Feb. 18, 1936. J. H. STEVENSON 2,031,015

CHILD'S WHEELED VEHICLE

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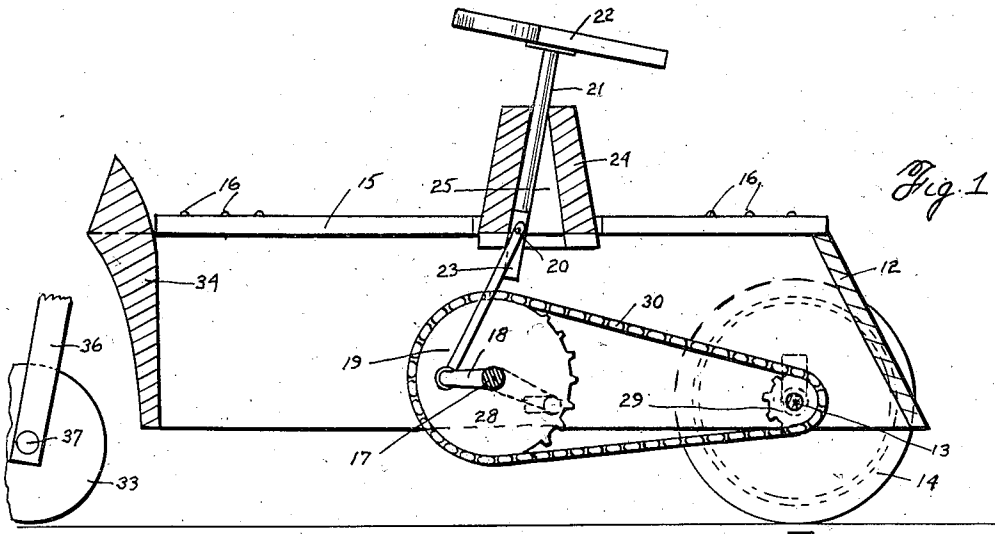


Fig. 1

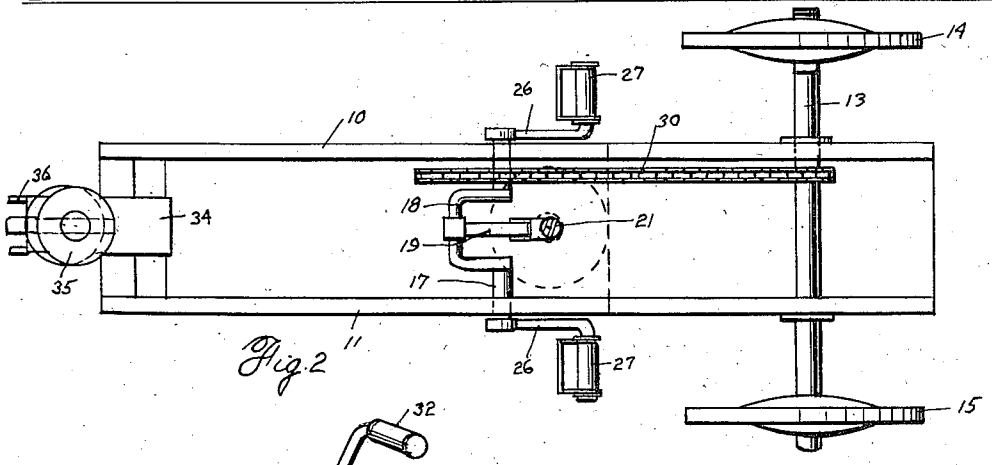


Fig. 2

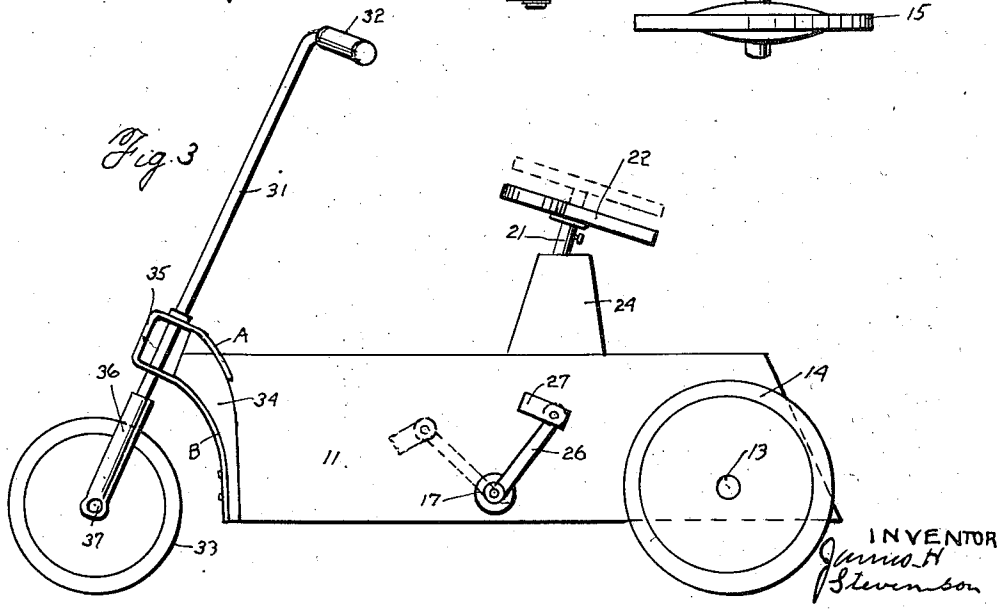


Fig. 3

INVENTOR
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Fig. 5

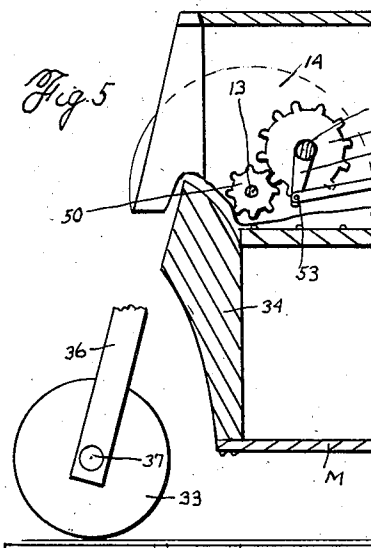


Fig. 4.

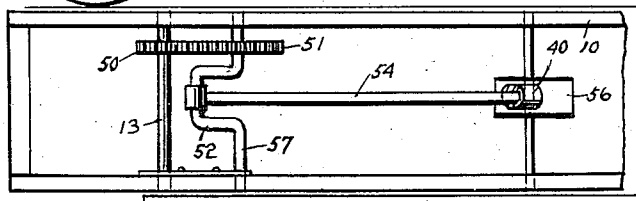


Fig. 6

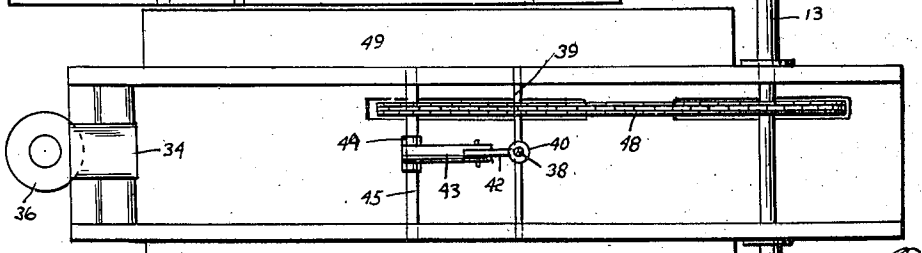


Fig. 7

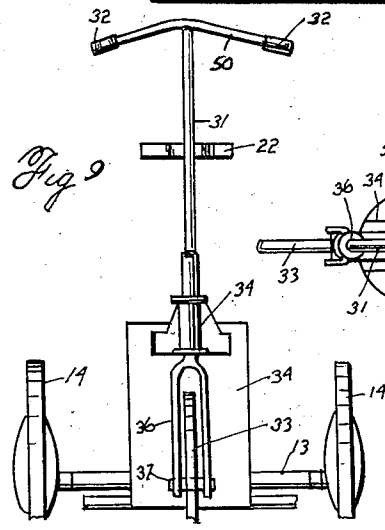


Fig. 9

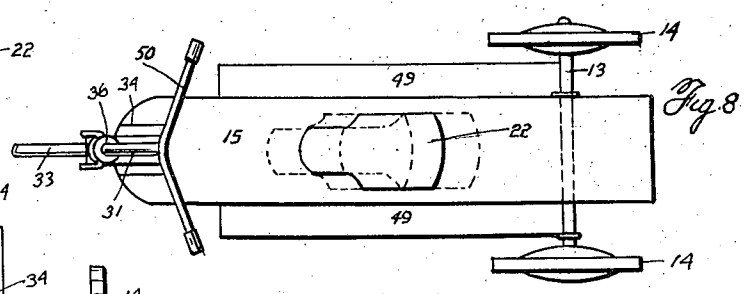


Fig. 8

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2,031,015

UNITED STATES PATENT OFFICE

2,031,015

CHILD'S WHEELED VEHICLE

James H. Stevenson, Los Angeles, Calif.

Application September 19, 1934, Serial No. 744,659

6 Claims. (Cl. 208—32)

This invention relates to improvements in toys and more particularly to vehicles for children.

The main object of the present invention is to provide a simple, efficient and inexpensive vehicle for children designed to stimulate in the child operating the same a healthy muscular condition of the body and to bring into use all the faculties of the child for wholesome recreation.

The conventional toy vehicles designed for children particularly toy scooters, velocipedes and similar arrangements are at fault when considered from the standpoint of physical culture for the child; the leg muscles alone are exercised in the course of foot-pedaling the vehicle, while other muscles lie dormant. Children as a general rule to not exercise themselves properly when at play. In order to provide a type of vehicle which is designed primarily to exercise most muscles of the body I have devised the present invention.

A further object of this invention is to provide a vehicle so shaped, constructed and designed that it is propelled by a body movement of the child which exercises all of the back muscles, leg muscles, muscles of the arm, of the neck and other parts of the body, including the abdomen. The operation of this type of vehicle by the child produces a movement forwardly of the machine and a swaying movement of the body of the child, at the same time, so that it will readily be seen that the physical culture value of the vehicle is stressed keenly.

Another object of this invention is to provide a vehicle for children in which the seat is given a fore and aft movement as the vehicle is propelled forwardly so that the torso of the child's body undergoes a wide range of muscular movements in the act of vehicle propulsion. As a result of the operation of this vehicle it will be seen that it is inevitable for the child to be in a fit physical condition after using the vehicle for a short period of time, thereby bringing about a healthy invigorating condition in the child as a result of mere play.

A still further object of this invention is to provide a vehicle in the nature of a velocipede which is propelled by the seat portion of the vehicle instead of by means of crank pedals which is the usual method.

Another object of this invention is to provide a velocipede which provides an up and down movement of the seat thereof for the purpose of stimulating muscular activity of the child's body.

A further purpose of this invention is to coordinate the operation of the foot pedals of a velocipede with the seat movements thereof so as to cause the seat to reciprocate as the vehicle moves forwardly or backwardly.

Another purpose of this invention is to provide a vehicle which has running boards upon which the feet of the child rider can rest while other portions of the child's body motivate and operate the propulsion mechanism of the vehicle.

A final object of the present invention is to provide a three wheeled vehicle with steering mechanism for exercising the muscles of the hands of the rider, and seat operating mechanism acting in time with the propulsion mechanism of the vehicle for exercising other parts of the child's body so that as the vehicle is put into use progressively the rider experiences physical activity.

With the above and other objects in view my invention consists in the combination, arrangement and details of construction disclosed in the drawings and specification, and then more particularly pointed out in the appended claims.

In the drawings, in which similar reference numerals designate similar parts throughout the respective views,

Figure 1 is a sectional longitudinal view of one form of my invention, some parts appearing fragmentarily,

Figure 2 is a top plan view of the vehicle shown in Fig. 1 some parts appearing fragmentarily.

Figure 3 is a side elevation of the form of vehicle shown in Figure 1,

Figure 4 is a longitudinal sectional elevation of a different form of vehicle devised by me, some parts appearing fragmentarily,

Figure 5 is a fragmental sectional view of a still different form of my invention,

Figure 6 is a fragmental sectional plan view of the form of vehicle shown in Figure 5, the top board of the vehicle being removed,

Figure 7 is a top plan view of the form of vehicle shown in Figure 4, the top board and front board not being shown, and certain parts of the steering mechanism not being shown,

Figure 8 is a top plan view of the vehicle shown in Figure 4, and

Figure 9 is a front elevation of the vehicle shown in Fig. 4, some parts appearing fragmentarily.

I have found after considerable experimentation that a vehicle in the nature of a child's velocipede can be constructed in such a manner as to be a source of pleasure from a recreation

standpoint and also a source of physical betterment for the child at the same time. I find that the seat of the vehicle is that part which can be made to conduce most towards a fitting physical stimulation of the muscles of a person's body when movement is imparted to the seat and to the rider's body resting thereupon or vice versa.

In the present drawings I illustrate various forms of vehicles in which the physical culture idea of vehicle propulsion is carried out. One form of such invention will now be described and reference will particularly be made to Figures 1, 2 and 3. The main body portion of the vehicle is box-like in construction and is hollow inside and has opposing side walls 10 and 11 and the inclining rear wall 12; this box is open at the bottom if desired. There is a rear shaft axle 13 designated to be rotated as hereinafter set forth. At the ends of this shaft axle are a pair of tired wheels 14 fixed to turn therewith. There is a top plate 15 which closes the box here and is removably secured by means of suitable fasteners 16 to the top of the box. There is a crank shaft 17 mounted inside of the box slightly to the rear of the center thereof, whose ends are operatively journaled in the side walls 10, 11 of the box, the crank proper thereof being designated 18. A pitman 19 is pivotally connected at one end to the crank 18 and extends upwardly so that its other end may be connected to a seat 22, and particularly to a depending post or rod 21 to which the seat is secured. The lower portion of the post is bifurcated or forked and here is located a pin 20 which serves as the means of connecting the post 21 to the connecting rod or pitman 21.

There is secured rigidly upon the top cover plate 15 of the vehicle a guide rest 24 whose internal bore is conical and tapers upwardly so that the post 21 is free to swivel in this bore in a manner soon to be described. At the ends of the crank shaft 17, outside of the frame or box of the vehicle are fixed a set of crank pedals, the cranks being designated 26 and the pedals 27 thereof, being of usual construction. Inside of the box is a sprocket 28 fixed upon the crank shaft 17, and fixed upon the rear shaft axle 13 is another sprocket 29, and a chain 30 is trained upon both sprockets 28 and 29 respectively so that when the crank shaft 17 is actuated the rear wheels 14 will turn to propel the vehicle.

At the front end of the machine is a steering post 31 carrying the usual handle bars 32 of a velocipede. At its lower end this post is operatively journaled in a member 35 being shaped from a metal strap and arranged as shown in Figure 3. This metal strap has one end secured upon the front piece 34 of the machine, its intermediate portion doubled upon itself to provide a U-shaped part 35 through the arms of which the post 31 projects, and the lower portion of the metal strap is secured to the incurvate portion of the front of the machine. At the lower end of the post 31 is a fork 36 which straddles the steering wheel 33 of the machine when actuated by the handle bars 32 held by the operator of the machine. The axle 37 for the steering wheel is mounted in the fork 36.

I refer now to the construction of parts of a changed vehicle illustrated in Figures 4, 7, 8 and 9 respectively. In this new form of vehicle I endeavor to show that the seat instead of moving up and down has a to and fro swaying action. The box and main body portion of the machine is the same as in connection with the vehicle already described. The box is hollow interiorly and has a bottom M cut away so as to provide a slot N therein. The seat 22 of approved construction carries a depending post 38 which is adjustably fitted into a sleeve 40 and locked adjustably into the latter by means of a set screw 41; this sleeve is mounted upon a pivot pin 39 fixed upon the side walls 10 and 11 of the main box body of the vehicle. Secured rigidly at right angles to the lower end of the sleeve 40 is an arm 42, which may be forked out at one end and pivotally secured to a lever 43 which in turn is pivotally secured upon a crank 44 upon a crank shaft 45 whose opposing ends are secured to the side walls 10 and 11 of the machine. The top board or plate 15 of the machine has a suitable slot P in which the sleeve 40 may swivel. Fixed upon the crank shaft 45 is a sprocket 46, and fixed upon the rear shaft axle 13 is a larger sprocket 47, and there is a sprocket chain 48 which is trained upon both sprockets at the same time whereby when the crank shaft turns the chain will impart motion to the rear wheels.

The construction of the steering wheel mechanism of the vehicle is the same as that described in connection with the type of vehicle already illustrated in Figures 1, 2, etc. There is a still further type of vehicle which supplies different mechanism for propelling the vehicle shown in Figures 4, 7 and 8.

Instead of the direct chain drive from the crank shaft to the rear drive shaft or axle of the machine I now describe a combination of parts which will more efficiently answer the same purposes. Reference will now be had to Figures 5 and 6.

The seat with its post and pivoted sleeve 40 are constructed in the same way illustrated in Figure 4. The pitman 54 is pivoted at one end to this sleeve, and its opposite end is pivoted directly to a crank 52 fixed upon a crank shaft 57 whose opposing ends are journaled in the side walls 10 and 11 of the vehicle. Fixed so as to rotate on this crank shaft is a small sprocket 51, which meshes with a smaller sprocket 50 fixed upon the drive axle 13 of the vehicle. Therefore a more positive drive connection is provided for propelling the rear wheels 14 of the machine than the chain drive set forth herein.

In operation when it is desired to propel the type of vehicle shown in Figure 1 it is accomplished as follows. The child is seated upon the seat 22, with his feet upon the pedals 27 of the propulsion mechanism. As the pedals are caused to turn the crank shaft 17 the crank 18 actuates the pitman or pusher 23 which in turn lifts and lowers the post 21 which carries the seat so that the child is lifted and lowered successively at the same time that the vehicle is moved forwardly. The child can himself accelerate the propulsion of the machine by his up and down bodily movement upon the seat concurrently with manipulating the pedals of the foot control for same.

In order to propel the type of vehicle shown in Figures 4, 7, and 8 as well as 9 the child will occupy the seat 22, with his feet idle upon the running boards 49 of the vehicle and by working the seat 22 back and forth, or to and fro reciprocatingly he actuates the crank shaft 45 and turns the same so that by means of the sprockets and sprocket chain the rear drive axle turns and so do the wheels 14 for propelling the vehicle. As the sleeve swings upon the pin 39 it pushes

forwardly in a cycle of movement a rigid arm 42, which has a swivel connection with the crank 44 of the crank shaft so as the sleeve swivels back and forth the crank completes one revolution and so in this manner the vehicle is propelled efficiently.

The construction of parts shown in Figures 5 and 6 permits the same swivelling to and fro action of the seat 22 and sleeve 40 to take place because it is evident that as the sleeve is propelled back and forth by the body of the driver that it actuates the pitman 54 which in turn actuates the crank 52 so that sprocket 51 turns and as it meshes with sprocket 50 the latter turns with it and in this way it will be seen that the rear driving axle and shaft turns continuously as the sleeve 40 is worked back and forth.

From the foregoing it will readily be seen that no matter which form of vehicle or velocipede is used the child propelling the same undergoes muscular activity in a manner not now permitted where the conventional velocipede is used. For as the seat rises and falls the center of gravity of the child is shifted and every muscle becomes active and removes tediousness and promotes exercising. Where the seat moves to and fro this motion serves to transmit propulsion to the vehicle and the body of the rider is again rendered active in point of muscular exercising. I do not confine myself to the exact details of construction save as pointed out in the appended claims.

What I desire to claim and seek Letters Patent on is:—

1. A vehicle consisting of a main box frame, a rear axle shaft a pair of traction wheels on the rear axle shaft, steering mechanism connected to the front of the box frame including a steering post with handle bars, a crank shaft between the ends of the main box frame, crank pedals for operating the crank shaft, to turn the latter, a driver's seat, a post supporting the seat, means for guiding the movement of the post, and means actuated by the crank shaft for moving the post up and down to successively raise and lower the seat.

2. A vehicle consisting of a box-like main frame, a steering column at its front, handle bars on the column, a steering wheel at the lower part of the column, a crank shaft extending transversely in the frame, crank pedals on the crank shaft outside the box frame for rotating the crank shaft, a tubular bearing rigidly fixed upon top of the frame and having a conical upwardly tapering bore, a post adapted to move up and down in said bearing swivelably, a seat secured on top of the post, and means actuated by the crank shaft for operating said post to reciprocate the seat vertically.

3. A vehicle of the kind described consisting of a box-like frame body, a rear shaft axle connected transversely thereto, traction wheels on the ends of the shaft axle, a steering wheel operatively mounted in front of the frame body, manual means for operating the steering wheel, a seat, a post carrying the seat, means for raising and lowering the post in the frame body, and foot-pedal operated mechanism for actuating the post.

4. A vehicle of the kind described consisting of a box-like frame body, a steering wheel at the front thereof, manual means for operating the steering wheel, a pair of rear traction wheels on either side of the frame body, a seat, a post carrying the seat, means guiding the movement of the post, a pair of rotary foot pedals, and mechanism actuated by the foot pedals and operating the post for moving the same up and down during each rotation of the foot pedals, and means whereby the traction wheels are automatically operated by the foot pedals.

5. A vehicle as described consisting of a vehicle frame body, a rear shaft axle thereon, traction wheels on the axle, a front steering wheel supporting the frame body, manually operative means controlling the steering wheel, a crank shaft in the frame body, means controlled by the crank shaft for turning the traction wheels, a reciprocating post, means actuated by the crank shaft for actuating the post, a seat, means securing the seat upon the post, and means for actuating the crank shaft.

6. A vehicle of the kind described consisting of a box-like frame body, a pair of rear traction wheels, a shaft axle on the body carrying the traction wheels, a crank shaft extending transversely in the frame body, a sprocket on the crank shaft, a sprocket on the rear shaft axle, a sprocket chain trained upon both sprockets, cranks at the ends of the crank shaft carrying foot pedals, a pitman connected to the crank shaft, a vertical post reciprocated by said pitman, a seat secured to the top of the post, and means guiding the post as it moves, and a front wheel manipulatable in steered relationship to the frame body.

JAMES H. STEVENSON.