Feb. 7, 1928. 1,658,494

S. OTANI

CHILD'S VEHICLE

Filed Nov. 11. 1926 3 Sheets-Sheet 1

Fig. 1.

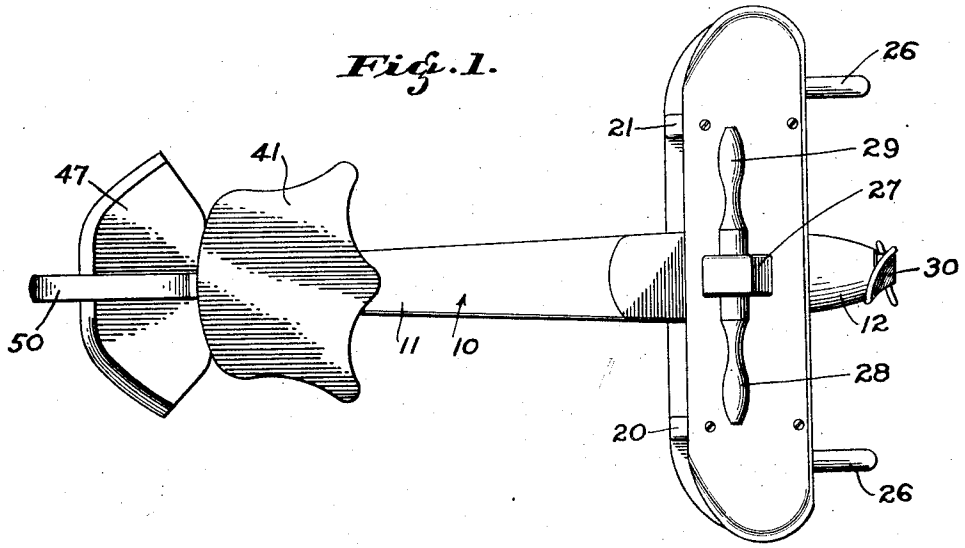
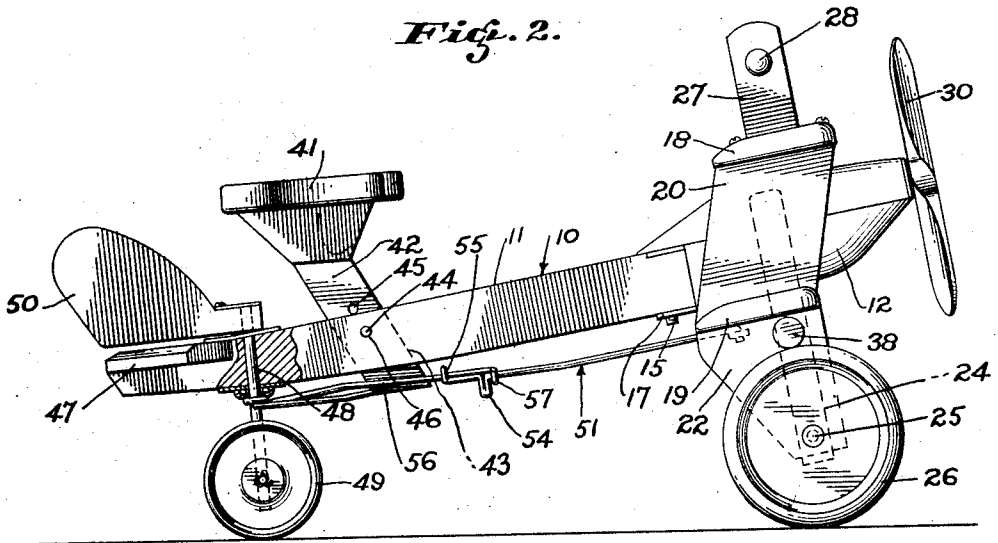


Fig. 2.



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Filed Nov. 11, 1926 3 Sheets-Sheet 2

Fig. 3.

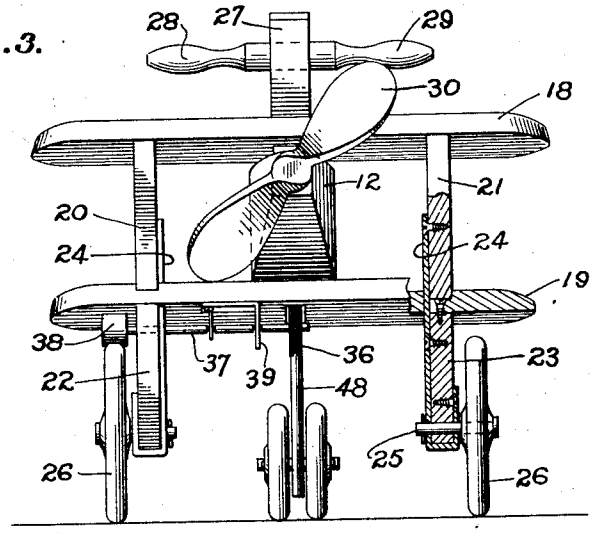


Fig. 4.

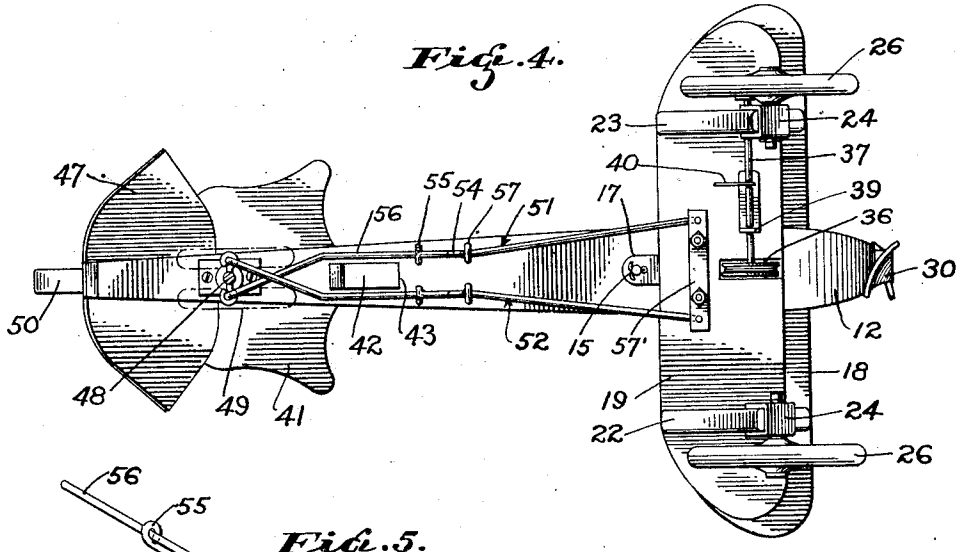
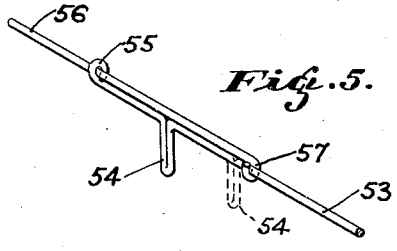


Fig. 5.



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Fig. 6.

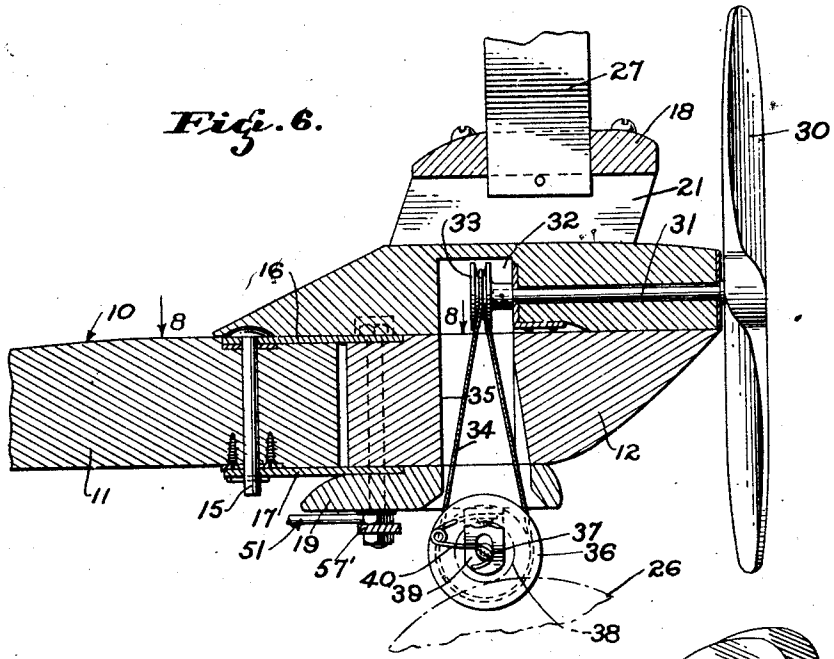


Fig. 7.

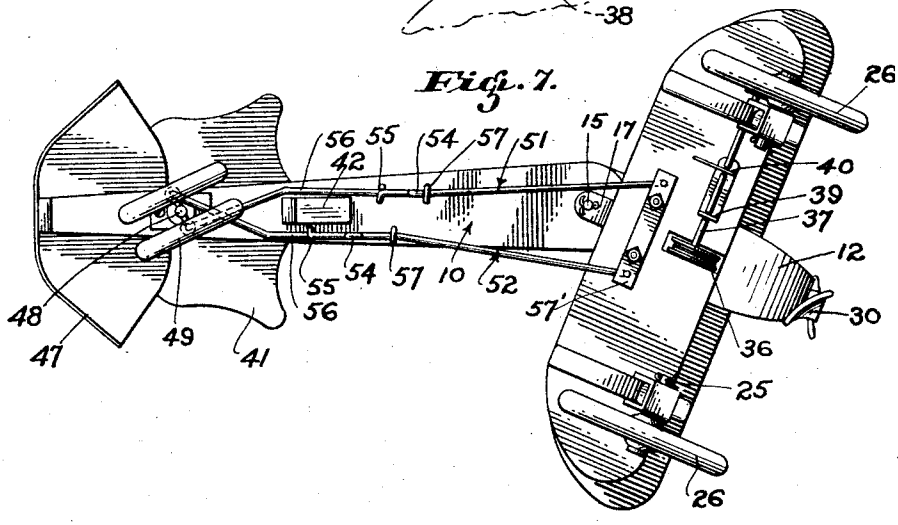
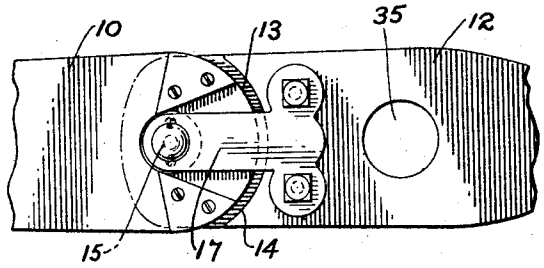


Fig. 8.



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Patented Feb. 7, 1928. 1,658,494

UNITED STATES PATENT OFFICE.

SHOZABURO OTANI, OF WINTERS, CALIFORNIA.

CHILD'S VEHICLE.

Application filed November 11, 1926. Serial No. 147,749.

This invention relates to a child's vehicle.

It is the principal object of the present invention to provide a child's vehicle having the general design of an aeroplane, and which vehicle may be easily propelled and steered and when in motion will appear similar to an aeroplane in flight. The present invention contemplates the use of a body member carrying a seat, the forward end of said member being fitted with imitation aeroplane wings, the rear of said member being fitted with an imitation rudder and ailerons. A propeller is mounted upon the front of the vehicle and running gear is provided for the support of a vehicle and by which running gear the propeller may be driven.

The invention is illustrated by way of example in the accompanying drawings, of which—

Figure 1 is a plan view of the child's vehicle with which the present invention is concerned.

Figure 2 is a view in side elevation showing the complete device.

Figure 3 is a view in front elevation, particularly showing the running gear construction and the manner in which the wheels are mounted on the front fork.

Figure 4 is a view of the vehicle in plan, as viewed from the under side.

Figure 5 is an enlarged view in perspective showing the fragmentary portion of an operating member by which the vehicle is steered.

Figure 6 is an enlarged fragmentary view showing the steering connection and the propeller drive mechanism.

Figure 7 is an enlarged fragmentary view similar to Figure 4 but showing the parts in their relative position during turning.

Figure 8 is an enlarged fragmentary view in elevation as seen on the line 8—8 of Figure 6 and showing the manner in which the parts of the vehicle body are articulately connected.

Referring more particularly to the drawings; 10 indicates the fuselage of a toy aeroplane which forms the body of the vehicle with which the present invention is concerned. This fuselage is made in two parts—a main body portion 11 and a forward portion 12 articulately connected thereto. The connection is particularly shown in Figures 6 and 8, where it will be seen that the member 11 has a curved forward portion as indicated at 12—13, which fits in an arcuate recess 14 of similar contour. The members are pivoted one with relation to the other, upon a vertically disposed bolt 15 which passes through T-shaped plates 16 and 17 disposed above and below the body member 11. The head portions of these T's are securely bolted to the forward body member 12 and thus insures that the forward body member will swing around the pivot pin 15.

The forward body member 12 is fitted with a pair of imitation aeroplane wings 18 and 19 secured above and below the body member as clearly indicated in Figures 2 and 3. These members are rigidly held in spaced relation to each other by vertical posts 20 and 21 which are secured between the members. Contiguous of these, posts indicated at 22 and 23 in Figure 3 extend downwardly from beneath the lower wing 19 and form the forks or supporting members of the landing gear. These forks are rigidly reinforced by bearing straps 24 which extend downwardly along the inner sides of the post and are bent around the lower ends thereof and extend upwardly along the outer faces of the posts 22 and 23. Openings are provided in the straps and through the posts to receive the axles 25 of running gear wheels 26. A pair of these wheels is therefore disposed as a part of the front section of the structure and in a manner to make the vehicle dirigible. A central steering post 27 extends upwardly through the top wing 18 and is fitted with steering grips 28 and 29 by which grips the entire front unit comprising the body section 12, the wings 18 and 19 and the front wheels 26 may be turned with relation to the pivot bolt 15 and the body section 11. The forwardly projecting end of the body section 12 is fitted with a propeller 30 which has a shaft 31 more clearly shown in Figure 6. The shaft 31 is rotatably mounted in the body portion 12 and terminates within a recess 32 where it is fitted with a pulley 33. A belt 34 extends around this pulley and passes downwardly through an opening 35 to be passed around a second pulley 36, disposed with its axis disposed at right angles to the axis of the pulley 33. The pulley 36 is mounted upon a shaft 37 which extends outwardly and carries a friction wheel 38 at its outer end. The periphery of this wheel rests against the circumfer-

ence of one of the front wheels 26. The shaft 37 extends through slotted bearing members 39 and the shaft is yieldably held in its lowermost position by a suitable spring 40 which forces the shaft downwardly and thus forces the friction wheel 38 against the periphery of one of the wheels 26. In this manner the running gear wheel 26 and the friction wheel 38 are held in contact so that the friction wheel is driven. In this manner rotary motion will be imparted to the propeller to cause it to be rotated as the vehicle moves. The rearwardly extending body portion 11 of the vehicle is fitted with a seat 41. This seat may be of any desired design and is mounted upon a supporting post 42. The post extends downwardly through a slotted opening 43 in the body member 11 and may be adjustably supported by a pin 44 extending through openings 45 in the post, and through an opening 46 in the body member 11. The rear end of the body member 11 terminates in an aileron wing 47.

At a point near the aileron wing a vertical shaft 48 is provided and is rotatably mounted through the body member 11. Suitable wheels 49 are rotatably secured to the lower end of the shaft 48 and may be swung during the steering operation in a manner which will be hereinafter set forth. The upper end of the shaft 48 carries a rudder structure 50 which will swing at the same time the wheels 49 are turned. The turning of the shaft 48 is brought about at the same time the forward section 12 of the body is swung on pivot 15. This is accomplished by a device here shown as comprising control rods 51 and 52. These rods are formed in two overlapping sections, the overlapping ends being formed as particularly shown in Figure 5. Here it will be seen that the forward sections 53 are formed with a stop portion 54 and then continue to form a loop 55 through which the rear sections 56 extend. The rear sections 56 extend through the loops 55 and lie parallel along the sections 53 and terminate at their forward ends in loops 57, passing around the forward sections 53. An examination of Figure 7 of the drawings will show that when a pull is being exerted on one of the control rods, as for example 51, the stop member 54 will be pulled forwardly to the position indicated by dotted lines in Figure 5 and solid lines in Figure 7. This will cause the stop to engage loop 57 and produce a tension on the entire control rod 51. At the same time the sections 53 and 56 of the opposite control rod 52 will slide relative to each other as they tend to shorten and will cause the slack to be taken up by relative longitudinal movement between the rod sections 53 and 56. The forward ends of the control rods 51 and 52 are pivotally connected to a plate 57 and are connected at points on opposite sides of the longitudinal center of the body member 12, and upon which center line the pivot bolt 15 is mounted. The rear ends of the rods are crossed and are connected to a plate and upon opposite sides of the axis of shaft 48, so that the swinging movement of the plate 57 in one direction will cause opposite swinging movement of the spindle shaft 48 and will cause the wheels 49 at the rear of the vehicle to turn at an angle relative to the longitudinal axis of the body opposite from the angle assumed by the front wheels 26, at the same time thus shortening the turning radius of the vehicle.

In operation of the present invention, the occupant of the vehicle sits upon the seat 41 and astride the body member 11. The vehicle is propelled when the operator shoves on the ground with his feet to force the vehicle forwardly. The vehicle may be steered by turning the handle grips 28 and 29 which will also turn the forward portion 12 of the body and the running gear structure comprising wheels 26. At the same time, the control rods 51 and 52 will act to turn the rear wheels in an opposite direction from the turning angle of the front wheels and will permit the vehicle to be turned in a comparatively small space. As the vehicle advances, frictional engagement of one of the front wheels 26 and the friction wheel 38 will cause the propeller wheel to be driven.

While I have shown the preferred form of my invention, as now known to me, it will be understood that various changes might be made in the combination, construction and arrangement of parts without departing from the spirit of the invention as claimed.

Having thus described my invention, what I claim and desire to secure by Letters Patent is—

1. A child's vehicle, comprising a body portion extending horizontally and being formed in two lengths articulately connected, a running gear rigidly secured beneath the foremost of said body sections and attached thereto, a steering structure mounted beneath the rearmost of said body sections and adapted to turn on a vertical axis, means for swinging the foremost body section with relation to the remainder of the body whereby the vehicle may be steered, and means connecting the foremost section with the steering structure whereby swinging of the body in one direction will cause the steering structure to swing in an opposite direction when the vehicle negotiates a turn.

2. A child's vehicle, comprising a horizontal extending body structure formed of two parts articulately connected for hori-

zontal swinging movement, a pair of running gear wheels secured to the front section of the body and adapted to support the same, a steering structure secured beneath the rear section of the body and adapted to swing around a vertical axis, and operating rods crossing each other and having their contiguous ends secured to opposite sides of the steering structure at one end and to points upon opposite sides of the longitudinal center of the front section of the vehicle body, whereby turning of the front body section with relation to the rear body section will cause the steering structure to turn in an opposite direction from that assumed by the front body section.

3. A child's vehicle, comprising a horizontal extending body structure formed of two parts articulately connected for horizontal swinging movement, a pair of running gear wheels secured to the front section of the body and adapted to support the same, a steering structure secured beneath the rear section of the body and adapted to swing around a vertical axis, and operating rods crossing each other and having their contiguous ends secured to opposite sides of the steering structure at one end and to points upon opposite sides of the longitudinal center of the front section of the vehicle body whereby turning of the front body section with relation to the rear body section will cause the steering structure to turn in an opposite direction from that assumed by the front body section, said rods being formed with sliding connections whereby the rods will operate only when under tension.

4. In a device of the character described, an operating rod adapted to act under tension, said rod being formed in two substantially longitudinally aligned sections, the contiguous ends of said sections overlapping and being formed with eyes through which the other section of wire extends and a shoulder formed on one of the wires intermediate the eyes whereby longitudinal movement of the wires will cause the shoulder to engage one of the loops and thereafter produce a unitary movement of the two wire members.

5. A child's vehicle, comprising an elongated body, said body being formed in two parts hinged together, a pair of laterally spaced members extending horizontally above and below the forward section of the body and secured thereto, downwardly extending posts connecting said lateral members and projecting beneath the lowermost of said members, running gear wheels having axles journalled on the lower extensions of said posts, a steering post extending upwardly from the top of the body member and being formed with handle grips for turning the same, a steering wheel structure mounted upon a vertical axis beneath the rear section of the body member, and means connecting the body member and said steering structure whereby the steering structure will turn in response to movements of the body member.

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