

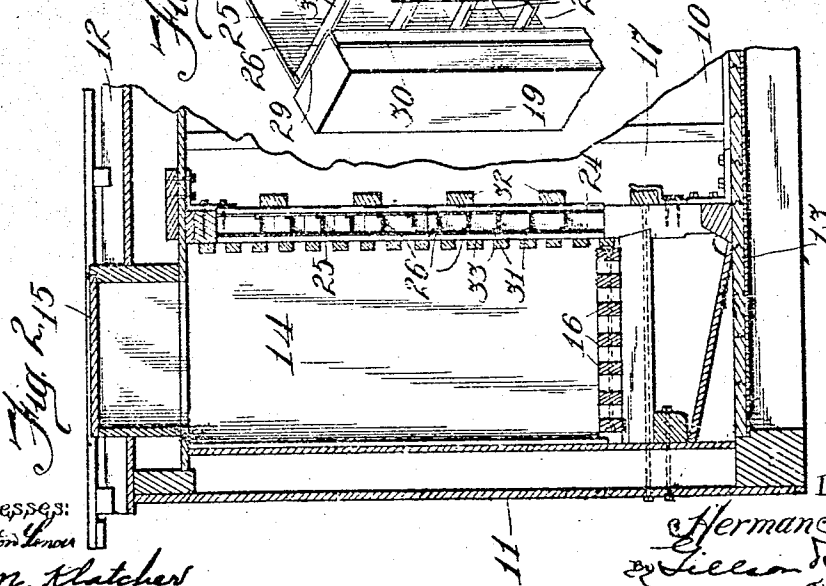
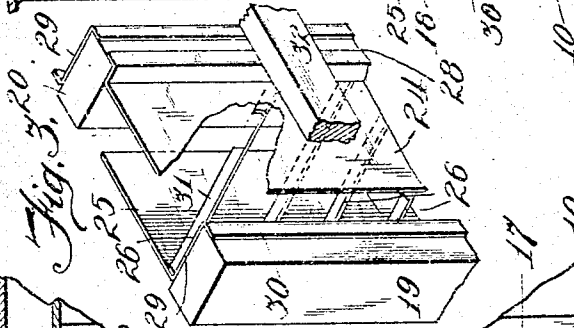
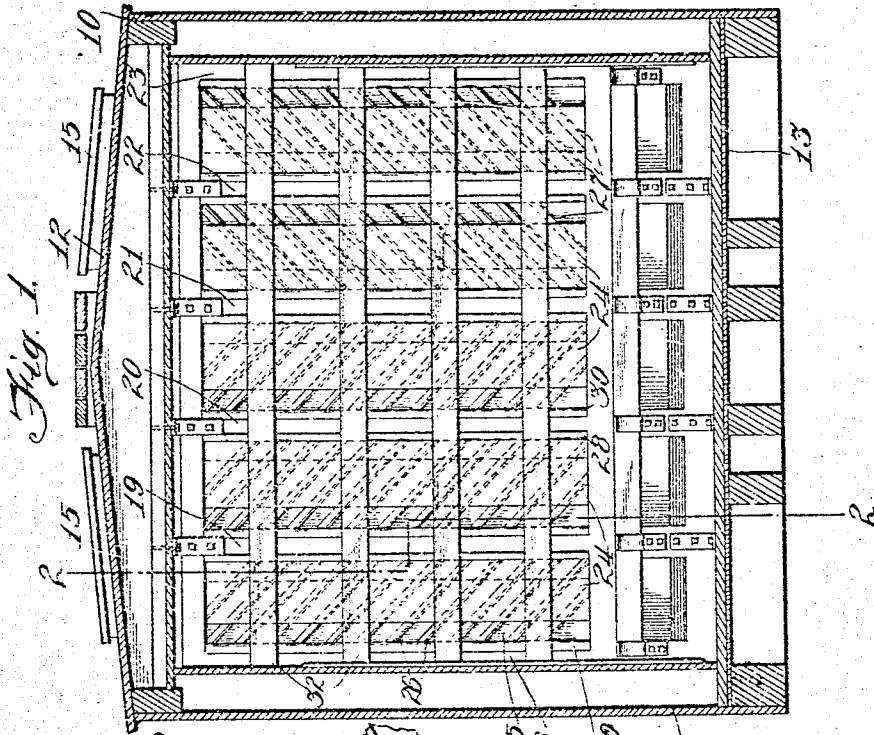
H. PRIES.
REFRIGERATOR.

APPLICATION FILED MAY 21, 1909.

Patented Mar. 14, 1911.

3 SHEETS—SHEET 1.

986,859.



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Fig. 4.

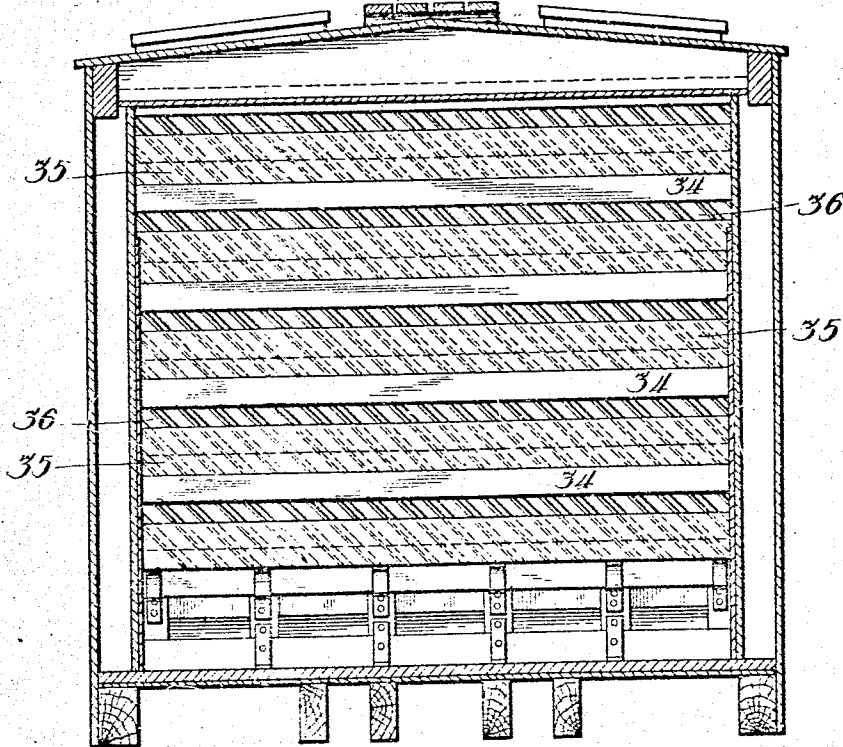


Fig. 5.

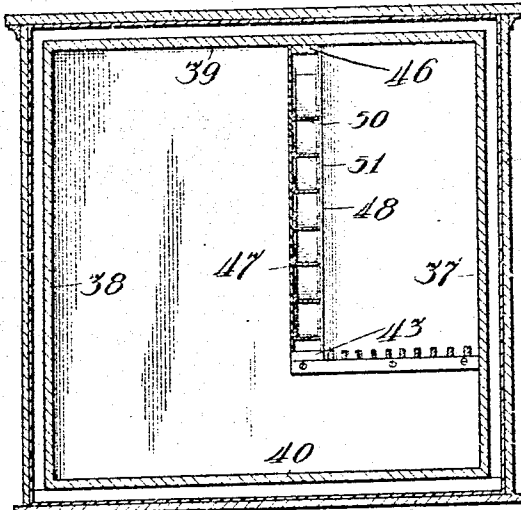
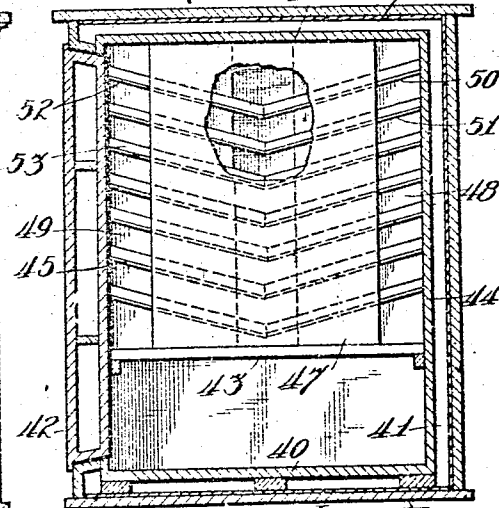


Fig. 6.



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Witnesses:

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UNITED STATES PATENT OFFICE.

HERMAN PRIES, OF MICHIGAN CITY, INDIANA.

REFRIGERATOR.

986,859.

Specification of Letters Patent.

Patented Mar. 14, 1911.

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To all whom it may concern:

Be it known that I, HERMAN PRIES, a citizen of the United States, and resident of Michigan City, county of Laporte, and State of Indiana, have invented certain new and useful Improvements in Refrigerators, of which the following is a specification, and which is illustrated in the accompanying drawings, forming a part thereof.

This invention relates to improvements in refrigerators, being applicable as well to domestic refrigerators as to refrigerator cars, and its object is to improve the construction of devices of this character, especially with view to increasing the circulation of air through both the storage compartment and the compartment for containing ice or other cooling agent.

The invention consists in a structure such as hereinafter described and as illustrated in the accompanying drawings, in which—

Figure 1 is a transverse vertical sectional view of a refrigerator car taken through the storage compartment and looking toward the wall of the ice compartment; Fig. 2 is a detail longitudinal vertical section of the car through the ice compartment; Fig. 3 is a detail in perspective of the partition separating the two compartments of the car; Fig. 4 is a sectional view similar to Fig. 1, showing a modified form of construction; Fig. 5 is a vertical section of a domestic refrigerator taken through both its storage and ice compartments; Fig. 6 is a vertical section of the same device taken through the storage compartment and looking toward the wall of the ice compartment, a portion of the wall being broken away; Fig. 7 is a vertical transverse section of a car body showing a modified form of construction; and Fig. 8 is a detail plan section on the line 8—8 of Fig. 7.

Referring to Figs. 1 and 2, there is shown at 10, 10, the side walls, at 11 an end wall, at 12 the roof, and at 13 the floor of a refrigerator car. An ice compartment is designated 14, its charging door is shown at 15, and its ice-supporting floor at 16. The storage compartment of the car is designated as 17. The two compartments are separated by a partition within which are included flues for promoting and stimulating the circulation of air. These flues lead from the storage compartment to the ice compartment, their openings into the latter

being lower than their openings from the former. Preferably, though not necessarily, these flues are inclined.

The partition separating the two compartments of the car, as illustrated in Figs. 1, 2 and 3, comprises a plurality of uprights or studs 18, 19, 20, 21, 22, 23, as many of such uprights being employed as the judgment of the builder may suggest; facing plates 24, 25, and inclined plates 26, 27, joining the facing plates and adjacent uprights. Openings are provided in both faces of the partition, the openings in the face toward the storage compartment of the refrigerator being at the upper ends of the inclined plates 26, 27, and those in the face toward the cooling compartment being at the lower ends of such plates. As shown, this arrangement of openings is provided by terminating the plates 24 a short distance from the uprights, as 18, from which the plates 26, 27, incline downwardly, and by terminating the plates 25 a short distance from the uprights, as 19, from which these inclined plates rise. Rigidity may be secured by bending the plates 24 to form an angle to fit the corner of the uprights, as 19, as plainly shown at 28; and for the same reason the plates 24 are bent to cover a side face of the uprights from which they lead, as shown at 29, and are further bent to overlap the front face of the upright, that is to say, the face adjacent the storage compartment, as shown at 30. These plates may be secured to the uprights by means of nails or screws. The inclined plates are preferably flanged upwardly at their edges, as shown at 31, and riveted to the facing plates. These side flanges of the inclined plates are preferably cut away opposite the openings in the partition. This construction of the partition provides flues leading downwardly from the storage to the cooling compartment and as air chilled in the cooling compartment tends to descend, it draws the air from the storage compartment through these flues. The circulation is further stimulated by the chilling of the air as it enters the flues. As the temperature within the storage compartment of a refrigerator is somewhat higher adjacent its side walls than remote therefrom, it is desirable to have openings in the storage compartment side of the partition adjacent the side walls and to this end, as shown by

dotted lines in Fig. 1, the partition flues extend downwardly from both sides of the car.

In Figs. 1 and 2 there are shown bars 32 crossing the storage compartment face of the partition. These bars merely serve the purpose of protecting the plates 24 from injury by contact of the contents of the car. Similar cross-bars 33 protect the plates 25 from damage by the ice.

In Fig. 4 the bars forming the framework of the partition, instead of being upright as in Figs. 1, 2 and 3, are horizontal, as shown at 34, and the facing plates 35, 36, are similarly disposed, the openings from the storage compartment being at the tops of the plates and the openings into the cooling compartment being at the bottoms of the plates 36. The inclined plates are arranged as in the other form of construction, and the manner of attaching the various plates to the framing of the partition may be substantially the same and need not, therefore, be shown and described in detail. This horizontal arrangement of the framing and facing plates has the advantage of providing continuous openings entirely across the car and which will receive the various strata of air moving toward the cooling compartment without compelling lateral movement.

In refrigerator car construction it is desirable that access may be freely had to the ice compartment for the purpose of cleaning, and to that end the partition separating the two compartments may be openable. Such form of construction is illustrated in Figs. 7 and 8, wherein a portion of the partition is shown as taking the form of a pair of doors 54, 55, hinged adjacent the side walls of the car, as shown at 56, 57, 58, 59, and meeting at the median line of the car and being secured together by any suitable means, such as a hasp 60. When this form of construction is employed, the air flues may be located in the doors, and these doors are shown as having panels each formed of a plate 61 located on the front or storage compartment side of the door and terminating below a cross-rail of the door; a plate 62 located on the back or ice compartment side of the door and terminating above a cross-rail of the door; and oblique plates, as 63, crossing the space between the two panel plates and with them constituting the flues.

The invention may be applied to a domestic refrigerator in substantially the same manner as shown in Figs. 5 and 6, wherein the side walls of such a device are shown at 37, 38, its top at 39, and its bottom at 40, its rear wall at 41 and its door at 42. In such a structure the partition between the two compartments need not be strengthened by intermediate uprights or cross-bars. As shown, the framing of the partition comprises a lower sill 43, uprights 44, 45, at the

rear and front of the refrigerator, and a cross-bar 46 at the top of the refrigerator. A single facing plate 47 is shown as extending from the sill 43 to the cross-bar 46 on the storage compartment side of the partition, the edges of this plate being spaced apart from the uprights 44, 45, to provide openings for admission of air; and there is a pair of facing plates 48, 49, forming the face of the partition directed toward the cooling compartment, these plates extending respectively from the upright 44 and the upright 45 toward but not quite to the vertical median line of the partition. A plurality of inclined plates 50, 51, as many as 80 may be preferred, extend downwardly from the upright 44, and a plurality of similar inclined plates 52, 53, extend downwardly from the upright 45, the inner ends of the two sets of plates meeting at the median line of the partition. These various plates may be secured to the framework of the partition and to each other in a manner similar to that shown in Figs. 1, 2 and 3, and need not be shown and described in detail.

I claim as my invention—

1. A refrigerator comprising a walled structure having a hollow partition with offset openings in its faces and inclined flues connecting such openings and extending parallel with the surfaces of the partition.

2. In a refrigerator, a partition separating the compartment for containing the cooling agent from the storage compartment, such partition comprising, in combination, studs or bars spaced apart, plates forming the faces of the partition, each plate being spaced apart from one of a pair of studs or bars, such spacing of opposing plates being out of register, and inclined flue plates fitting between such opposed plates.

3. In a refrigerator, a partition comprising studs or bars, inclined plates connecting adjacent studs or bars and extending transversely of the partition, and face plates, each extending from one stud or bar toward but spaced apart from an adjacent stud or bar, the face plates of one side of the partition engaging the studs or bars at the lower ends of the inclined plates and those of the opposite side of the partition engaging the studs or bars at the upper ends of the inclined plates.

4. In a refrigerator, in combination, a walled structure, and a partition separating the interior of the structure into a storage chamber and a cooling chamber, and inclined flues inclosed within the partition and extending parallel with its faces, such flues opening at their upper ends to the storage chamber and at their lower ends to the cooling chamber.

5. A refrigerator comprising a storage chamber and an ice chamber, the partition separating the two chambers having a door,

such door containing air flues extending parallel with the surfaces of the door and opening to both compartments.

5 6. A refrigerator comprising a storage chamber and an ice chamber, the partition separating the two chambers having a door, such door containing air flues extending parallel with its faces and opening to both com-

partments, the opening of each flue to the storage chamber being higher than its opening to the ice chamber. 10

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