

No. 848,240.

PATENTED MAR. 26, 1907.

J. M. GROFF.
END GATE.

APPLICATION FILED APR. 13, 1906.

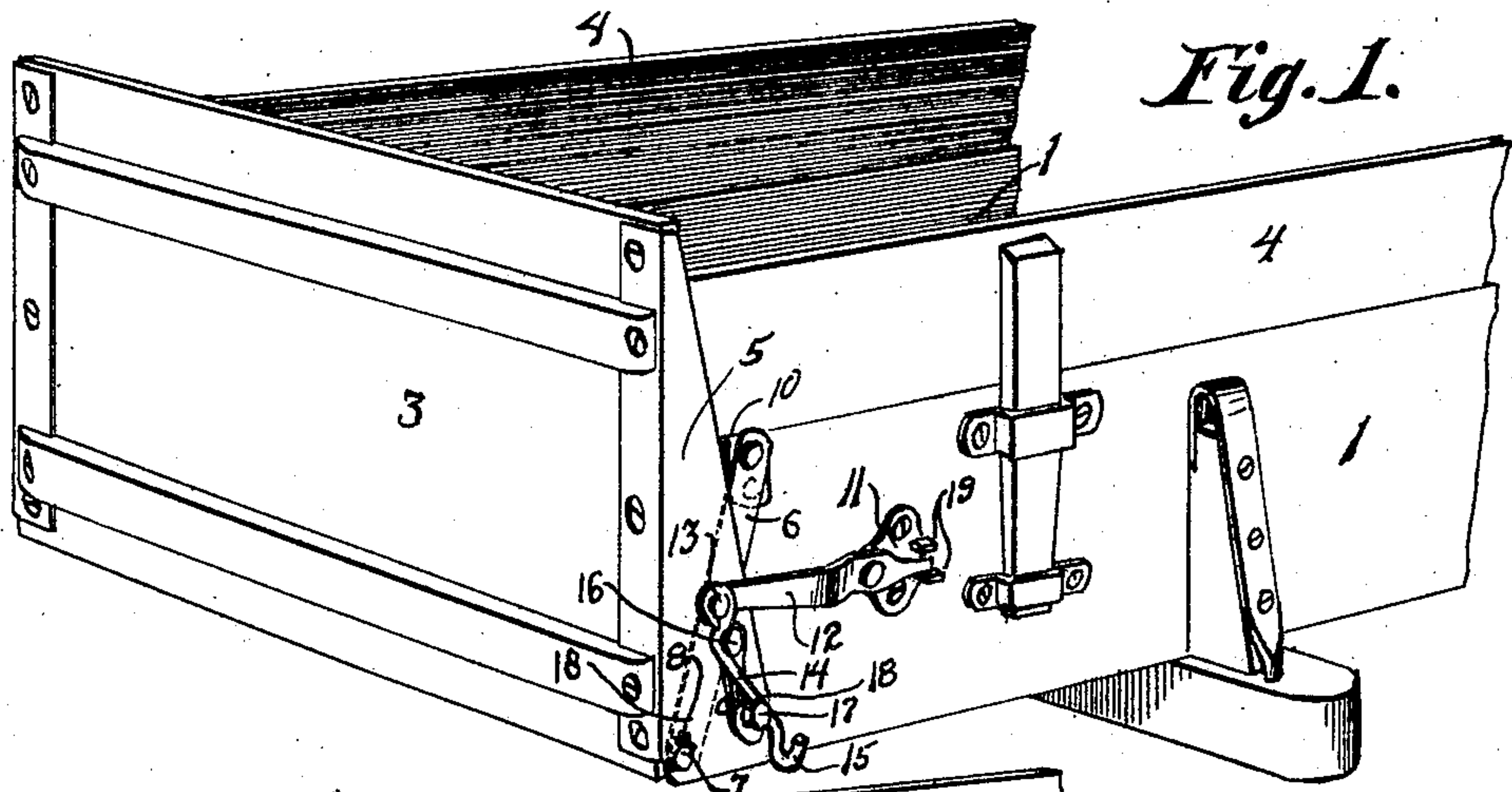


Fig. 1.

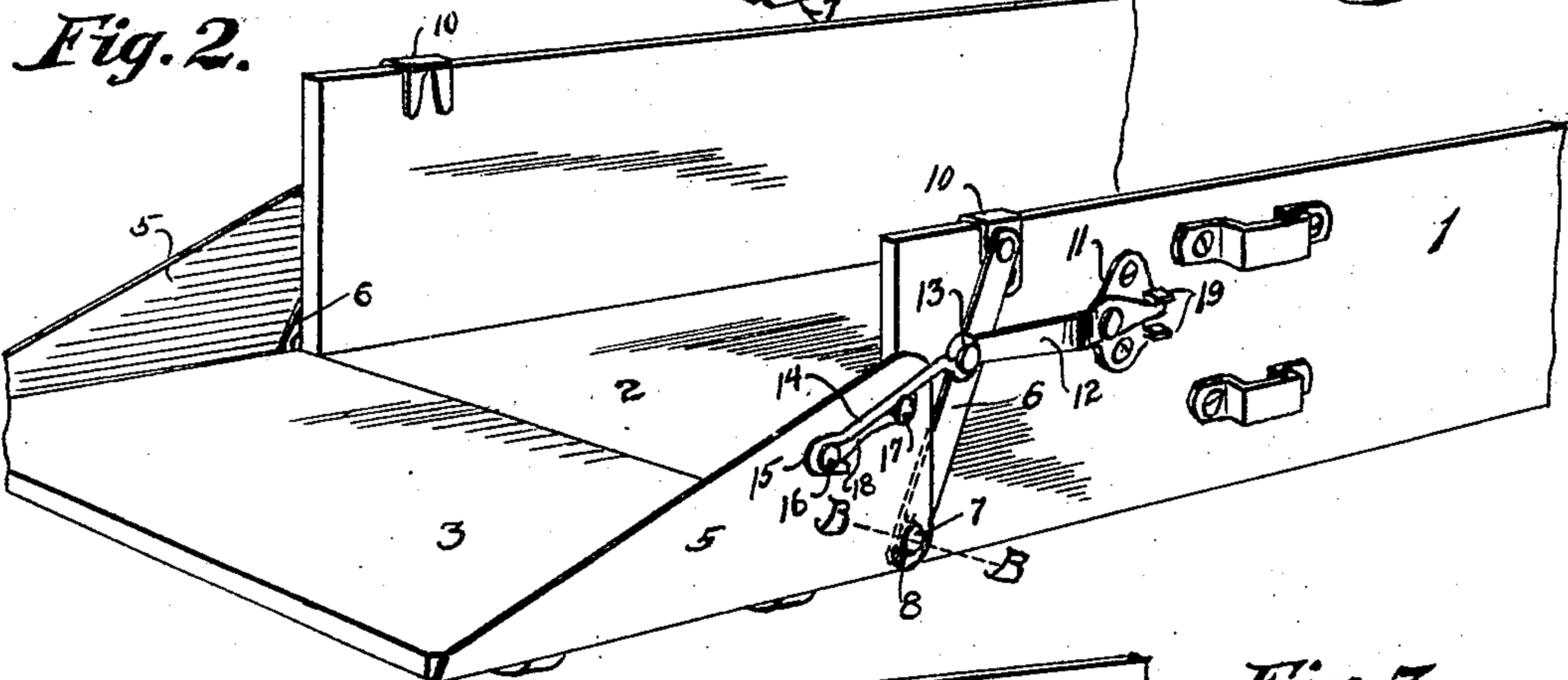


Fig. 2.

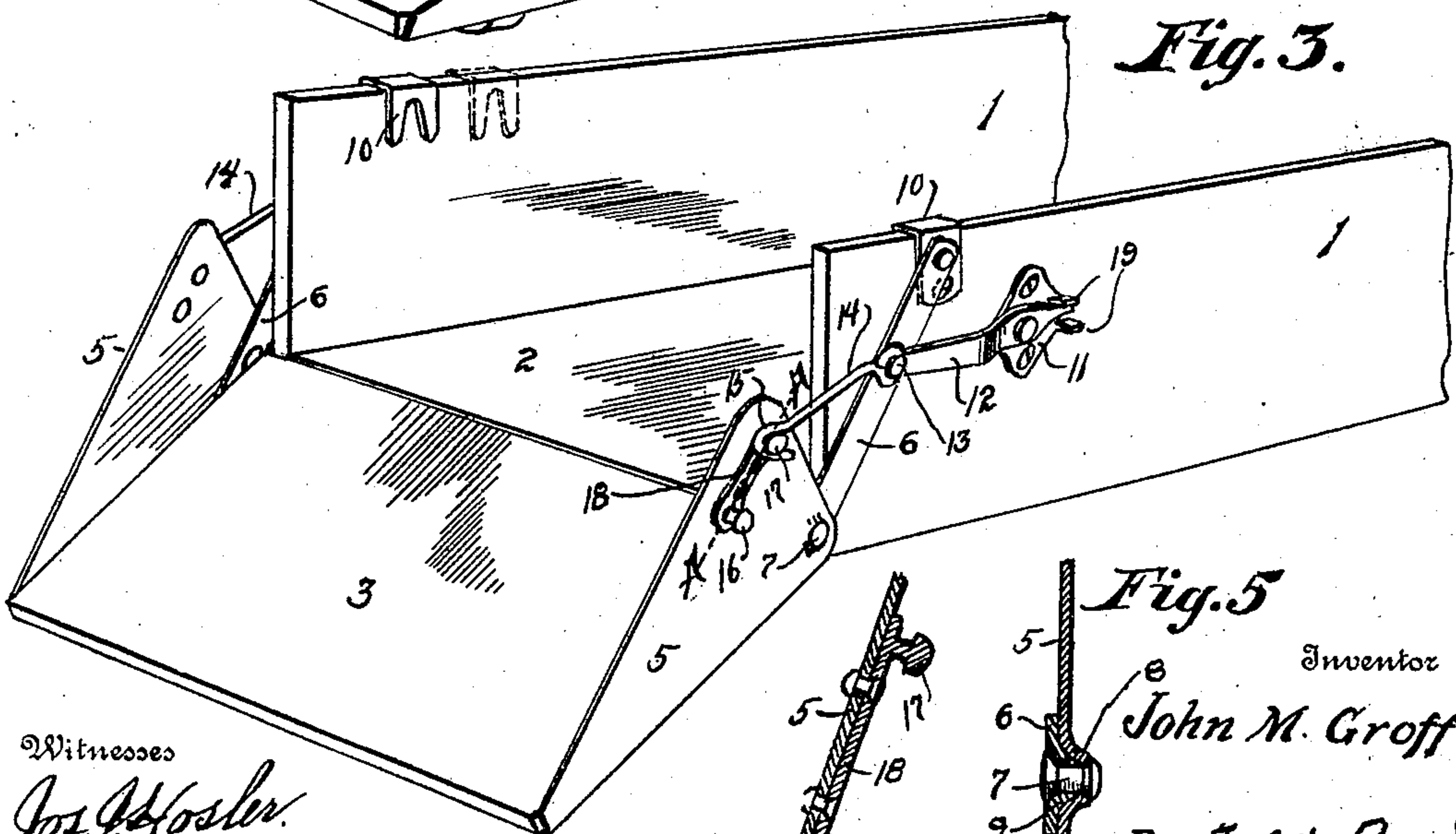


Fig. 3.

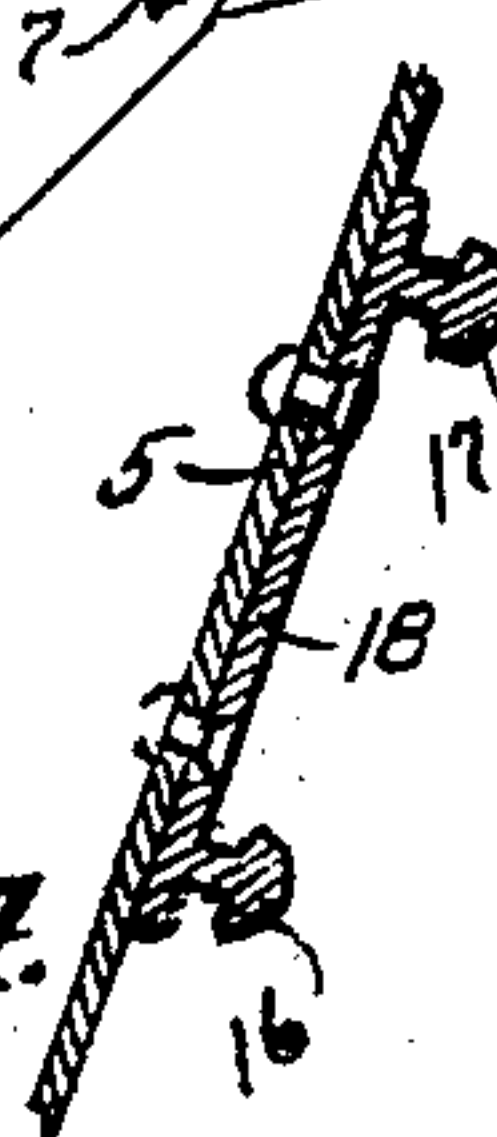


Fig. 4.

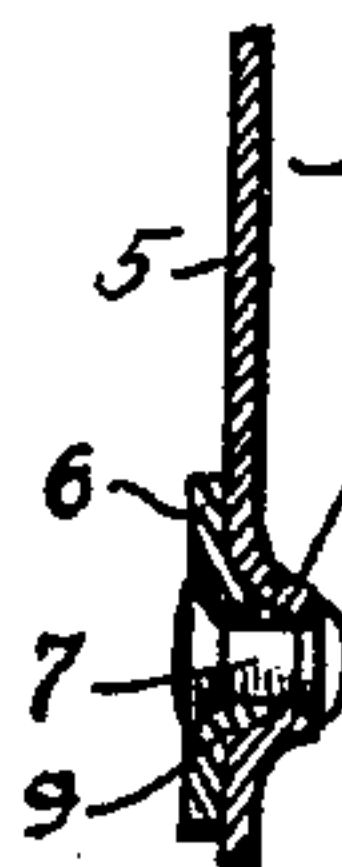


Fig. 5.

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END-GATE.

No. 848,240.

Specification of Letters Patent.

Patented March 26, 1907.

Application filed April 13, 1906. Serial No. 311,443.

To all whom it may concern:

Be it known that I, JOHN M. GROFF, a citizen 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 I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawing, making a part of this specification, and to the numerals and figures of reference marked thereon, in which—

Figure 1 is a perspective view showing a portion of the rear end of a wagon-box, illustrating the removable side-boards located thereon and showing the end-gate closed. Fig. 2 is a perspective view showing a portion of the rear end of a wagon-box and illustrating the end-gate placed in a horizontal plane with the bottom of the box. Fig. 3 is a similar view, except the end-gate is placed in position to form a chute or skid. Fig. 4 is a section on line A A, Fig. 3. Fig. 5 is a section on line B B, Fig. 2.

The present invention has relation to wagon end-gates; 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 drawing.

In the accompanying drawing, 1 represents the fixed or permanent side-boards of a wagon-box, and 2 the bottom of the box proper, which parts are connected together in the ordinary manner and form no particular part of the present invention, except that a box must necessarily be used in carrying out the purpose of the invention. The end-gate 3 is substantially of the form shown and is formed of such a height that when brought into a vertical position it will extend above or to the top edges of the removable side-boards 4. The end-gate 3 is provided with the side plates 5, located at the end of the end-gate 3 and connected thereto in any convenient and well-known manner. The side plates 5 are so located that when the end-gate 3 is brought into the position illustrated in Fig. 1 they will come upon the outer sides of the wagon-box sides 1 and 4 and assist in holding the wagon-box sides in proper relative position. To the side plates 5 are pivotally connected the bottom or lower ends of the straps 6 by means of the rivets 7 or their equivalents.

For the purpose of removing the strain from the rivets 7 the side plates 5 are provided with the sockets 8, and in which sockets are located the corresponding-shaped flanges 9, formed upon the bottom or lower ends of the straps 6, by which arrangement the relative movement is between the inner faces of the sockets 8 and the outer faces of the flanges 9, this feature being best illustrated in Fig. 5. Upon the top or upper edges of the side-boards 1 are connected the metal strap connecting-plates 10, to which plates are pivotally attached the top or upper ends of the straps 6, thereby forming a linked hinge connection between the end-gate 3 and the wagon-box proper. It is of importance that the hinge connection as between the wagon-box proper and the end-gate 3 be such that when the end-gate be brought to a horizontal plane with reference to the bottom 2 of the wagon-box that the top faces of the wagon-box and end-gate be in substantially the same horizontal plane, and in order that this result may be accomplished without changing the lengths of the straps 6 the connecting-plates 10 are attached to the tops of the side-boards of the wagon-box and the strap connections to the plate formed independent of the connection of the plates to the wagon-box proper, by which arrangement the connecting-plates can be set to or from the rear ends of the side-boards 1, and when brought into the proper adjustment with reference to the straps 6 they are fixedly connected to the wagon-box or side-boards thereof.

It is well understood that the height of the side-boards of wagon-boxes varies to considerable extent; but by providing a means for independently connecting the straps to the plates said plates can be adjusted so as to bring the hinge connection of the end-gate at the proper point, so that when said end-gate is turned into a horizontal position the top faces of the end-gate and bottom of the wagon-box will be in substantially the same horizontal plane. To the outer faces of the side-boards 1 are attached the metal plates 11, which metal plates are located a short distance from the rear ends of the side-boards 1, as illustrated in the drawing. To the metal plates 11 are pivotally attached the bars 12, which bars extend rearward and forward from their pivotal points and the rear ends provided with the studs or buttons 13, to which studs or buttons are pivotally attached the rods 14, the outer ends of which

are provided with the hooks 15, which hooks are for the purpose hereinafter described. The side plates 5 of the end-gate 3 are provided with the studs or buttons 16 and 17. In the drawing I have shown these buttons located upon a short bar 18, which short bar is attached to the side plates 5; but it will be understood that the studs or buttons may be attached direct to the side plates 5 if so desired, as this is simply a question of construction rather than invention.

When it is desired to hold the end-gate in the position illustrated in Fig. 3, the rods 14 are placed in the position illustrated in Fig. 1, which position brings the rods back of the studs or buttons 17 and in front of the studs or buttons 16, and for the purpose of so placing the rods 14 they should be formed of spring material, so that the hooked ends of said rods can be sprung into engagement with the forward faces of the studs or buttons 16, and thereby lock the end-gate 3 against hinge movement.

When it is desired to release the end-gate, so that it is free to turn upon its hinge connection, the rods 14 are released, after which the end-gate is free to be turned down, and when it is desired to hold the end-gate as illustrated in Fig. 2 the hooks 15 of the rods 14 engage the studs or buttons 16, as illustrated in Fig. 2.

When it is desired to hold the end-gate in the position illustrated in Fig. 3, the hooks 15 engage the studs or buttons 17. The bars 12 are limited as to their movements upon their pivotal points by means of the lugs 19, which lugs are located above and below the forward extended portions of the arms 12. The object in providing for a limited pivotal movement of the arms 12 is to allow said arms to move upward at their rear ends when the end-gate is closed, as illustrated in Fig. 1, so as to bring the pivotal connection of the rods 14 above the studs or buttons 17, and thereby allow the rods 14 to be brought back of the studs or buttons 17, as illustrated in Fig. 1.

It will be understood that by my peculiar way of hinging the end-gate it can be brought into the various positions for various uses.

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

1. In a wagon end-gate the combination of a wagon-box, and an end-gate therefor,

straps pivotally connected at their bottom or lower ends to the end-gate, and at their top or upper ends to plates and the plates connected to the side-boards of the wagon-box independent of the connection of the straps, substantially as and for the purpose specified.

2. In an end-gate the combination of a wagon-box, and an end-gate therefor, said end-gate provided with side plates and the side plates provided upon their outer faces with studs or buttons spaced from each other, bars located upon the sides of the wagon-box, and provided with pivoted hooked rods at their free ends and the hooks of the rods adapted to engage the spaced studs or buttons and straps pivotally connected to the end-gate at their lower ends, substantially as and for the purpose specified.

3. In a wagon end-gate the combination of a wagon-box, and an end-gate therefor provided with side plates, said end-gate hinged to straps, and the straps pivotally connected at their top or upper ends in fixed relation to adjustable plates, arms pivotally connected and means for limiting their pivotal movement, said arms provided at their free ends with hooked rods and the hooked rods formed of spring material and spaced studs or buttons secured to the side plates of the end-gate, substantially as and for the purpose specified.

4. In a wagon end-gate the combination with a wagon-box, and an end-gate provided with side plates, straps connected to the side plates of the end-gate and pivoted at their upper ends to plates fixed to the side-boards of the wagon-box, said plates adapted to be adjusted to and from the ends of the side-boards of the wagon-box independent of the pivoted attachment of the straps to the plates, and means for holding the plates in fixed adjustment, pivoted arms provided with hooked rods, studs or buttons formed upon the side plates of the end-gate, said studs or buttons adapted to engage the hooked ends of the rods, substantially as and for the purpose specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

JOHN M. GROFF.

Witnesses:

J. A. JEFFERS,
SYLVIA BORON.