

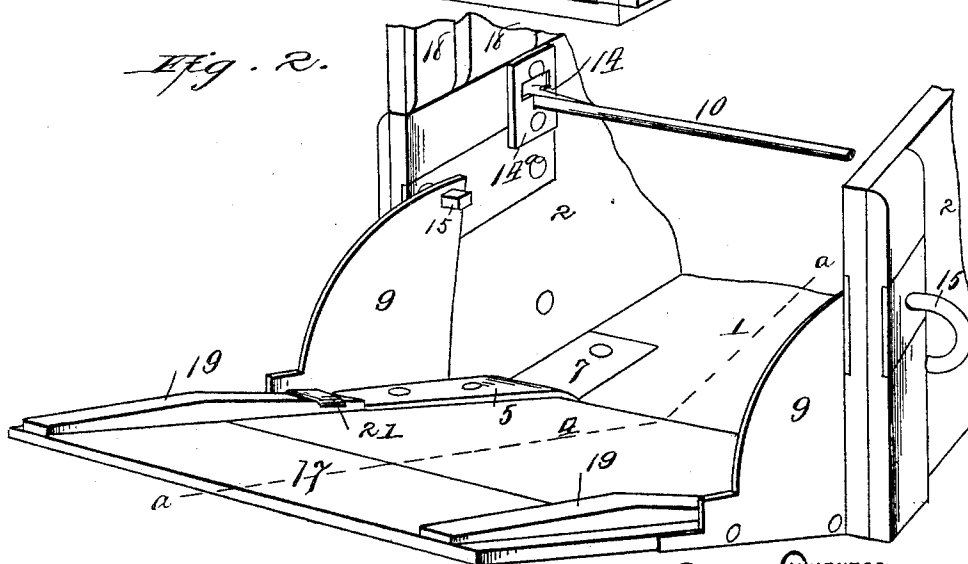
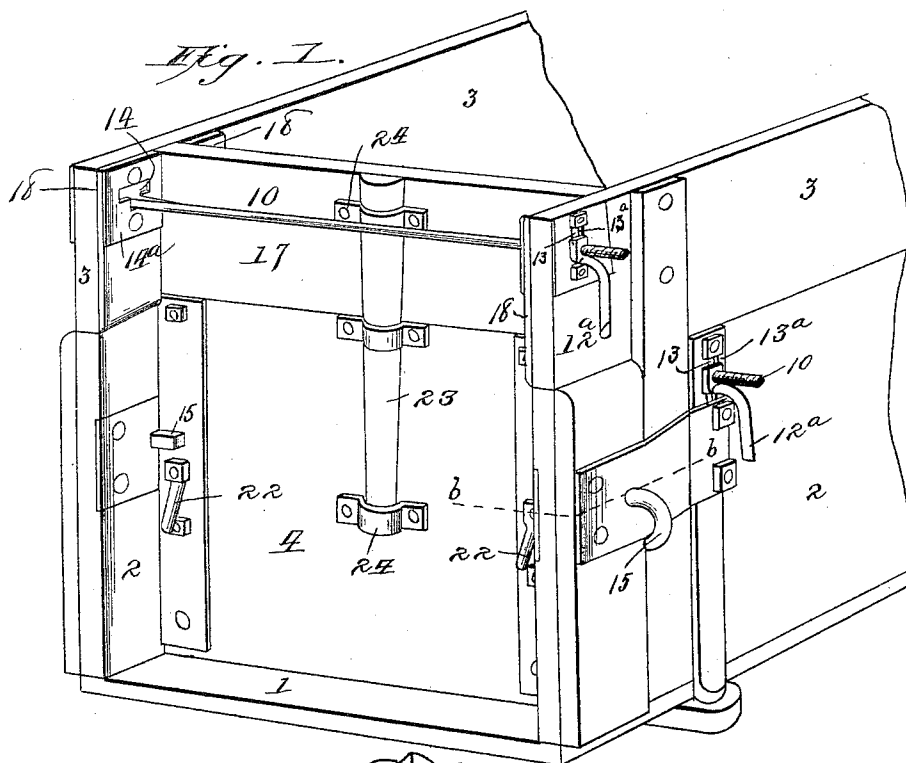
(No Model.)

2 Sheets—Sheet 1.

D. O. DUNCAN.
WAGON END GATE.

No. 460,851.

Patented Oct. 6, 1891.



WITNESSES:

A. J. Schwarz
J. F. Rully

D. O. Duncan INVENTOR
BY W. H. Fitzgerald & Co. ATTORNEYS.

(No Model.)

2 Sheets—Sheet 2.

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Fig. 3.

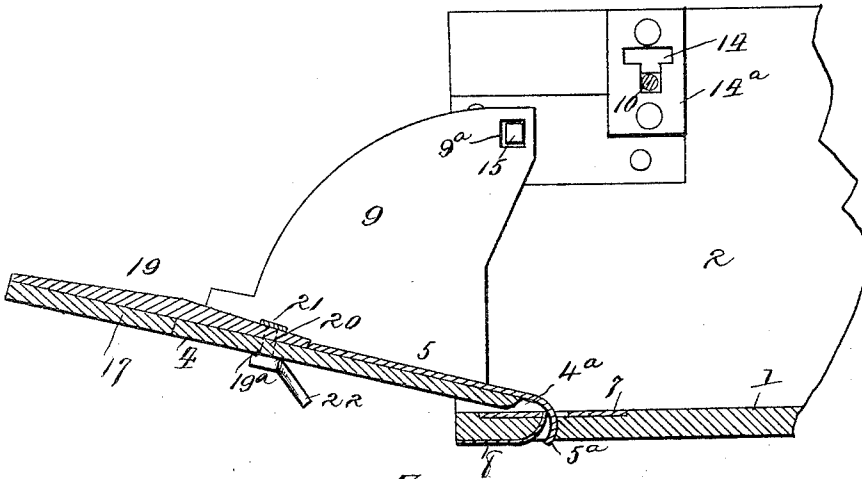


Fig. 4.

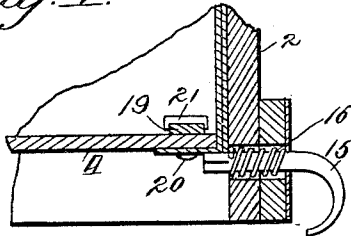
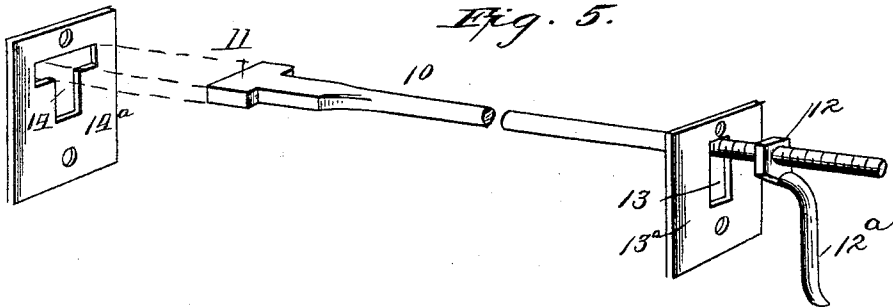


Fig. 5.



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UNITED STATES PATENT OFFICE.

DANIEL O. DUNCAN, OF GREENFIELD, OHIO.

WAGON END-GATE.

SPECIFICATION forming part of Letters Patent No. 460,851, dated October 6, 1891.

Application filed January 29, 1891. Serial No. 379,532. (No model.)

To all whom it may concern:

Be it known that I, DANIEL O. DUNCAN, a citizen of the United States, residing at Greenfield, in the county of Highland and State of Ohio, have invented certain new and useful Improvements in End-Gates; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention consists in a new and improved combined end-gate and scoop-board for wagons which is simple and strong in construction, can be readily applied to any wagon, and is very convenient and satisfactory in use.

The invention will be hereinafter fully described and claimed.

Referring to the accompanying drawings, Figure 1 is a perspective view of the rear end of the wagon, showing the end-gate in its closed position. Fig. 2 is a similar view showing the end-gate in its open position. Fig. 3 is a sectional view taken on the line *a a* of Fig. 2. Fig. 4 is a sectional view taken on the line *b b* of Fig. 1. Fig. 5 is a detail view of one of the removable brace-rods and its connections.

The same numerals of reference indicate corresponding parts in all the figures.

Referring to the several parts by their designating-numerals, 1 indicates the bottom of the wagon, and 2 2 the side pieces thereof, to which my invention is shown applied.

3 3 indicate the upper side-boards.

4 indicates the end-gate proper, to which are bolted the hinge-irons 5, the lower projecting ends 5^a of which are curved, as shown.

The end-gate is engaged with the end of the wagon by inserting the free curved ends 5^a of these hinge-irons through slots that are formed in the wagon-bottom at the rear end thereof. These slots are re-enforced by the flat slotted upper plates 7 and the lower plates 8, the rear ends of which are curved up, as shown in Fig. 3, until they are in close proximity to the upper plates 7. These curved lower plates form a suitable bearing for the curved lower ends 5^a of the hinge-irons, as will be readily seen by referring to the sectional view, Fig. 3 of the drawings. To the ends of the end-gate 4 are securely bolted the

segmental end wings 9, which are formed of sheet metal of suitable thickness.

The side-boards 2 of the wagon are braced at their rear ends by a brace-rod 10, arranged just within the gate. One end of this rod is formed with a T-shaped head 11, and its other end is threaded, and a nut 12, formed with a handle 12^a for convenience in turning, works on the said threaded end. To one of the side-boards are bolted bearing-plates 13^a, which are formed with a straight slot 13, while to the other side-board are bolted bearing-plates 14^a, the outer one of which is formed with a straight slot, while the inner plate is formed with a T-shaped slot 14. The brace-rod is placed in position by inserting its headed end through the slotted plates 13^a and then through the upper part of the T-slot in the plate 14, when the headed end of the bolt is pressed down into the lower part of the said slot, fitting into a recess cut in the side-board.

When the end-gate is closed, it is held in its closed position by locking-bolts 15, which pass through suitable openings in the side-board and have curved outer ends for convenience in drawing them out. These bolts are pressed inward by spiral springs 16, which encircle the bolts within a recess cut in the side-boards and are secured at one of their ends to the locking-bolts. When the gate is closed, the inner ends of these bolts project into the rear of it at each side thereof.

I preferably employ, particularly when hauling corn and other grain, the upper side-boards 3, which increase the depth of the wagon-body, and consequently the amount which it will hold. These upper side-boards are secured removably on the lower side-boards, as shown in the drawings, and the rear ends are provided with bearing-plates 13^a and 14^a, in which are secured a brace-rod 10, these bearing-plates and the brace-rod being precisely similar in construction to those above described and referred to by the same numerals. When these upper side-boards are employed, an upper end-board 17 is required, the ends of which fit between the parallel cleats 18 on the rear ends of the boards 3, while this end-board is secured to the main end-board 4 by the bars 19, which extend down on the inner side of the main

end-gate, and are formed near their lower ends with the openings 19^a. Securing-bolts 20, having the wide flanged heads 21, pass through the openings 19^a and through corresponding openings in the main gate 4, and upon the outer threaded ends of these bolts are screwed nuts 22, which are formed with short handles for convenience in turning them. The upper board 17 is also firmly secured to the main board by means of a removable staple 23, passing down through clips 24, secured to the outside of the two end-boards.

In operation, the upperside and end boards are in position and the end-gate is to be opened. The brace-rods 10 are removed, slipped out to the right by first lifting their heads out of the slotted plates 14^a and drawing them to the right. The lock-bolts 15 are then drawn out to clear their inner ends from the end-gate and the rear ends of the upperside-boards 17 are sprung out to free the ends of the upper end-gate from the cleats 18. When this is done, the end-gate can be immediately swung down to its open position, where it is caught and held by the spring-bolts 15, passing through openings 9^a, formed in the lower inner ends of the wings 9. It will thus be seen that the end-gates will be held in their inclined opened position, and will then act as a scoop-board while the corn or grain is being shoveled out of the rear of the wagon. The inner lower edge 4^a of the end-gate is beveled, so that it will not interfere with the movements of the shovel in removing the grain.

The gate is closed by drawing out the spring-bolts 15 and raising it into its closed position when the bolts forced inward to the rear lock it in its closed position.

When desired, the lower part only of the end-gate can be opened by removing the staple 23 and the securing-bolts 20, which connect the upper to the lower gate. It will be seen that by the peculiar construction of the hinge-iron which connects the end-gate to the wagon-bottom the lower edge of the gate is also held close to the bottom of the wagon when opening and closing and when in its open position, thus preventing the escape of grain, and that the end-gate can be readily

removed from the wagon when desired. If ice or snow accumulates on the wagon-bottom under the lower end of the end-gate, the irons 5 will permit the gate to rise slightly when closing, and when the ice melts it will sink by its own weight into its normal position.

It will be seen by the peculiar construction of the brace-rod 10 and the bearing-plates 13^a and 14^a that the rod can be slid out and placed in position without loosening its end nut, thus avoiding all wear of the nut and threads. The position of the bearing-plates can of course be reversed, so that the brace-bars can be drawn out either to the right or left hand to suit the convenience of the shoveler.

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

1. A wagon-bottom formed at its rear end with the slots 6, the slotted upper plates 7, the lower plates 8, having the upwardly-curved inner ends, and the end-gate having secured to it the hinged irons 5, formed with the curved lower ends 5^a, substantially as set forth.

2. The combination of the bottom formed with the end slots, the lower and upper side-boards connected together, the bearing-plates 13^a and 14^a, formed, respectively, with the straight slots 13 and the T-shaped slot 14, the sliding brace-rod having the cross-head and the threaded end and the nut working on said end, the vertical cleats 18, secured to the rear ends of the upper side-boards, the spring-actuated locking-bolts 15, the lower end-gate having the side wings 9, formed with the openings 9^a, and the upper end-gate secured on the lower gate, substantially as set forth.

3. The combination of the lower hinged end-gate having the clips 24, the upper gate 17, having an outer clip 24 and the bars 19, the securing-bolts 20, having wide flanged heads 21, the nuts 22, and the removable staple 23, substantially as set forth.

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

DANIEL O. DUNCAN.

Witnesses:

ISAAC WILLIAMSON,
J. FRANK WILSON.