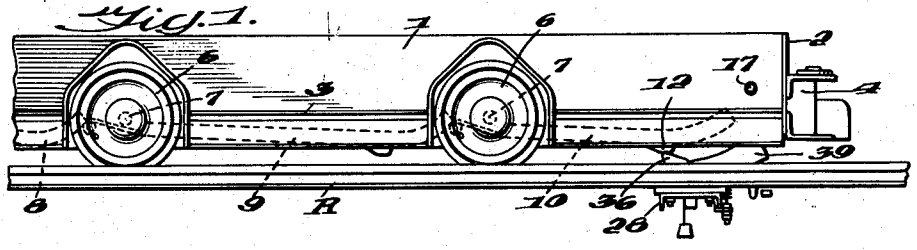
April 7, 1953 H. W. SANFORD 2,634,007

LATCH TRIPPING DEVICE

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Fig. 1.



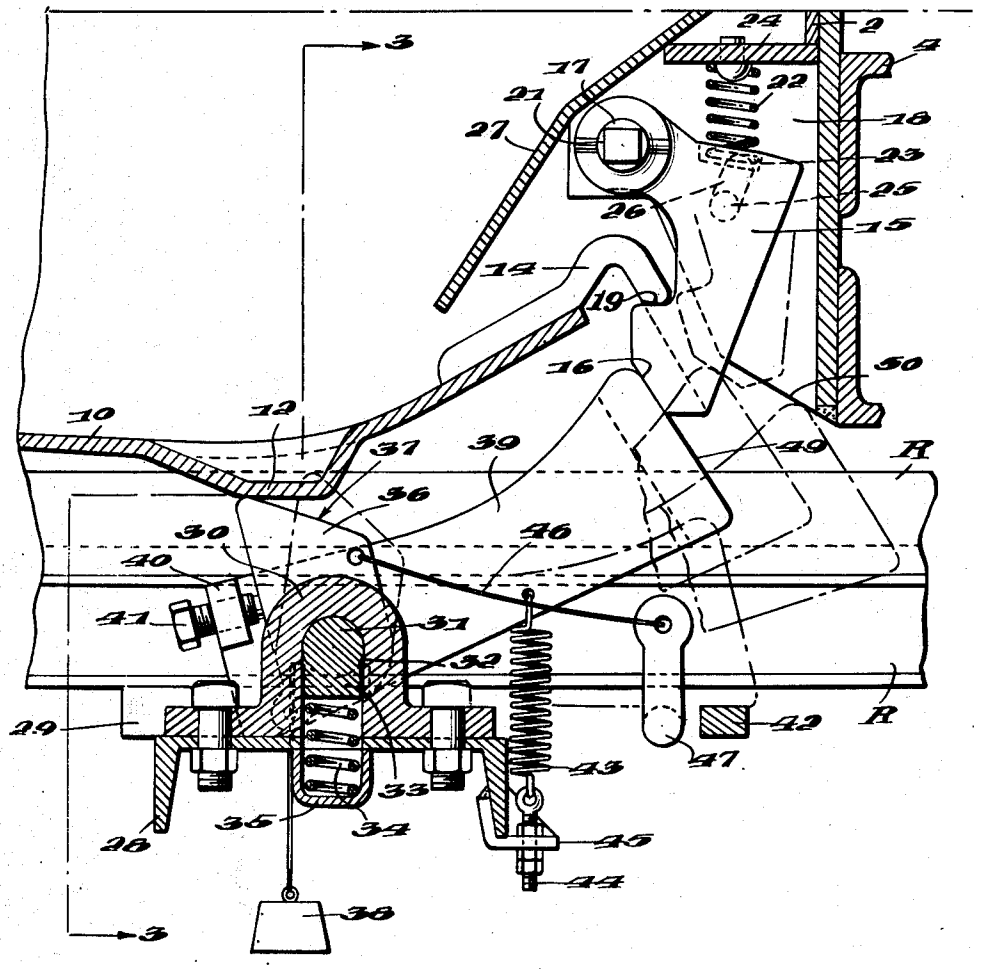


Fig. 2.

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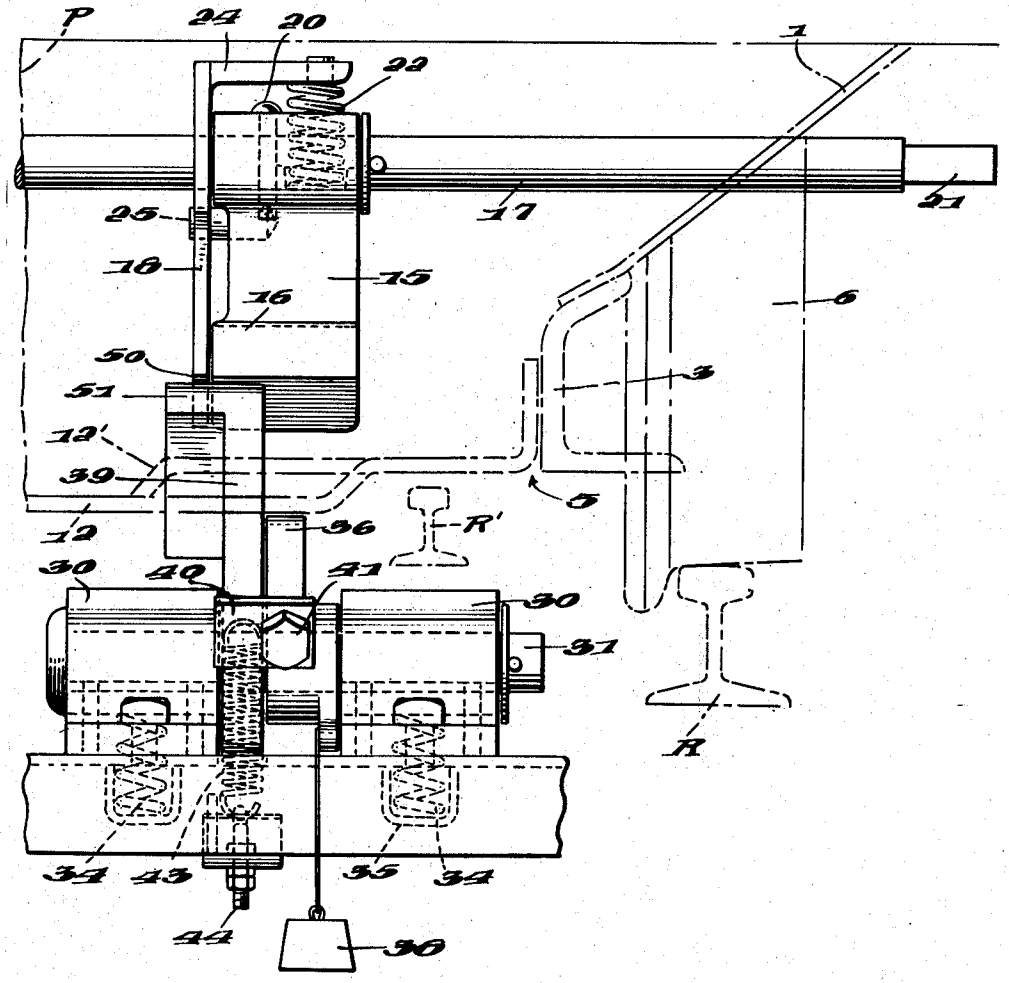
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LATCH TRIPPING DEVICE

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Fig. 3.



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LATCH TRIPPING DEVICE

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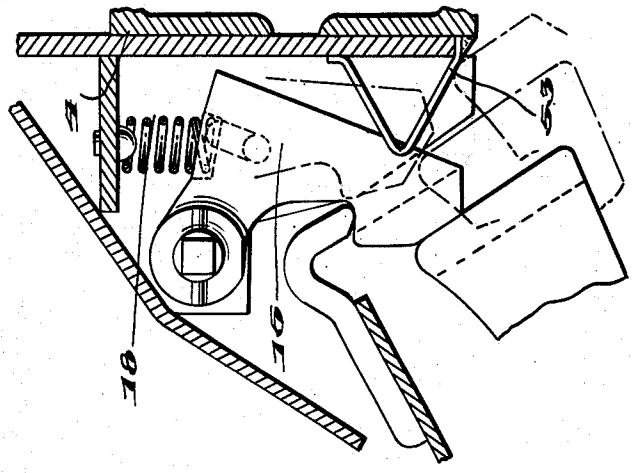


Fig. 5.

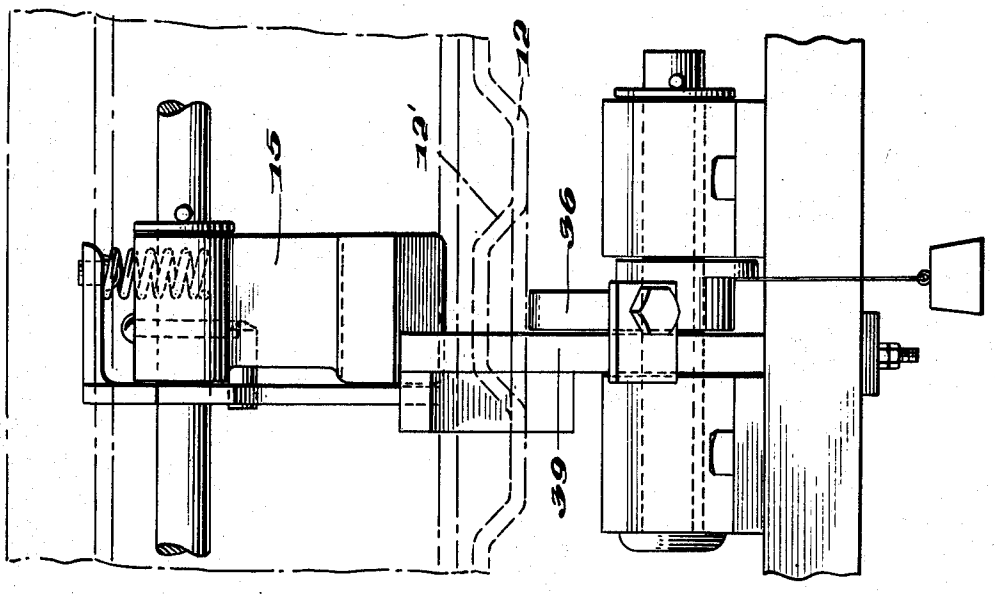


Fig. 4.

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LATCH TRIPPING DEVICE

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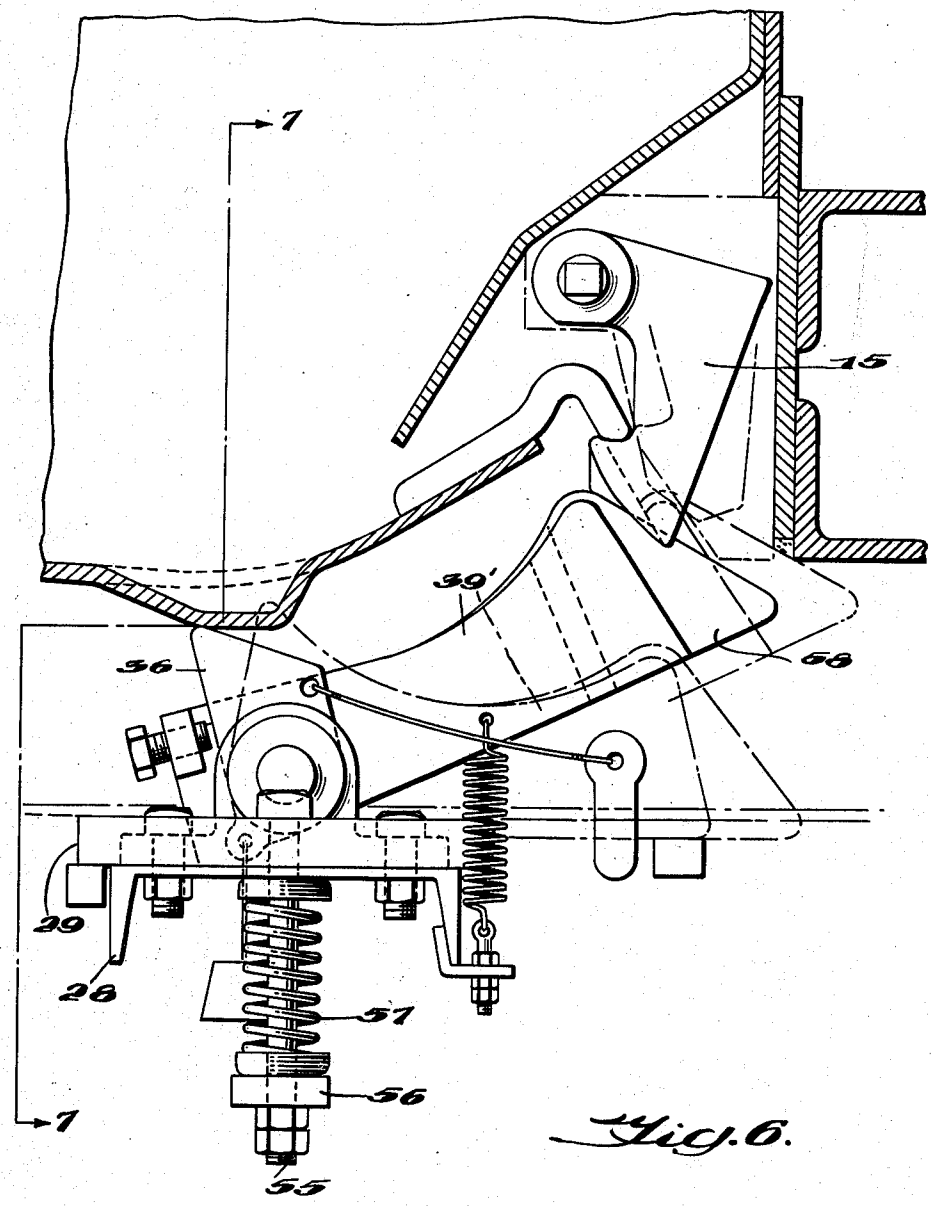


Fig. 6.

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LATCH TRIPPING DEVICE

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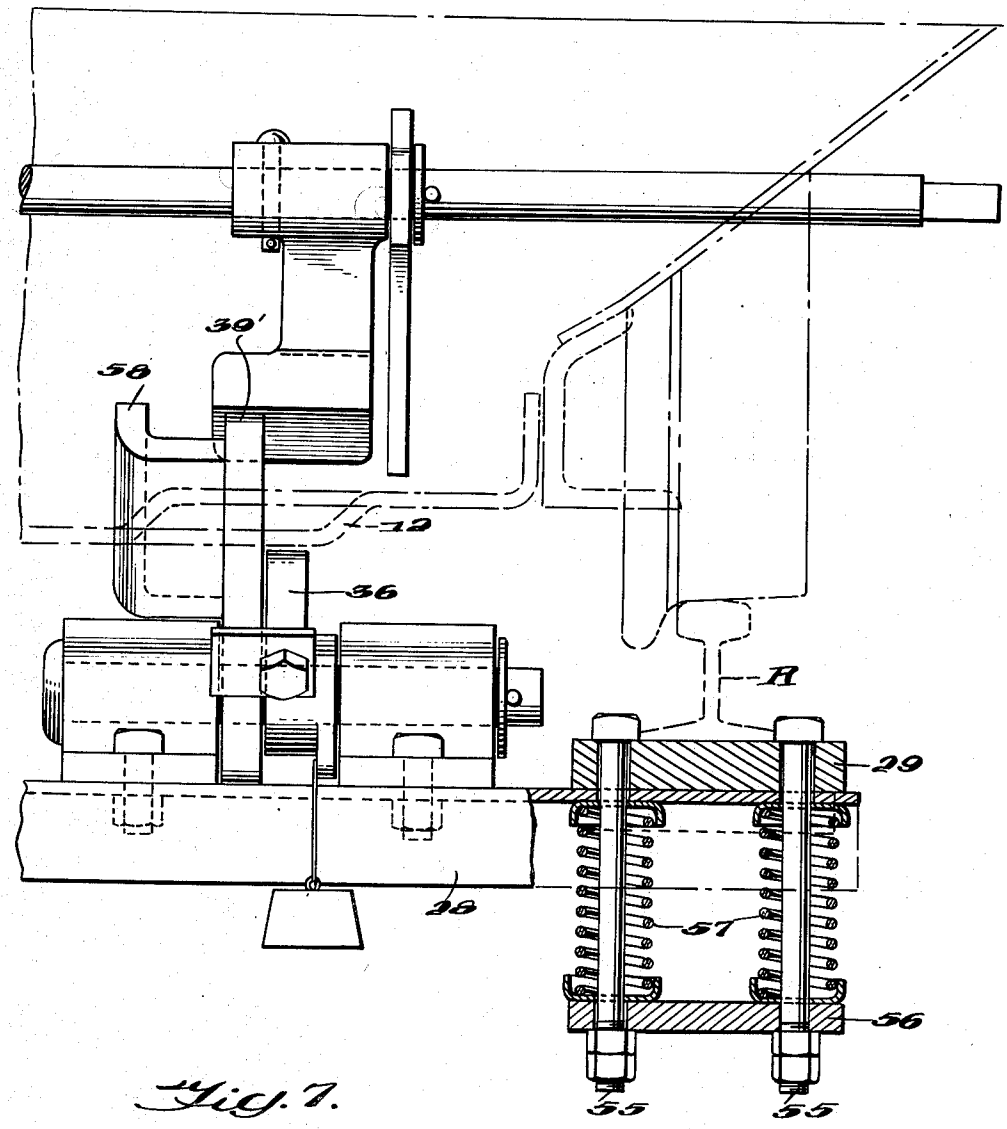


Fig. 7.

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2,634,007

UNITED STATES PATENT OFFICE

2,634,007

LATCH TRIPPING DEVICE

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Application April 7, 1947, Serial No. 739,795

10 Claims. (Cl. 214—58)

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This invention relates to improvements in latch tripping devices, of the character used for controlling the release of drop bottom doors of conveyances, such as mine cars.

This is an improvement on the latch tripping mechanism set forth in my prior patent, No. 2,399,708, granted May 7, 1946. In the prior device, the latch tripping mechanism was operated by a lug on a side sill of the car, which would require the lug to be disposed laterally of the latch hook which supports the door, and causes a somewhat more complex apparatus to be required than is desired.

The object of this invention is to simplify and improve the construction of the latch tripping device and the manner in which it is operated automatically by the car, by providing for the operation of the tripping device directly by one of the doors, such as a depression on the bottom of the latched door. This provides for bringing the controlling means very close to the point where the latch hook is located, often remote from the side sills of the car, in closer relationship to the latch hook. Furthermore, if the rear end-sill structure should droop, or when the wheel treads should wear, causing the latch hook to be lowered closer to the top of the rails, the rear door will be lowered correspondingly, and the relationship between the tripping means and the hook will not be changed appreciably.

The operation of the latch tripping device directly by the latched door itself not only provides a much simpler and less expensive mechanism that is more practical to manufacture, but also makes possible the supporting of the door by two laterally spaced hooks which can be brought fairly close together on the longitudinal axis of the car, directly behind the central bumper of the end-sill structure. Then if one of the latch hooks should fail to latch, the other hook will be in a more central position and will support the load on the door nearer to its center line, without as much danger of bending of the door plate due to the weight on the unsupported edge thereof. Moreover, if the edge of the door should become bent or warped, the variation in the height of the latch engaging elements on the door above the rail would be more nearly the same on such a bent door than it would be if these elements were spaced farther apart transversely.

According to a preferred embodiment of the invention, provision is made for latching the drop bottom door or doors of the conveyance by means of a latch hook which engages the rear edge of the latched door, and which hook preferably is

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disposed above the lower edge of the end sill, as described in my patent, No. 2,399,708, as well as above the lower edge of the door. A tripping arm is mounted in the trackway in position to be raised into engagement with the latch hook in properly timed relation with the movement of the car or conveyance over the tripping device. This operation of the tripping arm preferably is accomplished by means of a lever arm operatively connected with the tripping arm and disposed in close relation therewith, in position to be operated directly by the latched door itself. It is preferred that the operation of the lever arm be accomplished by means of a depression provided in the bottom of the door plate. Such a depression ordinarily is formed therein for engagement with the door-closing rails provided at the point of dumping, which depression may be used for this purpose, without the necessity for additional modification of the door plate. The proportioning of the lever arm and tripping arm may be such as to raise the tripping arm into position for engagement with the latch hook, as the car or conveyance passes over the tripping device.

When the car wheels wear or if the end sill structure should droop, this may cause a lowering of the normal position of the door plate relative to the latch tripping device mounted in the trackway.

To accommodate for this change in relationship, the arms may be mounted in yieldable positions in the trackway normally to be held in fixed relation thereto, but capable of yielding to abnormal pressure exerted on the lever arm by the door plate to allow the conveyance to pass thereover, for proper operation of the tripping device. This makes it possible for the same tripping device to be used both for new cars or those that have not been worn or distorted, and for cars in which the operating parts have been displaced somewhat relative to each other. The tripping and lever arms normally will be held in their operating positions, but may be moved bodily downward on the yieldable mounting thereof to accommodate for a door that has been lowered somewhat relative to the trackway due to wear or other imperfection in the car.

The invention is illustrated in certain embodiments in the accompanying drawings in which:

Fig. 1 is a side elevation of a drop bottom mine car showing the improved latch tripping device applied thereto;

Fig. 2 is a longitudinal vertical sectional view thereof;

Fig. 3 is a cross section therethrough on the line 3—3 of Fig. 2;

Fig. 4 is a cross section similar to Fig. 3, but showing a central latch hook for the door;

Fig. 5 is a detail longitudinal section similar to Fig. 2, showing a further modification of the structure;

Fig. 6 is another longitudinal section similar to Fig. 2, and showing a modification; and

Fig. 7 is a cross section therethrough, on the line 7—7, of Fig. 6.

This invention is shown as applied to a mine car of the general type set forth in my prior patent, No. 2,001,471, granted May 14, 1935, adapted for conveying coal or other loose lading from a receiving point to a tipple or other point of discharge. The mine car is shown to be of the 4-wheel type, having three drop bottom doors interconnected for release in one-two-three order. This application of the invention is used, however, merely for purpose of illustration, and it is evident that the subject-matter of this invention may be applied to other types of cars, vehicles, and drop bottom conveyors in general, wherever it may be desirable to release bottom doors for dropping, in which the principles of this invention may be applicable.

The general structure of the car illustrated comprises a car body formed of side and end walls 1 and 2, rigidly secured together, the side walls 1 rising from a pair of oppositely disposed side sills 3 (Figs. 3 and 7), connected together at the ends of the car by means of combined end-sills and bumpers, designated generally at 4. The side and end-sills 3 and 4 comprise the frame structure of the car for supporting the lading body thereof, and between which is a bottom opening designated generally at 5 (Fig. 3) for discharge of the lading therethrough.

The car is supported upon wheels 6 and axles 7 connected with the side sills 3. The wheels 6 are adapted to travel on a track formed by a pair of laterally spaced rails indicated generally at R.

Each of the doors 8, 9 and 10, usually is pivotally supported or hinged at its forward edge, capable of downward swinging movement at the point of discharge or tipple for discharge of the lading. Each of the forward or middle doors supports the free edge of the next forward door in the construction usually employed heretofore in the art, while the rear edge of the rearward door is adapted to be latched, and, when released, will allow successive or simultaneous dropping of the doors, according to the character of mountings used for the doors, various forms of which are well-known and have been used in the art.

In the form of door supporting mechanism shown in my prior patent, No. 2,001,471, three drop bottom doors were illustrated and adapted for discharge in one-two-three order from front to rear of the car, the pivotal mountings for the middle and rear doors permitting bodily slidable movement thereof. Then upon release of the rearward door, it may drop sufficiently to drag and move bodily rearward, thereby releasing the free edge of the middle door which will likewise drop and release the free edge of the forward door. This occurs usually just before the car reaches the tipple or bin, and permits dropping of the forward door in the bin for discharge of the lading thereon, as soon as room enough is provided in the bin therebeneath. The other doors drop in succession during the continued forward movement of the car over the bin or tipple in one-two-three order from front to rear of the car.

After dumping in passing over the bin or tipple, the doors are adapted to be closed by the usual door-closing rails located in the track. The doors have downward projections or indentations 12 in the under faces thereof to ride on the door-closing rails, which indentations extend transversely of the doors throughout substantial portions of the width thereof. The doors are thus moved successively about their hinge rods to their closed positions, and the middle and rearward doors are pushed forward into wedging relation with the next forward door, adapted to be latched in closed position.

As shown in Figs. 2 to 7, provision is made for latching the free edge of the rearward door 10 in closed position, thereby holding the several doors closed, to retain the lading in the car until the latching means is released for dumping. For this purpose, I have provided on the free edge of the rearward door 10, one or more supporting trunnions 14, one for each latch of said door. I prefer to use a pair of latches, each designated generally by the numeral 15 and spaced apart symmetrically with respect to the longitudinal center plane of the car, designated P (Fig. 3).

Each of the latches 15 is provided with a transverse engaging face 16 thereon, as hereinafter described more in detail. The latches 15 are pivotally mounted on a cross shaft 17 supported by brackets or plates 18 secured to the adjacent end wall 2 of the car. Each of the latches 15 is preferably so constructed, or spring-pressed at 22, as to be disposed normally in its door-supporting position, or to return thereto automatically when disengaged for release of the lading.

Each of the latches 15 is provided with a concave seat 19 (Fig. 2) at the forward face thereof in position to receive the end of the adjacent trunnion 14 attached to the free edge of the rearward door 10. As shown in Fig. 2, the seat 19 is located on the opposite side of the vertical plane passing through the pivot axis of the latch 15 from the door 10, so that the weight of the door and the lading thereon tends to maintain the latched relation without any tendency for this weight to push the latch to one side. This is particularly true when the concave seat is engaged by a convex end of the trunnion, whereby any movement of the latch tending to release the door must raise up the free edge of the door.

Each latch 15 is shown as pinned at 20 (Fig. 3) to the cross shaft 17, so as to be released upon rotation of the shaft, and this makes possible also the simultaneous operation of the latches on both sides of the upright central plane P of the car by a single tripping device operating in engagement with either of the latches. The manual release of the latches may be accomplished by a squared portion 21 on the free end of the cross shaft 17 (Fig. 3) externally of the side wall 1 of the car.

The latches 15 normally are urged to their door-engaging positions by springs, as mentioned above, as indicated at 22, one of which is interposed between a seat 23 in the upper face of the latch (Fig. 2) and a confining bracket 24, attached to one side of the mounting plate 18. The swinging movement of the latch 15 is limited by a pin 25, attached to one side of the latch hook and extending through a slot 26, formed in the mounting plate 18, which pin and slot limit the swinging movement of the latch hook between the two positions shown in full lines and in dotted lines in Fig. 2.

The latches 15 are interposed between the free

edge of the rearward door 10 and the adjacent end sill structure 4, underneath a guard plate 27, secured to the adjacent end wall 2, and which guard plate is supported also on the top edges of the mounting plates or brackets 18.

The latches 15 are so constructed and arranged that they are disposed wholly above the lower edges of the end-sills of the car, and also, preferably, above the lower face of the rearward door, in protected positions. This prevents disarrangement of the latches or damage thereto in the event of wreckage of the car or from contact with obstructions in the trackway, as might occur in a mine, thus assuring adequate protection of the latches to maintain these in proper operative positions. Each latch 15 is so mounted in protected position between the door 10 and the bumper 4 that a tripping space is provided between said door and the latch 15 in latched position for entry of a tripping arm therebetween.

The tripping mechanism for the latches 15 is adapted for mounting in the trackway between the opposite rails R at a point adjacent the bin or other point of dumping.

This tripping mechanism may be attached to the rails R or supported thereby or otherwise in the trackway.

In the form illustrated in Figs. 2 and 3, the tripping mechanism is shown as mounted on a supporting plate, such as a channel bar 28, rigidly secured as by welding to spacers 29, at opposite ends thereof, by means of which the mounting plate 28 is secured rigidly to the track rails R.

Where two latch hooks are provided spaced on opposite sides of the longitudinal upright central plane of the car, a tripping device may be provided, if desired, for each such latch hook, or both hooks may be operated by a single tripping device. It is preferred, however, that separate tripping devices be used. Each such tripping device may be of the form shown in Figs. 2 and 3, which illustrate one form of this invention.

In this form are illustrated bearing boxes 30, secured upon the mounting plate 28 in longitudinal spaced relation, and journaled therein is a mounting pin 31. The bottom of each bearing box 30 is slotted at 32, to permit vertical displacement of the mounting pin 31, relative to the journal boxes 30. This mounting pin normally is retained in its uppermost position, as shown in Fig. 2, by a bearing plate 33, urged upward by means of a coiled spring 34, interposed between the bearing plate 33 and a socket 35, provided in the mounting plate 28. This will permit bodily downward movement of the mounting pin 31, while normally retaining the pin in its uppermost position.

Extending upwardly from the journal pin 31 is a lever arm 36, having a wedge-shaped upper end with a beveled face 37 in position to engage the bottom face of the door depression 12. This lever arm 36 normally is urged in a counter-clockwise direction about the journal pin 31, by a weight 38 attached thereto.

Also journaled on the pin 31 is a tripping arm 39, which extends substantially in a rearward direction from the journal pin. As shown in Fig. 3, the tripping arm 39 is mounted in side-by-side relation to the lever arm 36, and is free of direct attachment thereto. However, the back end of the tripping arm 39 has an offset bracket 40, overlapping the back face of the lever arm 36, and through which bracket 40 is threaded a stop screw 41, the forward end of which is in position to be engaged by the lever arm 36. This

causes the lever arm 36 to be moved by the tripping arm 39 from the full line position, shown in Fig. 2, to the dotted line position therein, whenever the tripping arm is in its lower dotted line position, resting upon a stop 42. The tripping arm 39 normally is urged into this position in engagement with the stop 42, not only by its weight, but also by a coiled spring 43 connected at one end with the tripping arm 39, and adjustably connected by a screw 44, attached at its opposite end to a bracket 45, secured to the mounting plate 28. The adjustment of the tension of the spring 43 varies the upward movement of the tripping arm 39.

The lever arm 36 is also connected through a cable 46, with a crank rod 47, journaled in the trackway, to move the lever arm to its inoperative position, as hereinafter described.

The forward end of the tripping arm 39 has an engaging face 49, in position to engage the face 16 of the latch hook 15. The relation of the faces 16 and 49 is such that there is no tendency for the face 49 to slip off of the face 16 until the latch hook 15 is retracted to its unlatched position, as shown in dotted lines in Fig. 2. This angle of relationship insures positive unlatching of the hook whenever the tripping arm engages it by the movement of the conveyance over the tripping device. This angular relationship is described more in detail in my prior application for Latch Tripping Mechanism, Serial No. 571,170, filed January 3, 1945.

The bracket plate 18 has a beveled lower face 50, that extends downwardly from a point above the tripping position of the arm 39 to the lower edge of the bumper 4, in position to engage a lateral flange 51 (Fig. 3) provided on one side of the tripping arm 39, at the outer end thereof, to insure of a deflection of the tripping arm underneath the bumper 4 from a point above the lower edge of the latter.

Thus the bracket plate 18 serves a multiple function. It provides for the support of the latch shaft 17, the deflector plate 27, and the compression spring 22, that acts on the latch hook; and it also provides a wedging deflector for the face of the flange 51, that will guide the tripping arm 39 underneath the end-sill structure. The latter function is especially important when the cars are being dumped rapidly to assure the lowering of the tripping arm from its engagement with the latch hook without direct abutment against the forward face of the end-sill structure.

Because there is no tendency for the face 49 of the tripping arm 39 to slide off of the face 16 of the latch hook, it is possible to use a relatively weak compression spring 43, acting on the tripping arm 39. This spring is used merely to insure return of the tripping arm to its lower position, causing the lever arm 36 to be moved to its dotted line position in Fig. 2, in the path of the operating depression 12, in the car door.

The counter-weight 38 tends to hold the lever arm 36 against the adjusting screw 41, and in its upright position. However, when it is desired to move the cars over the tripping mechanisms, without release of the doors, the lever arm 36 can be rocked in a clockwise direction on the mounting pin 31, and held in position where it will not engage the tripping lug 12. This may be accomplished by the operation of the crank bar 47, journaled in the trackway, and which is connected with the lever arm 36 through the flexible cable 46, which cable should have

sufficient looseness, so as not to be tight when the lever arm 36 is in the position shown in Fig. 2.

It will be evident from Fig. 3, that the depressions 12 in the bottom faces of the doors usually extend throughout the major portion of the width of the doors. Where these indentations are used to operate the latch tripping device, according to this invention, such indentations would extend over the tripping device as indicated at 12 in Fig. 3, in the latched door of the car, but would be terminated short of the upright longitudinal plane of the tripping mechanism, as indicated at 12' in the other doors of the car, such as the doors 8 and 9.

Where the car is provided with a single latch hook 15, midway of the width of the door, as shown in Fig. 4, this may be operated by a tripping device of the character described above, including a tripping arm 39, and a lever arm 36, which will function and operate substantially as described. The lever arm 36 will be operated by the indentation 12 in the latched door, which indentation will extend continuously throughout the intermediate portion of the latched door, but for the other doors of the car, this indentation will be terminated at the center thereof, as indicated at 12' in Fig. 4.

Where the latch tripping device is used in connection with a car equipped with doors adapted to be opened in one-two-three order, and which must be moved bodily by a forward wedging movement to a closed position, as set forth in my prior patent, No. 2,001,471, it is preferred that the bracket plate 18 should not be used as the wedging means. It is preferred that a separate or auxiliary means for this purpose be used, as shown in the form of a bracket 53 in Fig. 5, welded to the forward face of the end-sill structure 4.

If the car door is not made precisely accurately, or if the door becomes bent in service, or the end-sill structure should droop, or the wheels become worn, the indentation that serves as the operating lug for the tripping device might be lowered below the position shown in the drawings. Provision is made to accommodate for such irregularities in the normal location of the indentation 12, relative to the lever arm 36. One form of adjustment for this purpose is shown in Figs. 2 and 3, in the yieldably mounted journal pin 31 carried by the springs 34. Thus, if too much pressure exists between the indentation 12 and the lever arm 36, the pin 31 will be lowered and the lever arm 36 will be relieved of undue pressure, allowing it to operate in the usual manner.

Another manner of providing for this adjustment is shown in Figs. 6 and 7, in which the mounting plate 28 is separate from the spacers 29, and is so mounted that the plate 28 can move downwardly relative to the track rails R.

In this form, the mounting plate 28 is retained by bolts 55, which extend downward through the spacer 29, and the corresponding end of the mounting plate 28, and through a confining plate 56, slidably mounted thereon. Interposed between the confining plate 56 and the under side of the mounting plate 28 are compression springs 57, the tension of which may be adjusted by the bolts 55. These springs 57 take the undue pressure that may arise between the lever arm 36 and the indentation 12 in the latched door.

This form of the invention has an auxiliary projection 58, on one side of the tripping arm 39', in position for engagement with the end-sill structure, as a safety means for guiding the tripping arm therebeneath when no other guiding means is provided. This may be important, particularly, when the cars are operated at an unduly high speed.

Otherwise, the device shown in Figs. 6 and 7 operates in the same manner as the tripping device, described above, in connection with Figs. 2 and 3.

Also as shown in Fig. 3, auxiliary rails are shown at R', underneath the lateral edges of the doors to prevent the doors from coming into contact with the tripping device, except for operation. These rails R' are placed in the track beside the tripping device, so that the door, when unlatched and falling, will not strike the tripping mechanism in its normal position. Furthermore, these rails R' will protect the tripping mechanism from being struck by mine cars which may be derailed at the dumping bin.

While the invention has been illustrated and described in certain embodiments, it is recognized that variations and changes may be made therein, without departing from the invention, except as specified in the claims.

I claim:

1. In conveying mechanism, the combination with a trackway, a dumping vehicle mounted on the trackway and including a frame structure, a drop bottom dumping door, and latch means for holding the door closed and movable to release the same for dropping, of latch tripping mechanism mounted in the trackway, said tripping mechanism comprising a tripping member normally out of the path of movement of the vehicle and being constructed for upward movement into the path of the latch means to release the same, an actuating member operatively connected with the tripping member in position to be engaged by the dumping door during movement of the vehicle thereover for actuating the tripping member to raise the same to said release position, said actuating member being free of the tripping member for movement to an inoperative position relative thereto, and means connected with the actuating member normally tending to move said member to said operating position.

2. In conveying mechanism, the combination with a trackway, a dumping vehicle mounted on the trackway and including a frame structure, a drop bottom dumping door, and latch means for holding the door closed and movable to release the same for dropping, of latch tripping mechanism mounted in the trackway, said tripping mechanism comprising a tripping member normally out of the path of movement of the vehicle and being constructed for upward movement into the path of the latch means to release the same, an actuating member operatively connected with the tripping member in position to be engaged by the dumping door during movement of the vehicle thereover for actuating the tripping member to raise the same to said release position, said actuating member being free of the tripping member for movement to an inoperative position relative thereto, means connected with the actuating member normally tending to move said member to said operating position, and yieldable means normally tending to move the tripping member to its normal position out of the path of movement of the vehicle.

3. In conveying mechanism, the combination with a trackway, a dumping vehicle mounted on

the trackway and including a frame structure, a drop bottom dumping door, and latch means for holding the door closed and movable to release the same for dropping, of latch tripping mechanism mounted in the trackway, said tripping mechanism comprising a tripping member normally out of the path of movement of the vehicle and being constructed for upward movement into the path of the latch means to release the same, an actuating member operatively connected with the tripping member in position to be engaged by the dumping door during movement of the vehicle thereover for actuating the tripping member to raise the same to said release position, pivot means supporting said tripping and actuating members, and means yieldably mounting the pivot means for bodily yielding movement of the tripping and actuating members upon the application to the actuating member of excess pressure exerted by the door.

4. In conveying mechanism, the combination with a trackway, a dumping vehicle mounted on the trackway and including a frame structure, a drop bottom dumping door, and latch means for holding the door closed and movable to release the same for dropping, of latch tripping mechanism mounted in the trackway, said tripping mechanism comprising a tripping member normally out of the path of movement of the vehicle and being constructed for upward movement into the path of the latch means to release the same, an actuating member operatively connected with the tripping member in position to be engaged by the dumping door during movement of the vehicle thereover for actuating the tripping member to raise the same to said release position, a shaft supporting the tripping and actuating members, and spring mean yieldably supporting the shaft for bodily displacement of the shaft in response to excess pressure applied to the actuating member by engagement of the door therewith.

5. In conveying mechanism, the combination with a trackway, a dumping vehicle mounted on the trackway, said vehicle including a frame structure with transverse end portions, a drop bottom dumping door, and latch means for holding the door closed and movable to release the same for dropping, said latch means being located wholly above the lower edge of the transverse end portion of the vehicle in the same longitudinal upright plane, of latch tripping mechanism mounted in the trackway and including a tripping member normally out of the path of movement of the latch means and being mounted for upward movement into the path of the latch means to release the same, an actuating member operatively connected with the tripping member, means connected with the door in position to engage the actuating member as the vehicle passes thereon to raise the tripping member to said release position, and means forming a wedging surface on the transverse end portion of the vehicle, and the tripping member having a portion thereof in the upright longitudinal plane of said wedging surface during movement of the vehicle over the tripping mechanism in position to be engaged thereby for forcing the tripping member down out of said release position after actuation of the latch means.

6. A latch tripping device adapted to control the release of a drop bottom door of a dumping conveyance, comprising a tripping member adapted to engage and release latch means, an actuating member operatively connected with the tripping member and adapted to be actuated by a portion of the conveyance passing thereover, a shaft mounting the tripping and actuating members thereon, a supporting bearing having an upright slot therein within which the shaft is slidably mounted for upward movement, and spring means bearing upon the shaft and urging the shaft upwardly in the slot for bodily yielding movement in response to excessive pressure applied to the actuating member upon engagement thereof by the conveyance.

7. In conveying mechanism, the combination with a trackway, a dumping vehicle mounted on the trackway and including a drop bottom door, latch means for holding the door closed and movable to release the same for dropping, said door having a downward projection thereon intermediate the width thereof, of a latch tripping mechanism mounted in the trackway including a tripping arm normally out of the path of the vehicle, said tripping arm being mounted for upward movement into the path of the latch means to release the same, and an actuating member operatively connected with the tripping arm and substantially in the same upright longitudinal plane as the latch means and in the path of the door projection for engagement thereby as the vehicle passes over the tripping mechanism for actuating the tripping arm to raise the same to said release position.

8. In conveying mechanism, the combination with a trackway, a dumping conveyance mounted on the trackway and including a frame structure having transverse end portions, and a drop bottom door, latch means for holding the door closed and movable to release the same for dropping, said latch means having an actuating portion thereof above the lower edge of the transverse end portions of the frame structure, said door having a downward projection thereon intermediate the width thereof between opposite sides of the frame structure, of latch tripping mechanism mounted in the trackway and including a tripping member normally out of the path of the conveyance, means mounting said tripping member for upward movement into operative engagement with the actuating portion of the latch means above the lower edge of the transverse end portions of the frame structure, and an actuating member connected with the tripping member and substantially in the same upright longitudinal plane as the latch means and in the path of the door projection for engagement thereby as the vehicle passes over the tripping mechanism for actuating the tripping member to raise the same to said engaging position.

9. In conveying mechanism, the combination with a trackway, a dumping vehicle mounted on the trackway and including side sill structures and a transverse end structure and a drop bottom door, latch means for holding the door closed and movable to release said door for dropping, means mounting the latch means on the transverse end structure spaced inwardly from the side sill structure, said door having a downward projection thereon intermediate the width thereof, of a latch tripping mechanism mounted in the trackway and including a tripping member normally out of the path of the vehicle, said tripping member being mounted for upward movement into the path of the latch means to release the same, and an actuating member operatively connected with the tripping member and substantially in the same upright longitudinal plane as the latch means and in the path of the door projection for engagement thereby as the vehicle

passes over the tripping mechanism for actuating the tripping member to raise the same to said release position.

10. In conveying mechanism, the combination with a trackway, a dumping vehicle mounted on the trackway and including side sill structures and a transverse end structure and a drop bottom door, a pair of latch members for holding the door closed and movable to release said door for dropping, means pivotally mounting the latch members on the transverse end structure with said latch members spaced apart and spaced inwardly appreciably from the side sill structures, each of said latch members having an actuating portion thereon, said door having a downward projection on the bottom thereof intermediate the width of the door, of a latch tripping mechanism mounted in the trackway and including tripping members normally out of the path of the vehicle, each of said tripping members being pivoted for upward swinging movement into the path of the actuating portion of one of the latch members to release the latter, and an actuating member operatively connected with each tripping member and substantially in the same upright longitudinal plane as one of the latch members and in the path of the door projection for engagement thereby as the vehicle passes over the tripping mechanism for actuating the tripping members to raise the same to release engagement with the latch members.

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