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W. R. SMITH ET AL
MANIKIN ATTENDED TOY

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2 Sheets-Sheet 1

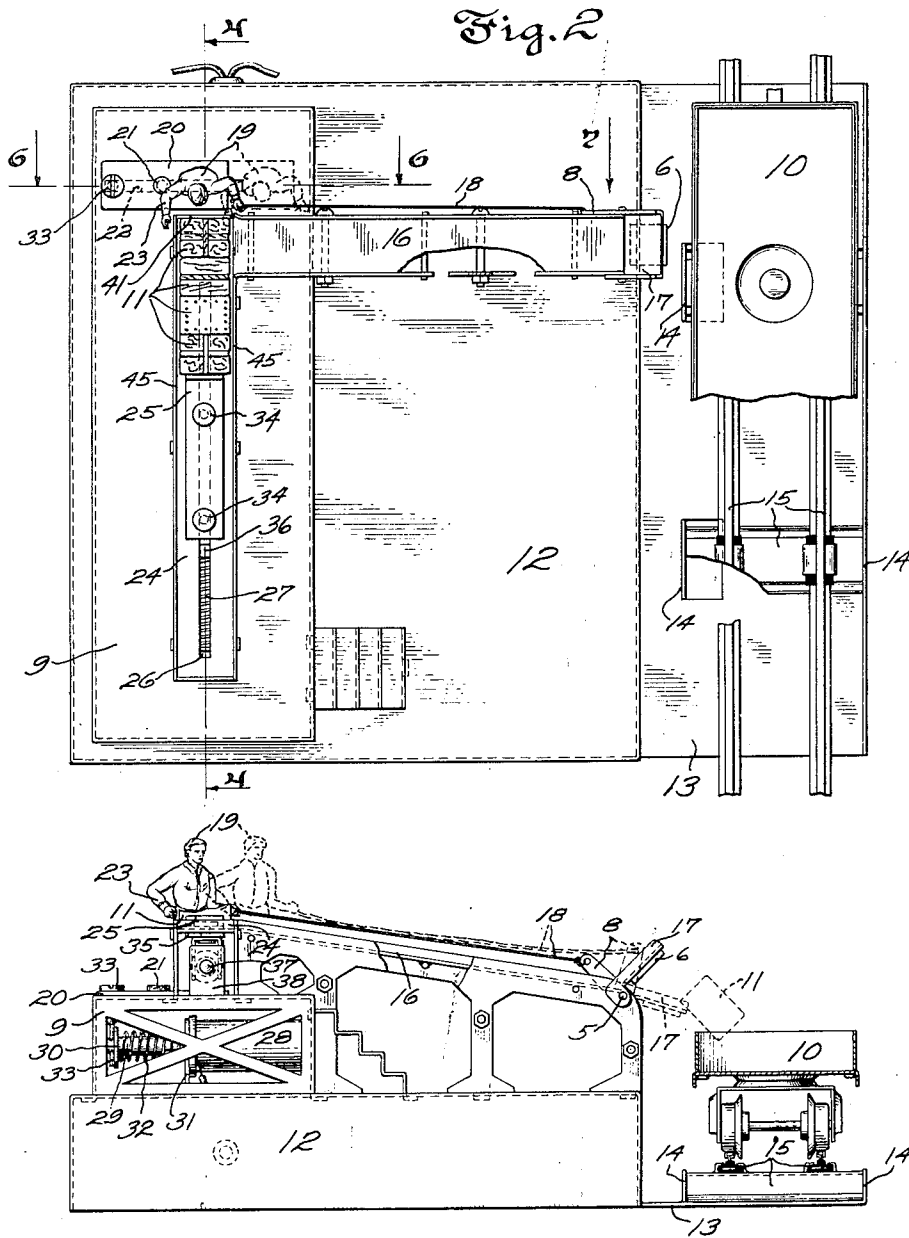


Fig. 1

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Fig. 3

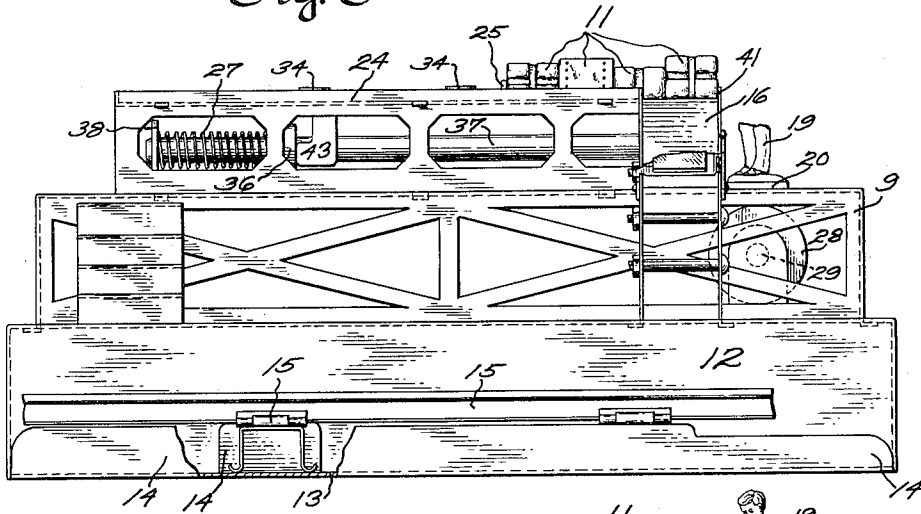
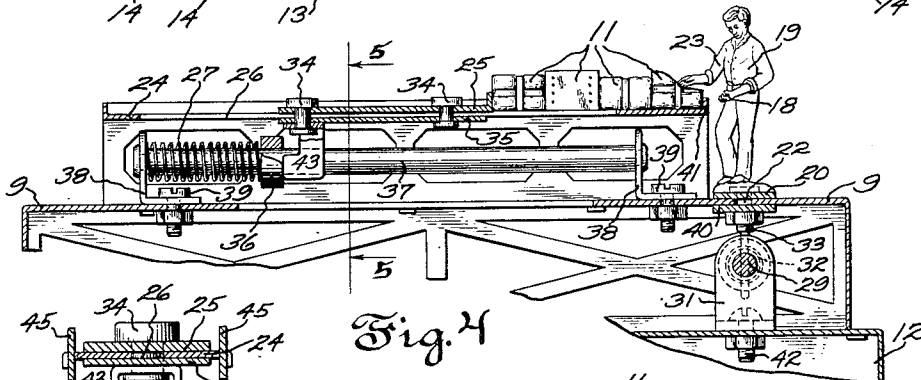


Fig. 4

Fig. 5

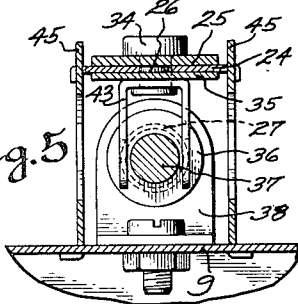
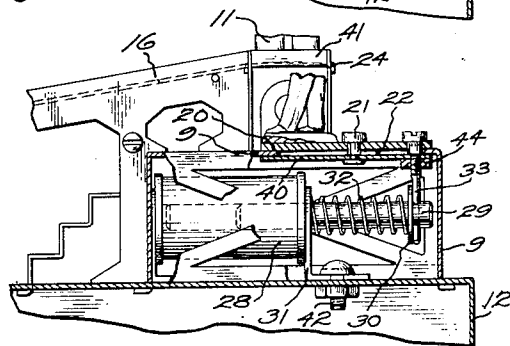


Fig. 6

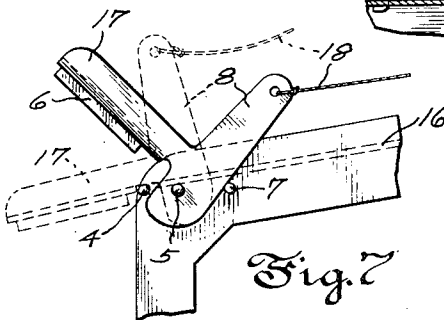


Fig. 7

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MANIKIN ATTENDED TOY

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6 Claims. (Cl. 46—40)

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This invention relates to a remotely controllable animated toy for use as a trackside accessory in toy railway layouts wherein a toy freight car standing on a toy railroad track can be loaded automatically with miniature imitative freight or express packages delivered thereto by conveyer apparatus attended by a manikin.

Toys for simulating railroad operations familiar at trackside stations, such as the handling of express or freight packages, need be simple and rugged in construction and should resemble as faithfully as possible the appearance and performance of actual station equipment and attendant workmen. Hence it is an object of this invention to provide a toy car loading accessory capable of being energized for automatic action at a remote point of control and simulating in appearance and performance an express handler engaged in transferring from a feeding conveyer to a chute successively arriving miniature articles that then are delivered from the chute to a waiting toy freight car.

Another object of the invention is to cause the express packages to arrive within the reach of the animated manikin automatically.

Another object is to cause, from a remote point of control, reciprocative repeated excursions of the manikin of such nature as will cause an outstretched arm thereof to push against successive express packages as they automatically arrive before him one by one, thus to impart a course changing force to the package causing it to start down the chute, or to be transferred to some other form of conveyer leading away from the manikin.

Another object of the invention is to arrest the toy express package at the bottom of the chute until purposely dumped from the delivery end thereof through mechanical action of the manikin.

A general object of the invention is to accomplish the aforesaid animated performance of a toy by means of sturdy structure and enduring mechanism that is low in cost yet realistic in appearance.

These and other objects of the invention are set forth in greater detail in the following description of a representative embodiment of the improvements having reference to the accompanying drawings wherein:

Fig. 1 is a side elevation of the complete, manikin attended toy indicating certain movements of the manikin as well as the chute discharge gate for delivering an imitative express package onto a toy freight car.

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Fig. 2 is a plan view looking downward on Fig. 1 showing portions of the structure partially broken away.

Fig. 3 is a front elevation drawn on an enlarged scale looking from the right toward Fig. 1 with fragments of the structure omitted or broken away.

Fig. 4 is a fragmentary view taken partially in section on the planes 4—4 in Fig. 2, looking in the direction of the arrows.

Fig. 5 is a still further enlarged view taken in section on the plane 5—5 in Fig. 4 looking in the direction of the arrows.

Fig. 6 is a fragmentary view drawn on the same scale as Fig. 3 taken partially in section on the plane 6—6 in Fig. 2 looking in the direction of the arrows.

Fig. 7 shows in enlarged detail the package dumping gate at the lower end of the delivery chute viewed in the direction of the arrow 7 in Fig. 2.

The toy as a whole comprises a stationary hollow platform 12 having a frontwise extension 13 of sheet metal on the "ground" level equipped with upstanding flanges 14 which fit and orient the conventional toy railroad track 15 in relation to platform 12. An empty toy freight car 18 of the open type is shown standing on track 15 in position to be loaded with miniature imitation toy freight or express packages 11 which upon occasion are caused by remotely controlled action to slide down the incline of a stationary car loading chute or inclined trough 16. Atop platform 12 at the uppermost end of chute 16 there is a hollow superstructure 9 containing the animating mechanism of the toy.

The delivery end of chute 16 has a dump trap 17 swingable on pivot pin 5 which because of its weighting slab 6 tends to fall by gravity to an article delivering position indicated by broken lines in Figs. 1 and 7. It is arrested at this angle by engagement with stop 4 at end of the chute structure. Trap 17 may be lifted to its upwardly inclined position shown in full lines in Figs. 1 and 7 through the pulling action of a cord 13 attached to an operating arm 8 of the trap which encounters a stop 7 in this position. An article 11 when sliding down the chute can be made to encounter trap 17 in raised position and thus be prevented from immediately passing off the chute onto the railway car until the trap is subsequently permitted to drop when cord 13 becomes slack.

The remote end of cord 13 is attached to the imitative left hand of manikin 19. The manikin

is fixed in standing position on a sliding foot plate 20. This foot plate spans a straight slot 22 in the top wall of superstructure 9 and overlies the latter. The manikin and its foot plate perform reciprocative excursions between the full line and broken line positions shown in Fig. 1. A shouldered stud 21 is fixed on foot plate 20 and extends downward through slot 22 to slide therein and be guided thereby. The bottom end of stud 21 is made fast to a steadying plate 40 which spans slot 22 and closely underlies the top wall of superstructure 9.

Motivation of manikin 19 is caused by an electromagnet whose solenoid 28 is located inside of, and at least partly concealed by, superstructure 9. Upon electrical energization of this solenoid it abruptly draws into itself (toward the left in Fig. 6, or toward the right in Fig. 1) a plunger armature 29 whose exposed end carries a thrust disc 30. Between this thrust disc and a stationary mounting bracket 31 that is secured to platform 12 by screw 42 for mounting the solenoid, a spring coil 32 loosely surrounds armature plunger 29 and is under axial compression constantly urging the latter toward the right in Fig. 6. A crosswise hole through the extreme right end of plunger 29 is engaged by the bottom elongated end of a second shouldered and threaded stud 33 that is fixed in and depends from foot plate 20 and is made fast to steadying plate 40 by a nut 44. Stud 33, like stud 21, extends downward through the slot 26 and is guided therein to limit the reciprocative movements of manikin 19 to rectilinear motion.

Manikin 19 stands at one end of a conveyor counter 24 having guide rails 45 along its sides which is fixedly mounted on the platform superstructure 9. All the imitative miniature express packages 11 are constantly urged along counter 24 between guide rails 45 from left to right in Figs. 3 and 4 by a pusher plate 25 guided by studs 34 which extend through and slide along an elongated slot 26 in the top wall of counter 24.

The bottom ends of studs 34 are anchored in a steadying plate 35 to which is fixedly attached a depending bifurcate angle bracket 43 whose laterally spaced legs lie in the path of a sliding collar 36. This collar is guided lengthwise of counter 24 by the stationary horizontal rod 37 which is supported at its ends under the conveyor counter by brackets 38 secured to superstructure 9 by screws 39. Pusher plate 25 is constantly urged toward the right in Figs. 3 and 4 by the axial expansion of a long open spring coil 27 loosely surrounding rod 37.

At a transfer station formed by the rectangular junction of the top end of chute 16 with the end of counter 24 the right arm 23 of manikin 19 is stiffly outstretched so that it sweeps from its full line position to its broken line position in Figs. 1 and 2 in unison with the body of the manikin whenever foot plate 20 moves toward the right in Fig. 2.

Thus when solenoid 28 is energized, its plunger 29, Fig. 6, abruptly jerks the manikin 19 bodily toward the left. This action as shown in Figs. 1 and 2 causes the manikin's extended right arm to sweep across the counter 24 and push ahead of it whatever express article 11 at the moment occupies the transfer station on the counter at the junction therewith of chute 16. It will be noted that the article thus displaced had stood lightly pressed against the upturned stop lip 41 by the feeding force of spring 27. The displaced article is thereupon automatically and

abruptly shoved away from the transfer station and caused to start down the incline of chute 16. The article continues to coast down the chute by gravity and unless solenoid 28 purposely has been too quickly de-energized by a manual control switch will proceed to pass over the dump trap 17 which is now in its broken line position in Fig. 2. This is permitted by the slack occasioned in the trap operating cord 18 when the manikin performs its article discharging movement.

Normally conveyer counter 24 will be loaded with a row of imitative express packages 11 intervening between the counter stop lip 34 and the pusher plate 25. As soon as the article nearest the manikin has been displaced from the conveyor counter onto the chute as just described, the next following article 11 is advanced toward the manikin until it encounters the hand of the outstretched arm 23. Here the article is temporarily arrested until solenoid 28 is purposely de-energized. At that time spring 32 restores manikin 19 to its full line position freeing article 11 from obstruction by the manikin's hand and permitting pusher plate 25 to complete the advance of the article 11 toward the manikin until it is arrested by the counter end lip 41 and becomes in turn the article that will be projected down the chute by the next automatic shoving action of the manikin when the solenoid is next energized.

The described animation of this toy produces the effect of a very busy train loading workman sending package after package down a chute in rapid succession as the push button of a momentary contact switch (not shown) is pressed to energize the solenoid or released to de-energize it in such sequence of timing as pleases the operator.

We claim:

1. In a manikin attended animated toy for diverting articles from one direction of travel onto an article discharging stationary trough disposed in angularly branching relation to said direction of travel, the combination with said trough of, an article transfer station located at one end of said trough disposed to receive and support an article in position to slide smoothly from said station onto said trough, a stationary stop in fixed relation to said trough at one edge of said transfer station, means to advance articles to said transfer station in a direction to be arrested by said stop, a manikin separate from said trough standing at said end thereof on the opposite side of said stop from said transfer station and having an article pushing member reaching over said stop, and toy animating means operative to move said member relatively to said stop across said transfer station in a direction to engage an article dwelling at said station and push said article along said stop away from said station onto said trough.

2. A manikin attended animated toy as defined in claim 1, in which the said article pushing member is fashioned to resemble an arm outstretched from the body portion of the said manikin.

3. A manikin attended animated toy as defined in claim 1, together with a hollow platform structure atop which the said manikin stands and above which the said transfer station is elevated to approximately half the height of said manikin, a toy animating prime mover below and within the hollow of said platform structure, and connections between said prime mover and said manikin operative to transmit motion from the

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former to the latter in a manner to actuate said article pushing member, said trough being inclined downward from said level of the transfer station and terminating in an article delivering end.

4. A manikin attended animated toy as defined in claim 1, together with an article feeding guideway receptive to a plurality of the said miniature articles, and article urging means comprising a slidable pressor element spring-biased to advance articles automatically along said article feeding guideway and onto said transfer station into contact with the said stationary stop, the said article pushing member occupying the path of advance of the said articles before the next following article reaches said stationary stop.

5. A manikin attended animated toy as defined in claim 1, in which the said trough is inclined downward from the said transfer station together with an article arresting trap at the lower article delivering end of said inclined trough, and con-

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nections from said trap to said manikin transmitting movement from the latter to said trap for alternately arresting and releasing an article arriving by gravity at said trap via said inclined trough.

6. A manikin attended animated toy as defined in claim 5, in which the said article arresting trap is a swingable gate pivotally mounted on the said trough, and the said connections comprise a flexible tie line.

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