

March 17, 1925.

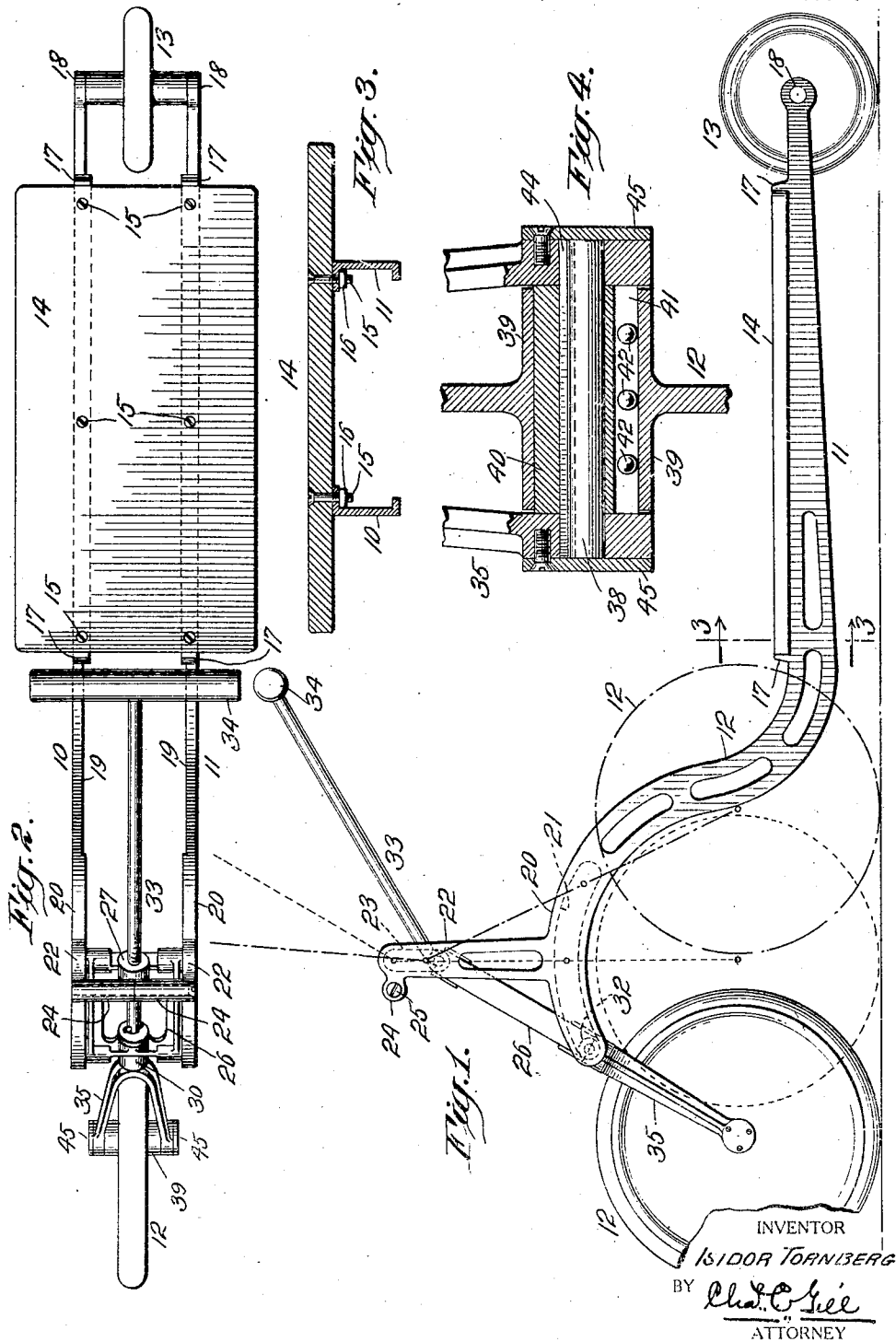
I. TORNERG

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SCOOTER AND THE LIKE

Filed Feb. 25, 1924

3 Sheets-Sheet 1



March 17, 1925.

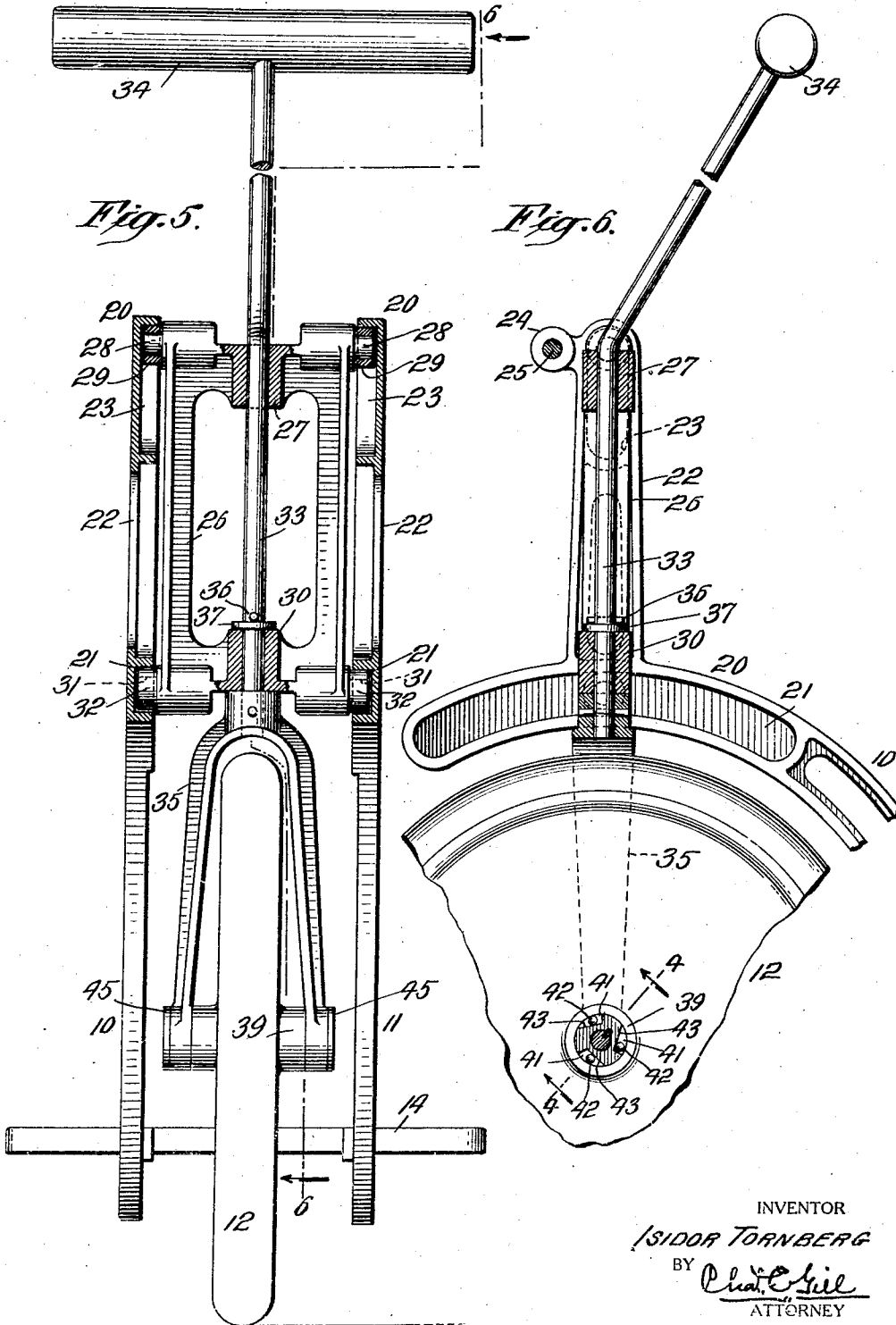
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3 Sheets-Sheet 2



INVENTOR
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BY *Chas. E. Hill*
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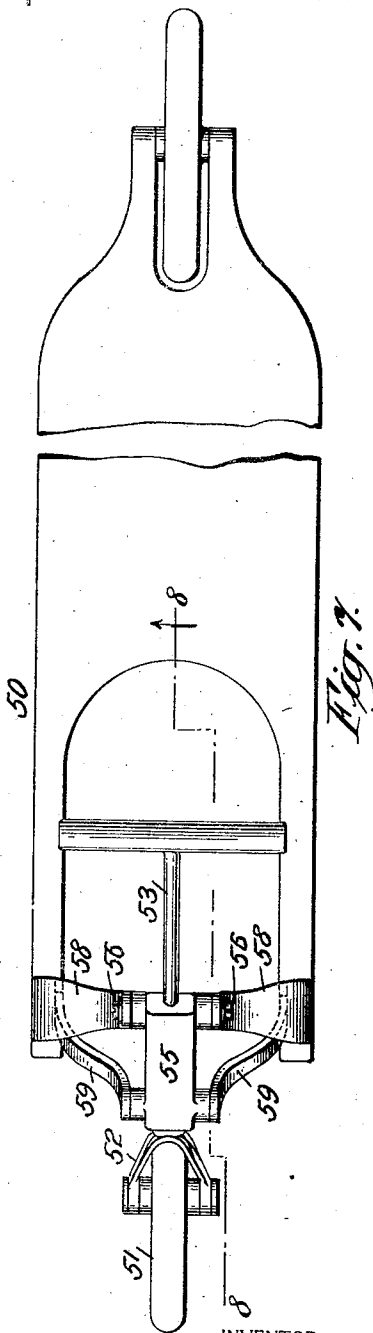
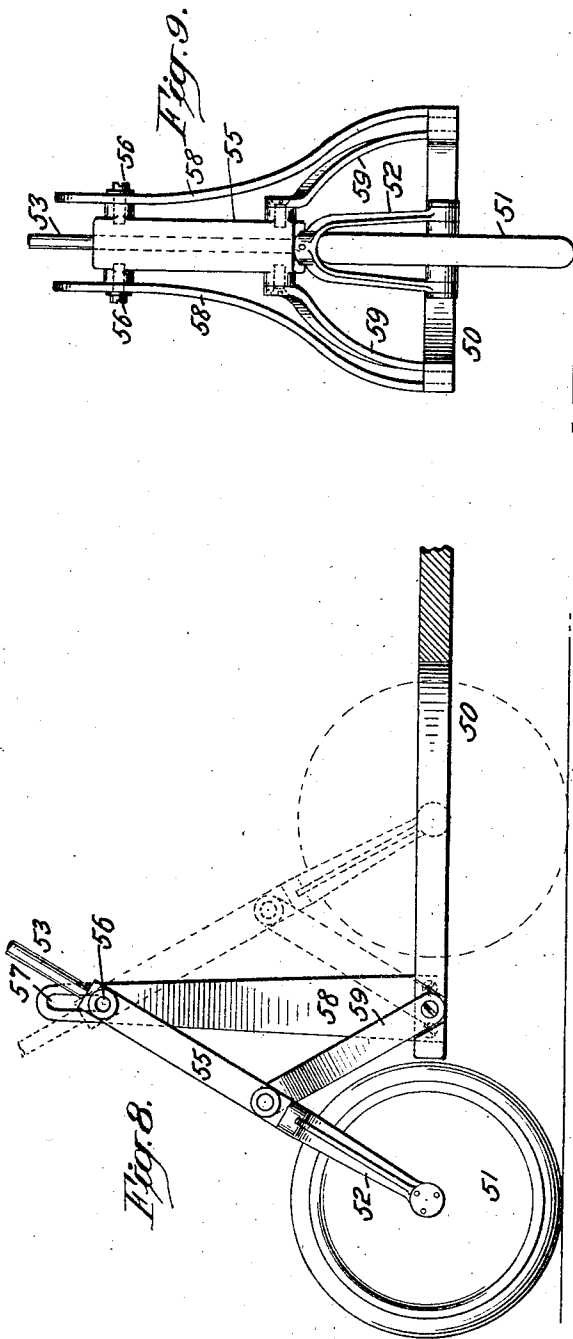
I. TORNBORG

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SCOOTER AND THE LIKE

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3 Sheets-Sheet 3



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Patented Mar. 17, 1925.

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UNITED STATES PATENT OFFICE.

ISIDOR TORNBERG, OF PLAINFIELD, NEW JERSEY.

SCOOTER AND THE LIKE.

Application filed February 25, 1924. Serial No. 695,049.

To all whom it may concern:

Be it known that I, ISIDOR TORNBERG, a citizen of the United States, and a resident of Plainfield, in the county of Union and State of New Jersey, have invented certain new and useful Improvements in Scooters and the like, of which the following is a specification.

The invention relates more especially to toys used by children on sidewalks and commonly known as scooters. The usual scooter comprises a platform mounted on two or three wheels and has a front handle, and a boy with one foot on the platform will use the other foot on the ground to force the platform ahead by stages until sufficient momentum has been created in the scooter to cause it to travel a short distance, during which period he may keep his foot off of the ground, this operation being repeated from time to time as the scooter loses its momentum.

The object of my invention is to provide a scooter which is adapted to be propelled on oscillatory movements being imparted to the handle thereof by a person standing on the platform, thus relieving the user of the necessity of developing momentum in the scooter by repeated pushing with one foot against the ground. A further object of the invention is to provide a scooter of the character referred to which is durable and simple of construction and devoid of the shafts and gearing common to toys of the propelling type.

The invention will be fully understood from the detailed description hereinafter presented, reference being had to the accompanying drawings, in which:

Fig. 1 is a side elevation, partly broken away, of a scooter embodying my invention, several positions of the handle being indicated by dotted lines;

Fig. 2 is a plan view of the same;

Fig. 3 is a vertical transverse section, on a larger scale, through the platform portion of the scooter, taken on the dotted line 3—3 of Fig. 1;

Fig. 4 is a transverse section, on a larger scale, through the hub portion of the forward wheel and adjacent parts, taken on the dotted line 4—4 of Fig. 6;

Fig. 5 is a front elevation, partly in section and partly broken away, of the scooter;

Fig. 6 is a vertical section through the same taken on the dotted line 6—6 of Fig. 5, and

Figs. 7, 8 and 9 are fragmentary views illustrating a modification.

In the drawings, 10, 11 indicate the longitudinal side frames of the scooter and 12, 13 the front and rear wheels, respectively, which support said side frames and upon which side frames is firmly secured the platform 14. The side frames 10, 11 will preferably be formed of metal and the platform 14 of wood.

The side frames 10, 11 are parallel with each other and alike in construction, except that said frames are of right and left hand formation. The side frames 10, 11 are straight and horizontal throughout the body portion of the device and at these portions are of vertical channel formation, as shown in Fig. 3, and receive the platform 14 which is fastened to the side frames by means of bolts 15 which enter the upper flanges thereof and are secured by nuts 16 (Fig. 3). The bolts 15 are formed with screw-heads, as shown, to facilitate their application to the nuts 16, which are kept from turning loose by reason of their close relation to the adjacent faces of the frames 10, 11. The side frames 10, 11 are formed with upwardly projecting lugs 17 which engage the ends of the platform 14 (Figs. 1 and 2) and serve to initially position the platform and to co-operate with the bolts 15 in resisting end-wise movement of the same.

The rear ends of the side frames 10, 11 furnish bearings 18 for the axle of the wheel 13. I show one rear wheel 13 but obviously may employ two rear wheels if desired.

The front portions of the side frames 10, 11, curve upwardly, as at 19, and then forwardly, as at 20, on the arc of a circle, and the portions 20 are flanged inwardly to form in the facing sides thereof the arcuate recesses or channels 21, indicated by dotted lines in Fig. 1 and solid lines in Figs. 5 and 6. Centrally above the channels 21, the side frames 10, 11 are formed with vertical standards 22 in the facing sides of whose upper ends are formed vertical recesses or channels 23. The upper ends of the standards 22 are formed at their forward edges with inwardly extending lateral sleeves 24 of equal dimensions and whose inner ends abut against

each other, as shown in Fig. 2. The sleeves 24 receive a screw or the like 25 by which the side frames 10, 11 at their upper forward ends are rigidly secured together. The platform 14 and bolts 15 securely connect the body portions of the side frames together.

Between the standards 22 and arcuate portions 20 of the side frames, I position a frame 26 which is generally of flat formation and at its upper end has a central vertical hub 27 and outwardly extending lateral pins or axle-members 28 on which are sleeve-rollers 29 (Fig. 5), said rollers being within the vertical channels or recesses 23 and adapted to ride against the side walls thereof. The lower end of the frame 26 has a central vertical hub 30 and outwardly extending lateral pins or axle-members 31 on which are sleeve rollers 32, said rollers being within the arcuate channels or recesses 21 and adapted to ride against the side walls thereof. The frame 26 will preferably be a casting and of a formation to afford adequate strength to its several parts, as shown.

The handle-rod 33 is provided on its upper end with a transverse handle bar 34, as usual, and the lower portion of said rod extends downwardly through the hubs 27, 30 of the frame 26 and is pinned in the upper hub-end of the yoke or fork 35 for the front wheel 12. The rod 33 is capable of swiveling movement in the hubs 27, 30 and is prevented from having undue downward movement through said hubs by a pin 36 and washer 37 located above the hub 30 (Fig. 5). The engagement of the upper end of the yoke 35 with the lower end of the hub 30, prevents the rod 33 from sliding upwardly. I preferably deflect the upper portion of the rod 33 rearwardly, as shown, for the convenience of the operator of the device. Oscillatory movement of the handle-rod 33 effects a special oscillatory movement in the frame 26, during which the rollers 29 have a vertical travel in the channels or recesses 23 and the rollers 32 have an arcuate travel in the channels or recesses 21, as explained hereinafter.

The arms of the yoke or fork 35 straddle the front wheel 12, as shown in Fig. 5, and said arms are correspondingly apertured at their lower ends to receive the ends of a stationary axle 38 for the wheel 12, whose hub 39 is closely confined between said arms. Upon the axle 38 and within the hub 39 is keyed a brake-sleeve 40 having in its surface a series of recesses 41 (Fig. 6) containing balls or rollers 42 and affording tangential surfaces 43 between which and the inner surface of the wheel hub 39 said balls or rollers become pinched when any attempt is made to rotate the wheel 12 in the reverse direction or clockwise, and prevent such rotation of the wheel. It is a feature of my invention that the wheel 12 shall only be

able to rotate in a forward direction or counter-clockwise. The hub 39 is free to turn counter-clockwise on the brake-sleeve 40 but not reversely thereon. The sleeve 40 and balls 42 constitute a familiar form of brake and require no special description. The sleeve 40 is fastened to the axle 38 and said axle is fastened in the arms of the fork 35 by means of the key 44. I preferably apply caps or disks 45 on the outer faces of the lower ends of the arms of the fork 35, to confine the axle 38 and conceal the ends thereof (Fig. 4).

The scooter hereinbefore described may, if desired, be used in the customary way that ordinary scooters are employed, that is, with the handle rod 33 and wheel 12 in the position shown in Fig. 1, a boy with one foot on the platform 14 may with his other foot on the ground create forward momentum in the device, as usual.

My invention, however, permits of the scooter being propelled from the handle rod 33 by a child standing with both feet on the platform 14 and holding onto the handle bar 34. If when a child mounts the platform 14, the wheel 12 should be in its forward position shown by solid lines in Fig. 1, the child will press upwardly and forwardly on the handle bar 34, and the effect of this will be, since the wheel 12 cannot rotate in a direction to cause it to travel toward the platform 14, to draw the platform forwardly toward the wheel 12 until the rod 33 has reached the limit of its stroke and the platform has reached the relation to the wheel 12 represented by the heavy broken line in Fig. 1. The scooter having thus been propelled forwardly a certain distance measured by the stroke of the handle-rod 33 and the momentum generated in the scooter, the child will draw the handle-bar 34 rearwardly to force the wheel to rotate forwardly to its former position shown by solid lines in Fig. 1, and immediately again push said handle-bar upwardly and forwardly as before to effect the movement of the scooter forwardly toward the wheel 12. This operation of the handle-bar will be repeated as long as desired, each forward thrust of the handle bar causing a forward movement of the body of the scooter toward the wheel 12, which is at the time stationary.

The frame 26 is positively oscillated from the handle-rod 33 with which it is positively connected, and said frame while being pivotally held at its upper end yields upwardly and downwardly at said end to permit the lower end of the frame to travel on the convex arc of a circle. The frame 26 serves as a link or a pair of links connecting the fork of the wheel 12 with the side frames of the scooter, and said connection is such as to permit an oscillatory lever 33 acting on said fork to have its movements without dis-

turbing the horizontality of the scooter, this result being one of the essential objects secured by my invention.

The scooter as a whole is one of desirable and simple construction and devoid of operating gear wheels and their connections common to propelled vehicles of the toy order. By curving the forward ends of the side frames upwardly, said side frames may remain parallel with each other and yet afford abundant space for the wheel 12 to swivel in, instead of being spread out at their forward ends to accommodate the swiveling action of said wheel.

It is very desirable that the body of the scooter shall remain horizontal or not have any rocking motion, during its travel, and this result I attain by the presence of the swinging or oscillatory link-frame 26 and the channels 21, 23 cooperating therewith. When the handle-rod 33 is turned forwardly from its position shown in Fig. 1, it forces the lower end of the frame 26, at its rollers 32, to ride upwardly in the channels 21 and then downwardly in said channels, instead of lifting the forward end of the scooter upwardly and then allowing it to descend, and this particular movement of the lower end of the frame 26 is permitted from the fact that the upper end of said frame, at its rollers 29, rides upwardly in the channels 23 and then downwardly therein to accommodate the arcuate travel of the lower end of the frame in the channels 21. A rearward pull on the handle-bar 34, causes the lower end of the frame 26 to swing forwardly and at this time the rollers 32 ride forwardly in the arcuate channels 21 and the rollers 29 move upwardly and then downwardly in the channels 23, whereby tilting movement of the scooter is prevented.

The distinguishing features of the invention are that the wheel 12 may travel forwardly but not backwardly, that the handle-rod, operating as a lever, is connected with the fork of the wheel and has a vertically yielding pivotal connection with the frame of the scooter and that the upper end of said fork or its immediate accessory part has a controlled movable connection with the frame of the scooter, said connection being compelled at the fork to travel through the arc of a circle as the handle-rod is moved back and forth from one side to the other of a vertical plane extending through the rod and the center of said wheel, whereby as the handle-rod is pulled rearwardly to move the wheel 12 forwardly and is then pushed forwardly to draw the body of the scooter to the wheel, the pivotal connection of the rod with the frame of the scooter is compelled to yield upwardly and downwardly under the control of said movable connection, to a limited extent to permit the handle-rod to perform

its oscillatory movements without influence on the horizontality of the body of the scooter.

In Figs. 1 to 6 inclusive I illustrate the preferred construction of the scooter, but I do not limit the invention in every instance to the details of that construction, since like functional results may be obtained in other embodiments of the invention and hence I present Figs. 7 to 9 inclusive as showing a modification thereof.

In Figs. 7, 8 and 9, 50 denotes the body of the scooter, 51 the front wheel, 52 the fork therefor, 53 the handle-rod, 55 a frame at the upper end of said fork and receiving the handle-rod which is rigid with said fork, 56 lateral pivot studs on the upper end of said frame, 57 elongated or vertical channel-bearings within which said studs may have vertical movement, 58 side bars forming a part of the frame of the scooter and in whose upper ends said bearings are formed and 59 oscillatory links pivoted at their lower ends to the frame of the scooter and at their upper ends to the lower end of said frame 55. The scooter shown in Figs. 7, 8 and 9, has the same operation as the scooter shown in Figs. 1 to 6, inclusive, since the studs 56 operate the same as the aforesaid rollers 29 and the upper ends of the links 59 travel through the same arc as that represented by the aforesaid arcuate channels 21 and are compelled to do so by the movements of the handle-rod 53, and said links on their movements compel the upward and downward movement of the studs 56 in the elongated bearings 57 so as to avoid rocking movement in the body of the scooter.

What I claim as my invention and desire to secure by Letters-Patent, is:

1. In a scooter or the like having a body portion, front and rear wheels, a fork in which the front wheel is mounted and a handle-rod connected with said fork, means for propelling the scooter forwardly and preventing rearward motion thereof comprising means pivotally mounting the handle-rod in the frame of the scooter for rockable or oscillatory motion by the user of the device and a brake permitting said front wheel to roll forwardly when the upper end of the handle-rod is pulled rearwardly and preventing reverse motion of said wheel when the said rod is pushed forwardly, thereby compelling the body of the scooter to move toward said front wheel.

2. A scooter or the like as claimed in claim 1, in which the brake is concealed within the hub of the front wheel and comprises a stationary recessed sleeve and balls in the recesses of the sleeve to wedge against the inner surface of the hub and lock the wheel against reverse rotation.

3. A scooter or the like as claimed in claim

1, having means for preventing rocking motion in the body of the scooter during the forward movement of the front wheel and the then forward movement of said body toward said wheel, comprising vertically elongated bearings for the pivotal connection of the handle-rod with the frame of the scooter and means for compelling the upper end of the fork to travel on the arc of a circle as said handle-rod is moved from one side to the other of a vertical plane through said rod and the axis of the wheel, said bearings at this time allowing the rod connection to yield upwardly and downwardly following the requirements of said arc.

4. A scooter or the like as claimed in claim 1, having means for preventing rocking motion in the body of the scooter during the forward movement of the front wheel and the then forward movement of said body toward said wheel, comprising means allowing limited vertical movement of the connection of said rod with the frame of the scooter and means for enforcing such movement when said handle-rod is moving from one side to the other of a vertical plane through said rod and the axis of the wheel and the upper end of the fork is traveling on the arc of a circle.

5. A scooter or the like as claimed in claim 1, having means for preventing rocking motion in the body of the scooter during the forward movement of the front wheel and the then forward movement of said body toward said wheel, comprising a frame on said handle-rod above said fork and at its upper end carrying lateral pivots as the pivotal connection for said rod with the frame of the scooter, vertically elongated bearings in the scooter-frame for said pivots, arcuate channels in the sides of the scooter-frame below said bearings and lateral members on the lower end of the handle-rod frame to ride in said arcuate channels and afford a connection below said pivots of said frame with the scooter frame, said elongated bearings permitting said pivots to yield upwardly and downwardly when the handle-rod is moving from one side to the other of a vertical plane through said rod, the axis of the wheel and the apexes of said arcuate channels.

6. In a scooter or the like having elongated parallel side frames which curve upwardly and forwardly at their front ends, a platform, front and rear supporting wheels, a fork in which the front wheel is mounted and a handle-rod connected with said fork,

said side frames at their forward raised portions having corresponding parallel standards, means for propelling the scooter forwardly and preventing rearward motion thereof comprising means pivotally mounting the handle-rod between said standards for rockable or oscillatory motion by the user of the device and a brake permitting said front wheel to roll forwardly when the upper end of the handle-rod is pulled rearwardly and preventing reverse motion of said wheel when the said rod is pushed forwardly, thereby compelling the body of the scooter to move toward said front wheel.

7. A scooter or the like comprising elongated parallel side frames which curve upwardly and forwardly at their front ends, a platform, front and rear wheels, a fork for the front wheel, a handle-rod connected with said fork, said side frames at their forward curved portions having arcuate facing channels and vertical standards having facing elongated vertical bearings, and means for propelling the scooter forwardly and preventing rearward motion thereof comprising a frame on the handle-rod above the fork having at its upper end lateral pivots mounted in said vertical bearings and acting as a pivotal connection of the handle-rod with the scooter-frame and at its lower end laterally extending members entered within said arcuate channels, and a brake concealed within the hub of the front wheel permitting forward travel of the wheel and preventing reverse motion thereof, said handle-rod being mounted for manual rockable operation and said vertical bearings permitting said pivots to ride upwardly and downwardly when the handle-rod is moving from one side to the other of a vertical plane through said rod, the axis of the front wheel and the apexes of said arcuate channels, whereby rocking motion in the body of the scooter during the forward travel of the same is avoided.

8. A scooter or the like as claimed in claim 1, in which the handle-rod is mounted to be turned axially for directing the front wheel.

9. A scooter or the like as claimed in claim 7, in which the frame on the handle-rod permits the rod to turn axially therein for directing the forward wheel.

Signed at New York city, in the county of New York and State of New York, this 23rd day of February, A. D. 1924.

ISIDOR TORNBORG.