

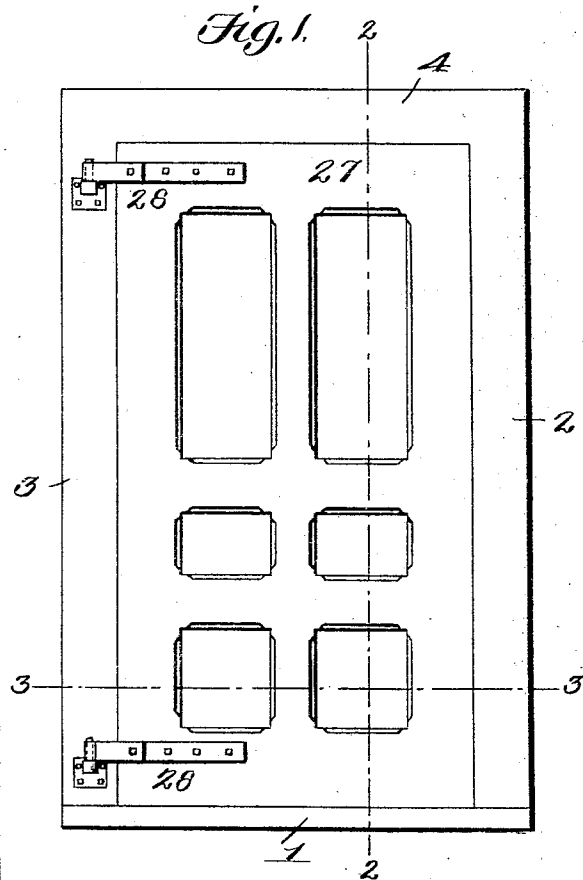
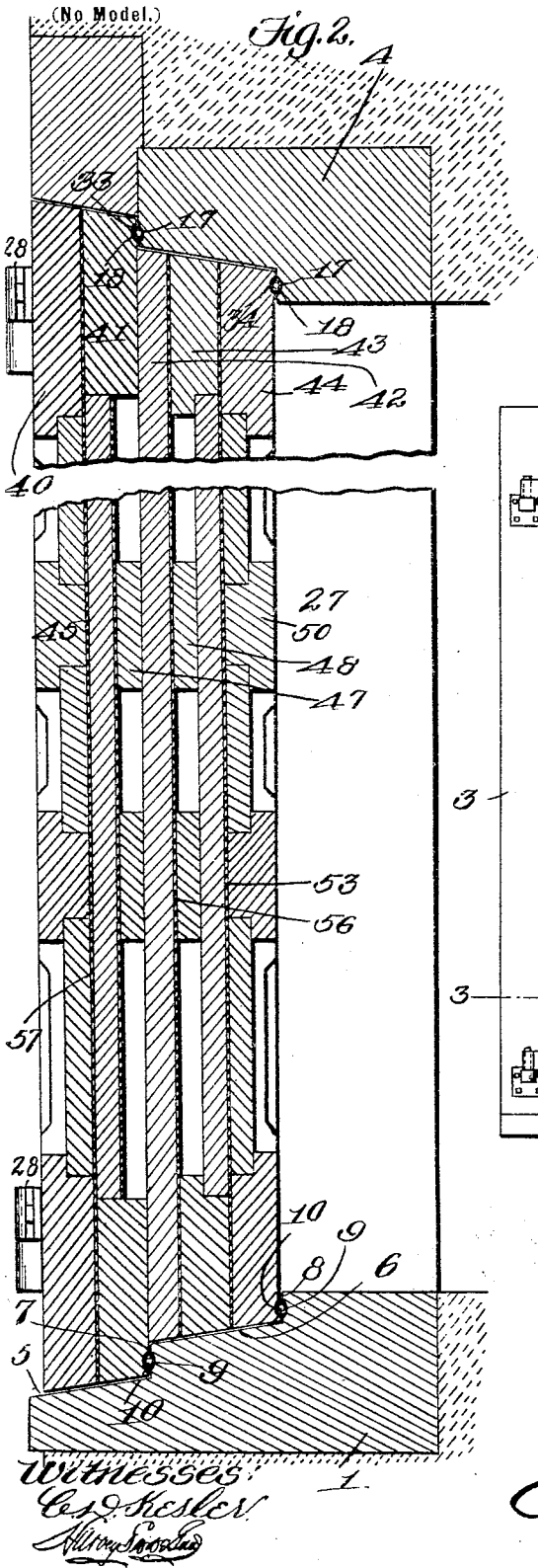
No. 710,859.

Patented Oct. 7, 1902.

W. GRIESSER.
REFRIGERATOR DOOR.

(Application filed Feb. 15, 1902.)

2 Sheets—Sheet 1.



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(No Model.)

2 Sheets—Sheet 2.

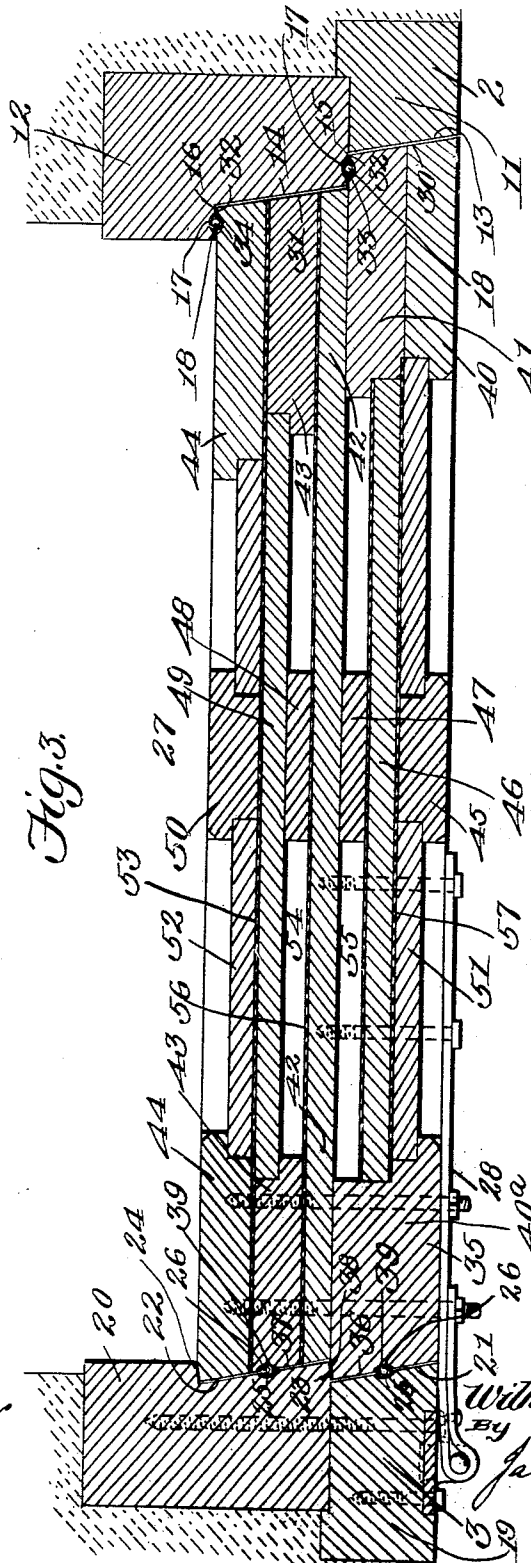


Fig. 3.

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UNITED STATES PATENT OFFICE.

WILHELM GRIESSER, OF NEW YORK, N. Y.

REFRIGERATOR-DOOR.

SPECIFICATION forming part of Letters Patent No. 710,859, dated October 7, 1902.

Application filed February 15, 1902. Serial No. 94,290. (No model.)

To all whom it may concern:

Be it known that I, WILHELM GRIESSER, a citizen of the United States, residing at New York, in the county of New York and State

5 of New York, have invented new and useful Improvements in Refrigerator-Doors, of which the following is a specification.

My invention relates to refrigerator-doors, the object of the same being to provide means

10 whereby a perfectly tight joint may be formed between the door and its frame.

A further object of the invention is to provide a novel construction of door of this kind by means of which it is rendered perfectly

15 heat-proof.

Other objects of the invention will hereinafter appear, and the novel features thereof will be set forth in the claims.

In the drawings forming part of this specification, Figure 1 is a front elevation of a refrigerator-door constructed according to my invention. Fig. 2 is a vertical section of the same, on an enlarged scale, taken along the line 2 2 of Fig. 1; and Fig. 3 is a transverse

25 section, on an enlarged scale, taken along the line 3 3 of Fig. 1.

Like reference-numerals indicate like parts in the different views.

The door-frame is made up of the sill 1, the sides 2 3, and the top 4. The sill 1 is rabbeted at two points, as shown, to form the inclined ledges 5 and 6 and the vertical shoulders 7 and 8. In each of the shoulders 7 and 8 is formed a horizontal groove 9, in which is seated a rubber tube 10. The side 2 of the door-frame is preferably composed of the two vertically-disposed blocks or timbers 11 and 12, the same being rabbeted at two points, as shown, to form the two walls 13 and 14 and the vertically-disposed shoulders 15 and 16. The walls 13 and 14 are inclined, as shown, so as to provide a flaring door-opening. In each of the shoulders 15 and 16 is formed a vertically-disposed groove 17, in which is seated a rubber packing or sealing tube 18. The shoulders 15 and 16 lie in the same planes, respectively, as the shoulders 7 and 8 on the sill 1, and the ends of the tubes 10 and 18 are so disposed that they practically form continuations one of the other. The top 4 of the door-frame is similar in all respects to the side 2, except that it is horizontally instead

of vertically disposed. The side 3 of the door-frame, to which the door is hinged, is also preferably constructed of two upright blocks or beams 19 and 20 and is double-rabbeted, as shown, to form the walls 21 22 and the shoulders 23 24. The shoulders 23 and 24, respectively, lie in planes at a slight angle to the plane of the front of the door-frame, and the walls 21 and 22 are substantially parallel to each other and are also substantially parallel to the walls 13 and 14 on the side 2—that is to say, said walls 21 and 22 do not lie at right angles to the front of the door-frame, but instead of extending at such angle as to make the door flaring along the side adjacent to the hinge of the door said walls extend inwardly from their points of connection with the shoulders 23 and 24, respectively. This construction is for a purpose which will hereinafter appear. In each of the walls 21 and 22 is formed a groove 25 for the reception of a rubber packing-tube 26, similar to the packing-tubes 10 and 18 heretofore referred to.

The door 27 is mounted upon the side 3 of the door-frame by means of the hinges 28. These hinges may be of any suitable or approved form of construction. The side rail 29, opposite the hinges 28, and the top and bottom rails of the door are cut away and beveled, as shown, to form the inclined walls 30 and 31 and the shoulder 32. The walls 30 and 31 are beveled at the same angle as the walls 13 and 14, 5 and 6, and are adapted when the door is in its closed position to fit within and lie in close contact with the same. The shoulders 32 on the top, side, and bottom rails of the door are each provided with a groove 33 to receive, respectively, the packing-tubes 10 and 18, with which the top, bottom, and sides of the door-frame are provided. A similar groove 34 is provided for the same purpose adjacent to the outer edge of each of the top, bottom, and side rails of the door. The side rail 35 of the door, or that to which the hinges 28 are secured, is cut away or beveled at two points to form the walls 36 and 37 and the shoulder 38. The walls 36 and 37 are cut upon the same angle as and are adapted, when the door is closed, to lie in close engagement with the walls 21 and 22 of the side 3 of the door-frame. The shoulder 38 is also cut upon the same angle

as the shoulder 23 and is adapted when the door is closed to lie in close contact with the shoulder 23. Each of the walls 36 and 37 is provided with a vertical groove 39 for the reception of the rubber packing-tubes 26 in the side 3 of the door-frame. Now it will be observed that when the door is in its closed position close contact is had at all points between said door and the frame in which it fits and that the various rubber packing-tubes are compressed, and consequently form a close impervious seal between the door and its frame or casing. All possibility of leakage, either of air, moisture, or heat, into or from the interior of the refrigerator is thereby prevented. Furthermore, as the walls 21 and 22 of the side 3 of the door-frame and the walls 36 and 37 of the side rail 35 of the door 27 converge from their inner ends outwardly said walls coöperate with each other to prevent any outward movement of the hinged side of the door when the same is in its closed position. Upon providing a lock, therefore, for the outer side and for the top and bottom of the door movement or displacement of the door in all directions is effectually prevented.

In order to render the door perfectly heat-proof, I propose to construct the same as follows: Each of the top, outer side, and bottom rails of the door is made in five layers 40, 41, 42, 43, and 44, the same being firmly united one to the other by any suitable means. The inner side rail 35 of the door may be constructed in the same way; but I have shown the same as being made of but four layers 40^a, 42, 43, and 44, the layer 40^a being of the same thickness as the layers 40 and 41 combined. The stiles are made in seven layers 45, 46, 47, 42, 48, 49, and 50. The spaces between the stiles and the side, bottom, and top rails of the door are connected by the five layers 51, 46, 42, 49, and 52. The layers 49 and 52 lie in close relation to each other, but are separated by a strip 53 of heavy paper. Between the layers 42 and 49 an air-space 54 is left, and a similar air-space 55 is left between the layers 42 and 46. Secured to the inner surface of the layer 42 is a strip 56 of heavy paper, and between the layers 46 and 51 is another strip 57 of heavy paper. The rails of the door are suitably chamfered to receive the layers 51, 46, 49, and 52, and these layers, with the layer 42, are preferably made from what is known as "flooring." The layer 42 extends entirely through the side rails 35 and 29 of the door and form parts of said side rails. The same is true of the layer 42 with respect to the top and bottom rails. It will thus be seen that the door built up and constructed as described is rendered perfectly heat-proof, and when the door is in its closed position it is next to impossible for any heat to pass through the same to the interior of the refrigerator.

For the rubber packing-tubes referred to it is obvious that I may use packing-strips in solid form and constructed of other material

than rubber. Where the term "packing-strip" is used, therefore, in the following claims, I intend the same to comprehend either the specific form of tube herein shown and described or a solid strip of rubber or other yielding material.

Having now described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination with a door-frame rabbeted around the door-opening therein to form at one side of said opening, and at the top and bottom thereof, a shoulder having a groove therein and an angularly-arranged flaring wall, and to form at the other side of said opening, a shoulder and an angularly-arranged inwardly-tapering wall having a groove therein, of a door having each outer edge thereof formed with an inclined wall, and having a groove in its inner surface around its outer edge and top and bottom, the walls of the top rail, outer side rail and bottom rail of said door being outwardly inclined and adapted, when the door is closed, to lie in close contact with the corresponding walls of said frame, and the wall on the inner side rail of said door being inwardly inclined and provided with a groove, and packing-strips in the grooves in one of said parts adapted to be received by the corresponding grooves in the other of said parts.

2. The combination with a door-frame having double rabbets around the door-opening therein, forming in one of the sides and in the top and bottom a plurality of shoulders and a plurality of angularly-arranged flaring walls, each of said shoulders being provided with a groove, and forming in the other side of said frame a plurality of shoulders, and a plurality of angularly-arranged inwardly-tapering walls, each of the latter walls being provided with a groove, of a door, each of whose outer edges is cut away to form a shoulder and inclined walls, the walls on the top rail, outer side rail and bottom rail of said door being outwardly inclined and adapted when the door is closed to lie in close contact with the corresponding inclined walls in the top, outer side and bottom of said frame, and the walls on the inner side rail of said door being inwardly inclined and provided with grooves, the inner surface of said door around the outer edge of the top, side and bottom rails, and the shoulder on the top, outer side and bottom rails of said door being provided with grooves, and packing-strips seated in the grooves on one of said parts and adapted to be received by the corresponding grooves in the other of said parts.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

WILHELM GRIESSER.

Witnesses:

WM. M. STOCKBRIDGE,
GEO. W. REA.