

No. 688,410.

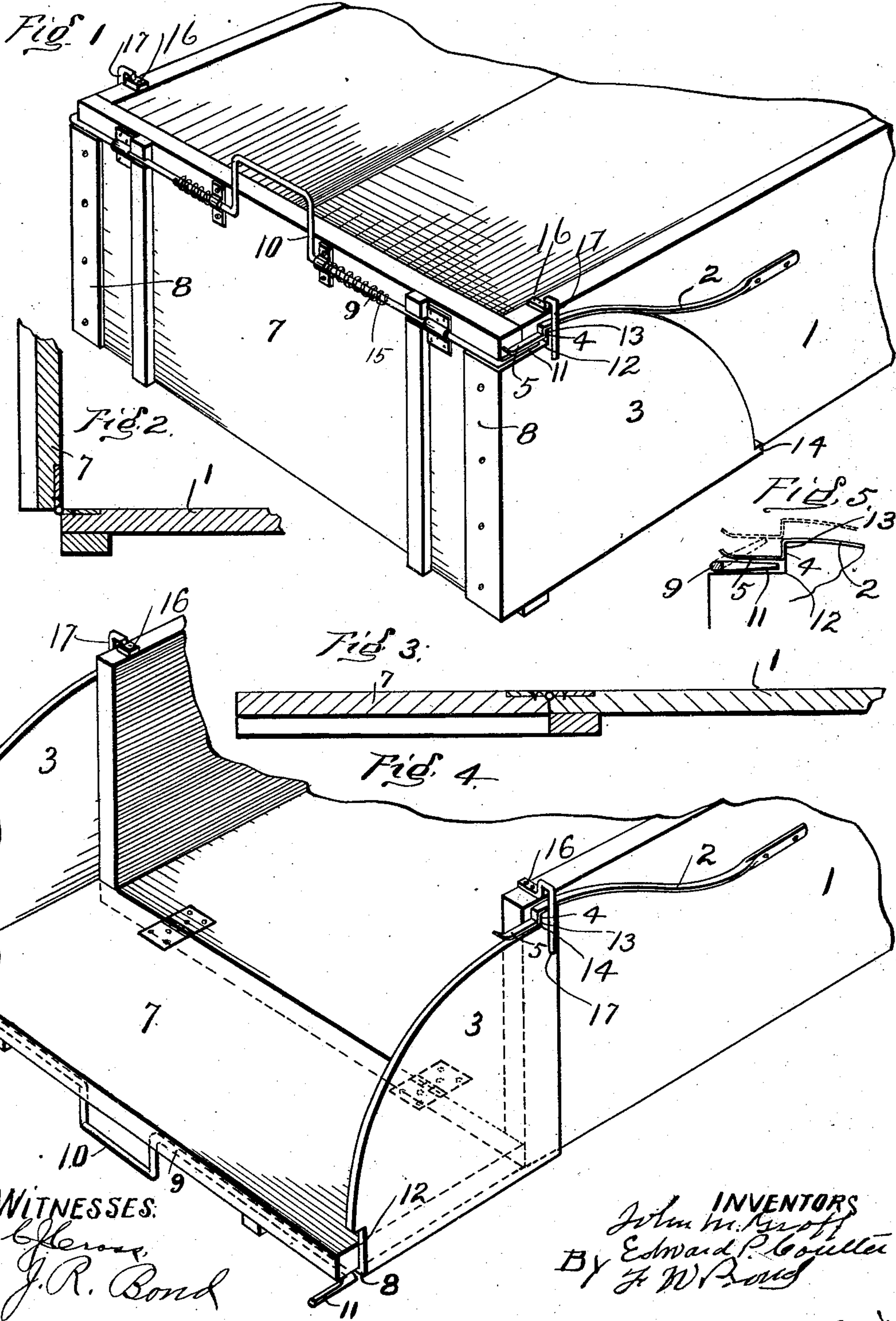
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J. M. GROFF & E. P. COULTER.

END GATE.

(Application filed Sept. 5, 1901.)

(No Model.)



WITNESSES:

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Att'y.



# UNITED STATES PATENT OFFICE.

JOHN M. GROFF AND EDWARD P. COULTER, OF NORTH LAWRENCE, OHIO.

## END-GATE.

SPECIFICATION forming part of Letters Patent No. 688,410, dated December 10, 1901.

Application filed September 5, 1901. Serial No. 74,385. (No model.)

*To all whom it may concern:*

Be it known that we, JOHN M. GROFF and EDWARD P. COULTER, citizens of the United States, residing at North Lawrence, in the county of Stark and State of Ohio, have invented certain new and useful Improvements in End-Gates; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, and to the figures of reference marked thereon, in which—

Figure 1 is a perspective view showing the end-gate closed. Fig. 2 is a sectional view showing portions of the end-gate and the bottom of the box. Fig. 3 is a sectional view showing the end-gate opened. Fig. 4 is a perspective view showing the end-gate opened. Fig. 5 is a view showing a portion of one of the springs, also one of the spring-riveting arms and a portion of one of the segmental ends of the end-gate.

The present invention has relation to end-gates especially designed for a combined end-gate and shoveling-board; and it consists in the novel construction hereinafter described, and particularly pointed out in the claims.

Similar numerals of reference indicate corresponding parts in all the figures of the drawings.

In the accompanying drawings, 1 represents an ordinary wagon-box, to the sides of which are connected the springs 2, which springs extend rearward and have their rear ends curved to correspond substantially with the curvature of the segmental ends 3. The springs 2 at the rear ends of their curved portions are provided with the stop-shoulders 4, which stop-shoulders are formed by bending the springs 2 downward and then rearward, so as to form the rearward-extending portions 5, the extreme rear ends of said extension portions 5 being curved upward for the purpose hereinafter described. To the bottom of the vehicle-box 1 is hinged the end-gate proper, 7, said end-gate being provided at its ends with the segmental end members 3, which move with the end-gate 7 when said end-gate is turned upon its hinges.

For the purpose of preventing the side members of the vehicle-box from springing

apart the segmental ends 3 are each provided with the right-angled portions 8, which right-angled portions are located upon the rear face of the end-gate 7 and are securely connected to said end-gate by suitable rivets or their equivalents.

It will be understood that in practice the segmental ends 3 should be formed of metal, so as to give the desired amount of strength and at the same time producing rigid connection between the segmental ends and the end-gate 7.

To the end-gate 7 is properly journaled the rock-bar 9, which rock-bar is provided with the operating-handle 10 and the spring-actuated arms 11, said spring-actuated arms being so located that they will come directly under the portions 5 of the springs 2 when the end-gate is closed, as illustrated in Fig. 1.

For the purpose of providing room for the arms 11 when they are brought under the portions 5 the segmental ends 3 are each provided with the cut-out portions 12, by which arrangement shoulders 13 are formed, which shoulders provide a means for locking the end-gate in a closed position by means of the stop shoulders or flanges 4, formed in the springs 2.

It will be understood that the cut-out portions 12 should be formed of sufficient depth to allow room for the arms 11 without lifting the springs 2 out of engagement with the shoulders 13 except when the rock-bar 9 is turned so as to elevate the free ends of the arms 11 and lift the springs 2 out of engagement, so as to allow the end-gate proper to be turned downward upon its hinges, as illustrated in Fig. 4.

For the purpose of holding the end-gate in proper horizontal position and on a plane with the bottom of the box the segmental ends 3 are provided with the lugs 14, which lugs strike against the stop-shoulders 4 when the end-gate is brought into the position illustrated in Fig. 4. It will be understood that by providing the curved portions of the springs 2 the lugs 14 will ride under said curved portions and lift the springs upward, but not allow the lugs 14 to pass the stop-shoulders 4.

In use when it is desired to close the end-gate after it has been opened the lock-bar is



brought into the position illustrated in Fig. 1 and the arms 11 passed into the cut-out portions 12 and under the extensions 5, and for the purpose of properly guiding the arms 11 under the portions 5 the rear ends are curved upward, as illustrated in the drawings.

It will be understood that when it is desired to lower the end-gate the handle 10 is moved downward, which in turn lifts the arms 11 and moves the spring 2 upward and disengages the same from the segmental ends 3.

For the purpose of automatically bringing the rock-bar 9 into such a position that the arms 11 will come under the extensions 5 the springs 15 are provided, one end of each spring being fixed to the rock-bar and the opposite end to some fixed object, such as the boxes 16 or their equivalent.

For the purpose of preventing the sides of the vehicle-box 1 from springing inward the flanges 16 are provided, which flanges are secured to the sides of the vehicle-box and are provided with the downward-extending arms 17, which downward-extending arms come upon the outside of the segmental ends 3. It will be understood that the segmental ends 3 should be formed of such thickness that they will not bend or spring, and as the outside of the segmental ends the side members of the wagon-box will be prevented from springing in.

Having fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The combination of a wagon-box having hinged thereto an end-gate, segmental ends secured to the end-gate, said segmental ends provided with right-angled flanges located upon the rear face of the end-gate, springs provided with stop-shoulders and extensions ex-

tended rearward of the stop-shoulders, rock-bar provided with an operating-handle, and arms located at the ends of the rock-bar, cut-out portions formed in the segmental ends adapted to receive the arms of the rock-bar and the rearward extensions of the springs and lugs located upon the segmental ends and adapted to hold the end-gate in a horizontal position, substantially as and for the purpose specified.

2. The combination of a wagon-box having hinged thereto an end-gate, segmental ends secured to the end-gate said segmental ends provided with right-angled flanges located upon the rear face of the end-gate, springs secured to the sides of the wagon-box and provided with stop-shoulders, lugs formed upon the segmental ends adapted to strike the stop-shoulders of the springs, a spring-actuated rock-bar provided with a handle and arm all arranged, substantially as and for the purpose specified.

3. The combination of a wagon-box having hinged thereto an end-gate, the sides of the wagon-box provided with flanges having downward-extending arms, segmental ends secured to the end-gate, a spring-actuated rock-bar provided with arms at its ends and springs provided with stop-shoulders to engage the lugs located upon the segmental ends and the shoulders of the segmental ends, substantially as and for the purpose specified.

In testimony that we claim the above we have hereunto subscribed our names in the presence of two witnesses.

JOHN M. GROFF.

EDWARD P. COULTER.

Witnesses:

MAGGIE CARMICHAEL,  
ALLIE POLLOCK.