

J. C. STEPHENS.
 END GATE AND CHUTE.
 APPLICATION FILED JAN. 8, 1921.

1,384,713.

Patented July 12, 1921.

4 SHEETS—SHEET 1.

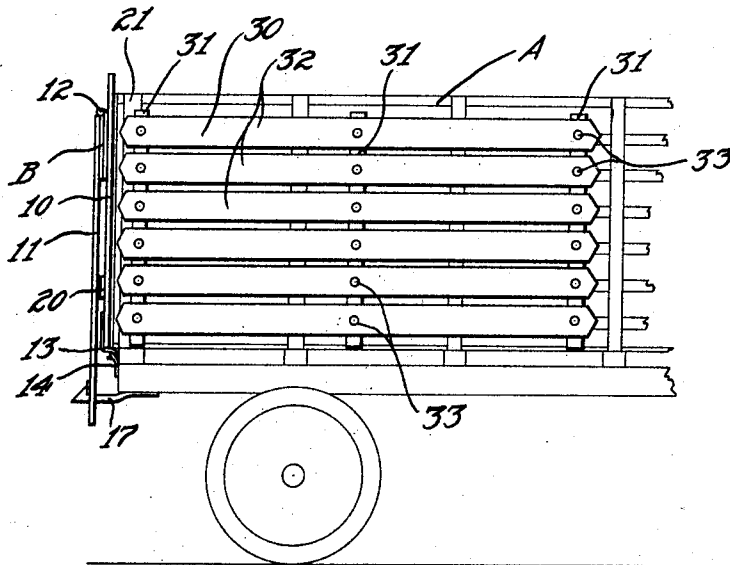
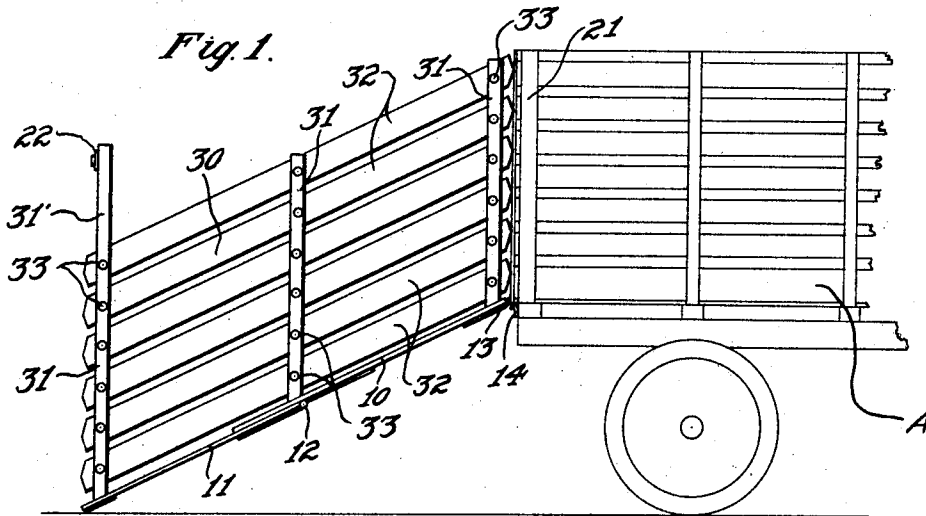


Fig. 2.

George L. Loring
E. J. Rogers

WITNESS:

J. C. Stephens.

INVENTOR

BY *Victor J. Evans*

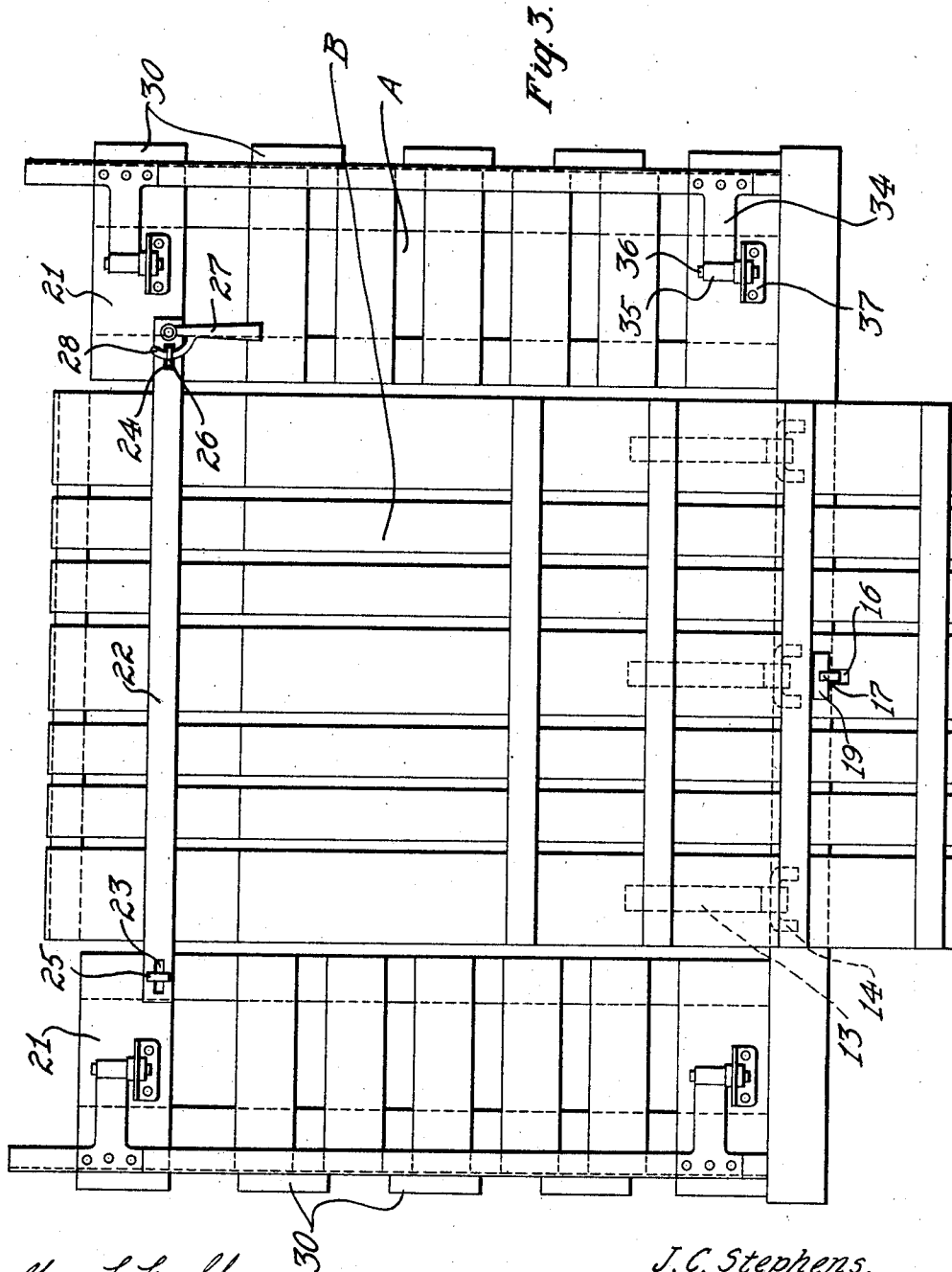
ATTORNEY

J. C. STEPHENS.
END GATE AND CHUTE.
APPLICATION FILED JAN. 8, 1921.

1,384,713.

Patented July 12, 1921.

4 SHEETS—SHEET 2.



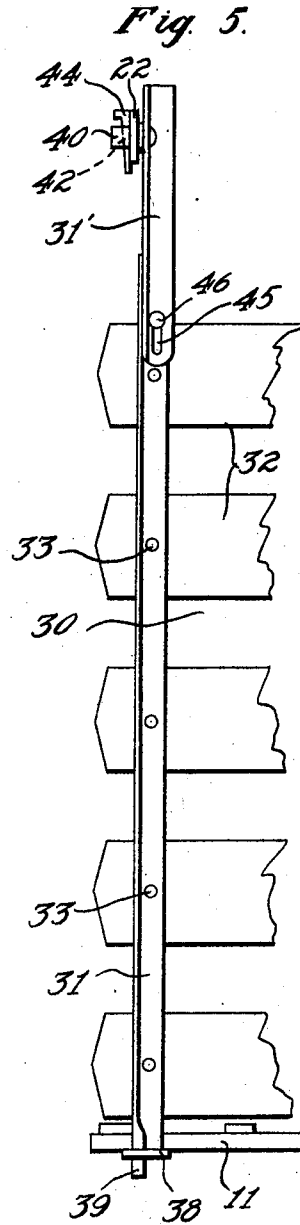
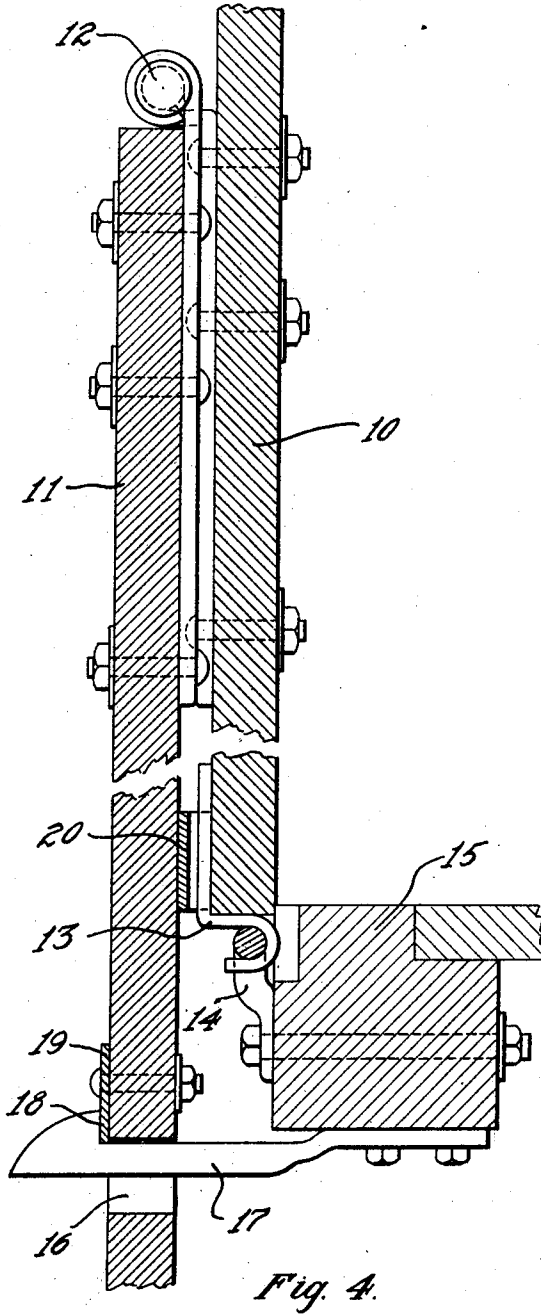
George L. Ljungblom
E. J. Jones
WITNESS:

J. C. Stephens.
INVENTOR
BY *Victor J. Evans*
ATTORNEY

J. C. STEPHENS.
END GATE AND CHUTE.
APPLICATION FILED JAN. 8, 1921.

1,384,713.

Patented July 12, 1921.
4 SHEETS—SHEET 3.



George L. Langley
E. Rogers

WITNESS:

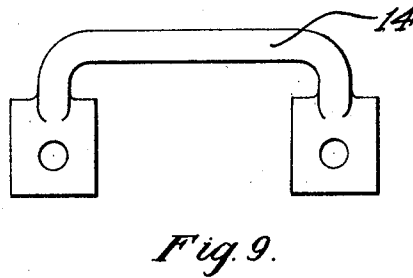
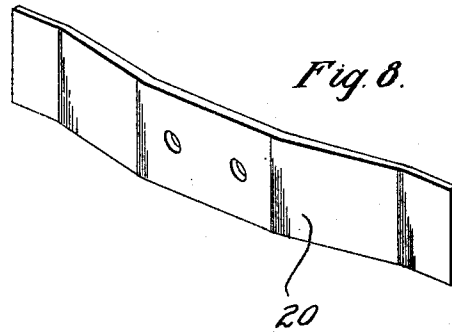
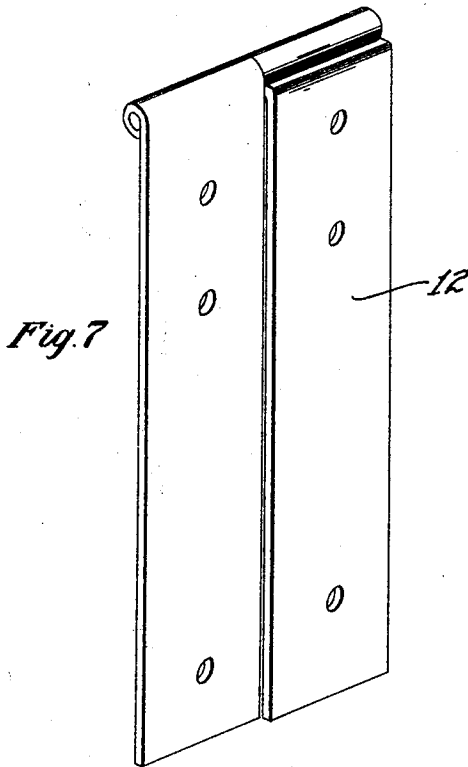
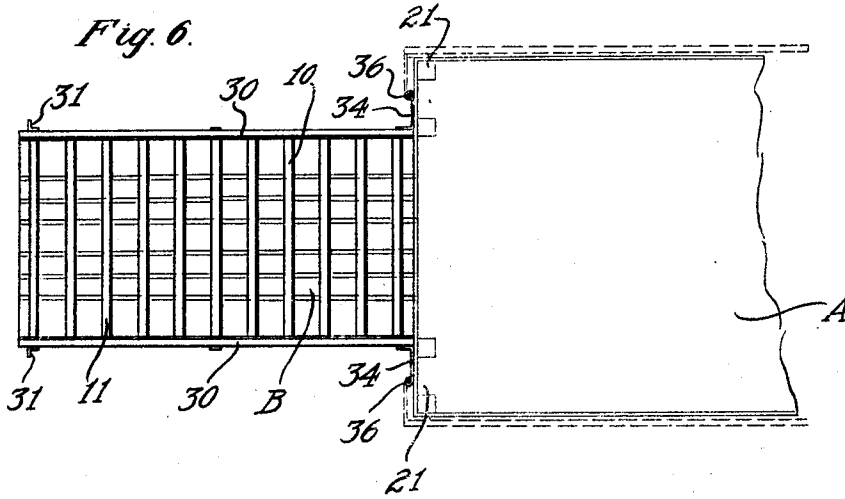
J. C. Stephens. INVENTOR
BY *Victor J. Evans* ATTORNEY

J. C. STEPHENS.
END GATE AND CHUTE.
APPLICATION FILED JAN. 8, 1921.

1,384,713.

Patented July 12, 1921.

4 SHEETS—SHEET 4.



George L. Linsley
E. Peaser

WITNESS:

J. C. Stephens. INVENTOR
BY *Victor J. Evans* ATTORNEY

UNITED STATES PATENT OFFICE.

JAMES CLAY STEPHENS, OF BRUCEVILLE, INDIANA.

END-GATE AND CHUTE.

1,384,713.

Specification of Letters Patent.

Patented July 12, 1921.

Application filed January 8, 1921. Serial No. 435,959.

To all whom it may concern:

Be it known that I, JAMES C. STEPHENS, a citizen of the United States of America, residing at Bruceville, in the county of Knox and State of Indiana, have invented new and useful Improvements in End-Gates and Chutes, of which the following is a specification.

This invention comprehends the provision of a combined end gate and stock chute for use in conjunction with stock wagons or the like, to facilitate loading and unloading of the latter.

One of the principal objects of the invention resides in providing a device of the above mentioned character with which any stock wagon or the like can be equipped without making any alterations to the wagon, the end gate constituting the floor of the chute when a device is used for loading or unloading the wagon.

Another object of the invention resides in providing an end gate made up of relatively movable sections arranged in parallelism when formed as an end gate, and in an extended position when used as the floor of the chute, the latter also embodying side members which normally fold against the sides of the wagon, but which are mounted to be swung outwardly and rearwardly therefrom for detachable association with the floor of the chute.

In carrying out the invention I also provide means for holding the end gate in its normal position, and subsequently used to brace the sides of the chute when the component parts of the device are associated to define the chute.

Other objects and advantages will appear when the following detail description is taken in connection with the accompanying drawings, the invention residing in the combination, construction and arrangement of parts as claimed.

In the drawings forming part of this application like numerals of reference indicate the similar parts in the several views and wherein:—

Figure 1 is a side elevation of a portion of a wagon body showing the chute in a position for use.

Fig. 2 is a similar view, showing the component parts of the chute folded in their normal positions.

Fig. 3 is an end elevation.

Fig. 4 is a vertical sectional view through

the end gate showing the parts in their normal position.

Fig. 5 is a fragmentary view of one of the side members of the chute.

Fig. 6 is a top plan view.

Fig. 7 is a detail view of one of the hinges used in the construction.

Fig. 8 is a detail view of the cushioning member.

Fig. 9 is a detail view of a bracket.

Referring to the drawings in detail A indicates generally a stock wagon or the like, and B the end gate therefor. The end gate is made up of inner and outer sections 10 and 11 respectively which are hingedly connected together as at 12. Secured to the lower edge of the inner section 10 are hook like elements 13 which engage brackets 14 of substantially U-shaped formation, which brackets are secured to the sill 15 of the wagon. This construction not only provides for a pivotal connection between the section 10 of the end gate and the sill 15, but also allows the end gate in its entirety to be quickly mounted upon the wagon or removed therefrom. The outer section 11 extends a slight distance below the inner section 10 when the parts are arranged to form an end gate for the wagon, and this projecting portion of the section 11 is provided with an elongated slot 16 to receive a resilient latch element 17 which is terminally secured to the sill 15. The latch element is provided with a shoulder 18 which engage the plate 19 secured to the section 11. When the sections 10 and 11 provide an end gate for the wagon they are vertically disposed and spaced in parallelism. In order to prevent rattling of these sections I provide a spring 20 having a compound curve as shown, the spring being secured medially of its length to the section 10 adjacent the lower edge thereof. When the sections are arranged in the manner above stated the spring 20 is tensioned and exerts an outward pressure against the section 11, and thereby holding this section in effective contact with the latch 17 for the purpose stated. As above pointed out the end gate constitutes the floor of the chute, and when used in this capacity the section 11 is swung upon its pivot 12 outwardly from the section 10, while the latter is swung upon its pivots 14 to an inclined position with regard to the ground, and the section 11 forming in its extended position a continuation of the section 10. The body

of the wagon A is preferably provided with spaced end sections 21 between which the end gate is arranged.

To assist in holding the end gate in its upright position, I employ a locking bar 22 which is provided with elongated slots 23 and 24 respectively which are arranged adjacent the ends of the bar as shown. The slot 23 receives the headed element 25 carried by the adjacent end section of the wagon body, the head of this element being arranged at right-angles to the slot 24 when the locking bar 22 is extended transversely across the end gate. Consequently, in order to associate the locking bar with the element 25, the bar must be first arranged vertically to receive the head 25 of said element, subsequently this bar can be swung to its active position across the end gate. The slot 24 in the bar 22 is adapted to receive an apertured lug 26, while pivoted upon the bar 22 adjacent the latter mentioned slot is a lever 27 including a curved finger 28. The finger 28 passes through the apertured lug 26, and in this manner the locking bar 22 is maintained in active position. In order to swing the end gate to position to constitute the floor of the chute, it is necessary to remove the bar 22. This can be accomplished by swinging the lever 27 upon its pivot in a direction to move the finger 28 out of the opening of the lug, as the bar can be moved off said lug to release the end gate.

30 indicates the sides of the chute, which are made up of a plurality of standards 31 of angle construction in cross section. A plurality of panels 32 which are pivoted at 33 are connected with the uprights 31. Secured to the upright 31 adjacent the corner post of the wagon body is one end of an extension hinge 34 the opposite end terminating to provide a sleeve 35 of the hinge which receives the pintle 36 and is carried by a bracket 37 secured to the adjacent end section 21 of the wagon body. By reason of this construction, it is manifest that the sides 30 can be readily and easily swung upon their hinges to project from the rear of the wagon body at the opposite sides of the end gate, when the latter is used in the capacity of the floor for said chute, or these sides can be swung to their normal position against the opposed sides of the wagon body as shown. When the sides 30 are in their active position, the panels 32 move upon their pivots 33 to assume an inclined position with respect to the ground or surface. Carried by the section 11 of the end gate is an apertured plate 38 which receives the reduced lower extremity 39 of the adjacent standard 31 to hold the sides 30 in operative relation with respect to the floor of the chute. This particular standard 31 includes a pivoted section 31' which when the inven-

tion is used as a chute, is swung upon its pivot to extend above the sides 30. Each pivoted section 31' carries an apertured lug indicated at 40. After the locking bar 22 has been removed from the wagon body, or in other words from its normal position, it is utilized to brace the sides 30 of the chute. In order to associate the locking bar 22 with said sides 30 of the locking bar it receives the lug 40. A wedge or the like 44 is then passed through the slot 42 of the lug to hold the locking bar 22 in proper position for use as a brace. The section 31' of the particular upright above referred to is associated with the latter by means of a slot and pin connection 45 and 46, and while this provides for the pivotal movement of the section 31', it is manifest that the latter must be moved until the pin 45 engages one end of the slot 46 before the section 31' can be swung to an elevated or active position. When it is desired to swing the sides 30 against the sides of the wagon body, the section 31' of said standard is swung upon its pivot to lie between the ends of said standard.

The component parts of the invention are normally arranged as shown in Fig. 1 with the sides 30 arranged against the sides of the wagon body, and the sections 10 and 11 of the end gate vertically disposed. When it is desired to use the chute for the purpose of loading or unloading the wagon, the resilient catch 17 is depressed until the section 11 can be separated therefrom, whereupon this section is swung upon its pivot 12 simultaneous with the swinging of the section 10 upon its pivot 14. During the movement of the parts, the section 11 is arranged in an extended position, constituting a continuation of the section 10 in the formation of the floor of the chute. The sides 30 are then swung upon the pintle 36 rearwardly of the wagon body. When swung to this position the panels 32 of said sides assume an inclined position with respect to the ground, and the said sides are coupled to the floor of the chute by means of the apertured plate 38 and the adjacent standard 31. Subsequent to the use of the chute, the sides are separated from the bottom and returned to their normal positions. Any suitable means may be employed to hold the sides in the position shown in Fig. 2. The floor is then elevated, the section 10 swinging upon its pivots 14, and the section 11 swing upon its pivot 12, and in this manner the end gate sections are returned to their normal position with the resilient latch 17 passed through the slot 16 of the section 11. The locking bar 22 is of course initially removed from the outermost standards 31, with which it was associated in order to brace the sides 30 of the chute, and this locking bar is then returned to its normal

position across the end gate and associated with the headed element 25 and the apertured lug 26.

While it is believed that from the foregoing description the nature and advantages of the invention will be readily apparent, I desire to have it understood that I do not limit myself to what is herein shown and described, and that such changes may be resorted to when desired as fall within the scope of what is claimed.

What I claim is:—

1. The combination with a vehicle body, of an end gate including two sections pivotally connected together and normally disposed parallel, one of said sections being hingedly mounted upon the wagon body, the other of said sections projecting below the hinge and having a slot, and a resilient latch projecting from the wagon and passed through said slot to hold said sections parallel.

2. The combination with a vehicle body, of an end gate including two pivotally connected sections normally disposed in spaced parallel relation, one of said sections being hingedly mounted upon the wagon body, the other of said sections projecting below said hinge and having a slot, a resilient latch element projecting from the wagon, and passed through said slot to hold said sections parallel, and cushioning means interposed between the sections and carried by one of said sections for the purpose specified.

3. The combination with a vehicle body, of an end gate including two pivotally connected sections normally disposed parallel, one of said sections being hingedly mounted on the wagon body whereby said sections can be extended at an inclination to the ground to form the bottom of a chute, said chute including side members hingedly mounted upon the body and normally arranged parallel with the sides of the latter, and adapted to be swung to occupy positions at the opposite sides of said bottom, and means for detachably connecting the sides with the bottom of the chute.

4. The combination with a vehicle body, of an end gate including two pivotally connected members normally disposed parallel, one of said members being hingedly mounted upon the wagon body whereby said members can be arranged in an extended position and at an inclination to the ground to form the bottom of a chute, said chute including

side members normally arranged parallel with the sides of the wagon body, said side members being pivotally mounted upon the wagon body and adapted to be arranged at the opposite sides of said bottom to form the chute, means for detachably connecting the side members with the bottom, and means for holding the sections of the bottom normally folded to provide an end gate.

5. The combination with a vehicle body, of an end gate including two pivotally connected sections normally disposed parallel, one of said sections being hingedly mounted upon the wagon body, means for holding said sections vertically and including a locking bar extended transversely of the end gate and removably secured to the wagon body, said sections being adapted to be swung to an extended position and at an inclination to the ground to form the bottom of a chute, said chute including side members pivoted upon the wagon body and normally folded against the sides thereof, said side members being adapted to be swung to positions at the opposite sides of said bottom, means for detachably securing the side members to the bottom of the chute, and means whereby said locking bar may be detachably associated with the said side members of the latter.

6. The combination with a vehicle body, of an end gate including pivotally connected sections normally arranged parallel, means for holding said sections in an upright position, one of said sections being hingedly mounted upon the wagon body, whereby said sections may be extended at an inclination to the ground to provide a bottom for a chute, said chute including side members pivotally mounted upon the wagon body and normally folded against the sides thereof, said sides including spaced standards and panels mounted thereon, said side members being adapted to be swung upon their pivots to the opposite sides of said bottom, means for detachably connecting the side members with the bottom, one standard of each side including a pivoted section adapted to be arranged vertically, a bracing element, and means for detachably connecting the bracing element with the pivoted sections of said standard for the purpose specified.

In testimony whereof I affix my signature.

JAMES CLAY STEPHENS.