(No Model.)

C. E. DURYEA.

SHOVELING BOARD FOR WAGONS.

No. 343,517. Patented June 8, 1886.

Fig. I.

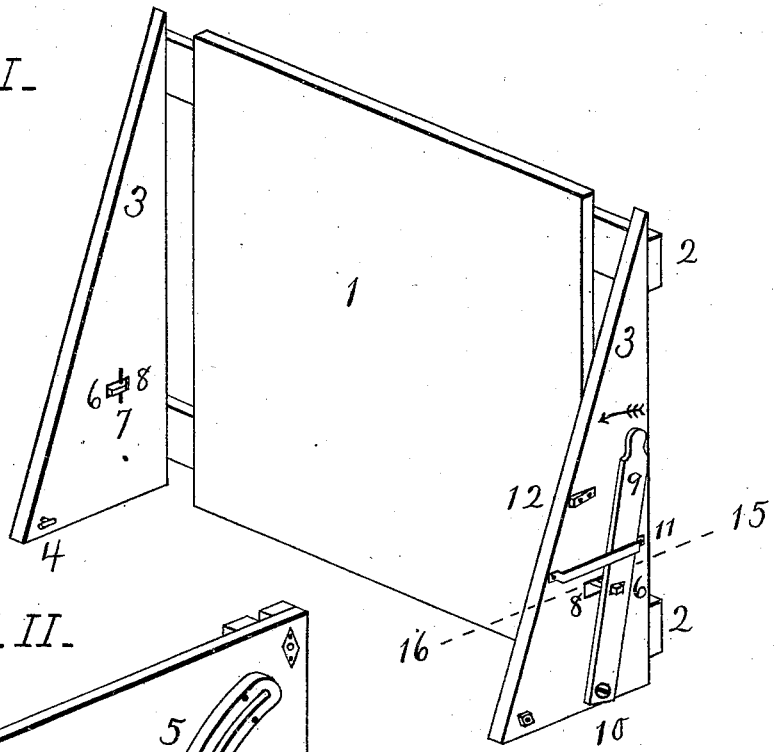

Fig. II.

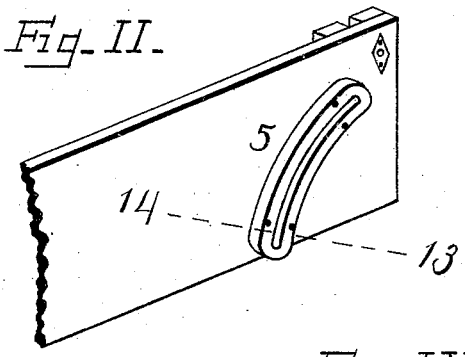

Fig. IV.

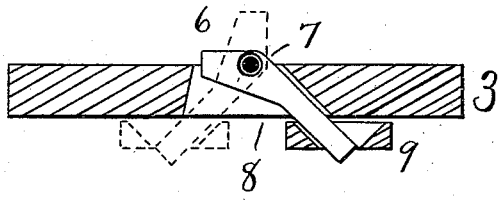

Fig. III.

Attest.
A. B. Upham.
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UNITED STATES PATENT OFFICE.

CHARLES E. DURYEA, OF PEORIA, ILLINOIS, ASSIGNOR OF ONE-FOURTH TO HENRY S. APPLE, OF SAME PLACE.

SHOVELING-BOARD FOR WAGONS.

SPECIFICATION forming part of Letters Patent No. 343,517, dated June 8, 1886.

Application filed January 23, 1886. Serial No. 189,502. (No model.)

To all whom it may concern:

Be it known that I, CHARLES E. DURYEA, a citizen of the United States, residing at Peoria, in the county of Peoria and State of Illinois, have invented certain new and useful Improvements in Shoveling-Boards, of which the following is a specification.

My invention relates to that class of end-gates for wagons which are so constructed that, when desired, they can be placed in a position suitable for using a scoop-shovel with ease.

The objects of my invention are, first, to avoid the disadvantages of hinges while retaining all their advantages; second, to render the application and removal of the board quick and easy, and without injury to the wagon, and, third, to render its mode of action swift and easy. These objects are attained by the mechanism shown in the accompanying drawings, in which—

Figure I represents the board detached from the wagon. Fig. II represents one side of the wagon-box, with an arcuate slot attached thereto. Fig. III is a cross section of said slot on the line 13 14; and Fig. IV is an enlarged cross-section of the side piece 3 on the line 15 16, showing the fastening device.

Similar numbers refer to similar parts throughout the several views; and the mechanism on one side piece of the board is identical with that on the other side piece, excepting such differences as are incidental to their adaptation to opposite sides. The floor 1, the cross-bars 2 2, and side pieces, 3 3, form the body of the board, and are substantially the same as are used in other boards. The side pieces, however, support the working mechanism, and for this purpose are wider than usual. The floor 1 rests directly upon the floor of the wagon-box, and instead of hinges at their junction I employ pins fixed one in each side piece of the board for the purpose of moving in slots provided one in or on each side of the wagon-box, said slots being described by arcs of circles whose centers coincide with the line of said junction. When thus arranged, any movement of the board upon said line of junction as a center produces a corresponding motion of the pins in the slots. Said slots may be formed in the sides of the wagon-box by cutting out the material thereof; but it is preferable to form them in iron or other strong material, and attach where desired by means of bolts, screws, or nails, as shown at 5 in Fig. II. Such attachment limits the length of the pin, which in turn necessitates the use of a head thereon, to prevent accidental displacement from the slot. To permit free motion of said head the slot is specially formed, and has a cross-section, substantially as shown in Fig. III. Said slots are formed with closed ends, so placed that when the board is upright the pins engage one end of the slots and prevent further forward motion, and when the board is down at the angle desired the pins engage the opposite ends of the slots, and thus prevent further downward motion.

To render the board easily removable from the wagon, the heads of the pins are made with one diameter shorter than the width of the slots, and placed with this diameter lengthwise the slot, as shown at 4 in Fig. I. By lifting the board upward and backward, allowing its upper end to tilt forward till said shorter diameter is crosswise the slot, and then springing the side pieces apart, the pins are removed from the slots. Thus the board may be removed from or attached to the wagon in an instant, and without the use of wrenches or other tools.

In addition to the above-described pins and slots, which are designed to control and limit the motions of the board, fastenings are necessary, by means of which the board may be firmly held in an upright position till desired otherwise. Any one of a number of contrivances may be used to effect this, but the device shown is preferred, and consists of a compound lever with guard and detent fixed upon each side piece of the board. Each compound lever is composed of two simple levers, 6 9. Figs. I and IV. The simple lever 6 is pivoted upon the staple 7 as a fulcrum, which staple is fixed firmly to the inner side of the side piece 3 in such a manner that the lever 6 projects through and is guided by the aperture 8. This aperture is sufficiently long to permit the lever 6 to be moved through a

quadrant. The lever 9 is pivoted at 10, and provided about midway of its length with an aperture, into which is inserted the long arm of the lever 6, as shown in Figs. I and IV. A guard, 11, is placed over lever 9 to limit its motion, and to hold it against the side piece 3 so that the lever 6 may not be disengaged or the pivot 10 injured. The lever 9 is shown in the position occupied when the short end of the lever 6 is sheathed. If 9 be moved, as indicated by the arrow in Fig. I, it will slide over the detent 12 and be stopped by the end of the guard 11, and lever 6 will occupy the position indicated by the broken lines in Fig. IV. If this movement be performed when the board is attached and upright on the wagon, the short end of lever 6 will engage the upper rearward end of slot 5 and hold the board against backward or upward movement. The detent 12 retains the levers in this position till they are released by springing the upper end of lever 9 outward till it clears the detent, and then moving it backward. As or before it reaches the rear end of guard 11 it sheaths the short end of lever 6, and the board having no further hinderance partakes of the motion of lever 9 and drops backward and downward till stopped by the pins engaging in the upper ends of the slots. Thus one motion both loosens the board and brings it down, ready for use, and the fastening is such that a large load in the wagon does not render it difficult to unfasten. Moreover, it may be unfastened with equal ease, whether the operator be in the wagon or on the ground.

Having thus described my invention, and being aware of the patent granted to Fry, February 10, 1880, No. 224,417, I do not broadly claim the use of slots and pins in connection with a shoveling-board; but

What I claim is—

1. The combination, with a wagon-box, of an arcuate slot fixed in or upon each side thereof, and a shoveling-board without hinges having a pin fixed in each side piece thereof, which pins are so arranged that their motion in the slots controls and limits the motion of the board upon the wagon, as herein described.

2. The combination, with a wagon-box having an arcuate slot provided upon each side thereof, of a shoveling-board without hinges having a pin fixed in each side piece thereof, and a fastening attached thereto for the purpose of maintaining the board in an upright position, substantially as described.

3. The combination, with a wagon-box having an arcuate slot with closed ends on each side thereof, and a shoveling-board having a pin fixed in each side piece thereof, of a compound-lever fastening provided with guard and detent, all substantially as described, and for the purpose set forth.

4. In the combination of a wagon-box and a shoveling-board without hinges having a pin in each side piece thereof for the purpose of moving in a slot attached to each side of the wagon-box, an arcuate slot formed of metal or other strong material, provided with eyes or other means for attaching to the wagon-box, and so shaped that when the above-mentioned pin is inserted in the slot the head of said pin may have room to move freely in a direction lengthwise the slot, substantially as described.

5. In the combination of a wagon-box and a shoveling-board without hinges, said wagon-box being provided with an arcuate slot in or upon each side thereof for the purpose of receiving a pin fixed in each side piece of said board, a pin provided with a head of which one diameter is shorter than the width of the slot, substantially as described, and for the purpose specified.

CHARLES E. DURYEA.

Witnesses:

R. W. KEMPSHALL,

W. I. SLEMMONS.