

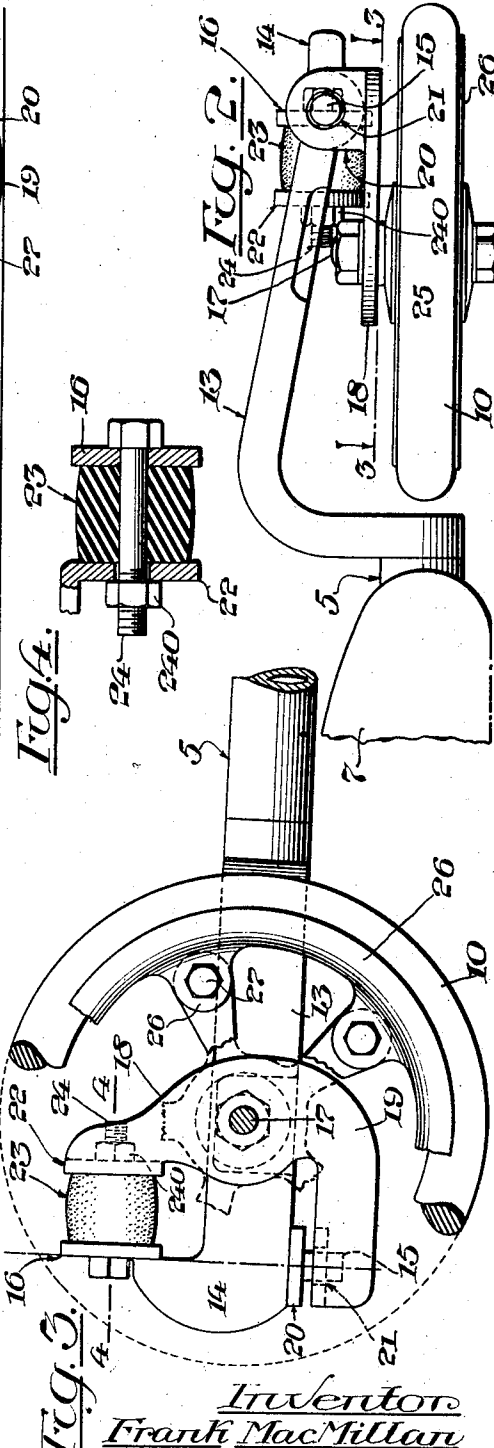
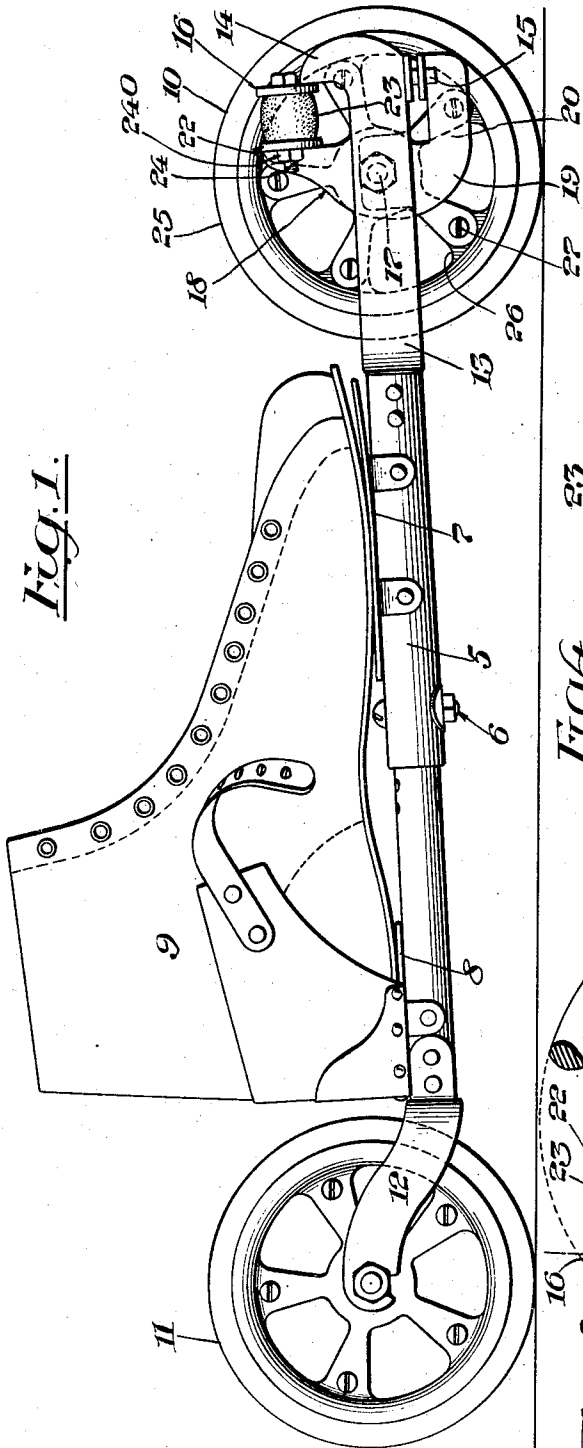
July 29, 1930.

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1,771,855

SKATE

Filed April 20, 1929



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UNITED STATES PATENT OFFICE

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SKATE

Application filed April 20, 1929. Serial No. 356,651.

This invention relates to that type of roller skates wherein relatively large rubber-tired wheels are supported in spaced relation and in alignment by means of a longitudinally extending foot frame or bar to which the sole and heel plates are secured, which skates are especially adapted to be used for road skating.

An object of my invention is to provide a skate of the type mentioned having a simple and inexpensive, yet efficient, wheel mounting which enables the skater to steer the skate with ease and facility.

Another object of my invention is to provide a skate having a wheel mounting of such construction that shocks incident to irregularities of the road are effectively absorbed.

A further object of my invention is to provide a skate having a wheel mounting of such construction that the tire, or the tire and rim, can be readily removed from the wheel, and be as readily replaced, without the necessity of detaching the body of the wheel from the mounting.

Other objects and advantages of the invention will hereinafter appear.

My invention comprises a skate having an end arm extension laterally offset from the foot bar, a vertically-disposed rocker spaced from the inner side of the extension and having a substantially vertical axis of oscillation on said extension, a wheel mounted on a horizontal axis supported on the outer side of the rocker between the foot bar and the axis of oscillation of the rocker, and resilient cushioning means co-acting with the said rocker and extension and operative to maintain the wheel normally in a central position with respect to the foot bar, yet permit the rocker and wheel to be easily swung within limits to the right or left at the will of the skater.

The invention also comprises novel features of construction and combinations of parts which will be hereinafter described; the scope of the invention then being defined in the appended claims.

In the drawings—

Figure 1 is a side elevation of a skate equipped with a front wheel mounting embodying the preferred form of my invention.

Fig. 2 is a bottom view of the front wheel and its mounting.

Fig. 3 is a section, as on the line 3—3 of Fig. 2, a part of the wheel being indicated.

Fig. 4 is a section through the rubber cushion, as on the line 4—4 of Fig. 3.

Referring to the drawings, 5 designates the longitudinal foot bar of a skate, which bar, in the present instance, comprises two telescopic tubular members adjustably connected by means of a bolt 6 passing through perforations in the two members in the usual manner. These members are provided with sole and heel plates 7, 8, respectively, to which a shoe, as 9, is riveted or otherwise secured. Beyond the respective ends of and in alignment with the bar are the front and rear wheels 10, 11, respectively, the latter, in the present instance, being axially supported in a rigid fork 12 extending rearwardly from the bar.

The front wheel 10 is so mounted that it is resiliently held in alignment with the rear wheel, yet it has capacity for lateral deflection to the right or left, at the will of the skater, in order to facilitate the steering of the skate. Accordingly, the front end of the foot bar 5 is provided with a forwardly extending arm 13 which is offset laterally from the path of the adjacent wheel and terminates in an integral head beyond the axis of the wheel. This head, in the preferred form illustrated, includes a bracket portion 14 and a pivot stud 15, the former rising above the axis of the wheel and terminating in an expanded bearing lug 16, and the pivot stud depending below such axis.

The axle 17 on which the wheel 10 is mounted, usually with ball bearings, extends horizontally outward from the upstanding leg 18 of an L-shaped rocker, which is spaced from the inner side of the arm 13. The other leg 19 of the rocker extends forwardly and terminates in a lateral lug 20 having a perforation 21 through which the pivot stud 15 extends. Hence the rocker and the wheel have capacity for bodily rocking movement, through a relatively large arc, about the pivot stud as an axis. The rocker leg 18 terminates in a lateral vertically disposed lug 22 which

is opposite to and spaced from the lug 16 at the top of the bracket, and a resilient cushion 23, preferably of elastic rubber, is interposed between the lugs and held in place by a bolt 24 passing axially therethrough and through suitable perforations in the respective lugs. The cushion maintains the rocker and wheel normally parallel with the longitudinal axis of the skate, but lateral pressure applied to the wheel by the foot of the skater will deflect the rocker and wheel to the right or left, against the opposing elastic force, thus facilitating the steering of the skate at the will of the skater. The elastic cushion also absorbs or reduces the shocks incident to irregularities of the road during straight ahead skating. By screwing up or unscrewing the bolt nut 24 the tension of the rubber cushion, and consequently the range of pivotal movement of the wheel 10, can be adjusted to meet the requirements of the skater.

Since the axis of oscillation of the rocker is laterally and forward of the axis of the wheel, and therefore forward of the point of peripheral contact of the wheel with the ground, a relatively wide horizontal arc may be described by the rocker and the axis of the wheel, thus permitting the wheel to be steered with facility within a relatively small or large radius, as desired, which operation is also facilitated by the relative positions of the pivot and cushion respectively below and above the axis of the wheel.

The pivot stud 15 is preferably slightly inclined with respect to the vertical, as indicated by the dot and dash line in Fig. 3, so that when the weight of the skater is imposed on the rubber-tired wheel the pivot assumes a vertical position. If the laterally-disposed pivot were normally vertical the action of the weight upon the rubber tire would incline the pivot slightly, with a resulting tendency of the wheel to run to one side, which effect is counteracted by the normal inclination of the pivot as mentioned. When the axis of the pivot 15 is in vertical position, it is in alignment, or substantially so, with the upper part of the bracket 14, adjacent the head of the bolt 24 about which the upper part of the rocker pivots (against the resilient action of the cushion) and therefore a stronger and more efficient turning force is had than if the pivot 15 were nearer the bearing point of the wheel on the road surface.

The mounting of the wheel on a rocker laterally of a single supporting arm enables the ready removal of the rubber tire 25 from the wheel, or its replacement thereon, without the otherwise necessity of detaching the wheel from the mounting or bearings. In order that the rim 26 of the wheel may be similarly removed if desired, I may construct the rim in a separate piece and detachably secure it by bolts 27 to the arms or side of the wheel body.

While I have herein shown and described my invention as applied to the front wheel of a skate, it is to be understood that the invention may be applied to the rear wheel also, if desired. It is also to be understood that my invention is not limited to the particular exemplifying construction herein described, as the same may be modified within the principle of my invention and the scope of the appended claims.

I claim—

1. A roller skate of the type described, comprising a foot bar having a rigid end extension offset laterally from the bar, a vertically-disposed rocker spaced from the inner side of the extension and having a substantially vertical axis of oscillation on said extension, a wheel having a horizontal axis of rotation on the outer side of the rocker between the foot bar and the axis of oscillation of the rocker, and resilient cushioning means co-acting with the said rocker and extension and operative to maintain the wheel normally in a central position with respect to the foot bar.

2. A roller skate of the type described, comprising a foot bar having a rigid end extension offset laterally from the bar, a vertically-disposed rocker spaced from the inner side of the extension, a pivot stud between the rocker and extension, a resilient cushion between said rocker and extension, said pivot stud and cushion being in vertically-spaced relation to each other and operative to permit oscillation of the rocker in a limited horizontal arc, and a wheel having a horizontal axis of rotation on the outer side of the rocker between the foot bar and the axis of oscillation of the rocker.

3. In a roller skate of the type described, a foot bar having an end arm extension offset laterally from the bar, a vertically disposed rocker pivotally mounted for horizontal movement on the extension and spaced from the inner side thereof, a wheel having a horizontal axis of rotation on the outer side of the rocker and above the pivot of the rocker, and a resilient cushion co-acting with the said rocker and extension in a plane above the axis of the wheel and operative to maintain the wheel normally in central position with respect to the foot bar.

4. In a roller skate of the type described, a foot bar having an end arm extension offset laterally from the bar, said extension terminating in a head having an upstanding portion and a basal pivot, a vertically disposed L-shaped rocker spaced from the inner side of the extension and having its horizontal leg mounted on said pivot, a wheel having a horizontal axis of rotation on the outer side of the rocker and above the pivot of the rocker, and a resilient cushion interposed between the upper end of the rocker and the upstanding portion of the head and operative to

maintain the wheel normally in central position with respect to the foot bar.

5. In a roller skate of the type described, a foot bar having an end arm extension offset laterally from the bar, said extension terminating in a head having an upstanding portion and a depending basal pivot, a vertically disposed L-shaped rocker spaced from the inner side of the extension and having its horizontal leg vertically perforated to receive the pivot, an axle extending outwardly from the vertical leg of the rocker in a plane above the pivot, a wheel mounted on said axle, and a resilient cushion interposed between the upper portion of the rocker and the upstanding portion of the head and operative to maintain the wheel normally in central position with respect to the foot bar.

6. In a roller skate of the type described, a foot bar having an end arm extension offset laterally from the bar, said extension terminating in an upstanding portion and having a depending pivot stud inclined slightly to the vertical so as to assume a vertical position when weight is applied to the skate, a vertically-disposed rocker pivotally mounted on the extension and spaced from the inner side thereof, a wheel having a perforated lug through which the pivot stud extends, an axle extending outwardly from the rocker in a plane above the pivot, a rubber-tired wheel mounted on said axle, and a resilient cushion interposed between the upper portion of the rocker and the upstanding portion of the head and operative to maintain the wheel normally in central position with respect to the foot bar.

7. In a roller skate of the type described, a foot bar having an end arm extension offset laterally from the bar, a vertically disposed rocker pivotally mounted on the extension and spaced from the inner side thereof, a wheel having a horizontal axis of rotation on the outer side of the rocker and above the pivot of the rocker, said wheel comprising a body portion and a rubber-tired rim detachably mounted thereon, and a resilient cushion co-acting with the rocker and extension in a plane above the axis of the wheel and operative to maintain the wheel normally in central position with respect to the foot bar.

8. In a roller skate of the type described, a foot bar having an end arm extension offset laterally from the bar, said extension terminating in a head having an upstanding portion and a depending basal pivot, a vertically disposed L-shaped rocker spaced from the inner side of the extension and having its horizontal leg vertically perforated to receive the pivot, an axle extending outwardly from the vertical leg of the rocker in a plane above the pivot, a wheel mounted on said axle, a resilient cushion interposed between the upper portion of the rocker and the upstanding portion of the head and operative

to maintain the wheel normally in central position with respect to the foot bar, and tension adjusting means for said cushion.

9. In a roller skate of the type described, a foot bar having an extending end member, a vertically-disposed rocker pivotally mounted for horizontal movement on said member, a wheel having a horizontal axis of rotation on said rocker above the pivot of the rocker, and a resilient cushion co-acting with the said rocker and end member in a plane above the axis of the wheel and operative to maintain the wheel normally in central position with respect to the foot bar, the pivot of the rocker being in substantially vertical alignment with the portion of the member opposing the action of the cushion.

10. A roller skate of the type described, comprising a foot bar having a rigid end extension, a vertically-disposed rocker spaced laterally from the end extension and having a substantially vertical pivot connection with said extension adjacent the free end of the extension, a wheel having a horizontal axis of rotation on the rocker in a plane above the pivot connection and between said connection and the foot bar, and a resilient cushion interposed between the rocker and the extension in a plane above the axis of the wheel and laterally of the wheel.

Signed at New York, in the county and State of New York, this 17th day of April, A. D. 1929.

FRANK MACMILLAN.

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