Dec. 11, 1934. R. M. NICHOL 1,983,869

ROLLER SKATE

Filed June 24, 1933

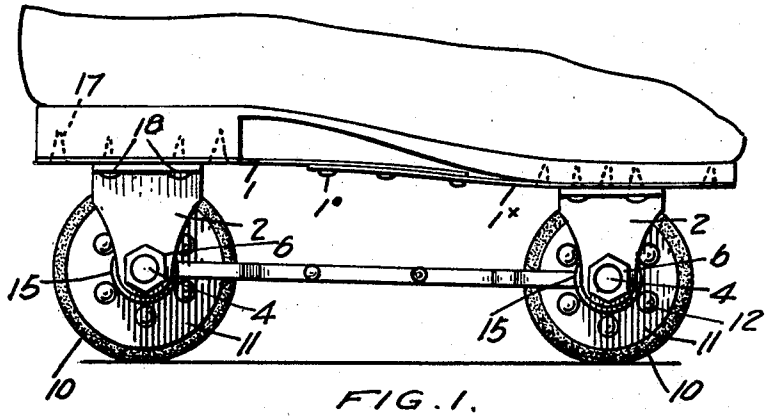


FIG. 1.

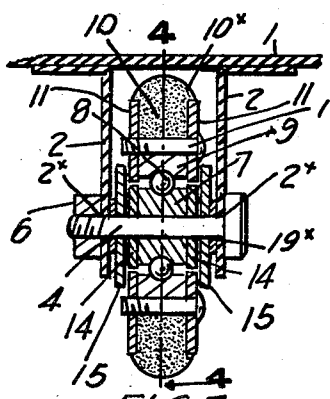


FIG. 3.

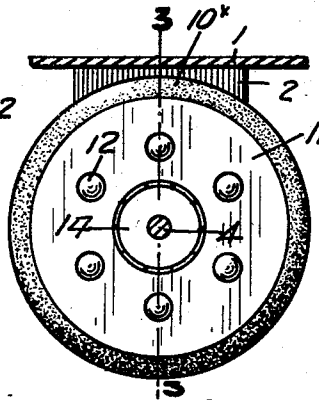


FIG. 2.

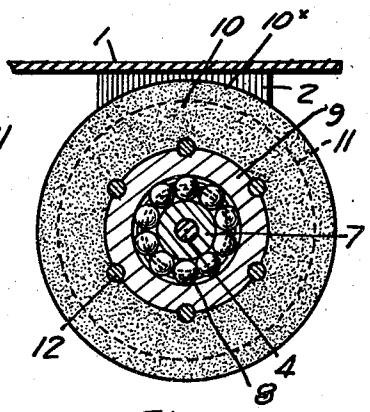


FIG. 4.

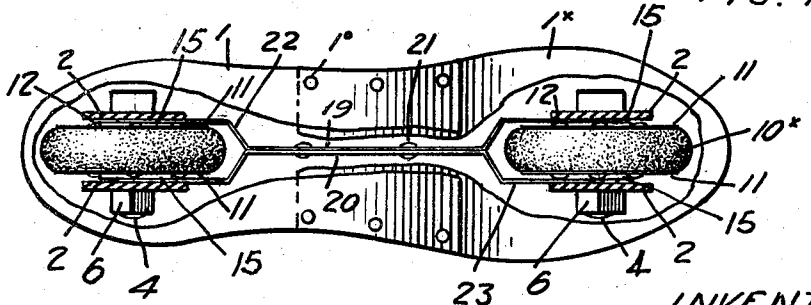


FIG. 5

INVENTOR
R. M. NICHOL.
BY Fitzsimmons & Sawtell
ATTORNEYS

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ROLLER SKATE

Robert Montrose Nichol, Medicine Hat, Alberta, Canada

Application June 24, 1933, Serial No. 677,381

1 Claim. (Cl. 208—181)

My invention relates to improvements in roller skates, and the object of the invention is to devise a roller skate which will give the user that free movement of ankle, knee and hip afforded by a single traction bearing contact and, at the same time, provide sufficient gripping traction to give easy and complete use and control as is available in an ice skate.

A further object is to provide a skate of this type which will operate smoothly and yet keep at a minimum the strain, friction and wear on the moving parts.

A still further object is to provide a tire which will afford secure traction, be readily replaceable and will minimize the jolt and jar of motion on hard surfaces and minimize wear and consequent dust on the skating floor and, at the same time, will operate noiselessly and will be capable of maintaining the moving parts well lubricated at all times without there being any escape of lubricant to soil the clothes or gather dust, and finally to provide a skate of this type in which there will be smooth free movement without loss of that rigidity which is necessary to afford security where great speed is achieved, and it consists essentially of the arrangement and construction of parts all as hereinafter more particularly explained.

Fig. 1 is a side view of a complete skate constructed in accordance with my invention.

Fig. 2 is a face elevation of one of the wheels of my skate and showing a portion of the skate body or sole plate by which the wheel is carried in section.

Fig. 3 is a transverse sectional view on line 3—3, Fig. 2.

Fig. 4 is a sectional view through the centre of the wheel parallel with the face thereof on line 4—4 Fig. 3.

Fig. 5 is a plan view of my skate showing the sole plate broken away to exhibit the underlying parts, the brackets 2 being shown in section.

In the drawing like characters of reference indicate corresponding parts in each figure.

1 and 1× are the members of a sole plate secured together as indicated at 1° to form the body of the skate and secured to the boot by a series of screws 17 as indicated in Fig. 1. 2 are opposing brackets which are located at the toe and heel end of the sole plate and riveted thereto as indicated at 18 (see Fig. 1). The brackets 2 are provided with transversely aligned holes 2× through which a bolt 4 extends, such bolt being secured by a nut 6 and forming the main support for the carrying rollers or wheels of the skate.

Rollers in the form of disc wheels, the construction of which I will now describe, are mounted on the bolts 4.

7 is a ball race which is mounted directly upon the bolt 4 between the inner washers 14 bearing against each side of the race and the outer washers 15 located between the washers 14 and each bracket 2. The washer 15 is of larger diameter than the washer 14 for a purpose which will hereinafter appear.

9 is an outer ball race between which and the inner race 7 operate the ball bearings 8. 11 are annular plates. A plate 11 is located at each side of the race 9 and clamped thereto by screws 12. The inner peripheral portion of the plates 11 extend between the washer 15 so as to limit the lateral movement, a slight clearance being left between the plates 11 and washers 15 so as to permit of free rotation of the outer race 9 and the plates 11 carried thereby. This construction also prevents leakage of the lubricant and prevents the entrance of dust or dirt into the bearings.

10 is a rubber tire clamped between the plates 11 and protruding therefrom to form an arc shaped or convex tread 10×. The space 16 between the inner race 7 and outer race 9 and between the washers 15 also forms a receptacle for a lubricant for the ball bearings 8.

19 and 20 are spacing rods secured together by rivets 21 and forming end forks 22 and 23 between which the wheels of the skate are mounted. The bolts 4 of the skate pass through orifices 19× in the end of the rods 19 and 20 thereby definitely spacing the wheels apart and adding rigidity to the structure.

By the foregoing it will be seen that I have provided a light weight roller skate on which the skater will be supported by two rubber tired disc wheels of unequal size, the larger wheel being under the heel and the smaller being slightly in front of the ball of the foot so that the weight of the skater is in balance and nicely adjusted for the movement which will propel the skater forward or backward, in which the tire is firmly secured so that it will permit the skater bearing obliquely thereon when turning corners or in figure skating without danger of the tire being displaced and in all positions prevents a bearing surface sufficiently great to give adequate and rigid traction, in which the ball race 7 and disc 11 form a relatively large hub so that it forms a rigid support for the

outer parts of the wheel which securely grip and hold the tire from displacement, in which the wheels are readily detachable and reversible so that wear is thereby distributed and in which the ball races and bearings are of maximum dimensions reducing strain and friction and more readily bearing the weight of the user.

By making the sole plate in two portions a sole plate may be readily provided of any desired length to fit the foot of any individual.

What I claim as my invention is:

In a roller skate, the combination with the sole plate and a pair of opposing brackets depending therefrom, of an inner cylindrical race, a washer at each end of the race of slightly larger diameter than the race, an outer annular race and annular plates at each end of the race of slightly smaller internal diameter than that of the outer race, the outer race and plates being respectively in vertical alignment with the inner race and washers, an annular resilient tread clamped between the plates of the outer race, a bolt extending through the brackets, washers and inner race, washers of larger diameter than the inner washers and also mounted on the bolt and overlapping the annular plates of the outer race, and balls between the inner and outer races.

ROBERT MONTROSE NICHOL.