C. R. POST.

ROLLER SKATE.

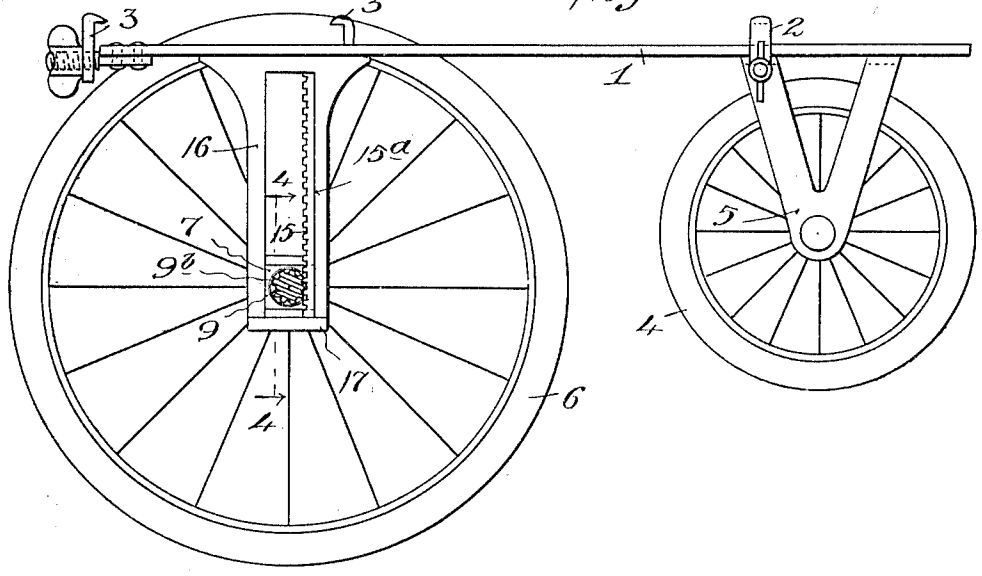
APPLICATION FILED JULY 12, 1912.

1,066,842.

Patented July 8, 1913.

2 SHEETS—SHEET 1.

Fig. 2.



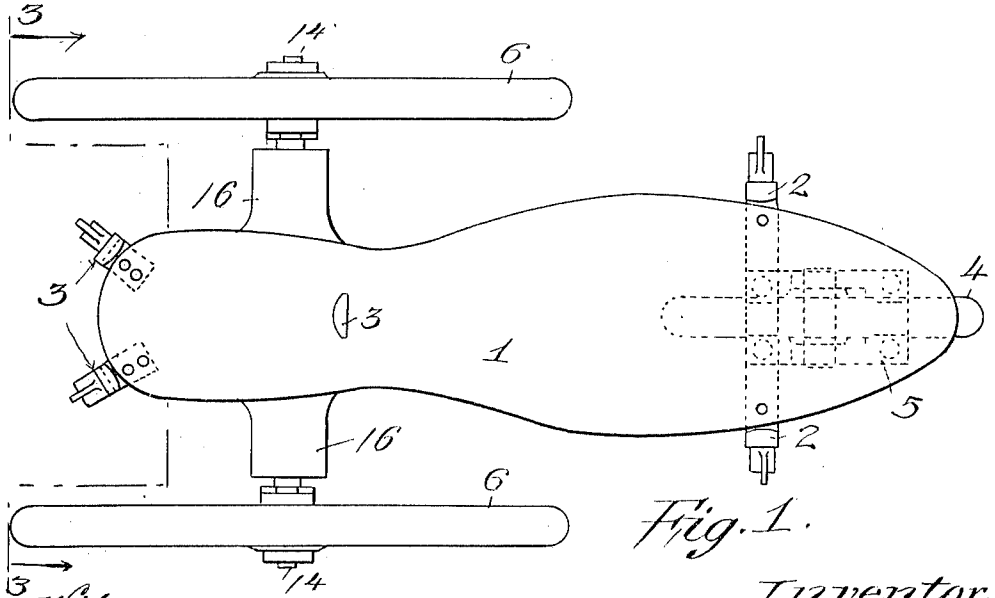


Fig. 1.

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2 SHEETS—SHEET 2.

Fig. 3.

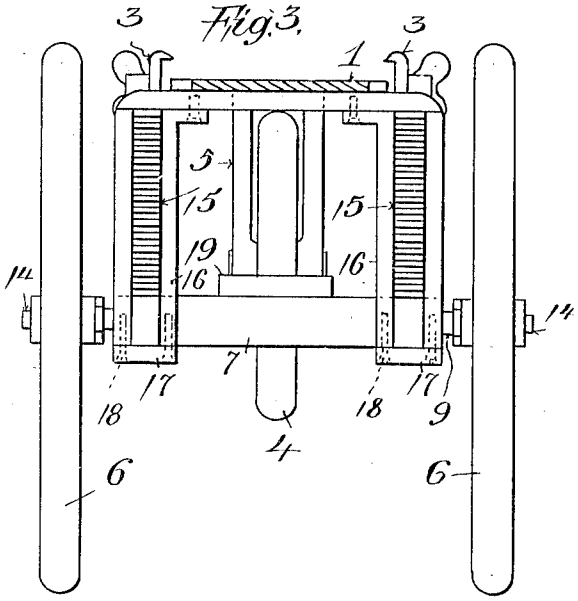


Fig. 5.

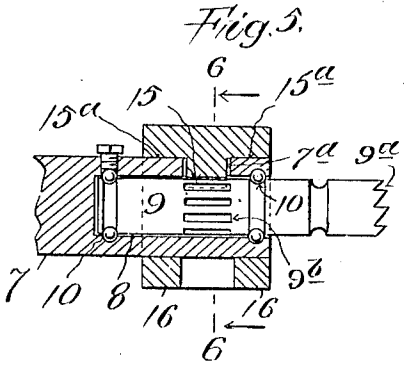


Fig. 7.

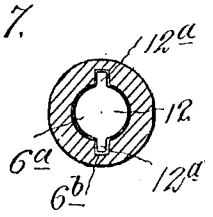


Fig. 4.

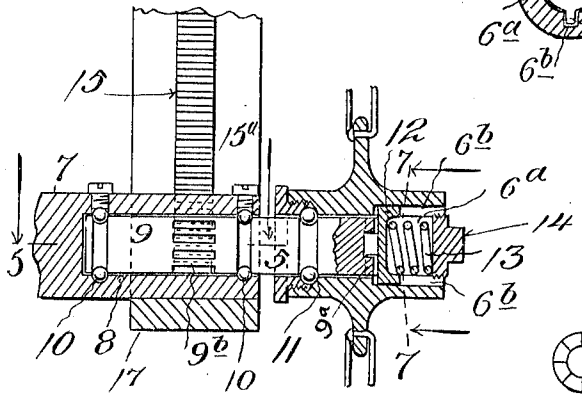


Fig. 6.

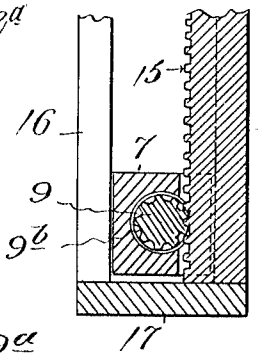




Fig. 8.

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UNITED STATES PATENT OFFICE.

CHARLES R. POST, OF NEW YORK, N. Y.

ROLLER-SKATE.

1,066,842. Specification of Letters Patent. Patented July 8, 1913.

Application filed July 12, 1912. Serial No. 708,953.

To all whom it may concern:

Be it known that I, CHARLES R. POST, a citizen of the United States, and resident of New York city, borough of Manhattan, in the county of New York and State of New York, have invented certain new and useful Improvements in Roller-Skates, of which the following is a specification.

The object of my invention is to provide means to cause rotation in a forward direction of the propelling wheels of roller skates through the medium of the weight of the skater being permitted to act in a downward direction upon transmitting mechanism interposed between the foot piece or plate of the skate and the driving wheels, and to permit the wheels to have free forward rotation when not under the influence of the propelling mechanism.

My invention comprises novel details of improvement and combinations of parts that will be more fully hereinafter set forth and then pointed out in the claims.

Reference is to be had to the accompanying drawings forming part hereof, wherein,

Figure 1 is a plan view of a roller skate embodying my invention; Fig. 2 is a side elevation thereof partly in section; Fig. 3 is a cross section substantially on the line 3, 3, in Fig. 1; Fig. 4 is an enlarged vertical detail section substantially on the line 4, 4, in Fig. 2; Fig. 5 is a section on the line 5, 5, in Fig. 4; Fig. 6 is a section on the line 6, 6, in Fig. 5; Fig. 7 is a detail section on the line 7, 7, in Fig. 4, and Fig. 8 is a detail face view of the clutch member at the end of the driving shaft.

Similar numerals of reference indicate corresponding parts in the several views.

In the drawings the numeral 1 indicates a foot plate of a roller skate shown provided with clamping devices 2 for the toe portion of the shoe and clamping devices 3 for the heel portion of the shoe, all of which may be of any suitable construction. A front wheel 4 is shown journaled upon suitable brackets 5 on the forward portion of plate 1. The driving wheels are indicated at 6 and are shown of greater diameter than the front or guiding wheel 4. Driving wheels 6 are shown spaced apart at the rear portion and on opposite sides of foot plate 1, and are rotatively carried at the outer ends of a cross bar 7 that is guided to have movement relatively to plate 1 beneath the same. Bar 7 at opposite ends is provided with recesses or bores 8 within which shafts 9 are rotatively mounted, upon which shafts wheels 6 are mounted to rotate freely in a forward direction. Suitable bearings are provided between bar 7 and shafts 9 and between wheel 6 and shaft 9, such as ball bearings 10, 11. Between shafts 9 and wheels 6 suitable clutch devices are provided for driving the wheels 6 forwardly when shafts 9 are rotated forwardly. For this purpose I have shown shafts 9 provided at their outer ends with clutch members 9^a, adapted to engage movable clutch members 12 shown carried within the bore 6^a of the hub of wheel 6, and normally pressed by spring 13 against clutch member 9^a, a stop 14 screwed or otherwise held in the bore of said hub retaining the parts 12 and 13 within the hub. The clutch member 12 is shown provided with projections 12^a (Fig. 7) entering grooves 6^b in the wheel hub to permit the clutch member to have sliding movement within the hub and to cause the clutch member to rotate the hub forwardly. The coacting faces of the clutch members 9^a and 12 are such that when shaft 9 rotates in a forward direction the wheel will be rotated with the shaft, but the wheel 6 may rotate freely forwardly independently of shaft 9. To rotate shafts 9 and the wheels forwardly by reason of the weight of the skater bearing downwardly, I provide shafts 9 with teeth or pinions 9^b engaged by downwardly disposed racks 15 spaced apart and depending from foot plate 1. The racks 15 enter recesses 7^a in the bar 7, whereby said bar is prevented from lateral displacement, and said racks are provided with side wearing faces 15^a to bear against the forward face of bar 7, guides 16 depending along the rear of bar 7 from foot plate 1, whereby bar 7 is guided between opposed parts 15^a and 16, enabling the racks to have up and down movement relatively to bar 7. Blocks or the like 17 are secured to the lower ends of rack 15 and guides 16 as by screws 18, whereby the lower free ends of parts 15 and 16 are firmly secured together and prevented from spreading apart. At 19 is a pad, which may be of rubber (Fig. 3), suitably secured upon bar 7 to resist downward thrust of foot plate 1. The racks 15 and guides 16 are of such length that when depressed they do not engage the ground, or in other words have less downward movement than the radius of wheels 6.

In accordance with my invention, when the skate is fastened to the foot and the foot is lifted the wheels 6, bar 7 and shafts 9 will descend, and the shafts rotate reversely as they travel down along racks 15. When the foot is depressed, and the wheels rest on the pavement, floor or the like, racks 15 will descend, due to the weight of the skater, and will cause shafts 9 to rotate forwardly thereby, through the clutch devices, causing forward rotation of wheels 6 and forward propulsion of the skater, and when such foot is again lifted the wheels and parts connected therewith will again descend, and so on. By the means stated, as the skater causes one foot to descend and the other to be raised, and so on, he will be propelled forwardly with a rolling motion without requiring him to use the strokes of the feet customarily employed in skating, since the skater will be propelled forwardly by merely raising and lowering the feet somewhat in the manner of walking. The front wheel 4 of the skate is shown of less diameter than the rear wheels 6 which enables downward movement of the foot plate for propelling wheels 6 for a suitable distance before wheel 4 engages the pavement or the like, and the skater may ride freely forwardly or "coast" as desired.

Having now described my invention what I claim is:—

1. A roller skate comprising a foot plate, a driving wheel, a shaft for the driving wheel, a guide depending from the foot-plate movably connecting the shaft with said plate to permit relative movement of one with respect to another, a rack depending from the foot-plate, transmitting mechanism between said rack and shaft for rotating said wheel upon movement of the plate toward said shaft, and means to permit forward rotation of said wheel while returning to the lower part of the guide.

2. A roller skate comprising a foot plate, a driving wheel, a shaft for the driving wheel, a guide depending from the foot-plate movably connecting the shaft with said plate to permit relative movement of one with respect to another, a rack depending from the foot-plate, transmitting mechanism between said rack and shaft for rotating said wheel upon movement of the plate toward said shaft, and clutch devices interposed between the shaft and the wheel for rotating the latter forwardly by the former, said clutch devices permitting said wheel to rotate forwardly separately from said shaft.

3. A roller skate comprising a foot plate, a drive wheel, a transverse bar beneath said plate, guides for said bar depending from said plate for guiding said bar to have up and down movement beneath said plate, a shaft journaled on said bar, a wheel mounted on said shaft, a rack depending from said plate, transmitting mechanism between the rack and shaft, and clutch mechanism to rotate the wheel forwardly by the shaft and permit forward rotation of said wheel while returning to the lower part of the guides.

4. A roller skate comprising a foot plate, a bar, guides depending from the foot plate and receiving said bar, a shaft journaled on said bar, a wheel mounted on said shaft, transmitting mechanism between the foot plate and shaft for rotating the latter forwardly upon approach of the foot plate toward the shaft, and clutch devices between the shaft and wheel for rotating the latter forwardly by the former and permitting reverse rotation of the shaft.

5. A roller skate comprising a foot plate, a bar beneath the plate, a rack carried by the foot plate, guides carried by the foot plate movably receiving said bar and means to limit endwise movement of the bar relatively to said guides, a shaft journaled upon said bar and provided with teeth meshing with the rack, a wheel upon the shaft, and clutch devices between the shaft and wheel for rotating the latter by the former and permitting rotation of said wheel while returning to the lower part of the guides.

6. A roller skate comprising a plate, a rack depending from the plate and having guiding faces, a bar having a recess receiving the rack limiting endwise movement of the bar, a guide for the bar opposed to the rack, a shaft journaled upon the bar and provided with teeth meshing with the rack, a wheel mounted upon the shaft, and clutch devices between the shaft and wheel for rotating the latter by the former in a forward direction and permitting free reverse rotation of the wheel.

7. A roller skate comprising a foot plate, a pair of spaced racks depending from said plate, guides opposed to said racks, a bar below the foot plate interposed between said racks and guides, shafts journaled in opposite ends of said bar and provided with teeth meshing with the corresponding rack, wheels mounted upon said shafts, and clutch devices between said shafts and wheels for rotating the latter forwardly by the former and permitting free reverse rotation of the wheels.

Signed at New York city, in the county of New York, and State of New York, this 11th day of July, A. D. 1912.

CHARLES R. POST.

Witnesses:
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MARIE F. WAINRIGHT.

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