

(No Model.)

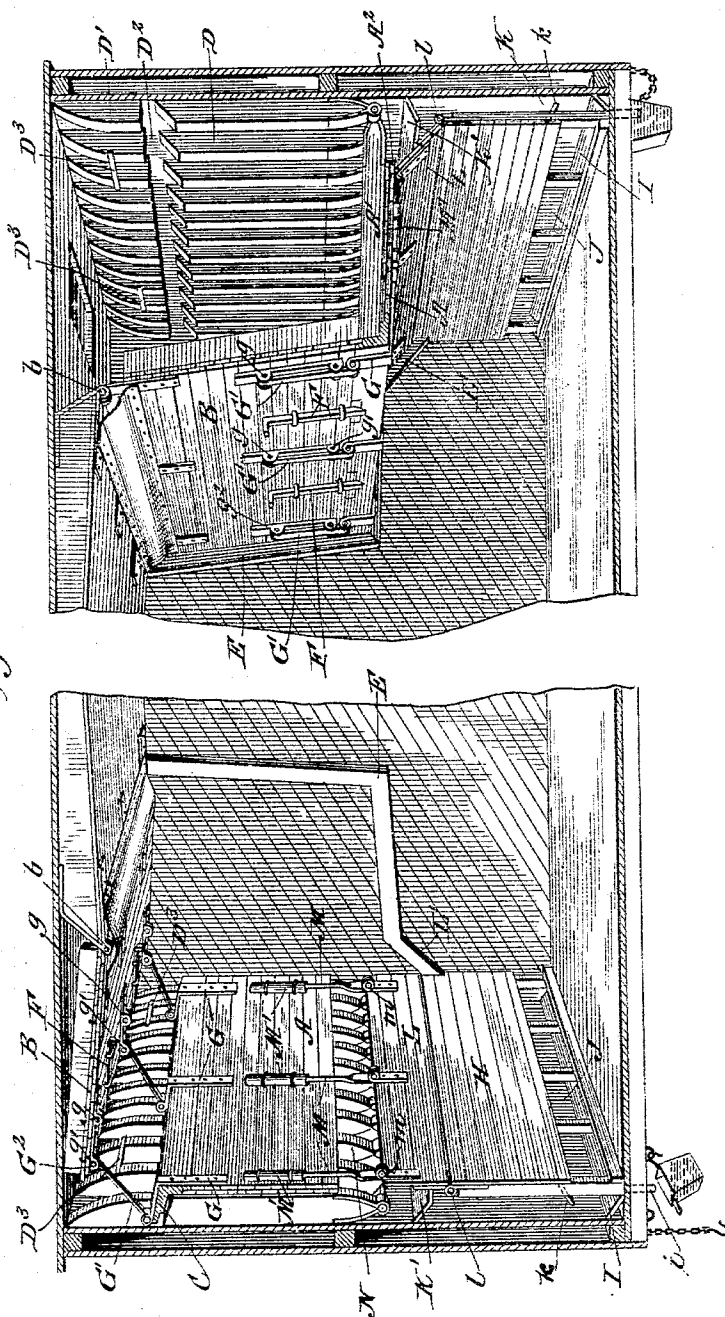
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C. S. HARDY.
REFRIGERATOR CAR.

No. 531,930.

Patented Jan. 1, 1895.

Fig. 1.



WITNESSES:
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P. B. Surpin.

INVENTOR
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(No Model.)

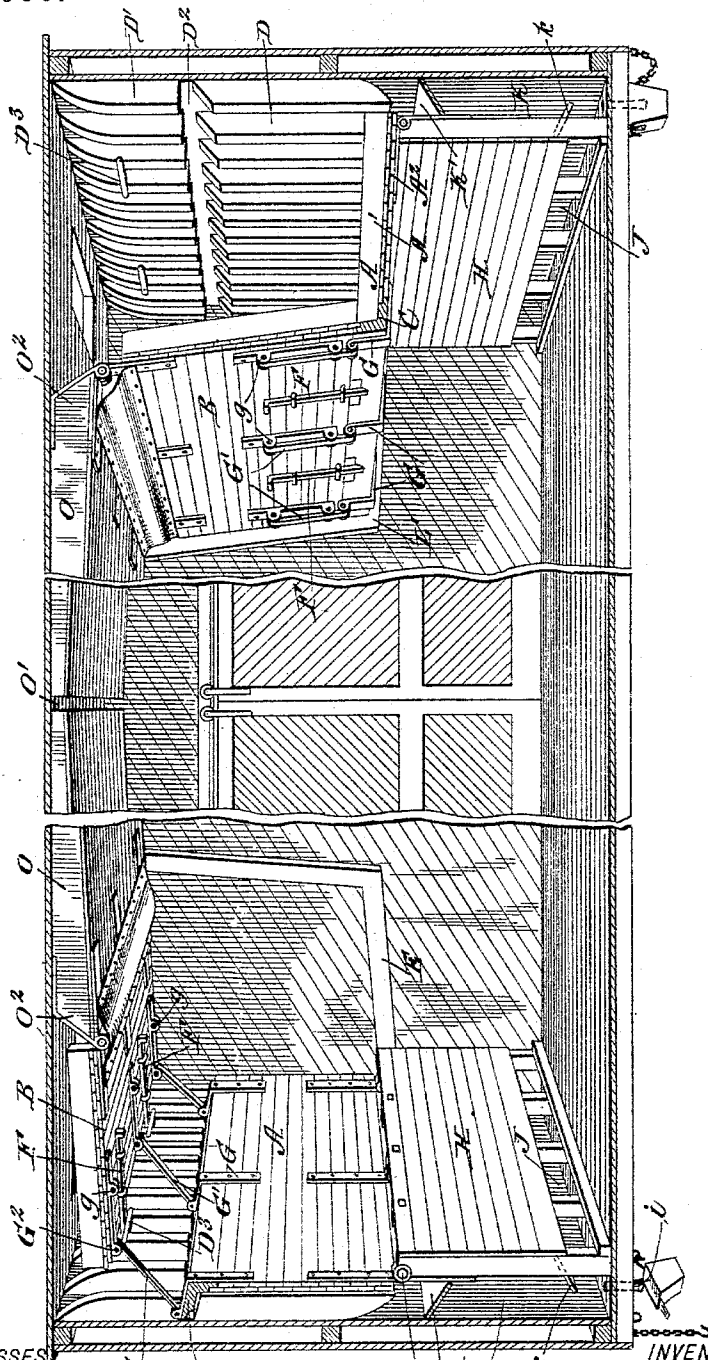
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Fig. 2.



WITNESSES

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UNITED STATES PATENT OFFICE.

CHARLES S. HARDY, OF SAN DIEGO, CALIFORNIA.

REFRIGERATOR-CAR.

SPECIFICATION forming part of Letters Patent No. 531,930, dated January 1, 1895.

Application filed December 15, 1893. Serial No. 493,779. (No model.)

To all whom it may concern:

Be it known that I, CHARLES S. HARDY, residing at San Diego, in San Diego county, in the State of California, have invented a new and useful Improvement in Refrigerating Apparatus, of which the following is a specification.

My invention is an improvement in that class of refrigerating and storing apparatus in which are employed folding ice boxes or receptacles and the present invention has for an object to furnish simple means to prevent shifting cargoes from closing in the folding sections of the ice box and to so construct such means that they will operate to support the folding side section folded in position while the floor section is being raised.

The invention has for a further object to provide a novel construction of drain passage.

The invention has for further objects other improvements, and consists in certain novel constructions and combinations of parts as will be hereinafter described and pointed out in the claims.

In the drawings—Figure 1 is an interior perspective view of the opposite ends of a car provided with my improvements, parts being broken away and others shown in section. Fig. 2 is a similar view showing a somewhat different construction.

In the figures the ice boxes at the left are shown closed or folded and those at the right open or unfolded.

In the construction shown in Fig. 1 and as preferred, the ice box is formed with the floor or bottom A and the wall B, the latter being suitably hinged at its edge b so it may be turned up toward the roof of the car. The bottom A is formed with the cleats A', the covering A² and the cross or edge bar C at its swinging end and is hinged to cleats D secured vertically upon the end of the car the hinge connection being preferably effected by the hinges shown having box like portions embracing the ends of cleats D and A'. The cleats A' alternate with and fold up between the end cleats of the car and the edge bar C fits above the ends of the cleats or sections D, the end cleats of the car being formed in upper and lower sections D' and D separated by an intervening cross space or recess D² into which the edge bar C fits in the folded

position of the bottom as will be understood from the position of parts shown at the left in Fig. 1. The upper sections or cleats D' hold the ice at the top of the receptacle away from the end of the car so air can freely circulate, serve to strengthen the car at such point and form a simple, convenient means of furnishing a support for the seats D³ for the bolts of the wall section.

In practice the floor or bottom may be lowered from the position shown at the left to that shown at the right in Fig. 1 and the side wall be then turned down with its swinging edge rested closely upon and fitted tightly to the edge of the floor section forming a snug joint. When so opened or unfolded the side or floor rest upon and are supported and sealed by side cleats E. To prevent the side and floor from being collapsed or pressed inward toward folded position by shifting of the freight or contents of the car I provide each box with locking devices preferably a bolt or bolts F held to the wall section and movable beyond the free edge thereof and alongside the edge of the floor lapped under the side wall as shown at the right in Fig. 1. When so adjusted the bolts prevent the wall from being forced inward and the bearing of the bottom below the wall prevents such bottom from being forced upward as will be readily understood. In addition to their utility in preventing the closing in or collapsing of the box by external pressure the bolts serve to support the side wall in the operation of closing the box. Thus in closing the box the side may be lifted and held elevated by engaging its bolts with the seats D³. This holds the side walls until the bottom can be turned upward to closed position and the hinges be adjusted to secure the side wall and floor in the closed position shown at the left.

The hinge shown has one strap G fixed to the bottom and its other strap G' is arranged to lap against the outside of the wall B and in a keeper frame having perforated lugs g g', the said strap G' being also perforated at g². When the parts are as shown at the right the connecting bolt G² may be passed through the opening in the lugs g and the opening g²; while to hold the parts in the folded position shown at the left the opening g² should be brought to register with lugs g' and the bolt G²

be then applied as shown at the left to hold the side wall and top in folded position, the hinge section operating as a brace between both box sections to secure them firmly in position.

5 At each end of the car I form drain flues H provided or communicating at their lower ends with troughs I from which the outlet pipes lead as shown. These drain flues communicate at their lower ends with the storage
10 space of the car and at their upper ends with the ice boxes and are provided between such points and preferably close to the lower opening J with a fender or drip guard having its edge *k* over which the drip passes next the
15 end of the car and arranged to receive and break the fall of water from above so that its drop into the drain trough will be short and will not have sufficient force to spatter upon the contents of the car. This drip guard is
20 an important feature and in practice I prefer to incline it as shown and also to employ in connection with it an upper drip guard K' arranged reversely to the guard *k* so it will discharge upon the upper side of the said guard
25 *k* as will be readily understood from the drawings. By this arrangement of upper and lower guards I insure that all drippings from above the lower guard will strike upon said guard instead of passing alongside the free edge of
30 such lower guard and avoid the possibility of any long drip into the bottom of the drain flue and consequently any splashing onto the contents of the car. The upper portion L of the inner wall of the drain flue is hinged at
35 its lower edge at *l* so it may fold outward as shown at the right in Fig. 1 or inward as shown at the left. This upper portion or wing L operates to flare the upper end of the flue when the parts are adjusted for use and
40 forms a free outlet for the air and drippings from the ice box. This portion or wing L also forms an additional drip or spatter guard it being in use projected oppositely to the upper guard K' and approximately parallel
45 to the lower guard *k*. This wing L discharges its drip onto the lower guard K' and being arranged at its lower end below the upper guard operates to receive any splatterings therefrom and is also so arranged that in case
50 of any considerable flow from such upper guard it will acquire sufficient impetus to flow over and onto said hinged guard L as will be understood from the drawings. When open as shown at the right in Fig. 1 the wing
55 or section L is supported upon side cleats L' and it is so connected with the folding side wall of the ice box that the movement of said wall opens and closes the drain flue wing, this being preferably effected by means of the connecting rods M jointed at one end *m* to the section or wing L and having a sliding connection at its other end with the wall of the ice box, such sliding connection being preferably effected by fitting such end of the
60 rod to slide in a sleeve M' secured upon the outer side of the wall A as shown. In practice it is preferred to use several of the con-

necting rods M to each wing usually one at each end and one at the middle as shown most clearly at the left in Fig. 1. When the ice
70 box flue wing, &c., are folded as shown at the left in Fig. 1 there are provided openings at N between the upper edge of the wing L and the ice box flue permitting in connection with the lower outlet from the drain flue a through
75 ventilation. This facilitates the drying out of the parts if they be folded when wet.

In Fig. 2 the drain flue is shown with its upper portion fixed instead of hinged as in Fig. 1 and the ice box floor is hinged to the
80 stud beams of the flue instead of to the end cleats of the car, but the end drain flue feature and the manner of locking the ice box against collapsing by external pressure are substantially the same as shown in Fig. 1.
85

The ice box or receptacle in both of these constructions receives the main air from the central storage space of the car through top
90 flues O opening at one end O' to the car and discharging at O² into the ice boxes as shown in both the figures.

Having thus described my invention, what I claim is—

1. In an apparatus for refrigeration and storage, an ice box or receptacle having fold-
95 ing sections arranged and adapted to open outward to position for use and provided with locking devices whereby to prevent the collapsing or folding of the box by external pressure, substantially as set forth.
100

2. In an apparatus for refrigeration and storage, an ice box having a hinged floor and side wall arranged to lap together when ad-
105 justed to position for use and a bolt or bolts held to one of said parts and movable alongside the other whereby to lock the box from being collapsed by external pressure, substantially as and for the purposes set forth.

3. In an apparatus for refrigeration and storage, the combination substantially as de-
110 scribed of the folding ice box sections, the cleats against which said sections rest in the unfolded or open position thereof, and locking devices whereby to prevent the said box from being collapsed by external pressure,
115 substantially as set forth.

4. The combination with the ice box floor and the folding wall of a bolt or bolts held to said wall and adapted to secure the box when
120 unfolded from collapsing and the car end wall having seats for said bolts whereby they may operate to support the wall section while the floor is being folded all substantially as and for the purposes set forth.

5. The combination of the car having its
125 end provided with vertical cleats and having a recess extended from side to side above said cleats, the box wall and the box floor hinged at one edge and having at its other edge a cross bar or beam fitting into the recess above
130 the end cleats in the folded position of the said floor, substantially as set forth.

6. The combination of the car having at its end upper and lower cleats separated by an

intervening recess and having the upper cleats provided with seats, the box floor hinged at one edge and provided at its opposite edge with a cross beam arranged to fit into said recess in the folded position of the box floor, and the box wall having bolts arranged to engage the seats of the upper end cleats when such wall is folded and to lock the said wall to the floor when the box is unfolded to position for use, substantially as set forth.

7. An apparatus substantially as described comprising the ice box or receptacle, an end drain flue communicating at its upper end therewith and having an outlet at its lower end, upper and lower reversely projected drip guards, and a hinged section arranged between said guards substantially as and for the purposes set forth.

8. In an apparatus substantially as described, a drain flue having a discharge opening at its bottom provided above the same with oppositely projected drip guards and having a hinged section the lower joint of which is arranged between said oppositely projected guards combined with a folding ice box and connecting devices by which to operate the hinged flue section when the box is folded, substantially as set forth.

9. In an apparatus for refrigeration and storage the combination of the folding ice box or receptacle the drain flue having a lower fixed and an upper hinged section arranged to open and close and connections whereby said upper hinged section may be opened and closed as the ice box is unfolded and folded, substantially as and for the purposes set forth.

10. In an apparatus substantially as described, the combination of the ice box hav-

ing a hinged floor or bottom, the drain flue having a hinged section, and a connecting rod jointed at one end to said flue section and having its other end held to and arranged to slide along the floor section, substantially as and for the purposes set forth.

11. The combination substantially as described of the ice box having a hinged floor and provided on the under side thereof near its hinged edge with guides arranged at right angles to said edge, the drain flue having a hinged section and rods jointed to said section and held and sliding in the guides upon the hinged floor, substantially as and for the purposes set forth.

12. The combination of the ice box having a hinged floor or bottom the drain flue having a hinged wall connected with and positively operated by said floor into both opened and folded positions an outlet opening being provided near the bottom of said flue and an opening being provided between the upper end of the flue and the floor section when the parts are folded, substantially as set forth.

13. An apparatus for refrigeration and storage substantially as described comprising a folding ice box, a drain flue having a hinged section connected with and operated by the ice box, a drip guard opposite to said hinged section and arranged at its discharge edge above that of the hinged guard section and a drip guard arranged below said hinged section and in position to receive the drip therefrom all substantially as and for the purposes set forth.

CHAS. S. HARDY.

Witnesses:

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F. S. BANKS.