June 12, 1928. 1,673,774

A. MOORE

GYRAL WHEEL

Original Filed Aug. 22, 1922 2 Sheets-Sheet 1

Fig 1

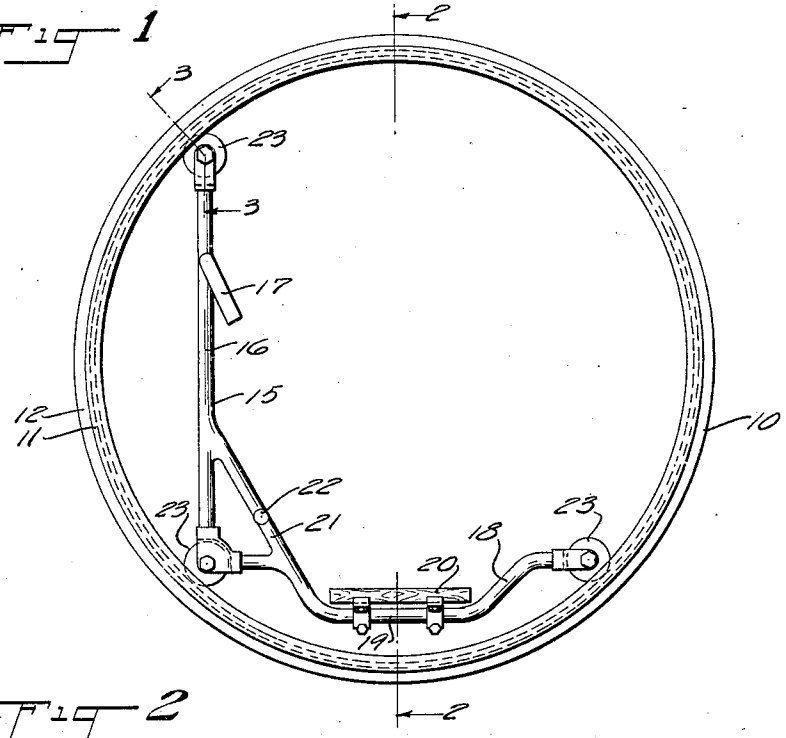


Fig 2

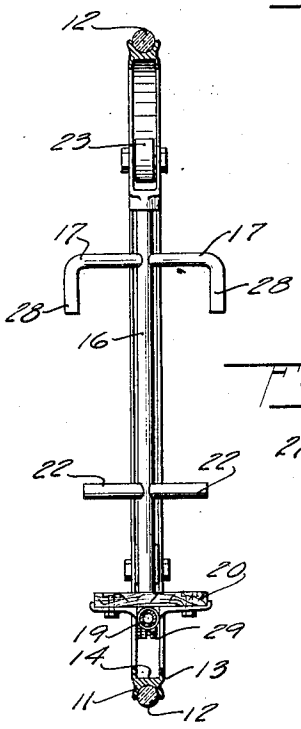


Fig 3

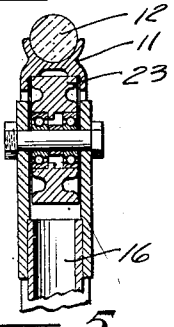


Fig 4

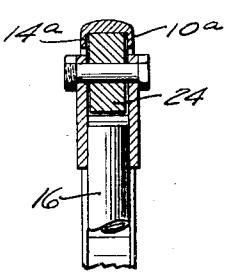
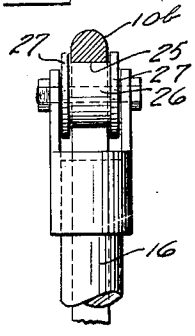


Fig 5



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June 12, 1928. 1,673,774

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GYRAL WHEEL

Original Filed Aug. 22, 1922 2 Sheets-Sheet 2

Fig 6

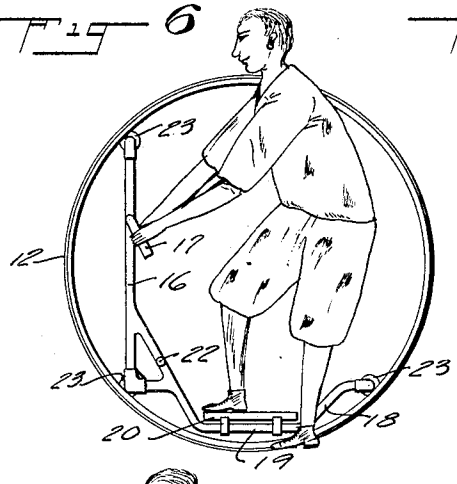


Fig 7

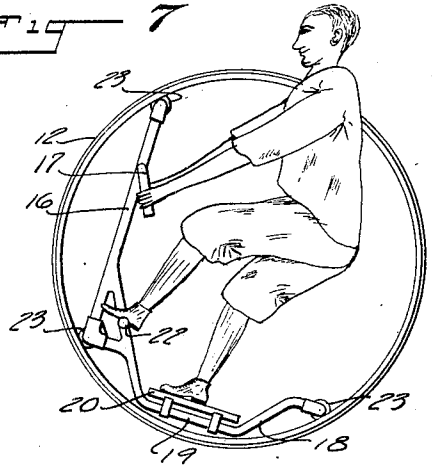


Fig 8

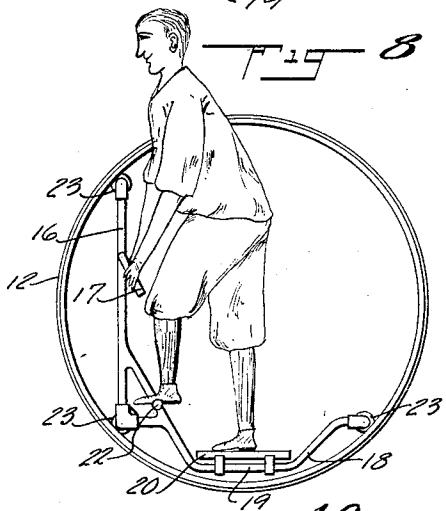


Fig 9

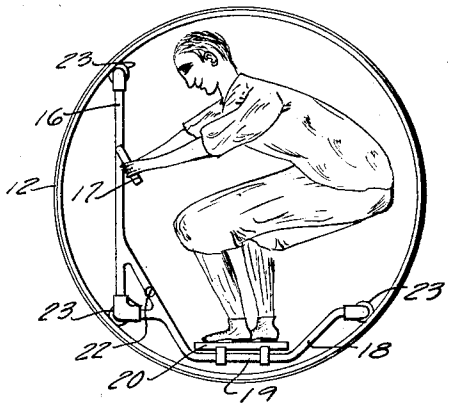
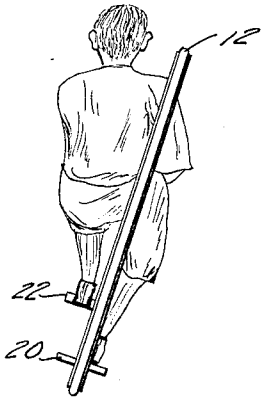


Fig 10



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Patented June 12, 1928. 1,673,774

UNITED STATES PATENT OFFICE.

ARLINGTON MOORE, OF NEW YORK, N. Y., ASSIGNOR TO MOORE INVENTIONS CORPORATION, OF WORCESTER, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS.

GYRAL WHEEL.

Application filed August 22, 1922, Serial No. 586,637. Renewed May 27, 1927.

My invention relates to what I prefer to call a gyral wheel to be used for sport and exercise, principally by children.

According to my invention a wheel or rim is provided with an open center, and a circular track is provided therein. An open framework is mounted to turn in the wheel, as upon rollers, and said frame is provided with a footsupport or footsupports and a handle or handles, so that the user may support his weight within the frame, and, holding to the handle or handles, may propel himself together with the wheel, as by pushing with one foot upon the roadway or by alternately throwing his weight backward and forward, or in other ways.

When the user is in erect position, the device is usually so held that the upper part of the wheel passes over the user's shoulder, but when coasting the user may stoop so that the upper part of the wheel passes over his head. The device may be used by two persons standing with one foot each upon the footsupport, each holding to a handle upon opposite sides of the frame, and may be used for sport and exercise in a great variety of ways.

Embodiments of the invention, selected for the purpose of illustration only, and not for limitation, are shown in the accompanying drawing. Fig. 1 is a side view. Fig. 2 is a cross-section on the line 2—2, Fig. 1. Fig. 3 is a section on the broken line 3—3, Fig. 1. Figs. 4 and 5 are cross-sectional detail views showing modified forms of track and roller constructions. Fig. 6 illustrates the device with a user in starting position about to shove off. Figs. 7 and 8 are views showing the device with the user throwing his weight back and forward respectively. Fig. 9 illustrates the coasting position, the user crouching within the wheel, and Fig. 10 is a rear view showing how the upper part of the wheel passes over the shoulder of the user when the latter is in erect position.

The open center wheel is designated generally by reference numeral 10, and while the diameter of the opening in the center may be substantially smaller than the diameter of the wheel, it is preferably made as large as possible, the wheel comprising merely a rim which may be provided on the outside with a tire or other wearing surface, and on the inside with a track for the frame rollers to run in.

In the form shown in Figs. 1, 2 and 3 the wheel rim is made of double channel section comprising an outer portion 11 having a rounded groove for the reception of the rubber or other tire 12, and an inner channel 13 provided with a groove 14 for receiving the frame rollers and providing a track for the rollers to run in. The frame, which is adapted to turn within the open space in the wheel, may be of various forms. I have shown a frame 15 of substantially L-form comprising the usual upright portion 16 to which the handles 17 are secured, and the portion 18 preferably at right angles thereto having a depressed center portion 19 to which the footsupport 20 is secured. The frame is made of any suitable material, as, for example, from welded pipe or tubing as in the manner of the ordinary bicycle frame, and is preferably suitably braced as by means of the angle brace 21, which is shown as being provided with footrests 22, 22.

Frame 15 is provided with rollers 23 to run in the track 14. In the form shown there are three of these rollers, one at each of the outer ends of the frame members 16 and 18, and the other one at the intersection of these members. The rollers are preferably of the ball bearing type as shown in Fig. 3, but plain rollers may be used as shown in Fig. 4.

In the modified form of Fig. 4, the rubber or other separate tire is dispensed with and the metal frame 10^a runs directly on the roadway, the rollers 24 running in the grooved track 14^a.

The rim 10^b of the modified form illustrated in Fig. 5 is made flat on its inner side as shown at 25, and the rollers 26 are provided with flanges 27, 27 in order to keep the rollers in place within the wheel, and various other formations of rollers and tracks may be resorted to, if desired.

The handles 17 are preferably provided with downwardly extending portions 28 to enable the user to hold on to the handles when hanging out to one side, as, for example, in turning corners and the like. The footsupport 20 is preferably bolted on the frame member 19, as shown at 29, Fig. 2, to afford a frictional mounting for the foot support 20, so that same, while normally

assuming the position shown in Fig. 2, may be turned to one side or the other in use against the frictional resistance of its bolted-up mounting, to enable the support to be tilted to one side or the other as when turning a corner or the like, or may be made use of in various ways in the operation of the device, according to the needs or whim of the user.

In making use of the device, propulsion may be effected in various ways, as by standing on the frame with one foot and stepping or striking with the other foot on the roadway, or the user may stand with one foot on the footsupport 20 and the other on the footrest 22 and propel the apparatus or keep it in motion by shifting his weight alternately backward and forward, thus causing the frame to take up different positions in the wheel 10 as the same is rocked therein.

While the frame is ordinarily held in slightly tilted position so as to cause the upper portion of the wheel to pass over the shoulder of the user standing in erect position, as when striking the ground with his foot or otherwise effecting propulsion of the apparatus; when coasting the user may take a stooping position, so that the wheel stands upright, the upper portion passing over the user's head. The two sides of the apparatus being preferably identical, the device is well adapted for use by two persons, one on one side and one on the other, and having the right and left foot respectively on the footsupport 20. The uses referred to are, of course, by way of example merely, and it will be obvious that the device may be made use of for purposes of exercise and sport in a great variety of different ways.

I claim:

1. In a device of the class described, a wheel with an open center, a circular track within the wheel, a substantially L-shaped frame provided with rollers to run in said track, one of the members of the L-shaped frame having a footsupport frictionally and pivotally mounted thereon so that it is adapted to be turned from side to side, the other member of the frame being provided with a handle, and a brace connecting the two members of the frame and the footrest on the brace.

2. In a device of the class described, a wheel having an open center and having a circular track in its open interior, a substantially L-shaped frame in said wheel and provided with a plurality of rollers running in said track, a footrest having a pivoted frictional mounting on the lower member of said frame, a pair of handles on the other member of said frame, a brace connecting the two frame members, and a pair of footrests one on each side of said brace.

In testimony whereof, I have signed my name hereto.

ARLINGTON MOORE.