J. D. JONES.

CYCLE SKATE.

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1,144,134. Patented June 22, 1915.

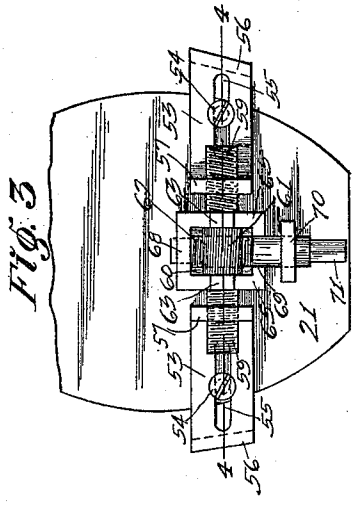


Fig. 3

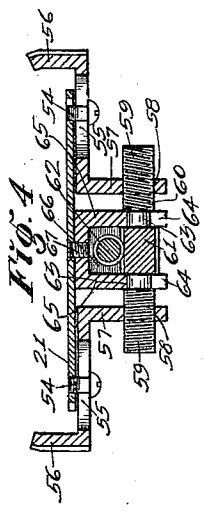


Fig. 4

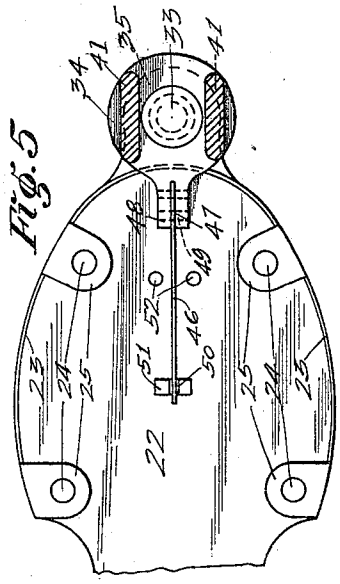


Fig. 5

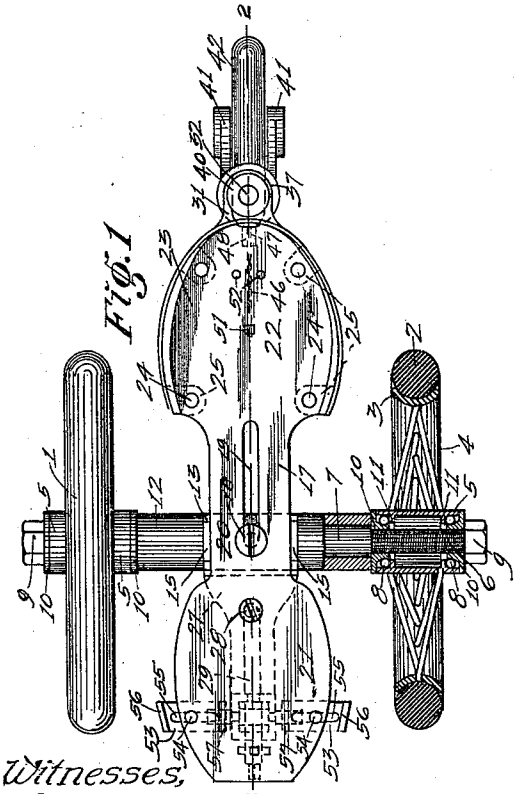


Fig. 1

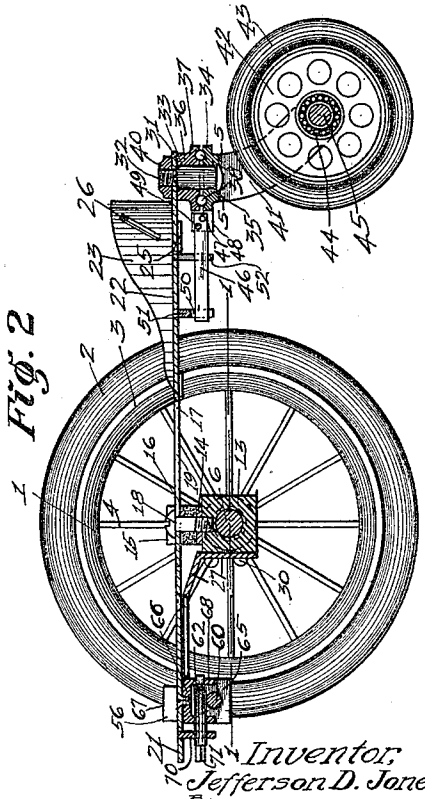


Fig. 2

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UNITED STATES PATENT OFFICE.

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CYCLE-SKATE.

1,144,134. Specification of Letters Patent. Patented June 22, 1915.

Application filed June 16, 1914. Serial No. 845,482.

To all whom it may concern:

Be it known that I, JEFFERSON D. JONES, a citizen of the United States, residing at Long Beach, in the county of Los Angeles and State of California, have invented a new and useful Cycle-Skate, of which the following is a specification.

My invention relates to cycle skates and has for its object the provision of a device capable of a very high speed, which may be used on any kind of road bed and which will not be materially affected by the rough surfaces over which it may pass, as in the case of the ordinary type of roller skate.

In the use of other well known types of skates, it is necessary to lift the skate from the ground when the rough portions of the road are encountered, and a further object of my invention is to provide wheels or rollers with cushion or pneumatic tires of sufficient diameter that will enable the wheels to cross the said rough portions of the road or car tracks with ease and without a very great jar to the rider, all of which it is desired to accomplish without materially increasing the weight of the vehicle over the ordinary types of skates.

My device, as shown embraces many improvements over other well known types of skates which are necessary to accomplish the objects as set forth and to provide an easy running and frictionless vehicle, the structure as hereinafter described, being simple, economical in manufacture and easily adjustable to different sizes of feet.

A further object of my invention is to provide a means of adjusting the toe clamp from the front end of the skate instead of at the sides as in the usual type of such devices.

Other objects may appear in the detailed description of my device as illustrated in the accompanying drawings in which:

Figure 1 is a plan view with one of the traction wheels shown in section on the line 1—1 of Fig. 2; Fig. 2 is a sectional elevation on the line 2—2, Fig. 1; Fig. 3 is a bottom view of the forward end of the foot plate showing the toe clamp in position thereon; Fig. 4 is a sectional elevation of Fig. 3 on the line 4—4; and Fig. 5 is a bottom view of the rear end of the foot plate showing the caster follower wheel limiting mechanism with the caster wheel fork shown in section on the line 5—5, of Fig. 2.

Similar characters of reference indicate the same parts throughout the specification and the several views of the drawings.

While the structure of my device may be somewhat altered without departing from the spirit of my invention, and while I do not desire to limit the scope of my invention by a specific structure, I prefer to carry out the objects as set forth in the manner illustrated in the drawings, and to which reference is had.

Cycle skates of other well known types usually comprise four wheels, all of which are depended upon for traction, and the weight of the skater is about equally distributed on all of the four wheels, while my device comprises but three wheels, only two of which are traction wheels in the proper sense, and the relation of the various elements is such that the weight of the skater is thrown principally on the two wheels.

Referring to the drawings, the main traction wheels 1 are provided with a suitable cushion or pneumatic tire which are mounted in the usual manner on a metal rim 3 which is in turn supported on the wire spokes 4 secured to the hub 5, the wheels 1 being revolubly and oppositely mounted on the reduced ends 6 of the axle 7 and provided with suitable ball bearings 8 which are inclosed in the hub and held in position by means of the nuts 9 on the ends 6 of the axle and on the cones 10 at each end of the hub 5. The axle is suitably threaded to receive the nuts 9 and the cones 10 and the hubs 5 are provided with the internal annular flanges 11 which form one side of the ball races. The wheels 1, while shown of wire, may be of metal if desirable, and they are spaced on the axle 7 by means of a sleeve 12 which serves to cover the entire central portion of the axle and which has the square portion 13 in the center. A chair 14 formed of flat metal and having the upwardly extending ends 15 is secured to the top surface of the sleeve 12 and a cushion 16 of rubber, leather or other similar material is interposed between the chair 14 and the foot plate 17, the chair, cushion and foot plate being secured in place by a common screw 18, a resiliency to the foot plate 17 being thus afforded and this plate being adjustable on the sleeve by means of a slot 19 through which the screw 18 is secured.

The foot plate 17, as is usual in such de-

vices, conforms to the shape of the foot, the narrowed central portion 20 resting in the chair 14 between the ends 15, the forward end portion 21 being adapted to receive the toe and the rear portion 22 to receive the heel of a shoe, the heel being held rigidly in place thereon by the usual type of heel guard 23 which is secured to the plate 17 by means of the rivets 24 through the ears 25. The guard 23 is additionally provided with suitable slots 26 on each side of the center through which a strap of leather or tape may be passed and buckled around the foot for holding the shoe in place.

To reinforce the plate 17, I provide a bracket 27 formed of a flat metal plate which is secured to the forward end of the plate 17 and made adjustable thereon by means of a screw 28 in a slot 29 and rigidly secured to the forward side of the sleeve 12 by means of the screws 30.

The rear end of the plate 17 has an extension 31 which is suitably drilled to receive the reduced end 32 of a stem 33, the lower end of which is countersunk and pivoted in the head 34 of the fork 35 and on which, between the head 34 and the extension 31 is interposed a collar 36 provided with a flange 37 of about the same diameter of the head 34, both the head and the collar flange being provided with an annular grove 38 adapted to receive the ball bearings 39, and the upper end 32 of the stem being provided with a suitable nut 40 for holding the fork firmly in position on the plate 31.

The fork 35 has the downwardly extending curved arms 41 between which the follower wheel 42 having a cushion tire 43 is mounted on ball bearings 44 on the axle 45 which is secured in the lower ends of the arms 41. The follower wheel 42 partakes somewhat of the functions of an ordinary caster wheel, as it is pivoted on the stem 33, but I prefer to limit the pivotal movement of the fork and the wheel to a certain extent by means of a flat spring 46 secured in a slot 47 in a lug 48 on the head 34 of the fork by the rivets 49, the other end being loosely seated in a slot 50 in a stud 51 which is riveted to the plate 17. This spring provides a resiliency to the fork in its movement on the stem 33, and the spring is prevented from removal from the slot 50 by means of the pins 52 on each side of the spring, and so spaced as to give a sufficient movement to the fork and wheel 42 and secured to the plate 17.

It is designed that the weight of the skater should be thrown on the main axle and that the use of the follower wheel should be limited to intermittent use to balance the vehicle on the ground when the skater is at rest or when a curve in the road is encountered, the foot plate 17 being so placed on the sleeve 12 that the foot will be balanced over the main axle 7, but the slight pivotal movement of the follower wheel will assist the skater on the curves and relieve him of the necessity for balancing himself as would be necessary on the two wheels alone.

The toe of the foot is designed to be held in position on the foot plate 17 by means of the pair of oppositely mounted toe clamps 53 which are adjustably secured to the front end of the plate 17 by means of the screws 54 in the slots 55, the outer ends 56 being bent upwardly at the sides of the plate 17 and adapted to clamp over the edge of the sole of the shoe, as in the usual types. The inner ends 57 of the clamps are bent downwardly and provided with the threaded openings 58 adapted to receive the outer ends 59 of the lateral screw 60 which has a right handed thread on one end and a left handed thread on the other end. The central portion of the screw 60 has a pinion 61 adapted to mesh with the threads on the longitudinally disposed worm 62, the teeth on the pinion being cut to correspond to the angle of the threads on the worm, the screw 60 being provided with the annular grooves 63 adapted to seat in the slots 64 in the sides 65 of the bracket 66 which is secured to the plate 17 by the screw 67, and the worm screw 62 being revoluble in the side 68 of the bracket, in the slot 69 in the side thereof, and in the plate 70 secured to the plate 17. The outer end of the worm screw 62 has the squared portion 71 adapted to be turned with an ordinary socket wrench for moving the toe clamps 53 inwardly or outwardly. The clamp 53 on one side of the plate 17 has a right handed thread to correspond with its associated thread on the screw 60 and the clamp on the opposite side has a left handed thread to correspond with the thread on the other end of the screw, thus the turning of the worm 62 will move both of the clamps either toward or away from the center of the plate 17, according to the direction it is turned and cause the upturned ends 56 of the clamps to frictionally engage and firmly hold the shoe on the plate 17 when the ends are moved inwardly or to disengage the shoe when moved outwardly. The outer end of the worm being in the center of the plate 17 and extending as it does toward the front of the plate renders the worm easily accessible to a wrench.

Having thus described my invention what I claim is:

1. A cycle skate having a foot supporting plate adjustably mounted on a pair of opposite traction wheels at a point midway of the length of said plate and a single pivotally mounted balancing wheel at the rear of said plate.

2. A cycle skate having a foot supporting plate adjustably mounted on a pair of opposite traction wheels at a point midway of

the length of said plate, a single pivotally mounted balancing wheel at the rear of said plate and means for limiting the movement of said balancing wheel.

3. A cycle skate having a foot supporting plate adjustably mounted on a pair of opposite traction wheels at a point midway of the length of said plate, and a single pivotally mounted balancing wheel at the rear of said plate provided with means for resiliently limiting the movement thereof.

4. In a cycle skate, the combination of an axle; a pair of resilient traction wheels mounted on frictionless bearings on the ends thereof; a sleeve on said axle between said wheels; a foot plate adjustably mounted and balanced upon said sleeve; a fork resiliently and frictionlessly pivoted on the rear end of said plate; and a caster wheel revolubly mounted on frictionless bearings in said fork.

5. In a cycle skate, the combination of an axle; a pair of resilient traction wheels mounted on frictionless bearings on the ends thereof; a sleeve on said axle between said wheels; a foot plate adjustably mounted and balanced upon said sleeve; a bracket rigidly secured to said sleeve and adjustably secured to said foot plate; a fork resiliently and frictionlessly pivoted on the rear end of said plate; and a caster wheel revolubly mounted on frictionless bearings in said fork.

6. In a cycle skate, the combination of an axle; a pair of resilient traction wheels mounted on frictionless bearings on the ends thereof; a sleeve on said axle between said wheels; a bracket rigidly secured to said sleeve and adjustably secured to said foot plate; a fork pivotally mounted on ball bearings on the rear end of said plate; means for limiting the pivotal movement of said fork; and a caster wheel revolubly mounted on frictionless bearings in said fork.

7. In a cycle skate, the combination of an axle; a pair of large resilient traction wheels mounted on the ends thereof; a sleeve loosely mounted on said axle between said wheels; a bracket rigidly secured to said sleeve and adjustably secured to said foot plate; a fork pivotally mounted on the rear end of said plate; a downwardly extending stud in said plate forward of said fork; a spring secured to the upper end of said fork at one end and loosely seated in a slot in said stud at the other end; a pin normally out of contact with and on each side of said spring, for limiting the pivotal movement of said fork; and a caster wheel revolubly mounted in the lower end of said fork.

8. In a cycle skate, the combination of an axle; a pair of large resilient traction wheels mounted on the ends thereof; a sleeve loosely mounted on said axle between said wheels; a foot plate mounted on said sleeve; means for adjusting the position of said plate on and at right angles to said sleeve; a fork pivotally mounted on the rear end of said plate; a downwardly extending stud secured to said plate forward of said fork; a spring secured to the upper end of said fork and loosely seated in a slot in said stud; a pin normally out of contact with and on each side of said spring and secured to said plate, for limiting the pivotal movement of said fork; a caster wheel revolubly mounted in the lower end of said fork; and a bracket rigidly secured to said sleeve and adjustably secured to said foot plate.

9. In a cycle skate the combination of a foot plate; a pair of opposite traction wheels mounted in such a manner that said plate is supported thereby at a point midway of its length; a single small caster wheel at the rear of said plate; means for adjustably mounting said plate on said traction wheels; means for pivotally mounting said small wheel on said plate; means for resiliently limiting the pivotal movement of said caster wheel; and a foot clamping mechanism on the front end of said plate comprising a pair of oppositely mounted clamping members; a laterally disposed screw having a right handed thread on one end associated with one of said clamping members and a left handed thread on the other end associated with the other clamping member, a pinion on said screw in the center, a bracket secured to said plate adapted to receive said screw, a longitudinally disposed worm screw revoluble in said bracket and adapted to mesh with said pinion, and a plate secured to said foot plate forward of said bracket adapted to receive and revolubly hold the outer end of said worm.

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."