Feb. 15, 1966 C. W. GRANT 3,235,252

OCCUPANT PROPELLED CYCLING APPARATUS

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Fig. 1

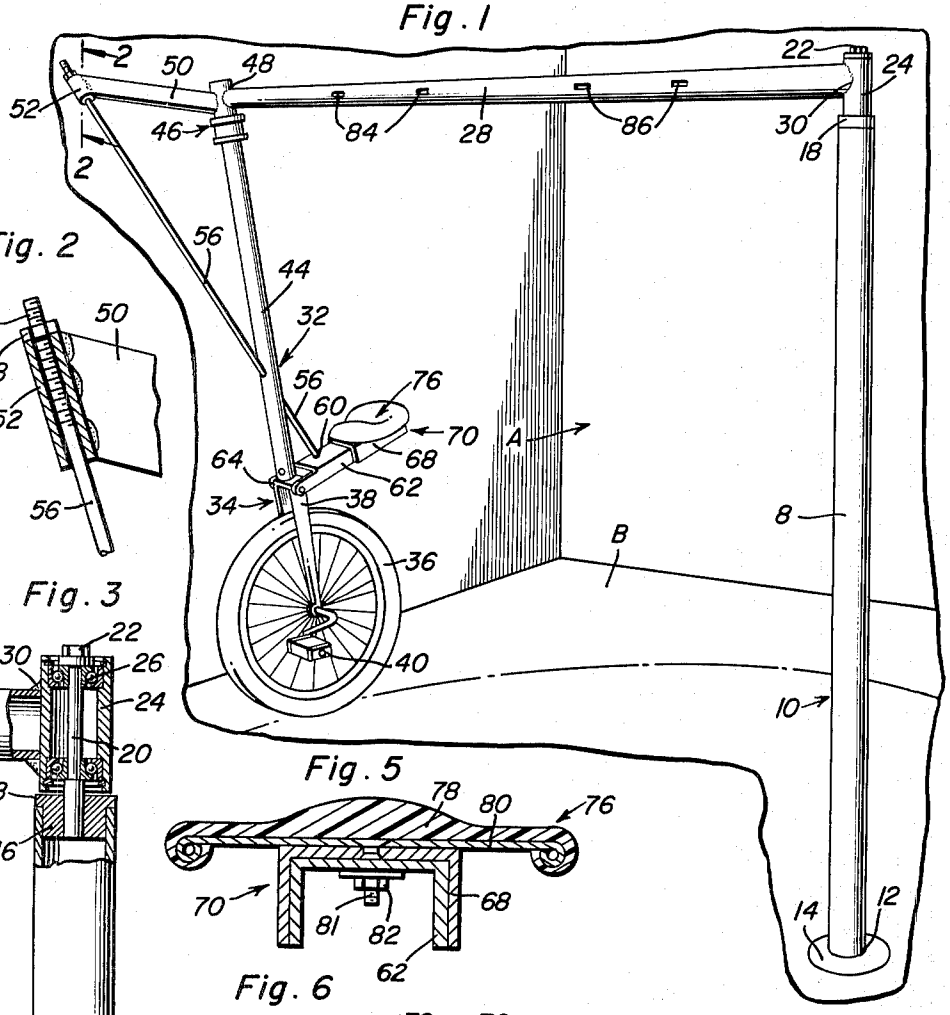


Fig. 2

Fig. 3

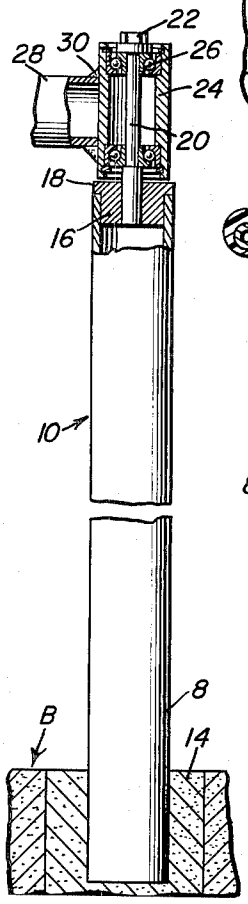


Fig. 5

Fig. 6

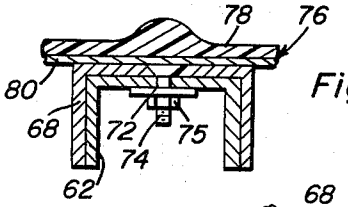


Fig. 4

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OCCUPANT PROPELLED CYCLING APPARATUS

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The present invention relates to an apparatus which is primarily, but not necessarily, functionally designed and structurally adapted for use indoors by youngsters, say from four to ten years of age and wherein the same embodies practical facilities which, when properly used, provoke fun and merriment and, what is also important, promote health and strength as a result of the exercise of muscles, limbs and arms.

While the apparatus was devised to provide a practical exercising structure for hanicapped youngsters and for use in the basement of the home, it will be evident that the construction and mode of use is such that the apparatus lends itself to use in a gymnasium or an equivalent place of recreation and exercise where, of course, the user or occupant can be restrained and kept under supervision.

As will be hereinafter more clearly evident the construction advocated, and which has been experimentally and successfully used, is possessed of the desired simplicity, reliability and featured improvements which, it is submitted, meet with the approval of all concerned.

A general objective is to improve upon a captive mechanical type unicycle or equivalent occupant propelled vehicle (bicycle or tricycle) and, in so doing, to achieve the desired ends, to provide an effective usable reasonably safe adaptation which can be endorsed for handicapped children and who, being exercised by use thereof can benefit physically to the extent of becoming self-serving and readied to cope with life and its difficulties.

Briefly, the apparatus is characterized by a post or standard whose lower end is fixed in a concrete or an equivalent base or foundation in a manner to rise perpendicularly therefrom. The upper end of the standard has an axle or spindle equipped with a free-turning hub or sleeve having suitable antifriction bearings. A substantially horizontal roundabout arm is joined at one end of the hub and travels in a circular path when the required impetus is imparted thereto. At its outer end the arm is provided with a wheeled vehicle (unicycle, tricycle or the like) which in turn is provided with a saddle or an appropriate seat. The occupant of the seat operating the wheel means by cranks or pedals can cause the vehicle to travel in a circular path and to accordingly accomplish the desired roundabout effect.

The invention features a free-turning arm which provides not only a support and traveling member for the vehicle but is, in effect, an exercising bar which can be used for chinning, as a support for swings, and other playground equipment.

The invention also features a simple standard, said standard having a fork or yoke carrying the wheel, said fork being provided with a bicycle-type seat which is pivotally and adjustably mounted.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

FIGURE 1 is a view in perspective showing a fragmentary portion of a basement (or other equivalent playroom, gymnasium or the like) and further showing the apparatus, how the parts are constructed and assembled for use;

FIGURE 2 is an enlarged view in section and elevation taken upon the plane of the line 2—2 of FIG. 1;

FIGURE 3 is a view in elevation and section showing the post or upright and emphasizing the bearing-equipped hub means;

FIGURE 4 is an enlarged perspective view with parts in section and elevation showing the seat means; and

FIGURES 5 and 6 are sections taken on the lines 5—5 and 6—6, respectively, of FIG. 4.

The reference letter A designates the room or other enclosure in which the apparatus is erected for fun and exercising use. For convenience of description, it can be assumed that the room is a basement in the owner's home having, for example, a satisfactorily usable concrete or an equivalent level floor B. The upright means comprises a vertical tubular post or equivalent member 8. This is the chief part of the upright means denoted generally at 10. The lower end 12 is anchored in a concrete or an equivalent base or foundation 14 (see FIG. 3). With reference now to FIG. 3, it will be seen that the post is of appropriate height and a plug or an equivalent fitting 16 is mounted in the hollow top, is provided with a stabilizing flange 18 and is also provided with an axial upstanding spindle or axle 20 having an assembling nut or the like 22 on the upper end. This axle serves to accommodate the hub. More specifically the hub comprises a cylindrical sleeve 24 which encircles the axle and is assembled and held in place in the manner shown and which is provided interiorly with appropriate ball bearings 26. The elevated roundabout arm comprises a tubular or an equivalent member 28 of appropriate length which has one end welded or otherwise fixed as at 30 to the hub. This arm is, of course, at an appropriate height and generally parallel to the floor and is of a suitable length depending on the available space in the room A. The vehicle which is used as the occupant controlled and propelled means is designated at 32.

As suggested the vehicle or equivalent wheeled device may, of course, take the form of a bicycle but for convenience it is here illustrated as a unicycle. The fork is denoted at 34 and the fork arms straddle and support the rubber tired or equivalent single wheel 36. The fork arms are denoted at 38 and the pedal-equipped crank means at 40. The stud of the fork is denoted (see FIG. 4) at the top as at 42 and the lower end of the vertical elongated reach tube or standard 44 is suitably connected thereto.

The upper end of the reach tube is provided with appropriate head means generally denoted at 46 and to which the outer end portion 48 of the aforementioned roundabout arm 28 is connected. This head supports an outstanding adapter arm 50 terminating in its outer end in a small appropriately angled sleeve 52 to which the upper screw-threaded end 54 of a rod type seat adjusting link 56 is connected. The upper threaded end passes through the bore of the sleeve and beyond it and is provided with an assembling and retaining nut 58. A lock nut (not shown) may be employed here if desired. The lower end portion of the adjusting link or rod is denoted at 60 in FIG. 4 where it is loosely connected to an inward channel member 62 which constitutes one of the seat supporting and adjusting members. More specifically, this member 62 has ears 64 which straddle the fork arms 38 and are pivotally connected thereto at 66. A second channel-shaped member 68 is provided and it is fitted telescopically over the member 62 and these two channel members, acting together, provide adjustable seat-support means 70. One of the members, the member 62, is provided with an elongated slot 72 to accommodate a bolt or equivalent fastener 74 which is used for assembling and joining the members 62 and 68 to each other. The saddle or equivalent occupant-seat is denoted generally at 76 and it is suitably contoured as at 78 and fixedly mounted on a plate or equivalent backing 80 which in turn

is appropriately fixed to the adjustable channel member 68. The construction preferably embodies the aforementioned stud or bolt 74 having assembling and clamping nut means 75 as shown in FIG. 6, for example. The same type of connection, bolt 81 and nut 82 may be provided for anchoring the seat plate 80.

Returning to the arm 28 it may be provided with paired slots 84 and 86 for the attachment thereto of swing ropes (not shown) or equivalent gymnasium equipment which is conventionally hung from an arm, bar or the like. In fact, the arm can be used for a chinning bar and other exercising and fun-provoking purposes.

It will be evident that the nut 58 can be tightened to pull up on the diagonally inclined link or rod 56 which in turn will lift the seat means, swing it on the hinges or pivot points 66 whereby to thus incline the occupant's seat. It should be noted that the median portion of the linking rod 56 is freely slidable through appropriately aligned adjusting holes provided therefor in the median portion of the tubular standard 44. The major portion of the rod in front of the standard is relatively long and a minimal portion of the lower end portion of the rod is disposed on the rearward side of the standard. In practice, the guide holes in the standard are sufficiently large to permit free sliding action of the rod 56 relative to the standard 54 in a manner to allow the seat supporting channel members (the means 70 as a unit) to be properly adjusted. The occupant can adjust the seat toward and away from the pedals and can use the pedals to propel himself in a guided path around the post 8. It is obvious that an apparatus of the type under consideration can and will be used by different users in many and varied ways. Under the circumstances no effort will be made here to dwell upon the manner in which an instructor would employ it for a given rehabilitation need.

It is submitted, too, that the specification in conjunction with the drawings and the invention as claimed will enable the reader to obtain a comprehensive understanding of all significant aspects of the concept. Therefore, a more lengthy description is believed to be unnecessary.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the invention as claimed.

What is claimed as new is as follows:

1. A supporting, seating, occupant-propelled exercising and therapy apparatus primarily for use by handicapped youngsters requiring rehabilitation comprising: a vertically elongated rigid post having a lower end fixedly anchored in a stationary foundation having a generally flat surface, said post rising perpendicularly from said surface and being of a predetermined height with its upper end terminating in a plane well above the heads of the contemplated users, a horizontally elongated arm providing a beam, said arm being adapted to travel in a circular path parallel to said foundation and also in a plane corresponding to the plane of the upper end of said post, the inner end of said arm having hub means secured to said upper end and rotatable on a vertical turning axis, a vertical standard fixed at its upper end to the outer end portion of said arm and depending therefrom, said standard being tubular, the lower end of said standard providing an axial socket member, a wheel mounting fork, a crank and pedal-equipped wheel operatively mounted between and straddled by the arms of said fork, the upper end of said fork providing a bight portion and being provided with a fixed rigid upstanding stud fitting telescopically into the socket member at the lower end of said standard and being secured to said standard, forward and rearward channel members having adjacent ends telescopically and adjustably connected together, said forward channel member being bifurcated and the furcations straddling the upper end portions of the arms of said fork and being pivotally joined thereto, a saddle-type seat detachably mounted atop the web portion of the rearward one of said channel members, a diagonally disposed rod having a median portion slidingly connected with a median portion of said standard, having a lower end portion connected with the forward channel member, a forwardly projecting brace arm connected at a rearward end to the upper end of said standard, said arm being at right angles to the axis of said standard, and means on the leading end of said brace arm with which the upper end of said rod is detachably and adjustably connected.

2. A supporting, seating, occupant-propelled exercising and therapy apparatus primarily for use by handicapped youngsters requiring rehabilitation comprising: a vertically elongated rigid post having a lower end fixedly anchored in a stationary foundation having a generally flat horizontal surface, said post rising perpendicularly from said surface and being of a predetermined height and having an upper end terminating in a plane well above the heads of the contemplated users, a horizontally elongated arm providing a beam, said arm being adapted to travel in a circular path parallel to said foundation and also in a plane corresponding to the plane of the upper end of said post, the inner end of said arm having hub means secured to said upper end and rotatable on a vertical turning axis, a vertical standard fixed at its upper end to the outer end portion of said arm and depending therefrom, said standard having a wheel mounting fork affixed to a lower end of said standard, a crank and pedal-equipped wheel operatively mounted between and straddled by the arms of said fork, an occupant's seat, extensible and retractible channel members adjustably joined to each other, a forward one of said members being bifurcated and the furcations straddling and being hingedly joined to an upper portion of said fork, said seat detachably mounted atop the web portion of the rearward one of said channel members, a seat angling and adjusting link comprising a rod having a median portion slidingly mounted in a median portion of said standard and having a lower end connected to one of said channel members and also having adjusting means at its upper end connected to the upper end portion of said standard by an interconnecting auxiliary arm joined to said upper end.

3. In an apparatus of the class described, in combination, a wheel having axially mounted crank supported pedals, a fork having arms straddling said wheel and cooperable with their respectively associated pedals, a vertically elongated standard having a lower end connected to and extending upwardly from said fork, a median portion of said standard being provided with aligned guide holes, a stabiliziing rod diagonal to and located primarily in front of said standard and having a median portion slidingly mounted through said guide holes and a major upper portion disposed in front of a cooperating front side of said standard and having a minimal lower end portion diametrically opposite thereto and disposed on the rearward side of said standard, a brace arm lateral to and connected at a rearward end to the upper end portion of said standard and having a free forward end provided with an oblique angled sleeve, the upper end of said rod passing slidingly through said sleeve and being screw-threaded and provided with an adjusting nut resting atop said sleeve, and occupant seating means pivotally mounted on said fork, the lower end of said rod being operatively connected to a cooperating part of said seating means.

4. The structure defined in claim 3 and wherein said seating means comprises telescoping extensible and contractible channel members, the forward one of which is hingedly mounted on said fork and the rearward one of which is provided with a saddle-type occupant seat.

5. The structure defined in claim 4 and, in combination,

support means for said standard and wheel comprising a fixed vertically elongated post, a horizontally elongated arm having hub means at an inner end rotatably connected to the upper end of said post and permitting said arm to travel in a 360° circle, and means provided on the outer end of said arm and connecting said outer end to the upper end of said standard, said standard being substantially parallel to said post and depending at an approximate right angle from the horizontality of said arm.

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