Jan. 20, 1959 S. R. GLANZ 2,869,686

HAND OPERATED TOY CAR

Filed March 1, 1956 3 Sheets-Sheet 1

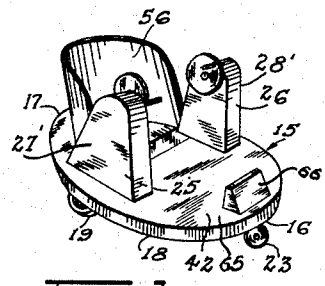


Fig. 1.

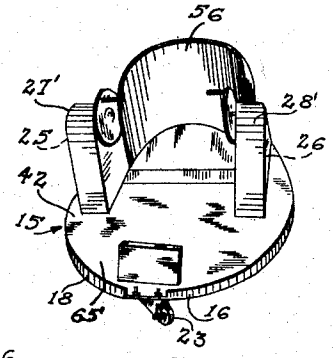


Fig. 2.

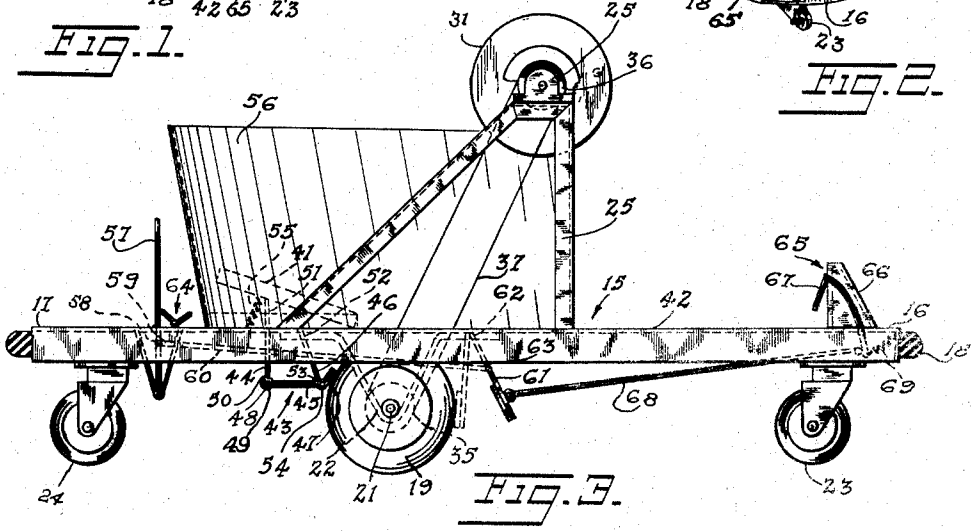


Fig. 3.

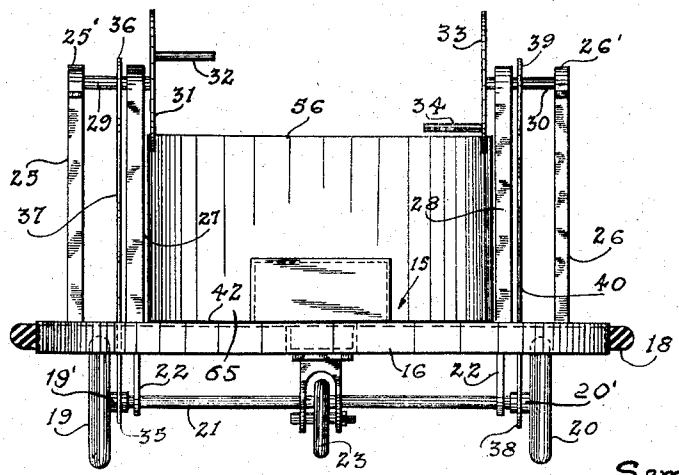


Fig. 4.

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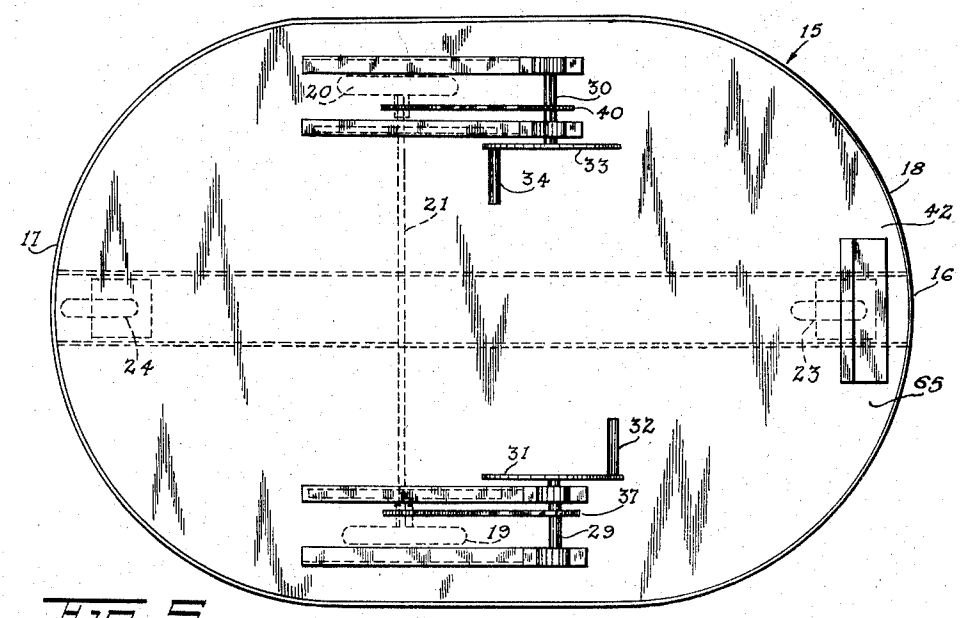


Fig. 5.

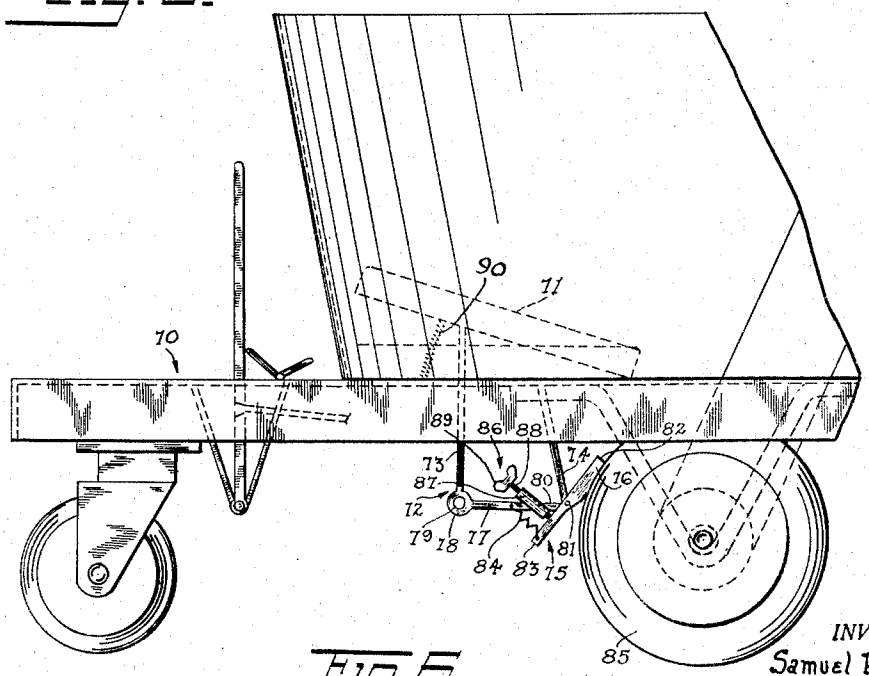


Fig. 6.

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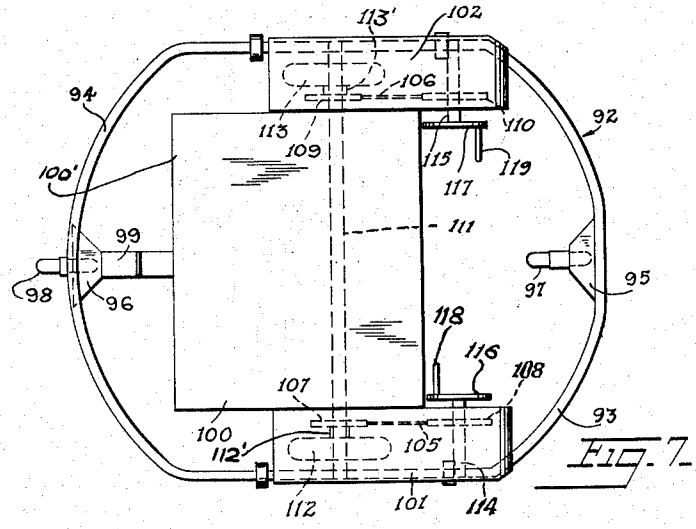


FIG. 7

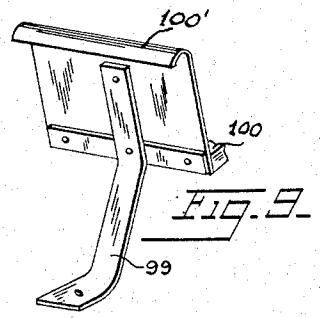


FIG. 9

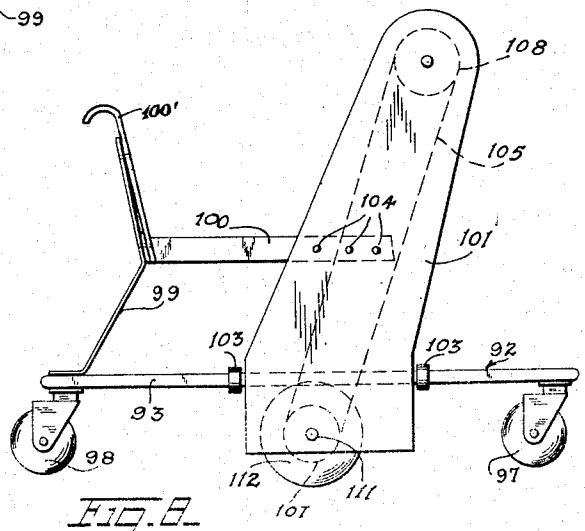


FIG. 8

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HAND OPERATED TOY CAR

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Application March 1, 1956, Serial No. 568,902

1 Claim. (Cl. 188—109)

This invention relates to new and useful improvements in toy cars for children to ride and propel.

More particularly, the present invention proposes the construction of an improved maneuverable hand-operated toy car which a child can easily and safely use for coasting, pushing and self-propelling.

As a further object, the present invention proposes forming the car with a chassis having a main set of drive wheels and front and rear swivel caster wheels with three different brakes for braking the main wheels. It is also an object of the invention to provide a hand operated toy car having two main drive wheels with means for driving each wheel independently of the other whereby greater maneuverability is produced.

Another object of the invention proposes constructing one of the brakes as a seat operated brake which will always be on when the seat of the car is unoccupied so as to permit the car safely to be parked on inclines and in places when it is likely to roll or be pushed.

For further comprehension of the invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawings, and to the appended claims in which the various novel features of the invention are more particularly set forth.

In the accompanying drawings forming a material part of this disclosure:

Fig. 1 is a perspective view of a toy car constructed and arranged in accordance with the present invention.

Fig. 2 is a view similar to Fig. 1 but showing a front view.

Fig. 3 is a side elevational view with parts broken away of the structure shown in Figs. 1 and 2.

Fig. 4 is a front elevational view with parts broken away.

Fig. 5 is a top plan view of the car with parts omitted for the purpose of clarity.

Fig. 6 is a fragmentary view similar to Fig. 3 but illustrating a modification of the present invention.

Fig. 7 is a view similar to Fig. 5 but illustrating another modification.

Fig. 8 is a side view of the structure shown in Fig. 7.

Fig. 9 is a perspective view of the seat bracket shown in Figs. 7 and 8.

The toy car, in accordance with the first form of the invention shown in Figs. 1 to 5, inclusive, has a chassis **15** which may be made of structural metal members and which preferably is made in the shape shown.

Chassis **15** has a front end **16** and a rear end **17** and a resilient rubber bumper **18** entirely encircles the chassis or frame. A pair of spaced main drive wheels **19** and **20** are rotatably mounted on the ends of a main axle **21** by means of laterally extending tubular hub extensions **19'** and **20'** respectively. The axle **21** is fixedly mounted on the chassis by brackets **22** between the front and rear ends of the chassis. Front and rear caster wheels **23** and **24** are swivelly mounted on the chassis at the front end **16** and rear end **17**, respectively.

Two pairs of spaced upright crank supports **25**, **26**, **27** and **28** covered by appropriate shields or covers **27'** and **28'** are mounted on the chassis and a pair of pillow blocks **25'** and **26'** are mounted at the top of the crank supports **25** and **26**. Stub axles **29** and **30** rotatably extend through the pillow blocks and crank supports. Crank disc **31** is fixed to the stub axle **29** and crank **32** is fixed to the crank disc. Likewise, a crank disc **33** is fixed to the stub axle **30** and a crank **34** is fixed to the crank disc **33**. Cranks **32** and **33** are opposed and disposed for convenient independent operation by a child from a sitting position. A sprocket **35** is fixedly mounted on the hub extension **19'** of the drive wheel **19**, and a sprocket **36** is fixedly mounted on the stub axle **29**. A chain **37** connects the sprockets **35** and **26**. Likewise, a sprocket **38** is fixedly mounted on the hub extension **20'** of the drive wheel **20**, and a sprocket **39** is fixedly mounted on the stub shaft **30**, with a chain **40** connecting these sprockets. This construction permits independent driving of the drive wheels **19** and **20** by the cranks **32** and **34**, respectively.

A seat **41** is pivotally mounted on the floor **42** of the chassis and a seat operated brake **43** is mounted on the chassis adjacent the main wheels and connected with the seat to prevent the main wheels from rotating when the seat is not occupied. The seat and main wheels are located on the frame or chassis substantially to balance the car between front and rear caster wheels.

Seat operated brake **43** has a seat lever arm **44**, a brake lever arm **45**, and a chassis connecting arm **46**. The brake lever arm **45** has a brake shoe end portion **47** and another end **48** pivotally connected by a pin **49** with one end **50** of the seat lever arm **44**. The seat lever arm **44** has another end **51** connected with the seat **41**.

Chassis connecting arm **46** is a fixed arm and has one end **52** connected to the chassis and another end **53** to which the brake lever arm **45** is pivotally connected by pin **54**. The pivot pin **54** is located between the ends **47** and **48** of the brake lever arm **45**.

A resilient member or spring **55** is disposed between the seat **41** and the chassis normally to bias the seat in a tilted position and through the seat and brake lever arms **44** and **45** to force the brake shoe portion **47** of the brake lever arm **45** against one of the main wheels.

The seat **41** is partially enclosed by a seat enclosure **56** which forms the body of the car. An externally operated brake lever **57** is pivotally mounted at one end **58** to the chassis at the rear end of the chassis. Adjacent the end **58** of brake lever **57**, one end **59** of a connecting rod **60** is attached. A brake bearing block lever **61** is pivotally dependent from the chassis adjacent one of the main wheels, lever **61** having one end **62** pivotally connected to the chassis. The connecting rod **60** has another end **63** connected to the brake bearing block lever for operating that lever by the externally operated brake lever **57**.

A foot trip release **64** is pivotally connected to the chassis adjacent the externally operated brake lever **57** for blocking and releasing the lever **57**.

A foot brake **65** is mounted on the front end of the chassis adjacent a foot rest **66**. The foot brake **65** has a pedal **67** pivotally mounted on the chassis and a tie rod **68** connects the pedal with the brake bearing block lever **61** for pressing the lever **61** against one of the main wheels when the pedal is depressed. A spring **69** normally holds the pedal in unpivoted position and the brake bearing block lever out of contact with the main wheel.

The modification of the invention illustrated in Fig. 6 is characterized by the provision of a frame or chassis **70** having a seat **71** pivotally mounted thereon and a

seat operated brake 72. The seat operated brake 72 has a seat lever arm 73, a fixed chassis connecting arm 74 and a brake lever arm 75. The brake lever arm 75 has a brake shoe 76 and a shank member 77, the shank member having an end 78 pivotally connected by pin 79 to the seat lever arm 73 and another end 80 pivotally connected by pin 81 to the brake shoe intermediate the ends 82 and 83 of the brake shoe. The brake shoe 76 is also pivotally connected by pin 81 to the fixed chassis connecting arm 74. A spring 84 connected to the shank member and to the end 83 of the brake shoe normally biases the end 82 of the brake shoe in pivoted position toward the main wheel 85.

A screw member 86 is mounted on the shank member 77. Screw member 86 has a tubular threaded housing 87 fixed to the shank member and a screw 88 with wing nut head 89 fits in the housing and bears against the end 83 of the brake shoe between the spring 84 and pivot pin 81 to counteract as desired the action of the spring and hold the brake shoe away from the wheel 85. A spring 90 normally biases the seat 71 in the raised tilted position shown.

The modification of the invention illustrated in Figs. 7, 8 and 9 is characterized by the provision of a pipe or tubular frame or chassis 92 preferably made of one-half inch diameter hollow aluminum tubing made in two lengths 93 and 94 and joined together by connector members 95 and 96 at the front and back of the frame respectively.

Swivel caster road steering wheels 97 and 98 are rotatably and swivelly mounted on the connector members 95 and 96, respectively. A seat bracket 99 extends upwardly from the rear connector member 96 and a seat 100 is mounted on the seat bracket, with a back rest 100'. Chain guards and crank supports 101 and 102 are mounted on the frame lengths 93 and 94 by clamps 103 and are secured to the seat 100 by bolts or screws 104.

Chain guards 101 and 102 house chains 105 and 106 extendnig between sprockets 107 and 108 and 109 and 110. A main axle 111 is fixedly mounted on the frame and main drive wheels 112 and 113 are rotatably mounted on the main axle by means of hub extensions 112' and 113'. Sprockets 107 and 109 are fixedly mounted on the hub extensions, and sprockets 108 and 110 are fixedly mounted on stub axles 114 and 115 rotatably mounted on the supports 101 and 102, respectively. Crank discs 116 and 117 are mounted on the stub axles 114 and 115 respectively, and crank handles 118 and 119 are secured to the crank discs, whereby the drive wheels 112 and 113 are independently driven.

While I have illustrated and described the preferred embodiments of my invention, it is to be understood that I do not limit myself to the precise constructions herein disclosed and that various changes and modifications may be made within the scope of the invention as defined in the appended claim.

Having thus described my invention, what I claim as new, and desire to secure by United States Letters Patent is:

In a toy car, the combination with a chassis and a pair of road traction wheels supported on the chassis, of braking mechanism including an articulated lever pivotally mounted on the chassis adjacent each road wheel, a brake shoe carried by each lever movable into and out of braking engagement with its respective road wheel, each brake shoe being pivotally connected to a fixed portion of the chassis, a seat pivotally mounted on the chassis, said seat being connected to one end of each articulated lever whereby movement of said seat in one direction sets the braking mechanism and movement thereof in the opposite direction releases the braking mechanism, a spring interposed between the seat and chassis for urging said seat in a direction to set the braking mechanism, and means for adjusting the length of throw of each shoe inward toward its respective wheel, said adjusting means including a spring interposed between the other end of each said articulated lever and one end of the shoe for urging the shoe toward the respective wheel, a tubular threaded housing fixed on said other end of each said lever, a screw member threaded in said housing and bearing against the brake shoe between the last-named spring and the pivotal connection of the shoe to said other end of each said lever, and a nut on said screw member for actuating the same whereby to counteract the action of the seat-actuated spring and to hold the shoe away from the wheel.

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