July 2, 1929. O. L. LEWIS 1,719,062

TOY VEHICLE

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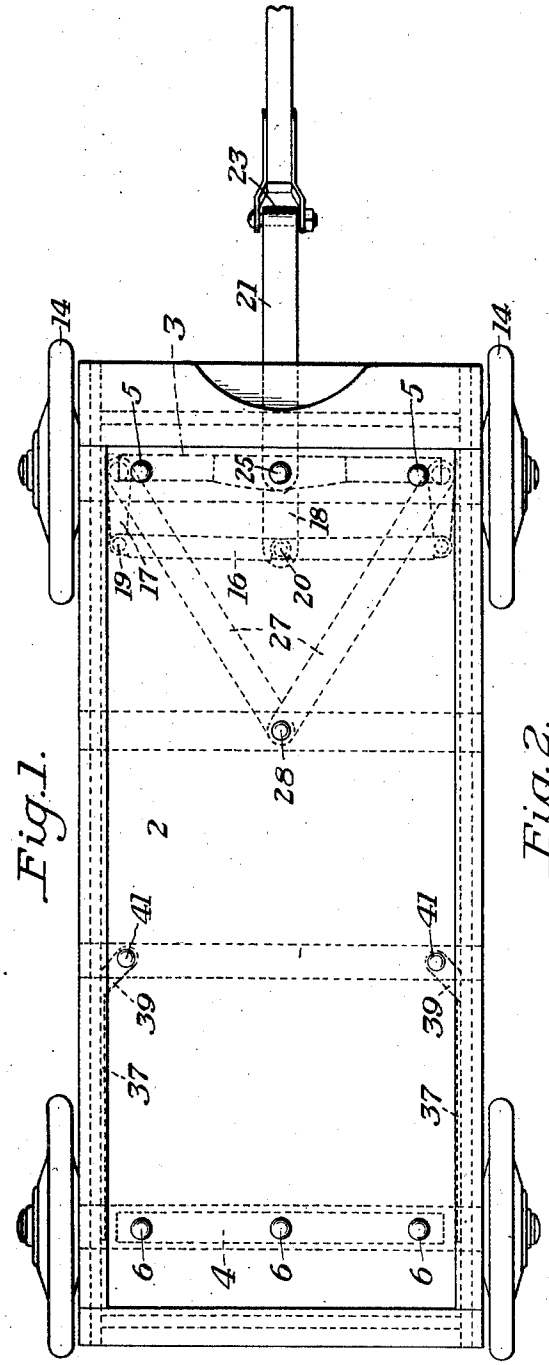


Fig. 1.

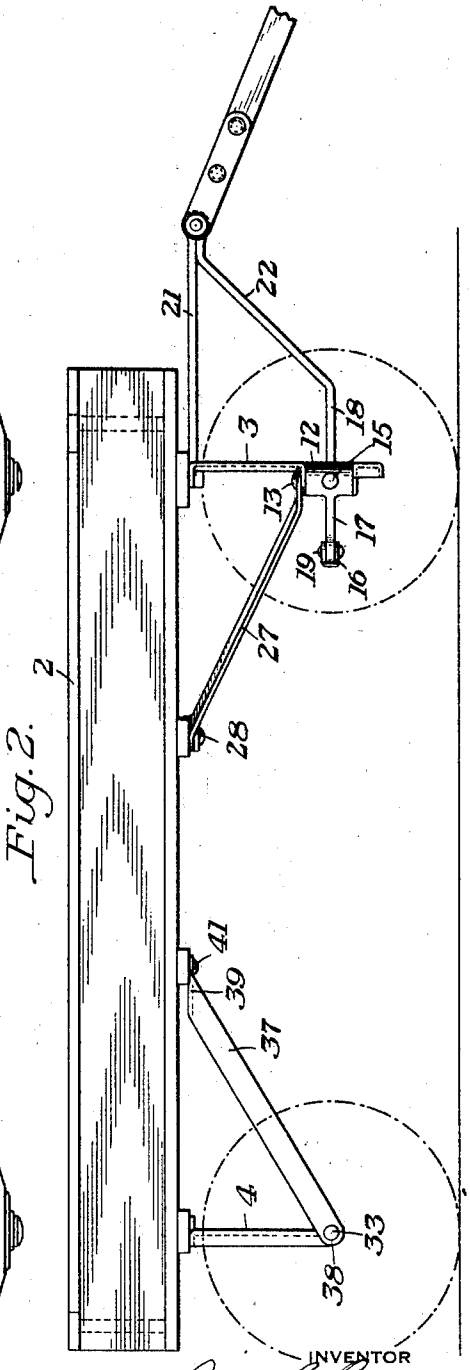


Fig. 2.

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Fig. 3.

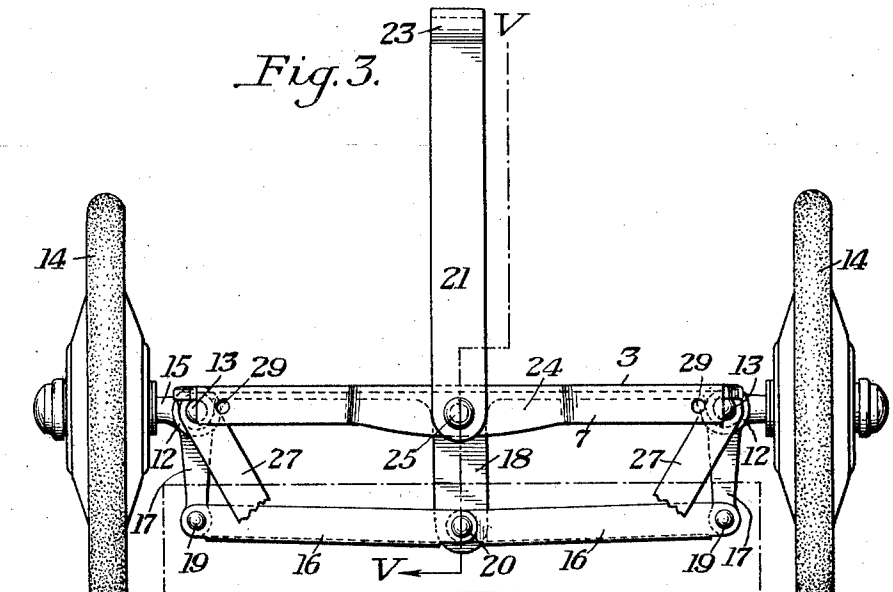
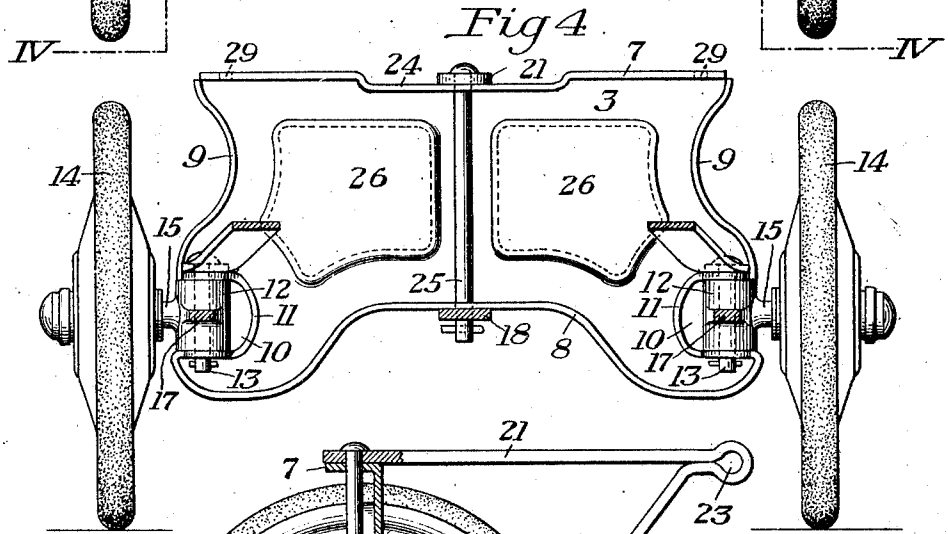


Fig 4



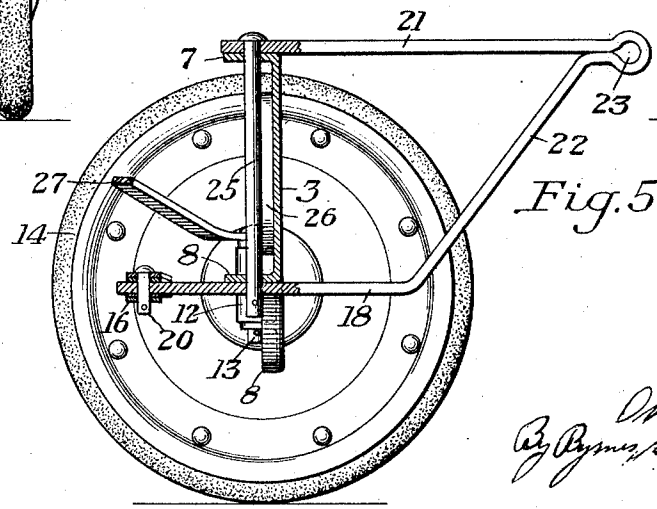


Fig. 5.

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July 2, 1929. O. L. LEWIS 1,719,062

TOY VEHICLE

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Fig. 6.

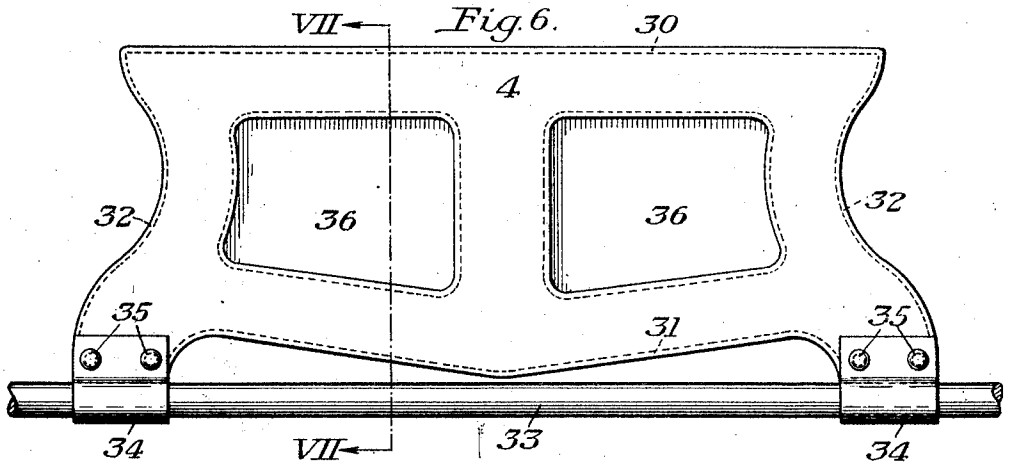


Fig. 7.

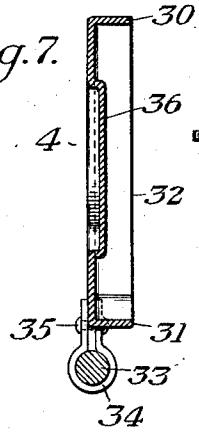


Fig. 8.

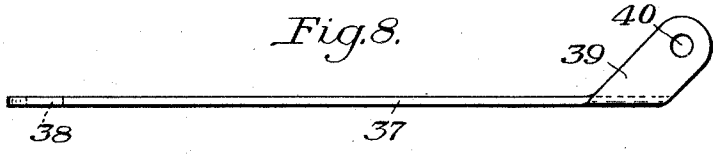
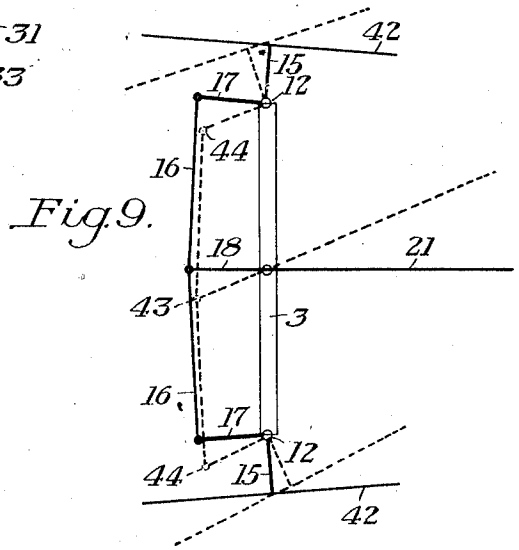


Fig. 9.



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July 2, 1929. O. L. LEWIS 1,719,062

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Fig 6a

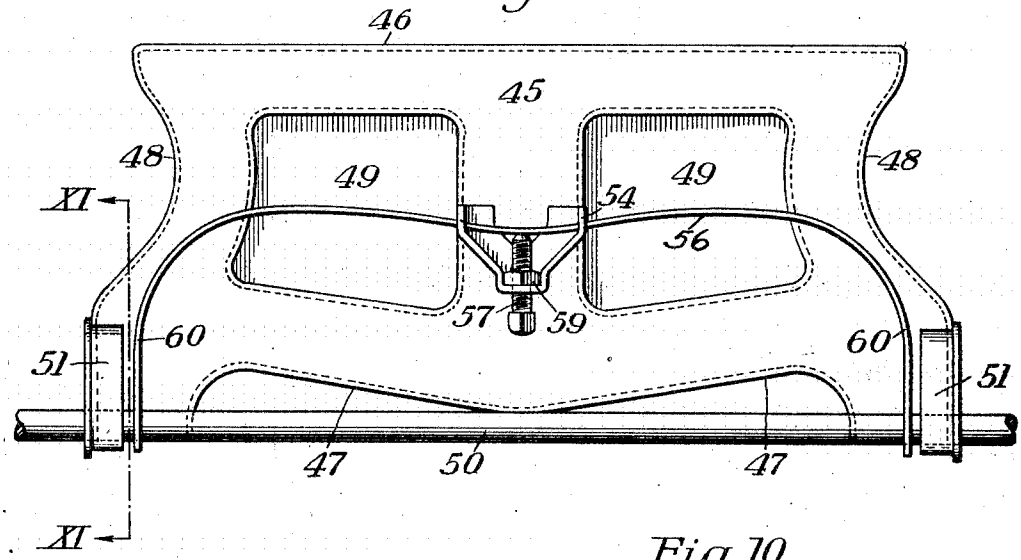


Fig. 11.

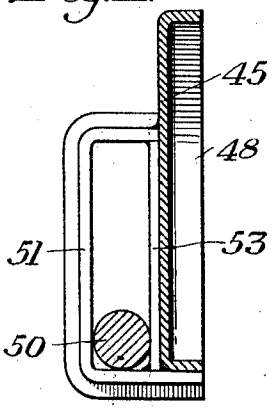


Fig. 10.

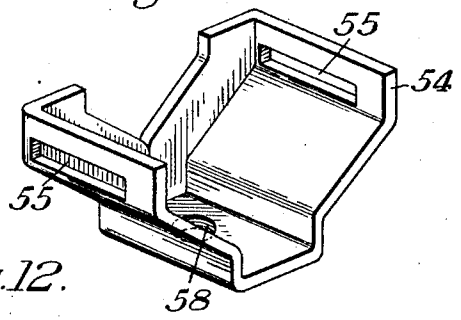
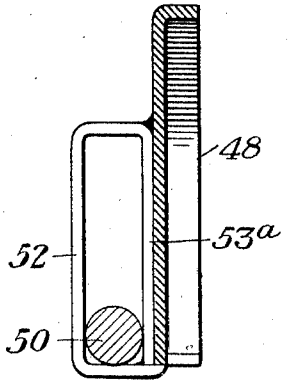


Fig. 12.



INVENTOR

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Patented July 2, 1929. 1,719,062

UNITED STATES PATENT OFFICE.

OWEN L. LEWIS, OF ALLIANCE, OHIO, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE ALLIANCE TOY & SPECIALTY COMPANY, OF ALLIANCE, OHIO, A CORPORATION OF OHIO.

TOY VEHICLE.

Application filed May 27, 1925. Serial No. 33,165.

The present invention relates to toy vehicles and more particularly to running gear construction for coaster wagons.

The invention provides a one-piece front bolster construction adapted to be pressed out of sheet metal and adapted for cooperation with a steering mechanism for the front wheels. The invention also provides a similar one-piece rear bolster construction adapted to be pressed out of sheet metal and having integral portions adapted to hold a rear axle. Another feature of the invention is an improved steering mechanism for the front wheels.

In the accompanying drawings—

Figure 1 is a plan view of a coaster wagon having a running gear embodying a preferred form of my invention;

Figure 2 is a side elevation of the construction shown in Figure 1;

Figure 3 is a plan view of the front bolster and associated steering mechanism and wheels;

Figure 4 is a view of the parts shown in Figure 3 partly in elevation and partly in section, the section being taken on the line IV—IV of Figure 3;

Figure 5 is a section on the line V—V of Figure 3;

Figure 6 is an elevation of the rear bolster and associated rear axle;

Figure 6^{A} is a view similar to Figure 6 of a modified form of rear bolster having a spring suspension for the rear axle;

Figure 7 is a section on the line VII—VII of Figure 6;

Figure 8 is a plan view of one of the rear braces;

Figure 9 is a schematic view of the front steering mechanism;

Figure 10 is a perspective view of the spring supporting bracket for the bolster shown in Figure 6^{A};

Figure 11 is a section on the line XI—XI of Figure 6^{A}, and

Figure 12 is a view similar to Figure 11 of a slight modification.

Referring to Figures 1 and 2, 2 designates the body of the wagon and 3 and 4 front and rear bolsters secured to the body by bolts 5 and 6.

The construction of the front bolster is shown in Figures 3, 4 and 5. It is pressed from sheet metal and has flanges 7 and 8 at its upper and lower edges and flanges 9 at its ends. Slots 10 are formed in the ends of the bolster and the bolster has substantially U-shaped flanges 11 at the edges of the slots. These slots are adapted to receive the hubs 12 of the steering knuckles, pivot bolts 13 extending through said hubs and through the upper and lower sides of the U-shaped flanges 11. The front wheels 14 are journaled on the stub axles 15 of the steering knuckles, and links 16 connect the arms 17 of the steering knuckles with the rear end of a horizontal strap 18, said links being pivotally connected to the arms 17 by pivot pins 19 and to the strap 18 by a pivot pin 20. The strap 18 is connected to the upper horizontal strap 21 by an inclined strap 22 integral with the straps 18 and 21. At their junction the straps 21 and 22 are bent to form an eye 23 for receiving a pivot bolt whereby to secure a tongue thereto. The straps 18, 21 and 22 form a substantially U-shaped steering member. The rear end of the strap 21 bears on a depressed portion 24 of the flange 7 and the strap 18 engages the under side of the lower flange 8 and a pivot bolt 25 extends through the straps 18 and 21 and through said flanges. The peripheral flanges constitute stiffening or reinforcing means for the bolster. However, the bolster may be additionally stiffened by pressing portions 26 on opposite sides of its center out of the plane of the bolster. Inclined braces 27 have their upper ends secured to the wagon body by a bolt 28 while their lower ends rest on the upper sides of the U-shaped flanges 11 and are secured thereto by the pivot bolts 13. The upper flange 7 has bolt holes 29 therein to receive the bolts 5.

The rear bolster 4 shown in Figure 6 is similar in construction to the front bolster. It is pressed in a single piece from sheet metal and has stiffening flanges 30 and 31 at its upper and lower edges and end flanges 32. The rear axle 33 is secured to the bolster by bending portions 34 at the lower corners of the bolster around the axle and securing the ends of such portions to the body portion of the bolster by rivets 35. The bolster is further stiffened by portions 36 pressed out of the plane thereof. Inclined braces 37 are secured at one end to the axle and at the other end to the wagon body. Each brace has an opening 38 in its lower end through which the end portion of the rear axle extends, the lower end of each brace being adapted to be positioned against the end of the bolster.

Each brace 37 has an angular portion 39 at its upper end with a bolt hole 40 therein adapted to receive a bolt 41 for securing the upper end of the brace to the wagon body.

Referring to Figure 9, the front wheels are "toed" as indicated by the solid lines 42. Due to this toeing of the front wheels, when the parts are swung to the position indicated in dotted lines, the pivot point 43 is further removed from the bolster 3 than the pivot point 44. It will be appreciated, therefore, that if the links 16 were one integral piece, a slot would have to be made in the strap 18 to accommodate the play of the pivot bolt 43. By connecting the arms 17 of the steering knuckles to the strap 18 by the links 16 instead of by a single bar, this slotted construction is avoided.

The rear bolster construction shown in Figure 6[A] is similar to that shown in Figure 6 but has a bowed plate spring associated therewith whereby the rear axle is spring suspended. The body portion 45 of the bolster is pressed in a single piece from sheet metal and has stiffening flanges 46 and 47 at its upper and lower edges and end flanges 48, and is further stiffened by the portions 49 pressed out of the plane thereof and corresponding to the portions 36 of the Figure 6 construction. At the lower corners of the bolster guides are formed for the axle 50 by either welding straps 51 to the body of the bolster, as illustrated in Figure 11, or by bending up portions 52 of the body, as illustrated in Figure 12, to form integral guides. In the construction shown in Figure 11 pieces 53 may be welded to the body of the bolster to space the axle 50 therefrom, whereas in the construction shown in Figure 12 the spacing pieces 53[a] may be formed integral with the straps 52. These guides hold the axle to the bolster but at the same time allow the same to have a limited vertical movement with respect to the bolster.

Welded or otherwise secured to the body of the bolster centrally thereof is a bracket 54 having slots 55 therein through which the plate spring 56 passes. A set screw 57 is threaded in a screw-threaded opening 58 in the bracket and impinges on the spring. This set screw also engages a nut 59 held from turning in the bracket. By adjusting the set screw the tension of the plate spring can be regulated. The end portions 60 of the spring are bowed downwardly and have openings therein through which the axle 50 passes. These end portions are spaced a slight distance inwardly from the straps 51 or 52 to provide clearance for the vertical movements of the rear axle.

The advantages of my invention will be apparent as it affords a running gear construction in which the front and rear bolsters are each adapted to be formed in one piece from sheet metal. While this one-piece bolster construction is particularly applicable to coaster wagons, its use is not limited in this regard as it may have utility in other types of toy vehicles, such as "kiddie kars", velocipedes and the like.

While I have shown and described a preferred embodiment of my invention, it will be understood that the invention is not limited to its illustrated embodiment, but that it may be otherwise embodied within the scope of the appended claims without departing from the spirit of the invention.

I claim:

1. In a toy vehicle, the combination with a vehicle body, of a one-piece sheet metal bolster having slots in its ends, said slots having U-shaped flanges at their edges pressed from the metal, steering knuckles having their hubs positioned in said slots between the upper and lower portions of said flanges, inclined braces having their upper ends secured to the vehicle body and having their lower ends positioned on the upper portions of said flanges, and pivot pins extending through the lower ends of said braces and through the upper and lower portions of said flanges and through said hubs, substantially as described.

2. In a toy vehicle, a one-piece sheet metal bolster, an axle associated therewith, guides for holding said axle to said bolster while permitting vertical movements of the axle relative to the bolster, and a bowed plate spring having its ends in engagement with the axle and its central portion held to the central portion of said bolster, substantially as described.

3. In a toy vehicle, a one-piece sheet metal bolster, an axle associated therewith, guides adjacent the ends of said bolster for holding said axle to said bolster while permitting vertical movements of the axle relative to the bolster, a bracket secured to the central portion of said bolster and having slots therein, a bowed plate spring passing through said slots and having its ends in engagement with said axle adjacent said guides, and means associated with said bracket for adjusting the tension of said spring, substantially as described.

4. In a toy vehicle, a bolster having vertically extending axle receiving guides therein, an axle slidably mounted in the guides, a plate spring engaging the axle at its ends and passing through a bracket on the bolster, and an adjusting screw on the bracket for adjusting the tension of the spring.

In testimony whereof I have hereunto set my hand.

OWEN L. LEWIS.