June 14, 1927. 1,632,747

R. E. NASH ET AL

END GATE

Filed Feb. 15, 1926

Fig. 1.

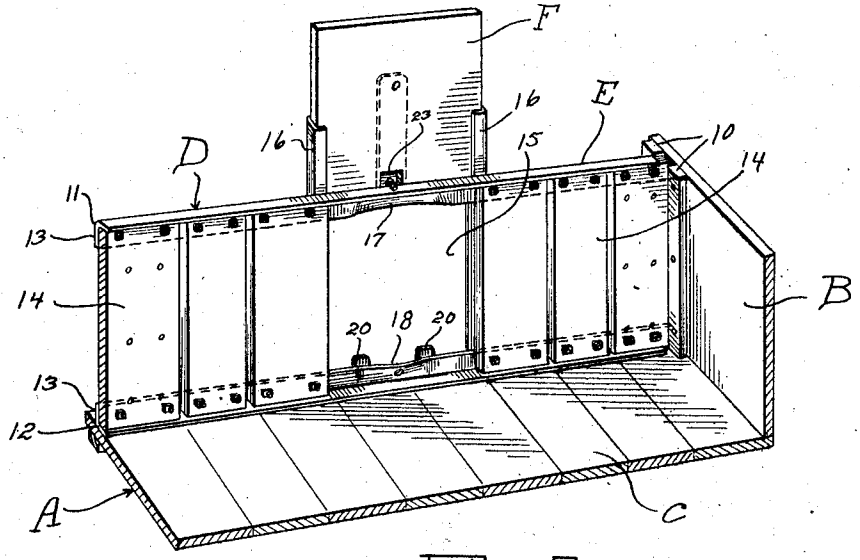


Fig. 2.

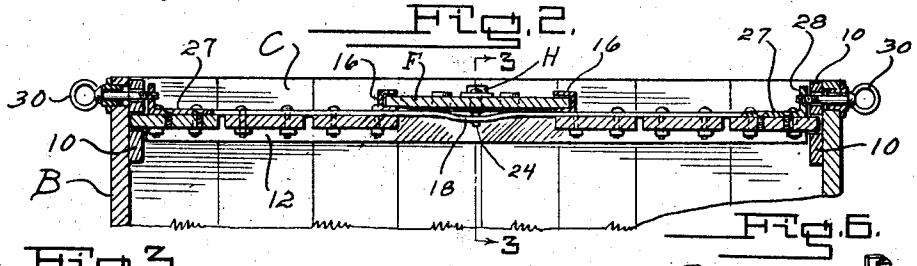


Fig. 3.

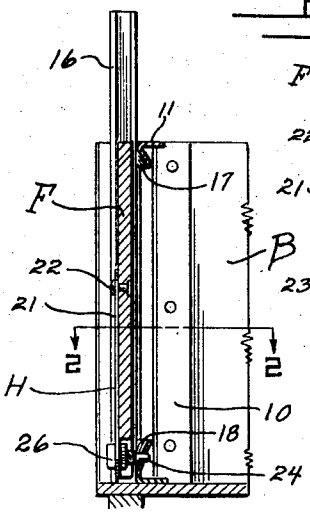


Fig. 4.

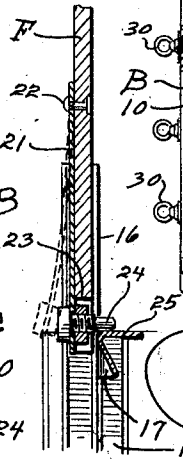


Fig. 5.

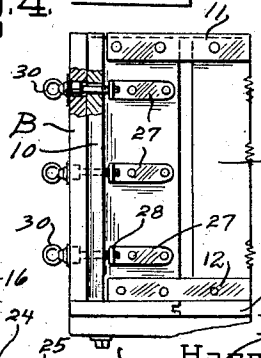
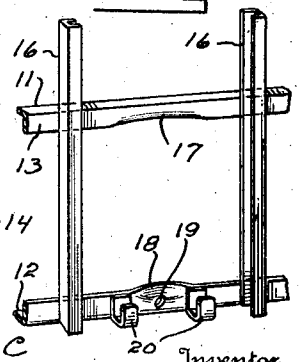


Fig. 6.



Inventor
Ronald E. Nash
Harry Von Spreecken
By Lancaster and Allwine
Attorneys

Patented June 14, 1927. 1,632,747

UNITED STATES PATENT OFFICE.

RONALD E. NASH AND HARRY VON SPREECKEN, OF MONTGOMERY, IOWA; SAID NASH ASSIGNOR TO SAID VON SPREECKEN.

END GATE.

Application filed February 15, 1926. Serial No. 88,447.

The present invention relates to vehicle bodies or boxes, and more particularly to an improved end gate construction therefor.

The primary object of the invention is to provide an improved end gate for wagon or truck boxes, particularly well adapted for use in the loading of live stock such as hogs and sheep.

A further object of the invention is to provide an improved end gate embodying a vertically sliding door capable of being automatically locked in either a raised or lowered position with respect to the gate proper.

A further object of the invention is to provide an improved end gate whereby the major portion of the end gate frame and associated parts may be made from stock metal sections.

Other objects and advantages of the invention will be apparent during the course of the following detail description, taken in connection with the accompanying drawing forming a part of this specification and in which drawing:

Figure 1 is a fragmentary perspective view of the rear portion of a wagon body, showing the end gate in position and the sliding door in a raised position, the view being one looking toward the rear of the body.

Figure 2 is a horizontal section through the improved end gate and showing the same in position upon the body.

Figure 3 is a vertical section on line 3—3 of Figure 2 looking in the direction of the arrows.

Figure 4 is a view taken substantially like that of Figure 3 and showing the door in a raised locked position.

Figure 5 is a fragmentary rear plan view showing the manner of securing the end gate to the side boards of the vehicle body.

Figure 6 is a fragmentary perspective view of the central portion of the end gate frame, looking from the rear, and showing the manner of providing the guide ways for the sliding door.

Referring to the drawing in detail, and wherein similar reference characters designate corresponding parts throughout the several views, the letter A may designate a vehicle body or box embodying side boards B and a bottom C. The letter D designates the improved end gate, adapted to fit between the side boards B and rest upon the bottom C, the end gate embodying a frame structure E, a sliding door F, and a locking means H for retaining the door F in a locked position when in either a raised or lowered position with respect to the frame E.

The body A which may be of ordinary construction, has secured to the rear portions of the side boards E, the usual spaced apart cleats 10 which form vertical guideways for receiving the ends of the gate D.

The frame structure E of the end gate embodies upper and lower rails 11 and 12 respectively, and which rails are preferably formed from lengths of angle iron and arranged with their vertical flange portions 13 in vertical alignment at the rear of the end gate. Bolted or otherwise secured to the inner faces of the vertical flange portions 13, are end boards 14 the terminal ends of which are adapted for slidably fitting between the cleats 10 of the side boards B, while the inner ends of the boards terminate short of the longitudinal center of the gate for providing a doorway 15. Arranged to each side of the doorway 15 and secured in any suitable manner to the rear side of the rails 11 and 12, are channel irons 16 arranged with their grooved faces in confronting relation, and which channel irons provide vertical guideways for the door F. These channel shaped guides 16 preferably have their lower ends flush with the lower rail 12, while the upper ends of the guides project past the upper rail 11 for providing a suitable support for the door when in a raised position. Each of the vertical flange portions 13 of the rails 11 and 12, at points substantially midway of the doorway 15, are formed with forwardly inclined deflecting portions 17 and 18 respectively, the inclined portion 18 of the lower rail being provided with an aperture 19 for cooperating with the locking means H. U-shaped stops or keepers 20 secured to the lower rail 12 at each side of the inclined portion 18, act as means for limiting the downward movement of the door F and also serve as a means for preventing the door being forced rearwardly when in its lowered position.

The door F which may be of any preferred construction, is of a width to slidably

fit in the guides 16 and of a height so that when in a lowered position will fully close the doorway 15.

The locking means H for retaining the door in a raised position, and in a locked lowered position, preferably embodies a yieldable spring strip 21 secured centrally of the door, to the rear face thereof, as by a suitable fastener 22 passing through the upper end portion of the strip. This yieldable strip 21 has its lower free end overlying a notch 23 provided in the lower edge of the door, and carries at its lower end a pin 24 which extends through the cut-out portion 23 and forwardly of the door as clearly illustrated in Figure 4. This pin 24 when the door is lowered in the guide 16, will engage the forwardly inclined portion 18 of the lower rail 12 and by reason of the yieldable strip 21 will seat in the aperture 19 for locking the door in a lowered position. Upon raising of the door in the guides 16, this pin will engage the forwardly inclined portion 17 of the top rail 11 and be guided to a position above the rail 11 whereupon it will come to rest upon the horizontal flange 25 of the upper rail and thus hold the door in a raised position. It will be seen that upon grasping the lower portion of the strip 21 as by the head 26, that the pin 24 may be moved out of engagement with the rails for permitting of raising or lowering of the door.

Secured to the rear face of the end boards 14, and adjacent each end of the gate, are angle irons 27 having their rearwardly extending arm portions 28 extending in right angular relation to the end gate and in parallel relation with the rearmost of the cleats 10. Each of the arm portions 28 is provided with a threaded bore for threaded reception of the inner end of an eye bolt 30 swivelly mounted in each of the guide boards B and extending through the rearmost cleats 10. Thus it will be seen that upon threading of the eye bolts 30 into their respective angle irons 27 carried by the end gate D, that the end gate will be securely held in position, and that the side boards B will be prevented from spreading at their rear ends. Such means for securing the end gate in position is desirable, for if the usual gate rods were employed for preventing spreading of the side boards, and which gate rods extend across the end gate in ordinary construction, such rods would prevent a clear doorway being provided when the door F is in a raised position.

While the end boards 14 have been shown as being formed of vertically extending strips, the same have been shown merely by way of example for closing of the frame structure to each side of the doorway 15, and if desirable, the end boards may be of solid or panelled construction, and if desirable a suitable grating may be provided to each side of the doorway.

From the foregoing description it will be apparent that a novel sliding door end gate for vehicle bodies has been provided, particularly well adapted for the loading of small live stock, and embodying a structure whereby the sliding door is movable in a vertical direction, and which door is automatically locked in either its lowered or raised positions, and which door when in a raised position will present an unobstructed doorway for ready passing of animals therethrough.

Changes in detail may be made to the specific form of the invention herein shown and described, without departing from the spirit of the invention or the scope of the following claims.

We claim:

1. An end gate comprising upper and lower rails having forwardly inclined portions arranged one above the other, end boards carried by the rails to each side of the inclined portions and providing a doorway, guides arranged vertically to each side of the doorway, a door slidable vertically in said guides, and a yieldable pin carried by said door, said yieldable pin being guided by said inclined portions of the rails into position for retaining the door in either a raised or lowered position with respect to the doorway.

2. An end gate comprising upper and lower rails, vertically extending spaced apart guides carried by said rails and providing a doorway, said rails being provided respectively with oppositely disposed forwardly inclined portions and with the inclined portion of the lower rail provided with an aperture, a door slidable vertically in said guides for opening and closing of said doorway, and a yieldable pin carried by the door adapted to be guided by the inclined portion of the lower rail into locking engagement in the aperture thereof for locking the door in a lower closed position, and guided by the inclined portion of the upper rail to a position above the rail for retaining the door in a raised open position.

3. An end gate comprising upper and lower rails, end boards connecting the end portions of the rails and providing a doorway, guides disposed vertically to each side of the doorway, a door slidable vertically in said guides, a yieldable strip carried by the outer side of said door, and a pin carried by the free end of the yieldable strip and extending forwardly through said door for yieldably engaging the upper and lower rails for retaining the door in a raised and lowered position upon respective engagement of the upper and lower rails.

RONALD E. NASH.
HARRY VON SPREECKEN.