March 26, 1929. F. L. MARTIN ET AL 1,707,064

GRAIN DOOR

Filed Dec. 4, 1926 3 Sheets-Sheet 1

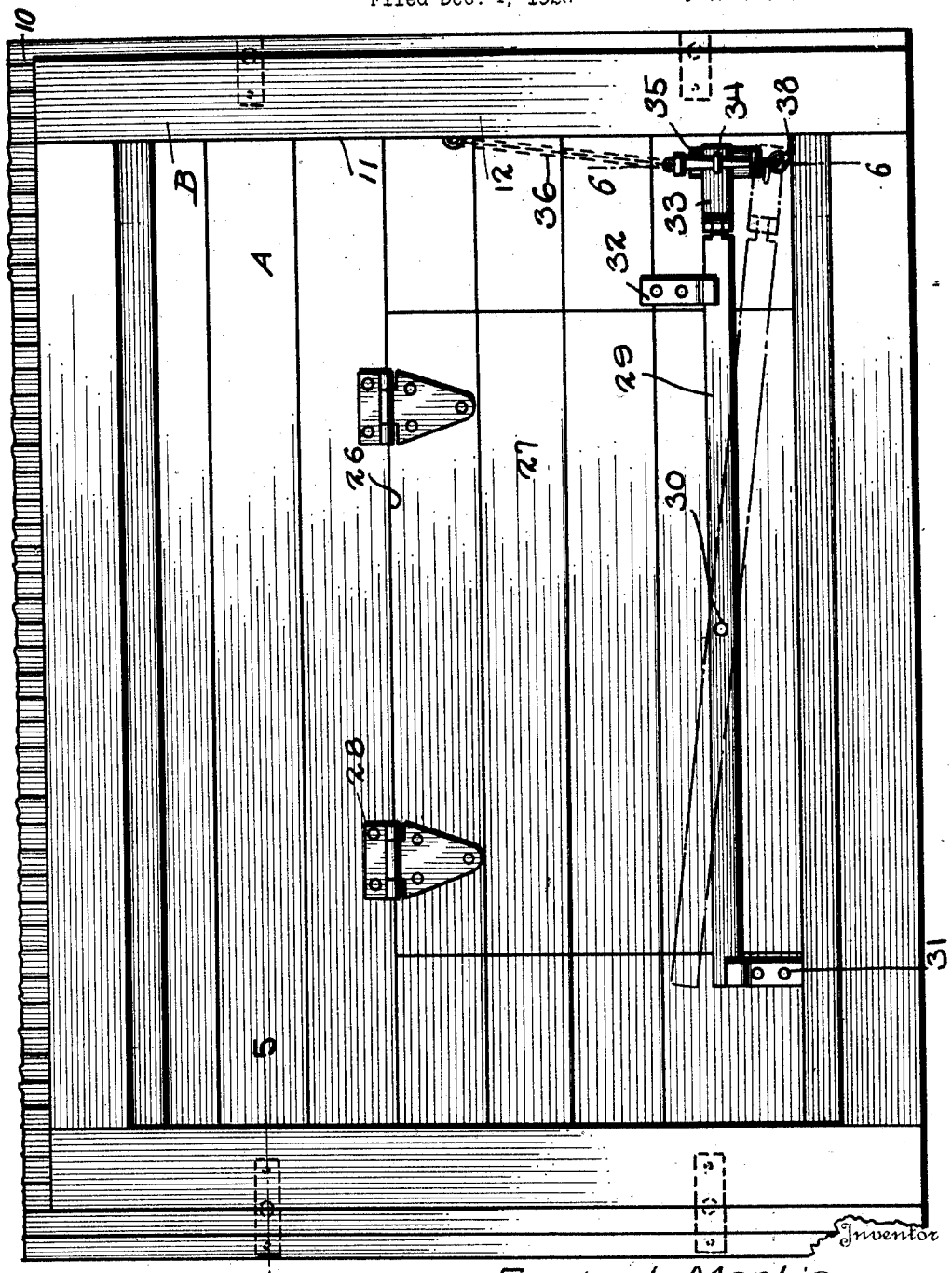


Fig. 1.

Witnesses
C. C. Churchman Jr.

Inventor
Fred L. Martin
Eugene F. Hughes
John C. Mc Nellis
By Richard B. Owen
Attorney

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GRAIN DOOR

Filed Dec. 4, 1926 3 Sheets-Sheet 2

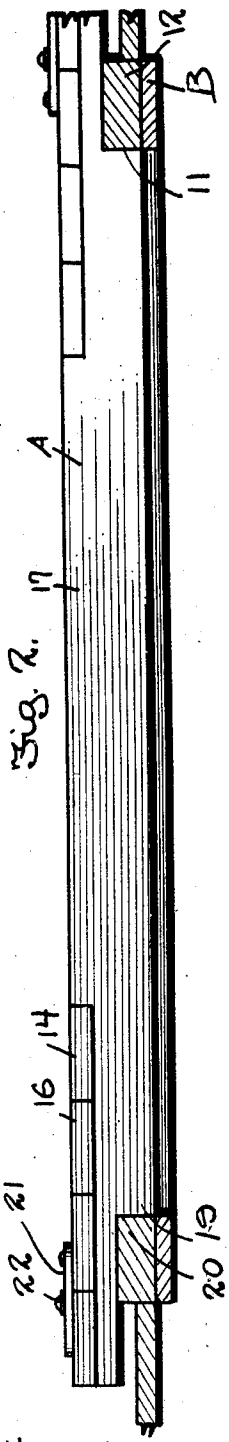


Fig. 2.

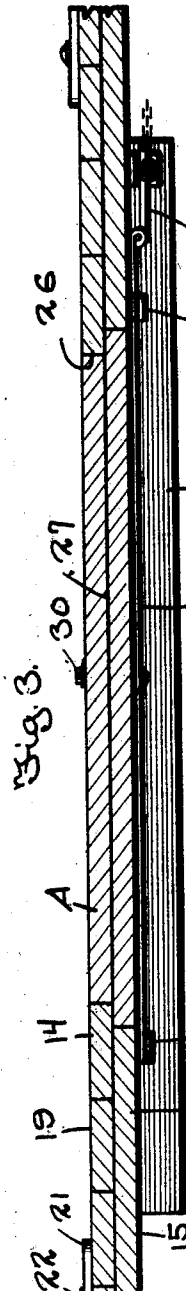


Fig. 3.

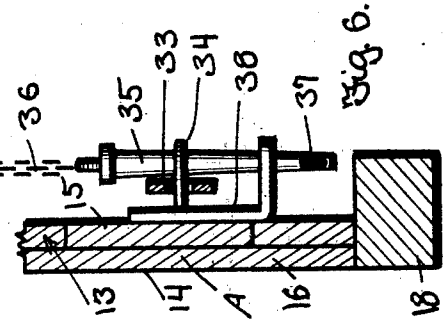


Fig. 6.

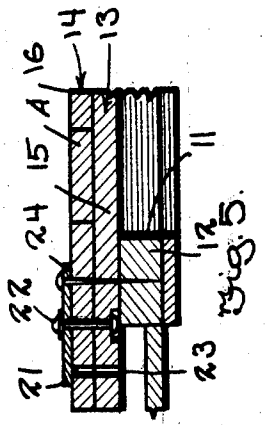


Fig. 5.

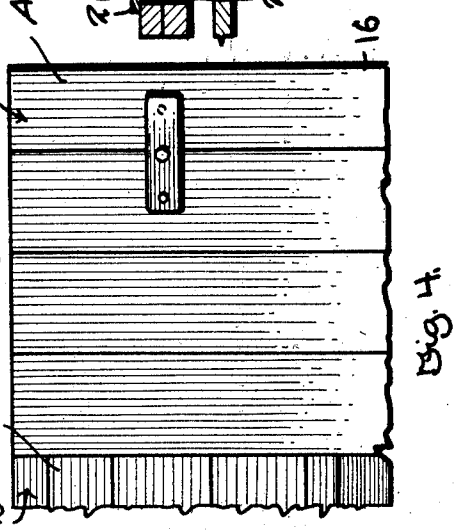


Fig. 4.

Witnesses
C. E. Churchman Jr.

Fred L. Martin, Inventor
Eugene F. Hughes
John C. McNellis

By Richard B. Owen

Attorney

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Filed Dec. 4, 1926 3 Sheets-Sheet 3

Fig. 7.

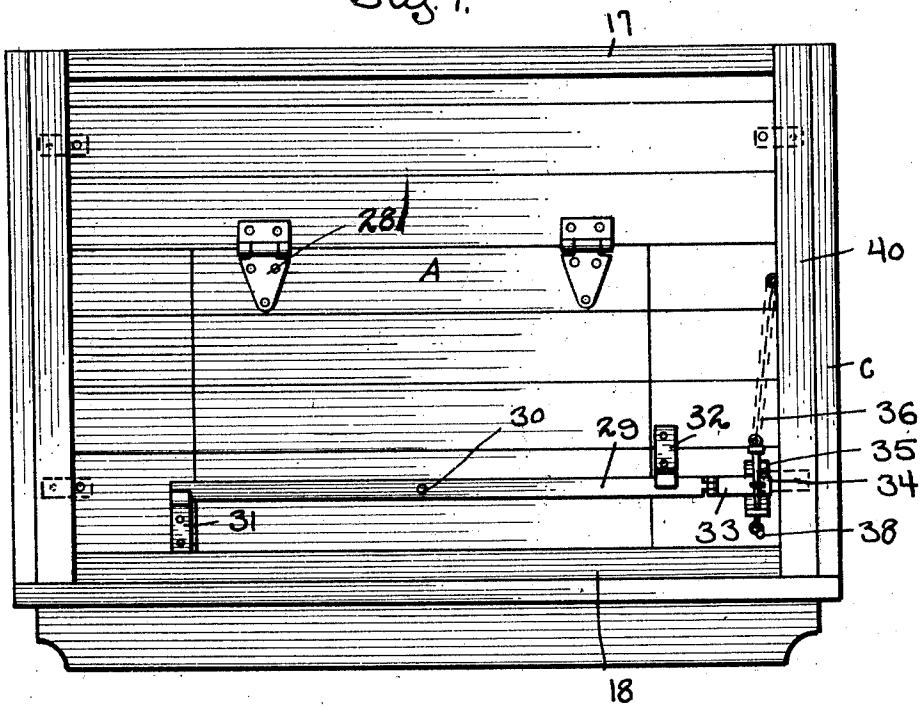
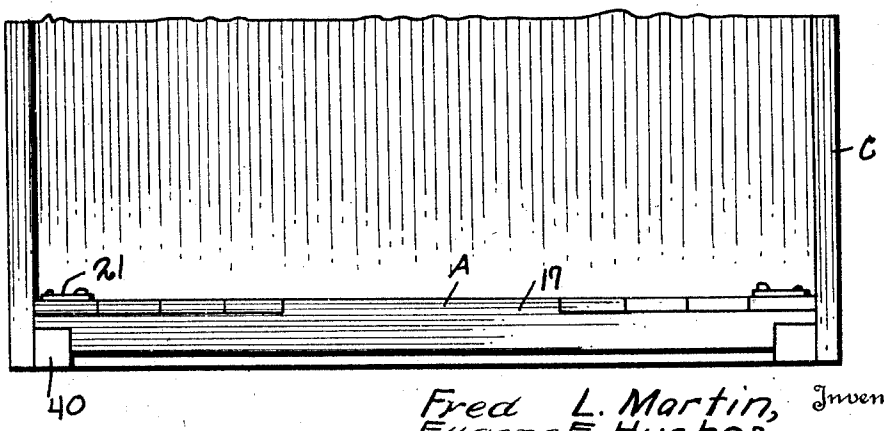


Fig. 8.



Witnesses
C. E. Churchman Jr.

Fred L. Martin, Inventor
Eugene F. Hughes
John C. McNellis
By Richard B. Owen
Attorney

Patented Mar. 26, 1929. 1,707,064

UNITED STATES PATENT OFFICE.

FRED L. MARTIN, EUGENE F. HUGHES, AND JOHN C. McNELLIS, OF DE GRAFF, MINNESOTA; SAID McNELLIS ASSIGNOR TO DANIEL J. HUGHES, OF DE GRAFF, MINNESOTA.

GRAIN DOOR.

Application filed December 4, 1926. Serial No. 152,611.

This invention appertains to grain doors or gates for railroad box cars, vehicle bodies and the like and the primary object of the present invention is to provide a grain gate or door which can be used a great number of times without injury thereto, thereby resulting in a saving of lumber and money as well as a saving of time and effort in removing the door or gate from its operative closed position.

Another object of the invention is the provision of novel means for applying the gate in place, whereby the same can be effectively reused, the gate having pairs of swinging apertured steel plates at each end thereof for receiving the holding nails, the plates being so arranged as to be swung to different positions for different widths of door frames.

A further object of the invention is the provision of a novel grain door or gate including inner and outer skins or sections, which are so arranged as to provide a leak proof construction, the gate also being provided with a novel outlet closure.

A further object of the invention is the provision of a novel lock for the closure and novel means for permitting a car seal to be used with the lock or closure whereby tampering with the latch or lock can be readily discovered.

A still further object of the invention is to provide a leak proof grain door or gate of the above character, which will be durable and efficient in use, one that will be simple and easy to manufacture and one which can be placed upon the market and incorporated with a box car or vehicle body at a small cost.

With these and other objects in view, the invention consists in the novel construction, arrangement and formation of parts, as will be hereinafter more fully described, claimed and illustrated in the accompanying drawings, in which drawings:

Figure 1 is a fragmentary side elevation of a box car showing our improved door connected therewith,

Figure 2 is a top plan view of the door showing the same in position on a box car, the car being shown in horizontal section,

Figure 3 is a central horizontal section through the improved door,

Figure 4 is a fragmentary elevation looking at the inside of the door showing one of the swinging attaching plates connected therewith,

Figure 5 is a detailed horizontal section taken on the line 5—5 of Figure 1, and

Figure 6 is a detail vertical section through the latch taken on the line 6—6 of Figure 1,

Figure 7 is an elevation of the gate showing the same in use on a wagon or truck body, and

Figure 8 is a plan view of the same.

Referring to the drawings in detail, wherein similar reference characters designate corresponding parts throughout the several views, the letter A generally indicates the improved grain door or gate and B a box car with which the same can be associated.

The box car B is of the conventional type and includes the usual side wall 10 having the door opening 11 and the side frame bars 12. The gate A is preferably constructed from wooden strips and includes outer and inner skins or sections 13 and 14. It is to be noted that the strips 15 of the outer skin 13 run horizontally while the strips 16 of the inner skin run vertically. This provides a grain proof door or gate.

The door or gate preferably includes upper and lower sills or bars 17 and 18 and these bars or sills extend beyond the front face of the door or gate. As shown the ends of the sills are notched as at 19 to provide shoulders 20. It is to be noted that the longitudinal walls of the notches 19 are flush with the outer face of the outer skin 13 of the gate. This allows the face of the door to be fitted flush up against the frame bars 12 of the door opening.

On the inner face of the door at each end thereof we provide pairs of attaching plates 21 and these plates are pivoted intermediate their ends to the door or gate by means of suitable bolts 22. The door itself on each side of the pivot point of the bolts is provided with spaced openings 23 and one end of the attaching plates 21 is provided with a nail receiving opening 24 which is adapted to be brought into registration with either one of the openings and by placing nails 25 in the openings, the gate or door can be quickly applied to different widths of frames and the attaching plate 21 forms means for receiving the nails for preventing the splitting of the gate or door and facilitate removal of the fas-

tening elements from out of the door frame. The provision of the gate or door with the pairs of relatively spaced openings 23, permits the door to be nailed to the uprights of door openings of different widths. When the gate or door is applied to a door opening wider than the one illustrated in the drawings, certain of the openings 23 will be located outwardly beyond or below the uprights. These openings will be closed by the plates 21 to prevent the passage of water and grain through them, and the nails will pass through the openings into the plates and the remaining openings in the gate or door.

In accordance with this invention the gate or door at a central point is provided with an enlarged outlet opening 26 which is adapted to be closed by a suitable closure 27. This closure 27 is formed of overlapping boards the same as the body portion of the gate. This closure 27 is connected to the gate by the use of suitable hinges 28.

In order to maintain the closure 27 in its normal closed position we provide a latch bar 29 which is pivotally mounted at a point substantially equidistant its ends on a pivot pin 30. The gate on opposite sides of the wall is provided with keeper plates 31 and 32. The keeper plates are oppositely arranged so that by rocking the latch bar 29 on its pivot the opposite ends thereof can be swung out of engagement with the keeper plates 31 and 32. The latch bar 29 is provided with a pivoted locking plate 33 which serves as means for preventing the rocking of the latch bar from out of engagement with the keeper plates 31 and 32. This locking plate 33 is adapted to receive a staple 34 rigidly connected with the gate or door and a suitable tapered pin 35 is provided for fitting in the staple 34 whereby swinging movement of the locking plate 33 will be prevented and consequent swinging movement of the latch bar 29. If preferred the tapered lock pin 35 can be connected with the frame of a door by suitable flexible means such as a chain 36.

The lower free end of this pin has a transverse opening 37 for the reception of a car seal 38.

It is to be noted that the staple 34 is carried by an angular attaching base plate 38 the lower portion of which is arranged in horizontal plane and provided with an opening in alinement with the staple 34 for receiving the lower end of the tapered pin 35.

From the foregoing description, it can be seen that a grain car door has been provided which can be easily applied to and easily removed without appreciable injury to the door or door frame.

In Figures 7 and 8 we have shown the gate applied to a vehicle body C which can be considered either as a wagon or truck body. This body can be of any conventional character and is provided with upright stop cleats 40 at the rear end thereof against which the gate is adapted to be fitted. The gate in this instance is of substantially the same construction as the gate or door previously designed and therefore a detail description thereof will not be here given.

Changes in details may be made without departing from the spirit or scope of this invention, but what we claim as new is:

1. The combination with a car having an opening and provided with spaced uprights at the sides of the opening, of a removable closure including a body, sills secured to the upper and lower ends of the body and extending beyond the front or outer side of the body, the sills being provided at their ends with notches receiving the uprights and deep enough to permit the outer side of the closure to lie in full abutting contact with the inner sides of the uprights, and retaining elements passing through the body and engaging the uprights.

2. A removable closure for an opening in a car having uprights at the sides of the opening, comprising a body adapted to rest in full abutting contact with the inner sides of the uprights and provided with pairs of spaced openings, the openings of each pair being horizontally aligned and one opening of each pair being arranged directly in rear of the uprights, the other openings being arranged laterally beyond the uprights, plates greater in length than the distance between the openings and pivoted centrally between their ends to the body at points centrally between the openings, the plates closing the openings, laterally beyond the uprights and provided with openings registering with the openings directly in rear of the uprights, and elements passing through the openings in the plates and the registering openings in the body and engaging the uprights.

In testimony whereof we affix our signatures.

JOHN C. McNELLIS.
FRED L. MARTIN.
EUGENE F. HUGHES.