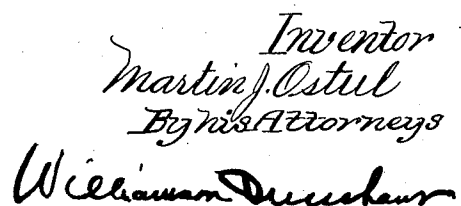


1,355.253.

2. SHEETS—SHEET 1.



M. J. OSTUL.
END BOARD FOR WAGON BOXES.
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2 SHEETS—SHEET 2.

Fig. 2

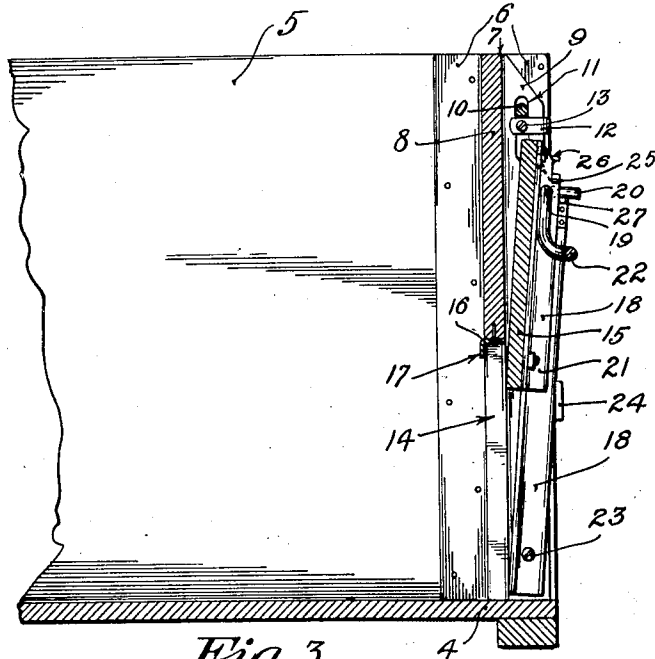
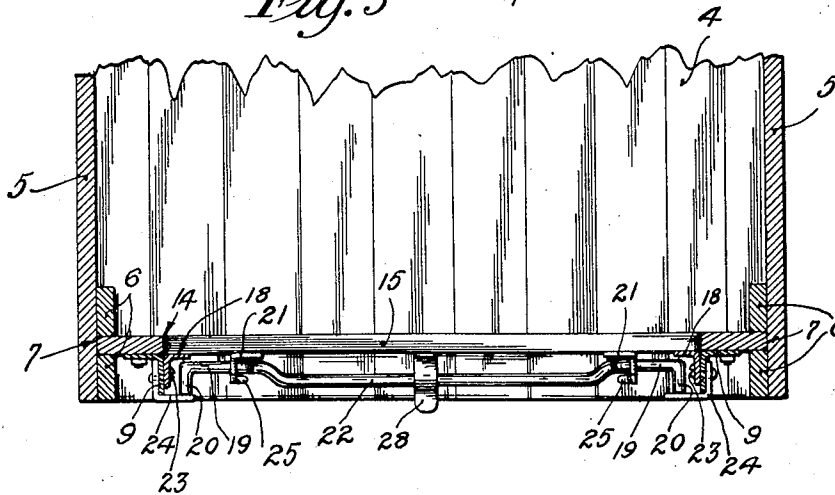


Fig. 3



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END-BOARD FOR WAGON-BOXES.

1,355,253.

Specification of Letters Patent.

Patented Oct. 12, 1920.

Application filed February 2, 1920. Serial No. 355,815.

To all whom it may concern:

Be it known that I, MARTIN J. OSTUL, a citizen of the United States, residing at Ghent, in the county of Lyon and State of Minnesota, have invented certain new and useful Improvements in End-Boards for Wagon-Boxes; 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 relates to improvements in end boards for wagons and trucks, and has for its primary object to provide a highly efficient end gate for use in connection with the end board.

To the above end, generally stated, the invention consists of the novel devices and combinations of devices hereinafter described and defined in the claims.

In the accompanying drawings, which illustrate the invention, like characters indicate like parts throughout the several views.

Referring to the drawings:

Figure 1 is a fragmentary perspective view of the rear end portion of a wagon box having the invention incorporated therein;

Fig. 2 is a central longitudinal section taken on the line 2—2 of Fig. 1; and

Fig. 3 is a horizontal section taken on the line 3—3 of Fig. 1.

The wagon box comprises a bottom 4, side boards 5, having on their inner faces edge-wise spaced cleats 6 to afford therebetween vertical channels 7 in which is removably mounted, for vertical sliding movement, the improved end board 8. A pair of upright angle bars 9 is rigidly bolted to the outer face of the end board 8, near the ends thereof, and extend the full height of said end board with their lower ends resting on the bottom 4 of the wagon box.

The customary adjustable tie-rod 10, for connecting the side boards 5 and drawing the same onto the ends of the end board 8, is extended through alined bores in said side boards and rearmost cleats 6, and through vertical slots 11 formed in the rearwardly projecting flanges of the angle bars 9. To prevent the end board 8 from working up under the jarring action of the wagon, there is frictionally clamped onto the rearwardly projecting flanges of the angle bars 9, clips 12 which extend transversely across the slots 11, under the tie-rod 10, and engage the same. These clips 12 are,

as shown, in the form of yokes, which embrace the rearwardly projecting flanges of the angle bars 9, and have their prongs connected and frictionally clamped onto said flanges by nut-equipped bolts 13, which extend through the slots 11. Obviously, by adjustably connecting the clips 12 to the rearwardly projecting flanges of the angle bars 9, the same may be moved vertically against the under side of the tie-rod 10 and thereby securely hold the end board 8 against lifting movement.

Formed in the end board 8, between the angle bars 9, is a gate opening 14 normally closed by an end gate 15 and extending substantially from the vertical center of the end board through the lower horizontal edge thereof. An angle bar 16 is rigidly secured, by screws or other suitable means, to the end board 8 at the top portion of the gate opening 14 and extends downwardly inward of said gate opening to afford a stop flange 17 for the end gate 15 and also closes the joint between the gate and gate opening.

To open or close the gate 15, the same is given a compound lateral movement and a vertical edgewise movement, and, to lock the same either in a closed or an open raised position, there is provided a pair of guide bars 18 and a coöperating rock-shaft 19 having at its ends crank-acting cams 20. The rock-shaft 19 is journaled in a pair of upright angle bars 21 bolted to the outer face of the end gate 15 and extending the full height thereof. The intermediate portion of the rock-shaft 19 is laterally offset, between the angle bars 21, to afford a crank 22, by which the rock-shaft 19 may be operated. This crank 22, by its engagement with the angle bars 21, holds the rock-shaft 19 against endwise movement. The guide bars 18 and the angle bars 9 are arranged in pairs with their rearwardly projecting flanges turned toward each other, connected at their lower ends by pivots 23, arranged to permit said guide bars to swing longitudinally in respect to the wagon box outward of the end board 8. The ends of the rock-shaft 22 overlap the inturned flanges of the angle bars 9 and bear thereagainst for a purpose that will presently appear. Secured to the rearwardly projecting flanges of the angle bars 9 are abutments 24, which extend into the gate opening 14, and with which the crank-acting cams 20 coöperate, when the crank 22 is turned downward, as shown in Fig. 1, to

press the guide bars 18 against the end gate 15 and draw the said end gate rearward against said guide bars and thereby securely lock the end gate in an operative or closed position.

Stops 25, on the angle bars 21, are arranged to be engaged by the arms of the crank 22 to limit the upward and outward swinging movement thereof and position the crank-acting cams 20 in inoperative positions. On the upper ends of the guide bars 18 are stop lugs 26 arranged to be engaged by the rock-shaft 19 to limit the lifting movement of the end gate 15. Also secured on the upper ends of the guide bars 18 are inwardly projecting lock lugs 27, located just under the lugs 26 and arranged to be engaged by the crank-acting cams 20, when the crank 22 is turned downward and inward, to support the end gate 15 from the guide bars 18 in an inoperative or raised position, as shown by full lines in Fig. 2. To lock the rock-shaft 19 with its crank-acting cams 20 in operative positions, there is pivoted to the end gate 15 a lock finger 28, arranged to be turned into overlapping relation with the crank 22, as shown in Figs. 1 and 2, to hold the same against outward swinging movement.

The operation of the improved end gate, may be briefly described as follows:—

To open the end gate, the lock finger 28 is first swung upwardly to release the crank 22 and permit said crank to be swung outwardly and upwardly until brought into engagement with the stops 25. This movement of the crank 22 turns the rock-shaft 19 and thereby moves its crank-acting cams 20 into inoperative positions, in which they project vertically upward between the intumed flanges of the guide bars 18 and the abutments 24. Then, by an outward pull on the crank 22, the upper portion of the end gate 15 may be swung outward of the gate opening 14 to clear the end board 8. This outward movement of the end gate 15 also causes the guide bars 18 to swing on their pivots 23 outward until stopped by the abutments 24. With the end gate 15 and the guide bars 18 thus positioned, the gate 15 may be raised by sliding the same vertically on the intumed flanges of the guide bars 18, until stopped by the engagement of the rock-shaft 19 with the stops 26, at which time the crank 22, being in engagement with the stops 25, affords a handle by which the gate may be lifted. With the rock-shaft 19 in engagement with the stops 26, the crank 22 may then be swung inward and downward to carry the crank-acting cams 20 into overlapping engagement with the lugs 27 and thereby support the end gate 15 from the guide bars 18 in a raised position. The lock finger 28 may then be turned downward over the crank 22 to hold the same against

outward swinging movement, which would release the crank-acting cams 20 from the lugs 27.

To close the end gate 15, the lock finger 28 is first moved to release the crank 22, and next, said crank may be swung outward and upward to release the crank-acting cams 20 from the lugs 27. The end gate 15 will then drop under its own weight, or may be assisted by pulling downward thereon until stopped by the engagement with the bottom 4 of the wagon box. Then, by pressing inward on the crank 22, the end gate 15 may be forced into the gate opening 14. This same movement of the gate 15 causes the rock-shaft to carry the guide bars 18 into engagement with the end board 8. Next, by swinging the crank 22 downward and inward, the crank-acting cams 20 may be brought into engagement with the abutments 24 to exert a force which presses the guide bars 18 against the end board 8, and, at the same time, draws the end gate 15 rearward against said guide bars, and, finally, the lock finger 28 is turned into overlapping engagement with the crank 22.

What I claim is:

1. A wagon box end board having a gate opening, an end gate for closing said opening and mounted for compound lateral and vertical movements, a pair of upright movable guide bars for the end gate, and means for pressing the guide bars against the end board and drawing the end gate against the guide bars.

2. A wagon box end board having a gate opening, an end gate for closing said opening and mounted for compound lateral and vertical movements, a pair of upright movable guide bars for the end gate, and means for pressing the guide bars against the end board and drawing the end gate against the guide bars and for supporting the end gate on the guide bars in a raised position.

3. A wagon box end board having a gate opening, an end gate for closing said opening and mounted for compound lateral and vertical movements, a pair of upright movable guide bars for the end gate, abutments secured to the end board, and means insertible between the guide bars and abutments for pressing the guide bars against the end board and drawing the end gate against the guide bars.

4. A wagon box end board having a gate opening, an end gate for closing said opening and mounted for compound lateral and vertical movements, a pair of upright movable guide bars for the end gate, abutments secured to the end board, and a rock-shaft journaled on the end gate and having on its ends crank-acting cams operative on the guide bars and abutments to press the guide bars against the end board and draw the end gate against the guide bars.

5. A wagon box end board having a gate opening, an end gate for closing said opening and mounted for compound lateral and vertical movements, a pair of upright movable guide bars for the end gate, abutments secured to the end board, a rock-shaft journaled on the end gate and having on its ends crank-acting cams operative on the guide bars and abutments to press the guide bars against the end board and draw the end gate against the guide bars, and a lock for securing the rock-shaft in an operative position. 40

6. A wagon box end board having a gate opening, an end gate for closing said opening and mounted for compound lateral and vertical movements, a pair of upright movable guide bars for the end gate, abutments secured to the end board, a rock-shaft journaled on the end gate and having on its ends crank-acting cams operative on the guide bars and abutments to press the guide bars against the end board and draw the end gate against the guide bars, and stops on the guide bars arranged to be engaged by the rock-shaft to limit the lifting movement of the end gate. 50

7. A wagon box end board having a gate opening, an end gate for closing said opening and mounted for compound lateral and vertical movements, a pair of upright movable guide bars for the end gate, abutments secured to the end board, a rock-shaft journaled on the end gate and having on its ends crank-acting cams operative on the guide bars and abutments to press the guide bars against the end board and draw the end gate against the guide bars, and means on the guide bars arranged to be engaged by the crank-acting cams to support the end gate in a raised position. 45

8. A wagon box end board having a gate opening, an end gate for closing said opening and mounted for compound lateral and vertical movements, a pair of upright movable guide bars for the end gate, abutments secured to the end board, and a rock-shaft journaled on the end gate and having on its ends crank-acting cams operative on the guide bars and abutments to press the guide bars against the end board and draw the end gate against the guide bars, said rock-shaft having an offset portion to afford an operating crank. 50

9. The combination with a wagon box, having a removable end board and a tie-rod connecting the side boards of the wagon box and drawing the same onto the ends of the end board, of out-turned flanges on the end board having vertical openings through which the tie-rod extends, and vertically adjustable clips on said flanges engageable with the tie-rod to prevent lifting movement on the end board in respect to the wagon box. 60

In testimony whereof I affix my signature in presence of two witnesses. 65

MARTIN J. OSTUL.

Witnesses:

WINIFRED I. WARD,
HARRY D. KILGORE.