

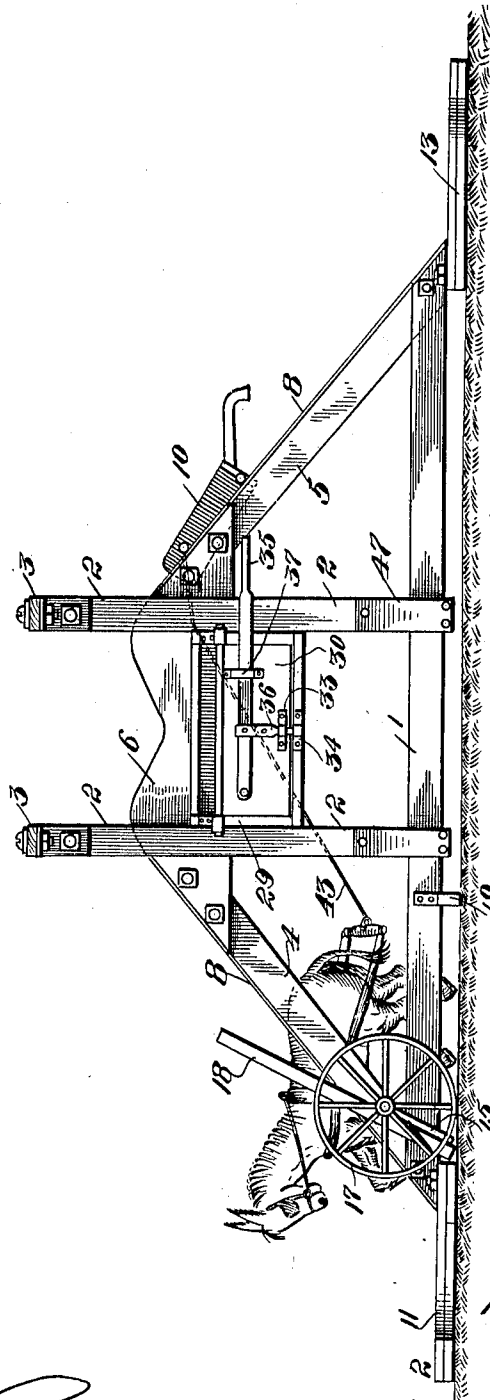
P. L. HOLCOMB.
LOADING APPARATUS.
APPLICATION FILED AUG. 18, 1911.

1,020,554.

Patented Mar. 19, 1912.

4 SHEETS—SHEET 1.

Fig. 1.



Witnesses

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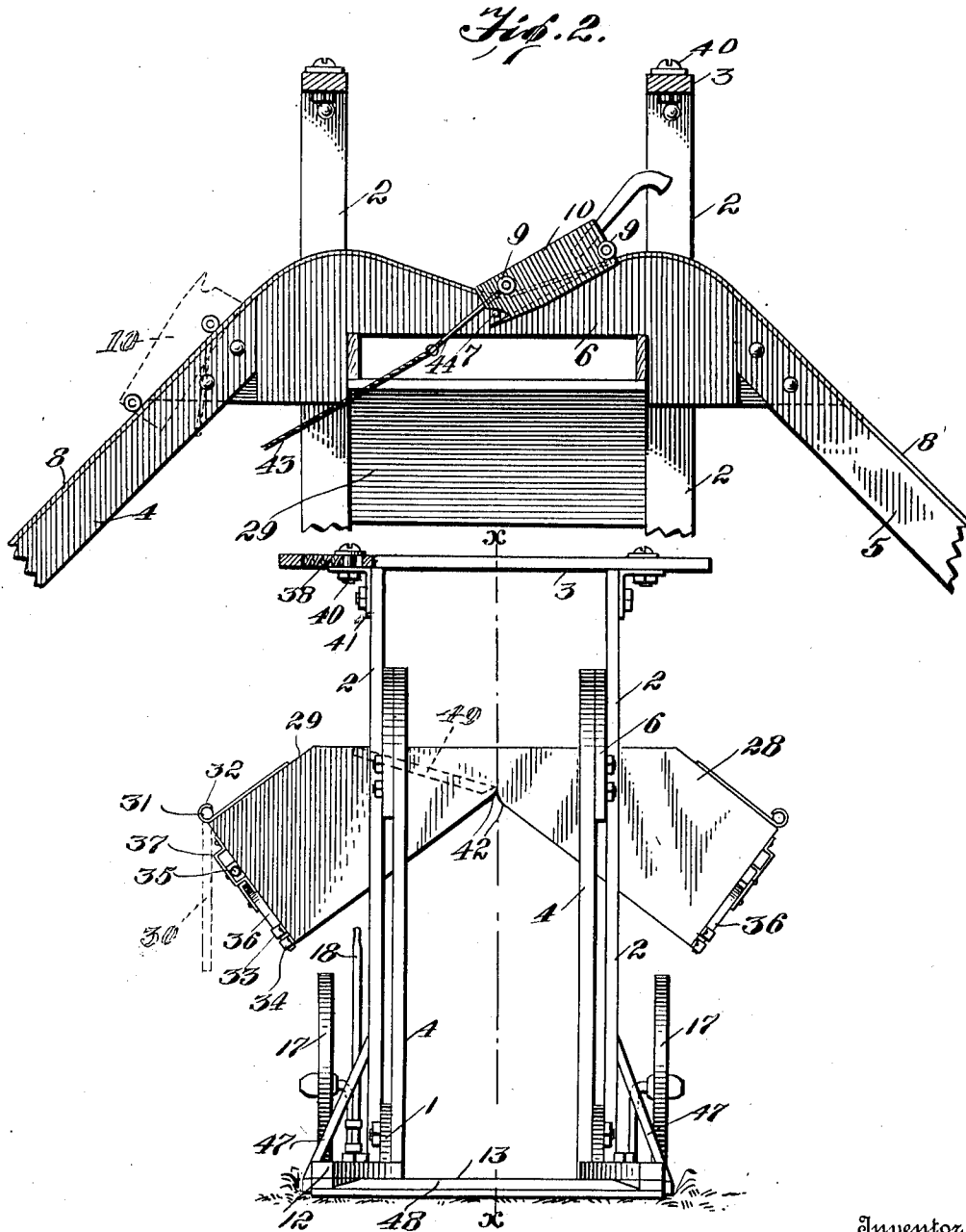


Fig. 3.

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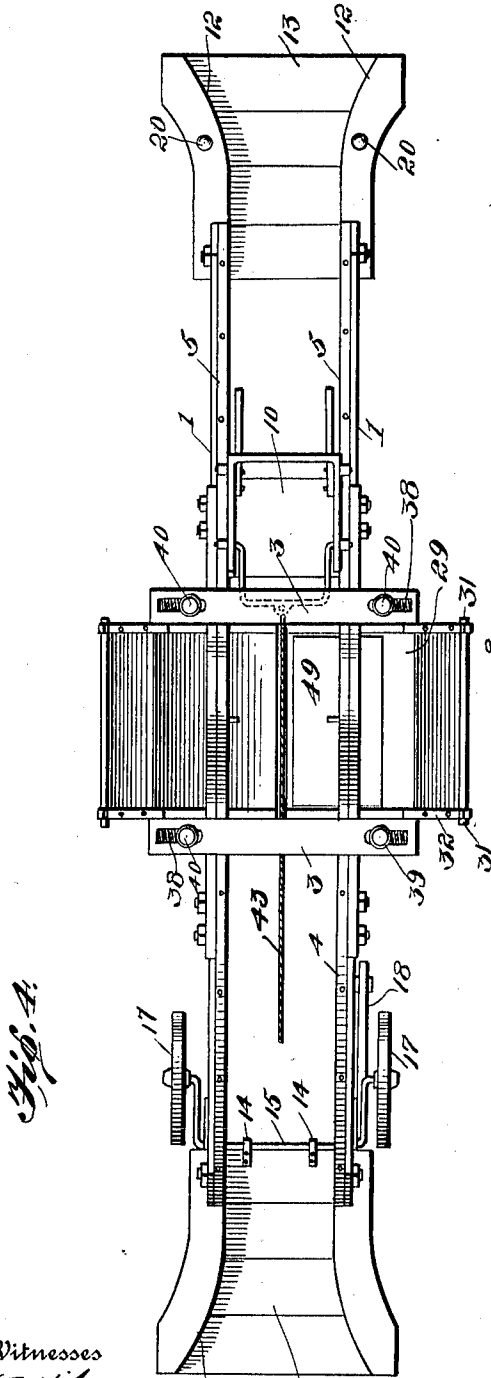


Fig. 4.

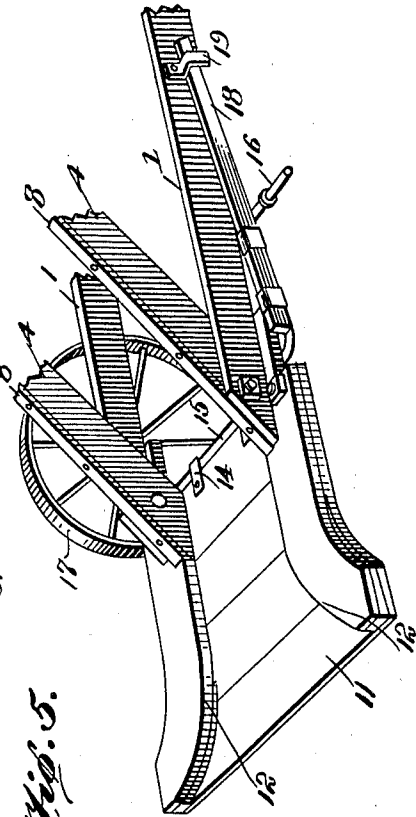


Fig. 5.

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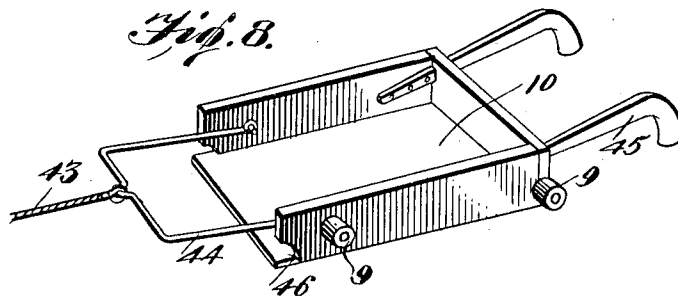
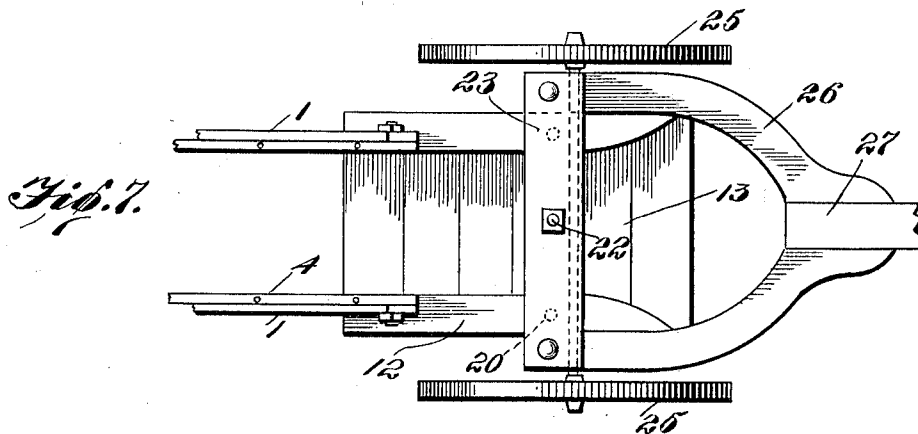
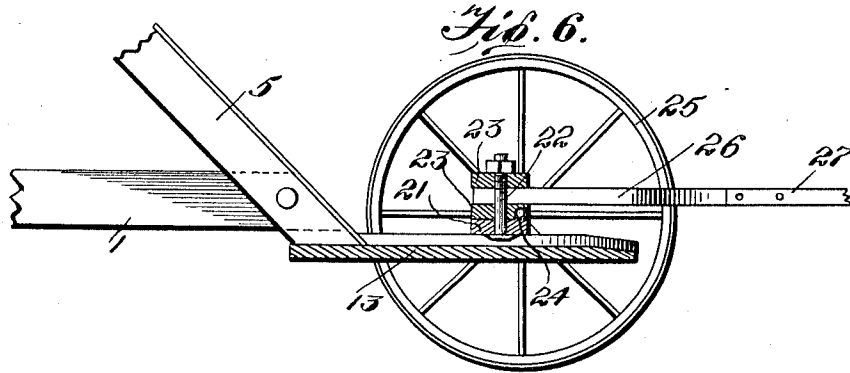
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4 SHEETS—SHEET 4.



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UNITED STATES PATENT OFFICE.

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LOADING APPARATUS.

1,020,554.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, PRESTON L. HOLCOMB, a citizen of the United States of America, residing at Birmingham, in the county of Jefferson and State of Alabama, have invented certain new and useful Improvements in Loading Apparatus, of which the following is a specification.

My invention relates to an improved apparatus for hauling earth, excavated by means of scrapes, and loading it into the wagons with a minimum of delay or expense, and the chief object of my invention is to provide an apparatus by means of which the draft animal or apparatus, which drags the scrape, can be utilized to both elevate it and automatically dump its contents into chutes or hoppers from which it may be loaded directly into wagons.

A further important object of my invention is to adapt my apparatus to act as a quick unloading device so that the scrapes may be continuously elevated and dumped into one or more hoppers which hold the earth until a wagon is ready to receive it and be loaded therefrom without labor and delay.

My invention further comprises other novel features of construction such as the mechanism for the convenient transportation of the apparatus from point to point; the novel means for permitting the drag rope for the scrape to pass through the dumping apparatus; the novel construction of the scrape; the arrangement of the guide platforms with the inclined elevating ways leading to a top dump; and other features, all of which are hereinafter more fully described, reference being had to the accompanying drawings, in which:—

Figure 1 is a side elevation of my improved apparatus. Fig. 2 is a sectional elevation along the line $x-x$ of Fig. 3. Fig. 3 is an end elevation, and Fig. 4 is a top plan view of Fig. 1. Fig. 5 is a detail view of the rear end platform showing the wheel supports therefor. Fig. 6 is a detail vertical sectional view through the front platform with its wheel supports in position. Fig. 7 is a plan view of Fig. 6. Fig. 8 is a detail view of my improved form of scrape.

Similar reference numerals refer to similar parts throughout the drawings.

My apparatus in the preferred form illustrated comprises a strong frame-work consisting of a pair of parallel horizontal bot-

tom bars 1 which are spaced about four feet apart and near their centers have connected to each a pair of vertical uprights 2, which uprights are cross connected at the top by the braces 3. At each end the bars 1 are connected to incline members 4 and 5, which members are, at their upper ends, bolted to a heavy dumping timber 6. There are two of these dumping timbers, each of which is bolted to the uprights 2 on its respective side of the frame. These members 6 are depressed at the center and provided each with a pin 7 projecting inwardly from its side. A metal strip 8 preferably extends along the top edges of the incline members 4 and 5 and over the top edge of the dumping members 6, forming metal tracks over which the wheels 9 on the scrapes 10 run. The incline members 4 and the rear ends of the bars 1 are rigidly attached to a rear platform 11, having at each side inwardly curving guide members 12 which direct the sides of the scrape into position for the rollers 9 thereon to ride up the incline ways, and in a similar manner the forward ends of the bars 1 and the incline members 5 are connected to a platform 13 also having incurving guide members 12.

The platform 11 has a pair of metal straps 14 attached thereto and bent over to form a bearing for a bent axle 15, the ends 16 (Fig. 5) of which axle are bent outwardly at right angles and have mounted thereon wheels 17. A lever 18 is connected to a portion of the axle that lies parallel with a bar 1 and is adapted to be caught under an angle fastener 19 attached to the adjacent bar 1, as seen in Fig. 5. When the lever is caught in this position the rear platform is lifted on the wheels as fulcrums and is sustained by the wheels ready for transporting the apparatus. The forward end of the apparatus is provided with a pair of bolts 20 which are adapted to engage a cross bar 21 (Figs. 6 and 7), carrying at its center a king bolt 22, which bolt connects with the cross members 23 which support an axle 24 on which wheels 25 are mounted, and to which are connected the hounds 26 to which the tongue 27 is fastened. When the apparatus is ready for service the forward wheel attachments are readily disconnected therefrom and the apparatus left resting solidly on the ground as shown in Fig. 4, the lever 18 being disconnected from the clip 19.

Referring to Figs. 2 and 3, it will be seen

that I provide a pair of hoppers 28 and 29 which are suitably attached at each side of the frame to the uprights 2 and are disposed at an incline with their lower ends normally closed by doors 30 which are hinged by pins 31 in metal straps 32 attached to the top of the hopper. Each door is also provided with a staple or strap 33 in line with a similar staple or strap 34 at the lower end of the hopper, and I provide a pivoted lever 35 which carries a pin 36 adapted to be passed down through the staple or straps 33 and 34 to hold the door closed. A strap 37, connected to the door, serves as a guide for the lever 35. It will be noted that the two upper ends of the hoppers 28 and 29 are juxtaposed but are not directly connected. Normally they will be held in abutting position by means of coil springs 38, which are set in slots 39 formed in the cross braces 3 and adapted to engage and press against the bolts 40 which are connected to angle irons 41 bolted to the tops of the uprights 2 and pass through the slots adjustably connecting the uprights to the braces 3. These springs tend to force the uprights together and hold the adjacent edges of the chutes in juxtaposition while not weakening the general strength with which the apparatus is assembled. The side edges of the abutting ends of the hoppers are curved or grooved, as seen at 42 (Fig. 3), so as to readily guide a rope or cable 43, which is attached to the scrape 10, in between the hoppers so that it will force them apart and pass between them as the draft animal passes through the apparatus in drawing the scrape up the incline ways. The rope or cable 43 is attached to a bail 44 that is pivotally fastened to the inside forward ends of the scrape. The handles 45 for the scrape are also preferably attached inside of the side members so as to leave exposed on the side only the rollers 9. The forward ends of the scrape are provided with notches 46 which, as the scrape rides down into the depression on the dumping members 6, will engage the pins 7, as seen in Fig. 2, and will cause the scrape to turn over and dump its contents into the hoppers and pass down the other incline in reversed, inverted position, as shown in dotted lines Fig. 2. The members 2 may be further strengthened by braces 47 and the end boards 48 of both platforms will be beveled off so that the scrape will readily ride onto the platforms.

In practice, the scrape is filled with dirt or material in the usual manner as it is drawn along by the draft animal, which is then driven through the apparatus. As the animal passes through, the scrape is guided onto the incline ways 4 or 5 by the guides 12 and its rollers 9 cause it to run up the inclines without much friction or increased draft. At the top of the incline the scrape

is turned over and dumped in the manner described and its contents will fall equally into the hoppers 28 and 29. The teams for conveying it away will be driven under the discharge ends of said hoppers and the wagons loaded by releasing the doors 30 and discharging the hopper contents thereinto. When it is desired to dump into either hopper 28 or 29, I provide a plate 49 which may be dropped into the hopper not to be used so that it will assume the inclined position therein shown in dotted lines in Fig. 3. This will cause all the material to be thrown into the hopper that it is desired to charge.

My apparatus can receive loads from either end and provides for a continuous operation in loading the hoppers 28 and 29 and a quick operation in unloading the hoppers into wagons for hauling away the excavated material, thus permitting the maximum economy in operation both of the excavating and hauling equipment.

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

1. An unloading apparatus comprising a frame-work, two oppositely disposed and reversely inclined ways supported by said frame-work, a load carrying receptacle adapted to ride up said ways from either direction, and dumping means to engage and dump said receptacle as it passes in either direction from one to the other inclined way.

2. In an unloading apparatus of the character described, reversely inclined ways over which a loaded receptacle is adapted to be moved in making a continuous passage through said apparatus, a receptacle adapted to ride up said ways, means to dump said receptacle in its elevated position, a hopper into which the contents of said receptacle are adapted to be dumped, means to support said hopper in an elevated position to discharge its contents sidewise of the apparatus into wagons, and draft means which pass centrally lengthwise through said apparatus which lifts the receptacle above the line of draft to dumping position.

3. In an apparatus of the character described, a frame-work comprising uprights, a pair of oppositely disposed and reversely inclined ways which lead from the ground up to said uprights, dumping means disposed at the top of said inclined ways, a hopper also supported by said uprights and adapted to receive the contents from conveyers which are dumped thereinto in passing by said dumping means, door means to retain the material in said hopper which is disposed in elevated position to discharge into a wagon, and a haulage connection to said conveyers adapted to pass down between said ways and below said hopper as it passes lengthwise through the apparatus, substantially as described.

4. In an apparatus of the character described, a dumping structure comprising oppositely disposed and reversely inclined ways, a receptacle adapted to be drawn up
 5 said ways, a pair of inclined hoppers disposed on each side of said ways near the upper ends thereof, and means to engage said receptacle and dump its contents partially into each of said hoppers, substantially
 10 as described.

5. An apparatus of the character described comprising uprights, inclined ways leading in reverse directions from the upper
 15 ends of said uprights, reversely inclined hoppers supported in elevated position and disposed to each side of said ways, a receptacle adapted to be moved up one way and down the other, and means to dump the contents of
 20 said receptacle into said hoppers, substantially as described.

6. In an apparatus of the character described, reversely inclined ways, a two part receptacle disposed at the upper ends of
 25 said ways, a conveyer and a haulage connection, which is adapted to draw said conveyer up one incline way and down the other, said connection being adapted to pass between the adjacent portions of the two part
 30 receptacle, substantially as described.

7. In an apparatus of the character described, an elevated dumping structure, inclined ways leading in reverse directions therefrom, uprights supporting said dumping
 35 structure, hoppers supported by the uprights and disposed one on each side of the dumping structure, yieldable means to hold the adjacent portions of the hoppers normally in engagement, a receptacle adapted
 40 to pass over said ways and be dumped by said structure, and a haulage connection to said receptacle which is adapted to pass between said adjacent portions of the hoppers, substantially as described.

8. In an apparatus of the character described, an elevated dumping structure, inclined ways leading in reverse directions therefrom, uprights supporting said dumping
 45 structure, hoppers supported by the uprights and disposed one on each side of the dumping structure, yieldable means to connect the uprights and hold the adjacent portions of the hoppers normally in engagement, a receptacle adapted to pass over said
 50 ways and be dumped by said structure, and a haulage connection to said receptacle which is adapted to pass between said adjacent portions of the hoppers, substantially as described.

9. In an apparatus of the character described, an elevated dumping structure, inclined ways leading in reverse directions therefrom, a receptacle adapted to ride on
 60 said ways, the means for moving said receptacle being adapted to pass in either direction lengthwise through the apparatus
 65 and under said dumping structure, and hoppers, disposed at each side of the apparatus, between which the haulage connections for said receptacle passes, said hoppers being
 70 disposed in elevated position so as to dump into a wagon, and door means to control the discharge of the contents from said hoppers, substantially as described.

10. In an apparatus of the character described, a frame-work, an elevated dumping
 75 means supported by said frame-work, inclined ways leading in reverse directions from said dumping means to the ground, said dumping means comprising symmetrical concave ways, pin projections opposite the
 80 lowest portion of said concave ways, and a carrier adapted to ride up one inclined way and be tilted in passing in either direction over said concave dumping ways, said carrier having portions at its forward end
 85 adapted to engage said projections and invert the carrier, substantially as described.

11. In an apparatus of the character described, a frame-work, an elevated dumping
 90 means supported by said frame-work, inclined ways leading in reverse directions from said dumping means to the ground, said dumping means comprising concave ways, pin projections opposite the lowest
 95 portion of said concave ways, and a carrier adapted to ride up one inclined way and be tilted in passing over said concave dumping ways, said carrier having portions at its forward end adapted to engage said projections
 100 and invert the carrier, without regard to its direction of movement, substantially as described.

12. In an apparatus of the character described, an elevated dumping means, reversely inclined ways leading downwardly
 105 therefrom to platforms adapted to rest on the ground, side guides on said platforms, and a conveyer comprising a receptacle having side rollers which is adapted to ride onto said platforms and be guided into position
 110 for its rollers to engage said ways, overhead means to connect said ways and a haulage connection for said receptacle which passes down between the inclined ways lengthwise of the apparatus and is adapted
 115 to draw the receptacle with a continuous movement up one way, over the dumping means, which dump the contents from the rollers, and down said other way, substantially as described.

13. In an apparatus of the character described, an elevated dumping means and reversely inclined ways leading downwardly
 120 therefrom, in combination with wheel supports for said ways, which at one end thereof are loosely hinged to the structure to permit it to rest solidly on the ground, and means to lift said end of the structure and support it from said wheel means, substantially as described.

14. In an apparatus of the character described, an elevated dumping means and reversely inclined ways leading downwardly therefrom, in combination with wheel supports for said ways, which at one end thereof are loosely hinged to the structure to permit it to rest solidly on the ground, means to lift said end of the structure and support it from said wheel means, and detachable wheel supports for the other end of the apparatus, substantially as described.

15. In an apparatus of the character described, an elevated dumping means and reversely inclined ways leading downwardly therefrom, in combination with wheel sup-

ports for said ways, which at one end thereof are loosely hinged to the structure to permit it to rest solidly on the ground, means to lift said end of the structure and support it from said wheel means, detachable wheel supports for the other end of the structure, and a wagon tongue connected thereto, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

PRESTON L. HOLCOMB.

Witnesses:

NOMIE WELSH,

R. D. JOHNSTON, Jr.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."