No. 657,093. Patented Sept. 4, 1900.

H. K. CRISSEY.

END GATE OR SHOVELING BOARD.

(Application filed Dec. 30, 1899.)

(No Model.) 2 Sheets—Sheet 1.

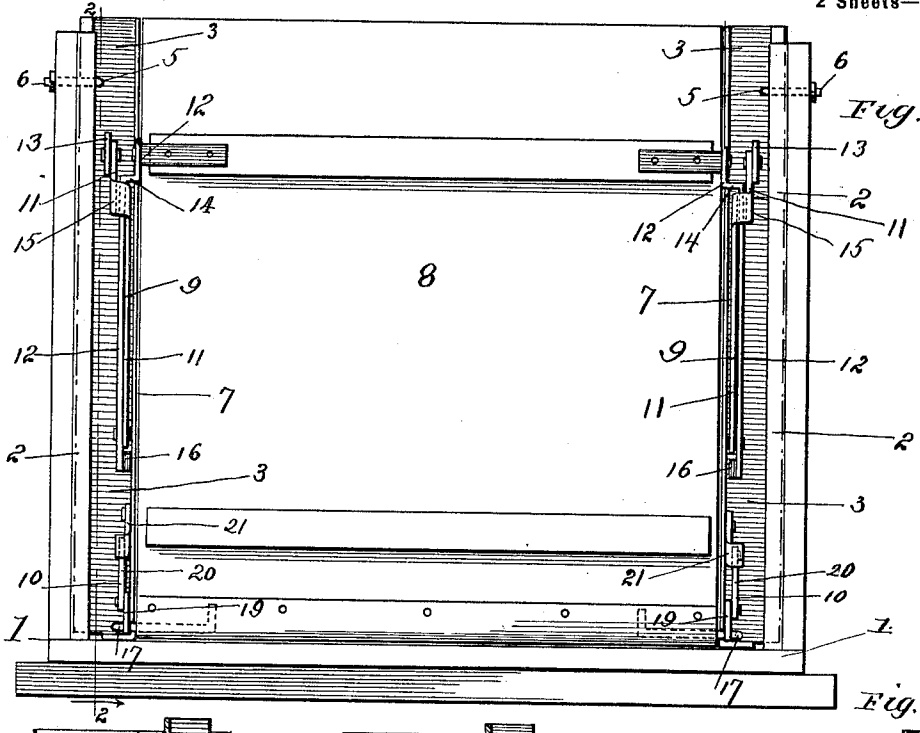


Fig. 1.

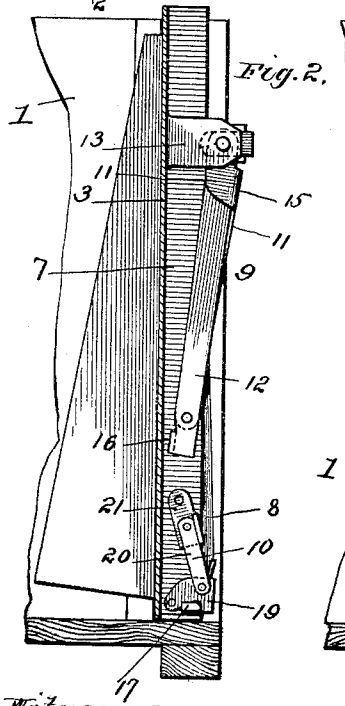


Fig. 2.

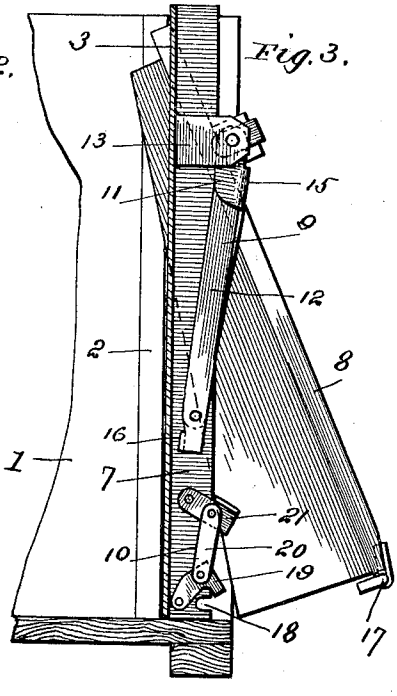


Fig. 3.

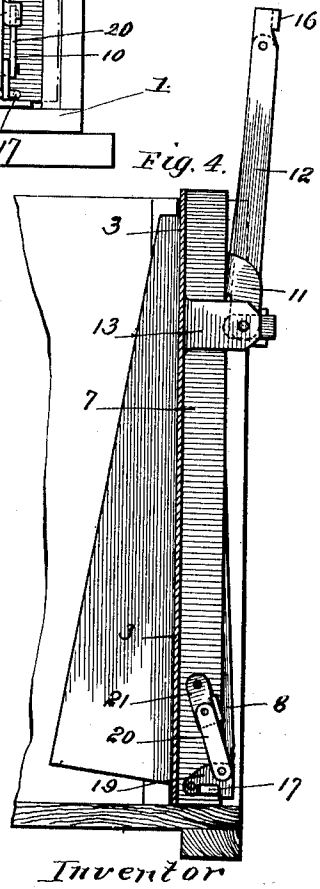


Fig. 4.

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Fig. 5.

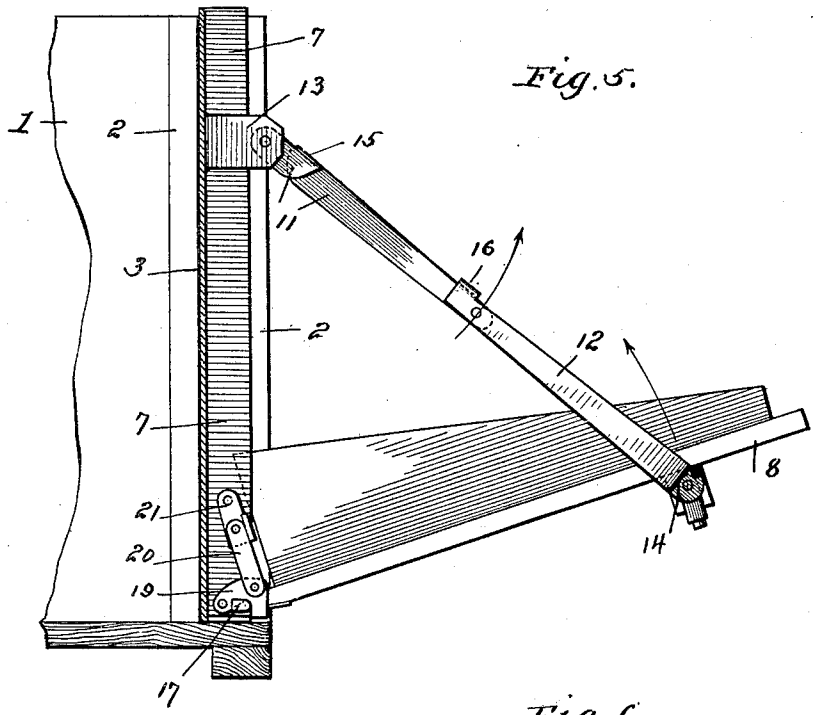
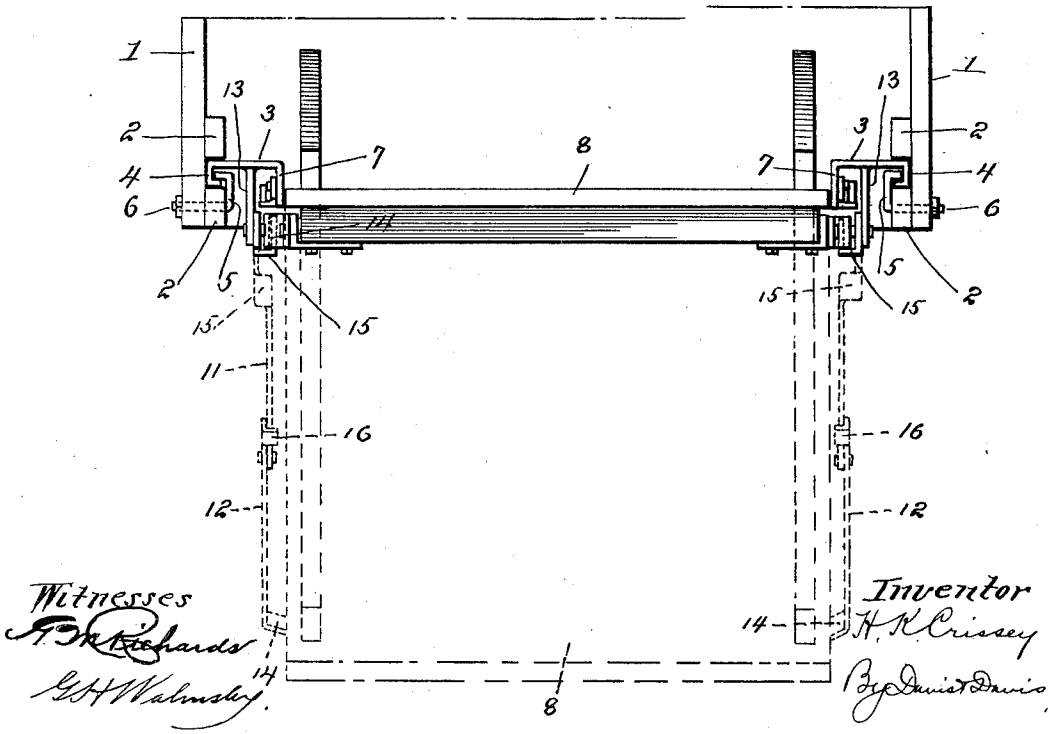


Fig. 6.



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UNITED STATES PATENT OFFICE.

HENRY K. CRISSEY, OF IOWA FALLS, IOWA.

END-GATE OR SHOVELING-BOARD.

SPECIFICATION forming part of Letters Patent No. 657,093, dated September 4, 1900.

Application filed December 30, 1899. Serial No. 742,093. (No model.)

To all whom it may concern:

Be it known that I, HENRY K. CRISSEY, a citizen of the United States, residing at Iowa Falls, in the county of Hardin and State of Iowa, have invented certain new and useful Improvements in End-Gates or Shoveling-Boards, of which the following is a specification, reference being had therein to the accompanying drawings, in which—

Figure 1 is a rear view of a wagon-body, showing the end-gate in its closed position. Fig. 2 is a vertical sectional view on line 2 2 of Fig. 1. Fig. 3 is a similar view showing the lower end of the gate released and swung rearward. Fig. 4 is a similar view showing the lower end of the gate latched, as in Fig. 1, and the upper locking-brace raised to permit the upper end of the gate to be swung rearward and downward. Fig. 5 shows the upper end of the gate swung rearward and downward; and Fig. 6 is a plan view, the gate being shown in dotted lines in the position shown in Fig. 5.

The object of the invention is to provide an end-gate or shoveling-board for wagons which may be readily opened and swung rearward at either its upper or its lower end and which when it is desired may be entirely removed from the wagon without removing any bolts or fastening devices.

Referring to the various parts by numerals, 1 designates the rear end of a wagon-body, and 2 the usual end-gate-retaining cleats or guides, which are secured to the inner vertical sides of the wagon-body and between which the groove for receiving the end-gate is formed. At each of the sides of the wagon-body, near the end thereof, is a vertical gate-supporting post 3, said post being equal in height to the wagon sides and being formed with a lateral post or head 4, which fits in the groove between the cleats 2, said head being engaged by the head 5 of a bolt 6. This bolt is rigidly secured to the side of the wagon, near the upper edge thereof, its head serving to prevent the inward withdrawal of the post 3 from between the cleats, but permitting said post to slide vertically. Each of these posts is provided at its inner vertical edge with a rearward-extending flange 7, which extends the entire length of the post, and the end-gate 8 extends across the wagon and fits between these flanges.

The end-gate, near its upper edge, is permanently connected to the upper ends of the posts 3 by means of folding locking-braces 9 and is detachably connected at its bottom to the lower ends of these posts by means of latches 10, one of said braces and one of said latches being connected to each post 3. The folding locking-braces each consists of two rigid links 11 and 12, pivoted together at their lower ends. The upper end of the inner link 11 is pivoted to a rearward-extending lug 13, formed on the post 3, and the upper end of the outer link 12 is pivoted to the end-gate 8 near the top thereof, these two pivots being adjacent to each other and axially in line with each other and with the corresponding pivots of the other folding brace. The link 12, slightly below its pivot, is bent outward, as at 14, and then extends downward, and the link 11 extends downward a short distance, then inward laterally across the rear edge of link 12, as shown at 15, and then downward on the inner side of the link 12, being pivoted at its lower end to the inner side of the link 12, near the lower end thereof. By this means the top of the end-gate is effectually prevented from swinging rearward and downward when the locking-braces are in their normal folded position, as shown in Figs. 1, 2, and 3, the upper end of link 12 being locked in its normal downward-extending position by the inward-extending part 15 of link 11. When it is desired to swing the top of the end-gate rearward, the locking-braces are swung upward to the position shown in Fig. 4. This releases links 12 from the parts 15 of links 11 and permits the gate to be swung to the position shown in Fig. 5. The lower end of each link 12 is extended beyond its pivot and is provided with an inward-extending flange 16, which when the brace is unfolded or extended engages the adjacent link 11 and limits the inward movement of the brace. When it is desired to raise the end-gate to its closed position, the braces are swung upward and forward until they assume the position shown in Fig. 4. The folded braces are then swung rearward and downward until they assume the locked position shown in Fig. 2. The posts 3 and the end-

gate when it is in its closed position, together with the headed bolts 6 and the interlocked braces, form a continuous connection between the two sides of the wagon-body at the upper edge thereof and brace the said sides against outward strains.

Secured at each of the lower corners of the end-gate is an outward-extending non-rotatable pin 17, which pins when the said lower corners are in their innermost position enter notches 18, formed in the lower ends of the flanges 7 of the posts 3. When these pins are thus secured in said notches, they form pivots on which the gate turns and is supported when its upper end is swung rearward. Secured to each of said flanges 7, on the outer side thereof adjacent to the notch 18 therein, is a pivoted hook 19, which engages the pin 17 in the adjacent corner of the gate 8 and retains it in the notch 18. Connected to the hook is a link 20, which in turn is connected to pivoted lifting-lever 21. When it is desired to swing rearward the lower end of the gate, the lever 21 is raised, as shown in Fig. 3, thus releasing the hooks 19 from the pins 17 and permitting the lower end of the gate to swing rearward. In this position the gate is supported by and swings on the pivots of the upper ends of the folding braces, as shown in Fig. 3. When the locking-braces are in their normal position, they preferably incline downward and slightly forward from their upper pivots, as shown, the forward movement of their lower ends being limited by the supporting-posts. In this position they form non-yielding supports for the end-gate when the gate is swung rearward at its lower end, the weight of the gate holding the braces in this position and preventing them unfolding. By placing the pivots of the upper ends of the braces axially in line with each other the links can be formed of a single rigid piece and be positively pivoted together at their lower ends and yet be readily swung to their folded or unfolded positions, and by bending one link laterally across the rear edge of the other link a positive lock is provided which prevents the unfolding of the braces when they are in their normal folded position.

It will be understood from the foregoing that the gate, with the attached supporting-posts 3, may be entirely removed from the wagon-body whenever desired and replaced therein with as little difficulty as is experienced in manipulating the ordinary end-gate or tail-board. It will also be noted that the device may be readily applied to any wagon-body of the proper width which is provided with the cleats 2, it being only necessary to place the bolts 6 or similar devices in their proper positions.

It will be readily seen that this invention is not limited to the exact construction of parts shown and described, and I desire it understood that I do not limit myself to such construction, as changes may be made therein without departing from the scope of the invention.

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

1. The combination of a wagon-body, an end-gate, a pair of folding braces connecting the end-gate near its upper end to the wagon-body, each of said braces consisting of an inner member and an outer member, the outer member being pivoted at its upper end to the end-gate and the inner member being pivotally supported at its upper end by the wagon-body, said members crossing each other and having their upper pivots in substantially-axial line with each other, the lower ends of said members being pivoted together.

2. The combination of a wagon-body, a pair of end-gate-supporting posts removably connected therewith, an end-gate fitting between said posts, a pair of folding locking-braces connecting the end-gate near its upper end to said posts, each of said braces consisting of an inner member and an outer member pivoted together at their lower ends, the upper end of the outer member being pivoted to the end-gate, and the upper end of the inner member being pivoted to the adjacent post, one of said members extending across the rear edge of the other member and the upper pivots of the braces being axially in line with each other.

3. The combination of a wagon-body, an end-gate, a pair of folding locking-braces connecting the end-gate at its upper end to the wagon-body, each of said braces consisting of two rigid members pivoted together at their lower ends, the upper end of one member being pivoted to the end-gate and the upper end of the other member being pivotally supported by the wagon-body, one of said members in its normal position preventing the rearward movement of the upper end of the member which is pivoted to the end-gate, said braces forming non-yielding pivotal supports for the end-gate when the said braces are in their normal position, and means for detachably pivoting the lower edge of the end-gate.

4. The combination of a wagon-body, a pair of end-gate-supporting posts removably connected thereto, a pair of folding braces connecting the upper end of the end-gate to the posts, the upper ends of said braces forming pivotal supports for the upper end of the end-gate, pivots carried by the end-gate at its lower end, and a latch device carried by each of the supporting-posts at their lower ends to detachably secure the pivots carried by the end-gate to the said posts.

5. The combination of a wagon-body, an end-gate, a pair of folding braces connecting the end-gate to the wagon-body, each of said braces consisting of an inner rigid member and an outer rigid member pivoted together at their lower ends, the upper end of the outer member being pivoted to the end-gate and

the upper end of the inner member being pivotally supported by the wagon-body, one of said members in its normal position preventing the rearward movement of the upper end of the other member, said braces in their normal folded position extending forward of their upper pivotal points, and means for detachably securing the lower edge of the end-gate to the wagon-body, whereby when said lower edge of the end-gate is released and swung rearward the folded braces will form non-yielding pivotal supports for the end-gate.

6. The combination of a wagon-body, a pair of supporting-posts detachably connected to the wagon-body, an end-gate adapted to fit between said posts, means for detachably connecting the lower edge of the end-gate to the lower ends of the posts, a pair of folding braces connecting the end-gate near its upper edge to the posts, said braces each consisting of two members pivoted together at their lower ends and crossed near their upper ends, one member being pivoted at its upper end to the end-gate and the other to the adjacent post, said braces extending forward of their pivots, whereby when the lower edge of the end-gate is swung rearward, the braces will form non-yielding pivotal supports for the end-gate.

7. The combination of a wagon-body, an end-gate, means for securing the lower edge of the end-gate to the wagon-body, a pair of folding braces connecting the end-gate near its upper edge to the wagon-body, each of said braces consisting of an inner and an outer rigid member, whose lower ends are pivoted together, the upper end of the inner member being pivotally supported by the wagon-body and the upper end of the outer member being secured to the end-gate, said members being each formed of one piece, one of said members being bent laterally across the rear edge of the other member.

In testimony whereof I hereunto affix my signature, in the presence of two witnesses, this 16th day of December, 1899.

HENRY K. CRISSEY.

Witnesses:
A. F. BOYLAN,
JOHN E. BLAIR.