

S. MASON, DEC'D.
W. L. MASON, ADMINISTRATOR.
REFRIGERATOR CAR.

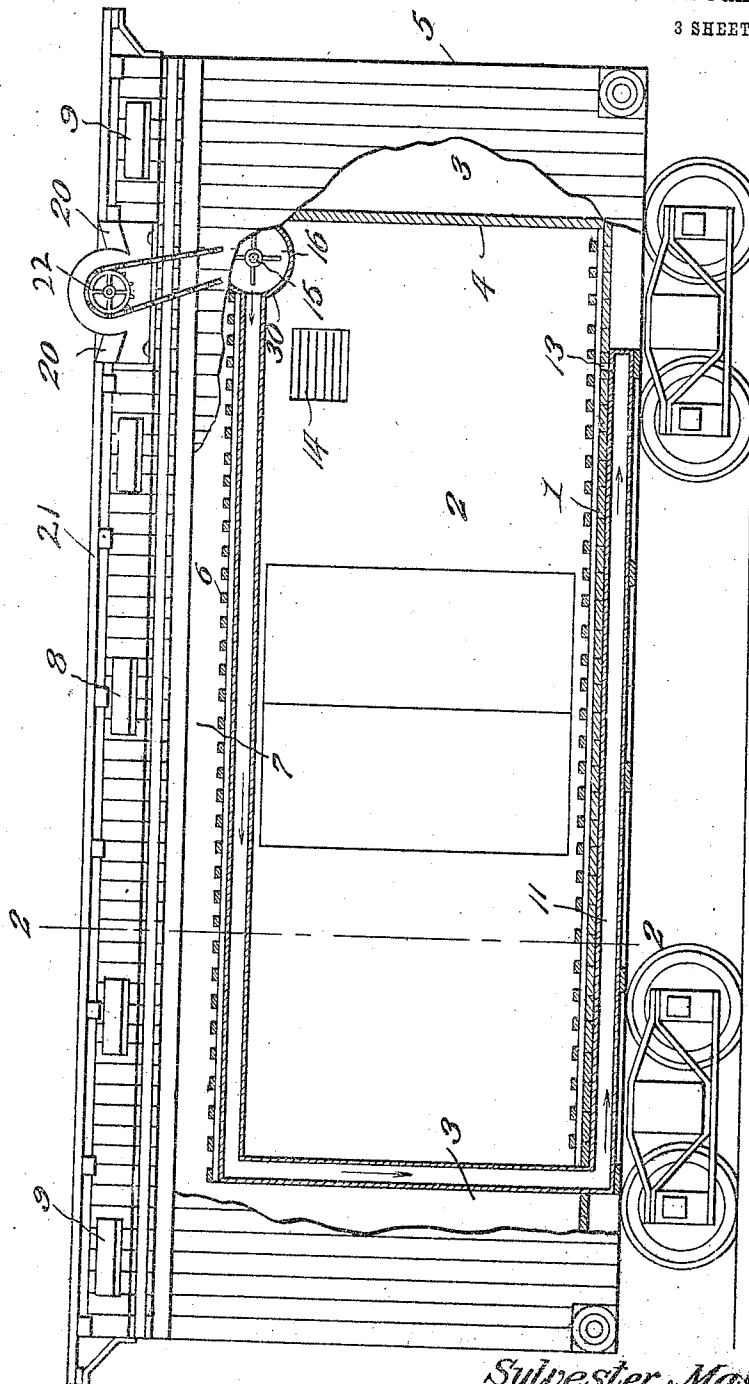
APPLICATION FILED NOV. 12, 1907. RENEWED AUG. 15, 1911.

1,030,671.

Patented June 25, 1912.

3 SHEETS—SHEET 1.

Fig. 1.



Witnesses

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3 SHEETS—SHEET 2.

Fig. 2.

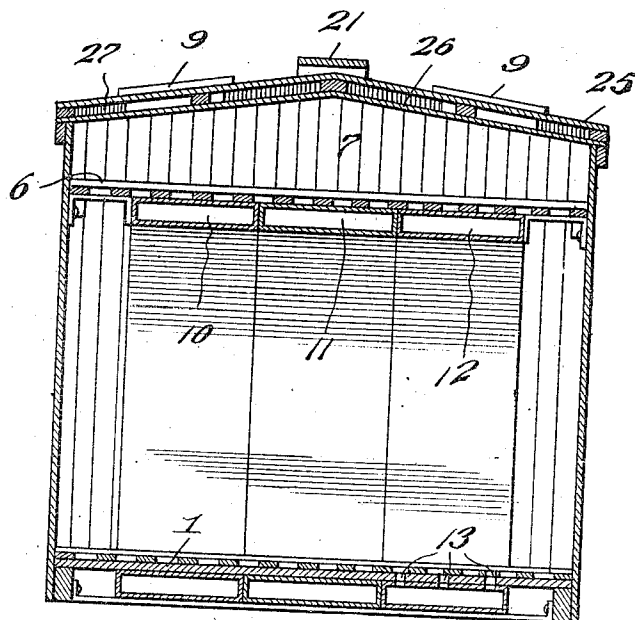
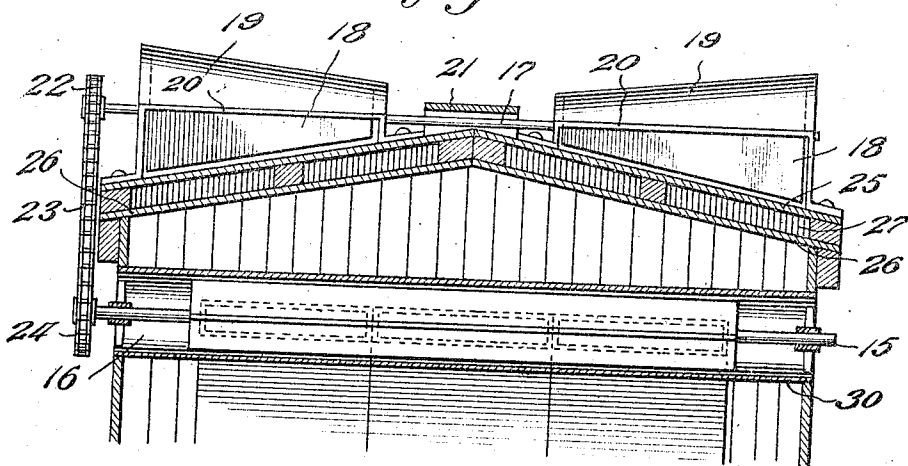


Fig. 3.



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3 SHEETS—SHEET 3.

Fig. 4.

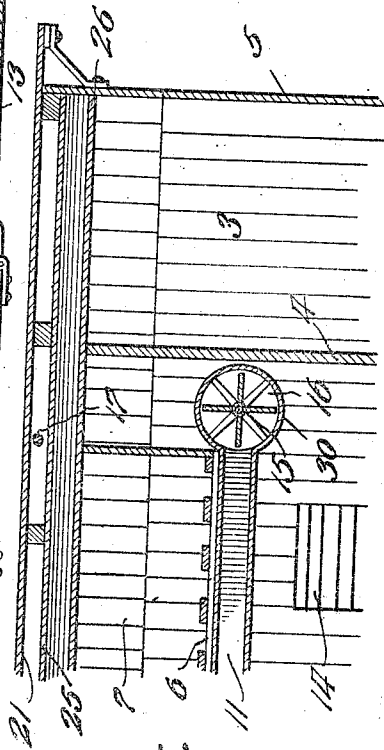
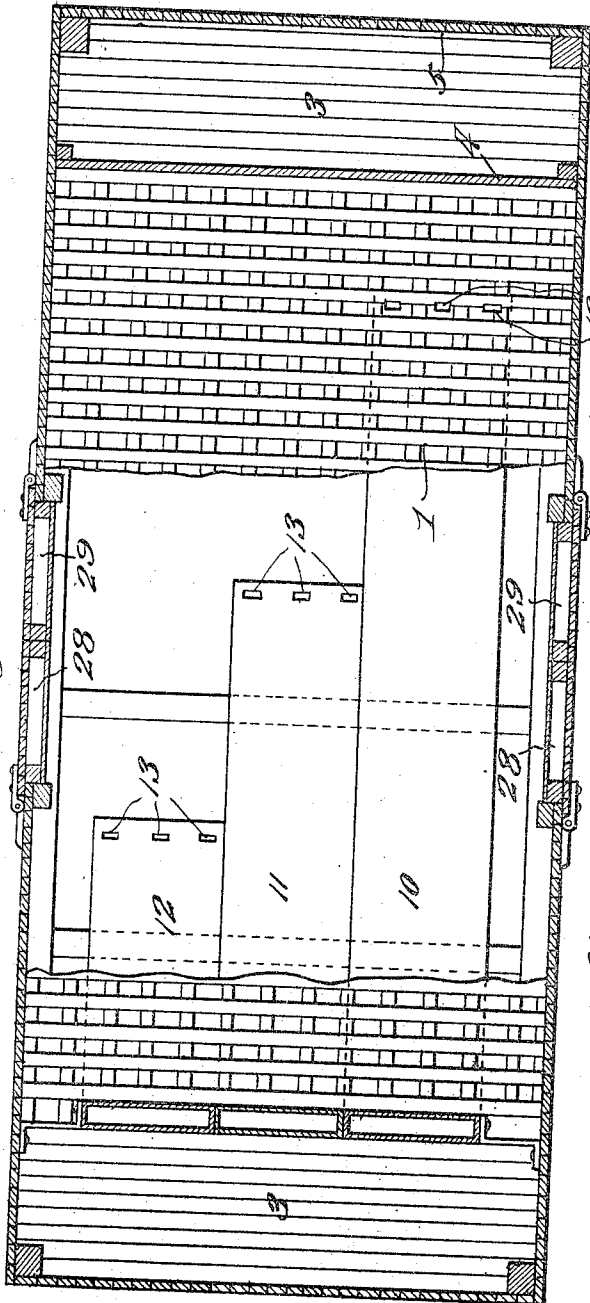


Fig. 5.

Witnesses

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UNITED STATES PATENT OFFICE.

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REFRIGERATOR-CAR.

1,030,671.

Specification of Letters Patent.

Patented June 25, 1912.

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To all whom it may concern:

Be it known that I, SYLVESTER MASON, a citizen of the United States, residing at Willisville, in the county of Perry and State of Illinois, have invented new and useful Improvements in Refrigerator-Cars, of which the following is a specification.

This invention relates to refrigerator cars, the object of the invention being to secure better refrigeration than is now to be obtained in the ordinary refrigerating cars now in common use, to render the refrigeration of the car more economical, to afford increased storage capacity and also to provide for a complete circulation of air and ventilation of and escape of heated air from the storage compartment.

A further object of the invention is to obtain a simple, economical and effective construction of car and the parts thereof which contribute to the ventilating and refrigerating capabilities thereof.

With the above and other objects in view, the nature of which will more readily appear as the description proceeds, the invention consists in the novel construction, combination and arrangement of parts hereinafter fully described, illustrated and claimed.

In the accompanying drawings, Figure 1 is a side elevation partly in section of a refrigerator car to which this invention is shown applied. Fig. 2 is a vertical cross section thereof on the line 2—2 of Fig. 1. Fig. 3 is an enlarged vertical cross section through the upper portion of a car illustrating the motor and fan arrangement. Fig. 4 is a sectional plan view of the car. Fig. 5 is a detail vertical longitudinal section through the upper part of one end of the car.

The car in which this invention is embodied may be of any general or preferred construction and in fact the principles of the invention may be applied to cars now in general use without rebuilding the same and without extensive alterations.

1 designates the usual floor of the car which forms the bottom of the refrigerating chamber or storage room 2. This storage room is made as long as possible to leave end ice bins 3 between the end walls 4 of the storage room and the ends 5 of the car, which bins are adapted to be partially or wholly filled with ice. The roof or top of the storage room is preferably of slatted

form as shown at 6 and is at a sufficient distance beneath the roof of the car to provide a superimposed or top ice bin 7 to which filling openings lead through the roof of the car, said openings being closed by means of trap doors 8. Corresponding filling openings lead through the roof of the car to the end ice bins 3 and are closed by other similar trap doors 9.

Extending along the top of the storage room 2 is a plurality of air conduits 10, 11 and 12 arranged side by side and preferably close together as illustrated in Figs. 2 and 4. At one end of the storage compartment, said air conduits extend downward as shown in Fig. 1 and then horizontally beneath the floor of the car as shown in the same figure, and by reference to Fig. 4, it will be observed that these air conduits terminate beneath the car floor at different points and are provided with discharge openings 13 which register with corresponding openings in the floor 1, whereby the cold air delivered from said conduits is directed up through the floor of the car at different points in the length of the storage compartment thus distributing the cold air throughout said compartment and through the produce contained therein, the heated air rising and passing through one or more slatted ventilators 14. The top runs of said air conduits which extend along the top of the storage compartment all terminate in the same transverse plane as indicated in Fig. 1, and extending across the receiving ends of said conduits is the shaft 15 of a blast fan 16, which fan is of sufficient length to supply air to each and all of the air conduits 10, 11 and 12 when rapidly rotated.

The fan casing 30 extends the full width of the car body and has its ends both open to the atmosphere so that air can enter from each end as the fan rotates and as a result all the air ducts will be amply supplied with air and as long as the fan operates there will be a continuous circulation of air through the storage room since the air will flow out through the ventilator 14 as fast as fresh air is supplied by the fan.

The means for imparting movement to the blast fan 16 consists of a wind motor mounted on the roof of the car so as to be subjected to a current of air from either side according to the direction in which the car is moving. Under the preferred embodiment of

the invention, the wind motor comprises a shaft 17, on which are mounted fans 18 partially inclosed by superimposed housings or hoods 19, which shield about one-half of each fan 18, exposing the remaining half, preferably the lower half of such fan to the action of the current of air, the hoods 19 being provided with inlet mouths 20 extending in opposite directions as indicated in Fig. 1. The shaft 17 passes under the usual running board 21 extending lengthwise and centrally of the top of the car, and said shaft is provided at one end with a sprocket wheel 22 from which a driving chain 23 extends downward around another sprocket wheel 24 fast on the blast fan shaft 15. Thus it matters not in which direction the car is moved, the fan 18 is subjected to the action of the air current and rotation is imparted to the blast fan 16 which directs a current of air through each of the air conduits 10, 11 and 12, the air being distributed to different parts of the storage room of the car in the manner above described. It will be noted that as the air traverses the said conduits it becomes thoroughly chilled by reason of the contiguity of said conduits to the ice bins shown and described.

It is also desirable to make the roof of the car of double construction as indicated in Figs. 2 and 3, the said roof comprising an outer wall 25 and an inner wall or ceiling 26, leaving an interposed air space 27 between the same. The construction just referred to affords a considerable protection to the top ice compartment and other parts of the car and economizes in the consumption of ice.

If desired, the side and end walls of the car and also the doors 28 may be double walled or provided with inclosed air spaces 29 and the said parts may be lined with suitable material to still further resist the transmission of heat from the outer atmosphere to the storage compartment of the car.

While the driving mechanism for the blast fan has been described as of the sprocket and sprocket chain type, it will of course be understood that spur gearing or belt gearing may be substituted for the sprocket gearing shown and described without departing from the principle of the invention.

Having thus fully described the invention, what is claimed as new is:—

1. A refrigerator car comprising a body provided with a storage compartment, a fan casing mounted wholly within the body and

extending from one side thereof to the other with both ends open to the atmosphere, a fan arranged within the casing, means for distributing air delivered by the fan into the storage compartment, a ventilator leading out of the storage compartment and independent of the fan casing, and means mounted on the body for operating the fan.

2. A refrigerator car comprising a body provided with a storage compartment, a fan casing mounted wholly within the body and formed in part by one of the walls of the storage compartment, both ends of the fan casing being open to the atmosphere, a reversible fan mounted in the casing to draw air into the latter through both ends, air conduits extending from the casing to and discharging into the storage compartment, and a reversible motor mounted on the body at the outside thereof and operatively connected with the fan.

3. A refrigerator car comprising a body provided with a storage compartment, a fan receiving air direct from the atmosphere and delivering it to the compartment, a motor shaft mounted on the top of the body and extending transversely thereto in a horizontal plane, an operating connection between the shaft and fan, separate wind wheels secured to the shaft, and a hood over each wheel and open at opposite sides to cause rotation of the wheels in either direction by the currents of air induced by the movement of the car.

4. A refrigerator car comprising a body provided with a storage compartment, a fan casing extending entirely through the body and open to the atmosphere, means for conducting air from the fan casing to the compartment, a fan rotatably mounted in the casing, a shaft mounted above the body and extending from one side thereof to the other and substantially parallel with the axis of rotation of the fan, driving means between the shaft and fan located outside the car body, wind wheels mounted on the shaft at opposite sides of the longitudinal center of the car, and a hood secured to the roof of the car and disposed over each wind wheel and having openings at opposite sides for permitting wind currents to rotate the wheels in either direction.

In testimony whereof I affix my signature in presence of two witnesses.

SYLVESTER MASON.

Witnesses:

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