Feb. 25, 1941. F. F. VOORHEIS 2,233,116

TOY WAGON

Filed Jan. 22, 1940

Fig. 1.

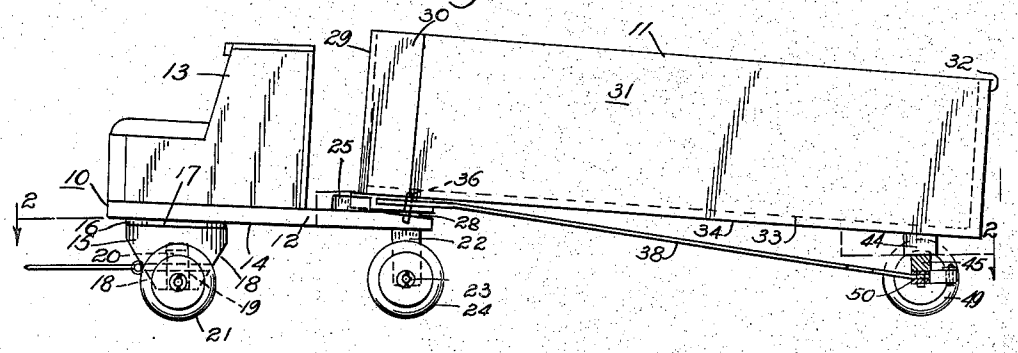


Fig. 2.

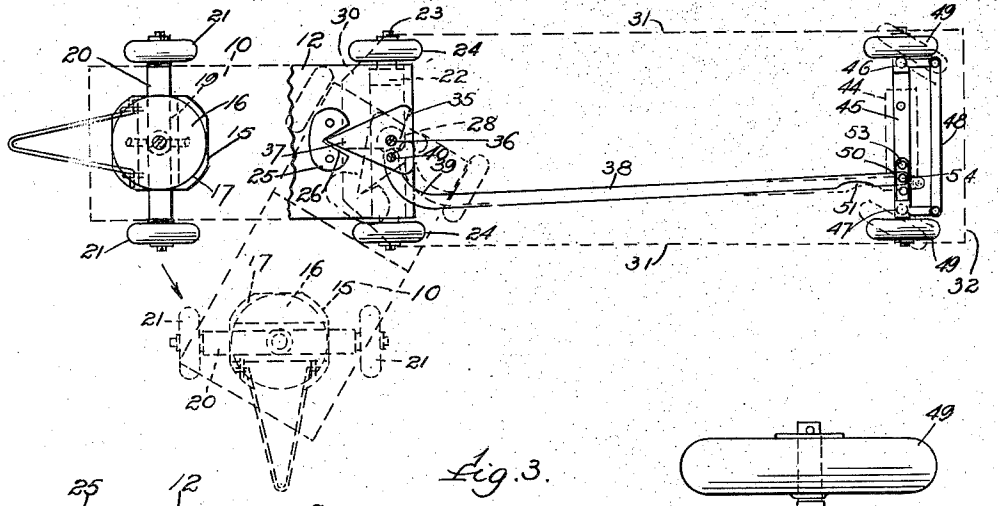


Fig. 3.

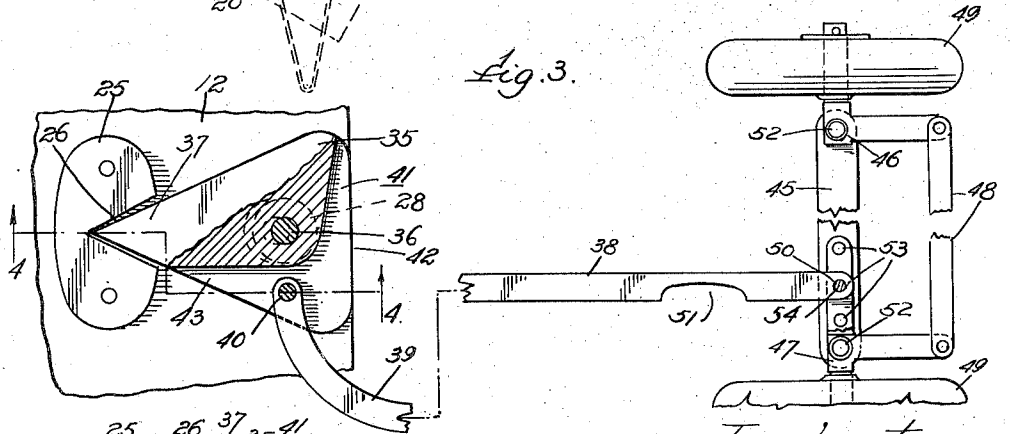
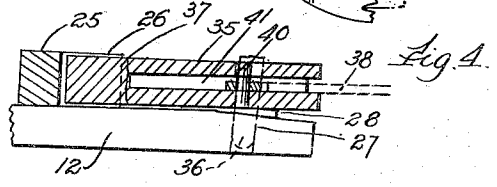


Fig. 4.



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2,233,116

TOY WAGON

Frank F. Voorheis, Downers Grove, Ill.

Application January 22, 1940, Serial No. 315,021

3 Claims. (Cl. 46—201)

My invention relates to toy wagons having a front cab and trailer and with six wheels.

Among the objects of my invention is to provide toy wagons having a construction that will permit them to turn in the minimum of space and in which the trailer will follow exactly in line with the path of the cab, and such other objects, advantages and capabilities as will later more fully appear and which are inherently possessed by my invention.

While I have shown in the accompanying drawing a preferred form of my invention, yet I desire it understood that the same is susceptible of modification and change without departing from the spirit of my invention.

Referring to the drawing, Fig. 1 is a side elevational view of a toy wagon constructed in accordance with my invention; Fig. 2 is a plan view on line 2—2 of Fig. 1, also showing by dotted lines the operation of my invention; Fig. 3 is an enlarged detailed view partly in section; Fig. 4 is a sectional detail view on line 4—4 of Fig. 3.

The embodiment selected to illustrate my invention comprises a simulated front cab 10 and a simulated trailer 11. My cab 10 has a floor 12 on which is built a cabin 13. Rotatably attached to the under bottom portion 14 of the floor 12 by suitable means such as a bolt is a block 15, said block being spaced from the bottom portion 14 of the floor 12 by a washer 16.

Said block 15 has a flat top portion 17 resting against the bottom of the washer 16. The block 15 also has a pair of oppositely sloping side portions 18 and a central groove 19 to receive the axle frame 20 for the front wheels 21. The axle frame 20 is pivotally attached by a pin to the block 15 and is adapted to pivot with a knee action so that the wheels 21 may pass over minor obstructions in their path.

A housing 22 is attached to the rear of portion 14 and has therein an axle 23 for the rotatable support of center wheels 24.

On the upper face of floor 12 adjacent the rear is a guide 25 with a V-shaped cut out portion 26. To the rear of the guide 25 in the floor 12 is a slightly forwardly inclined aperture 27 surrounded by a washer 28.

My trailer 11 has front walls 29 with angular portions 30, side walls 31, a rear wall 32 and a floor 33. To the under portion 34 of the floor 33 adjacent the front thereof a substantially triangular shaped member 35 is pivotally attached by a pin or bolt 36. The bolt 36 is substantially midway between the side walls 31. The apex 37 of the triangular shaped member 35 is adapted to slide within the V-shaped cut out portion 26 and be held therein by the walls of guide 25. The lower end of the bolt 36 removably fits within aperture 27.

A connecting shaft 38 has a curved front portion 39 which is pivotally attached to the triangular member 35 by a pin 40. The triangular member 35 has a slotted portion 41 which extends from the base 42 around to one of the side portions 43 short of the apex 37.

At the rear of the under portion 34 is attached a block 44 to which is attached an axle frame 45. Pivotally attached to said axle frame 45 on opposite ends are stub axles 46 and 47 connected by a cross member 48. Rear wheels 49 rotate on said stub axles 46 and 47.

The connecting shaft 38 extends rearwardly from the triangular member 35 and its rear end 50 is pivotally attached to stub axle 47. The shaft 38 may have a cut out portion 51 to escape contact with one of the rear wheels 49 when the same is in certain positions.

For best results my pin 40 attaches the front end 39 of connecting shaft 38 to triangular member 35 at a point substantially one-third forwardly from the base 42 of said triangular member 35. My pin 40 is positioned laterally from bolt 36 the same distance that either king pin 52 is laterally positioned from the center tread of its adjacent rear wheel 49.

The stub axle 47 has a plurality of spaced openings 53 through which pin 54 may be inserted to attach the rear end 50 of the connecting shaft 38.

In use when the front wheels of the cab are turned my construction acts to turn the rear wheels of the trailer so that the cab and trailer turn on a minimum of space.

Having thus described my invention, I claim:

1. A toy wagon construction comprising a cab, a trailer, said cab having front and back wheels, and at its rear portion a guide with a V shaped portion and an aperture, said trailer having at its front portion a substantially triangular shaped member, a bolt for pivotally attaching said triangular member to the trailer, the apex of said triangular member adapted to fit within said V shaped portion of the guide member, said bolt adapted to fit within said aperture to removably attach the trailer to the cab, an axle frame attached adjacent the rear of said trailer, a stub axle construction pivotally attached by king pins

to said axle frame, rear wheels having a tread attached to said stub axle construction, said king pins positioned a desired distance laterally from the tread of the adjacent tire, a connecting shaft connecting said triangular member and said stub axle construction, said connecting shaft on one end pivotally attached to the triangular member the same distance laterally of said bolt that either of said king pins is spaced from the tread of its adjacent tire, said connecting shaft on the other end pivotally attached to the stub axle construction on the same side, so that when the front wheels of the cab are turned the triangular member will move the connecting shaft and cause it through the stub axle construction to turn the rear wheels of the trailer so that the wagon may be turned in a minimum of space.

2. A wagon construction comprising a cab and a trailer, said cab having front and back wheels, said trailer having an axle frame, stub axles pivotally attached by king pins to said axle frame and rear wheels, each of said king pins positioned a desired distance laterally from the center tread of its adjacent wheel, means for removably and pivotally attaching the trailer to the cab, a triangular member attached to the trailer by said means, said member contacting said cab and turnable upon the turning of said cab, a connecting shaft extending from said triangular member to the axle, said shaft pivotally attached on one end to the said triangular member the same distance laterally of the center of said member, that either of said king pins is spaced from the center tread of its adjacent tire and pivotally attached on the other end to one of the stub axles a desired distance so that when the front wheels of the cab are turned said triangular member will turn and cause the shaft to also turn the rear wheels of the trailer so that the wagon may be turned in a minimum of space.

3. A toy wagon construction comprising a cab, a trailer, said cab having front and back wheels, and at its rear portion a guide with a V shaped portion and an aperture, said trailer having at its front portion a substantially triangular shaped member, a bolt pivotally attaching said triangular member to the trailer, the apex of said triangular member adapted to fit within said V shaped portion of the guide member, said bolt adapted to fit within said aperture to removably attach the trailer to the cab, an axle frame attached adjacent the rear of said trailer, a stub axle construction pivotally attached by king pins to said axle frame, rear wheels having a tread attached to said axle construction, each of said king pins positioned a desired distance laterally from the tread of their adjacent tires, a connecting shaft connecting said triangular member and said stub axle construction, said connecting shaft having a curved front portion, the front end of said connecting shaft pivotally attached to the triangular member the same distance laterally of the bolt that either of said king pins is spaced from the tread of its adjacent tire and the rear end of said connecting shaft pivotally attached to said stub axle construction so that when the front wheels of the cab are turned the triangular member will move the connecting shaft and cause it through the stub axle construction to turn the rear wheels of the trailer so that the wagon may be turned in a minimum of space, said triangular member having a continuous grooved portion extending inwardly from its base and one of its sides to substantially its center to accommodate the curved portion of the connecting member whenever the triangular member is turned to extreme positions.

FRANK F. VOORHEIS.