

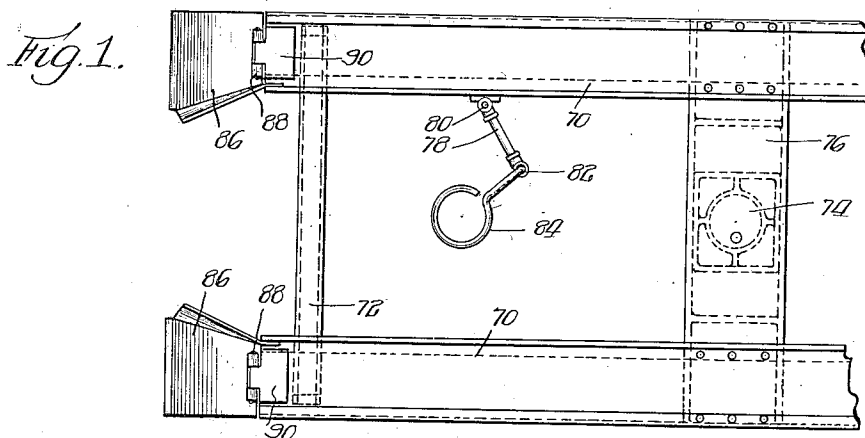
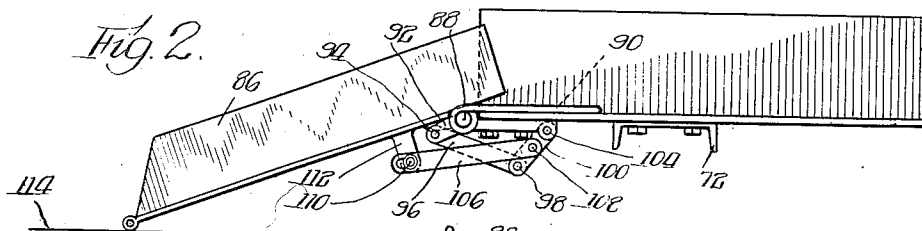
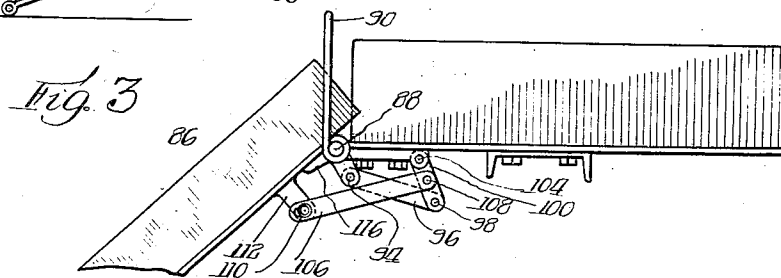
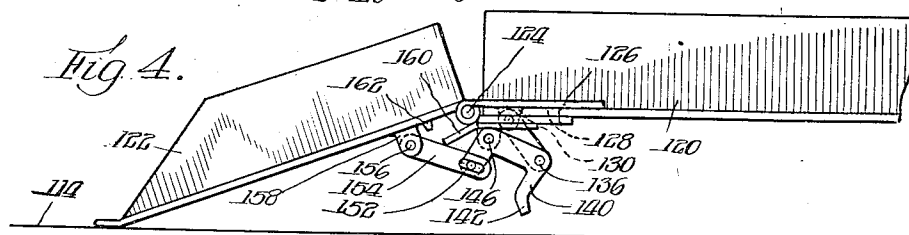
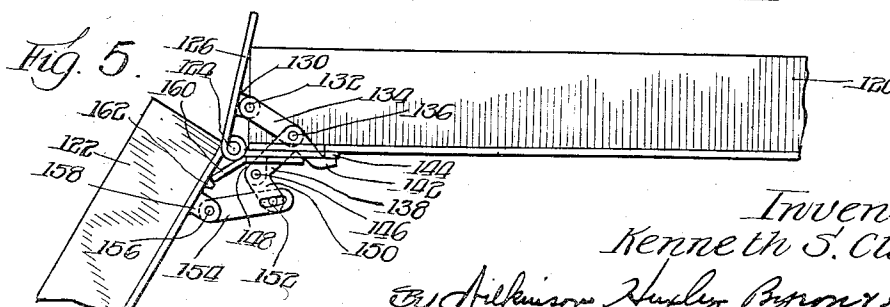
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CHOCK

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CHOCK

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13 Claims. (Cl. 254—89)

This invention relates broadly to vehicle lifts and more particularly to automatic chock mechanism for such lifts.

The primary object of the invention is to provide an improved means for automatically operating a chock at opposite extremities of a vehicle lift when the latter is raised and lowered.

A more specific object is to provide a vehicle lift embodying a movable ramp or approach portion and a chock operatively associated with the lift and ramp by a particularly advantageous type of linkage mechanism, whereby the chock is automatically and positively moved into and from vehicle blocking position through the raising and lowering action of the lift.

Another object of the invention is to provide a movable chock for vehicle lifts which will automatically move to vehicle blocking position when the lift is raised and upon reaching its blocking position, the chock will be positively held against displacement in the event a vehicle wheel exerts pressure thereagainst without imposing stresses on the mechanism for operating the chock.

The foregoing and other objects and advantages will become apparent in view of the following description taken in conjunction with the drawing, wherein:

Figure 1 is a fragmentary top plan view of a vehicle lift embodying the features of the invention;

Fig. 2 is an enlarged fragmentary side elevation of the one extremity of the lift, showing the latter in its lowered position with the ramp contacting the floor or ground surface and the chock lying flat to permit a vehicle to move onto the lift;

Fig. 3 is a view similar to Fig. 2, showing the lift elevated or partially elevated with the chock in vehicle blocking position;

Figs. 4 and 5 are views similar to Figs. 2 and 3, respectively, showing a modification in structure.

Referring to the drawing in detail, the lift shown for illustrative purposes only comprises spaced tracks 70 which are secured together at their ends by means of braces 72, and at an intermediate portion to lift mechanism 74 by means of a cross brace or head 76. The lift may be raised and lowered by any suitable means, not shown, but which may consist of the conventional fluid operated cylinder and piston assembly well known in the art, the piston being connected to the cross head 74. As shown, one of the tracks is provided with an arm 78 pivoted at 80 to the track, and having a supporting bracket 84 pivoted to its opposite extremity as at 82, the bracket being adapted to support a reservoir, not shown, which may be used for the drained crank case oil. A ramp or approach portion 86 is pivoted to each of the tracks 70 as at 88.

A chock 90 is provided and is shown as being hinged or pivotally mounted on the pivot 88. A crank arm 92 is connected at one end to the chock 90 and at its opposite end as at 94 to the one end of link 96, the latter being pivoted at its opposite end as at 98 to a crank 100, which in turn is suitably pivoted to the track 70 as at 104. A link 106 is pivotally connected at one end to the crank 100, as at 108, and at its opposite end is loosely pivoted as at 110 to an arm or bracket 112 which is connected to the ramp 86.

In operation, when the lift is in lowered position, as illustrated in Fig. 2, with the ramp contacting the floor or ground, indicated at 114, the links will be disposed so that the chock is in lowered position to permit a vehicle to run up onto the tracks without obstruction. When the lift is raised, the weight of the ramp causes it to swing downwardly as shown in Fig. 3, its downward swinging position being limited by means of a stop 116. As the ramp swings downwardly, it turns the pivot 88 in a counter-clockwise direction and after lost motion is taken up in the link 106, the latter actuates the crank 100, which through the link 96 and crank 92 raises the chock 90 to braking position.

The full braking or obstructing position as shown in Fig. 3 is approximately vertical, but it will be understood that the links may be arranged and dimensioned to move the chock to any desired intermediate position, and to this end the link 96 or the link 106 may be made extensible. It will be noted that the operating levers or links are disposed wholly beneath the ramp and track, and that when the lift is lowered the linkage moves close to the track and ramp and does not obstruct the full downward travel of the lift.

In Figs. 4 and 5, means are provided for positively locking the chock against rearward or backward movement in the event it should be contacted by a vehicle wheel. The track is indicated at 120 and the ramp at 122, the latter being pivoted as at 124 with the pivot common to the chock 126. The track is slotted adjacent its end as at 128 to accommodate a downwardly extending arm 130 which is connected to the chock 126. Arm 130 is pivoted at 132 to a link 134, which in turn is pivoted at 136 to a bell crank 138. The bell crank 138 is provided with an arm 140 formed with a stop portion 142 adapted to engage a stop portion provided on the track at 144 to thereby limit upward or rearward turning movement of the chock 126. The bell crank 138 is pivoted at 146 to a suitable hinge member 148 carried by the track 120, the arm 150 of the bell crank being loosely pivoted as at 152 to the one end of a link 154, the opposite end of the said link being pivoted as at 156 to an arm or bracket 158 secured to the ramp 122. A stop 160 is also provided on the track and is adapted to contact a shoulder or lug 162

provided on the under side of the ramp so that undue strain will not be put on the linkage mechanism.

In the operation of this form of the device, when the lift is in lowered position as shown in Fig. 4 with the ramp 122 contacting the floor or ground 114, the chock will be lying flat or lowered to permit a vehicle to readily run up on the ramp and track. When the lift is raised, the ramp will assume a downwardly inclined position, the downward swinging movement being limited by contact of the lug 162 with the stop 160. Downward movement of the ramp causes the link 152 to move the bell crank 138 in counter-clockwise direction until the stop 142 contacts the portion 144, the chock then being in its raised position and positively limited against displacement in the event a vehicle wheel should exert pressure thereagainst. As in the form first described, the linkage mechanism may be constructed and arranged to permit the chock to move to any desired vehicle blocking position other than that shown.

The improved linkage and chock mechanism is easily applied and maintained in operative position, is positive of operation and is not subject to the danger of misalignment with respect to the track.

It will be understood that certain variations in structure and arrangement of parts may be adopted without departing from the spirit and scope of the invention as defined by the appended claims.

I claim:

1. In lift mechanism, the combination of a track having an entrance portion and a chock member associated with said track and movable by said entrance portion to vehicle braking position, means connecting said chock member to said entrance member including a lever and connecting links pivoted to said lever and entrance portion and chock member.

2. In lift mechanism, the combination of a track having an entrance portion and a chock member associated with said track and movable by said entrance portion to vehicle braking position, means connecting said chock member to said entrance member including a lever pivotally connected to said track, a link connected to said lever and chock member, and a link connected to said lever and loosely connected to said entrance portion.

3. In lift mechanism, the combination of a track having an entrance portion and a chock member associated with said track and movable by said entrance portion to vehicle braking position, means connecting said chock member to said entrance member including a lever pivotally connected to said track, a link connected to said lever and chock member, a link connected to said lever and loosely connected to said entrance portion, and a stop for limiting the position of said chock member.

4. In lift mechanism, the combination of a track having an entrance portion and a chock member associated with said track and movable by said entrance portion to vehicle braking position, and means connecting said chock member to said entrance member including a lever and connecting links pivoted to said lever and entrance portion and chock member, said means being disposed wholly beneath said track and entrance portion in any position of operation.

5. In lift mechanism, the combination of a track having an entrance portion and a chock member associated with said track and movable by said entrance portion to vehicle braking position, means connecting said chock member to said entrance member including a lever pivotally connected to said track, a link connected to said lever and chock member, and a link providing a loose connection between said lever and entrance portion.

6. The combination of an elevating platform, a ramp hinged thereto, a pivotally mounted chocking device, and a rock lever carried by the platform and linked to the chocking device and to the ramp.

7. The combination of a platform, a ramp hinged to the end thereof, a chocking device hinged on the same axis as the ramp, a rocking lever pivoted to the platform, a link connecting the rocking lever with the ramp and a link connecting the rocking lever with the chocking device.

8. The combination of a platform, a ramp hinged to the end thereof, a chocking plate hinged to the platform, a rock lever pivoted to the underside of the platform, a link connecting the lever with an arm on the under side of the chocking plate, and a link connecting the lever with the under side of the ramp.

9. In a vehicle lift, a track, a ramp pivotally connected to the track, a chock also pivotally associated with the track and ramp, and linkage mechanism connecting the ramp with the chock whereby when the track is raised and the ramp swings downwardly the chock is raised to chocking position, a stop member, said linkage mechanism including a lever having a portion thereon adapted to contact the stop member when the chock reaches a predetermined chocking position.

10. In a vehicle lift, a track, a movable chock associated with said track, a member adapted to lower by gravity when the lift moves upwardly for raising the chock to vehicle blocking position, and means connecting said gravity member with said chock for compounding the raising force imparted to the chock.

11. In a vehicle lift, a track, a movable chock associated with said track, a member adapted to lower by gravity when the lift rises for moving the chock to vehicle blocking position, and linkage mechanism connecting said member with said chock for compounding the raising movement imparted to the chock.

12. In a vehicle lift, a track, a chock pivotally associated with said track, means adapted to operate by gravity for moving the chock to vehicle blocking position, and linkage mechanism connecting said means with said chock for compounding the throw and raising pressure applied by said means to the chock.

13. In a vehicle lift, a track, a ramp pivotally associated with said track, a chock movably associated with the track and ramp, linkage mechanism connecting the ramp with the chock for moving the latter to vehicle blocking position through gravity when the lift rises, said linkage mechanism being arranged to compound the raising throw and force imparted to the chock by the ramp.

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