J. A. KUNKEL.

REFRIGERATORS.

No. 194,251. Patented Aug. 14, 1877.

Fig. 1.

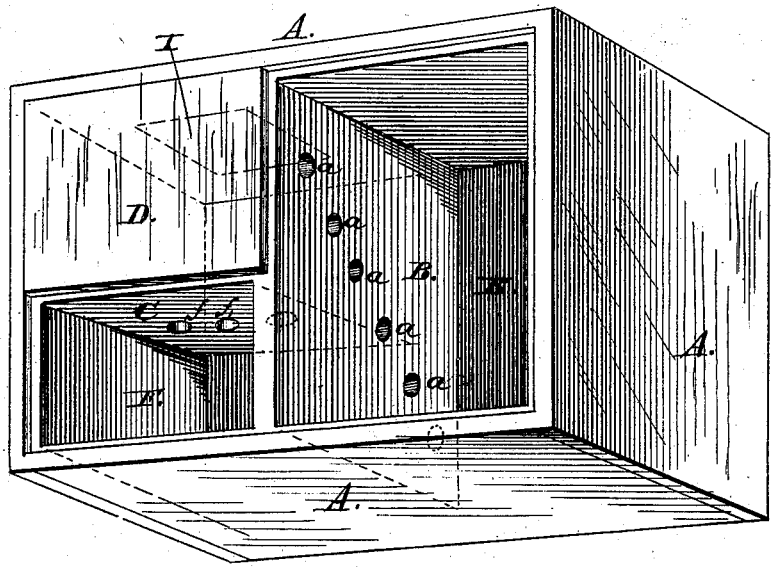


Fig. 2.

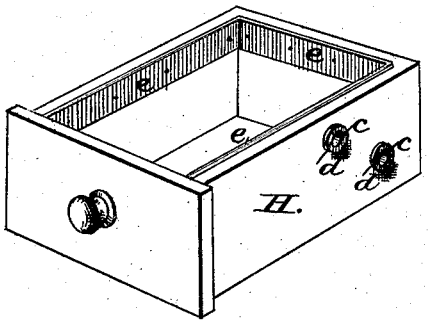
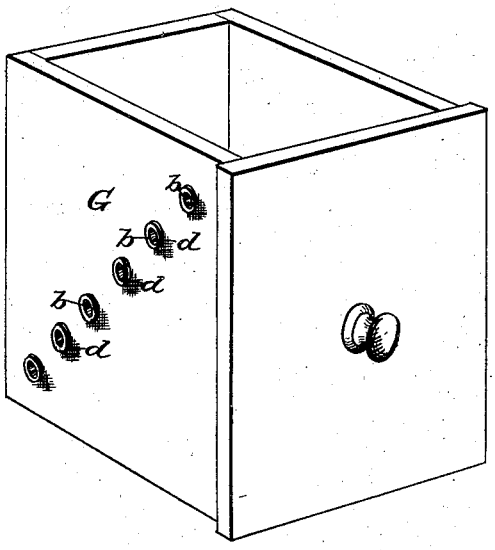


Fig. 3.



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UNITED STATES PATENT OFFICE.

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IMPROVEMENT IN REFRIGERATORS.

Specification forming part of Letters Patent No. **194,251**, dated August 14, 1877; application filed July 18, 1877.

To all whom it may concern:

Be it known that I, JOHN A. KUNKEL, of Jersey City, in the county of Hudson and State of New Jersey, have invented certain Improvements in Refrigerators, of which the following is a specification:

This invention relates to certain improvements in refrigerators, and has for its object to produce a refrigerator wherein the articles to be preserved can be placed or removed without any liability of the escape of the cold air contained in the refrigerator.

To this end my invention consists in a box or casing divided by a vertical and a horizontal partition into three compartments or chambers, said vertical partition being provided with a series of perforations extending in an oblique line in the partition, and the horizontal partition being provided with perforations, all for the circulation of air through the ice-chamber and the sliding drawers which are fitted in two of the compartments, the said drawers being perforated in their sides adjacent to the vertical partition; and when the drawers are in position the perforations in their sides coincide with the perforations in the vertical partition; but when drawn out the openings are removed out of coincidence, and hence no cold air can pass into the drawers and escape.

The invention also consists in providing the perforations in the sides of the drawers with rubber tubes, so as to project slightly beyond the perforations, so that when the drawers are drawn out the ends of the tubes will bear against the vertical partition, and forming a tight joint between the two, and effectually preventing the passage of air into the drawer through the perforations.

In the accompanying drawings, Figure 1 represents a perspective view of the interior of the refrigerator-case; and Figs. 2 and 3, perspective views of the drawers.

In the accompanying drawings, A represents a box or casing, of rectangular or other suitable shape, having a vertical partition, B, and a horizontal partition, C, between the latter and the end of the casing, whereby the same is divided into three compartments, viz., an ice-chamber, D, and two chambers, E and F, in which latter are arranged to slide the drawers G and H for the reception of the perishable articles to be preserved or cooled. I represents a hinged door in the top of the casing, for gaining access to the ice-chamber.

I will here remark that the ice-chamber will be of any approved construction, and adapted to carry off the water resulting from the melting ice, and I therefore have not illustrated any particular construction of ice-chamber.

The vertical partition B is provided with a series of perforations, *a*, extending, preferably, in an oblique direction from the upper to the lower end of the partition, and the sides of the drawers which are adjacent to the said partition are likewise perforated, as at *b* and *c*, to correspond with the perforations in the latter; and when the drawers are in position their perforations coincide with the perforations in the vertical partition, whereby a free circulation of air through the ice-chamber and the drawers is permitted; but when the latter are drawn out to gain access to the same, their perforations are brought out of coincidence with the perforations in the vertical partition, and hence no cold air contained in the casing can pass into the drawer and thus escape.

The perforations in the sides of the drawers are each provided with an elastic tube, *d*, arranged to project a slight distance beyond the perforations, and which bear against the partition C. Hence, when the drawers are moved out, said elastic tubes or packings will hermetically seal the openings or perforations, and hence prevent the admission of any air through them into the drawer which might pass between the drawer and the vertical partition, thereby most effectually preventing the access of cold air into the drawer when it is opened to gain access to the same.

In order to more effectually prevent the entrance of cold air contained in the casing into the drawers when the latter are opened, I provide their upper inner edges with strips of rubber or other elastic packing, as at *e*, which press against the under side of the horizontal partition, or the top part of the casing if the strips are attached to the drawer G, and thus more effectually prevent the entrance of cold air into the drawer from within the casing when the former is drawn out beyond the perforations in the partition.

The horizontal partition C is also perforated, as at *f*, to permit the circulation of air downward from the ice-chamber in the drawer H, from which it will circulate through the drawer G back into the ice-chamber.

By this means I obtain a simple and comparatively inexpensive construction of refrigerator, and one which is most efficient in preserving perishable articles; and by preventing the escape of the cold air contained in the casing when the drawers are opened a great reduction in the quantity of ice usually employed is attained.

It is evident that the elastic tubes *d* can be arranged in the perforations of the vertical partition instead of in the perforations of the drawer; but I prefer to arrange them in the latter.

What I claim, and desire to secure by Letters Patent, is—

1. The combination of the casing A, the perforated vertical and horizontal partitions B and C, forming the chambers D, E, and F, with the sliding drawers having their sides perforated to coincide with the perforations in the vertical partitions, substantially as and for the purpose described.

2. The combination, with the casing A and vertical partition B, having a series of perforations, *a*, of the sliding drawers, having in their sides a series of perforations provided with elastic packing *d*, and coinciding with the perforations in the vertical partition only when the drawer is closed, substantially as described, and for the purpose set forth.

JOHN A. KUNKEL.

Witnesses:
JOS. LAUGHLIN,
JAS. MCCANDLISH.