No. 780,234. PATENTED JAN. 17, 1905.

C. C. SCHLAGLE.

END GATE OR SIDE BOARD FASTENING FOR WAGONS.

APPLICATION FILED JAN. 25, 1904.

Fig. 2.

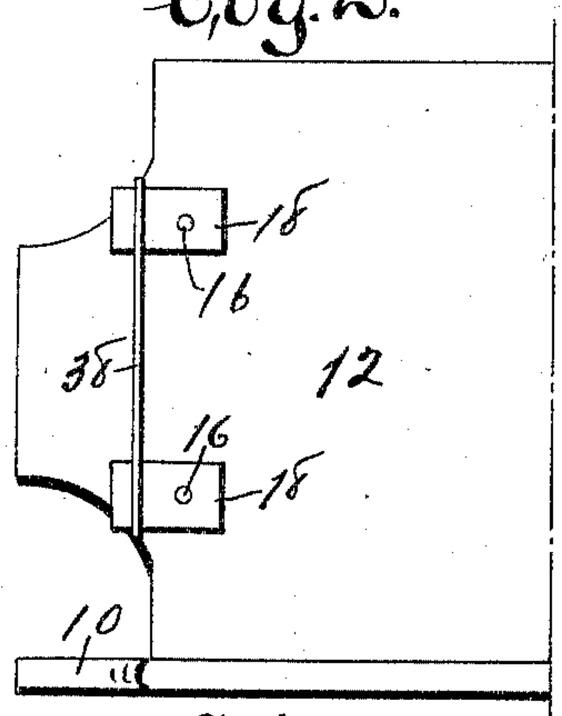


Fig. 1.

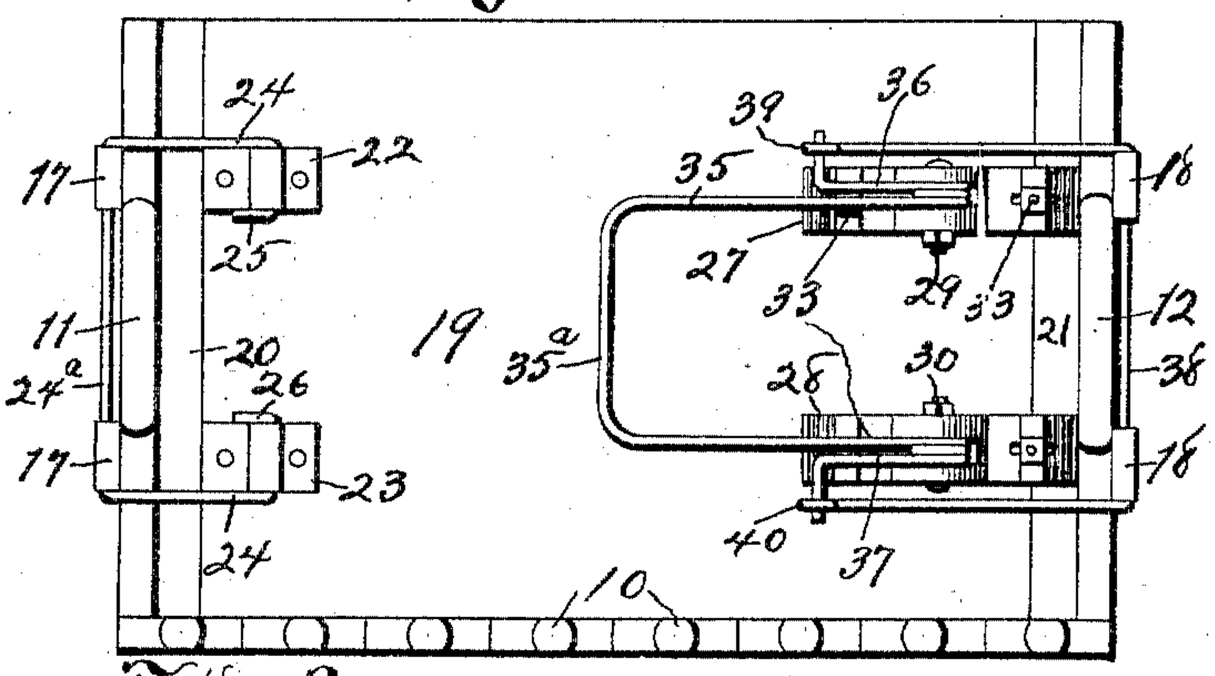


Fig. 3.

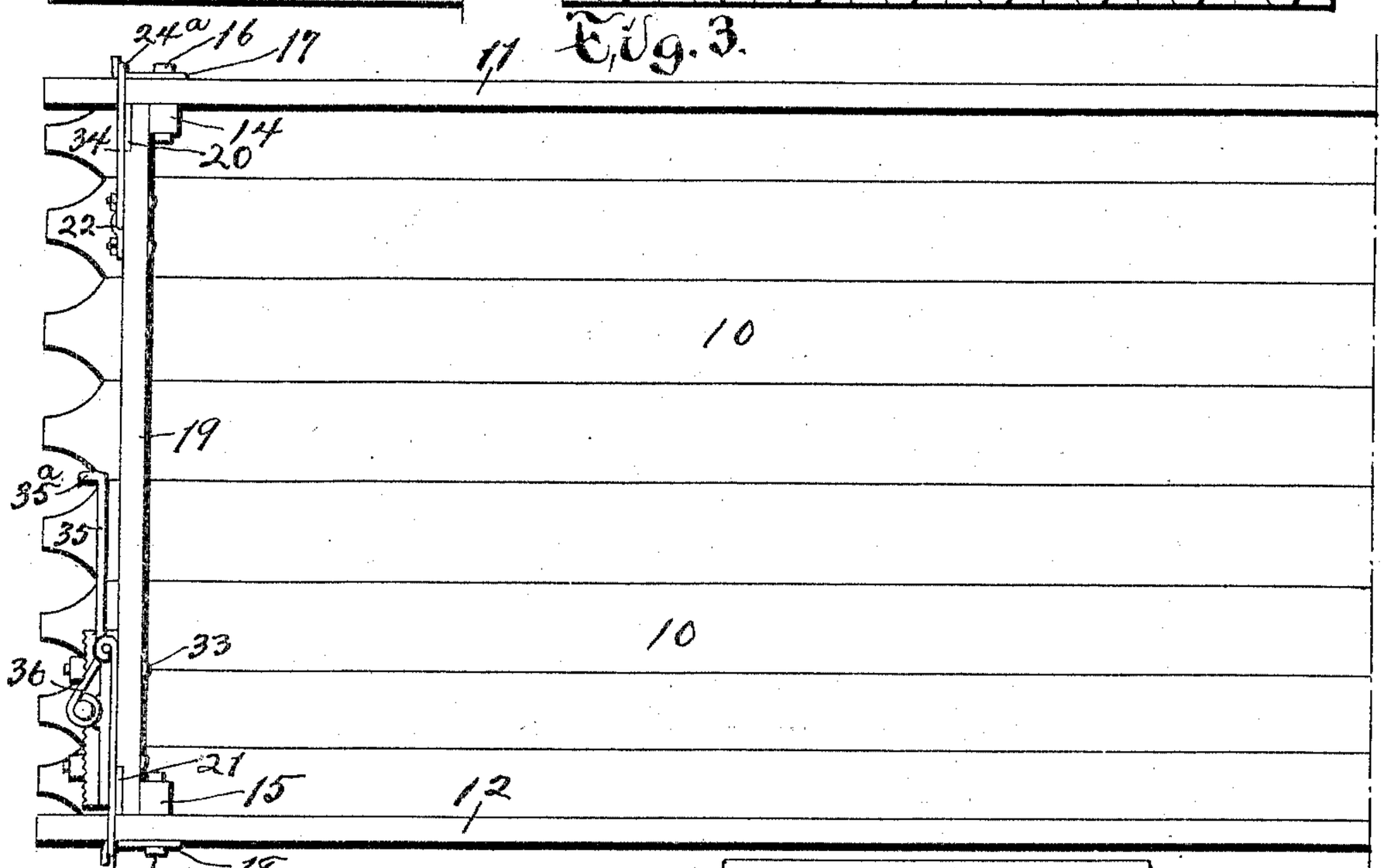


Fig. 4.

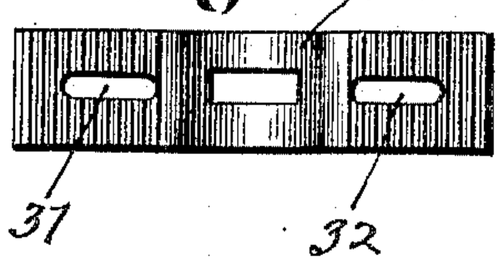


Fig. 5.

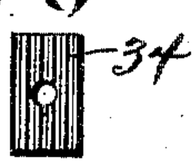
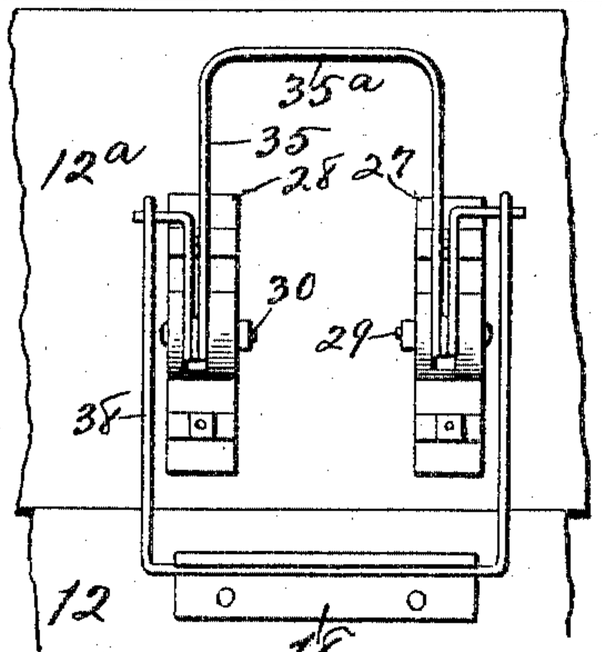


Fig. 6.



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No. 780,234. Patented January 17, 1905.

UNITED STATES PATENT OFFICE.

CHARLES C. SCHLAGLE, OF DES MOINES, IOWA.

END-GATE OR SIDE-BOARD FASTENING FOR WAGONS.

SPECIFICATION forming part of Letters Patent No. 780,234, dated January 17, 1905.

Application filed January 25, 1904. Serial No. 190,442.

To all whom it may concern:

Be it known that I, CHARLES C. SCHLAGLE, a citizen of the United States of America, and a resident of Des Moines, Polk county, Iowa, have invented a new and useful End-Gate or Side-Board Fastening for Wagons, of which the following is a specification.

The object of this invention is to provide improved means for mounting an end-gate on a wagon-box or for mounting auxiliary side-boards on a wagon-box.

A further object of this invention is to provide improved means for connecting the side-boards of a wagon-box made of separable "boards"—such as is used ordinarily in hauling earth, sand, mortar, rubbish, and the like—whereby the end-gate may readily and conveniently be removed and replaced relative to the side-boards and serve as a connection between them.

My invention consists in the construction, arrangement, and combination of elements hereinafter set forth, pointed out in my claims, and illustrated by the accompanying drawings, in which—

Figure 1 is an end elevation of a wagon-box or set of "dump-boards," showing my improved end-gate mounted therein. Fig. 2 is a detail side elevation of one end portion of the device shown in Fig. 1. Fig. 3 is a plan of a portion of the wagon-box shown in Fig. 1, one end-gate being shown complete. Fig. 4 is a detail view of a portion of a bearing-block employed on my improved end-gate, and Fig. 5 is a detail view of another portion of said block.

In the construction of the device as shown the numeral 10 designates the bottom boards, and 11 12 the side-boards, of a wagon-box, such as is commonly employed in hauling earth, sand, gravel, mortar, rubbish, and the like. The bottom boards are arranged parallel with each other and formed with tapering or attenuated end portions to serve as handles, whereby said boards may be removed and replaced relative to a wagon or supporting-truck. The side-boards 11 12 are arranged edgewise on the marginal bottom boards and are formed with attenuated or reduced end portions serving as handles, whereby said side-boards may be readily and conveniently removed and replaced. Cleats 14 15 are mounted transversely of the inner faces of the side-boards 11 12, near the end portions thereof, and are secured to said side-boards by bolts 16. The bolts 16 also secure hooks 17 18 in pairs to the side-boards and cleats—the hooks 17 on the outer surface of the side-board 11 and the hooks 18 on the outer surface of the side-board 12. The hooks 17 18 have their outwardly-turned end portions nearer the extremity of the side-board on which they are mounted and a little to the rear of the transverse plane of the cleats 14 15.

An end-gate 19, preferably made of a single piece of lumber, is provided and is of a size to fill the space between the inner surfaces of the side-boards 11 12 and extend from the upper surface of the bottom boards 10 to the upper margins of the side-boards. Wear-plates 20 21 are mounted on or countersunk in the rear face of the end-gate 19, near the ends thereof. Bearing-blocks 22 23 are mounted on the rear face of the left end portion of the end-gate 19 and are apertured in vertical alinement with each other. A yoke 24 is provided and preferably is formed of a single length of round bar metal bent into approximately U shape. The yoke 24 is formed with end portions journaled in the bearing-blocks 22 23. The yoke 24 preferably embraces the bearing-blocks 22 23, and the extremities thereof are bent laterally parallel to and in vertical alinement with the arms thereof between and in contact with the inner faces of the bearing-blocks, thus forming fingers 25 26 for engagement with the outer surface of the end-gate. The loop or closed portion 24^a of the yoke 24 embraces the reduced end portion of the side-board 11 and engages the hooks 17. The hooks 17 not only retain the yoke 24 against movement outwardly and around the end portion of the side-board 11, but also serve as wear-plates and prevent said yoke cutting the wooden side-board.

Bearing-blocks 27 28 are mounted on the rear face of the right end portion of the end-gate 19,

and bolts 29 30 are mounted in alining vertical apertures in said blocks. Each of the bearing-blocks 27 28 is formed of two members, the base and cap plate, and is slotted at 31 32 for the reception of bolts 33, which bolts pass through the end-gate and are secured by nuts on their outer ends. Interposed between the nuts on the extremities of the bolts 33 and the outer surface of the cap-plate of each bearing-block is a washer 34. The outer surface of each cap-plate is serrated transversely, and the inner surface of each washer 34 is serrated for engagement therewith. Thus is provision made for adjusting the bearing-blocks longitudinally, the contact of the serrated faces established and maintained by the nuts on the bolts 33 effectively securing each block in any adjusted position. A lever-yoke 35 is provided and is formed with coils in its end portions, which coils are pivoted on the outer portions of the bolts 29 30. Crank-arms 36 37 extend from the coils of the lever-yoke 35 approximately parallel with the arms of said lever-yoke and are outturned at their extremities in opposite directions. The central portion 35^a of the lever-yoke is offset and extended outward relative to the rear face of the end-gate 19.

A yoke 38 is provided and is preferably made of a single length of round bar metal bent into U shape. The loop or closed portion of the yoke 38 embraces and bears upon the hooks 18 on the side-board 12, and the arms of said yoke embrace the reduced end portion of said side-board. The extremities of the arms of the yoke 38 are formed into eyes 39 40, which eyes loosely embrace the outturned end portions of the crank-arms 36 37 on the lever-yoke.

It will be observed that the axis of the bolts 29 30 is laterally removed a considerable distance from the rear surface of the end-gate 19. Such arrangement provides for the inward movement of the crank-arms 36 37 to a plane between the axis of the bolts 29 30 and the rear surface of the end-gate 19. The distance between the crank-arms 36 37 and the bearing-points of the hooks 18 preferably is slightly greater than the operative length of the arms of the yoke 38, and such difference is compensated for by the resilience of the coils on the lever-yoke 35. Thus when the end-gate is mounted with the yoke 24 embracing the end portion of the side-board 11 and bearing on the hooks 17 the left end of the end-gate in contact with the side-board and with the cleat 14 the lever-yoke 35 may be moved manually rearward from the end-gate and be swung on the axis of the bolts 29 30 in such manner as to move the yoke 38 materially to the left and permit said yoke 38 to move forward into a position embracing the rear end portion of the side-board 12 and engage with the hooks 18 in the movement of the right end of the end-gate to a seat in contact with the cleat 15. Manual force may then be applied to the lever-yoke 35 to move the same to the left and inward toward the rear surface of the end-gate 19, and in moving to its seat in contact with or in close proximity to the end-gate 19 said lever-yoke will exert a strain or draft through the medium of its crank-arms on the yoke 38 and cause said yoke 38 to draw the side-board 12 into contact with the end of the end-gate. In such closing or locking movement of the lever-yoke 35, as is above described, the coils of the lever-yoke yield to compression to permit the passage of the eyes 39 40 inward beyond the vertical plane of the bolts 29 30, and thereafter the tension or resilience of said coils maintains a strain or draft on the yoke that in conjunction with the strain of the yoke 24 effectively combines and holds together the two side-boards and end-gate. There is a material advantage in providing for the rearward opening and removal of the end-gate relative to the dumping-boards as contradistinguished to a straight vertical movement of the end-gate in slide-bearings on the dump-boards, since the pressure of the earth or other contents of the wagon, accentuated by the jolting and jarring applied thereto in transportation, frequently is so great as to make it very difficult to remove the end-gate and initiate the operation of dumping the load. Furthermore, in combining the rearwardly-opening and removable end-gate with the side-boards through the medium of yokes embracing the ends of the side-boards provision is made for drawing the side-boards toward each other and relieving the strain of the expansion of the load from the bolsters or standards of the wagon-truck.

Through the use of the bearing-blocks serrated on their outer surfaces and mounted, as described, within the binding engagement of serrated washers said bearing-blocks may be adjusted longitudinally to compensate for any permanent contraction of the coils of the lever-yoke or any wear and strain on the side-boards and hooks 17 18.

The same device may be applied to the side-boards of an ordinary wagon by cutting notches or slots in the extremities of the side-boards for the admission of the yokes 24 35.

This device may be applied to either end of a wagon or may be employed to connect auxiliary side-boards by arranging the connecting device at right angles to the position described, as shown in Fig. 6. When employed for connecting auxiliary side-boards to the main side-boards of a wagon-box, the yoke 24 and the bearing-blocks 22 23 would be dispensed with.

I claim as my invention—

1. The combination of side-boards, an end-gate extending from one side-board to the

other, an embracing-yoke pivoted on said end-gate and embracing one side-board, a lever-yoke pivoted on said end-gate, and a second embracing-yoke pivoted on the lever-yoke and embracing the other side-board.

2. The combination of an end-gate, bearing-blocks mounted thereon, an embracing-yoke mounted in a pair of said bearing-blocks, a lever-yoke mounted pivotally on another pair of said bearing-blocks and formed with crank-arms, and also formed with coils connecting the crank-arms to the lever-yoke, and an embracing-yoke pivotally connected to the crank-arms of the lever-yoke and arranged to embrace a side-board.

3. In an end-gate fastening, the combination of an end-gate, an embracing-yoke, a lever-yoke pivoted for oscillation through an arc greater than one-half a circle and provided with crank-arms arranged for oscillation through an arc synchronous with the oscillation of the lever-yoke, and eyes on the embracing-yoke pivotally mounted on the said crank-arms.

4. In an end-gate fastening, bearing-blocks formed with longitudinal slots and serrated in their outer faces, an end-gate, bolts mounted through the end-gate and extending through the slots in the bearing-blocks, serrated washers on said bolts in contact with the serrated surfaces of the bearing-blocks, and nuts on the extremities of said bolts and arranged to bind the washers to the bearing-blocks.

5. In a device of the class described, side-boards, cleats on the side-boards, hooks on the side-boards opposite the cleats, bolts conjunctively securing the hooks and cleats to the side-boards, an end-gate, and yokes on the end-gate embracing the side-boards and engaging said hooks, the end portions of the end-gate in contact with said cleats.

Signed by me at Des Moines, Iowa, this 31st day of December, 1903.

CHARLES C. SCHLAGLE.

Witnesses:
S. C. SWEET,
W. E. ELLIS.