Sept. 1, 1931. E. D. DRUMMOND 1,821,744

VENTILATED DOOR

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Fig. 1.

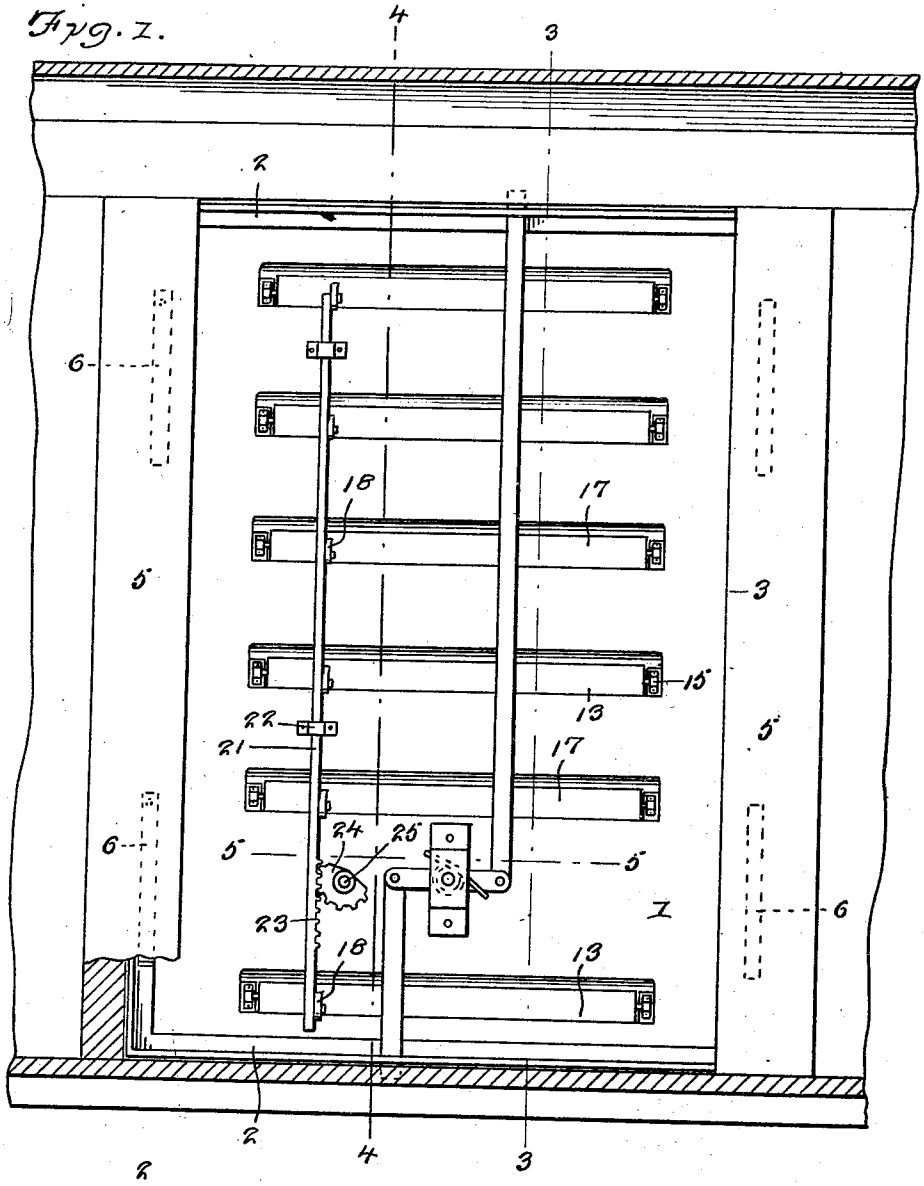


Fig. 6.

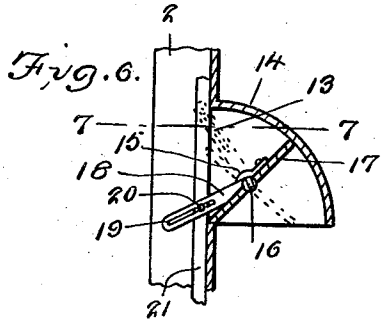


Fig. 7.

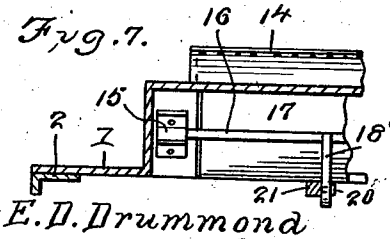
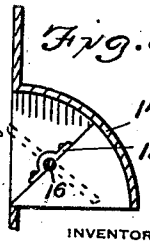


Fig. 8.



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Fig. 3.

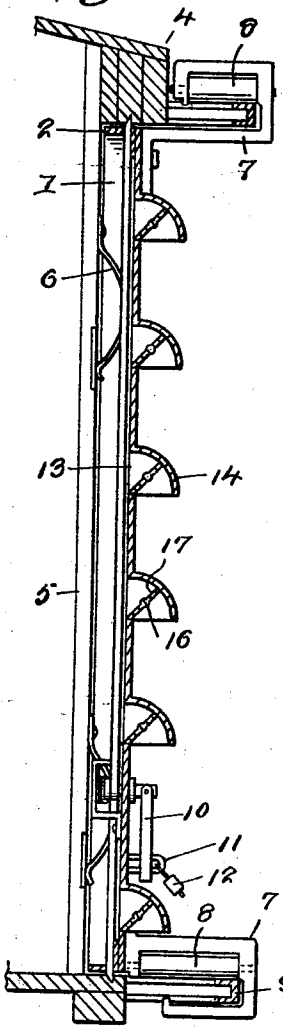


Fig. 4.

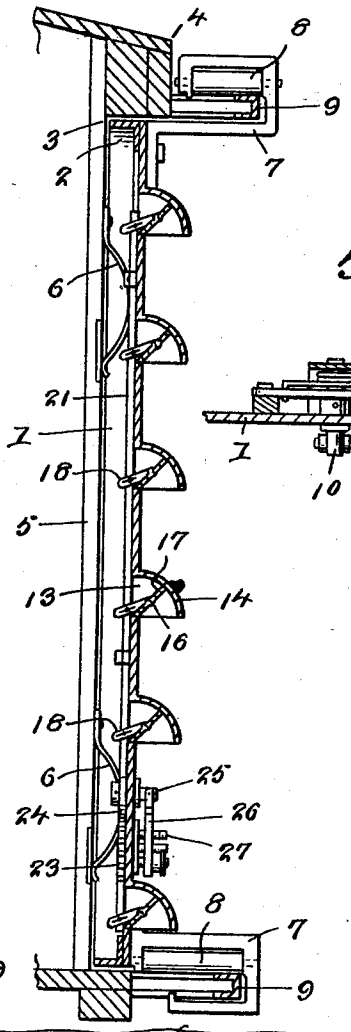


Fig. 5.

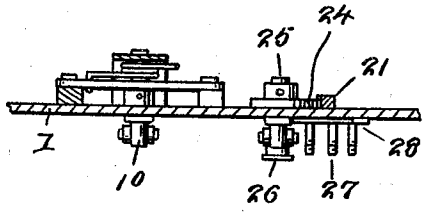
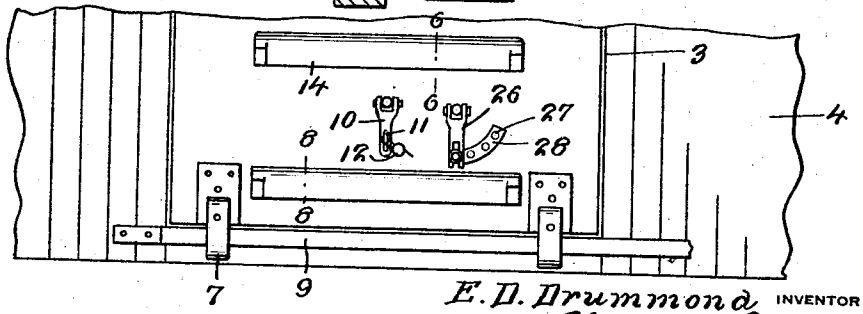


Fig. 2.



E. D. Drummond INVENTOR

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Patented Sept. 1, 1931 1,821,744

UNITED STATES PATENT OFFICE

EDWIN D. DRUMMOND, OF JACKSONVILLE, FLORIDA

VENTILATED DOOR

Application filed May 9, 1930. Serial No. 451,091.

My present invention has reference to a new and novel construction of ventilated doors, and my primary object is the provision of a door with means for ventilating the construction closed thereby so that the contents thereof may be properly aerated to prevent the decomposition or spoilage of materials contained therein to a desired degree without permitting the passage of rain or the like through the door.

Particularly the improvement is designed for use as a door for freight cars or the like and is mounted for sliding movement to an open position and locked in closed position in a manner substantially similar to that set forth in my copending application Serial No. 414,988, filed by me on Dec. 18, 1929.

A still further object is the provision of a door primarily designed as a closure for freight cars that is preferably constructed of steel or like metal but which may be also constructed of wood that is metal bound and in which the said door is provided with a series of transversely arranged superimposed openings, each of which is surrounded by an outwardly extending arched shield and pivotally mounted in each shield there is a shutter valve, together with means for simultaneously swinging the valves to closed or to desired open positions and for locking the said shutter valves in any of their said positions.

The invention will be fully and comprehensively understood from a consideration of the following detailed description when read in connection with the accompanying drawings which form part of the application, with the understanding, however, that the improvement is capable of extended application and is not confined to the exact showing of the drawings nor to the precise construction described and, therefore, such changes and modifications may be made therefrom as do not affect the spirit of the invention nor exceed the scope thereof as expressed in the appended claim.

In the drawings:

Figure 1 is a vertical longitudinal sectional view through a freight car illustrating the application of my improvement thereon.

Figure 2 is a detail front elevation looking toward the outer face of the car with the door in closed position.

Figure 3 is a sectional view approximately on the line 3—3 of Figure 1.

Figure 4 is a similar sectional view approximately on the line 4—4 of Figure 1.

Figure 5 is a sectional view approximately on the line 5—5 of Figure 1.

Figure 6 is a detail sectional view approximately on the line 6—6 of Figure 2.

Figure 7 is a sectional view approximately on the line 7—7 of Figure 6.

Figure 8 is a detail sectional view approximately on the line 8—8 of Figure 2.

In the preferred embodiment of my invention the door 1 is constructed of steel and has its ends and edges flanged inwardly. The flanges 2 may be either integrally formed with the door or provided by reinforcing plates for the ends and edges of the door. In the showing of the drawings the door is designed to close an opening 3 in a box or like freight car 4. The sides provided by the opening 3 have secured to the inner faces thereof suitable plates or boards 5 which partly extend into the opening and which form stop flanges for the door 1. On the outer faces of the stop flanges 5 there are secured the ends of arched springs 6 that serve as abutments for the door when the same is arranged in the opening and is likewise provided with means for forcing the door outward of the opening, such construction being specifically set forth in my mentioned copending application Serial No. 414,988. Also the mount and tracks for the door, whereby the same may be moved into or out of the door opening and moved longitudinally along the outer face of the car is fully set forth in my mentioned copending application, as is also the means for latching the door closed so that a detail description of these elements employed in my present structure is not deemed necessary.

However, it may be necessary to state that the door has fixed on its outer face guides 7 for rollers 8 which travel on tracks 9 fixed to the door, the guides or brackets 7 being of substantially U-shaped formation so that the

door can move outwardly through the opening and travel longitudinally on the tracks and likewise that the latching bars, which move into upper and lower keepers in the top and bottom members of the door openings are connected to the ends of a link or bar which is centrally mounted upon a shaft provided with an operating handle 10 on the outer face of the door and the said handle, when the door is in closed position, receives through a slot therein a bail 11 to be engaged by the hasp of a lock 12.

The door 1, at desired spaced intervals, is also provided with transverse substantially rectangular openings 13 and each of these openings is surrounded by an outwardly extending downwardly arched shield 14. The shields are preferably integrally formed with the door 1.

In the ends of the shields 14 there are fixed bearings 15 for shafts 16 and fixedly secured on each of these shafts there is a shutter valve 17. Each shaft, or if desired, each shutter valve has secured thereto an inwardly extending angularly disposed arm 18 provided with an elongated slot 19 and these slots have passed therethrough headed pins or studs 20 which enter a vertically disposed rod or bar 21, the said rod or bar being slidable through suitable guides 22. One edge of the rod or bar 21, adjacent to the lower portion thereof, has outwardly extending teeth 23 and these teeth are engaged by teeth on a segmental member or wheel 24. The wheel 24 is fixed on a shaft 25 that is journaled through a suitable bearing in the door 1. The stub shaft 25 has pivotally secured on its outer face the bifurcated end of a lever 26, and this lever is swingable between spaced pairs of fingers 27 fixed on and extending outwardly from a segmental plate 28 and the said segmental plate is bolted or otherwise secured on the outer face of the door.

It will be apparent that by swinging the lever and turning the shaft a longitudinal movement will be imparted to the rod or bar 21 and by throwing the lever between any desired pair of fingers 27 the shutter valve 17 will be swung to close or to partly open the shields 14, so that outside air will be permitted to pass through the openings surrounded by the shields at desired quantities and consequently the interior of the car will be properly ventilated without liability of rain, snow or the like entering therein. The shutter valves are operated only when the door is closed and by this construction it will be apparent that the contents of the car or other device closed by the door 1 will be properly ventilated and will be protected from deterioration.

Having described the invention, I claim:

A door for the purpose set forth provided with vertically arranged spaced series of lateral openings arranged in a line, outwardly disposed downwardly extending arched shields covering the openings, bearings in the ends of the shields, shafts journaled in the bearings, flat plates comprising shutter valves fixed on the shafts, angularly arranged slotted arms fixed on the shafts and extending through the openings, a vertically movable bar having headed studs received through the slots of the arms, guide means for the bar, said bar having a toothed edge, a toothed wheel engaging the teeth of the bar, a shaft on which the wheel is fixed, bearings for the shaft, a swingable lever on the shaft, a segmental bracket fixed on the outer face of the door and having spaced pairs of outwardly extending arms between which the lever is swingable.

In testimony whereof I affix my signature.

EDWIN D. DRUMMOND.