Jan. 31, 1933. L. SHAW 1,895,737

BALANCING COASTER WAGON WITH AIRPLANE CONTROLS

Filed Nov. 5, 1930 2 Sheets-Sheet 1

Fig. 1.

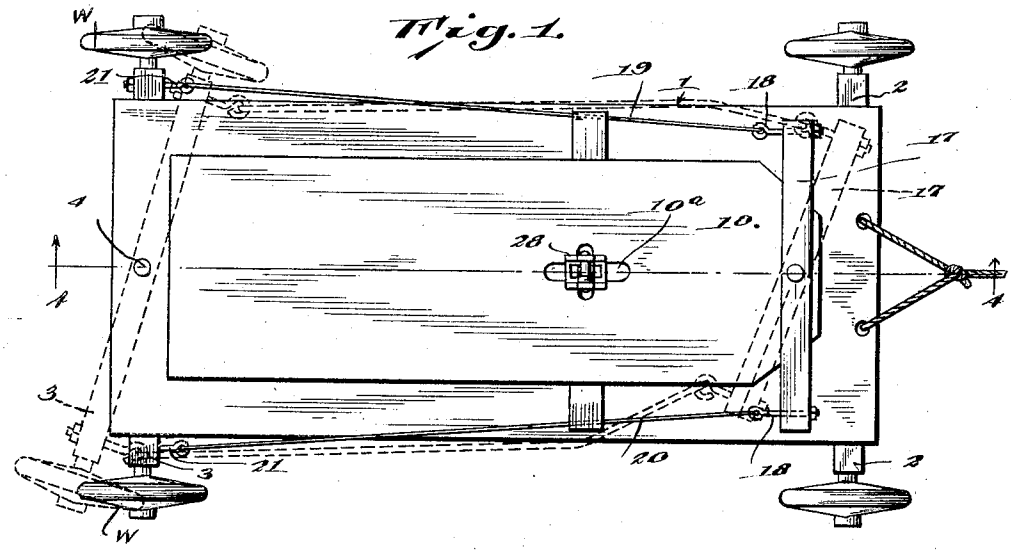


Fig. 2.

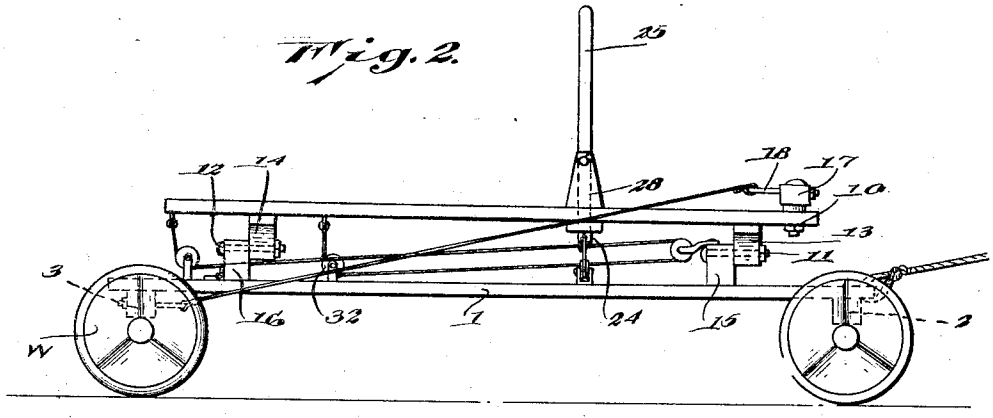
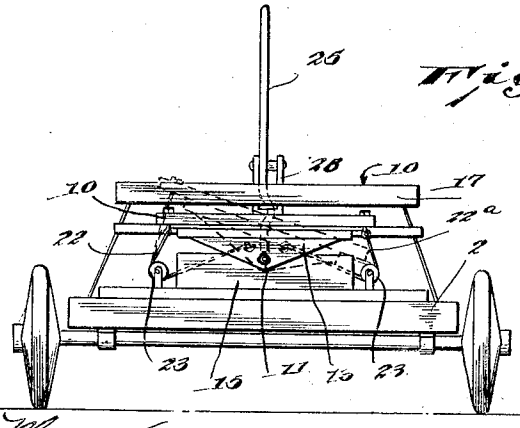


Fig. 3.



WITNESS

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Fig. 4.

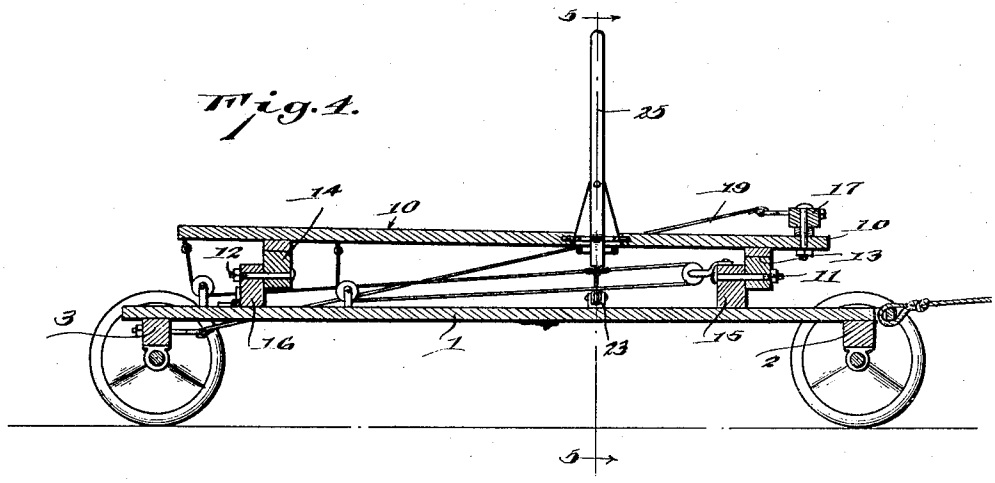
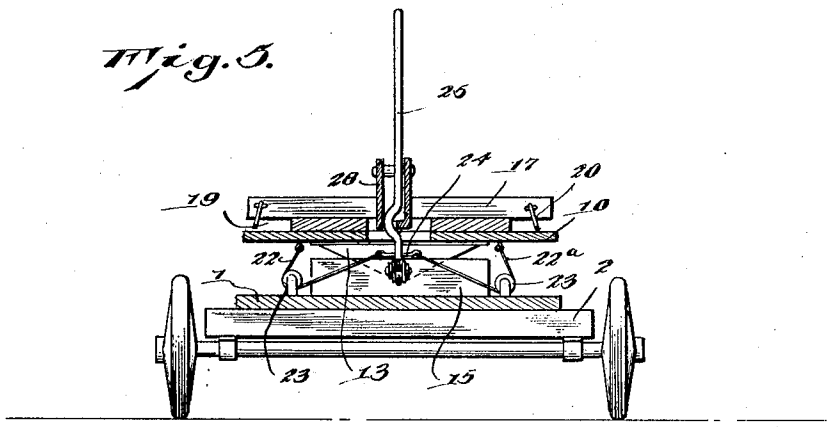


Fig. 5.



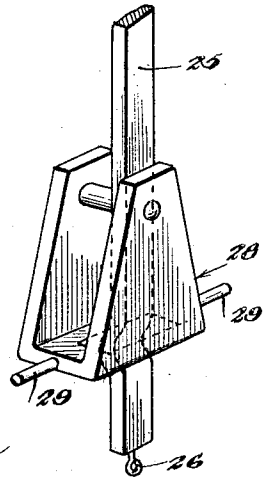


Fig. 6.

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UNITED STATES PATENT OFFICE

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BALANCING COASTER WAGON WITH AIRPLANE CONTROLS

Application filed November 5, 1930. Serial No. 493,622.

This invention relates to balancing coaster wagons and the primary object thereof is by the use of this wagon to train young drivers in the use of the foot rudder and control stick employed in airplanes so that they will instinctively react correctly to its unusual controls.

Another object of the invention is to provide a wagon of this character having a balanced bed in which all of the controls are integral with it and move as it moves thereby producing a feel and response similar to that in an airplane.

Another object is to construct a wagon of this character in which a balancing bed is mounted to be rocked from side to side and the vehicle is to be steered by means of the feet in a manner similar to that employed in an airplane.

In carrying out these objects, the invention is susceptible of a wide range of modification without departing from the spirit or sacrificing any of the advantages of the claimed invention; there being shown in the drawings for illustrative purposes a preferred and practical form, in which:

Figure 1 represents a plan view of a coaster wagon constructed in accordance with this invention showing the rudder control in operation in dotted lines;

Fig. 2 is a side elevation of the coaster wagon.

Fig. 3 is a front elevation thereof;

Fig. 4 is a longitudinal section taken on the line 4—4 of Fig. 1;

Fig. 5 is a transverse section taken on the line 5—5 of Fig. 4; and

Fig. 6 is a detail perspective view showing a portion of the control stick and its mounting.

In the embodiment illustrated the wagon constituting this invention comprises a frame or chassis 1 equipped with a fixed front wheel axle 2 and a rear axle 3 pivotally mounted midway its ends intermediate the width of said frame at the rear thereof as is shown clearly in Fig. 1, the pivot bolt being indicated at 4.

Mounted to tilt sidewise relatively to the frame 1 is a balancing bed 10, the front pivot bolt being shown at 11 and the rear pivot bolt at 12. These bolts 11 and 12 extend through depending lugs or blocks 13 and 14 mounted respectively at the front and rear ends of the wagon bed on the lower face thereof as is shown clearly in Fig. 4. They also extend through upstanding blocks 15 and 16 carried by the frame 1.

Arranged transversely on the upper face of the front end of the bed 10 is what we term a rudder bar 17 pivotally connected midway its ends to the bed midway its width as is shown clearly in Fig. 1. The ends of this bar 17 project beyond the sides of the bed 10 and have attached thereto by any suitable means, preferably eye-bolts 18, control wires 19 and 20. The other ends of these wires are connected by eye-bolts 21 to the rear axle 3 to which the rear wheels W are attached and which constitute the steering wheels.

It is understood that the rudder control wires 19 and 20 operate when the rudder bar is shifted to turn the axle 3 for steering the wagon. When the driver pushes forward on the rudder bar with either foot the wagon will be steered to that side instead of in the manner to which he is accustomed in all other land machines. This will result in teaching the driver this difficult and unnatural method of steering which is used in the steering of airplanes.

To provide for the sidewise tilting of the wagon bed 10 the pivot bolts 11 and 12 above described are employed, and balance control wires 22 and 22*a* are connected with the bed 10 and with a balance control stick 25 in a manner presently to be described. These wires 22 and 22*a* extend transversely of the vehicle as shown clearly in Fig. 5 and pass under pulleys 23 carried by the upper face of the frame or chassis 1 and in spaced relation as is shown clearly in Fig. 5. The inner ends of these wires 22 and 22*a* are connected with the lower end of the balance control stick 25 by suitable means here shown in the form of an eye-bolt 24 which extends through a loop-like connection here shown in the form of an eye 26 on the lower end of the stick 25 in a manner to permit some free play between the stick and the wires.

The control stick 25 is made in the form of a lever mounted between the arms of an upstanding inverted U-shaped bracket 28 mounted on the wagon bed 10 and pivotally connected with said bed by journals 29 so that the side-wise rocking of the stick will operate to move this bracket on its journals and cause the lower end of the stick to exert a pulling action on one or the other of the wires 22 or 22*a* according to the direction in which the stick is moved. When the control stick 25 is moved to the left the lower end of the stick beyond its pivot or fulcrum moves to the right exerting a pull on the left control wire and releases the right control wire. This motion is transferred through the pulleys 23 so that the left wire pulls down the left side of the balancing wagon bed 10 and the right control wire permits the right side to rise. It will thus be seen that when the control stick 25 is moved to either side the wagon bed 10 tilts to the same side and simulates the action of the pilot seat in an airplane when he moves his control stick to the side.

Without further description it is thought that the features and advantages of the invention will be readily apparent to those skilled in the art, and it will, of course, be understood that changes in the form, proportion and minor details of construction may be resorted to, without departing from the spirit of the invention or its scope as claimed.

I claim:

1. A wagon of the class described comprising a chassis, a bed mounted for sidewise tilting on said chassis, and a manually operable control stick connected thereto whereby said bed may intentionally be tilted.

2. A wagon of the class described comprising a chassis, a bed mounted for sidewise tilting on said chassis, control wires for holding said bed in balanced position, and a control stick movably mounted on and extending through to the nether side of the bed, the nether end of said stick being connected to said wires to tilt the bed towards either side with reference to the chassis.

3. A wagon of the class described comprising a chassis, a bed spaced above said chassis and pivot means on which said bed is rockable sidewise, pulleys carried by the chassis, control wires connected with the bed and passing around said pulleys, and a control stick fulcrumed on said bed with one end extended therethrough to the nether side of the bed, the nether end of the stick being connected with said wires whereby the rocking of the stick will manipulate the wires to rock the bed.

LLOYD SHAW.