

Nov. 10, 1953

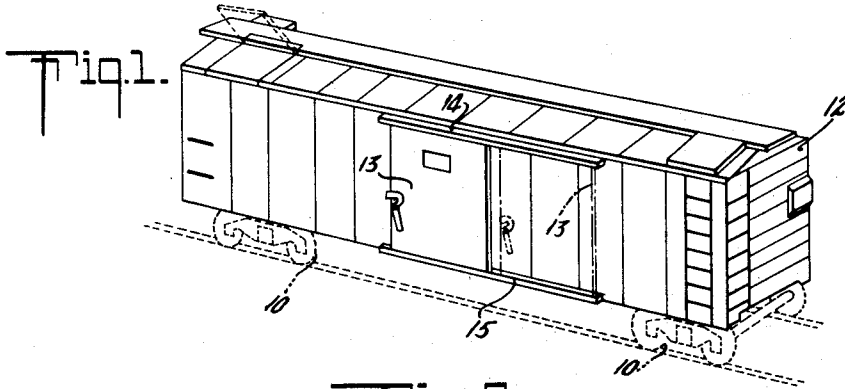
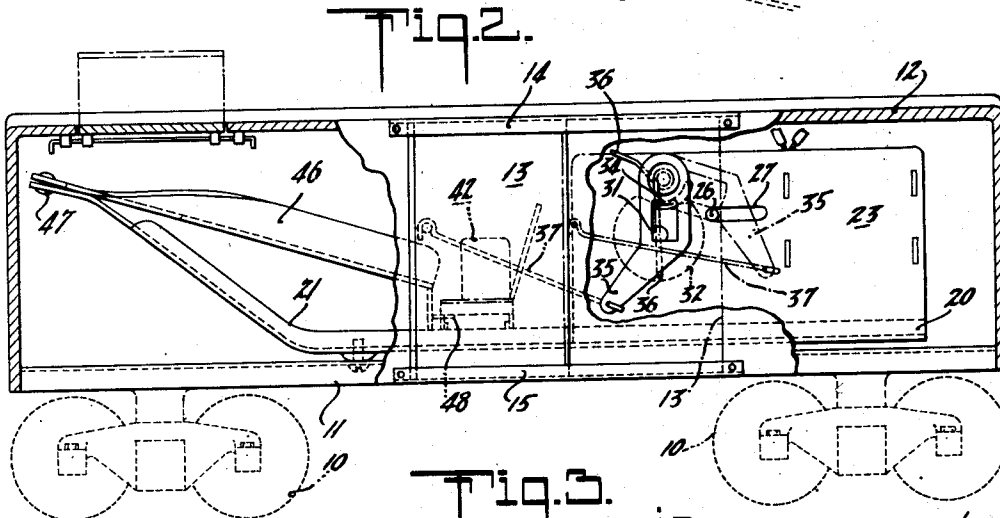
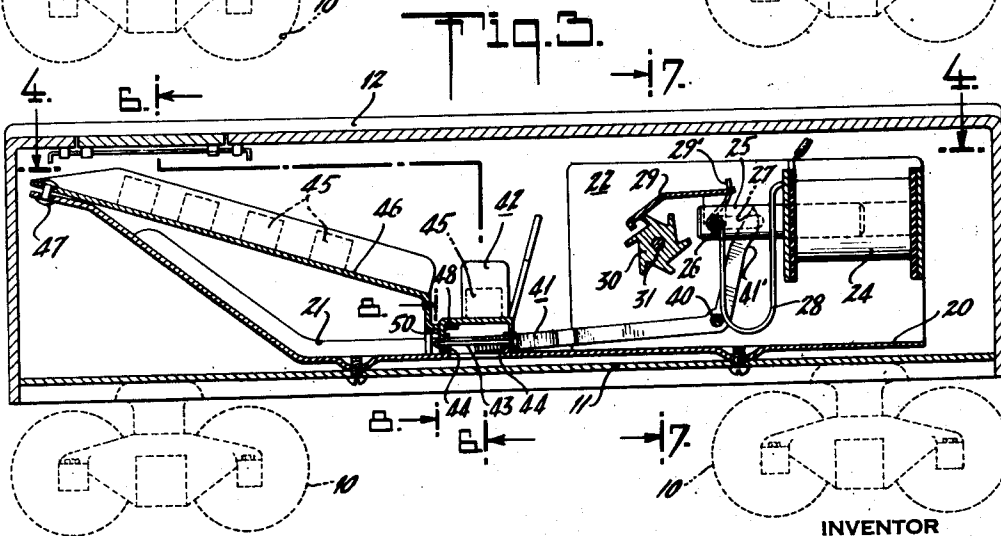
F. PETTIT

2,658,307

MERCHANDISE UNLOADING TOY CAR

Filed Oct. 23, 1946

2 Sheets-Sheet 1



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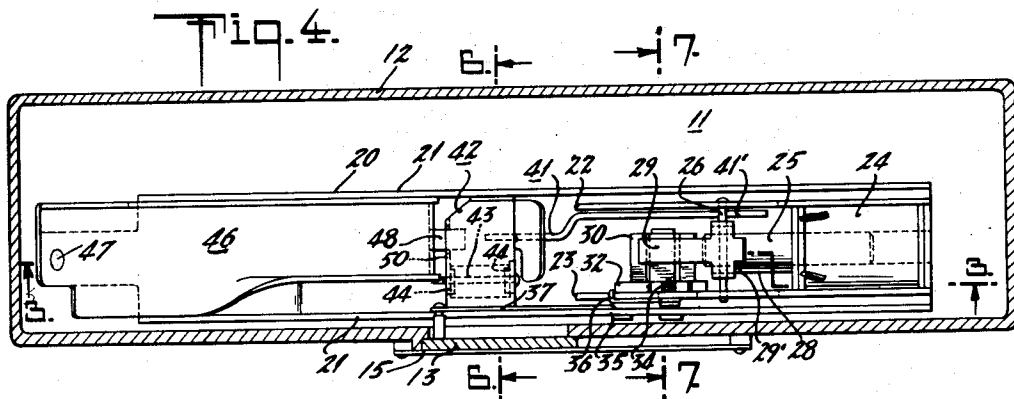
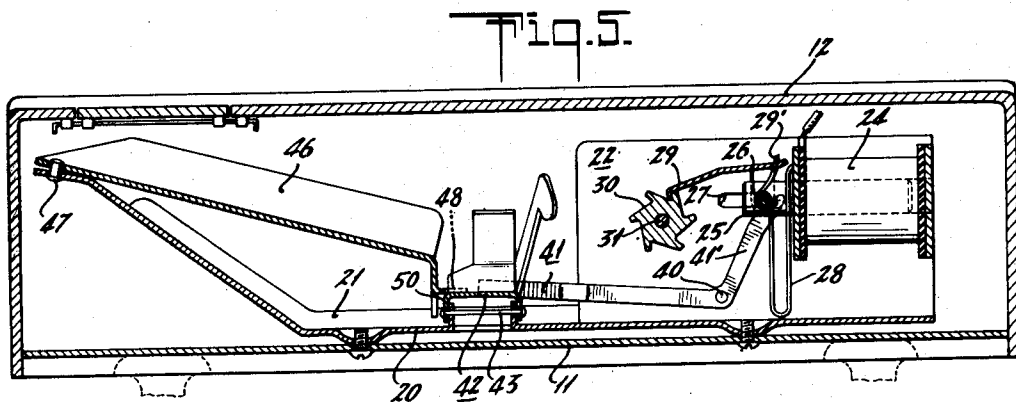
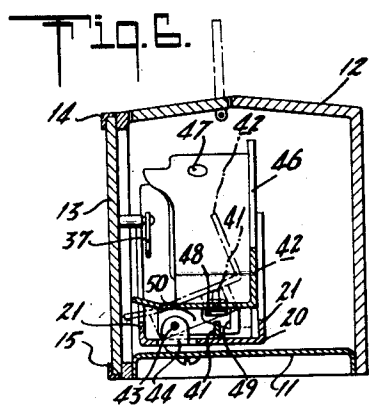
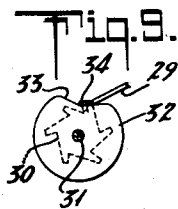
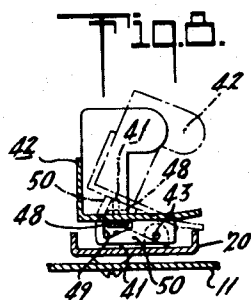
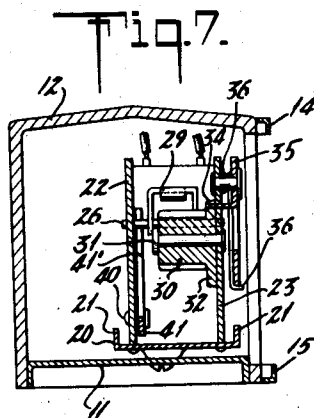
F. PETTIT

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MERCHANDISE UNLOADING TOY CAR

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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE

2,658,307

MERCHANDISE UNLOADING TOY CAR

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3 Claims. (Cl. 46—218)

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The present invention relates to toy cars more particularly directed toward toy cars provided with automatic unloading devices for discharging toy merchandise; and with door operating mechanism. The present invention contemplates a mechanism for use in toy cars whereby an electromagnetic device carried by the car and capable of external control is employed to open the door of a toy car and eject a plurality of articles of toy merchandise from inside the toy car one at a time. After the ejection of the last article of the series the car door is again automatically closed.

According to the present invention, all this mechanism is in the form of a preassembled unit capable of being housed inside the body of the toy box car. By thus mounting all the mechanism inside the car body, no external elements or devices are employed which change the appearance of the toy car from the box car which it is intended to represent.

The present invention relates to improvements in toy cars of the type shown in my prior Patent No. 2,302,142, November 17, 1942.

The accompanying drawings show, for purposes of illustrating the present invention, an embodiment in which the invention may take form, it being understood that the drawings are illustrative of the invention rather than limiting the same.

In these drawings:

Figure 1 is a perspective view of the toy car;

Figure 2 is a side elevational view of the car with parts broken away to show interior construction;

Figure 3 is a vertical longitudinal sectional view on the line 3—3 of Figure 4, showing the parts in idle position;

Figure 4 is a horizontal sectional view through the toy car taken on the line 4—4 of Figure 3;

Figure 5 is a longitudinal sectional view taken on the line 3—3 of Figure 4 showing the parts in the ejecting position;

Figures 6, 7 and 8 are sectional views taken on the lines 6—6, 7—7 and 8—8, respectively, of Figure 3; and

Figure 9 is a fragmentary view illustrating the door operating cam.

The toy car shown herein has the usual wheeled trucks 10—10 for use on the usual toy railroad track. These trucks are secured to a platform 11 forming the floor of the toy car. This platform is made out of sheet metal and carries a car body 12 which may be an ejection molding of polystyrene. The car body 12 is provided with a slid-

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able door 13 carried in top and bottom guides 14 and 15, respectively.

The mechanism to be housed inside the car body is all carried by a sheet metal frame member 20 having stiffening side flanges 21. The right hand end of the base 20, as illustrated in the drawings, carries two vertical metal plates 22 and 23. These plates carry a solenoid coil 24 and a slidable plunger 25. The plunger is carried on a pin 26 which extends through slots 27 in the side plates 22 and 23 and is urged to the left by a spring 28. This pin 26 carries a ratchet 29 urged in a counter-clockwise direction by an extension 29' of the spring 28. The end of the ratchet bears on a ratchet wheel 30 carried on a pivot stud 31 supported from the side plate 23. The ratchet wheel 30 carries a cam 32 shown more clearly in Figure 9. This cam has one low spot 33 into which an extension 34 carried on an arm 35 may enter. This arm is biased in a clockwise direction by a spring illustrated at 36 and the lower end of the arm is connected by a rod 37 with the door 13.

When the parts are in the position illustrated in full lines in Figure 2, the door is closed. The first time that the coil 24 is energized, the plunger is drawn in and the ratchet wheel advanced one tooth. This will swing the arm 35 in a counter-clockwise direction opening the door. This operation takes place during the first part of the stroke of the plunger and the door will remain open until the ratchet wheel has been turned to a position to permit the spring 36 to swing the extension 34 down into the notch.

The plate 22 is provided with a pivot 40 which carries a bell crank lever 41. The upper inner arm 41' of this lever is in the path of the pin 26 which moves with the plunger 25 and is engaged by this pin near the end of the inward movement of the plunger so as to suddenly shift the lever 41 from the position shown in Figure 3 to the position shown in Figure 5. The left end of the lever 41 extends under an ejector 42 similar to that illustrated in the prior patent. The ejector is carried on a pivot pin 43 supported in upwardly bent lugs 44 formed from the plate 20. When the lever 41 is given a sudden rocking motion by the magnet, the ejector is shifted from the full line position of Figures 6 and 8 to the dotted line position of these figures; also from the position of Figure 3 to the position of Figure 5 and this causes the ejector to throw the article, such as a small cube 45, out through the door opening.

These articles may be stored on a sheet metal

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chute 46 loosely pivoted at 47 on the end of the base 20. The lower end of the chute normally rests on the plate 20 but is held against lateral shifting by a prong or extension 48 passing through a hole 49 in the downwardly bent flange 50 of the ejector 42. The parts are so proportioned that when the ejector is shifted to throw out an article the lower end of the chute is lifted from the position shown in Figures 3 and 6 to the positions shown in Figures 5 and 8. This will shake the articles so they readily slide down the chute.

Since it is obvious that the invention may be embodied in other forms and constructions within the scope of the claims, I wish it to be understood that the particular form shown is but one of these forms, and various modifications and changes being possible, I do not otherwise limit myself in any way with respect thereto.

What is claimed is:

1. In a toy car, a base, an article ejector pivoted to the base to swing about a horizontal axis, the ejector having a normally horizontal platform and an apertured depending side flange, a sloping chute having its upper end loosely secured to an upwardly extending end of the base and its lower end adjacent the platform of the article ejector, the chute having an extension entering the aperture in the flange and engageable therewith to lift the lower end of the chute when the ejector is actuated.

2. A toy car comprising a support, an article ejector pivoted to the support to swing about a horizontal axis, support carried ejector actu-

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ating means, a chute mounted on the support and loosely secured thereto in an inclined position for delivering articles to the ejector, and ejector operated means connected with the chute to shake the chute to loosen articles thereon.

3. A merchandise unloader for use in a toy car, having the usual car floor, said unloader being in the form of a preassembled unit and comprising a base for securement to the car floor, a base supported article ejector pivotally carried above the base on a horizontal longitudinal axis and adapted on sudden actuation to eject an article laterally, a base supported solenoid coil spaced from the ejector and having a horizontally reciprocable armature above the level of the ejector, a bell crank lever partially supported from the base and having a lower end under the ejector and an upper end engageable by the armature to shift the ejector, and an article storage chute carried by and loosely secured to the base in an inclined position to discharge articles onto the ejector and interconnected with the ejector to be jiggled thereby to facilitate loosening articles in the chute.

FRANK PETTIT.

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