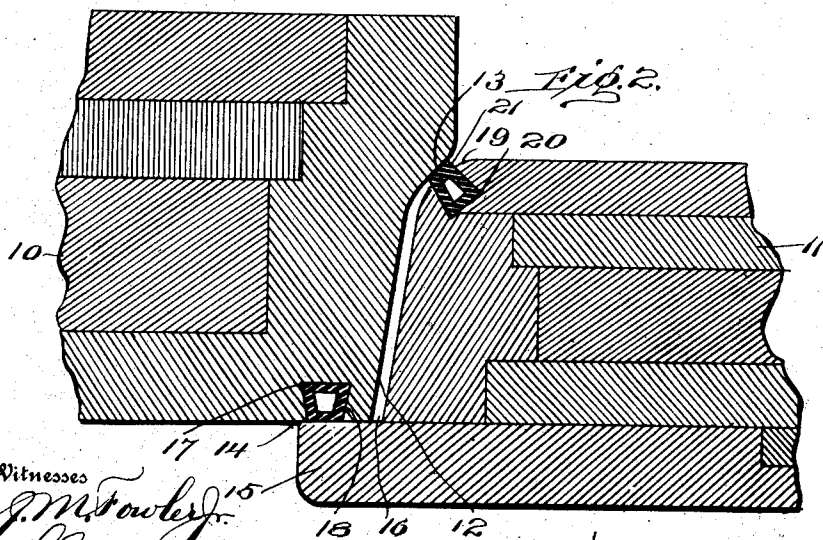
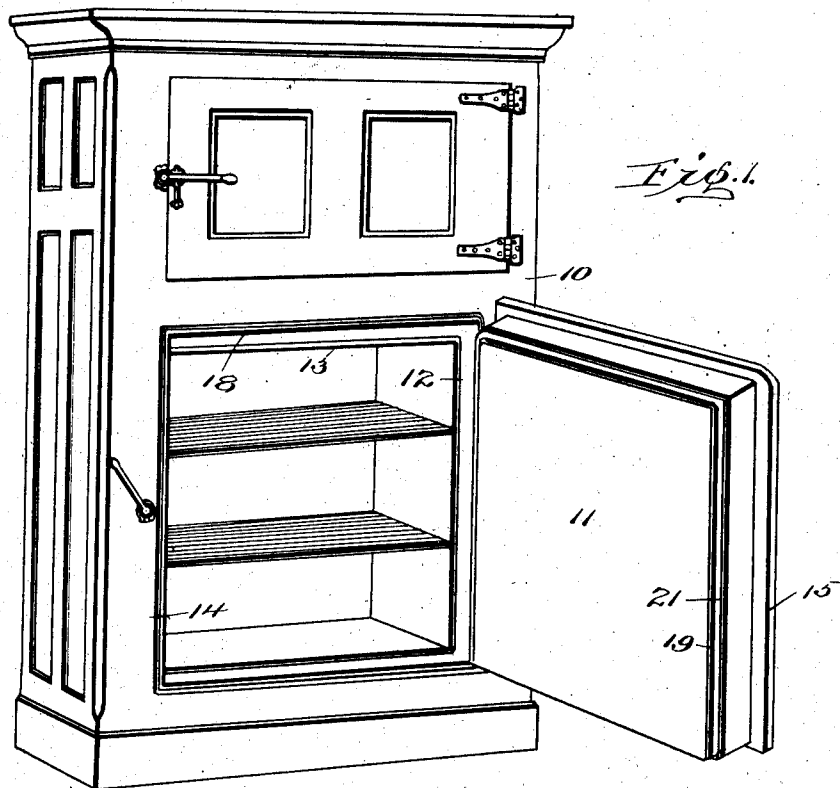


No. 866,439.

PATENTED SEPT. 17, 1907.

V. A. DE CANIO.
DOOR STRUCTURE.
APPLICATION FILED SEPT. 15, 1906.



Inventor

Witnesses

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UNITED STATES PATENT OFFICE.

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DOOR STRUCTURE.

No. 866,439.

Specification of Letters Patent.

Patented Sept. 17, 1907.

Application filed September 15, 1906. Serial No. 334,773.

To all whom it may concern:

Be it known that I, VICTOR A. DE CANIO, a citizen of the United States, residing at Union Hill, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Doors and Door Structures; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

10 This invention relates to doors and door structures and especially to doors adapted to close a compartment substantially air-tight.

The device forming the subject matter of this invention while adapted broadly for application to doors of various structures, is especially adapted for use in association with doors of refrigerators and refrigerating chambers, and other doors to similar chambers intended and adapted to prevent the passage of heat from without or within.

20 The object of the invention is to provide in a door structure, improved means for association with the door frame or casing for making an air tight joint.

A further object of the invention is to provide in a door frame or door casing improved means for association and engagement with a door as an auxiliary means for preventing passage of heat.

25 With these and other objects in view, the invention comprises certain novel constructions, combinations, and arrangement of parts, as will be hereinafter fully described and claimed.

30 In the accompanying drawings: Figure 1 is a perspective view of a conventionalized refrigerator with the improvement forming the subject matter of this invention in operative position thereon. Fig. 2 is a view in horizontal section of a fragment of a door and the adjacent door frame or casing and showing also in transverse section the improved device.

Like characters of reference designate corresponding parts throughout the several views.

40 While the device forming the subject matter of this invention is adapted for application to and association with doors and closures of various kinds and for various purposes, it is especially well adapted for use upon and association with doors of refrigerators and the like, such a refrigerator being shown conventionally as at 10, with a door 11 of substantially the usual proportion and structure, and inclosed by a frame or casing proportioned to engage with the periphery of the door. The door frame or casing surrounding the door proper, is 50 preferably formed with its inner edge at an angle varying slightly from a vertical to the plane of the frame, as shown at 12 and presenting along the inner side a greater angle to the perpendicular as at 13 forming a beveled ledge entirely around the opening with its 55 plane disposed preferably at an oblique angle to the plane of the jamb. The frame is also provided with a

substantially plane portion, as at 14, against which the flange 15 about the periphery of the door ordinarily contacts. The door proper is so proportioned as to define a space, as at 16 between its outer edge and the 60 beveled portion 12 of the jamb.

The plane portion 14 of the jamb is provided upon its exterior surface with a dovetailed groove 17 within which is disposed a normally cylindrical resilient pipe or tube 18, which may be of the usual and ordinary rubber hose. The proportion of the hose to the dovetailed 65 groove 17, is such that the hose normally and in the absence of pressure from the door extends slightly beyond the surface 14 of the jamb. The inner corner of the door is beveled as at 19 to form a surface substantial in 70 parallelism with the surface 13 of the jamb when the door is closed, and at an angle oblique to the plane of the door and the edge.

The surface 19 is provided with a dovetailed groove 75 20 similar to the groove 17 and within which is disposed a similar flexible cylindrical tubing or hose 21 proportioned to extend beyond the outer end of the dovetailed groove and positioned to contact with the surface 13 of the jamb.

The grooves 17 and 20 are formed with their larger or 80 wider extent rearwardly or inwardly, so that the hose or flexible tubings disposed within the said grooves, are retained therein by the resiliency of the said tubes, the faces engaging the beveled or tapered sides of the dovetailed grooves from which they may be removed to be 85 replaced with new tubes as occasion may require, or for cleansing or other purposes. It will be understood that owing to the resiliency of the tubes 18 and 21, they may be inserted within the said grooves by exercising pressure upon the sides thereof to contract them to a sufficient 90 extent to permit their being slidably inserted through the smaller outer open end of the said grooves.

It will be seen especially from Fig. 2 that when the door 11 is in closed position, as therein represented, the flexible tubes 18 and 21, are slightly contracted and 95 pressed at their outer sides by contact with the flange 15 of the door and the tapered ledge of the jamb. It will further be seen that between the flexible tubes 21 and 18, a space 16 is inclosed forming a dead air space, which is well known to be a first-class non-conductor of 100 heat. While the two tubings are each intended to produce an air-tight seal, it is obvious that owing to imperfections either one may fail to do so completely and the other is therefore an auxiliary means for closing the opening. It is further well known that owing to the 105 contained moisture within refrigerators, the doors are subject to swelling if made of wood, as is usually the case, and that when they so swell, they bind with the jamb, and at other times the doors contract or shrink and leave space for the introduction of air, or the escape 110 of the confined cooled air within the refrigerator.

By the use of a door formed with its outer end spaced

away from a similar and parallel beveled portion 12 of the jamb, provision is made for shrinking and swelling of the door and the tubes 18 and 21 being resilient in nature compensate for any such shrinking and swelling as may occur and produce at all times air-tight, or substantially air-tight joints.

What I claim is:

1. In a door structure, a door frame having inclined sides defining a door opening, and a beveled shoulder entirely about the opening, an elastic packing carried upon the plane outer surface about the opening, a door proportioned to close within the opening and having an inclined side substantially parallel with and spaced from the inclined sides of the frame and having a beveled inner corner approximately parallel with and spaced from the beveled shoulder of the frame, an elastic packing carried by the door and extending from the beveled corner into position for engagement with the beveled shoulder, and a flange formed about the periphery of the door larger than the door opening, and positioned to engage the elastic packing carried by the frame.

2. In a door structure, a door frame having inclined sides defining a door opening, and a beveled shoulder entirely about the opening with a dove-tailed groove extending entirely about the opening and formed in the plane outer surface of the frame, an elastic packing carried in the dove-tail groove and extending beyond the outer surface about the opening, a door proportioned to close within the opening and having an inclined side substantially parallel with and spaced from the inclined sides of the frame and having a beveled inner corner approximately

parallel with and spaced from the beveled shoulder of the frame and with a dove-tail groove formed therein, an elastic packing carried within and extending beyond the dove-tail groove, and into position for engagement with the beveled shoulder, and a flange formed about the periphery of the door larger than the door opening, and positioned to engage the elastic packing carried by the frame.

3. In a door structure, a door frame having inclined sides defining a door opening, and a beveled shoulder entirely about the opening, with a dove-tail groove extending entirely about the opening and formed in the plane outer surface of the frame, an elastic packing carried within the dove-tail groove about the opening, a door proportioned to close within the opening and having inclined sides substantially parallel with and spaced from the inclined sides of the frame, and having a beveled inner corner approximately parallel with and spaced from the beveled shoulder of the frame and with a dove-tail groove formed therein; an elastic packing carried by the dove-tail groove and extending beyond the beveled corner and into position for engagement with the beveled shoulder, and a flange formed about the periphery of the door larger than the door opening, and positioned to engage the elastic packing carried by the frame and all so positioned that an air space is produced between the two packings and between the sides of the door and the frame.

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

VICTOR A. DE CANIO.

Witnesses:

HARRY K. LETTERMAN,
EDWARD M. PATTISON, Jr.