W. E. WINE.

CAR VENTILATOR.

APPLICATION FILED NOV. 19, 1917.

1,359,557. **Patented Nov. 23, 1920.**

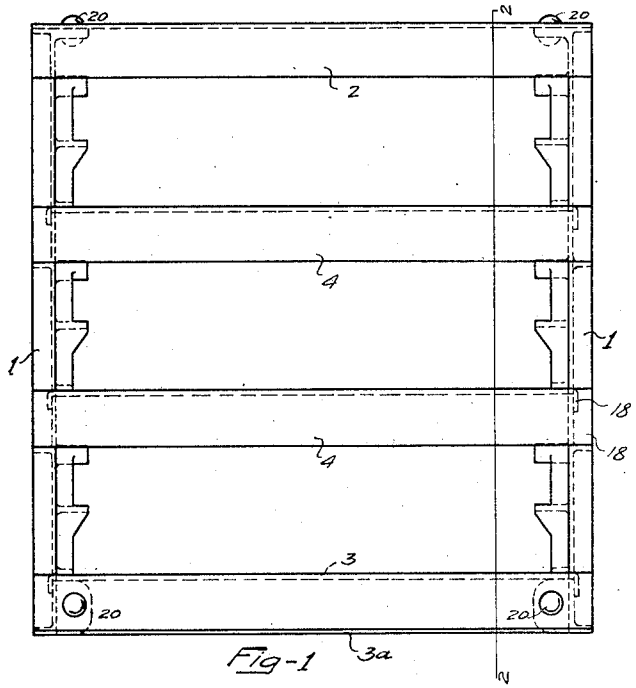


Fig-1

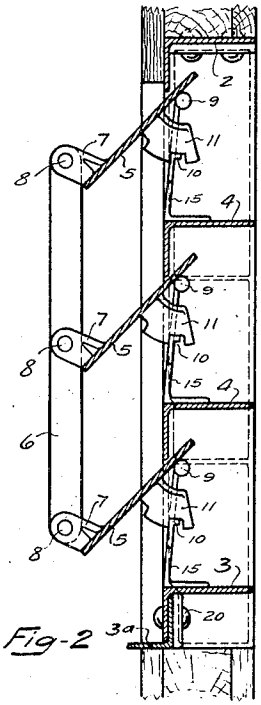


Fig-2

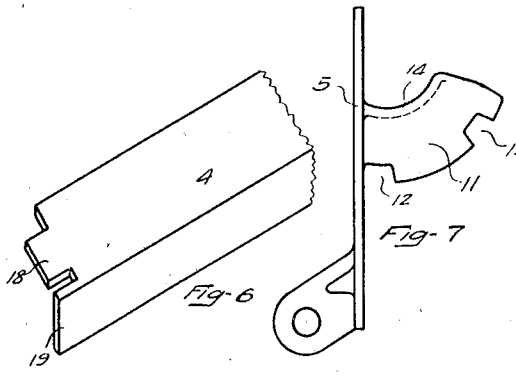


Fig-6

Fig-7

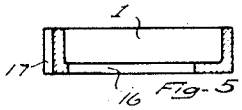


Fig-5

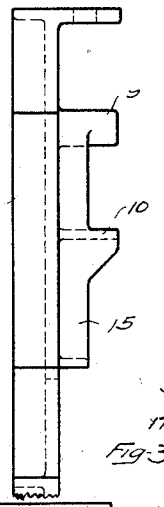


Fig-4

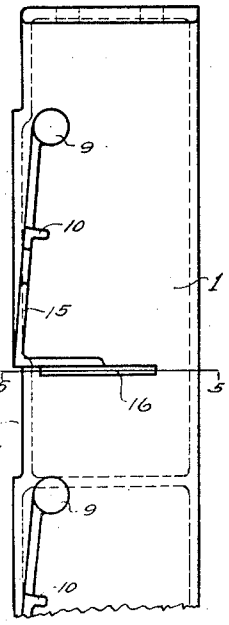


Fig-3

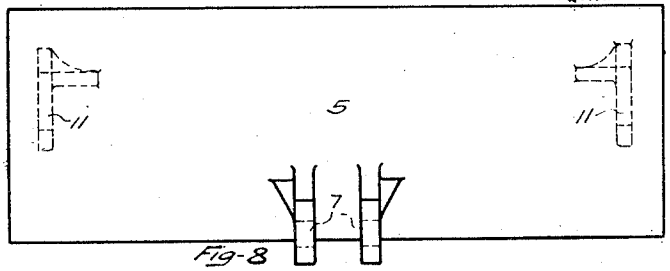


Fig-8

INVENTOR

W. E. Wine

UNITED STATES PATENT OFFICE.

WILLIAM E. WINE, OF TOLEDO, OHIO, ASSIGNOR TO THE WINE RAILWAY APPLIANCE COMPANY, A CORPORATION OF OHIO.

CAR-VENTILATOR.

1,359,557. Specification of Letters Patent. Patented Nov. 23, 1920.

Application filed November 19, 1917. Serial No. 202,792.

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 the State of Ohio, have invented new and useful Improvements in Car-Ventilators, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof.

My invention relates to a new and useful improvement in ventilators for freight cars, and to that type of ventilator shown in patent granted to me October 1st, 1912, bearing Serial No. 1,040,084, and patent of April 9th, 1912, Serial No. 1,022,918, which is now owned by the assignee of this application.

The object of my invention is to provide a ventilator that incorporates all the advantages of my previous ventilator and with a further addition one that can be constructed largely of plates and rolled shapes.

With these and other objects hereinafter explained in view, my invention consists in the construction and combination of elements hereinafter described and claimed.

In the accompanying drawings which illustrate the preferred embodiment of my invention; Figure 1 is a full front view of the ventilator frame but with shutters removed; Fig. 2 is a vertical section on line 2—2 of Fig. 1 showing the shutters in their opened position; Fig. 3 is an elevation of a portion of the sides of the ventilator frame; Fig. 4 is a front elevation of an upper portion of the sides of the frame; Fig. 5 is a section on line 5—5 of Fig. 3; Fig. 6 is a perspective view of the ends of the intermediate bars of the ventilator frame; Fig. 7 is an end view of the shutters; Fig. 8 is a plan view of the shutters.

Similar characters designate similar parts throughout the several figures of the drawings.

Referring now to the parts by number: The frame is composed of sides 1, top bar 2, bottom bars 3 and 3ª and intermediate bars 4. The openings between the top, bottom and intermediate bars are provided with shutters 5 which are operated by operating bar 6 into their opened and closed positions. The operating bar 6 is connected to the shutters 5 of connecting lugs 7 and pin 8. In this instance the connecting lug 7 is shown integral with the plate 5 but it is obvious that this lug may be a separate member riveted to the plate in the same manner shown in my co-pending application.

The sides 1 are provided with lugs 9 and 10 which are adapted to guide and support the shutters in their opened and closed positions. The shutters 5 are provided with a guide arm 11 which in this instance is shown integral with plate 5, but it is entirely obvious that the plate may be a roll section and the guide arm attached thereto. The guide arm 11 is provided with notches 12 and 13 for supporting and maintaining shutters in their closed and opened positions respectively. This guide arm 11 is of sufficient proportion to occupy almost the entire space between lugs 9 and 10 with exception of what clearance is necessary to lift the notches 12 and 13 clear of lug 10. It can, therefore, be seen that the lug 9 limits the vertical movement of the shutters 5 by engaging the top rounded surface 14 of guide arm 11. The side arms 1 are also provided with ribs 15 for sealing the joint between the ends of the shutters 5 and sides 1.

The side bars 1 are provided with slots 16 and recesses 17 for the reception of the ends 18 and 19 respectively of the bottom and intermediate bars 3 and 4. In order to secure the bottom bar 3 and intermediate bars 4 in position, the ends 18 are deflected so as to prevent their removal as shown on Fig. 1. The top bars 2 and bottom bar 3ª being held in position by rivets 20.

It will be understood from this description that although the improvements in this invention are simple, they accomplish in a thoroughly practical manner all the objects sought.

I wish it further understood that I do not desire to be limited to the specific construction or arrangement of elements shown and described, as it is obvious that changes in construction and arrangement may be made without departing from the spirit of the invention.

Having thus described my invention, I aim in the appended claims to cover all modifications which do not involve a departure from its spirit and scope.

What I claim as new and desire to secure by Letters Patent of the United States is:

1. In a ventilator, a frame having pivotal and guide members extending therefrom,

and a closure having guide arms, one of said guide arms being provided with a convex lower surface for engagement with a guide member and a concave upper surface for engagement with a pivotal member.

2. In a ventilator, a frame having pivotal and guiding members, a closure having guiding arms, one of said guiding arms being provided with a notched lower surface for engagement with one of said guiding members and an upper surface for engagement with one of said pivotal members.

3. In a ventilator, a frame having pivotal and guiding members thereon, a closure having guiding arms, said guiding arms being provided with limit stops on their lower surfaces for engagement with the guiding members, and curved upper surfaces for engagement with pivotal members, said limit stops being adapted to determine the open and closed positions of the shutters.

This specification signed and witnessed this 17th day of November, 1917.

W. E. WINE.

In the presence of—
Jos. L. TILLMAN,
R. F. TILLMAN.