C. J. SLADEK.

TOY AUTOMOBILE.

APPLICATION FILED DEC. 12, 1919.

1,399,667.

Patented Dec. 6, 1921.

2 SHEETS—SHEET 1.

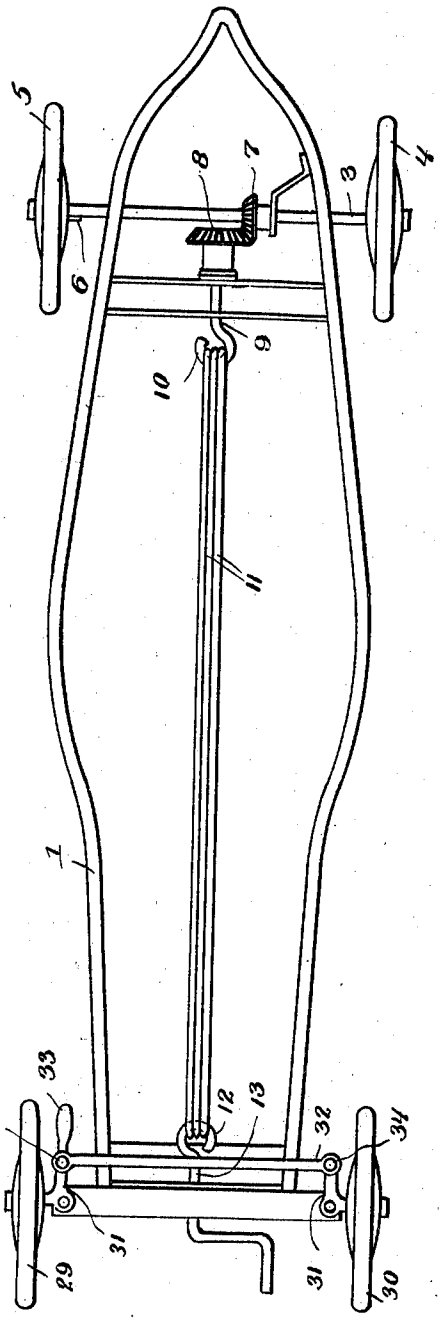


Fig. 1.

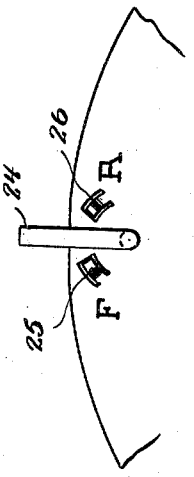


Fig. 3.

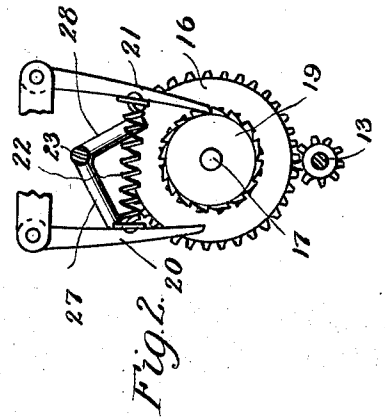


Fig. 2.

Witnesses

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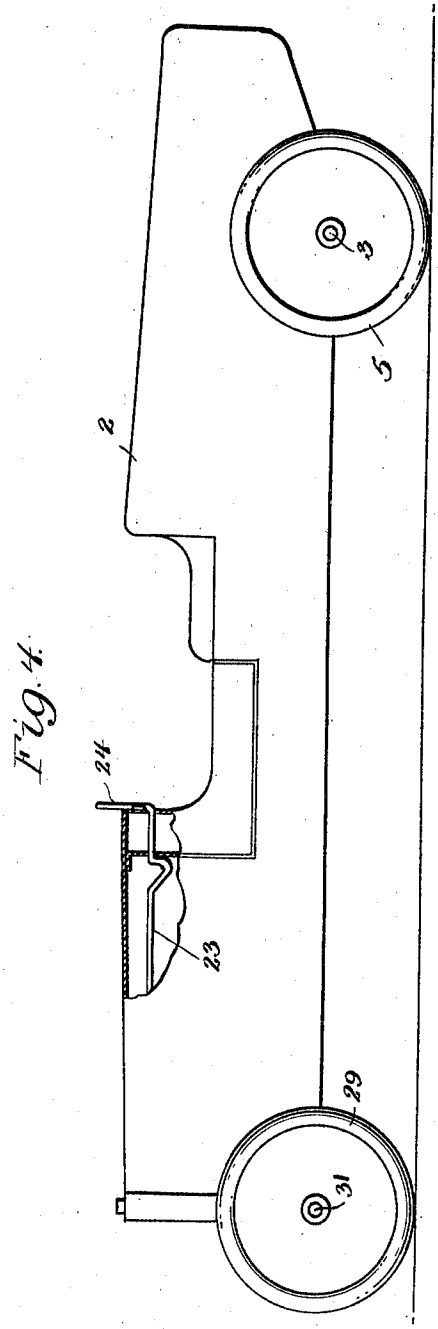


Fig. 4.

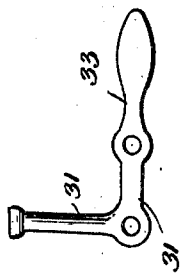


Fig. 6.

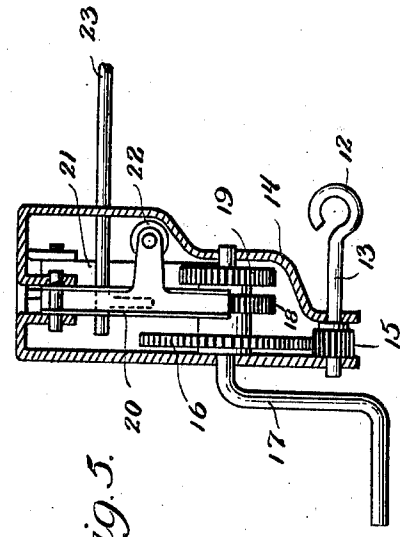


Fig. 5.

Witnesses

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UNITED STATES PATENT OFFICE.

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TOY AUTOMOBILE.

1,399,667. Specification of Letters Patent. Patented Dec. 6, 1921.

Application filed December 12, 1919. Serial No. 344,362.

To all whom it may concern:

Be it known that I, CHAS. J. SLADEK, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented new and useful Improvements in Toy Automobiles, of which the following is a specification.

This invention relates to toys and more particularly to a toy automobile and has for its primary object the provision of a toy automobile that will have its distance of travel materially increased over similar devices now on the market.

An object of the invention is the construction of a toy automobile, the driving element of which may be readily renewed at very little expense by a child inexperienced in mechanics.

A feature of the invention is the novel manner of controlling the direction of travel of the crank arm so that the toy may travel forward and rearward.

With these and other objects in view the invention will be better understood from the following detailed description taken in connection with the accompanying drawings wherein—

Figure 1 is a bottom plan view of the toy.

Fig. 2 is an enlarged view of the winding mechanism.

Fig. 3 is a detailed view of the control rod.

Fig. 4 is a side elevation of the toy.

Fig. 5 is a large sectional view showing winding mechanism in side elevation.

Fig. 6 is a detailed view of one element of the guiding means.

Again referring to the drawing illustrating one manner in which my invention may be constructed 1 designates a frame of the body 2 of the toy. It is, of course, to be understood that the body may be constructed in various other shapes depending upon which is the most practical in practice. Supported by the frame is a rear axle 3 upon which is loosely mounted a rear wheel 4 while the other rear wheel 5 is connected to the shaft as indicated at 6. From this arrangement it will be seen that one wheel is free to rotate on the axle while the other wheel must move with the axle thereby allowing the toy to take a turn more readily. The axle 3 has fixed thereto a gear 7 which meshes with a gear 8. This gear 8 is fixed to a stub shaft 9 having one end formed into an eye 10 for receiving the ends of a series of rubber bands 11.

The bands are also looped around the eye shaped end 12 of a second stub shaft 13. This shaft 13 is rotatably mounted in a frame 14.

Fixed to the shaft 13 is a gear 15 engaging a larger gear 16 fixed to a crank handle 17, also fixed to the crank handle 17 are ratchet wheels 18 and 19. Coöperating with the wheel 18 is a pawl 20 while coöperating with the ratchet wheel 19 is a pawl 21. The pawls are pivotaly mounted and forced toward each other by the spring 22.

As it is necessary that only one pawl engage a ratchet at a time I provide the control rod 23 rotatably supported by the body 2 and having one end 24 bent to be forced into engagement with either of the spring clips 25 and 26, the former controlling the forward movement of the toy while the latter controls the reverse movement of the toy. This rod 23 is provided with a pair of arms 27 and 28 arranged to engage the pawls so as to always hold one pawl out of engagement with its associated ratchet wheel.

From this arrangement it will be seen that the pawls in their coöperation with the ratchet wheels will control the direction in which the crank 17 may be turned, thereby controlling the direction in which the rubber bands will be twisted. The direction in which the rubber bands are twisted determines the direction of travel of the toy.

For the purpose of allowing the toy to travel in a circle the front wheels 29 and 30 are mounted on pivoted bell crank levers 31 which are connected by a link 32. One of the bell crank levers is provided with a handle 33 so that the parts may be adjusted for arranging the wheels at an angle to the body of the automobile.

It is, of course, to be understood that the joints 34 will be tight enough to hold the wheels in adjusted position.

From the detailed description taken in connection with the accompanying drawing it should be apparent that I provide a toy of simple, substantial construction in which the parts are so arranged that the travel thereof may be accurately controlled and having the additional advantage that the main driving element may be readily replaced at very little expense.

It is, of course, to be understood that the

invention may be constructed in various other manners and the parts associated in different relations and, therefore, I do not desire to be limited in any manner except as set forth in the claims hereunto appended.

Having thus described my invention what I claim is—

1. A toy automobile comprising a body, wheels supporting the body, gears having driving connection with certain of said wheels, rubber bands connected to said gears, a device for twisting said rubber bands, a crank for operating said device, means for controlling direction of operation of said crank, and a manually operated element for controlling the operation of said last named means.

2. A toy automobile comprising a body, supporting wheels therefor, gears having driving connection with certain of said wheels, rubber bands adapted, when tensioned, to drive said gears, means for tensioning said rubber bands, and a double pawl and ratchet structure for controlling the direction in which said rubber bands are tensioned thereby controlling direction of travel of the automobile.

3. A toy automobile comprising a body, an axle carried by said body, drive wheels on said axle, a gear fixed to said axle, a second gear meshing with said first gear, rubber bands having connection with said second gear, a stub shaft connected to said bands, a crank handle, gears connecting said crank handle and stub shaft, ratchet wheels fixed on said crank handle, pawls coöperating with the ratchet wheels for controlling the direction of travel of the crank handle, and means controlling the engagement of said pawls with said ratchet wheels.

4. A toy automobile comprising a body, a pair of front wheels, a pair of rear wheels, an axle keyed to one of the rear wheels and loosely supporting the other rear wheel, a gear fixed to said axle, a second gear meshing with the first gear, a series of rubber bands having a connection with said second gear, a stub shaft also connected to said bands, a crank handle having a gear connection with said stub shaft, a pair of ratchet wheels fixed to said crank handle, pawls coöperating with the ratchet wheels for controlling the direction of travel of the crank handle, and a manually operated rod for alternately allowing said pawls to engage said ratchet wheels.

5. A toy automobile comprising a body, supporting wheels therefor, gears for driving certain of said wheels, rubber bands adapted, when tensioned, to drive said gears, means for tensioning said rubber bands, a double pawl and ratchet structure for controlling the direction in which said rubber bands are tensioned and thereby controlling direction of travel of the automobile, and a manually operated element for controlling operation of said double pawl and ratchet structure.

In testimony whereof I affix my signature.

CHARLES J. SLADEK.