W. E. WINE.

VENTILATOR FOR FREIGHT CARS.

APPLICATION FILED AUG. 18, 1917.

1,298,136.

Patented Mar. 25, 1919.

2 SHEETS—SHEET 1.

Fig. 1.

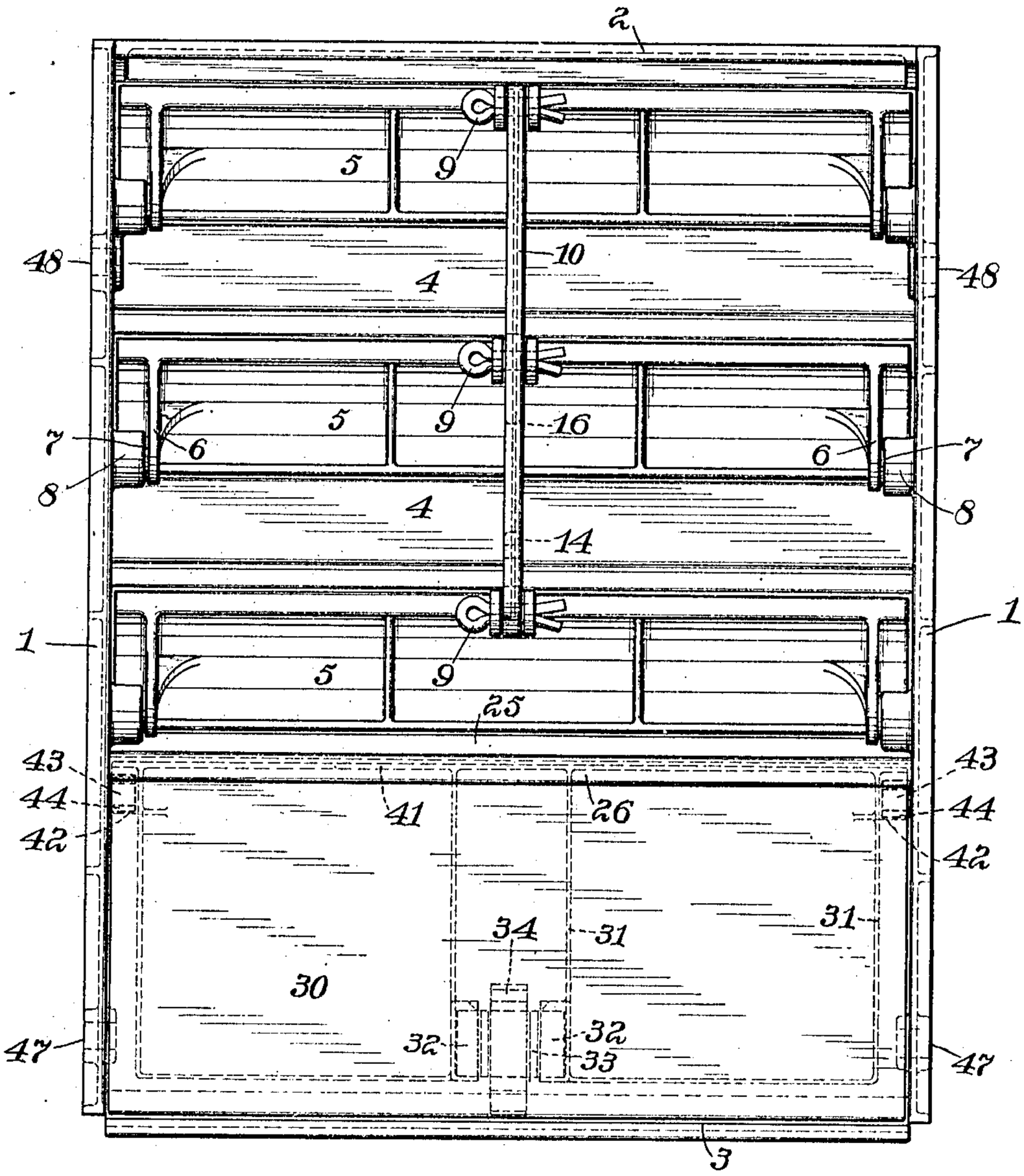
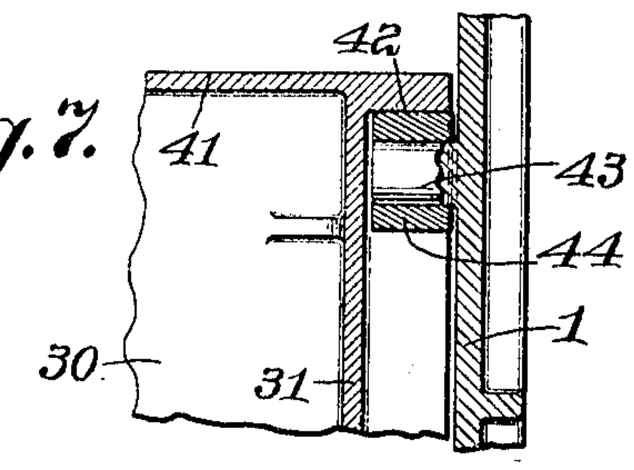


Fig. 7.



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2 SHEETS—SHEET 2.

Fig. 2.

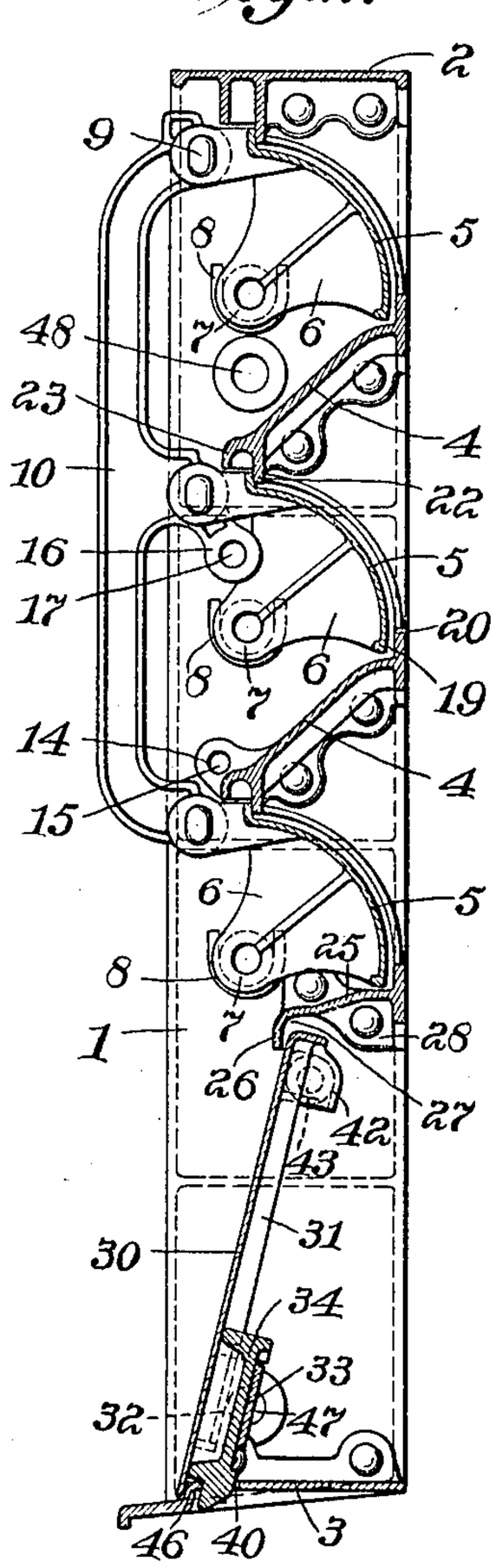


Fig. 3.

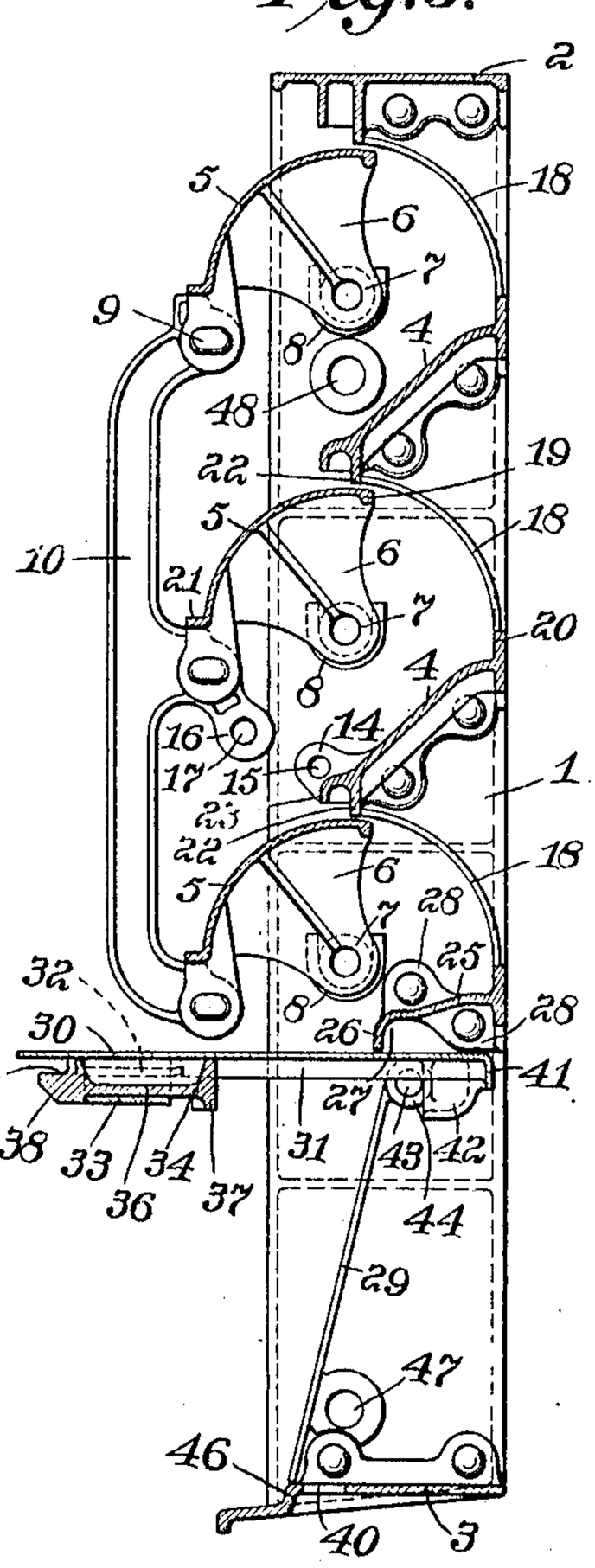


Fig. 4.

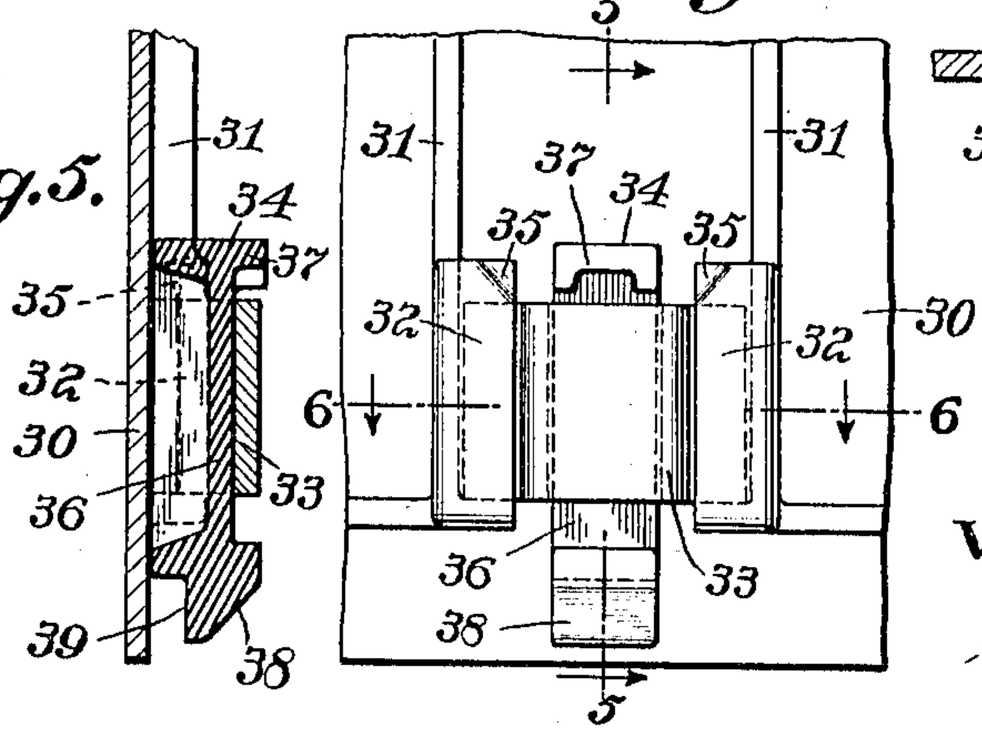
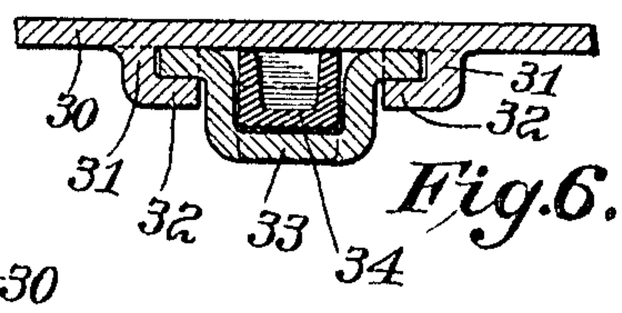


Fig. 5.

Fig. 6.



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UNITED STATES PATENT OFFICE.

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VENTILATOR FOR FREIGHT-CARS.

1,298,136. Specification of Letters Patent. Patented Mar. 25, 1919.

Application filed August 18, 1917. Serial No. 186,886.

To all whom it may concern:

Be it known that I, WILLIAM E. WINE, a citizen of the United States, residing at Toledo, in the county of Lucas and State of Ohio, have invented certain new and useful Improvements in Ventilators for Freight-Cars, of which the following is a specification.

My invention relates to a new and useful improvement in ventilators for freight cars and to that type of ventilator as shown in the patent granted to me on October 1, 1912, and being numbered 1,040,084.

An object of my invention is to provide a ventilator that incorporates all the advantages of my previous ventilator with the further addition of providing an additional shutter arrangement located in the lower portion of the ventilator, which shutter is to be independently operated from the remaining shutters of the ventilator.

Another object of my invention is to provide a ventilator for freight cars that will not only provide plenty of ventilation, but at the same time will be formed with an opening and shutter arrangement through which it will be possible to pass articles such as lumber or other materials having a relatively long length.

Still another object of my invention is to provide a ventilator wherein the ordinary shutters may be locked in their open or closed position from the outside and although the shutter at the lower portion of the ventilator may be closed from the outside, to open the same, it will be necessary to gain an entrance in the car by the ordinary door and then release the lock on the lower shutter so that the same may be opened.

It is to be understood that, wherein there is an opening in the ventilator large enough to permit the entrance of a person, it is necessary to keep the same locked, as otherwise goods, etc., will be stolen from the freight cars.

Still other objects of my invention are to provide the former arrangement of shutters and operating means with the additional relatively large opening in the lower portion of the ventilator and a novel shutter and locking arrangement, the operation of which is to be independent of the remainder of the shutter.

With these and other objects in view my invention consists in certain new and novel constructions and combinations of parts as will be hereinafter more fully described and pointed out in the claims.

In the accompanying drawings forming a part hereof, which illustrate the preferred embodiment of my invention,

Figure 1 is a full front view of my improved ventilator with all of the shutters shown in their closed position.

Fig. 2 is a vertical sectional view showing the shutters in their closed position.

Fig. 3 is a similar view with all of the shutters in their open position.

Fig. 4 is a detail rear view of the lower portion of the lower shutter and the latch mechanism thereon.

Fig. 5 is a detail vertical sectional view taken on line 5—5 of Fig. 4 looking in the direction of the arrows.

Fig. 6 is a horizontal sectional view on line 6—6 of Fig. 4 looking in the direction of the arrows, and

Fig. 7 is a fragmentary sectional view showing a bearing of the lower shutter.

Referring now to the ventilator, first, a brief description will be set out of the construction and operation of the major portion of the ventilator which, as before mentioned, is fully set out in Patent No. 1,040,084 and granted to me on October 1, 1912.

It comprises a frame composed of the sides 1, the top bar 2, bottom bar 3 and intermediate bars 4. Shutters or closures 5 are shown which are provided with the arms 6 at their ends, which arms are in turn provided with the trunnions 7. Located on the inner sides of the frame 1 are a plurality of properly spaced pockets 8 in which the trunnions 7 rest, so that the shutters or closures may pivot on said trunnions when the said shutters are opened or closed.

The shutters or closures 5 operate simultaneously, which is possible by connecting them by pins 9 passed through the lower ends of the shutter to a vertically extending connecting bar 10.

A lug 14 is located centrally of the lower intermediate bar 4 and said lug is provided with an opening 15. A projection 16 having an opening 17 therein, is also formed on the bar 10 so that a seal may be passed through

the said openings 15 and 17 to assist in keeping the closure or shutters 5 in their set position after being opened.

Formed on the sides 1 are the arcuate ribs 18 which act as sealing ribs between the ends of the shutters 5 and the sides 1. The shutters or closures 5 are arranged so that when they are in their closed position the inner edges 19 of the shutters, drop down behind the upper edges 20 of the intermediate bars 4, and form protective joints, and the outer edges of the shutters fit tightly against the lower edges 22 of the cross bars 4. The inner edges 23 of the cross bars 4 are slightly outwardly rounded as shown in Figs. 2 and 3 to protect the shutters or closures from weather when the same are in their shut position.

If desired to keep the shutters or closures 5 in their closed position, a wire is simply passed through the opening in the lug 14 and passed around the bar 10. It will be understood that gravity will keep the shutters 5 either in their open or closed position and a wire and seal is simply used, as mentioned, to make sure that the shutters will be retained in their set open or set closed position.

It is to be noticed that any time it is desired to remove any of the shutters, it is simply necessary to disconnect the pins from the bar 10 and swing the shutters inwardly so that the inner edges of the shutter will be disengaged from the lower edge 22 of the bar 4, and the trunnions 7 may then be lifted from the pockets and the shutters removed, and the operation is just the opposite to insert them.

Referring now to the gist of the present invention, it will be seen that with the addition of that above mentioned, which is substantially similar in all respects to my former invention, that instead of using four shutters or closures of the same type, I, in this instance, only use three. However, a further cross bar 25 is positioned immediately below the lower arc 18, but the cross bar 25, instead of being greatly inclined as the other bars 4, is only slightly angular and has its inner end turned downwardly, as at 26, to form a pocket 27; and its ends have the oppositely arranged lugs 28 which are riveted to the sides 1.

Also formed on the inner surfaces of both of the sides 1 are the two downwardly extending seats 29 on which rest the opposite sides of a large door or shutter 30, when the said door is in its closed position. This door 30 extends completely across the ventilator and is preferably ribbed as at 31 to strengthen the same. Formed on the inner surface of the door are the two projecting lugs 32 behind which is placed a bar 33 and sliding between this bar 33 and the door 30 is a latch member 34. After this latch member 34 and the bar 33 are inserted behind the lugs 32, the corners of the lugs 32 are hammered or bent downwardly as at 35 so that it is impossible for the bar 33 or latch mechanism 34 to be removed.

Referring further for the moment to this latch member 34, it will be seen that it consists of a shank 36, a broadened top 37 and also a beveled head 38, the said beveled head having a portion cut out as at 39 so that the beveled head may fit within an opening 40, which opening is formed in the bottom bar 3. This latch member 34 may be lifted from the inside of the ventilator by grasping the top portion 37 and sliding it upwardly behind the bar 33.

Referring now to the upper portion of the door, it will be seen that the same is provided with a flange 41 which extends across the entire upper edge of the door, and formed on both upper corners are the pockets 42 in which fit the trunnions 43 which are formed on the inner surfaces of the sides 1 and directly below the pocket 27. Placed on these trunnions 43 are the roller bearings 44, the upper surfaces of which are adapted to contact with the upper surface of the pockets 42 formed on the upper corners of the door or shutter 30. The rib 31 on the door will prevent the roller bearings from sliding outwardly off the trunnions.

The operation of this door is as follows: Supposing for instance the door 30 is in its closed position as shown in Fig. 2; to open the same it is only necessary to clasp the head 37 of the latch 34 and pull the same upwardly so that the head 38 will be disengaged from the front of the opening 40 in the bottom bar 2 and the door 30 may then swing outwardly from the bottom so that the flanged portion 41 swings down from behind the flanged portion 26 of the cross bar 25 and out of the pocket 27.

When the door has reached a horizontal position, it is then forced backwardly and the same will be held tightly in place, it being supported from the bottom by the trunnion and roller bearing 43 and 45, and it will also contact with the flanged portion 26, while the innermost end will fit under the lug 28 formed on the bar 25.

To close the door the same is simply forced forwardly and it will then swing to its closed position, forcing the latch 34 just upwardly and it will then fall within the opening 40 in the lower bar. The sides of the door will rest on the seats 29 to form a tight seat and the bottom of the door will rest against the upwardly raised portion 46 of the base plate to also form a tight seat. The upper edge of the door will be within the pocket 27 and be protected by the downward curvature of the flange 26.

To fasten the ventilator in the car, either in a wooden end car or steel end car, it is sim-

ply necessary to pass bolts through the openings 47 and 48 which are formed in both of the sides 1.

From the foregoing it will be seen that this ventilator not only incorporates all the desirable features of my previous ventilator, but also has the enlarged lower opening through which lumber may be passed into the car, and this lower opening is protected by a door which may be readily and quickly operated from the inside of the car, which will rest in its open position when operated as mentioned, and will also lock itself when swung to its lower or closed position. Furthermore, the ventilator is one that is entirely weatherproof, that is, one wherein the rain cannot enter the car when the shutters are in their closed position.

It will be understood that many slight variations may be made in regard to size and arrangement of parts without departing from the spirit and scope of my invention.

Having thus described the same, what I claim as new and desire to secure by Letters Patent, is:—

1. In a ventilator a frame, a bar extending from side to side of said frame and provided at its edge with a downwardly disposed flange, trunnions mounted at the sides of the frame, a shutter pivotally mounted on said trunnions, the upper portion of said shutter extending behind said flange, said shutter being adapted to be swung outwardly and upwardly to assume a horizontal position whereby the shutter may assume a position below the flange, said shutter being adapted to be moved rearwardly when in a horizontal position, and means on said cross bar for retaining the shutter in its open position.

2. In a ventilator a frame comprising side bars and a bottom portion, a cross bar located in said frame and a shutter pivotally mounted beneath said cross bar, trunnions located on the cross bar, said shutter being provided with pockets at its opposite upper ends, the said trunnions coöperating with said pockets on said shutter to retain the upper portion of said shutter, a latch member located at the inner surface of said shutter and adapted to lock in the bottom of said frame when said shutter is in its closed position.

3. In a ventilator a frame comprising side bars and a bottom portion, a cross bar carried by the side bars, trunnions located on said side bars and at a point nearer the rear edges of the side bars than the front edges, a shutter provided with pockets at its upper corners, said pockets being open at one end and adapted to receive said trunnions, said shutter being capable of a pivotal movement and adapted to be moved rearwardly when in a horizontal position and a latch member for retaining said shutter in its closed position.

4. In a ventilator a frame comprising side bars and a bottom portion, a cross bar carried by the side bars, a shutter located in said frame and lying in an inclined position when closed, trunnions mounted on said side bars, pockets mounted on the upper corner portions of said shutter and adapted to coöperate with said trunnions, said pockets being open at one end, said shutter also being capable of a rearward movement when in a horizontal position whereby the pockets disengage the trunnions, means for holding the said shutter in its open position and a locking means for retaining the shutter in its closed position.

5. In a ventilator a frame comprising side bars and a bottom portion, a cross bar extending from one side bar to the other, said cross bar having a downwardly extending flange, a shutter provided with pockets at its upper corners, said pockets being opened at one end, trunnions located on said side bars of the frame, and positioned directly beneath the said cross bar, sealing lugs extending from the said trunnions on said side bars down to the bottom portion, a latch member on said shutter and adapted to be operated from the inside of said frame, said shutter being capable of a pivotal movement and an edgewise movement when the same is in a horizontal position.

In testimony whereof I affix my signature.

W. E. WINE.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."