Feb. 11, 1969 V. MARASCO 3,427,037

VEHICULAR TOY CAPABLE OF SIMULATING A REARING HORSE

Filed Nov. 2, 1966

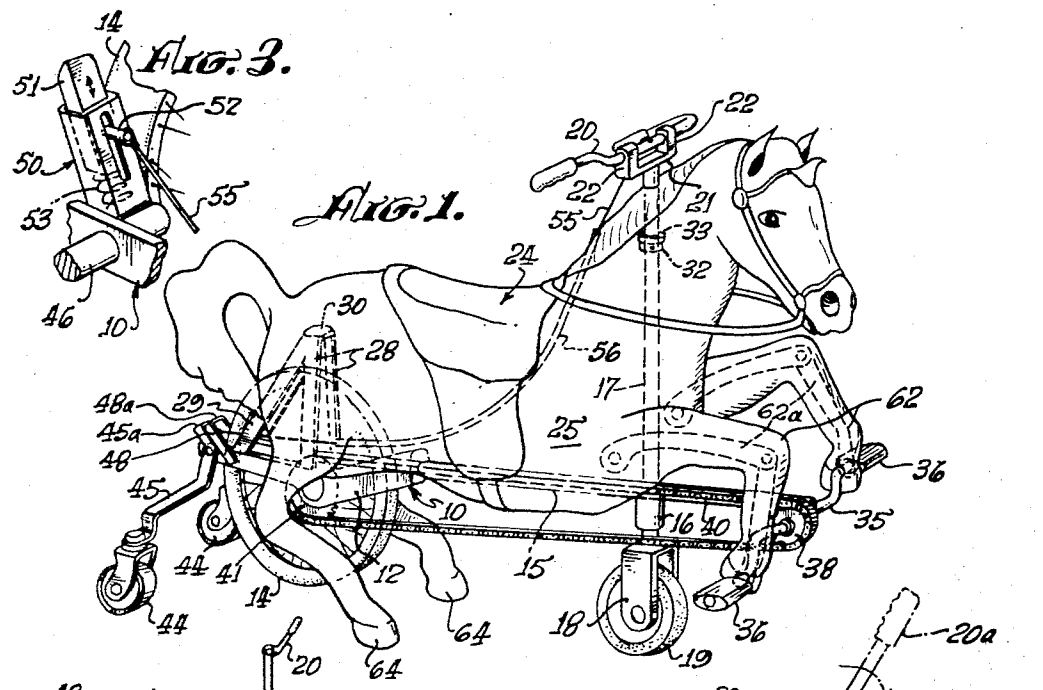


FIG. 1.

FIG. 3.

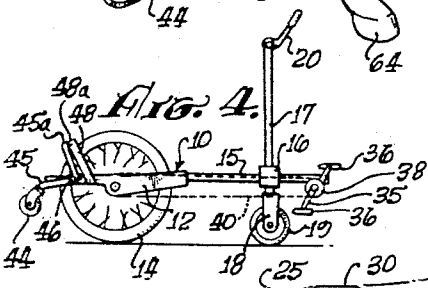


FIG. 4.

FIG. 2.

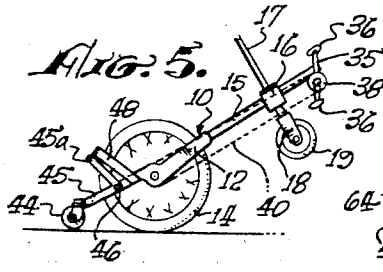


FIG. 5.

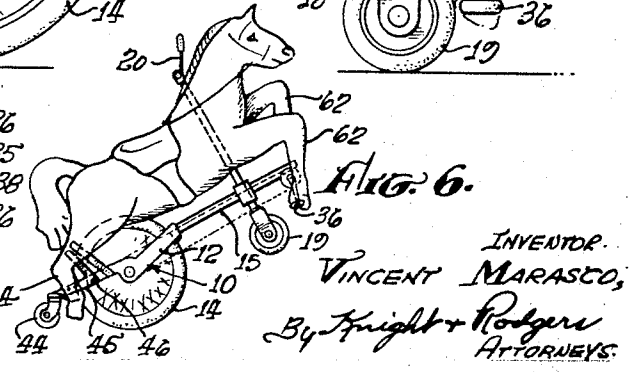


FIG. 6.

INVENTOR.
VINCENT MARASCO,
By Knight & Rodgers
ATTORNEYS.

United States Patent Office 3,427,037
Patented Feb. 11, 1969

3,427,037

VEHICULAR TOY CAPABLE OF SIMULATING A REARING HORSE

Vincent Marasco, 1364 North Western Ave., Los Angeles, Calif. 90027

Filed Nov. 2, 1966, Ser. No. 591,517
U.S. Cl. 280—1.189 7 Claims
Int. Cl. A63g 13/00, 19/00; B62h 1/00

ABSTRACT OF THE DISCLOSURE

A child's toy consists of a bicycle with the body of a horse, or other animal, and a pair of auxiliary wheels that can be raised and lowered and maintained in either position. When lowered, the auxiliary wheels provide added stability to the bicycle, similar to trainer wheels; when raised, they allow the toy to operate either on the two bicycle wheels or, by raising the front wheel off the ground, in the posture of a rearing horse.

The present invention relates generally to a child's toy, and more especially to a toy of the vehicular type which can be ridden by a child.

It is a general object of the present invention to provide an attractive toy of novel design which a child can ride in a variety of ways, thus increasing the appeal of a particular toy to children and also enlarging the age group to which the toy appeals.

The present invention produces an action type toy that appeals to children because of the movement of the toy and because of the different attitudes in which it can be ridden. In its preferred embodiment, the appeal to children is increased by providing a body on the toy having the representation of the body of an animal, for example the body of a horse, which serves to stimulate the child's imagination.

A toy embodying the present invention has a frame provided with seat means for supporting the child and also with a first pair of ground-engaging wheels, arranged in tandem in the manner of a bicycle. Suitable means are operatively connected to one of these wheels to permit the child riding the toy to propel it, such means typically being pedal-operated cranks connected through sprockets and chain to the rear wheel of the first pair. A pair of auxiliary wheels are also provided that preferably are disposed rearward of and one at each side of the rear ground-engaging wheel, or can be moved to such a position. The auxiliary wheels are mounted on a frame which is pivotally connected to the main frame of the toy to allow the wheels to swing about a horizontal axis in order to be raised or lowered with respect to the ground. When lowered, the auxiliary wheels are held in contact with the ground and steady the toy, in the manner of trainer wheels on a bicycle. When raised, the auxiliary wheels may be kept clear of the ground permitting the toy to be ridden as a bicycle; or, by tilting the toy to raise the front end, the auxiliary wheels may be brought down into engagement with the ground to provide a three-point support for the vehicle. To facilitate handling the toy in this mode, the auxiliary wheels are preferably casters.

The nature of the present invention will be better understood by reference to the following description and to the annexed drawing, in which:

FIGURE 1 is a side and front perspective of the complete toy embodying the present invention;

FIGURE 2 is a side elevation of the frame and wheels alone, the body in a represenation of an animal being removed for purposes of better illustration;

FIGURE 3 is a fragmentary perspective of the latch mechanism restraining movement of the auxiliary wheels;

FIGURE 4 is a side elevation, similar to FIGURE 2, at reduced scale, showing the auxiliary wheels in the raised position;

FIGURE 5 is a view similar to FIGURE 4 showing the front end of the frame tilted upwardly to bring the front wheel off the ground and the auxiliary wheels into engagement with the ground; and,

FIGURE 6 is a view similar to FIGURE 5 showing an alternative arrangement of the feet of the horse.

Referring now to the drawing, and more particularly FIGURES 1 and 2, it will be seen that the vehicular toy illustrated therein comprises a frame indicated generally at **10**. This frame includes a horizontally extending open box member **12** which passes around rear ground-engaging wheel **14** and supports the bearings for the axle by which wheel **14** is rotatably mounted upon frame **10**. Extending horizontally forward from box element **12** is a tubular frame element **15** which connects collar **16** to the box element. Collar **16** serves as a journal in which is rotatably mounted upright post **17**. At the lower end of post **17** is a yoke **18** upon which the front ground-engaging wheel **19** is rotatably mounted. Thus, it will be seen that the two wheels **19** and **14** are arranged in tandem, that is with wheel **19** in front of wheel **14** in the familiar manner of a bicycle.

At the upper end of post **17**, there is mounted handle bars **20** which are provided to turn post **17** in order to steer the vehicle by orienting front wheel **19**. The handle bars **20** are preferably rotatably mounted in a bracket **21** having two horizontally spaced bearing portions **22**. The reasons for this construction will become apparent later.

Seat means are provided on the toy for a child riding it. Such seat means, indicated at **24** as a saddle, are preferably carried by body **25**, which, as shown in FIGURE 1, is preferably in the representation of some familiar animal, such as a horse. Although any other suitable type of body structure may be provided to support seat **24**, the representation of a four-legged animal allows the youthful rider to identify himself with men of action, such as cowboys.

In order to support body **25** on frame **10**, the frame is provided with a pair of spaced posts **28**, one on either side of rear wheel **14**, which are each attached to and supported by one side of box frame member **12**. Posts **28** are preferably braced rearwardly by a pair of spaced braces **29** which, with posts **28**, provide at their top a platform **30** upon which body **25** rests. The supporting structure for the body comprising braces **29** and posts **28** thus straddles rear ground-engaging wheel **14** and supports body **25** and the weight of a rider on seat **24**.

At some location near its forward end, body **25** is supported by post **17**. A connection between the body and the post may be effected by any suitable type of support bearing such as the one indicated diagrammatically in FIGURE 2 and which comprises a collar **32** attached to post **17** to turn therewith and a stationary collar **33** resting upon collar **32**. Collar **33** is engaged by and supports directly body **25** but remains stationary with respect to the post as the post turns in order to steer the vehicle.

Any suitable means are provided for propelling the toy. As an example of such means, there is provided a double crank **35** provided on its two ends with pedals **36** and rotatably mounted in suitable bearing means carried by body extension **36** which is connected at its rear end to collar **16**. Crank **35** has attached to it a sprocket **38** over which passes chain **40**. The chain **40** extends rearwardly and passes over a second sprocket **41** non-rotatably affixed to the axle of rear wheel **14**. This construction is generally similar to the familiar bicycle and enables a child sitting on seat **24** to manipulate crank **35** by

engaging the pedals **36**, and upon rotating the crank, to move the vehicle forward.

The vehicle is provided with a pair of auxiliary wheels, preferably in the form of two casters **44**, which are disposed one at each side of the rear wheel **14**. The casters are rotatably mounted at the outer, opposite ends of laterally extending arms on frame **45**; and each caster swivels individually about a vertical axis. Frame **45** is pivotally mounted on box element **12** to swing as a unit about a horizontal axis established by two aligned pivot pins **46** in the opposite sides of box frame member **12**. Pins **46** are preferably located rearwardly of the axle for rear wheel **14**, but not necessarily so. The advantage gained is that shorter arms may be used. Alternatively, arms carrying the wheel may be pivoted on posts **28**; but at any location, the design is such that the two wheels **44** and rear wheel can be arranged to make a three-point contact with the ground, the points being in a triangular configuration. The central portion of frame **45** is in the form of a U-shaped strap **45***a* which straddles a portion of wheel **14** and interconnects the two arms carrying casters **44**.

Means are provided to raise and lower the wheels **44** relative to the ground by causing casters **44** and frame **45** to swing as a unit about the horizontal axis at **46**, there being provided means to lock the wheels in the down position shown in FIGURE 2 and means to limit their upward travel, as will be further explained.

A stationary U-shaped strap **48** has its open ends attached to the two sides of box member **12**, with an interconnecting portion **48***a* extending horizontally at a position rearwardly of wheel **14**. Cooperating with this strap is a spring-biased latch **50** which is non-rotatably attached to one of the pivot pins **46**, as shown particularly in FIGURE 3. The latch **50** has a movable plunger **51** which is spring-biased to an outwardly or raised position; but which can be lowered by a downward pull on pin **52** to move the plunger against spring **53**. In the outward position, latch plunger **51** engages stop member **48***a* as shown in FIGURE 2, the parts being so arranged and constructed that, in this position, the caster wheels **44** engage the ground as shown. Engagement of latch **50** with stop element **48***a* prevents clockwise rotation of caster frame **45**, thus keeping the wheels **44** in the lowered position in which they engage the ground.

Means to release latch **50** includes a flexible cable **55** which passes through cable housing **56**. The housing is securely anchored to vehicle frame **10** in any suitable manner, anchor blocks for this purpose being indicated diagrammatically in FIGURE 2 at **57**. These anchor blocks are attached to frame **10** by suitable members, not shown. The rear end of flexible cable **55** is connected to plunger pin **52**, as shown in FIGURE 3, while the forward end of the cable is attached to the central portion of handle bars **20** at a position between the two bearing blocks **22**. This central portion of the handle bars serves as a drum on which a portion of the cable connected thereto can be wound. By rotating the handle bars clockwise upwardly in bearings **22** from the solid line position of FIGURE 2 to the dotted line position **20***a*, a terminal portion of the cable is wrapped around the handle bars and the cable is placed in tension. The pull of the cable on pin **52** first retracts plunger **51** against the pressure of spring **53**, thereby disengaging the plunger from fixed stop member **48***a* and freeing frame **45** and the caster wheels for rotation in a clockwise direction around the horizontal axis at **46**. As the cable is wrapped around handle bars **20**, the continued pull on the cable after releasing latch plunger **51**, is in a direction to pull the latch forwardly and thereby rotate the caster frame **45** about axis **46** to raise wheels **44** upwardly out of ground engagement, to the raised position shown in FIGURE 4.

The clockwise rotation of frame **45** and wheels **44** is limited by engagement of frame portion **45***a* with the fixed stop **48**. This engagement may occur either with

the side arms of the central portion **45***a* of the frame engaging the side arms of the U-shaped strap **48**, or central bar **48***a* may be so shaped as to engage frame portion **45***a*.

While frame **45** and the auxiliary wheels carried by it are gravity biased to the downward position of FIGURE 2, it is preferred to provide additional pull on cable **55** to return it to the corresponding position. For this reason, spring **60** is provided. The spring is connected to cable **55** and to a fixed abutment on frame **10**, such as box frame member **12**, in order to draw cable **55** rearwardly through housing **57**.

When auxiliary wheels **44** are raised clear of the ground by rotating handle bars **20** to the dotted line position **20***a* of FIGURE 2, the toy appears as in FIGURE 4. It can then be ridden as an ordinary bicycle since only wheels **14** and **19** are in ground engagement and they are arranged one in front of the other. For the young or inexperienced child, additional stability can be gained by using wheels **44** as trainer wheels by lowering them into contact with the ground as in FIGURE 2. This is accomplished by rotating handle bars **20** rearwardly or counterclockwise as viewed in the drawing, thereby relaxing the tension on cable **55** and allowing the wheels to drop under the influence of gravity and the pull of spring **60**. In this position, the auxiliary wheels are held firmly by latch **50**, plunger **51** now engaging the rear edge of stop means **48***a*. Casters **44**, like outriggers, prevent the vehicle from tipping sidewise.

When the auxiliary wheels are raised to the position of FIGURE 4, the vehicle can be converted to a three-wheeled toy by tipping the frame rearwardly to lift front wheel **19** off the ground. The vehicle then rests upon the two casters **44** and large rear wheel **14**, as shown in FIGURE 5, in the manner of a tricycle. Incentive to do this is provided by making body **25** in the representation of a horse since the youthful rider then considers himself as riding a bucking horse.

The illusion of motion on the part of the animal reprsnted by body **25** can be heightened by attaching the two fore legs **62** of the animal to the two cranks **35** adjacent pedals **36**. The legs **62** may have articulated internal elements **62***a* covered by a flexible material. This construction, shown in FIGURE 1 causes the front legs of the animal each to rise and fall with one of the cranks as cranks **35** are rotated.

In a somewhat similar manner, the rear legs **64** can each be connected to one of the arms of caster frame **45**, as shown in FIGURE 6. This arrangement causes the legs to move up and down with casters **44** and give the appearnce of a bucking horse when the front end of the toy is lifted up as in FIGURES 5 and 6.

It will be apparent without enumerating the many possible changes, that changes in the detailed structure and arrangement of the parts of the present invention may be effected by persons skilled in the art without departing from the spirit and scope of the present invention. Accordingly, it is to be understood that the foregoing description is considered as being illustrative of, rather than limitative upon, the invention.

I claim:

1. A toy vehicle comprising:

a frame with seat means thereon;

a first pair of ground-engaging wheels on the frame mounted one in front of the other;

means operatively conncted to one of the pair of wheels to propel the toy;

a pair of auxiliary wheels disposed one at each side of and rearwardly of the rear one of the first pair of wheels;

means pivotally mounting the auxiliary wheels on the frame to swing about a horizontal axis to move both auxiliary wheels as a unit up and down with re-

spect to said axis and, when up, also rearwardly of the point of ground contact of said rear wheel.

and stop means limiting upward swinging movement of the auxiliary wheels relative to the frame whereby the toy can be supported on the auxiliary wheels in such upward position and the rear one of the first pair of wheels.

2. A toy vehicle according to claim 1 in which the auxiliary wheels each swivel independently about a vertical axis.

3. A toy according to claim 1 which also includes releasable latch means holding the auxiliary wheels in lowered position.

4. A toy according to claim 1 in which the front one of the first pair of wheels is dirigible and handle bars are provided to orient the front wheel;

and the toy also includes a flexible cable connected to the mounting means for said auxiliary wheels and to a drum rotated by the handle bars to raise and lower the auxiliary wheels relative to the ground by movement of the handle bars.

5. A toy according to claim 3 in which the auxiliary wheels each swivel independently about a vertical axis.

6. A toy vehicle comprising:

a frame with seat means thereon;

a first pair of ground-engaging wheels on the frame mounted one in front of the other, the front one of said pair of wheels being dirigible;

handle bars operatively connected to said front wheel to orient same;

means operatively connected to one of the pair of wheels to propel the toy;

a pair of auxiliary wheels disposed at each side of the rear one of the first pair of wheels;

means pivotally mounting the auxiliary wheels on the frame to swing about a horizontal axis to move both auxiliary wheels as a unit up and down with respect to said axis and, when up, also rearwardly of the point of ground contact of said rear wheel;

and a flexible cable connected to the mounting means for said auxiliary wheels and to a drum rotated by the handle bars to raise and lower the auxiliary wheels by movement of the handle bars.

7. A toy according to claim 6 which also includes releasable latch means actuated by the cable and holding the auxiliary wheels in lowered position.

References Cited

UNITED STATES PATENTS

664,353	12/1900	Rieger	280—303
1,519,208	12/1924	Lupton.	
1,537,729	5/1925	Banks	280—1.189
1,632,092	6/1927	Morrill et al.	280—1.195 X
2,474,114	6/1949	Ransom	280—1.195 X
2,617,658	11/1952	James et al.	280—1.204 X
2,629,611	2/1953	Covington	280—295 X
2,646,990	7/1953	Fowler	280—293 X
2,898,121	8/1959	Kelly	280—1.204 X

LEO FRIAGLIA, *Primary Examiner.*

U.S. Cl. X.R.

280—1.184, 1.204, 303