Dec. 16, 1924. 1,519,208

B. M. LUPTON, JR

TOY VEHICLE

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Fig. 1.

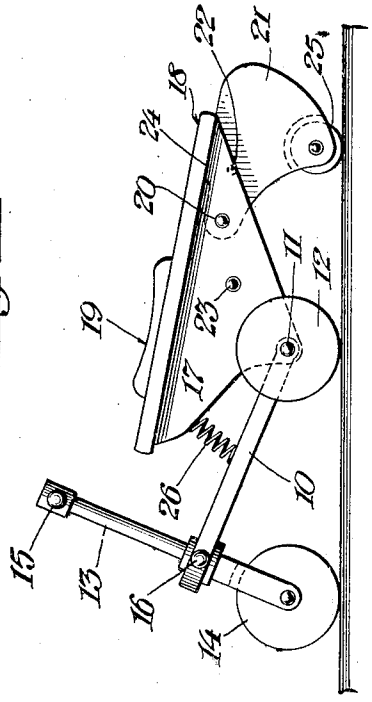


Fig. 3.

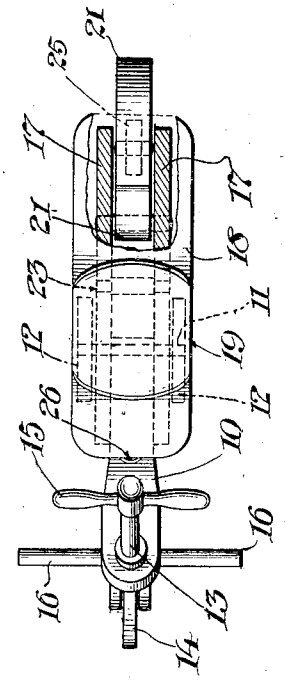


Fig. 2.

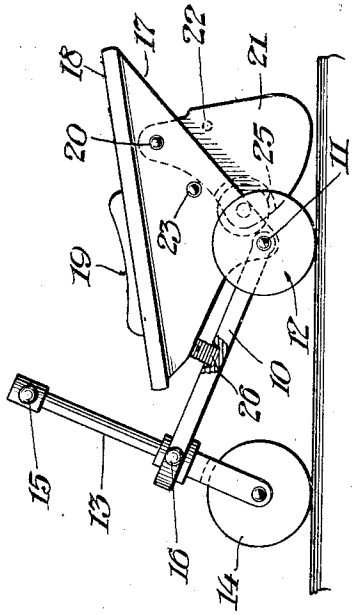
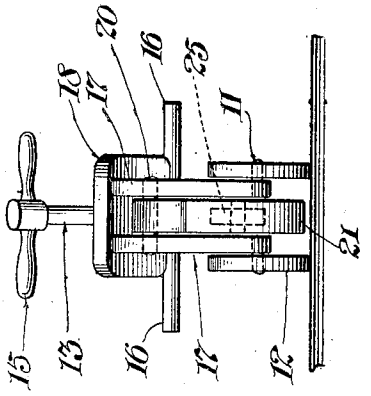


Fig. 4.



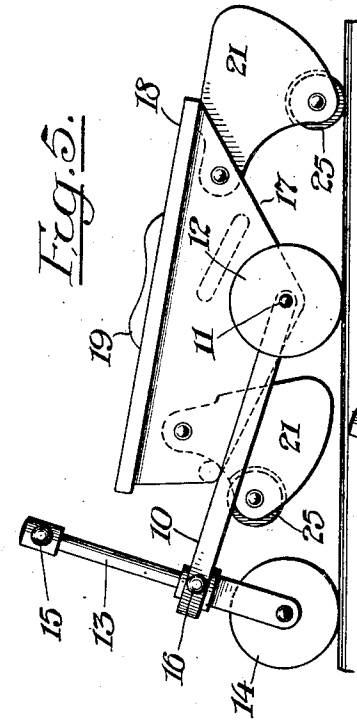
Inventor:
Benjamin M. Lupton Jr.
by his Attorney
John F. Nolan

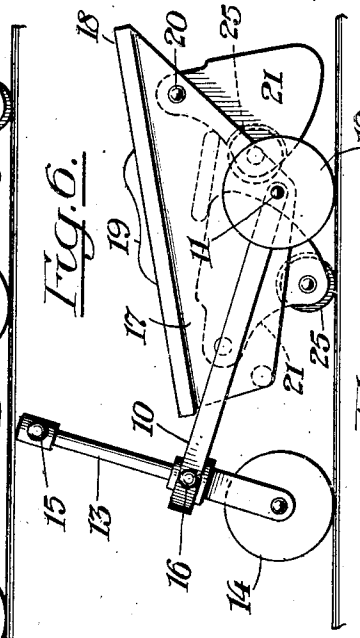
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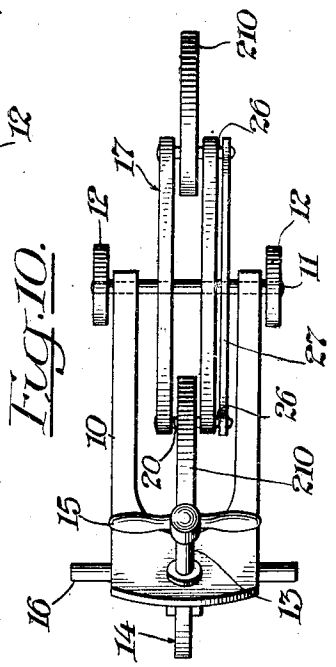
B. M. LUPTON, JR

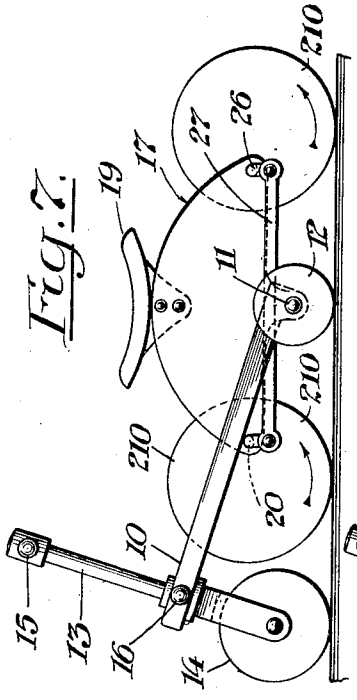
TOY VEHICLE

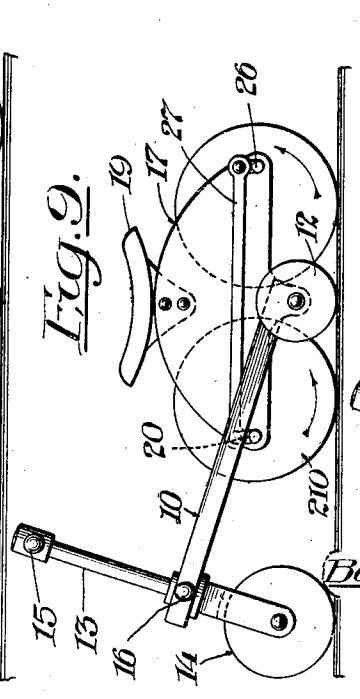
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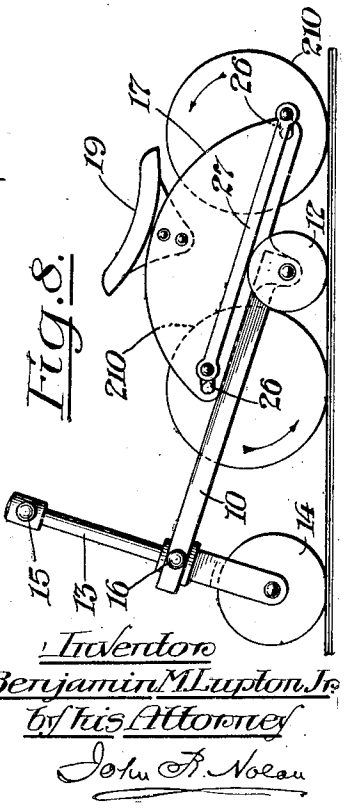












Inventor
Benjamin M. Lupton Jr.
by his Attorney
John F. Nolan

Patented Dec. 16, 1924. 1,519,208

UNITED STATES PATENT OFFICE.

BENJAMIN M. LUPTON, JR., OF JERSEY CITY, NEW JERSEY.

TOY VEHICLE.

Application filed September 28, 1921. Serial No. 503,916.

To all whom it may concern:

Be it known that I, BENJAMIN M. LUPTON, Jr., a citizen of the United States, and resident of Jersey City, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Toy Vehicles, of which the following is a specification.

This invention relates more especially to toy vehicles designed to be ridden by children; and it has for its object to provide a vehicle having a rockable load-bearing element and means connected with and operable by said element in such a manner as to engage the surface of travel with a turning effort and thus impart motion to the vehicle; the construction being such that the vehicle can be readily drawn or pushed along independently of the said actuating mechanism; all as will be hereinafter fully described and claimed.

In the drawings—

Figures 1 and 2 are side elevations of a toy vehicle embodying the principle of my invention, showing the actuating mechanism in different positions of operation.

Fig. 3 is a plan of the vehicle, part of the wheeled supporting frame being broken away.

Fig. 4 is a rear end elevation of the vehicle.

Figs. 5 and 6 are side elevations of a modification of the vehicle in different positions of operation.

Figs. 7, 8 and 9 are side elevations of another modification of the vehicle in different positions of operation.

Fig. 10 is a plan of the construction shown in Fig. 7, the seat or saddle being omitted.

Referring to the drawings, 10 designates a supporting frame comprising, preferably, an inclined body supported at its lower or rearward end upon an axle 11 which is equipped with a pair of spaced carrying wheels 12. The forward end of the frame is formed with a suitable bearing for a steering post 13 which is provided at its forked lower end with a wheel 14 and at its upper end with a suitable handle bar 15. The forward end of the frame is also provided with laterally projecting foot rests 16.

Pivotally supported on the axle 11 is a load-bearing rocker element comprising, preferably, two spaced members 17 and a top member 18, the latter being, in the present instance, equipped with a suitably disposed seat 19, whereby a person positioned on the seat, with his feet bearing on the foot rests, can readily and forcibly rock the element on its axis. Between the rearward portions of the rocker members 17 is pivoted, as at 20, a propelling element comprising preferably a sector 21 of an eccentrically mounted wheel which has capacity for oscillation during the actuation of the rocker element, so that the periphery of the sector can be successively engaged with and disengaged from the surface upon which the wheels 12 and 14 of the vehicle are supported. Such periphery is described from a center, as at 22, slightly rearward of and below the axis 20, and the conformation of the sector body is such that if the rocker element be tilted in a forward direction the sector will be raised from contact with the underlying surface and thus be permitted to gravitate freely forward to the position indicated in Fig. 2. A suitably disposed stop 23 in and between the members 17 co-acts with the sector to limit the forward movement of the latter. If, now, the body be rocked in a rearward direction the peripheral portion of the descending sector, being of gradually decreasing radii from its axis, will progressively contact with the underlying surface and thus under the influence of the load be caused to roll upwardly and rearwardly about its axis, thereby positively pushing the vehicle forward until the upper rearward portion 24 of the sector abuts against the top 18 of the rocker element, as seen in Fig. 1. Hence, by alternately rocking the said element rearwardly and forwardly on its axis 11, forward progress will be imparted to the vehicle, the speed thereof being governed by the rapidity of oscillation of the rocker element. From the foregoing it will be noted that the eccentric axis of the sector is so located that the greatest radius of the sector is below and in approximate vertical alignment with the said axis when the adjacent end of the load-bearing element is in its uppermost position.

Preferably, the forward peripheral portion of the sector is equipped with a wheel 25 which bears upon the underlying surface of travel when the sector is in the rearward position illustrated in Fig. 1; and preferably, also, a spring 26 is interposed between the forward portion of the said element and

the vehicle frame so as to serve as a cushion during the oscillation of the rocker element. The wheels 12, 14 and 25 normally rest on the surface of travel, and the vehicle may, therefore, if desired be drawn or impelled without actuating the rocker element.

In Figs. 5 and 6 I have shown a modification of my invention wherein two similar wheel sectors 21 are eccentrically mounted adjacent the respective ends of the rocker element, so that, during the oscillations of such element, the said sectors will act in alternation upon the bearing surface in a manner to effect the progress of the vehicle.

In Figs. 7 to 10, inclusive, I have illustrated another modification wherein, in lieu of the pair of eccentrically mounted gravity controlled wheel sectors, a pair of wheels 210, 210 are eccentrically mounted at the respective ends of the rocker element, and are operatively connected by suitable motion transmitting devices in such a manner that during the forcible oscillation of the said element the wheels are caused to revolve concurrently about their ececntric axes and thus propel the vehicle. As illustrated, the wheels 210 are eccentrically mounted on axles 20 at the respective ends of the rocker element, said axles being projected at one end and provided with cranks 26 which are coupled by a link 27, whereby when the rocker element is oscillated the wheels are rotated and the motion is transmitted from one to the other. The successive operations of the eccentrically mounted wheels to effect the propulsion of the vehicle are illustrated in Figs. 7 and 9, inclusive.

It is to be understod that my invention is not limited to the particular details of construction herein shown and described, as the mechanism may be variously modified within the principle of my invention and the scope of the appended claims.

I claim—

1. In a toy vehicle, a traveling supporting structure, a load-bearing element mounted intermediate its ends for rocking motion on a horizontal axis on said structure, and propelling means comprising a rotary member having a curved peripheral portion and eccentrically mounted on said element on an axis laterally of the first-named axis, the greatest radius of said rotary member being below and in approximate vertical alignment with the axis of said member when the adjacent end of the load-bearing element is in its uppermost position, whereby the act of rocking said element by alternately shifting the load thereon from one side to the other of the first named axis causes the progressive propulsive engagement of the said peripheral portion with the surface of travel.

2. In a toy vehicle, a traveling supporting structure, a load-bearing element mounted intermediate its ends for rocking motion on a horizontal axis on said structure, a propelling sector eccentrically mounted for independent oscillation on said load bearing element on an axis laterally of first-named axis, and having its greatest radius, when the curved periphery of the sector is raised above the surface of travel, positioned below and in vertical alignment with the axis of oscillation of the sector, whereby the act of rocking said element by alternately shifting the load thereon from one side to the other of the axis depresses the sector and causes it to engage the surface of travel with a turning effort and then lifts the sector and permits it to return to its previous position by gravity.

3. In a toy vehicle, a supporting frame having spaced apart forward and rearward wheels, a load-bearing element mounted for rocking motion on an axis adjacent the rearward wheels, and a pivoted propelling element eccentrically mounted on said load-bearing element and operable thereby through contact with the surface of travel to impart forward motion to the vehicle, the greatest radius of said propelling element being below and in approximate vertical alinement with its axis when the adjacent end of the lad-bearing element is in its uppermost position.

4. In a toy vehicle, a supporting frame having spaced apart forward and rearward wheels, a load-bearing element mounted for rocking motion on an axis adjacent the rearward wheels, and a pivoted propelling member mounted on said load-bearing element and operable to engage the surface of travel and impart forward motion to the vehicle during the rearward rocking of the load-bearing element, the greatest radius of said propelling member being below and in approximate vertical alinement with the axis of said member when the adjacent end of the load-bearing element is in its uppermost position, and the said member being so constructed as to swing forward by gravity during the forward rocking of the load-bearing element.

5. In a toy vehicle, a supporting frame having spaced apart forward and rearward wheels, a load-bearing element mounted for rocking motion on an axis adjacent the rearward wheels, a propelling sector eccentrically mounted on said load-bearing element and operable thereby to engage the surface of travel and impart forward motion to the vehicle during the rearward rocking of the load-bearing element, the greatest radius of said sector being below and in approximate vertical alinement with the axis of the sector when the adjacent end of the load-bearing element is in its uppermost position, and the said sector being so constructed as to swing forward by gravity during the

forward rocking of the load-bearing element.

6. In a toy vehicle, a frame having a forward steering wheel and rearward supporting wheels, a load-bearing element mounted for rocking motion on an axis adjacent the rearward wheels, a propelling sector eccentrically mounted on said load-bearing element and operable thereby to engage the surface of travel and impart motion to the vehicle during the rearward rocking of the load-bearing element, the said sector being so constructed as to clear the ground and swing forward by gravity during the forward rocking of the load-bearing element, and a wheel on said sector arranged to bear on the surface of travel when the load-bearing element is in rearwardly rocked position.

7. In a toy vehicle, a supporting frame having spaced-apart forward and rearward wheels, a load-bearing element mounted intermediate its ends for rocking motion on an axis adjacent the rearward wheels, and the two propelling sectors eccentrically mounted for independent oscillation on axes adjacent the respective ends of the load-bearing element, each of said sectors having its greatest radius, when the curved periphery of the sector is raised above the surface of travel, positioned below and in vertical alignment with the axis of oscillation of the sector, whereby the act of rocking said element by shifting the load thereon from one end to the other, causes the sectors to act in alternation upon the surface of travel in a manner to propel the vehicle.

Signed at New York in the county and State of New York this 23d day of September 1921.

BENJAMIN M. LUPTON, Jr.