W. F. WOLKEN.

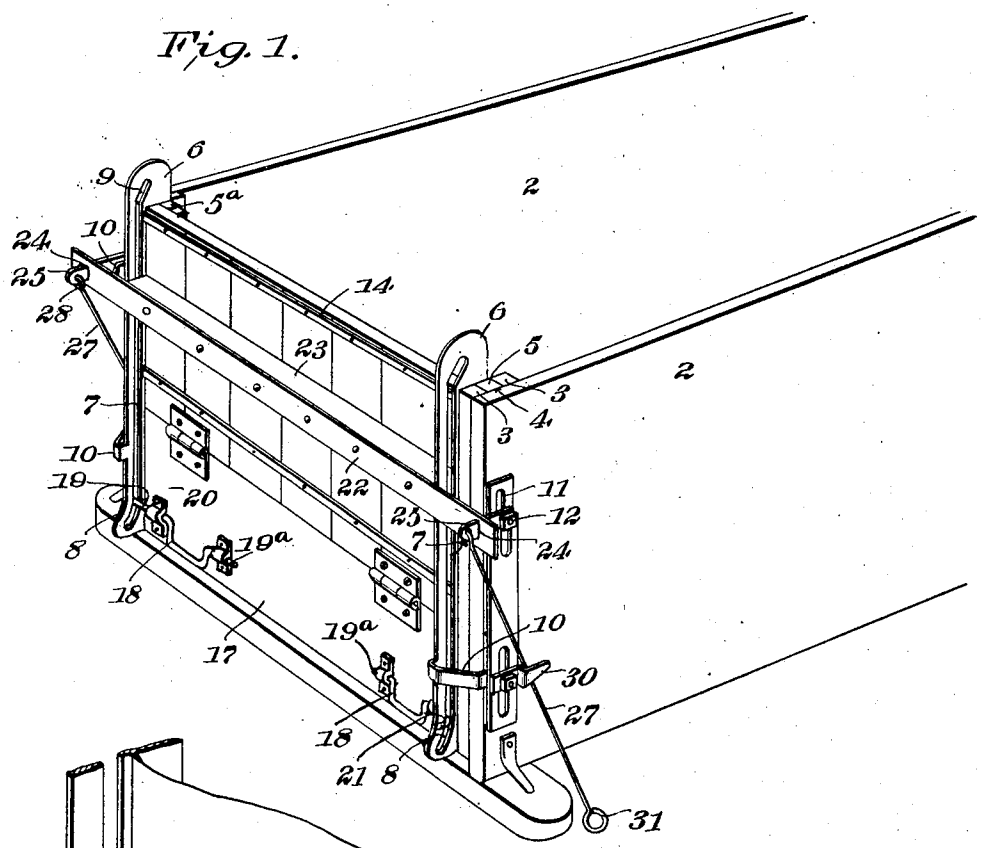
COMBINATION END GATE AND SCOOP BOARD.

APPLICATION FILED AUG. 17, 1909.

998,144. **Patented July 18, 1911.**

3 SHEETS—SHEET 1.

Fig. 1.



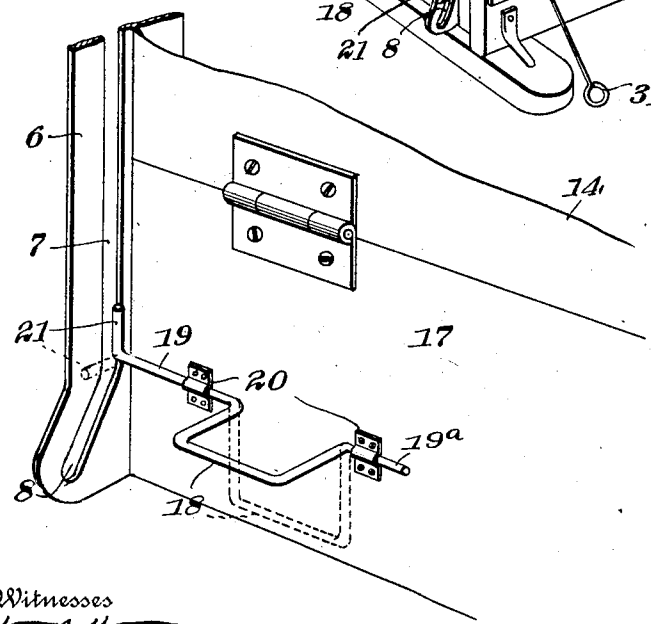


Fig. 2.

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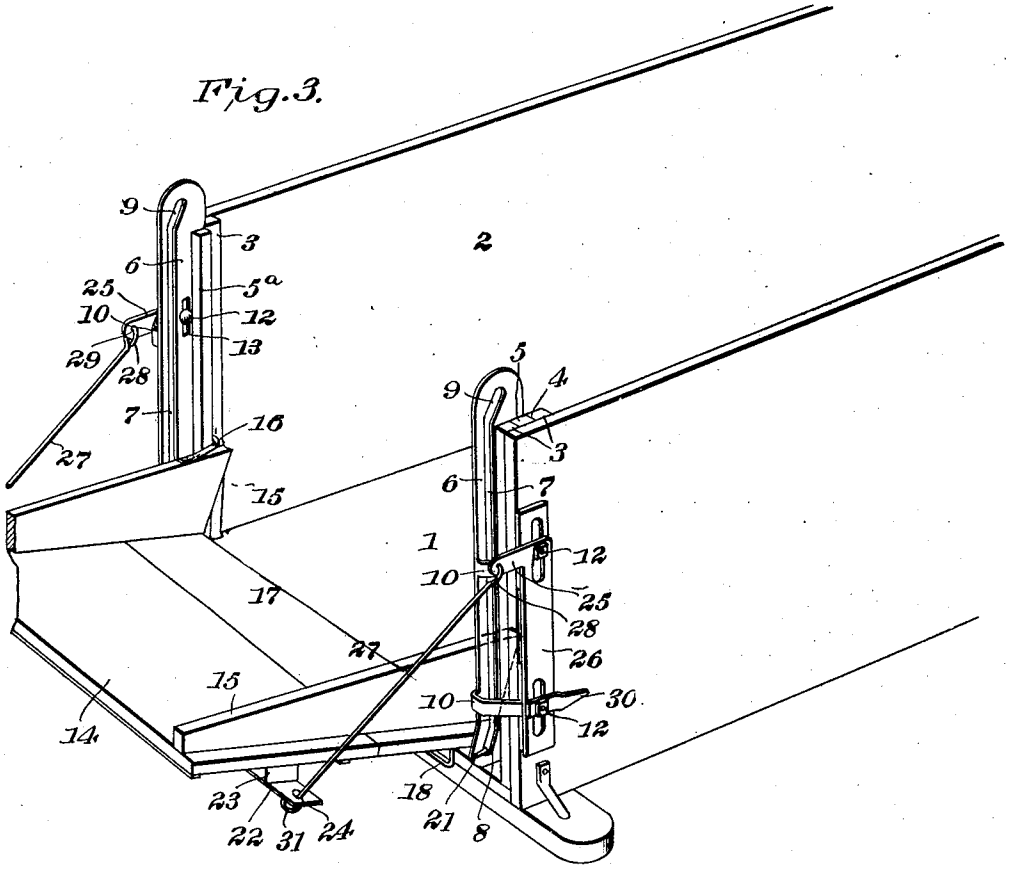
3 SHEETS—SHEET 2.

Fig. 3.



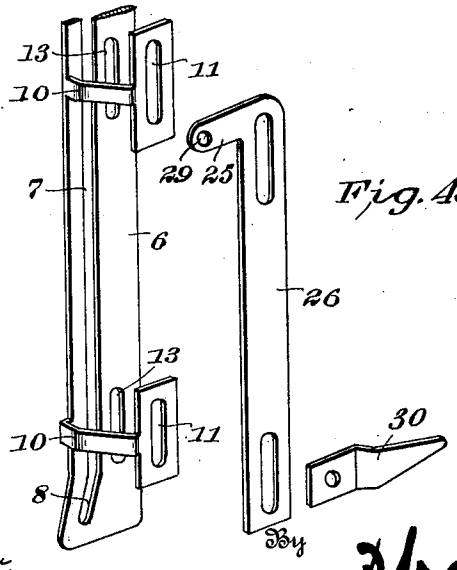


Fig. 4.

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3 SHEETS—SHEET 3.

Fig. 5.

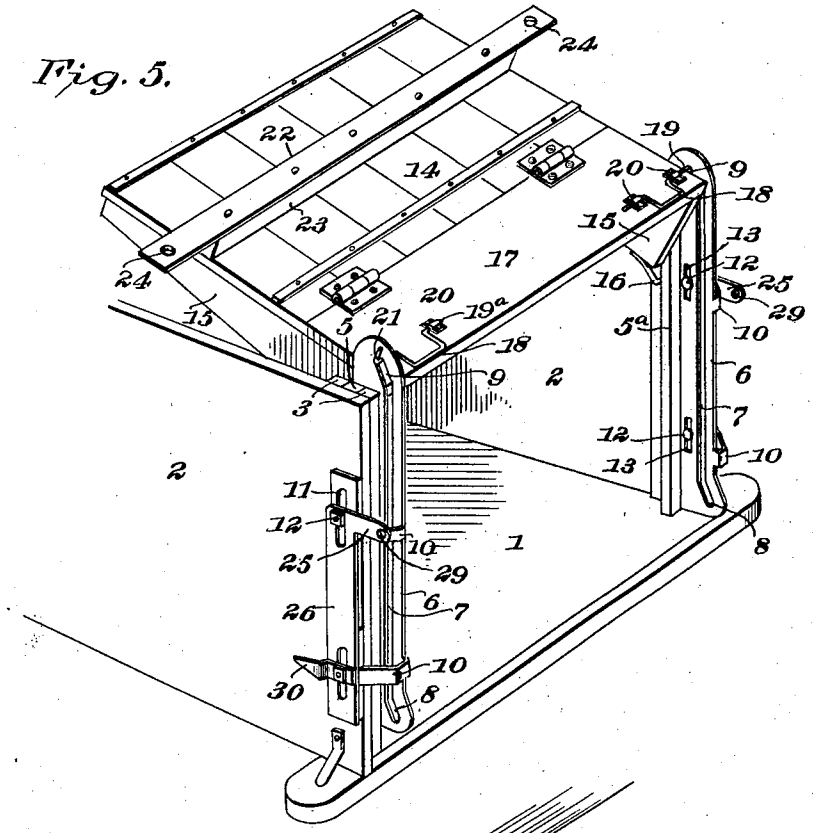
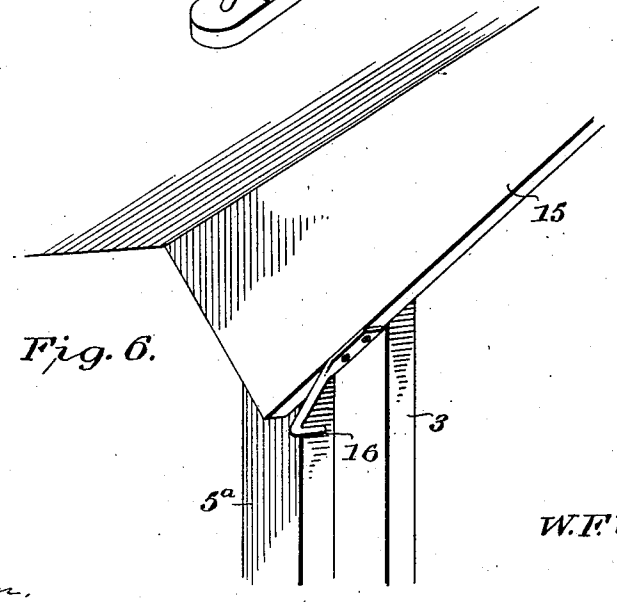


Fig. 6.



Witnesses

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COMBINATION END-GATE AND SCOOP-BOARD.

998,144. Specification of Letters Patent. **Patented July 18, 1911.**

Application filed August 17, 1909. Serial No. 513,320.

To all whom it may concern:

Be it known that I, WILLIAM F. WOLKEN, citizen of the United States, residing at Granville, in the county of Sioux and State of Iowa, have invented certain new and useful Improvements in Combination End-Gates and Scoop-Boards, of which the following is a specification.

The present invention comprehends certain new and useful improvements in wagons, and relates more particularly to an end gate of that type adapted to be swung outwardly and downwardly to serve as a scoop board and also capable of being turned upwardly on top of the wagon body, so as to be entirely out of the way when it is desired to dump the load.

The object of the invention is an improved device of this character which embodies spring rods that are bent to lock the end gate in closed position in an efficient manner, and that in addition to the above function also assist in supporting the end gate in the lowered position wherein it serves as a scoop board.

Another object of the invention is an end gate equipped at its lower end with a hinged section susceptible of being opened independently of the main portion of the end gate in order to permit the discharge of a portion of the load.

A further object of the invention is a hinged end gate section which is provided with bails whereby it may be conveniently manipulated, the bails being movable into engagement with slotted guides supported at the sides of the wagon body, in order to lock the hinged section in closed position, and being further adapted to travel in the said slots, so as to guide the end gate during its movement to position on top of the wagon body.

With these and other objects in view that will more fully appear as the description proceeds, the invention consists in certain constructions and arrangements of parts that I shall hereinafter fully describe and then point out the novel features thereof in the appended claims.

For a full understanding of the invention and the merits thereof and also to acquire a knowledge of the details of construction, reference is to be had to the following description and accompanying drawings, in which:

Figure 1 is a fragmentary perspective view of a wagon body equipped with my improved end gate, the latter being shown in closed position; Fig. 2 is an enlarged fragmentary perspective view of a portion of the end gate and one of the face plates; Fig. 3 is a perspective view showing the end gate in lowered position to serve as a shovel board; Fig. 4 is a perspective view of a face plate, lug and base strip, and a stop in juxtaposition; Fig. 5 is a perspective view showing the end gate in raised position on top of the wagon body; and, Fig. 6 is a detail view showing the projection on one of the wings abutting against the corresponding standard in the raised position of the end gate.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

The invention is illustrated as applied to a wagon body that is of conventional form and comprises a bottom 1 and opposed spaced side members 2 upstanding therefrom. Fastened to the inner faces of the side members in proximity to the rear ends thereof, are pairs of spaced strips 3 forming vertical guideways 4 that are designed to have standards slidably fitted therein. In the present instance each of the standards is split longitudinally and composed of separate strips or sections 5 and 5^a which are secured together with a metallic face plate 6 interposed therebetween, the section 5 being substantially equal in thickness to the strips 3 and being received in the guideway 4 therebetween, while the section 5^a is disposed at the inner face of the metallic plate, for a purpose to be hereinafter disclosed.

The face plate 6 extends rearwardly from the sections 5 and 5^a and along the inner face of the adjacent strip 3 and projects beyond the rear end of the side member, as best seen in Fig. 3. The plate is formed in its projecting portion with a vertical guide slot 7 that is substantially straight throughout its length, except at its ends where it has a cam formation, the lower end of the slot being turned obliquely rearwardly, as indicated at 8, and the upper end of the slot being extended beyond the upper edge of the side member and being disposed obliquely forwardly, as shown at 9.

The projecting portion of the plate 6 is braced through the medium of a plurality of vertically spaced hooked arms 10 which

are extended from the edge thereof and are turned laterally outwardly to embrace the rear end of the corresponding side member, whereby to assist in maintaining the standard section 5 in the guideway 4 against inward displacement. The terminals of the arms bear against the outer face of the side member and are enlarged, as shown, and formed with vertical slots 11 through which bolts 12 are passed, the said bolts being inserted through the side member and the rearmost strip 3 and through registering slots 13 formed in the face plate between the sections 5 and the guide slot 7. By tightening these bolts the standard is held in position against upward displacement. Attention is here directed to the fact that it is not necessary to bore separate holes through the side members for the bolts, as the latter are passed through the openings usually provided for the customary tie rods which extend transversely at the end of the wagon body.

14 designates the end gate which, when in closed position, as illustrated in Fig. 1, fits between the face plates 6 and rests upon the bottom 1, the end gate abutting the standard sections 5^a, so as to be held against inward movement. Correspondingly tapered wings 15 project perpendicularly from the inner face of the end gate and extend along the same in proximity to the side edges thereof. The ends of the wings are cut off square flush with the ends of the gate and in the closed position of the latter the wings are positioned inside of the standard sections 5^a, the larger ends of the wings resting on the bottom 1 and extending forwardly beyond said sections 5^a and being provided with laterally turned projections or stops 16.

For convenience the gate is provided at its lower end with a hinged section 17 that is not secured to the wings 15 and that is adapted to be swung upwardly and outwardly independent of the main portion of the gate in order to admit of the dumping of a small portion of the load. The hinged section is manipulated by means of transversely extending bails 18 disposed at its outer face in proximity to its side edges. The bails have alining straight end portions 19 and 19^a that are slidably and rotatably mounted in bearings 20, the end portions 19 adjacent to the respective face plates 6 being adapted to serve as pintles for the end gate and having terminals 21 turned angularly at right angles to the planes of the bails. When the bails are in their normal positions, that is, swung downwardly against the outer face of the hinged section 17, the angularly turned terminals 21 project outwardly from the latter, as shown by dotted lines in Fig. 2. By lifting the bails to horizontal position and then sliding the same outwardly and laterally, the terminals 21 may be projected through the guide slots 7, so that the end portions 19 are held in engagement therewith when the bails are permitted to drop to their normal positions. By virtue of this arrangement the hinged section is effectually locked in closed position against the wings 15 and the strips 5^a.

Disposed transversely at the outer face of the main portion of the end gate is a metallic bar 22 that is preferably secured to an interposed wooden cleat 23. The ends of the bar project beyond the side edges of the gate and beyond the outer edges of the side members 2 and are apertured to form keeper loops 24 arranged to have lugs 25 project rearwardly therethrough in the closed position of the end gate. The lugs 25 are extended rearwardly beyond the rear ends of the respective side members and have metallic base strips 26 that are attached to the outer faces thereof by means of the bolts 12. Spring rods 27 are pivotally and detachably connected at one end to the protruding portions of the lugs, said connection being effected in the present instance through the medium of hooks 28 formed at the said ends of the rods and engaged through apertures 29 extending through the lugs. The rods depend from the lugs with the hooks 28 extending across and bearing against the keeper loops, and are bent and sprung into forwardly facing hooked stops 30 located at the outer faces of the side members and fastened thereto by the lower bolts 12. In this position the spring rods retain the keeper loops in engagement with the lugs, whereby to rigidly lock the end gate in a closed position. The free ends of the rods are permanently bent to form finger loops 31 by means of which they may be readily manipulated, attention being particularly directed to the fact that the finger loops are of such size as to be prevented from passing through the keeper loops 24, while the hooks 28 are movable freely through the latter.

Before describing the practical operation of an end gate constructed in accordance with my invention, it is to be assumed that the end gate is closed with its component parts in the positions hereinbefore described. If it is desired to move the end gate so that it will serve as a scoop board or shovel board, the spring rods 27 are first disengaged from the hooked stops 30 whereby to release the keeper loops from the lugs 25 and permit the end gate to swing outwardly and downwardly about the end portions 19 of the bails, as pivots, the said end portions 19 moving into the angularly turned lower ends 8 of the slots, in order to permit the gate to swing outwardly from the strips 5^a with its lower edge abutting thereagainst. This swinging movement is limited by means of the lateral projections 16 fastened at the

larger ends of the wings 15 and carried against the respective standard sections 5^a (see Fig. 3). The keeper loops 24 slide longitudinally of the guide rods during the aforesaid movement of the gate and abut against the finger loops 31 at the free ends of the rods, so that the latter serve as braces to assist in supporting the gate in its lowered position.

In order to move the gate from its initial or closed position to a position on top of the wagon body, the rods 27 are first disengaged from the stops 30, as in the previous instance, and the hooks 28 are then removed from the apertures 29, thus detaching the rods from the lugs 25. The upper end of the gate is then swung outwardly sufficiently to disengage the keeper loops 24 from the lugs 25, whereupon the end gate is moved substantially vertically upwardly, the pintles or end portions 19 of the bails traveling in the slots 7 to guide the end gate in such movement. The pintles 19 are slid into the angularly turned upper extremities 9 of the slots, after which the end gate is swung forwardly and downwardly toward the top of the wagon body and about the said pintles, as pivots (see Fig. 5). The gate is supported through the instrumentality of the stops 16 which abut against the strip 5^a to limit the downward swinging movement of the end gate, as illustrated in Fig. 6. In this position the end gate is entirely out of the way, so as to in no wise interfere with the dumping of the load.

From the foregoing description in connection with the accompanying drawings, it is believed that the manner of shifting the end gate from one position to another will be clearly understood.

Having thus described the invention what is claimed as new is:

1. The combination with a wagon body having opposed side members, of an end gate fitting between the side members and having its lower portion hinged to swing outwardly independently of the upper portion of the gate, latches carried by the hinged portion and movable relatively thereto into detachable engagement with the side members, to lock the hinged portion in closed position in the plane of the gate, and means for establishing pivotal connections between the end gate and the side members, through the medium of the latches.

2. The combination with a wagon body having opposed side members, of an end gate fitting between the side members, means disposed substantially vertically on the side members for limiting the inward movement of the gate, guides provided on the side members and terminating at their lower ends in proximity to the bottom of the wagon body, the guides extending upwardly above said limiting means, and pivot members carried at the lower end of the gate and engaging with the guides to establish pivotal connections between the gate and the side members, said guides permitting the pivot members to be slid upwardly to cause the gate to clear the limiting means.

3. The combination with a wagon body having opposed side members, of an end gate fitting between the side members, means disposed substantially vertically at the inner faces of the side members for limiting the inward movement of the gate, the side members being provided with substantially vertical guide slots terminating at their lower ends in proximity to the bottom of the wagon body and extending upwardly above said limiting means, and pivot members carried at the lower end of the gate and received in the slots to establish pivotal connections between the gate and the side members, said slots permitting the pivot members to be slid upwardly to cause the gate to clear the limiting means, the slots having a cam formation at their upper and lower ends, as and for the purpose specified.

4. The combination with a wagon body having opposed side members, of an end gate fitting between the side members and having its lower portion hinged to swing outwardly independently of the upper portion of the gate, means provided on the side members for limiting the inward movement of the gate, guides provided on the side members and terminating at their lower ends in proximity to the bottom of the wagon body, the guides extending upwardly above the limiting means, latches carried by the hinged portion of the gate and movable relatively thereto into detachable engagement with the guides to lock said hinged portion in closed position in the plane of the gate, and means for establishing pivotal connections between the gate and the side members through the medium of the latches, the guides permitting the latches to be slid upwardly to cause the gate to clear the limiting means.

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

WILLIAM F. WOLKEN. [L. S.]

Witnesses:
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