Feb. 28, 1939.

O. K. WINDING

2,148,919

PROPEL SCOOTER

Filed March 18, 1937

Fig. 1

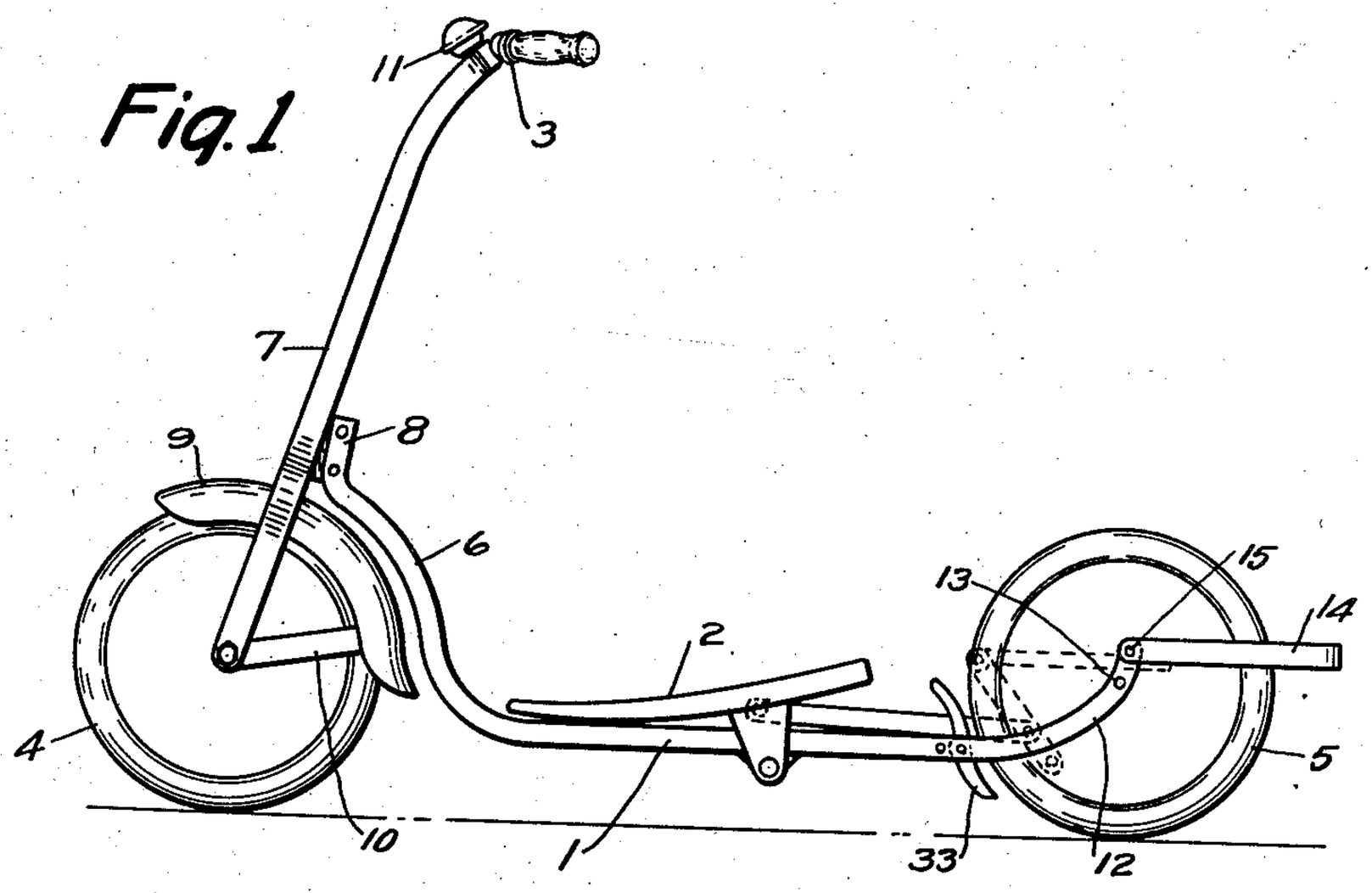



Fig. 2

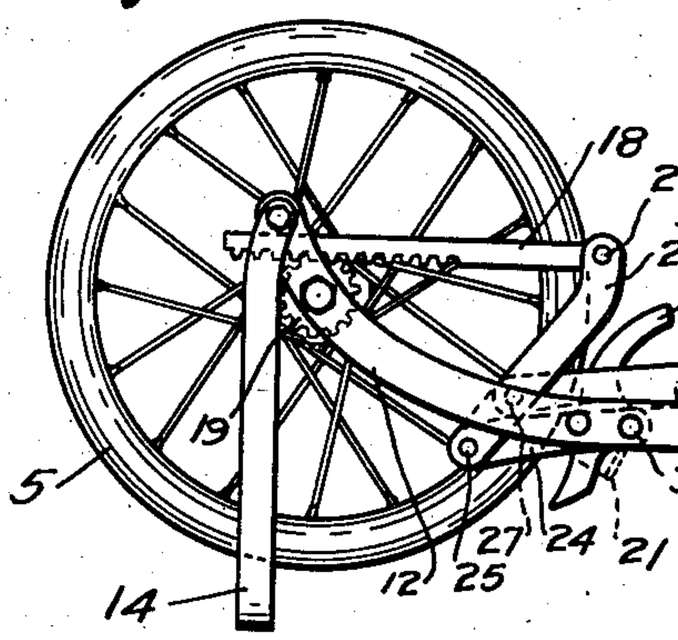



Fig. 4

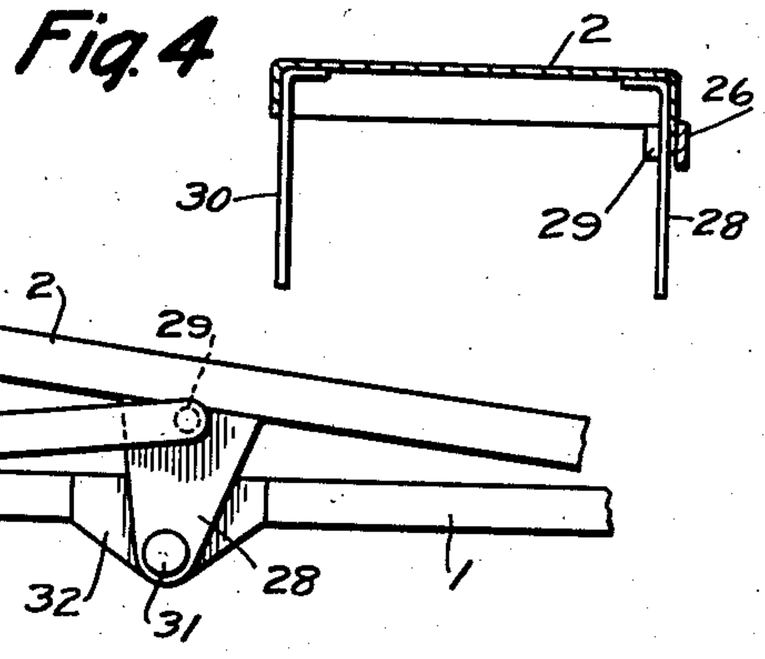



Fig. 3

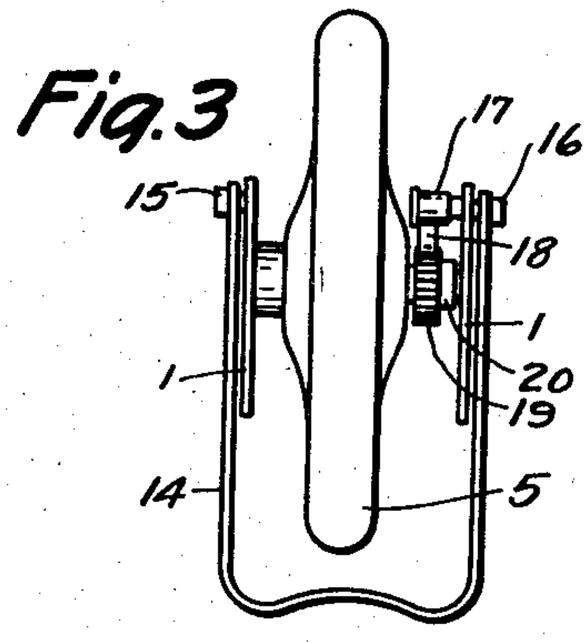
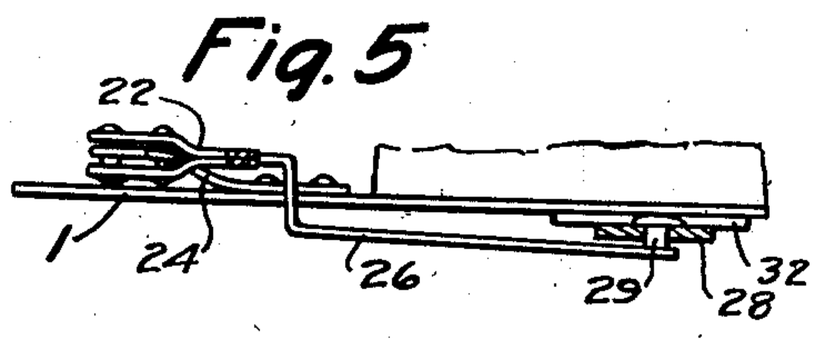



Fig. 5

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Patented Feb. 28, 1939 2,148,919

# UNITED STATES PATENT OFFICE

2,148,919

## PROPEL SCOOTER

Ove K. Winding, New York, N. Y.

Application March 18, 1937, Serial No. 131,659

1 Claim. (Cl. 280—221)

The purpose of this invention is to provide improvements in scooters and the like of the propel type.

The invention is an improvement over my prior Patent 2,076,804 in that the straight rack and gear are used without a bearing extending upward from the treadle. The operating means is provided by levers below the upper surface of the treadle and the length of the stroke is increased by leverage.

Many different arrangements have been designed for transferring the motion of a treadle to a forward action on the rear wheel, but the most efficient mechanism is where a straight rack travels horizontally over a gear on a free running clutch which pulls the wheel forward and which releases the wheel on the backward movement, and it has been found very difficult to operate this rack from the foot treadle without extending a connection above the surface of the treadle and such a connection is obviously in the way because it strikes the child's legs and tears and wears the hose.

The object of the invention is, therefore, to improve the construction of scooters of this type by using the straight rack and gear and operating the same by a series of levers under the treadle.

Another object is to provide suitable connections between a treadle and a gear rack through which the length of the movement or stroke may be increased sufficiently to drive the scooter without unnecessarily multiplying the actions of the treadle.

A further object is to provide driving means between the lower side of a treadle and a rack on a rear wheel which does not increase the size of the scooter.

And a still further object is to provide suitable means for connecting the foot treadle of a scooter to a gear rack and pinion without extending parts above the surface of the treadle which provides a simple and economical construction.

With these ends in view the invention embodies a scooter of the type having a front and rear wheel, an underslung platform supported between the wheels, a steering post with handle bars at the upper end extending upward from the front wheel and pivotally attached to the forward end of the platform, a treadle pivotally mounted on the platform, a free running clutch on the rear wheel, a gear on said clutch, a rack meshing with said gear, levers connecting the treadle to the rack below the surface thereof, a brake, and a bracket forming a stand which may be moved downward to raise the rear wheel so that the device will stand by itself.

Other features and advantages of the invention will appear from the following description taken in connection with the drawing wherein:

Figure 1 is a view showing a side elevation of the scooter.

Figure 2 shows a side elevation of the rear end looking toward the opposite side of the scooter shown in Figure 1 and with the forward part omitted.

Figure 3 is an end view showing the rear wheel with the forward part omitted.

Figure 4 is a view showing a cross-section through the treadle.

Figure 5 is a plan view showing the lever connecting the treadle to a lever at the rear with the other parts of the scooter omitted.

In the drawing the scooter is shown as it may be made wherein numeral 1 indicates the platform, numeral 2 the treadle, numeral 3 the handle bars, and numerals 4 and 5 the front and rear wheels.

The platform 1 is suspended between the wheels with both ends curved upward and the treadle 2 is mounted on the straight part thereof between the wheels. The forward end of the platform is curved upward as shown at the point 6 and the upper end is pivotally attached to a post 7 at the point 8. The post 7 is in the form of a yoke which extends over the front wheel 4 and the wheel is pivotally mounted therein. A mud guard 9 may be provided over the wheel and may be attached to the post 7 and the lower part may be held by braces 10. The handle bars 3 are mounted on the upper end of the post and these may be of any type or design. A bell 11 is also shown on the upper end of the post.

The opposite end of the platform 1 curves upward as shown at the point 12 and the wheel 5 is rotatably mounted on a shaft 13 extending through the sides of the platform. The ends of the sides extend upward beyond the shaft 13 and the ends of a bracket 14 are pivotally mounted thereon by bolts 15 and 16 and a roller 17 is mounted on the inner end of the bolt 16 which is positioned over a gear rack 18 that meshes with a gear 19 on a clutch 20 on the shaft of the rear wheel. The bracket 14 is frictionally held so that it may extend straight outward as shown in Figure 1 or it may be folded under the platform to the position indicated by the dotted lines 21 shown in Figure 2; however, this bracket may be held in any manner.

The inner end of the rack 18 is attached to a

lever 22 at the point 23 and the lever is pivotally mounted on a bar 24 through a pin 25. This lever is connected by a bar 26, to which it is pivotally connected by a pin 27, to one of the side plates 28 of the treadle 2 and it is connected to the side plate by a pin 29 as shown. The treadle is formed with another side plate 30 on the opposite side and the lower ends of the side plates are pivotally mounted on pins 31 in bearing plates 32 extending downward from the sides of the platform as shown.

A brake 33 may also be pivotally mounted on a pin 34 between the rear part of the platform and it will be noted that by pressing downward on the upper end, the lower end will be forced in against the tire of the rear wheel.

It will be understood that other changes may be made in the construction without departing from the spirit of the invention, one of which changes may be in the use of other means for connecting the treadle to the rack below the surface of the treadle; another may be in the use of the connection shown in combination with a scooter or toy of any other type and still another may be in the use of this device in combination with a brake of any other type.

The construction will be readily understood from the foregoing description:

In use the scooter may be used in the usual manner and it will be noted that with both feet on the treadle and with the right foot positioned ahead of the pivot point or fulcrum, and with the left foot positioned so that the ball of the foot is ahead of the fulcrum and the heel behind the fulcrum the treadle may readily be moved upward and downward and the entire weight of the right foot and ball of the left foot will be employed in the forward stroke and the treadle will be raised or returned by the heel of the left foot. This, therefore, makes it possible to obtain the greatest power on the forward stroke and at the same time eliminates any obstruction whatever on or around the treadle.

Having thus fully described the invention, what I claim as new, and desire to secure by Letters Patent, is:

A scooter of the type having two aligned wheels, one at the front and one at the back, an underslung platform suspended below the centers of the wheels, and a handle pivotally attached to the forward end of the platform and in which the front wheel is mounted; a treadle extending across the face of the platform whereby it will accommodate both feet of the operator, means pivotally mounting said treadle on said platform and spacing it a short distance therefrom, said means comprising members extending downward at the sides of the platform and pivoted to the platform, said pivot point being located slightly behind the center of the treadle, a rack, a toothed wheel on the rear wheel, a vertically positioned lever, with the upper end pivotally attached to said rack, with the rack extending over and engaging the said toothed wheel, a bearing extending downward from the lower part of said underslung platform and in which the lower end of said vertically positioned lever is pivotally mounted, and a link pivotally attached to said lever at a point substantially midway thereof, and with the opposite end pivotally attached to one of the said members extending downward from the sides of said treadle; said link actuating said vertically positioned lever as the treadle moves about its pivot, thereby moving said rack backward and forward over said gear.

OVE K. WINDING.