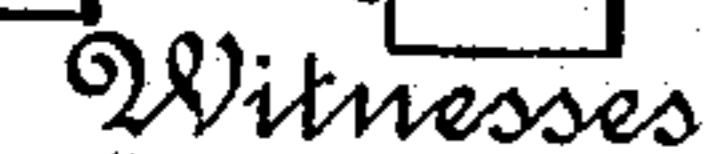


900,606.

2 SHEETS—SHEET 1.



Henry O. Sparks, Inventor

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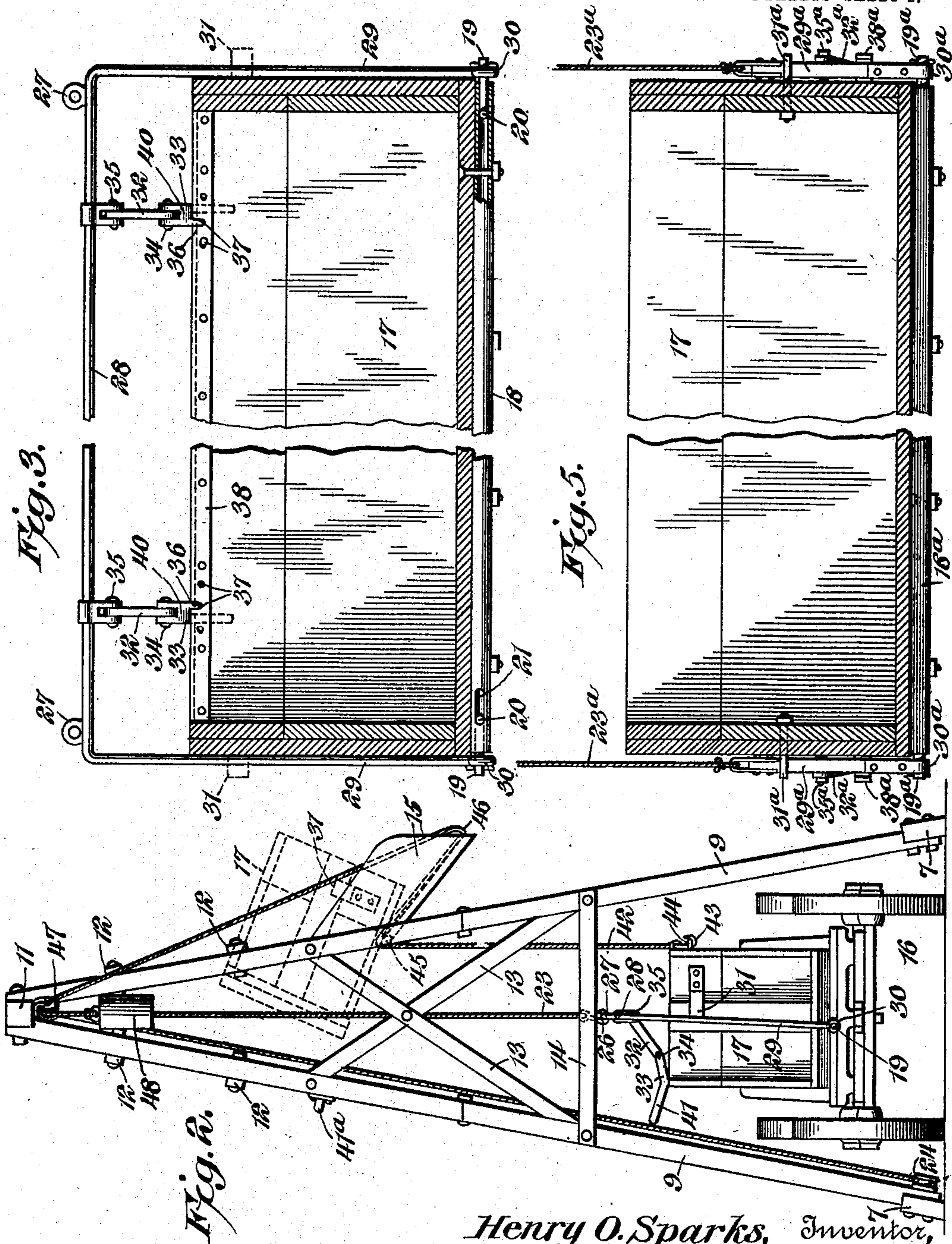
C. G. Siggers.
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H. O. SPARKS.
VEHICLE UNLOADING MECHANISM.
APPLICATION FILED DEC. 7, 1907.

900,606.

Patented Oct. 6, 1908.

2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

HENRY O. SPARKS, OF SHELBYNA, MISSOURI.

VEHICLE-UNLOADING MECHANISM.

No. 900,606.

Specification of Letters Patent.

Patented Oct. 6, 1908.

Application filed December 7, 1907. Serial No. 405,574.

To all whom it may concern:

Be it known that I, HENRY O. SPARKS, a citizen of the United States, residing near Shelbyna, in the county of Monroe and State of Missouri, have invented a new and useful Vehicle-Unloading Mechanism, of which the following is a specification.

The principal object of the present invention is to provide novel, comparatively simple and practical means for quickly unloading vehicles, though there are features in the invention that are capable of successful employment for other analogous purposes, as for instance in loading.

A further object is to provide a structure, which can be readily manufactured, and which can be transported from place to place.

Two embodiments of the invention are illustrated in the accompanying drawings, but it will be clearly evident from an inspection of the appended claims that the invention is not necessarily limited to these two particular forms of construction.

In said drawings: Figure 1 is a side elevation of one embodiment. Fig. 2 is an end elevation of the same. Fig. 3 is a longitudinal sectional view through the vehicle body. Fig. 4 is a detail cross sectional view showing one of the locking devices. Fig. 5 is a longitudinal sectional view through a slightly modified form of construction. Fig. 6 is an end elevation of this modification.

Similar reference numerals designate corresponding parts in all the figures of the drawings.

Referring first to the embodiment disclosed in Figs. 1-4 inclusive, a frame or derrick is employed, which has a base composed of spaced sleepers 7. These sleepers also act as runners so that the mast or derrick can be drawn over the ground, and therefore they have rounded ends, as shown, together with openings 8 to permit draft animals to be hitched thereto. Rising from the sleepers 7, and secured at their lower ends thereto, are sets of crossed standards 9, one set being located at each end of each sleeper. The oppositely disposed sets are convergently disposed, as illustrated in Fig. 2, and are secured at their upper ends to a supporting beam 11 disposed centrally over the space between the sleepers. Braces 12 connect the upper ends of the standards of each set, while crossed braces 13 and 14 are in like

manner employed to connect the corresponding standards of the opposing sets. Thus a strong rigid frame is provided, which however, is light in weight, so that it may be readily moved. In the particular embodiment of the invention disclosed, this frame or derrick is provided with an elevated downwardly inclined chute 15 that extends to one side of the same.

The space between the sleepers 7 is sufficient to permit a vehicle, as 16, passing between them, and mounted on the vehicle, is a suitably constructed detachable body 17, constituting a holder or receptacle for the load. This body, as shown, has a pivot rod or bar 18 extending longitudinally beneath its bottom. The pivot rod or bar may be constructed in any suitable manner, but in the structure now being described, it is shown as tubular, and has slidably mounted in its ends, bolts 19 that are arranged to project beyond the ends of the bar or rod and of the vehicle body. The movements of the bolts are limited by outstanding stops 20 engaged in slots 21 formed in the bar or rod, these offset ends constituting convenient means for operating the bolts, as will be evident. Means are employed for elevating this vehicle body as a whole to the chute 15, and said elevating means is suspended from the supporting beam 11. To this end, pulleys or sheaves 22 are secured to the supporting beam, and cables 23 pass through said sheaves or pulleys. The cables at one end are connected to any suitable means, whereby they may be drawn longitudinally. In the present embodiment, said cables pass at their lower ends around pulleys 24, and are connected to a whiffletree or draft equalizer 25. The other ends of the cables carry hooks 26 engaged in eyes 27 formed upon the longitudinal bar 28 of a metal bail. This bail has depending side arms 29 terminating in eyes 30 that are detachably engaged by the bolts 19, as will be clear by reference to Fig. 3.

The swinging movement of the holder or vehicle body beyond an upright position in one direction is prevented by abutments 31 carried by the ends of the vehicle body and engaging the side arms 29 of the bail. Devices are also employed for normally holding the vehicle body against movement in an opposite direction. In the present embodiment, two of these devices are employed, and each comprises links 32 and 33 pivotally

connected as shown at 34. The link 32 is pivoted, as illustrated at 35 to the longitudinal bar 28 of the bail. The other link 33 has a downwardly extending spur 36 arranged
 5 to engage in a socket 37 formed in a wear preventing plate 38 secured to one side of the vehicle body. It will be observed particularly by reference to Fig. 4 that while the links can relatively swing beyond an aligned
 10 position in one direction, their movement in this direction is limited by a finger 39 formed upon the link 32, and abutting against a stop 40 formed on the link 33. Their movement in an opposite direction is
 15 not so limited, and a handle or trip arm 41 is provided on the end of the link 33 for effecting such movement. Positioning cables 42 are also provided, which have hooks 43 at their lower ends, said hooks detachably en-
 20 gaging in eyes 44 secured to the side of the vehicle body that is adjacent to the chute 15. The cables 42 extend over pulleys 45 at the upper end of the chute, thence around pulleys 46 at the lower end of said chute. From
 25 the pulleys 46, the cables extend to other pulleys 47 suspended from the ends of the supporting bar 11, and fastened to the upper ends of the cables are weights 48.

The operation of the apparatus is as follows: The vehicle to be unloaded is driven be-
 30 tween the sleepers 7, the bail 28—29 is then engaged by the bolts 19, and the hooks 43 of the cables 42 are engaged with the eyes 44. The bail being in an upright position, is
 35 then locked by placing the links 32 and 33 in the position shown in Fig. 4, and inasmuch as said bail is thus prevented against swinging in either direction by the links, and by the abutment 31, it will be evident that
 40 it will be held rigid with respect to the body. Draft animals are then hitched to the draft equalizer or whiffletree 25, and as these animals are driven away from the derrick, it will be evident that the bail 28 with the ve-
 45 hicle body secured thereto, will be raised. When it reaches the chute, the links are swung outwardly, and this movement may either be accomplished by hand, or a rod 41^a may be placed in the paths of movement of
 50 the arms 41. As the vehicle body is elevated, the weights 48 are moved downwardly, but when said body reaches the chute, and is unlocked, then the weights 48 drawing upon the cables 42 will cause the vehicle body to
 55 turn over, as indicated in dotted lines in Fig. 2. The contents of the body will therefore be discharged on to the chute. Having emptied said body, the parts are returned to their original positions, in which case, the
 60 body will again be placed upon the running gear of the vehicle. The bail and the cables 42 are disengaged and the vehicle can be driven out from the derrick.

As an example of how the structure may
 65 be modified, attention is invited to Figs. 5

and 6. In this case, the elevating cables which are designated 23^a and correspond in all respects to the cables 23 of the previously described construction, are connected to arms
 70 29^a. These arms terminate at their lower ends in eyes 30^a that detachably receive pintles 19^a formed in the ends of a pivot bar or rod 18^a. Abutment pins 31^a are carried by the ends of the vehicle body, and are dis-
 75 posed to engage the arms 29^a to prevent the pivotal movement of the body in one direction. The movement in an opposite direction is normally prevented by sets of links 32^a and 33^a, one set being employed for each
 80 arm 29^a and one of the links of each set being pivoted as shown at 35^a to said arm. The other link 33^a has a spur 36^a detachably engaging a holding plate 38^a fastened to the vehicle, and said link 33^a has an outstanding
 85 arm or trip 41^a. It will be evident that this structure will operate in exactly the same manner as the first described embodiment, and has all the advantages thereof while being somewhat simpler.

From the foregoing, it is thought that the
 90 construction, operation and many advantages of the herein described invention will be apparent to those skilled in the art, without further description, and it will be under-
 95 stood that various changes in the size, shape, proportion and minor details of construction, may be resorted to without departing from the spirit or sacrificing any of the ad-
 100 vantages of the invention. For instance, a derrick of the character set forth is not en- tirely necessary, and the hoisting mechanism can be suspended from any suitable support and used in connection with cribs, bins or the like.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is:—

1. In mechanism of the character set forth, the combination with sleepers spaced apart to permit a vehicle passing between them, of a supporting beam located centrally over the
 110 space and longitudinally of the sleepers, sets of convergent standards supporting the beam, the standards of each set having their lower ends secured directly to the sleepers at one
 115 end and having their upper ends secured directly to the opposite sides of the supporting beam at one end, braces connecting the upper portions only of the standards, leaving the space between the lower portions and
 120 between the sleepers entirely unobstructed, and elevating mechanism suspended from the supporting beam.

2. In mechanism of the character set forth, the combination with sleepers spaced to per-
 125 mit a vehicle passing between them, of a supporting beam located over the space, a plurality of pairs of crossed standards, each pair having spaced lower ends secured to each end portion of a sleeper and spaced
 130

upper ends secured to an end portion of the supporting beam, the opposite pairs of crossed standards converging toward their upper ends, and elevating mechanism suspended from the supporting beam.

3. In mechanism of the character set forth, the combination with a derrick comprising sleepers, spaced to permit a vehicle passing between them, a supporting beam located centrally over the space, and convergently disposed sets of crossed standards secured at their lower ends directly to the sleepers and having their upper ends fastened directly to the supporting beam, of elevating mechanism suspended from the supporting beam.

4. In mechanism of the character described, the combination with elevating means, of material holding means having a pivotal connection with the elevating means, said material holding means having a socket, a link pivoted to the elevating means, another link pivoted to the first link and free of the elevating means, said second link having an offset spur engaging in the socket, and means for limiting the relative swinging movement between the links in one direction.

5. In mechanism of the character described, the combination with elevating means, of material holding means having a pivotal connection with the elevating means, and a device for preventing the pivotal movement of the material holding means on the elevating means, said device comprising pivotally connected links, one of which is pivoted to one of the means, the other being pivoted to the first mentioned link and having a detachable engagement with the other means, said link projecting beyond said engagement to form an actuating device for relatively swinging the links.

6. In mechanism of the character described, the combination with elevating means including a bail, of material holding means pivotally connected to the bail, a link pivoted at one end to the bail, and another link pivoted to the free end of the first link and having an offset spur between its ends that detachably engages the material holding means, said link projecting beyond the spur to form an actuating handle.

7. In mechanism of the character set forth, the combination with elevating means, of material holding means having a pivotal connection with the elevating means, and a device for preventing the pivotal movement of the material holding means, said device comprising pivotally connected links, one of which is pivoted to one of the means, the other being free of said means and having a spur that detachably engages the other means.

8. In mechanism of the character set forth, the combination with elevating means, of material holding means having a pivotal connection with the elevating means, a de-

vice for preventing the pivotal movement of the material holding means, said device comprising pivotally connected links, one of which is pivoted to one of the means, the other being free of said means and having an offset spur that detachably engages the other means, and a handle for relatively swinging the links.

9. In mechanism of the character described, the combination with a bail, of material holding means pivotally mounted on the bail, a link pivoted to the bail, a link pivoted to the free end of the first mentioned link and detachably engaging with the material holding means, and a finger carried by the pivoted end of one of the links and detachably engaging with the other link to limit the movement of said links in one direction.

10. In mechanism of the character set forth, the combination with elevating means, of a holder or receptacle having a pivotal connection therewith, an abutment carried by the holder or receptacle and engaging the elevating means to prevent the movement of said holder or receptacle in one direction, and a device for preventing the movement of the receptacle or holder in an opposite direction, said device comprising pivotally connected links, one of the links being pivoted to the elevating means, the other link having a spur that engages the holder or receptacle, means for limiting the swinging movement of the links in one direction, and a handle or trip mounted on the link having the spur.

11. In mechanism of the character set forth, the combination with a holder or receptacle, of bolts slidably mounted on the holder or receptacle and projecting from the ends of the same, elevating means for the holder or receptacle, including a bail having eyes detachably engaged with the bolts, and means for securing the holder or receptacle against pivotal movement on the bail.

12. In mechanism of the character set forth, the combination with a holder or receptacle, of elevating means including a bail having arms that detachably engage the ends of the holder or receptacle, abutments carried by the said ends and engaging the arms of the bail, and devices for securing the holder or receptacle against pivotal movement, said devices each comprising links pivoted together independently of the bail and holder or receptacle, one of said links being pivoted to the bail, the other having a detachable engagement with the holder or receptacle.

13. In mechanism of the character set forth, the combination with a derrick having an elevated chute, of a holder or receptacle, means connected to the lower portion of the holder or receptacle for elevating said holder or receptacle to the chute, a ca-

ble connected to the upper portion of the holder or receptacle and extending longitudinally of the chute to tilt the holder or receptacle thereon, and means connected to
5 the cable for exerting a pull thereon.

14. In mechanism of the character set forth, the combination with a derrick having an elevated chute, of a holder or receptacle, means for elevating the holder or receptacle to the chute, a cable connected to
10 the holder or receptacle and extending longitudinally of the chute, and a weight connected to the cable.

15. In mechanism of the character set forth, the combination with a derrick including spaced sleepers, sets of crossed standards rising from the sleepers, and a supporting beam mounted on the upper ends of the standards, of a chute carried by the derrick,
20 a vehicle body, a pivot bar or rod extending

longitudinally of the body, elevating means suspended from the supporting beam and having arms pivotally connected with the bar or rod, abutments carried by the body and engaging the arms, holding devices comprising pivotally connected links pivoted to the elevating means and detachably engaging the vehicle body, a cable connected to the upper portion of the body and extending longitudinally of the chute, pulleys over
25 which said cable passes, and a weight connected to the cable.

In testimony, that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

HENRY O. SPARKS.

Witnesses:

JOHN H. SIGGERS,
LEWIS EBERLY.