(No Model.)

2 Sheets—Sheet 1.

H. KROENKE & E. BINDEWALD.

REFRIGERATOR.

No. 508,520. Patented Nov. 14, 1893.

Fig. 2.

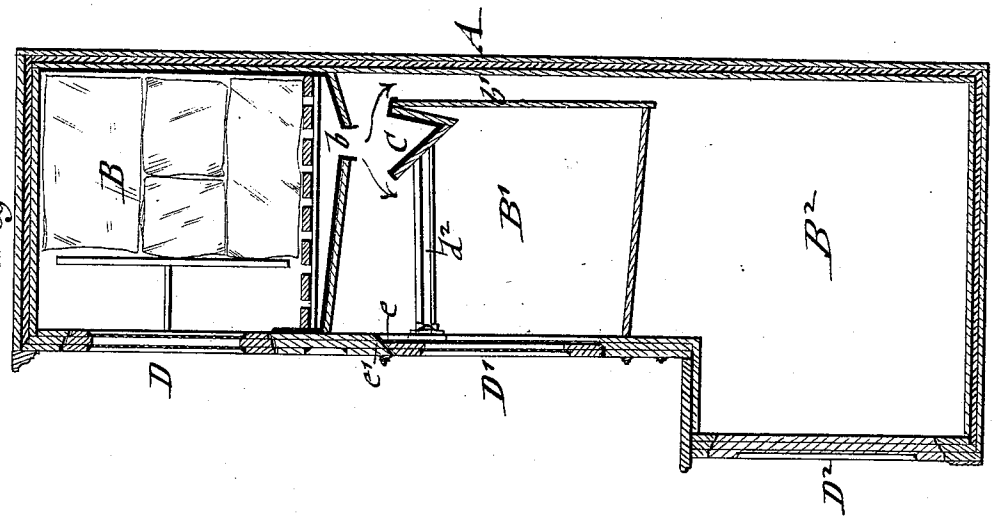
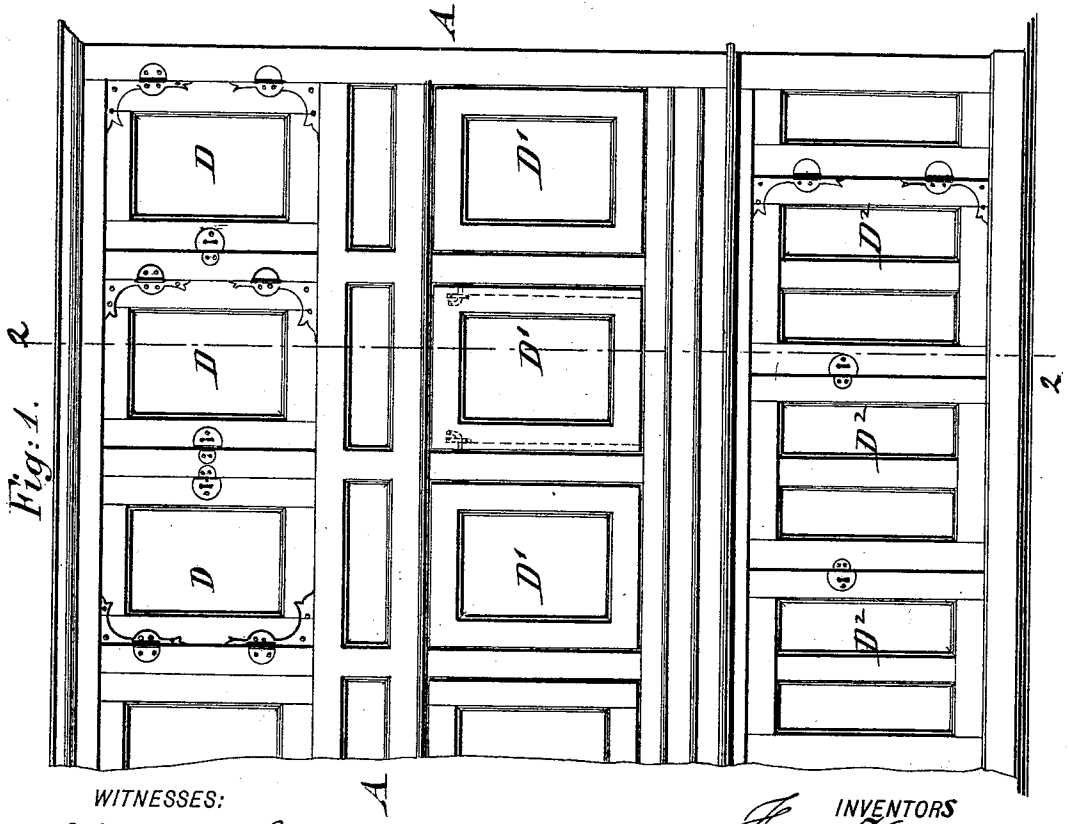


Fig. 1.



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(No Model.)

2 Sheets—Sheet 2.

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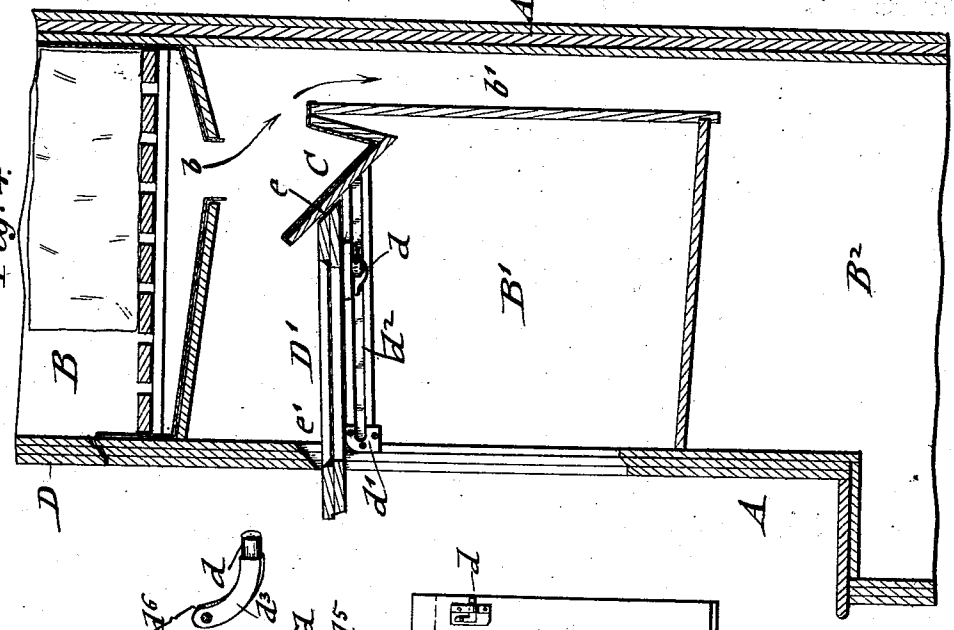
Fig. 4.



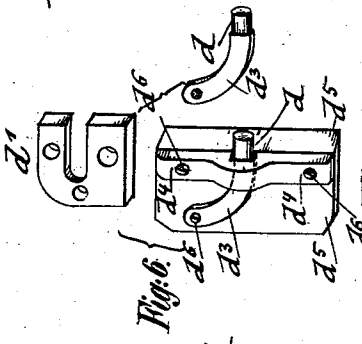


Fig. 6.

Fig. 5.

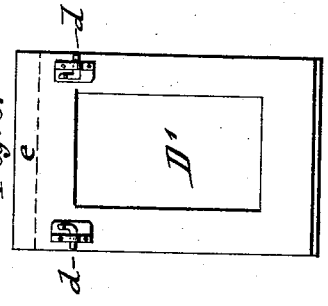
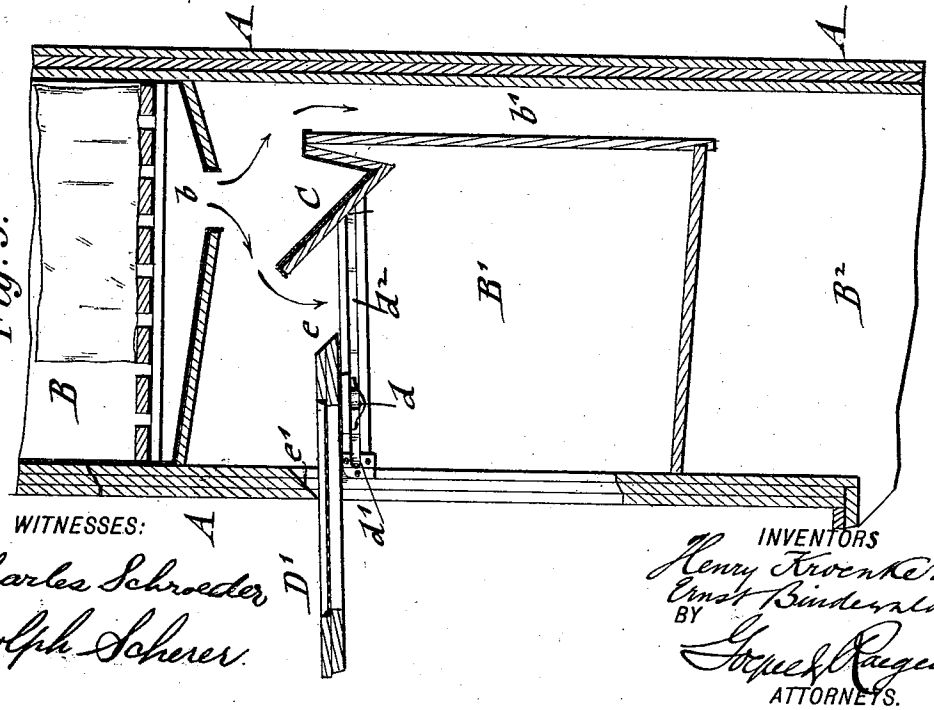


Fig. 3.



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UNITED STATES PATENT OFFICE.

HENRY KROENKE AND ERNST BINDEWALD, OF NEW YORK, N. Y.

REFRIGERATOR.

SPECIFICATION forming part of Letters Patent No. 508,520, dated November 14, 1893.

Application filed July 27, 1893. Serial No. 481,597. (No model.)

To all whom it may concern:

Be it known that we, HENRY KROENKE and ERNST BINDEWALD, citizens of the United States, residing in the city of New York, in the county and State of New York, have invented certain new and useful Improvements in Refrigerators, of which the following is a specification.

Our invention relates to certain improvements in refrigerators of that class which are used by grocers, butter merchants and others, for cooling and preserving of butter, milk and similar articles, the invention relating more especially to that class of refrigerators in which a swing-door is arranged in the front-wall of the refrigerator, and adapted to be opened and pushed inwardly so as to give access to the main storage chamber while the cold air is prevented from escaping to the outside of the refrigerator and compelled to pass into another chamber of the refrigerator.

The invention consists of a refrigerator in which the door leading to the main storage chamber is adapted to be lifted and pushed back in suitable ways into a horizontal position, so that it abuts with its rear-part against a trough for the drip-water from the ice-chamber, whereby the supply of cold air to the storage-chamber is intercepted and conducted to the lower storage-chamber of the refrigerator. The door of the storage-chamber is provided with fixed pivot-pins at its corners by which it is guided in grooved ways of the side-walls of the storage-chamber and swung along recessed and rounded off corner-pieces of said side walls into vertical position, so as to close the front of the storage-chamber, the upper beveled edge of the swing-door fitting along the corresponding beveled edge of the front wall of the refrigerator when the door is in closed position, and along the inclined wall of the drip-trough when the door is in open position.

In the accompanying drawings, Figure 1 represents a front-elevation of our improved refrigerator. Fig. 2 is a vertical transverse section of the same on line 2, 2, Fig. 1. Figs. 3 and 4 are vertical transverse sections, drawn on a larger scale, and showing the door of the storage-chamber in partly and entirely open position. Fig. 5 is a detail rear elevation of the door of the storage-chamber, and Fig. 6 is a detail perspective view of one of the pivots and corner pieces, on which the door swings into open or closed position.

Similar letters of reference indicate corresponding parts.

Referring to the drawings, A represents a refrigerator in which the ice-chamber B is arranged at the top part of the same above the main storage chamber B′. The drip from the ice-chamber B is conducted into a transverse trough C that is arranged below a discharge opening *b* in the inclined bottom of the ice-chamber, said trough being arranged at a sufficient distance from the rear wall of the refrigerator to permit the arrangement of a channel or duct *b′* by which the cold air is conducted into the lower storage-chamber B^2 of the refrigerator in which the milk-cans or other articles are stored. A partition b^2 separates the main storage-chamber B and the trough C from the rear-wall of the refrigerator and forms the channel *b′* behind said storage-chamber.

In the front-wall of the refrigerator are arranged doors D, D′, D^2, by which access is given to the ice, the main and the lower storage-chambers of the refrigerator. The storage-chamber B′ below the ice-chamber and in front of the trough C is preferably used for the storage of butter in tubs or for similar articles. The door D′ of the storage-chamber B′ is provided near its upper corners with fixed pivots *d* that rest in the recessed cast-metal corner-pieces *d′* attached to the side walls of the main storage chamber B′. The pivots *d* are so constructed that they engage the recessed corner-pieces *d′* when the door D′ is in closed position and vertically in line with the front wall of the refrigerator, as shown in Fig. 2. The upper edge *e* of the door D′ is beveled so as to correspond with the inclination of the front wall of the trough C, the meeting edge *e′* in the front wall of the refrigerator being provided with a similar bevel so that a tight fit between the door D′ and front wall of the refrigerator is obtained when the door is placed in closed position. The recessed corner-pieces *d′* are rounded off at the outer corners so as to facilitate the swinging of the door D′ over the same in open or closed position. From the recess of the corner-pieces

d' extend along the side walls of the main storage chamber B′, grooved ways d^2 in which the pivots d are guided when the door D′ is swung into horizontal or nearly horizontal position, as shown clearly in Figs. 3 and 4, the door being pushed inward until its beveled upper edge e abuts against the inclined front wall of the trough C, as shown in Fig. 4. When the door D′ is placed in this position, the main storage chamber B′ is open, so that access is given to the same, while the supply of cold air to the storage chamber is intercepted and the air compelled to pass from along the rear channel b' into the lower storage chamber of the refrigerator, as indicated by arrows in Fig. 4. The pivots d are provided with curved shanks d^3 of rectangular cross-section, which are attached by recessed straps d^4 and intermediate blocks d^5 to the rear of the door D′ as shown clearly in Figs. 5 and 6. The inner ends of the shanks d^3 and the ends of the straps d^4 are attached by screws d^6 to the blocks d^5 and the frame of the door. The fastening of the pivots d by the straps d^4 and intermediate blocks d^5 imparts considerable strength to the pivots and brings the same in line with the grooved ways d^2 and the recesses of the corner pieces d', so that the moving of the door D′ from its closed into partly and entirely open position in the refrigerator, or vice versa, from closed into open position, can be accomplished with great facility.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

1. The combination, with the main-storage-chamber of a refrigerator, of an ice-chamber, a lower storage-chamber, a trough extending transversely across the upper part of the main storage-chamber, a partition in the rear-part of the main storage-chamber, said partition forming a channel or duct between the main storage-chamber and its trough and the rear-wall of the refrigerator, guide-ways extending from the trough to the front wall of the refrigerator, recessed corner-pieces at the front ends of said guide-ways, and a door provided with pivots and adapted to be moved from its closed position into horizontal position in the interior of the refrigerator and back again into closed position, substantially as set forth.

2. The combination, with the main storage-chamber of a refrigerator, of an ice-chamber, a lower storage-chamber, a trough extending transversely across the upper part of the main storage-chamber, a partition at the rear part of the main storage-chamber, said partition forming a channel or duct between the main storage-chamber and its trough and the rear-wall of the refrigerator, guide-ways extending from the trough to the front wall of the refrigerator, recessed corner-pieces having rounded off corners, located at the front-ends of the guide-ways, and a door provided with pivots and adapted to be moved from its closed position into horizontal position in the interior of the refrigerator and back again into closed position, said doors and the front-wall of the refrigerator being provided with beveled meeting-edges corresponding to the inclination of the front-wall of the trough, substantially as set forth.

3. The combination, with the storage-chamber of a refrigerator, a swing-door in the front wall of the same, pivots having rectangular shanks attached to the upper part of the swing-door, recessed straps extending over said shanks, blocks interposed between the shanks and straps and the door, recessed corner-pieces having rounded off outer corners, a transverse trough in the upper part of the storage-chamber, and grooved ways extending from the recesses of the corner-pieces to the front wall of the trough, substantially as set forth.

4. In a refrigerator, a swing-door provided with pivots, recessed straps extending over the shanks of the pivots, blocks interposed between the straps and door-frame, and screws for attaching the shanks, straps, and blocks to the door-frame, substantially as set forth.

In testimony that we claim the foregoing as our invention we have signed our names in presence of two subscribing witnesses.

HENRY KROENKE.
ERNST BINDEWALD.

Witnesses:
PAUL GOEPEL,
CHARLES SCHROEDER.