

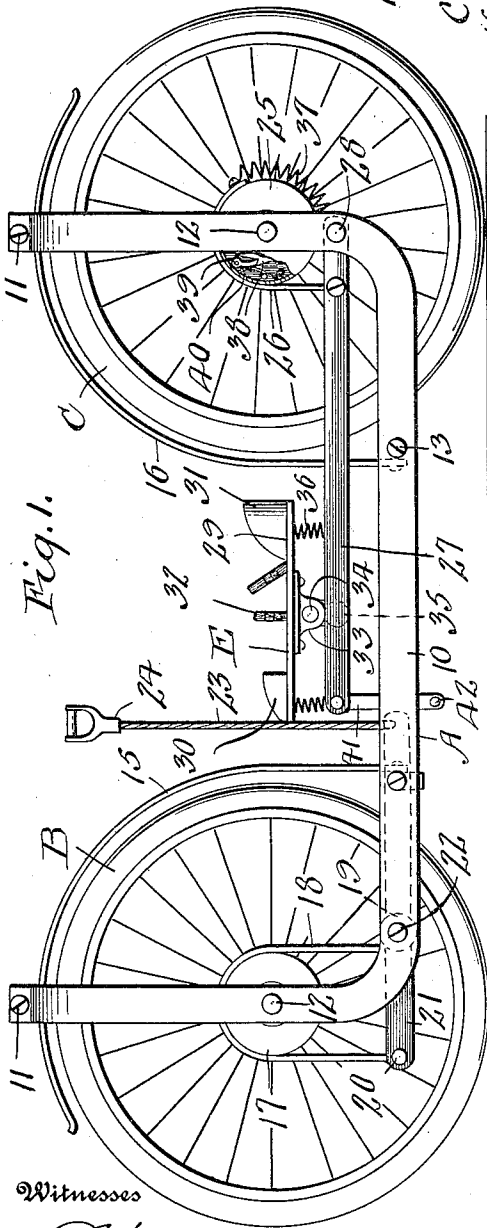
W. B. HARRELL.
SKATE.

APPLICATION FILED DEC. 15, 1914.

Patented Sept. 21, 1915.

2 SHEETS—SHEET 1.

1,154,510.



Witnesses

W. B. Harrell, Jr.
T. O. Anderson

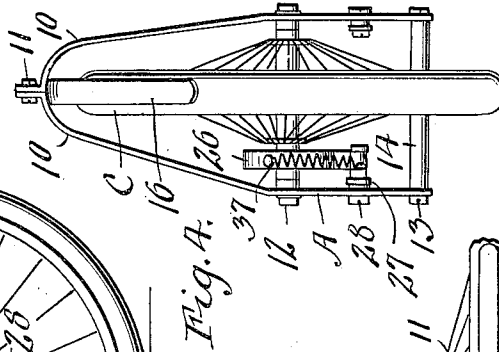
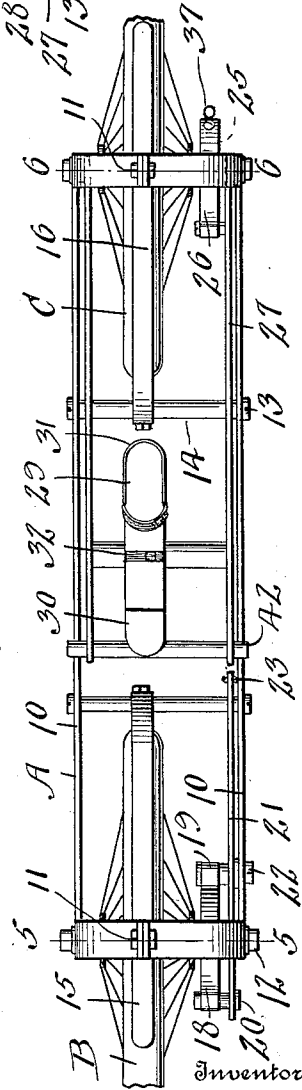


Fig. 4.

Fig. 2.



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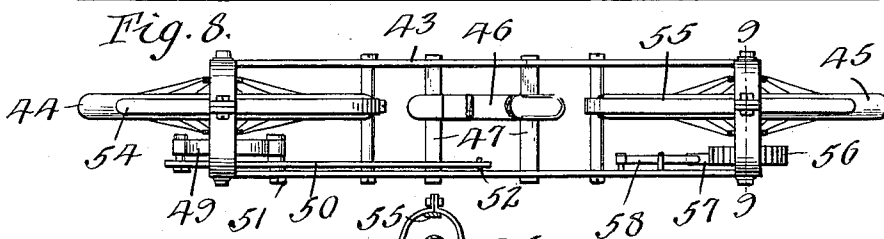
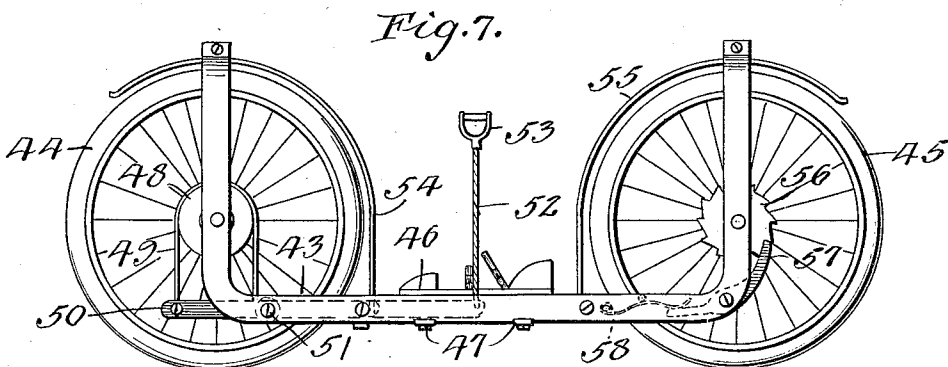
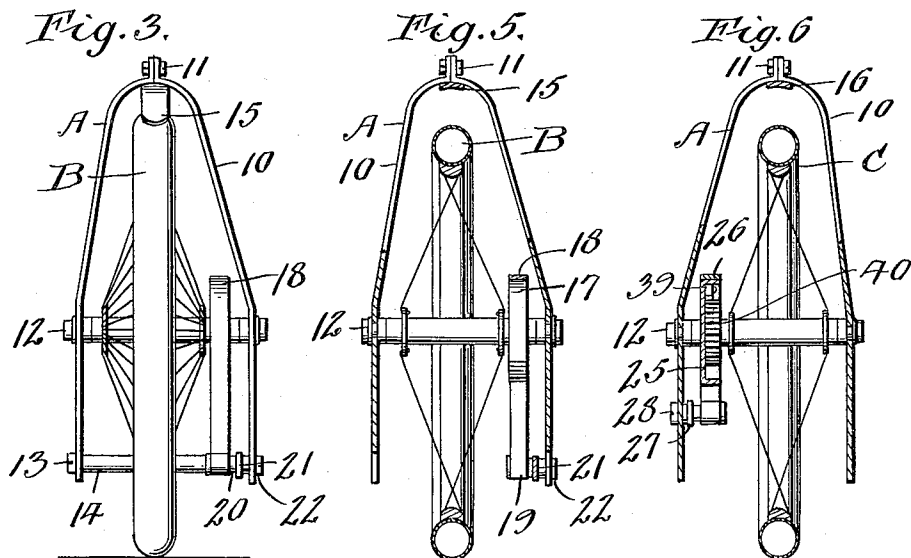
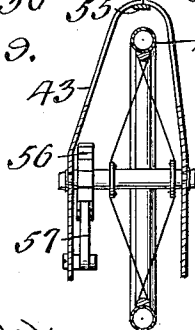


Fig. 9.



Witnesses

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UNITED STATES PATENT OFFICE.

WILLIAM B. HARRELL, OF BALDWIN, FLORIDA.

SKATE.

1,154,510.

Specification of Letters Patent.

Patented Sept. 21, 1915.

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To all whom it may concern:

Be it known that I, WILLIAM B. HARRELL, a citizen of the United States, residing at Baldwin, in the county of Duval and State of Florida, have invented new and useful Improvements in Skates, of which the following is a specification.

The invention relates to skates, and more particularly to the class of wheel skates.

The primary object of the invention is the provision of a skate wherein the same will be propelled under the movement of the foot of the user, that is to say, correspondingly to the action of the feet when in the act of walking, the skate being of novel form so that no excess energy is employed over that ordinarily required during the act of walking for actuating the skate to propel the same.

Another object of the invention is the provision of a skate wherein the frame thereof is constructed so that it will be rendered rigid to possess the requisite strength and durability, while the foot stirrup is swingingly supported to allow freedom of action in the movement of the foot of the user of the skate.

A further object of the invention is the provision of a skate wherein the user on raising and lowering the legs will actuate the propelling mechanism of the said skate to advance the same, the speed of travel thereof being regulated by the movement of the legs, and the advancement of the skate is not retarded resultant from the dragging of either skate resultant from thrusting either leg of the user backwardly in a fashion of skating with the ordinary skates during the continuity of strokes required therefor.

A still further object of the invention is the provision of a skate wherein the user can readily control the travel thereof and also can brake the same for bringing either skate to a standstill either gradually or suddenly, as the occasion may require.

A still further object of the invention is the provision of a skate of this character which is simple in construction, reliable and efficient in use, and inexpensive in manufacture.

With these and other objects in view, the invention consists in the construction, combination and arrangement of parts as will be hereinafter fully described, illustrated in

the accompanying drawings, and pointed out in the claims hereunto appended.

In the drawings: Figure 1 is a side elevation of a skate constructed in accordance with the invention. Fig. 2 is a top plan view thereof. Fig. 3 is a front elevation. Fig. 4 is a rear elevation. Fig. 5 is a fragmentary sectional view on the line 5—5 of Fig. 2. Fig. 6 is a similar view taken on the line 6—6 of Fig. 2. Fig. 7 is a side elevation of a modification. Fig. 8 is a top plan view thereof. Fig. 9 is a sectional view on the line 9—9 of Fig. 7.

Similar reference characters indicate corresponding parts throughout the several views in the drawings.

Referring to the drawings in detail, the skate comprises the frame A, the front and rear wheels B and C respectively, and the foot stirrup E, the details of which will be hereinafter fully described.

The frame A includes the substantially U-shaped sections 10 which are disposed in spaced relation to each other at opposite sides of the wheels B and C; and have their limbs upwardly converging and united through the medium of the bolt members 11, while journaled in the limbs of the sections 10 are the axles 12 supporting the said wheels, the said axles being fixed in the frame in any suitable manner. Located between the front and rear wheels B and C and fastened in the sections 10 of the frame are cross bolts 13 supporting spacer sleeves 14 which hold the said sections in their spaced relation to each other.

Suitably fixed to the spacer sleeves 14 and rising over the front and rear wheels B and C are the forward and rear mud guards 15 and 16, respectively, which are also suitably fixed at the point of the unity of the limbs of the sections 10, the guards being of any preferred form.

At one side of the front wheel B concentrically about the axle 12 supporting the same, and fixed to said wheel, is a brake band 18; one end of which is suitably fixed to a bracket 19 carried by one section of the frame A, while its opposite end is loosely connected to a stud 20 mounted in the forward end of a rocking operating lever 21 supported upon a pivot 22 mounted on the frame, while connected to the rearmost end of the lever 21 is a flexible member 23 preferably in the form of a rope, which carries at its free end a bail handle 24, the same

being designed to be gripped by the user of the skate, and on exerting an upward pull upon the rope 23 the bands 18 will be drawn tight about the drum 17 for frictionally retarding the rotation of the latter to brake the skate.

Arranged at one side of the rear wheel concentrically about the axle 12 therefor, and free therefrom, is a rotatable drum 25, over a portion of the outer periphery of which is trained a band 26, one end of the same being fixed to the said drum, while its opposite end is connected to a rocking yoke 27, the rearmost ends of which are swingingly connected through the medium of pivots 28 to the sections 10 of the frame A, and supported by this yoke is the stirrup E, hereinafter fully described.

The stirrup E comprises a base plate 29 having mounted thereon the respective toe and heel boxings 30 and 31, and the buckle straps 32, so that the foot of the user of the skate can be fastened in the stirrup. Fixed to and depending centrally from the base plate 29 is a pivot bearing 33 receiving a pivot 34 which, together with the connection 35, swingingly attaches the stirrups E in place upon the yoke 27, thereby allowing free action of the foot during the working or propelling of the skate. Suitably supported by the yoke 27 directly beneath the toe and heel portions of the foot E are cushion springs 36 which retard undue rocking of the stirrup when working the skate.

Connected to the drum 25 and trained for a distance about the remaining portion of the outer periphery thereof is a coiled retractile spring 37 which is also connected to the frame A, and this spring serves to rotate the drum 25 in a reverse direction to the pulling action of the band 26 on the lowering of the yoke 27 when depressing the same by the foot of the skater.

Fixed to the rear wheel C about the axle 12 is a ratchet wheel 38, while pivoted internally of the drum 25 is a ratchet dog or pawl 39, which is adapted to ride over the teeth of the ratchet wheel 38 when the drum rotates in one direction but on movement of the drum in the reverse direction the said dog or pawl 39 will lock with one of the teeth of the ratchet wheel 38 so as to rotate the wheel C in unison with the drum 25, which is actuated by the yoke 27 on pressing the same downwardly by the foot of the user of the skate, and in this manner the skate is driven forwardly. The dog or pawl 39 is acted upon by means of a spring 40 which is mounted interiorly of the drum 25 and is designed to hold the said dog or pawl 39 in positive engagement or operative relation to the ratchet wheel 38 within the drum. Pivoted at the front end of the yoke 27 is a hanger 41 carrying a cross pin 42 which is engageable with the frame A at one

side thereof to limit the upward movement of the yoke 27 under the action of the spring 37, as will be clearly apparent.

In Figs. 7, 8 and 9 there is shown a modified form of skate wherein the frame 43, in which are journaled the front and rear wheels 44 and 45, respectively, supports therebetween the foot stirrup 46 which is stationarily mounted on the frame upon cross rests 47 bolted or otherwise secured to the frame intermediate the front and rear wheels therein. Fixed to the front wheel 44 concentrically about its axle is a brake drum 48, over a portion of the outer periphery of which is trained a brake band 49 having one end fixed to one side of the frame 43, while its opposite end is loosely connected to the forward extremity of a rocking operating lever 50 pivoted at 51 to the frame, while connected to the rear extremity of this lever 50 is a flexible pull member 52 carrying a hand grip 53 so that the operator of the skate can pull upon the member 52 for the rocking of the lever 50 which frictionally binds the brake band 49 about the drum 48 to control the speed of rotation of the skate, which is propelled by manipulation of the limbs of the user in the usual well-known manner.

Fixed in any suitable manner in the frame and extending over the front and rear wheels 44 and 45 are the front and rear mud guards 54 and 55, respectively, and fixed to the rear wheel 45 concentrically about its axle is a ratchet wheel 56, while pivoted to one side of the frame 43 is a pawl or dog 57 which engages with the teeth of the ratchet wheel for holding the wheel against rotation in one direction, yet permitting the said wheel to rotate in the reverse direction, the ratchet wheel and dog or pawl being designed to prevent any back movement of the skate when in use.

Mounted in the frame 43 and working against the pawls 57 is a spring 58 which acts to hold the pawl in positive or operative relation to the ratchet 56 to avoid any possibility of slight downward movement of either of the skates when applied to the foot of the wearer and being propelled.

From the foregoing description, taken in connection with the accompanying drawings, it is thought that the construction of the device will be clearly understood, and therefore a more extended explanation has been omitted.

What is claimed is:—

1. A skate comprising a rigid frame, front and rear wheels journaled therein, a drum loosely supported upon the journal of the rear wheel, a ratchet wheel fixed to the rear wheel internally of the drum, a pivoted pawl arranged interiorly of the drum and engageable with the ratchet wheel, a yoke pivoted to the frame and extended

forwardly to a point between the front and rear wheels, a flexible band connected to the yoke and drum and trained about a portion of the periphery of the latter, means connected with the frame and the drum for tensioning the latter, and a foot stirrup pivotally supported upon the yoke.

2. A skate comprising a rigid frame, front and rear wheels journaled therein, a drum loosely supported upon the journal of the rear wheel, a ratchet wheel fixed to the rear wheel internally of the drum, a pivoted pawl arranged interiorly of the drum and engageable with the ratchet wheel, a yoke pivoted to the frame and extended forwardly to a point between the front and rear wheels, a flexible band connected to the yoke and drum and trained about a portion of the periphery of the latter, means connected with the frame and the drum for tensioning the latter, a foot stirrup pivotally supported upon the yoke, and means for braking the front wheel and controlled by the user of the skate.

3. A skate comprising a rigid frame,

front and rear wheels journaled therein, a drum loosely supported upon the journal of the rear wheel, a ratchet wheel fixed to the rear wheel internally of the drum, a pivoted pawl arranged interiorly of the drum and engageable with the ratchet wheel, a yoke pivoted to the frame and extended forwardly to a point between the front and rear wheels, a flexible band connected to the yoke and drum and trained about a portion of the periphery of the latter, means connected with the frame and the drum for tensioning the latter, a foot stirrup pivotally supported upon the yoke, means for braking the front wheel and controlled by the user of the skate, and means for cushioning the toe and heel portions of the stirrup.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM B. HARRELL.

Witnesses:

E. P. BEACH,

Mrs. L. A. PRINGLE.

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