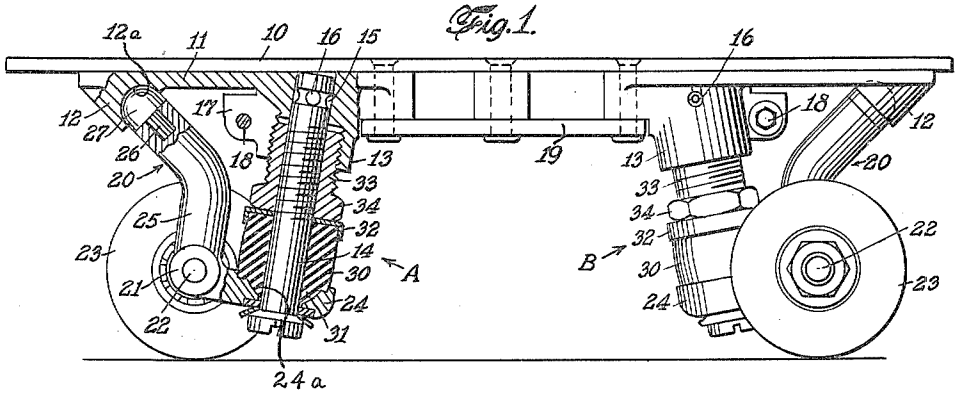


Fig. 2.

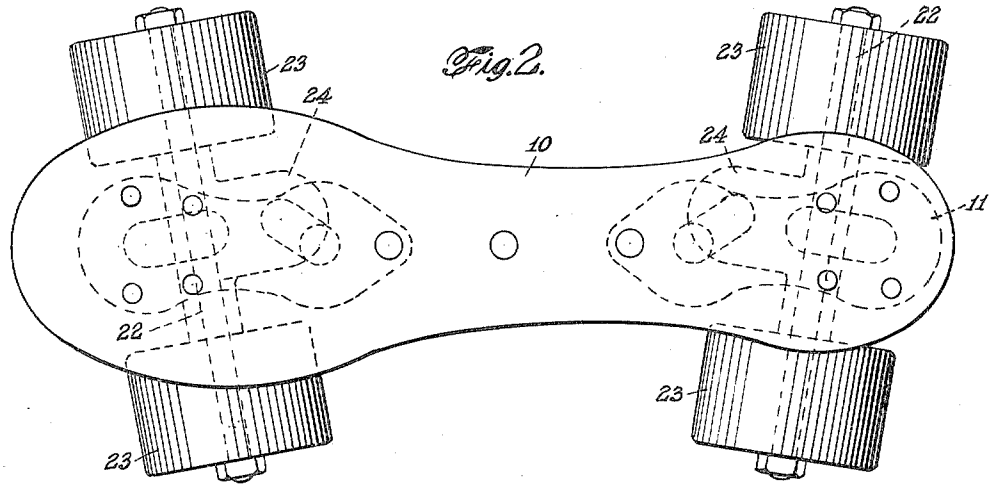


Fig. 3.

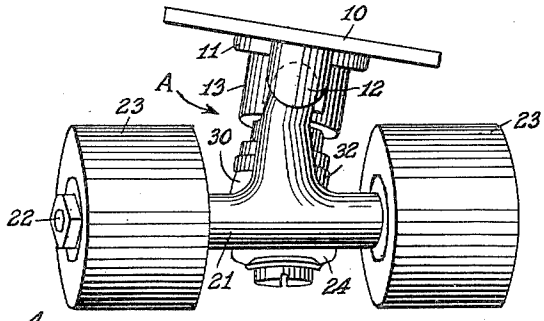
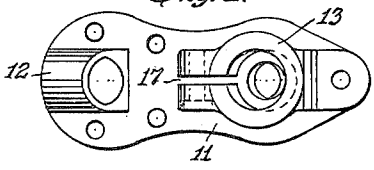


Fig. 4.



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ROLLER SKATE TRUCK

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6 Claims. (Cl. 280—11.28)

1

This invention relates to improvements in roller skates, and its object is to provide a simple truck construction of great strength which is capable of resisting the shocks to which it is exposed and of long life. More specifically, its object is to provide a truck of which the cushioning element can be adjusted without altering the vertical distance between the wheel axle and the foot plate.

These and other objects of the invention will appear in the following specification, in which I will describe what I now consider a preferred embodiment of the invention and will point out its novel features in claims.

Roller skates are provided with a pair of spaced trucks affixed to a foot plate, each of which supports a transverse axle for a pair of rollers. These trucks are arranged to cause the tilting of the foot plate from side to side to swing the axles pivotally in opposite directions out of parallelism to cause the skate to run on curves. Each truck is provided with a cushioning element, which tends to maintain the axles in parallelism and which resiliently opposes their pivotal movement.

It is customary in high-grade skates to provide for adjusting the cushioning element to vary its resistance to the pivotal displacement of the axles to suit the needs of individual skaters. These arrangements have the objectionable feature of altering the vertical distance between the wheel axles and the foot plate when they are adjusted, so that they are not often used. By the simple arrangement which I have invented this objectionable feature is eliminated.

Referring to the drawings,

Fig. 1 is a side elevation, partly in section, of a roller skate which is made according to and embodies the present invention;

Fig. 2 is a plan view of the skate shown in Fig. 1, with its parts shown in the relative positions they assume when the foot plate is tilted to one side;

Fig. 3 is an end elevation of the skate as shown in Fig. 2 taken from the front of the skate; and

Fig. 4 is an inverted plan view of a base which, in the specific structure illustrated, forms the supporting member for the other parts of the truck.

10 is a foot plate, upon which the other parts of the device are mounted. This is to be riveted or otherwise secured to a shoe. Two trucks A and B are affixed to the under side of the plate. They are identical with each other, but are faced oppositely. Each of them comprises a base 11, near one end of which is a boss 12 having

2

a semi-spherical pocket 12a, the axis of which is disposed at an angle of 45° to the surface of the plate. Near the other end of the plate is an internally threaded housing 13, the axis of which is disposed of at angle of 10° to the surface of the plate. These axes lie in a vertical plane through the longitudinal center of the plate and converge toward each other. This base is an integral member made preferably of duraluminum.

20 is an axle bracket, which has a transverse portion 21 in which an axle 22 for rollers 23 is supported. From this transverse portion a flat flange 24 extends at an angle normal to the axis of the housing 13. An arm 25, 26 extends from the portion 21 to the boss 12. It is bent intermediate its ends so that its lower end 25 is at right angles to the flange 24 and its upper end 26 is alined with the axis of the pocket in the boss 12. This bracket is also an integral piece of duraluminum. A piece 27 of hardened steel having a semi-spherical surface is affixed to the upper end of the part 26 of the arm and extends into the pocket 12a in the boss 12.

14 is a screw, which passes through the flange 24 and into the base 11 in the center of the housing 13. The threads of this screw are of the same pitch as those of the housing. An annular groove 15 near the upper end of the screw is engaged by a set screw 16, which holds the screw in fixed relation to the base 10. The head of the screw 14 engages the under side of the flange 24 and prevents any downward movement thereof, and thus maintains the axle 22 at a constant fixed distance from the plate 10.

30 is a cylindrical block of rubber or other resilient material, which has a central bore through which the screw 14 passes. The lower end 31 of the block is shaped to fit a central recess 24a in the flange 24, in which it is seated. 32 is a cup-shaped washer over the upper end of the block. 33 is an adjusting plug, which is internally and externally threaded to fit the screw 14 and the housing 13. The lower end of this plug is provided with flattened sides, as at 34, for the reception of a wrench.

It is obvious from the foregoing description that by turning the adjusting plug 33, a variable amount of pressure may be exerted on the flange 24 through the resilient block or cushioning member 30. In the usual way this pressure tends to keep the axle 22 at right angles to the longitudinal center of the plate 10. Also in the usual manner, when the plate is tilted sidewise, as shown in Figs. 2 and 3, the axle is

swung or swiveled out of its normal position. I claim no novelty for this arrangement or its operation. I depart from former arrangements, however, in providing a device for maintaining the axle bracket a fixed distance from the plate 10 when the vertical length of the cushioning element 30 is changed to adjust the pressure which is exerted through it on the angle bracket.

The housing 13 is split as at 17 so that when the adjusting plug 33 has been moved to the desired position it can be locked in place by a through bolt 18. For further strengthening the structure a plate 19 is affixed to the proximate parts of the bases 11.

Various modifications in construction, mode of operation, method and use of an invention may and do occur to others, especially after benefiting from knowledge of such a disclosure as that herein presented, of the principles involved, but the invention itself is not confined to the present showing.

I claim:

1. A roller skate truck of the type in which the axle for the rollers is supported in a bracket having an arm extending obliquely from the axle to a base on a foot plate, to which base the arm is connected by a universal joint, said bracket having a flange projecting from the axle, and in which truck an element rigidly affixed to the base at a point spaced from the universal joint extends through said projecting flange, whereby tilting of the foot plate swings the axle out of normal position in which it is at right angles to a line through the longitudinal center of the foot plate when the rollers are in contact with a floor, and in which truck a resilient cushion surrounds said element and is interposed between said projecting flange and the base on the foot plate, in which, according to my invention, said element is a screw non-adjustably affixed to the base and has an enlarged head under the projecting flange and the bracket, and in which an adjusting plug, arranged to engage the top of the resilient cushion, is in threaded engagement with said screw.

2. A roller skate truck of the type defined in claim 1, in which, according to my invention, the truck comprises a base having a part of the universal joint formed near one of its ends and in which an internally threaded housing is formed near its other end, said element being an externally threaded screw non-adjustably affixed to the base in the axial center of said housing, the threads of the housing and of the screw being of the same pitch, said screw having an enlarged head under the projecting flange of the bracket, and said adjusting plug is externally and internally threaded and is in threaded engagement with the housing and with the screw.

3. A roller skate truck of the type defined in claim 1, in which, according to my invention, the truck comprises a base having a part of the universal joint formed near one of its ends and in which an internally threaded housing is formed near its other end, said element being an externally threaded screw non-adjustably affixed to the base in the axial center of said housing, the threads of the housing and of the screw being of the same pitch, said screw having an enlarged head under the projecting flange of the bracket, said adjusting plug is externally and internally threaded and is in threaded engagement with the housing and with the screw, and means for locking said adjusting plug in desired position.

4. A roller skate truck of the type defined in claim 1, in which, according to my invention, the truck comprises a base having a part of the universal joint formed near one of its ends and in which an internally threaded housing is formed near its other end, said element being an externally threaded screw non-adjustably affixed to the base in the axial center of said housing, the threads of the housing and of the screw being of the same pitch, said screw having an enlarged head under the projecting flange of the bracket, said adjusting plug is externally and internally threaded and is in threaded engagement with the housing and with the screw, a longitudinal slit in one side of the housing and a transverse through bolt passing through the base near the part thereof which forms the housing.

5. A roller skate of the type defined in claim 1, in which the universal joint comprises a semi-spherical pocket formed in the base near one of its ends, and a piece of hardened metal affixed to the upper end of the arm of the bracket, said piece having a corresponding semi-spherical surface at its upper ends.

6. A roller skate of the type defined in claim 5, in which an internally threaded housing is formed on the base in axial alinement with said element, a longitudinal slit in one side of the housing, and a transverse through-bolt passing through the base near the part thereof which forms the housing.

EARL VAN HORN.

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