

July 29, 1958

W. R. SMITH ET AL

2,844,911

LUMBER UNLOADING TOY FREIGHT CAR

Filed Oct. 3, 1956

2 Sheets-Sheet 1

Fig. 1

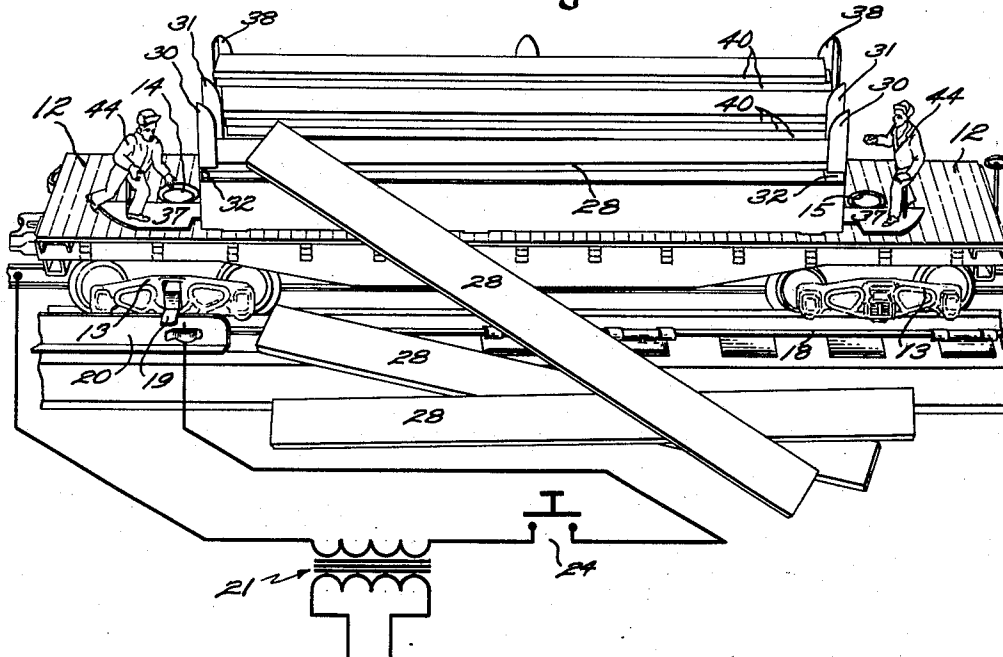


Fig. 2

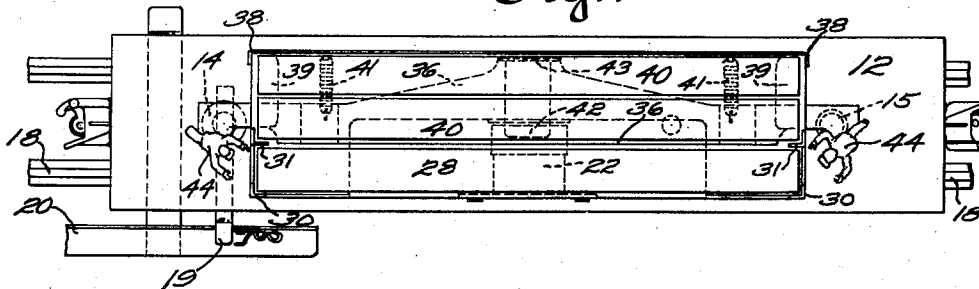
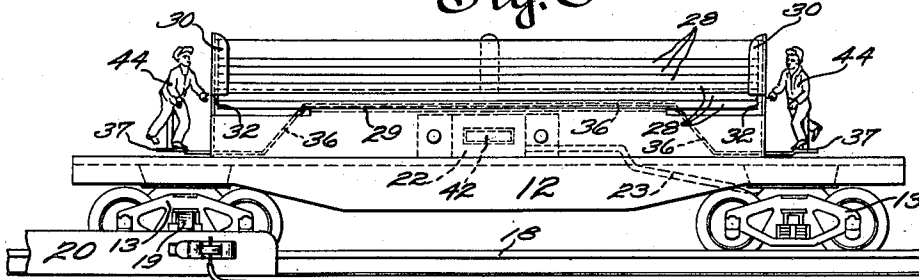


Fig. 3



INVENTORS
William R. Smith
Gabriel R. Monaco
BY *W. R. Smith*
ATTORNEY

July 29, 1958

W. R. SMITH ET AL

2,844,911

LUMBER UNLOADING TOY FREIGHT CAR

Filed Oct. 3, 1956

2 Sheets-Sheet 2

Fig. 4

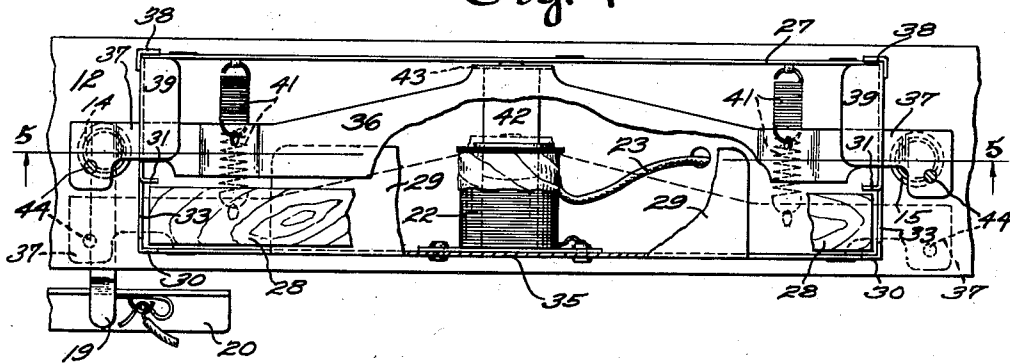


Fig. 5

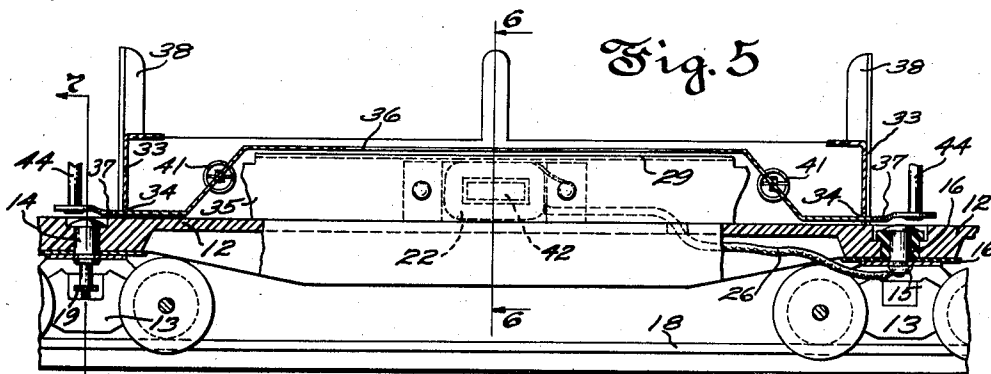
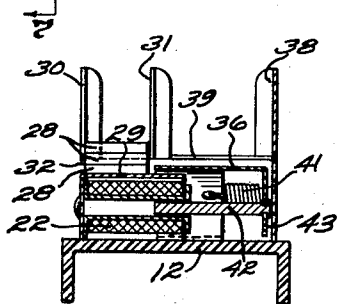
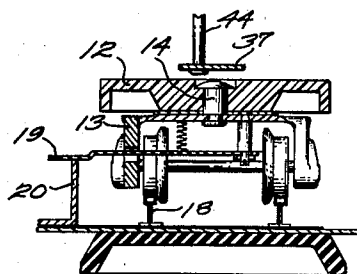


Fig. 6

Fig. 7



INVENTORS
William R. Smith
Sabriel R. Monaco
BY *W. R. Smith*
ATTORNEY

1

2,844,911

LUMBER UNLOADING TOY FREIGHT CAR

William R. Smith, Hamden, and Gabriel R. Monaco, New Haven, Conn., assignors to The A. C. Gilbert Company, New Haven, Conn., a corporation of Maryland

Application October 3, 1956, Serial No. 613,711

9 Claims. (Cl. 46—40)

This invention relates to a toy railway freight car of the flat-car type equipped with figurettes that can be animated to perform in a manner resembling workmen unloading lumber from the car to the trackside.

An object of the invention is to cause the animated figurettes to appear to fling lumber boards from the car by causing the figures to move in synchronism with each lumber board as it is discharged from the car although the figurettes do not actually handle the lumber.

Another object is to conceal all mechanism that actually does cause the discharge of the boards from the car one by one.

A further object is to arrange electromagnetically motivated board discharging mechanism so as to be concealed in a shallow space beneath a pile of toy lumber boards yet entirely above the floor surface of the freight car.

A further object is to provide a storage bin on the car chassis for retaining a stack of boards in a condition to be discharged one by one as aforesaid.

These and other objects of the invention will appear in fuller particular from the following description of a preferred form of the improvements having reference to the appended drawings wherein:

Fig. 1 is a perspective view of the improved automatic lumber unloading toy car standing on its track with already unloaded lumber boards resting at the trackside or in course of being cast from the car.

Fig. 2 is a plan view of the lumber unloading car with the mechanical parts of its lumber discharging mechanism in normally inactive position.

Fig. 3 is a side elevation of the car of Fig. 2 carrying lumber boards stacked in a holding bin.

Figure 4 is a plan view like Fig. 2 drawn on a larger scale showing the lumber absent from the bin with parts broken away to expose the animating electromagnet.

Fig. 5 is an elevation similar to Fig. 3 showing parts broken away to expose details of the unloading mechanism and partly in section on the plane 5—5 in Fig. 4 looking in the direction of the arrows.

Fig. 6 is a view taken in section on the plane 6—6 in Fig. 5 looking in the direction of the arrows.

Fig. 7 is a view taken in section on the plane 7—7 in Fig. 5 looking in the direction of the arrows.

In the drawings end portions of the chassis or platform 12 of a toy freight car of the flat-car type are shown supported in conventional manner on wheeled trucks 13 that are pivotally connected to the chassis. If the chassis is of metal or electrically conductive material one truck, all of whose wheels are of insulative material, is connected to the chassis by a pivot pin 14 permitting electric contact between the truck and the car chassis and the other truck is connected to the chassis by a pivot pin 15 and may have conductive wheels and be insulated from the chassis by a bushing 16 and washer 17 so that current derived from a track rail 18 through the wheels of the latter truck can be led to the prime mover 22 of the lumber discharging mechanism through a conductive lead

2

23. Chassis 12, however, may be made of insulating material.

In case of a conductive chassis the electric circuit through the prime mover or actuating solenoid 22 is completed by grounding its winding to the car chassis which itself derives current through a collector shoe 19 coupled electrically to the car chassis by pivot pin 14. In case of an insulative chassis shoe 19 will be connected to the solenoid winding by a separate lead wire, not here shown because aside from the invention. Shoe 19 rides into contact with an auxiliary rail 20 stationed beside and separated from track 18 in insulated relation thereto. Fig. 1 indicates current for operating solenoid 22 to be furnished from a suitable toy transformer 21 under selective remote control of a momentary contact switch 24.

Toy lumber boards 28 can be stacked in a pile on a stationary platform surface 29 that is elevated somewhat above chassis 12. The boards are maintained in vertical alignment by upstanding, angle forming, corner posts 30 which together with upright flanges 31 spaced to the rear thereof form a retaining bin for the pile of lumber boards 28 by engaging only the end corners of the boards. At the bottom ends of corner posts 30 on a level with the platform surface 29 there is a cutout 32 in each post which frees the end of only the bottom board 28 to be shoved forward edgewise and separated from the pile of boards above it and ejected from the platform surface 29.

To accomplish such discharge of the bottom lumber board from the lumber car an ejector is provided in the form of a stroking element 36 positioned to perform reciprocative movement just above and across the platform surface 29. The preferred outline shape of stroking element 36 appears most clearly in Figs. 4 and 5 where it is seen to comprise a thin flat horizontal rigid strip bent downward and outward to provide terminal portions 37 which rest slidably on the top surface of the chassis 12. At each end of the ejector 36 its terminal portions extend lengthwise of the car past the confines of the lumber bin defined by posts 30 and flanges 31 which rise from end walls 33 upstanding from chassis 12 which have their bottom edges recessed at 34. End walls 33 meet a front wall 35 and a rear wall 27 completing the superstructure that forms an elevated bin. Ejector 36 shifts backward and forward between its positions shown respectively in broken and in full lines in Fig. 4 by sliding along recess 34.

When ejector 36 occupies its normal position farthest to the rear it underlies a storage portion of the superstructure that adjoins the lumber bin at the rear as defined by two additional corner posts 38 rising above end shelves 39 on which there may rest the ends of an inactive stack of lumber boards 40, or some dummy representation thereof, additional to the boards 28 in the active pile.

Ejector 36 is normally pulled toward the rear and maintained in its retracted position, shown in full lines in Fig. 4, by two extensible spring coils 41 anchored to the rear wall 27 of the superstructure and to the ejector 36. The force of springs 41 can be overcome by the attracting power of solenoid 22 when the latter, which is mounted on front wall 35 by means of rivets 26, is electrically energized to draw its armature 42 forward. The rear end of armature 42 is fixed in a downward bent apron depending from stroking element 36 and the rear wall 27 of the superstructure acts as a stop to determine the normally retracted position of the ejector.

On each of the aforementioned terminal portions of ejector 36 just outside the ends of the bin a figurette 44 is mounted fashioned to represent a workman posed as in the natural act of lifting ends of the boards 28 from the bin and casting the boards off from the car one at a

3

time. Thus when the figurettes move quickly forward in unison with the casting off of a board by ejector 36 an illusion is created that each board, although actually ejected from the bottom of the pile, has been lifted from the top of the pile and cast off from the freight car by cooperative action of the two figurettes.

This casting off of a single board at a time can be occasioned repeatedly and at will by momentarily closing switch 24 which can be located close to the other track side switches that control various operations of a toy or miniature railroad.

The appended claims are directed to and intended to cover not only the precise shape and arrangement of parts herein disclosed to illustrate the invention but all equivalents thereof that are fairly embraced by a broad interpretation of the terms used in the claims.

We claim:

1. A toy railway open elongated flat car electrically operative to unload individual lumber boards more than half as long as said car, comprising a chassis of the flat-car type supported on wheeled trucks, a bin-like superstructure on said chassis fashioned to form a rectangular elongate board stacking space bordered by up-standing posts of corner forming cross sectional shape, actuating means on said chassis at the rear of said space mounted to move crosswise thereof in a path and direction to engage and displace the long edges of said boards from said space at least one at a time, and a normally idle electromagnetic prime mover connected when electrically energized to actuate said means in said path and direction.

2. A toy railway freight car as defined in claim 1, in which the said movable means comprises a stroking element mounted and connected to be reciprocated in a rectilinear path by the said prime mover.

3. A toy railway freight car as defined in claim 1, together with two movable figurettes simulating lumber handling workmen positioned at and facing each other and the opposite ends of the said space respectively thereby seemingly to cooperate in handling said boards one by one, and connections between said figurettes and the said actuating means operative to cause movement of both figurettes in synchronism with board actuating

4

movement of the said means, thereby to produce a visual impression that both figurettes cooperate simultaneously in causing discharge of a single lumber board from the car.

4. A toy railway freight car as defined in claim 1, in which the said superstructure forms a bin having a stationary platform surface and upright guide posts positioned to nest the corners of a pile of toy lumber boards stacked in said space, at least two of said guide posts being apertured to permit at least one of said boards at a time to depart edgewise from said bin.

5. A toy railway freight car as defined in claim 4, in which the said stationary platform surface is elevated above the said chassis to form a space occupied by the said prime mover.

6. A toy railway freight car as defined in claim 5, in which the said movable means comprises a stroking element mounted and connected to be reciprocated in a path above and across the said stationary platform.

7. A toy railway freight car as defined in claim 6, in which the said stroking element comprises a slide mounted and connected to be reciprocated in a planar path across and parallel with the said stationary platform.

8. A toy railway freight car as defined in claim 5, in which the said prime mover is confined to levels above the said car chassis.

9. A toy railway freight car as defined in claim 8, in which the said prime mover comprises an electromagnet solenoid having a horizontal axis and a horizontally flattened cross sectional shape for condensing its height to accord with shallow dimensions of the said space between the said platform surface and the said car chassis.

References Cited in the file of this patent

UNITED STATES PATENTS

2,323,240	Rexford	June 29, 1943
2,444,961	Smith	July 13, 1948
2,658,307	Pettit	Nov. 10, 1953
2,664,664	Bonanno	Jan. 5, 1954
2,686,385	Smith	Aug. 17, 1954