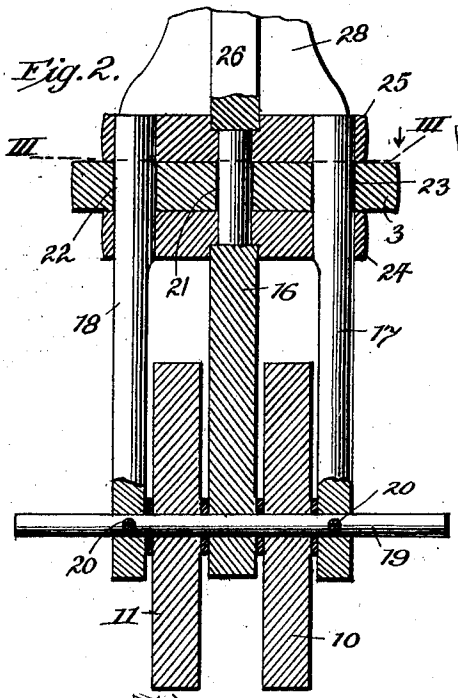
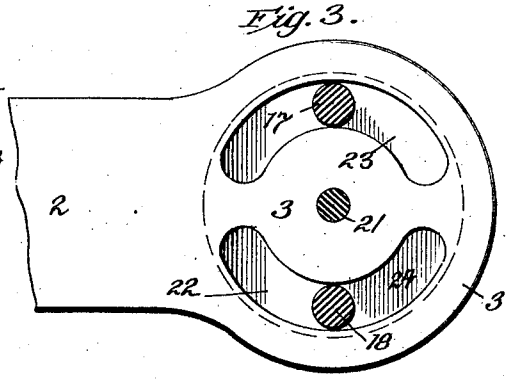
Oct. 9, 1923. 1,470,441

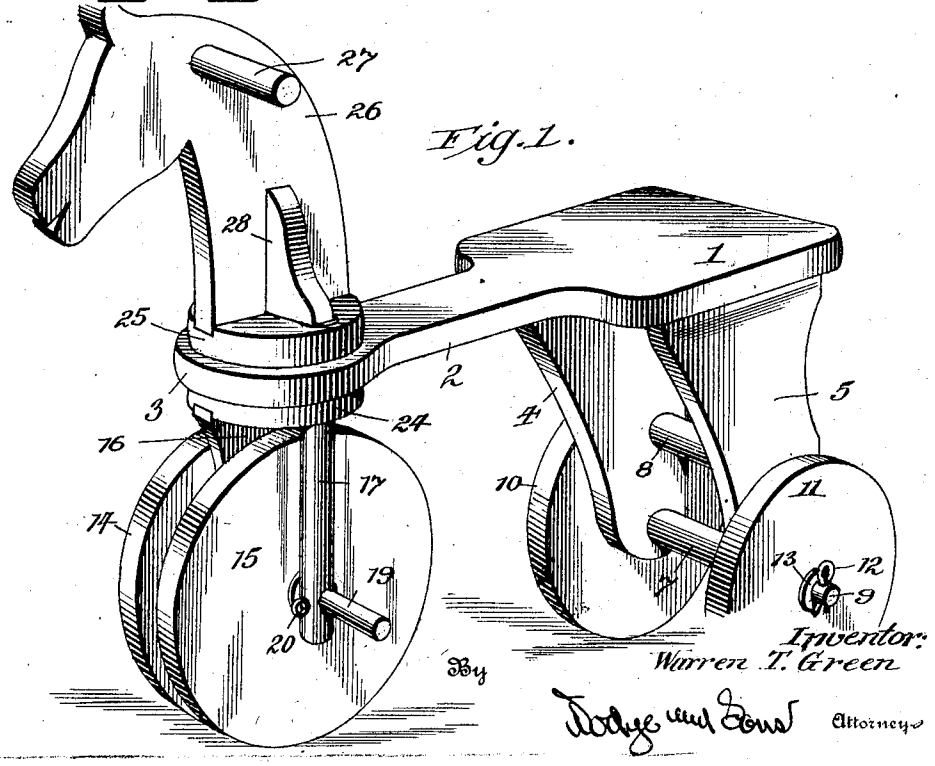
W. T. GREEN

TOY VEHICLE

Original Filed Oct. 15, 1920 3 Sheets-Sheet 1







Oct. 9, 1923. **1,470,441**

W. T. GREEN

TOY VEHICLE

Original Filed Oct. 15, 1920 3 Sheets-Sheet 2

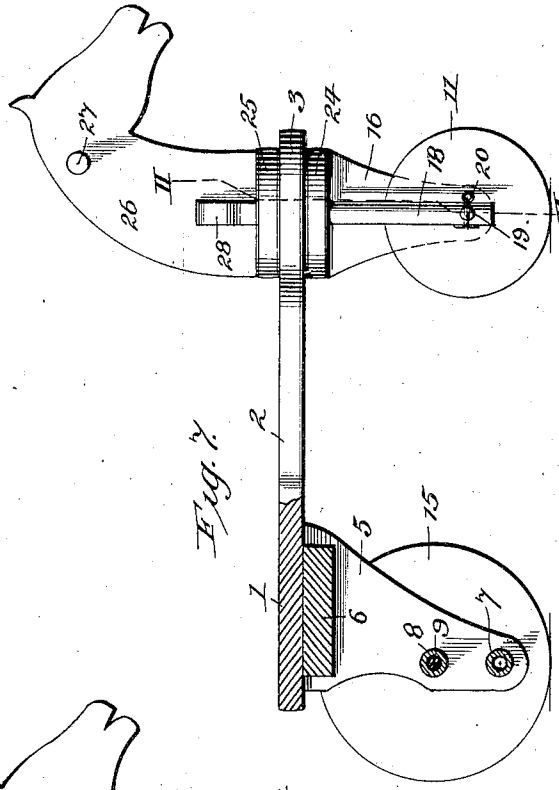


Fig. 4.

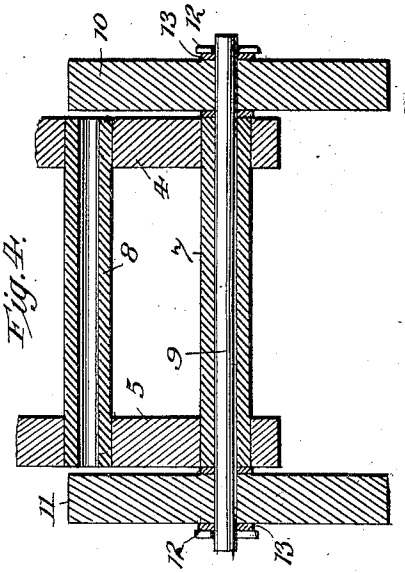


Fig. 6.

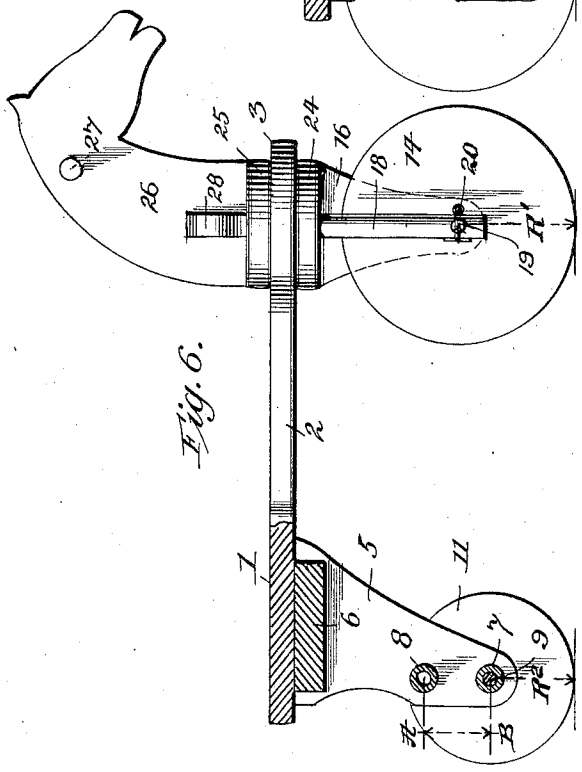
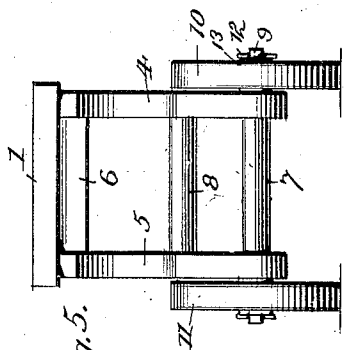


Fig. 5.



Inventor
Warren T. Green,

Dodge and Dodge,
Attorneys

Oct. 9, 1923. 1,470,441

W. T. GREEN

TOY VEHICLE

Original Filed Oct. 15, 1920 3 Sheets-Sheet 3

Fig. 8.

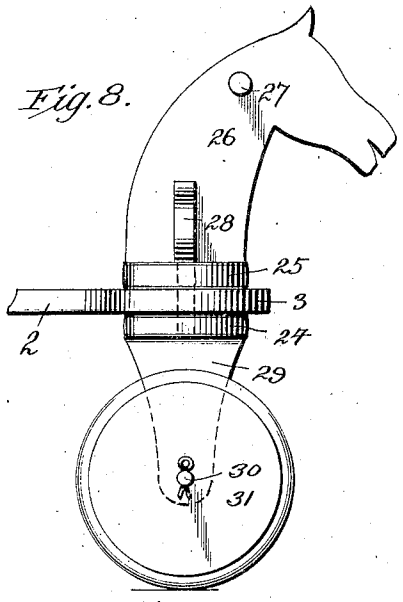


Fig. 9.

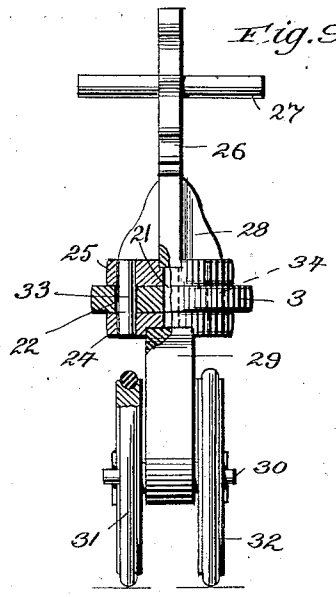


Fig. 10.

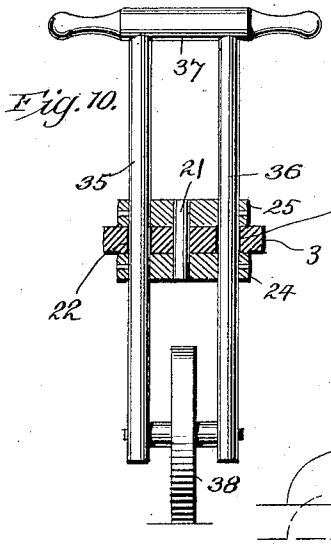
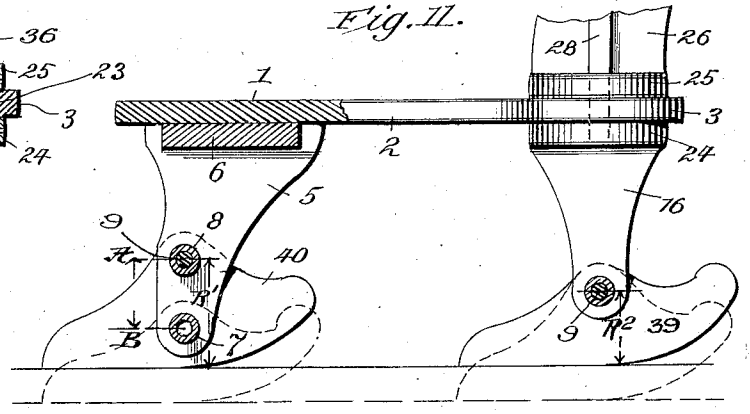


Fig. 11.



Inventor
Warren T. Green

By Dodge and Sons

Attorneys

Patented Oct. 9, 1923. 1,470,441

UNITED STATES PATENT OFFICE.

WARREN T. GREEN, OF ST. LOUIS, MISSOURI, ASSIGNOR TO THE MENGEL COMPANY, OF LOUISVILLE, KENTUCKY, A CORPORATION OF NEW JERSEY.

TOY VEHICLE.

Application filed October 15, 1920, Serial No. 417,157. Renewed August 14, 1922. Serial No. 581,845.

To all whom it may concern:

Be it known that I, WARREN T. GREEN, a citizen of the United States, residing at St. Louis, State of Missouri, have invented certain new and useful Improvements in Toy Vehicles, of which the following is a specification.

This invention relates to toy vehicles, and more particularly to that type wherein the operator or user straddles the seat and propels the device by placing his feet upon the ground or floor and makes a motion similar to walking or running.

The main object of the invention is to provide a structure which readily lends itself to adjustment as to height so that it may be made to accommodate children of various sizes.

A further object resides in the provision of means whereby the front swiveled steering wheel (or wheels) will be limited in its extent of swiveling movement, the arrangement at the same time affording a staunch and rigid construction not likely to be readily broken or impaired during usage, which at times is rather rough and severe.

The construction is such that it readily lends itself to the employment of runners as well as wheels, the feature of adjustment as to height of the seat with reference to the ground being maintained when the runners are employed.

With these and other objects in view, reference will be had to the annexed drawings, wherein:

Fig. 1 is a perspective view of the vehicle;

Fig. 2 a vertical sectional elevation of the front wheels, the fork and the steering head or turntable, taken on the line II—II of Fig. 7;

Fig. 3 a horizontal sectional view taken on the line III—III of Fig. 2;

Fig. 4 a detail vertical sectional view of the rear wheel construction illustrating the brackets and the two axle receiving housings or bearings;

Fig. 5 a rear elevation of the vehicle on a somewhat smaller scale with the front forks, wheel and allied parts omitted;

Figs. 6 and 7 sectional elevations illustrating the wheels in their interchanged position to effect a variation in height of the seat or body proper;

Figs. 8 and 9 side and front elevations respectively, showing a modification of the steering head;

Fig. 10 a sectional elevation of a still further embodiment of the invention wherein the principle of the steering head is retained; and

Fig. 11 a sectional elevation illustrative of the adaptability of the structure to the employment of runners as substitute for wheels with the adjustment as to height retained.

The preferred embodiment of the invention is shown in Figs. 1 to 7, inclusive, and will be first described.

The body is of the usual construction, comprising a seat 1, a relatively narrow reach section 2 and a forward end portion or head 3, the latter being somewhat wider than the reach. Secured to the under face of the seat section 1 and extending downwardly therefrom, and preferably having a rearward inclination are two spaced brackets 4 and 5. A filler block 6 is, by preference, secured to the under face of the seat intermediate the upper ends of the brackets, the brackets being likewise secured thereto to ensure rigidity. Each bracket is bored to receive two axle housings or bearing sleeves 7 and 8, the housing 7 being arranged adjacent the lower ends of the brackets, while the other, 8, is arranged above and spaced therefrom. These housings make a tight fit in the openings in the brackets and being glued or otherwise secured in place render the brackets rigid and firm.

The rear axle is denoted by 9 and the wheels, as shown in Fig. 1 by 10 and 11, the latter being held upon the axle by cotter pins 12, or any suitable securing means. Washers, as 13, will preferably be placed on the axle to each side of the wheel. Under the arrangement shown in Figs. 1 and 6, said rear wheels are of a diameter less than the wheels 14 and 15 carried by the front fork which will presently be described. Axle 9 may be readily placed in either housing 7 or 8 and the smaller or larger wheels placed thereon, dependent upon whether the axle is in the lower or upper housing, while the larger or smaller wheels are positioned in the front fork, see Figs. 6 and 7. This arrangement admits of adjustment of the body as to height from the floor or ground with the use of the same wheels and without the em-

ployment of any movable adjusting devices, latches or similar means.

The front fork may be said to comprise three spaced elements, a center element 16 and two outer elements 17 and 18, each of said elements or members being provided adjacent their lower ends with an opening through which an axle 19 extends, and upon which the wheels 14 and 15 (or 10 and 11, as the case may be) are mounted. The axle is secured in place by cotter pins 20, and, as illustrated, is extended out at each end to provide foot rests when the vehicle is used for coasting, through, of course, such projecting ends may be omitted.

A centrally disposed opening is formed in the forward body end 3 for the reception of a swivel or king pin 21, the body being likewise provided with oppositely disposed arcuate slots 22 and 23, see Fig. 3, concentric with the pin. A disk 24 underlies the end 3 and a similar disk 25 is placed upon the upper face thereof, said disks being connected by the swivel pin 21 and by the upper ends of the fork elements 17 and 18, which latter pass through the slots 22 and 23 and are guided thereby. The center element 16 is preferably made deep, from front to rear, or substantially equal to the diameter of the plate 24, the plate on its under face being grooved to receive the element 16 and to thus effect a tight union or joint between the parts. Such arrangement, moreover, tends to mutually sustain and brace the elements and render the structure rigid. The plates 24 and 25 form, in effect, a turntable, with the pin 21 acting as a pivot about which the table turns. The upper ends of the elements 17 and 18 which extend through the slots 22 and 23 prevent the turntable from being completely rotated by reason of the fact that they will contact the end walls of the slots when the table is turned to its limit in one or the other direction.

Surmounting the upper element 25 of the turntable or steering head is a vertically disposed member or element 26 provided with a handle bar 27 through which the turntable, and consequently the front steering fork, may be manipulated. The lower end of said element 26 is let into plate 25 and brackets 28 are provided to firmly secure the parts together.

In Figs. 8 and 9 a modification of the steering fork is shown, while at the same time the turntable arrangement is maintained. Under this construction instead of having a plurality of fork members, a single arm or bracket 29 extends downwardly from the plate 24 and carries at its lower end an axle 30 upon which are mounted wheels 31 and 32. Pins 33 and 34 interconnect the plates 24 and 25, passing through arcuate slots in the forward body portion 3, said pins being the equivalent, in so far as connecting the plates is concerned, of the upper ends of the members 17 and 18 in the construction heretofore described. A center pin 21 will preferably be employed to prevent binding or cramping of the parts.

In Fig. 10 a still further modification is shown wherein two bars 35 and 36 form the fork and the steering element, the bars at their upper end being provided with a cross handle or steering bar 37. Said bars 35 and 36 extend downwardly through the plates 24 and 25 to which they are secured and through the same arcuate slots as shown in Fig. 3. The center pin 21 forms the pivot for the turntable as under the other constructions. A single wheel, as 38, is mounted upon an axle carried at the lower ends of the elements 35 and 36. As will be seen, the same turntable construction is present in this instance as in the other constructions.

In Fig. 11 the applicability of runners to the structure is shown together with the feature of interchangeability of the runners to effect a variation in the height of the seat from the ground or surface upon which the vehicle stands. In the full line showing the forward runner 39 is fulcrumed upon the front axle carried at the lower end of the steering fork and the rear runner, denoted by 40, is fulcrumed upon the axle 9 when the same is in the upper axle housing 8. The height of the rear runner 40 is greater than that of the front runner 39. When it is desired to increase the height of the vehicle the runners are shifted and carried to the dotted line position, as shown in Fig. 11. That is to say, the forward lower runner 39 is shifted to the dotted line position and fulcrumed or secured upon the axle 9 when the same is in the lower housing 7. The runner 40 of greater depth is then secured in the front fork and the vehicle will be of a height indicated by the dotted line position.

The adjustment of the wheels and runners to effect the difference in elevation of the structure may be stated as follows, reference being had to Figs. 6 and 11:

The distance A B between the centers of the axle housings 7 and 8 is equal to 2 $(R'-R^2)$ in which R' equals the radius of the larger wheel or the height or depth of the runner 40, and R^2 equals the radius of the smaller wheels and the height or depth of the smaller runner 39. By maintaining this relation of the parts the body of the vehicle will always be maintained parallel to the surface upon which the vehicle bears.

What is claimed is:—

1. In a child's vehicle, the combination of a body having an opening formed at its forward end with a pair of oppositely disposed arcuate slots arranged adjacent thereto; a pair of disk-like members respectively contacting the upper and lower faces of said forward end; and wheel sustaining

and guiding means attached to said disks and extending through the opening and slots aforesaid.

2. In a child's vehicle, the combination of a body having an opening formed at its forward end with a pair of oppositely disposed arcuate slots arranged adjacent said opening; at least one front wheel; and wheel carrying and supporting means associated with the forward end of the body and cooperating with the opening and slots aforesaid.

3. In a toy vehicle, the combination of a body element comprising a seat, a narrow portion and a forward head portion, the latter having an opening therein and two oppositely disposed arcuate slots concentric to the opening; a disk located upon the upper face of the head portion; a second disk located below the head portion; a center pin passing through the opening and connecting the disks; a member extending through each of the slots and into the disks; wheel supporting means extending downwardly from the lower disk; at least one wheel supported at the lower end thereof; means connected to the upper disk whereby the same and the parts attached thereto may be moved about the center pin; and wheels supporting the rear portion of the body element.

4. In a toy vehicle, the combination of a body element comprising a seat, a narrow portion and a forward head portion, the latter having an opening therein and two oppositely disposed arcuate slots concentric to the opening; a disk located upon the upper face of the head portion; a second disk located below the head portion; a center pin passing through the opening and connecting the disks; a pair of spaced fork elements extending through the slots and disks and extending downwardly below the lower disk; a third fork element connected to the lower face of said lower disk and standing parallel to and intermediate of the other fork elements; a wheel placed to each side of the third fork element; an axle extending through the pair of fork elements and the wheels; means connected to the upper disk whereby the disk and the parts attached thereto may be moved about the center pin; and wheels supporting the rear portion of the body element.

5. In a vehicle, the combination of a body element adapted to form a seat for the user thereof; a fork swiveled in the forward part thereof; an axle carried by the fork adjacent its lower end; a surface contacting element sustained thereby; a pair of axle housings; means for sustaining the same one above the other in spaced relation below the rear portion of the body element; an axle adapted to be placed in one or the other housing; and surface contacting elements mounted on said last named axle, whereby surface contacting elements of different radii may be employed upon the front and rear axles and transposed from one to the other when the height of the body element with reference to the surface upon which the vehicle rests is to be varied.

6. In a vehicle, the combination of a body element adapted to form a seat for the user thereof; a wheel sustaining element swiveled in the forward end of the body element; wheels removably mounted thereon; spaced brackets extending downwardly from the rear portion of the body element; a pair of axle housings extending between said brackets, one above the other; an axle adapted to be mounted in one or the other of said housings; and a pair of wheels carried by said axle, the wheels being of a diameter different from that of the aforementioned wheels, whereby the wheels may be interchanged and the axle shifted to one or the other housing to effect a variation in the height of the vehicle.

7. In a vehicle, the combination of a body element adapted to form a seat for the user thereof, a wheel sustaining element swiveled in the forward end of the body element; an axle carried by said sustaining element; surface contacting elements mounted upon said axle; a pair of axle housings having a fixed spaced relation; means for sustaining said housings beneath the rear of the body element; an axle adapted to be placed in one or the other of said housings; surface contacting elements carried by said axle, said last named surface contacting elements being of a diameter different from the first named surface contacting elements, whereby the height of the body element with reference to the surface upon which the vehicle rests may be varied by shifting the last named axle from one housing to the other and transposing the surface contacting elements from the front axle to the rear axle and from the rear axle to the front axle.

8. In a vehicle, the combination of a body member adapted to form a seat for the user thereof; a wheel sustaining element swiveled to the forward portion of said body member; an axle carried at the lower end of said sustaining element; a pair of vertically spaced axle housings secured in fixed relation beneath the rear portion of the body member; an axle adapted to be placed in one or the other of said housings; and independent surface contacting supporting elements removably mounted upon each of the axles, said supporting elements differing in height to an extent such that the difference between twice the radius of one minus twice the radius of the other is substantially equal to the distance between the axle housings.

9. In a child's vehicle, the combination of a body, said body at its forward end having

an opening extending therethrough and two oppositely disposed arcuate slots arranged concentric to the opening; a rolling support for the rear portion of the vehicle; a pair of disk-like members bearing respectively upon the upper and lower faces of the forward end of the body; a front wheel; means for supporting the same and interconnecting the disk-like members, said means extending through the opening and slots aforesaid; and a steering handle connected to said disks and means.

In testimony whereof I have signed my name to this specification.

WARREN T. GREEN.