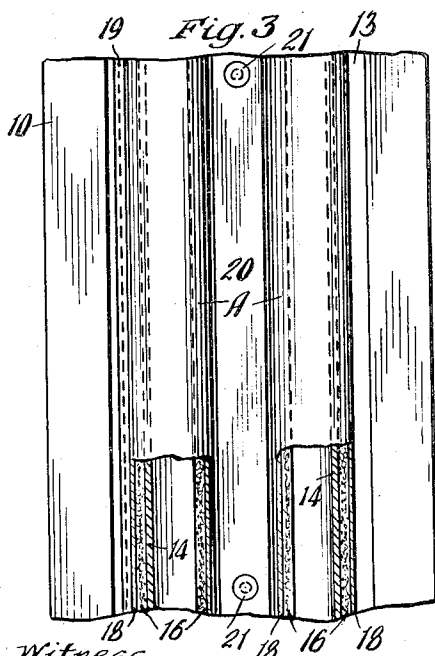
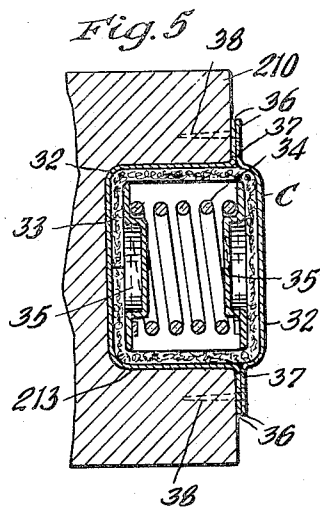
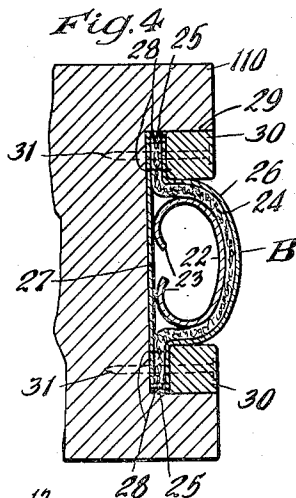
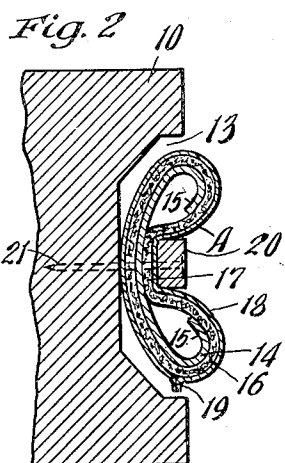
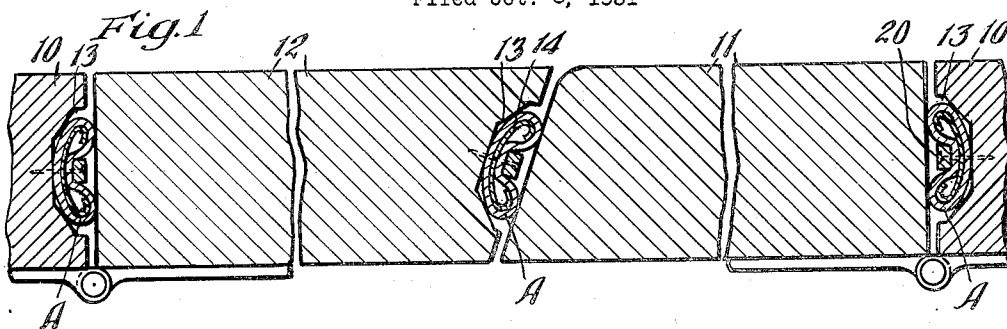


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R. J. OLANDER
INSULATION FOR DOORS

1,979,636

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UNITED STATES PATENT OFFICE

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INSULATION FOR DOORS

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Application October 8, 1931, Serial No. 567,629

7 Claims. (Cl. 20—69)

The invention relates to improvements in insulation for doors.

One object of the invention is to provide means for insulating doors and especially the hinged doors of refrigerator railway cars, comprising a composite strip of insulating material of simple design, which may be applied as a unit to the doors or door frame.

A more specific object of the invention is to provide a prepared, completely assembled unit insulating strip which may be readily applied by unskilled labor through simply placing the same in position and securing it by a nailing strip or element.

A further object of the invention is to provide a prepared strip of insulation for refrigerator car doors, comprising as a unit a sheet of insulating material, a resilient backing, and a cover strip for the insulating material, together with nailing strip means for securing the unit to the door or door frame.

Other objects of the invention will more clearly appear from the description and claims hereinafter following.

In the drawing, forming a part of this specification, Figure 1 is a horizontal sectional view through the hinged double doors and door frame of a refrigerator car, showing my improvements in connection therewith. Figure 2 is a view similar to Figure 1, on an enlarged scale, showing one wall of the door frame with the improved insulating material applied thereto. Figure 3 is a partly elevational and partly vertical sectional view looking from the right in Figure 2. And Figures 4 and 5 are views similar to Figure 2, illustrating respectively two additional embodiments of the invention.

Referring first to the embodiment of the invention illustrated in Figures 1, 2, and 3, 10—10 indicate the side walls of the door opening of a refrigerator car, and 11 and 12 the two hinged doors. As shown, the end edge faces of the walls 10—10 are provided with the usual vertical grooves 13—13, which are adapted to accommodate the insulating material strips A—A. The meeting edges of the doors 11 and 12 are beveled as usual, and the door 12 is shown as also provided with a groove 13 in which the insulating strip A is seated. As shown in Figures 1, 2, and 3, my improved insulation A is in the form of a unit seated in the groove 13 of either of the walls 10—10 or the door 12. As will be understood, the top wall of the door opening is also provided with such a groove, in which a unit of insulating material A is seated. As most clearly shown in

Figures 2 and 3, the unit A comprises a resilient metal strip 14 of curved cross-section having its outer edges curled inwardly, as indicated at 15—15. The resilient strip 14 is enclosed on all sides by a strip of flexible insulating material 16, which is preferably in the form of quilting. As most clearly shown in Figure 2, the quilting material has an indented section 17 disposed centrally between the curled edge portions 15—15 of the metal strip 14. The metal strip 14 and the strip of flexible insulating material 16 are enclosed within a fabric sheathing 18, which is preferably made of canvas and has a side seam, as indicated at 19, which is preferably stitched. The exterior contour of the sheathing 18 corresponds to the exterior contour of the flexible insulating material 16. The resilient strip 14 together with the insulating strip 16 and the sheathing 18 form the complete unit of insulating material, which is bodily applied within the groove 13. In placing the insulating unit A within the groove 13, the convex side thereof is disposed next adjacent to the inner vertical wall of the recess or groove. In order to fasten the unit A within the groove 13, a nailing strip 20, preferably of wood, is placed within the seat formed by the indented portion of the unit between the curled side edges 15—15 of the strip 14, and the unit is thereby clamped within the recess or groove 13. Securing elements in the form of a plurality of nails 21 are preferably employed for fixing the unit A in position, the nails 21 extending through the securing strip 20, the sheathing 18, the flexible insulating material 16, and the resilient strip 14, and into the member provided with the groove 13. When the unit strip A is secured within the grooved member, the same projects outwardly beyond the end edge face of said member so that it will engage the cooperating door member when closed. The material of the insulation A projects to such an extent that the unit will be compressed when the doors are closed, thereby providing a tight seal between the opposed edge faces of the overlapped door members.

Referring next to the embodiment of the invention illustrated in Figure 4, the same comprises a unit insulation member B, including a central resilient metal strip 22, which is curved in cross-section and has the convex side thereof disposed outermost. The side edges of the strip 22 are curled inwardly, as indicated at 23—23. The strip 22 is covered on the outer side by a strip of flexible insulating material 24, which has the side edges 25—25 projecting laterally. On the outer side, the strip 24 is covered with a can-

was strip 26, which corresponds in width to the same. On the inner side of the unit, a canvas strip 27 is disposed, which corresponds in width to the unit. The strips 26 and 27 are secured together by being seamed to the lateral projecting portions 25—25 of the strip 24. The strips 26, 27, and 24 are preferably sewed together, the sewed seams being indicated by 28—28. The insulating unit B is seated within a substantially rectangular groove 29 provided in the door frame member 110. The strip unit B is secured in position by two wooden sealing strips 30—30, which overlie the projecting side flanges of the unit B. A plurality of securing elements in the form of nails 31—31 are employed to secure the strips 30—30 in position, said nails extending through the strips 30, the projecting side portions of the canvas strips 26 and 27, and the sections 25—25 of the strip of insulating material. As shown in Figure 4, the convex outer portion of the insulating unit projects beyond the end edge face of the member 110 and is adapted to be engaged by the cooperating end edge face of the door member when closed and compressed thereby so as to form a seal.

Referring next to the embodiment of the invention illustrated in Figure 5, the insulating unit is indicated by C and comprises a tubular casing or sheathing 32 preferably of canvas, a lining of flexible insulating material 33 in the form of a folded strip, and a plurality of resilient members 34 in the form of coiled springs disposed within the unit to hold the same expanded. Metal spring follower strips 35—35 are preferably employed in connection with the coiled springs 34, said strips having bosses pressed therein engaging within the outer ends of the spring coils. The sheathing 32 is preferably composed of inner and outer sections, having overlapping flanges 36—36 at opposite sides, which are secured together by seams indicated by 37—37. The unit C is seated in an opening 213 provided in the member 210, and the entire unit is secured by nails 38—38 which extend through the flanges or sections 36—36 and into the member 210 at opposite sides of the groove 213.

From the preceding description taken in connection with the drawing, it will be evident that I have provided insulating unit material which may be readily applied to the door members of refrigerator cars by unskilled labor without in any way affecting the efficiency of the seal provided by said insulation. A further advantage in my improved construction is that by employing the nailing strips, the nailing may be done at spaced intervals which are greater than those usually selected in applying well-known types of insulating material to refrigerator car doors. This arrangement facilitates the securing of insulating strips to such an extent that a great amount of labor is saved in applying the same.

I have herein shown and described what I now consider the preferred manner of carrying out my invention, but the same is merely illustrative and I contemplate all changes and modifications that come within the scope of the claims appended hereto.

I claim:

1. In insulating means for constructions including two relatively movable members adapted to have their end edge faces brought into overlying relation, the edge face of one of said members being grooved and the cooperating edge of the other member being flat, the combination with an insulating unit including a resilient

transversely curved strip, flexible insulating material overlying said strip, and a fabric sheathing enclosing and completely surrounding said strip and flexible insulating material; of a nailing strip partly overlying said unit; and means extending through said nailing strip and unit for securing the unit within said groove.

2. In insulating means for sealing the crevice between the faces of two relatively movable members adapted to have their faces brought into overlying relation, the face of one of said members being grooved and the cooperating edge of the other member being flat, the combination with an insulating unit including a resilient strip, a strip of flexible insulating material enclosing said resilient strip, and a fabric cover strip completely surrounding said strip of insulating material on all sides, said insulating unit being bodily insertable in said groove; of a nailing strip extending lengthwise of said unit and partly overlying the same; and securing elements extending through said nailing strip and unit and into said grooved member for securing the unit in said groove.

3. In insulating means, the combination with an insulating unit including a transversely curved resilient strip, a flexible strip of insulating material completely covering said resilient strip, and a fabric sheathing strip surrounding said strip of insulating material on all sides; of a central nailing strip extending lengthwise of said unit; and securing elements extending through said nailing strip for securing said insulating means to a member to be insulated.

4. In insulating means, the combination with an insulating unit including a transversely curved resilient strip having curled longitudinal edges, a strip of flexible insulating material completely surrounding and covering said resilient strip on all sides and having a section thereof inset and disposed between said curled edges of the resilient strip, and a fabric sheathing enclosing said resilient strip and insulating strip and surrounding the same on all sides; of means for securing said unit to a member to be insulated, said means comprising a longitudinally disposed nailing strip seated in said inset section; and securing elements extending through said nailing strip and unit and into said member for fixing the insulating unit to said member.

5. In insulating means, the combination with an insulating unit including a resilient transversely curved strip, a strip of flexible insulating material covering said resilient strip, and a fabric cover for said insulating strip surrounding said insulating strip on all sides; of a pair of nailing strips overlying the longitudinal side edges of said unit; and securing elements extending through said nailing strips for securing the unit to a support.

6. In insulating means adapted to be seated in a grooved member, the combination with an insulating unit including a resilient transversely curved strip, a strip of flexible insulating material covering the convex side of said resilient strip, said strip of covering material having the side edges thereof extending beyond said resilient strip, and inner and outer fabric covering strips overlying said flexible insulating strip and said resilient strip, said inner and outer fabric strips together surrounding the insulating and resilient strips on all sides, the longitudinal side edges of said covering strips being secured to the side edge portions of said flexible insulating strip, said unit being disposed in the groove of the grooved

member; of a pair of nailing strips covering the side edges of said unit; and securing means extending through said nailing strips, the side edges of the fabric covering strips, and the side edges of the flexible insulating strip.

7. In means for insulating closures of containers, the combination with a closure member having an edge face; of a cooperating member also having an edge face, said members being relatively movable to bring said edge faces of said members in opposed relation, the edge face of one of said members being longitudinally grooved; a strip of insulating material having

beaded side edges, said strip being accommodated within said groove, said groove being of such a size as to house the major portion of said strip and partially enclose the beads thereof with the inner portions of said beads of said strip inwardly of the edge face of said grooved member and the remaining portions of said beads projecting from said groove outwardly beyond the edge face of said grooved member to engage with said opposed edge face of the other member; and means engaging the strip and clamping the same in said groove.

ROLAND J. OLANDER.

15	90
20	95
25	100
30	105
35	110
40	115
45	120
50	125
55	130
60	135
65	140
70	145
75	150