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OCCUPANT PROPELLED SCOOTER

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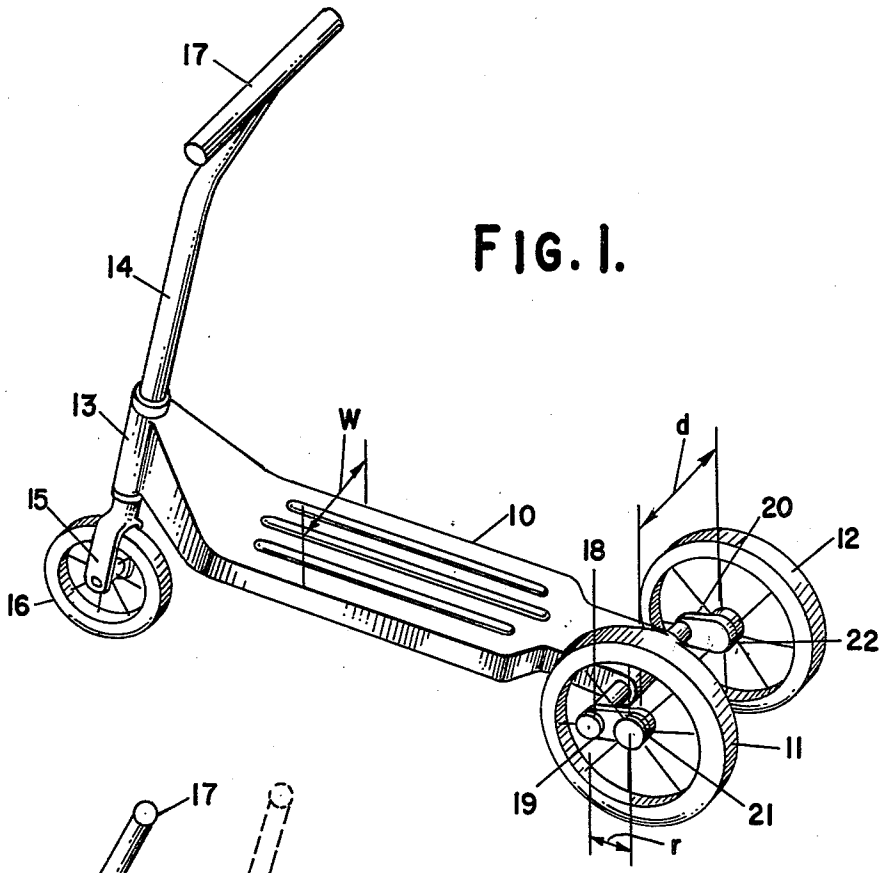


FIG. 1.

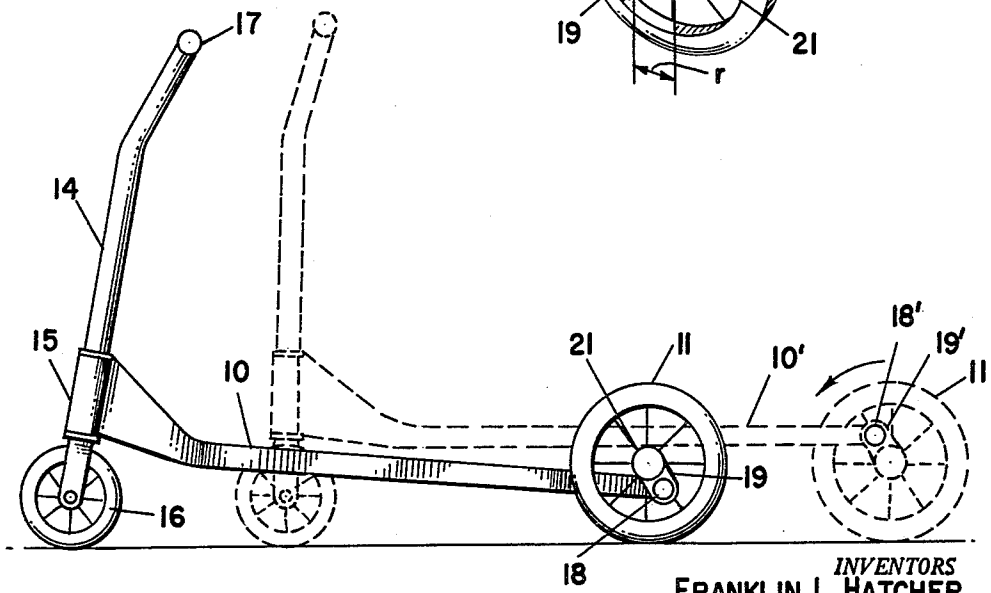


FIG. 2.

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OCCUPANT PROPELLED SCOOTER

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1 Claim. (Cl. 280—221)

This invention relates generally to scooters and more particularly to an improved toy scooter for children.

In the age group from three to six, tricycles have proved popular as a toy as well as educational for providing a child with experience in the feel of motion. For children in the age group from nine to twelve and higher, bicycles are most popular. There is thus a period from six to nine when the average child is too old for a tricycle and too young to safely master the techniques of riding a bicycle.

An intermediate motion type toy for children in the latter mentioned age group is the conventional scooter which ordinarily comprises a footboard having a single front and a single rear wheel. However, even the scooter is somewhat difficult to use safely since it must be balanced on the two wheels in tandem. Further, the user of the scooter must usually support his entire weight with one foot while employing the other foot to propel himself. Thus, the popularity of scooters is more concentrated in the older children within the six to nine year old age group.

With the foregoing in mind, it is a primary object of the present invention to provide a moving vehicle type toy for children ideally suited to an age range from six to nine in which the degree of skill required to use the vehicle lies between that necessary for a tricycle and that necessary for a bicycle.

More particularly, it is an object to provide an improved toy scooter which is stable by itself and will remain upright when not in motion and yet may be propelled by appropriate shifting of the user's weight on the scooter in a manner similar to that used to propel a bicycle if only a single pedal were available.

A more general object of this invention is to provide an improved scooter type toy which is somewhat different from conventional tricycles or bicycles, thereby providing a novel challenge to children at an intermediate age between those using exclusively tricycles and bicycles.

Other objects of the invention are to provide an improved scooter which is rugged in construction and relatively economical to manufacture.

Briefly, these and other objects and advantages of this invention are attained by providing a conventional type scooter footboard terminating at its rear end in a pair of wheels. The wheels are co-axial and spaced apart a distance corresponding substantially to the width of the footboard so that a degree of balance and stability is provided and the scooter structure will remain upright even when stationary. The front portion of the footboard terminates in a conventional single wheel and suitable steering mechanism therefor. The pair of rear wheels themselves are eccentrically mounted to the rear portion of the footboard in such a manner that rotation of the wheels will cause the end portion of the footboard to move up and down swinging generally about the front steering wheel as a pivot.

In operation, the user, by shifting his weight up and down, can "pump" the footboard in such a manner as to maintain the rear wheels in rotating motion and thus propel himself over the ground. In this connection, the footboard is of sufficient width to accommodate both feet of the user which move simultaneously to effect the pumping action as opposed to alternate movement as in the case of a bicycle.

A better understanding of the invention will be had by now referring to one embodiment thereof as illustrated in the accompanying drawings, in which:

FIGURE 1 is an overall perspective view of the improved scooter of this invention; and,

FIGURE 2 is a side elevational view of the scooter together with a phantom line representation thereof useful in explaining the operation of the invention.

Referring first to FIGURE 1, the scooter includes a footboard **10** terminating at its rear end portion in a pair of wheels **11** and **12** co-axially aligned as shown. Preferably, the distance between the wheels **11** and **12** as indicated by the letter *d* corresponds substantially to the width *w* of the footboard **10**.

The front end portion of the footboard **10** terminates in a steering means which may take the form of a simple steering trunnion **13** receiving a steering column **14**. The lower end of the steering column **14** terminates in a support means **15** in the form of a yoke rotatably mounting a single front wheel **16**. The upper end of the steering column **14** in turn terminates in a simple steering handle **17**.

In accordance with an important feature of the invention, the pair of rear wheels **11** and **12** are coupled to the end portion of the footboard **10** by novel coupling means comprising a shaft **18** and link members **19** and **20**. The link members **19** and **20** are coupled to opposite ends of the shaft **18** and have their other ends rigidly secured to the centers **21** and **22**, respectively, of the wheels **11** and **12**. By this arrangement, the wheels **11** and **12** are eccentrically mounted with respect to the axis of the shaft **18**. The spacing between the axis of shaft **18** and the axis of the wheels is indicated at *r* and is equal to about one-third the radius of the wheels.

Referring now to FIGURE 2, the operation of the improved scooter of this invention will be evident. Assume first that the scooter is in the dotted or phantom line position shown in FIGURE 2 wherein the numerals described heretofore are primed. In such position, the shaft **18'** and corresponding link **19'** connecting to the wheel **11'** are in a position such that if the user places his weight on the footboard **10'**, a component of rotative force will be developed to rotate the wheel **11'** in the direction of the arrow. This motion of the wheel **11'** will bring it to the solid line position shown at **11** in FIGURE 2 at which time the shaft **18** and link **19** will be carried beyond their lowest point by momentum. If the user pumps up and down on the footboard **10**, his inertia can be made to correspond with the period of rotation of the wheel **11** such that the momentum imparted to the vehicle during the downward movement of the footboard **10** will be sufficient to carry the shaft **18** and link member **19** upwardly and to their initial position illustrated in phantom lines. Thus, the user need only shift his weight in an up and down motion to propel the scooter. This action effectively swings the footboard **10** in an up and down manner about the front wheel **16** as a pivot.

From the foregoing description, it will be evident that the present invention has provided a rugged and simple toy scooter structure. By employing the pair of rear wheels as described, the scooter will stand in an upright position even when stationary, and thus its use by children towards the lower end of the age range for which the device is designed is not difficult and does not require intricate balancing. The invention thus provides an ideal intermediate motion type vehicle for children too old for a tricycle and too young for a bicycle.

Minor modifications may be made in the structure without departing from the scope and spirit of the invention. Therefore, the improved scooter is not to be though of as limited to the exact embodiment shown.

What is claimed is:

A scooter comprising, in combination: an elongated footboard; a pair of rear wheels in side-by-side coaxial relationship, said wheels being axially separated by a distance corresponding substantially to the width of said footboard; a shaft rigidly mounted to the rear end portion of said footboard, the axis of said shaft being parallel to and spaced from the axis of said wheels a distance approximately equal to one-third the radius of said wheels; links having first ends connected to the ends of said shaft and second ends rigidly connected to the centers of said wheels so that said wheels are eccentrically mounted with respect to said axis of said shaft; and a single forward steering wheel and steering means mounted to the front

end portion of said footboard, whereby forward motion of said scooter causes said rear portion of said footboard to swing upwardly and downwardly in a vertical plane about said front steering wheel as a pivot.

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