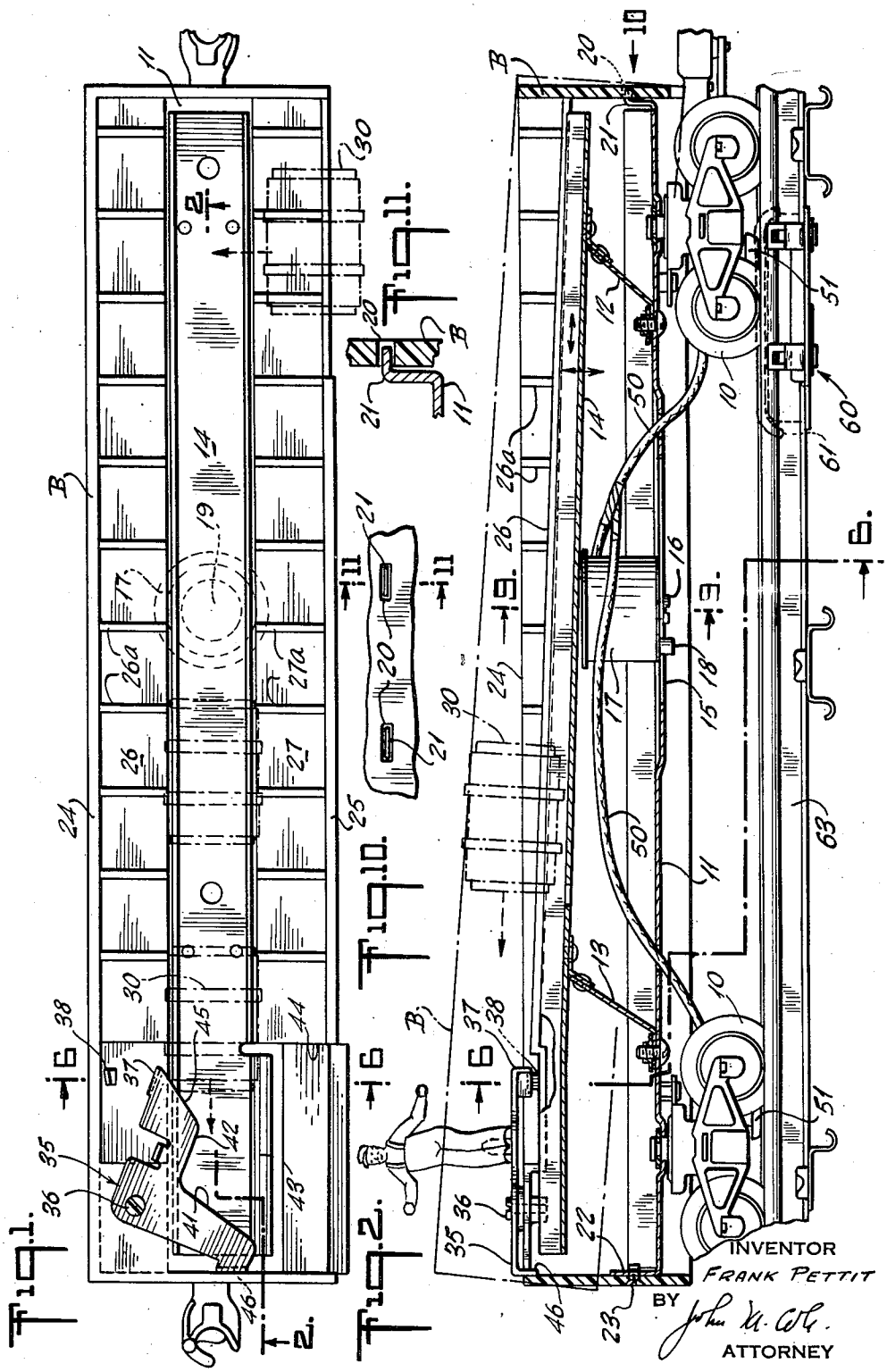
Nov. 19, 1957 F. PETTIT 2,813,648

TOY CARS

Filed Aug. 5, 1955 2 Sheets-Sheet 1



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TOY CARS

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Fig. 3.

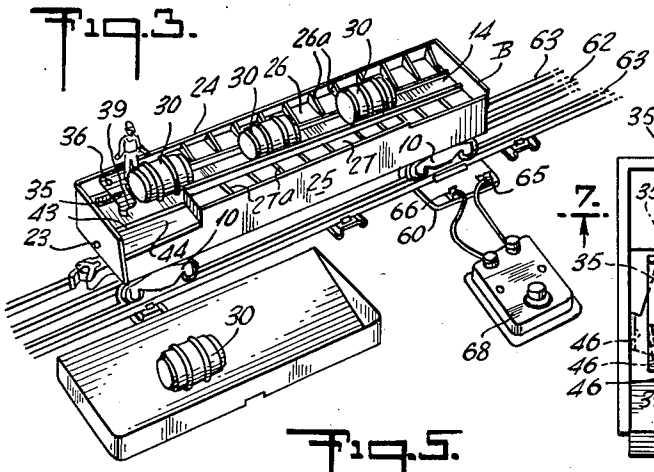


Fig. 4.

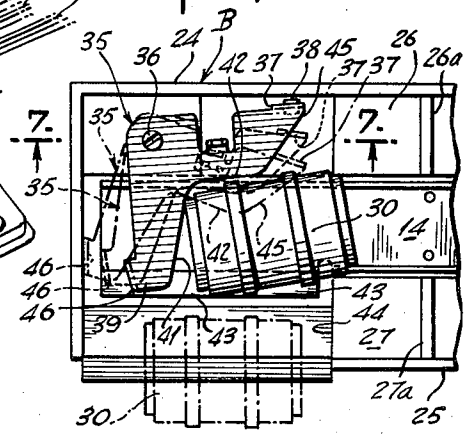


Fig. 5.

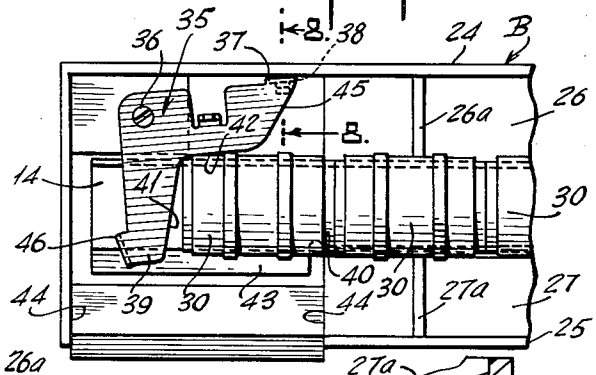


Fig. 6.

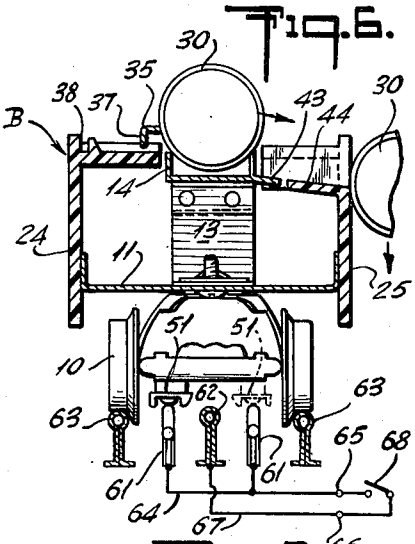


Fig. 9.

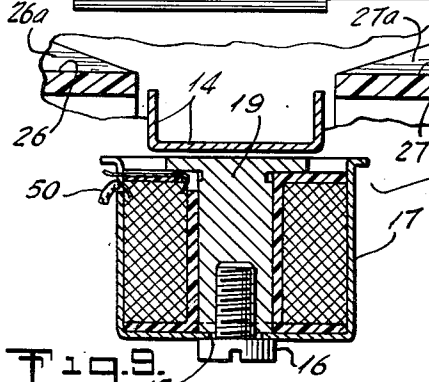


Fig. 7.

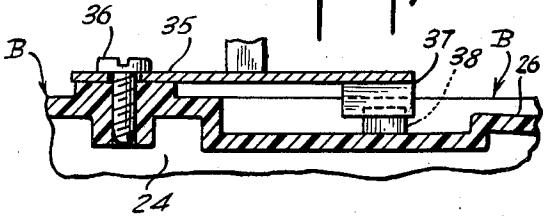
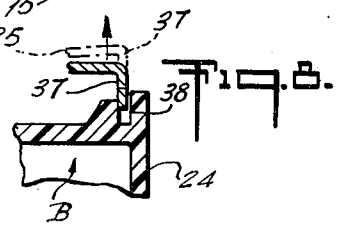


Fig. 8.



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TOY CARS

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Application August 5, 1955, Serial No. 526,667

6 Claims. (Cl. 214—518)

The present invention relates to toy cars and is more particularly related to toy cars for the transportation of cylindrical articles such as toy barrels and the automatic unloading of such toy barrels by mechanism carried on the car.

The present invention contemplates toy railroad cars onto which toy barrels or the like may be loaded by mechanism such, for example, as that shown in the Bonanno application Serial No. 394,185, filed November 24, 1953. The car is adapted to transport these barrels over the toy railroad track layout and when stopped on the track opposite a suitable remote controller alongside the track to discharge the barrels when mechanism carried in the car is energized thereby.

According to the present invention, the toy car is provided with a longitudinally sloping, electromagnetically operated, vibratory ramp or article carrier up which the toy barrels are shifted when the vibrator magnet is energized. The car is provided with a lockable cam adapted to prevent barrels from being ejected from the car unintentionally. This cam is manually releasable so that when the barrels are shifted against it, it acts so as to eject one barrel laterally over the rollway and presets itself for actuation by the next toy barrel.

The accompanying drawings show, for purposes of illustrating the present invention, one 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 top plan view of a toy car showing the releasing cam shifted to the extreme forward position occupied after a toy barrel has been discharged;

Figure 2 is a sectional view through the toy car on the line 2—2 of Figure 1 with parts in elevation;

Figure 3 is a perspective view of the car on the track associated with the remote controller;

Figures 4 and 5 are fragmentary top plan views of the discharge end of the car; Figure 4 illustrating the control cam in three different positions, and Figure 5 illustrating it in locked position;

Figure 6 is a vertical sectional view through the toy car and track taken on the line 6—6 of Figures 1 and 2;

Figure 7 is a fragmentary sectional view on the line 7—7 of Figure 4;

Figure 8 is a fragmentary sectional view on the line 8—8 of Figure 5;

Figure 9 is a fragmentary sectional view on the line 9—9 of Figure 2;

Figure 10 is a fragmentary view taken in the direction of the arrow 10 of Figure 2; and

Figure 11 is a cross section on the line 11—11 of Figure 10.

In the drawings, the usual car trucks are indicated at 10—10, and the platform of the car is indicated at 11. This platform, usually made of sheet steel carries upwardly extending oblique springs 12 and 13. They may be made of Phosphor bronze, spring 13 longer than spring

12. They are connected to a magnetizable channel shaped article carrier or conveyor 14 medially disposed and extending longitudinally of the car.

Platform 11 is slotted as indicated at 15, Figure 2 to receive anchoring screw 16 for fastening in a vibrator magnet 17. This magnet has a pin 18 extending down through the slot to facilitate guiding the vibrator for purposes of adjusting for proper airgap to operate in the desired voltage range. The vibrator magnet has a pole piece 19 adjacent magnetizable article carrier 14 so that when the magnet is energized by low voltage, alternating current article carrier 14 will be attracted and repelled. Owing to the sloping support given by the springs 12 and 13, the article carrier 14 will have a small back and forth longitudinal movement as well as an up and down movement.

The car platform supports a one piece plastic body indicated generally by the letter B. To secure the body in place, it is provided with openings 20, 20, in one end wall to receive prongs 21 carried by the car platform 11 and at the other end the platform has a prong 22 to receive a screw 23. The car body has a rear side wall 24 and a front side wall 25. These side walls have inwardly extending decks 26 and 27 which slope longitudinally at the same angle as the article carrier 14. They are so disposed to accommodate the article carrier. The decks have ribs 26a, 27a, which slope downwardly as indicated so as to make certain that a cylindrical toy object such as the toy barrels 30 will roll down into the article carrier.

The left end of the car body, as indicated in the drawings, carries a cam or lever 35 pivoted at 36. This lever is adapted to be moved back and forth between the positions indicated in Figures 1 and 5. When it is in position of Figures 5 and 8, it is locked against movement by a downwardly extending prong 37 entering a notch 38 in the car body. When in this position, it will be seen from Figure 5 that uppermost barrel carried by the carrier has been brought to the position indicated in that figure and held there. Its left hand engages the forward arm 39 of the cam member 36 and the rear end of the barrel is still in the channel shaped article carrier 14 as indicated at 40, Figure 5. The barrel therefore cannot move forward or laterally.

When it is desired to have the barrels discharged, the lever 35 is flexed sufficiently to lift the prong 37 out of the notch 38 as indicated by the dotted lines of Figure 8 and brought slightly forward to the full line position of Figure 4. Now when the vibrator is actuated, the barrels are urged to the left, and the front end of the uppermost barrel now engages the cam surface 41 and urges the cam from the full line position indicated in Figure 4 through the other two positions so that the barrel may move out of the channel portion of the article carrier. By this time a camming surface 42 on the cam member 35 has engaged the side of the barrel and pushed the barrel forward. This causes the barrel to roll over the forwardly extending lip 43 of the article carrier and down into to a rollway 44 in the front side of the car body.

When the barrel rolls down the rollway, it leaves the cam member 35 in the full line position of Figure 1 or the clockwise position of Figure 4. When the next barrel approaches its front end will engage a camming surface 45 and shift the cam member 35 back to the full line position of Figure 4 so that this barrel can again shift the cam 35 and be ejected down the rollway. The cam member 35 has a downwardly extending stop flange 46 engageably with the end of the car body. It will thus be seen that when the cam 35 is in a position shown in Figure 5, one can place barrels on the sloping article carrier 14 and by means of the vibrator shift them to-

ward the discharge end of the device and that the loaded car can be carried around the track without danger of unintentional discharge of the barrels.

When the barrels are to be discharged, the car is brought to a proper position on the track where the magnet **17** can be energized and the cam **35** is released. One side of the vibrator coil is grounded to the car platform and connected through the trucks and wheels with the grounded rails of the track. The other side of the vibrator coil **17** is connected by wires **50—50** with contact shoes **51—51** carried by the trucks **10—10**. When one of these contact shoes is energized, by being connected to the power rail the vibrator is operated. When one uses a five-rail track section, such as is shown in Patent #2,661,852 or similar special track section, the vibrator coil **17** may be energized by connecting rail **36** or **37** (of said patent) to the third rail by a suitable remote control switch, such as the uncouple push button shown in that patent.

Instead however, of employing the construction of the prior patent just referred to, it is preferable to employ a connector such as is indicated in **60** in Figures 2, 3 and 6. This connector has two contact rails **61—61** between the power rail **62** and the wheel bearing rails **63**. These contract rails are connected together as indicated at **64** and to a terminal clip **65**. The power rail is connected to another terminal clip **66** as indicated at **67**. The clips **65** and **66** are connected to a control switch **68**. The structure of the connecter **60** forms the subject matter of my application filed August 5, 1955, Serial No. 526,748.

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. A toy car for the transportation of toy cylindrical objects resting on their sides, the car having a receiving end onto which the articles may be loaded and a discharge end at a higher elevation than the receiving end, an inclined, vibratory, article receiving channel in which the articles rest in abutting relation and acting when vibrated to shift the articles from the receiving end to the discharge end, a discharge rollway at one side of the discharge end, and ejector means opposite the rollway and movable back and forth by each advancing article, between an ejecting position and a preset position.

2. A toy car for the transportation of cylindrical toy articles resting on their sides, comprising a toy body with front and rear side walls and longitudinal decks extending inwardly therefrom to form a slot higher at one end than at the other, a magnetizable channel occupying the slot and adapted to receive the cylindrical toy articles in end to end position, electromagnetic means to vibrate the channel to cause the articles to travel toward the upper end thereof, a latchable cam pivoted to the rear deck at the upper end thereof, a forwardly sloping rollway opposite the cam, the cam when in latched position stopping movement of the uppermost article while it is still in the channel so that its discharge is prevented.

3. The toy car of claim 2 wherein the cam when unlatched is movable by the advancing article to allow it to pass beyond the channel, and the cam has a surface engageable with the side of the article to eject it onto the rollway.

4. The toy car of claim 2 wherein the cam has a surface engageable by the succeeding article to again shift it back toward the latching position.

5. A toy car having a horizontal platform, a car body secured to the platform and having end walls, front and rear side walls and longitudinally extending decks higher at one end than the other and extending inwardly to form a sloping slot, an article carrier occupying the slot space, a magnetic vibrator between the platform and carrier, oblique leaf springs connecting the carrier and platform for effecting longitudinal movement of the carrier as it is vibrated, the deck at the higher end and the adjacent side walls being shaped to form a laterally sloping rollway for articles discharged from the upper end of the article carrier, and a cam pivotally carried by the other deck opposite the rollway, the cam having a first surface to engage an oncoming article to shift the cam rearwardly, a second surface past which the article freely moves and a third surface which is engaged by the article to effect a forward swinging movement of the cam to eject the article from the carrier.

6. The toy car of claim 5 having means to latch the cam in the rear position so that it limits the forward movement of the uppermost article on the carrier.

References Cited in the file of this patent

UNITED STATES PATENTS

1,452,608	Kirst	Apr. 24, 1923
1,672,807	Etzel	June 5, 1928
2,302,142	Pettit	Nov. 17, 1942
2,450,867	Smith	Oct. 5, 1948
2,618,376	May	Nov. 18, 1952
2,618,888	Hoff	Nov. 25, 1952
2,660,001	Smith et al.	Nov. 24, 1953
2,664,664	Bonanno et al.	Jan. 5, 1954
2,732,958	Bonanno	Jan. 31, 1956