Aug. 27, 1935. H. M. HANSON 2,012,876

SEALING PAD

Filed Oct. 25, 1934

Fig. 1.

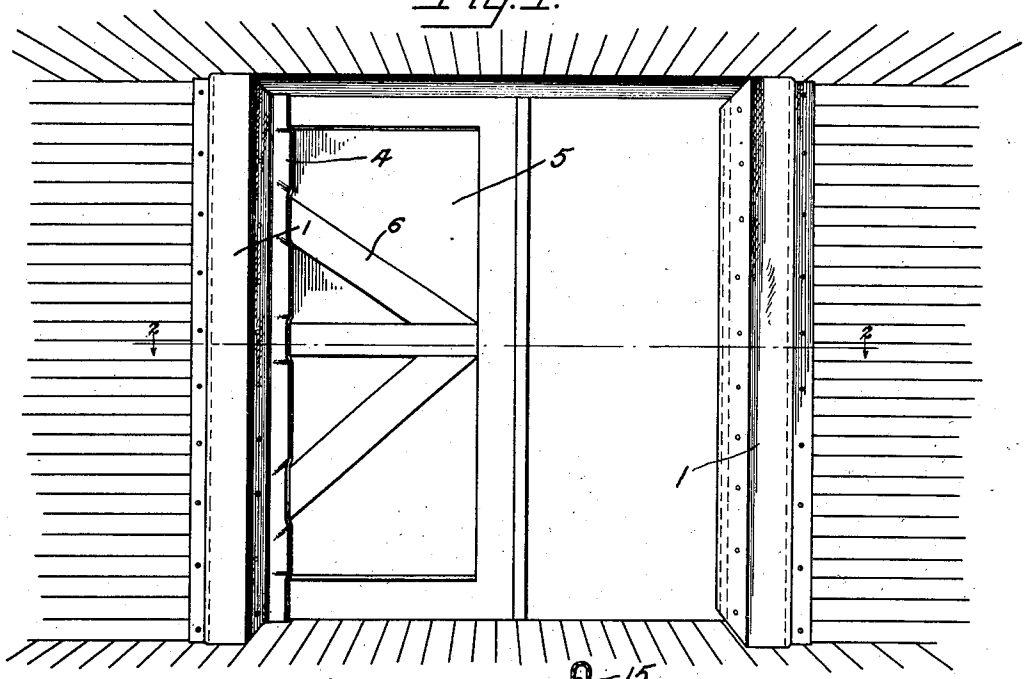


Fig. 2.

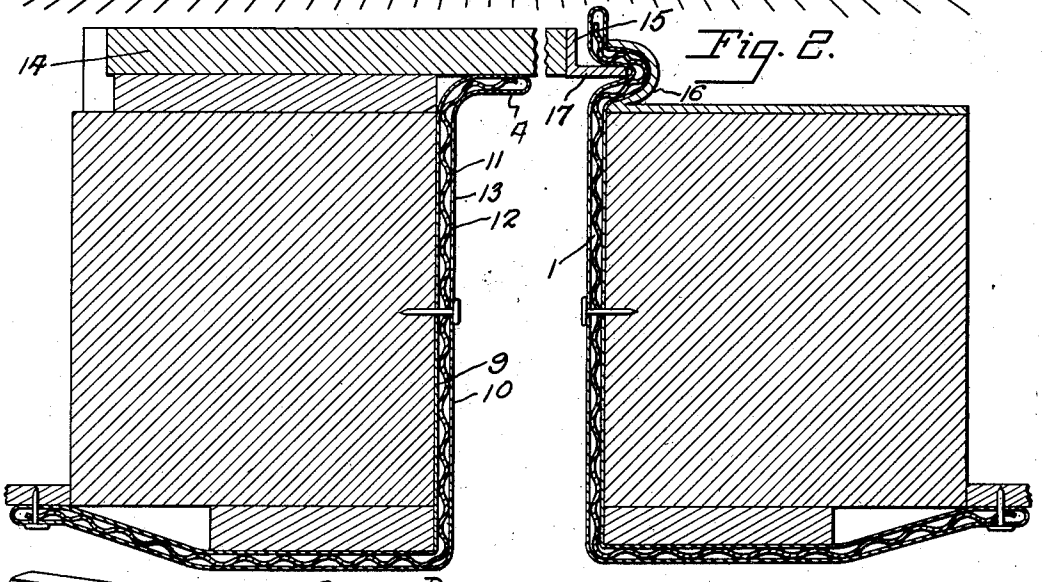
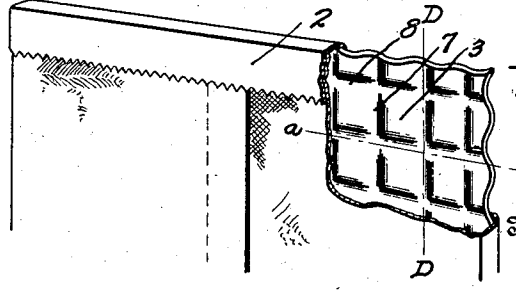


Fig. 3.



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2,012,876

SEALING PAD

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Application October 25, 1934, Serial No. 749,978

5 Claims. (Cl. 20—69)

This invention relates to flexible insulating units particularly adapted for sealing cracks around doors or other openings of a freight car. The invention has other and more general uses.

The principal object of the invention is to provide an air-cellular sheet insulating unit which is extremely flexible in both directions.

Another object of the invention is the provision of an air-cellular sheet insulating unit including a corrugated core sheet and an envelope freely enclosing said core sheet not only permitting independence of the core and envelope in the bending or folding of the unit, but also permitting shifting of the enclosed insulating air from a region of the unit which may be flattened by engagement with portions of the cargo, to another portion of the unit not so flattened, distending the envelope and improving the insulating efficiency thereof.

Other objects of the invention will appear as the following description of a preferred and practical embodiment thereof proceeds.

In the drawing which accompanies and forms a part of the following specification, and throughout the several figures of which the same characters of reference have been employed to denote identical parts:

Figure 1 is a perspective view of a freight car door illustrating the employment of the sealing unit or pad constituting the present invention;

Figure 2 is a cross section taken along the line 2—2 of Figure 1, the door being shown closed; and

Figure 3 is a perspective view partly in section illustrating the construction of the pad.

It will be understood that in the shipment of many valuable cargoes such as silk or perishable foodstuffs, it is essential that the car be sealed against the entrance of dust and moisture, or against atmospheric heat leakage into the car. Car liners of one type or another are in extensive use for protecting freight of this character. The present invention relates to a sheet insulated unit or pad which may be used for general car lining purposes, but has been particularly designed to seal the cracks around the door of a car against the entrance of water or dust and to prevent refrigeration losses.

The pad 1 of the present invention is made of paper or any other suitable flexible material and of any desired length and width, preferably being as long as the height of the door opening. The pad comprises an envelope 2 which may be of kraft or any other suitable paper or of waterproof material, the seams of said envelope being preferably tightly pasted together or otherwise closed so as to retain a body of inert air within the envelope. The envelope freely surrounds a core sheet 3, the latter being corrugated or otherwise formed with elevations which may touch the opposite sides of the envelope holding them apart and thus creating an air-cellular structure.

It will be noted from Figure 1 that one of the preferred utilizations of the pad is to tack it along the door post with an edge portion 4 freely lapping against the inside of the sliding door. The door, it will be observed, is not ordinarily a plane surface, but is constituted by recessed panels 5 and elevated braces 6. In order that the lapped portion 4 shall be an effective seal, it is essential that it lie not only against the braces 6, but also against the surfaces of the panels so that it must be very freely flexible in a horizontal direction. It is also essential that it be flexible in a vertical direction so as to readily conform to the corners of the door post and the angle between the door post and door.

To obtain this flexibility in both directions, the core sheet is corrugated both ways as is indicated 7 and 8, and it will be understood that no claim is made to the core sheet per se, which is a patented article and in the fabrication of the present invention, the core sheet is purchased ready-made. If, as in ordinary corrugated board, the front and back sides 9 and 10 of the envelope were pasted to the peaks of the corrugations, the pad would be very stiff and unbendable due to the fact that it would be necessary in bending the strip, to elongate the envelope between adjacent corrugations on the convex side of the bend, which would be impossible if the envelope were pasted to the corrugations. This is clearly suggested in Figure 2, where, if the outer side 10 were in adherence with the peaks at 11 and 12, the intervening part 13 of the sheet could not elongate and stretch and therefore the unit could not be bent between 11 and 12. By having the envelope entirely free from the core sheet it offers no impediment to the easy flexing of the core sheet in both directions.

Another advantage of the free relation of the envelope to the core sheet is that when a portion of the pad is pressed by the cargo and flattened so as to displace the air in the thus engaged portion, the air readily shifts to a portion of the envelope not so constricted, and distends the envelope, thus improving its insulating quality.

Figure 2 shows that the car door 14 is faced on its forward edge with an angle iron 15 and that the co-operating door post is provided with a channel 16 adapted to receive the flange 17 of the angle iron. This is conventional car door con-

struction. The insulating pad 1 is tacked to the door post with a marginal portion extending out into the channel 16. When the door is completely closed, the flange 17 compresses the insulating pad or unit 1 into the channel 16 as shown, thus sealing the joint between the flange 17 and the channel.

Thus by means of this simple invention, the joints between the car door and door post are effectively sealed against ingress of dust or moisture and against loss of refrigeration.

While I have in the above description disclosed what I believe to be a preferred and practical embodiment of my invention, it will be understood to those skilled in the art that the specific details as shown and described are merely by way of example and not to be construed as limiting the scope of the invention as claimed.

What I claim is:

1. Sealing pad comprising a flexible envelope, and a flexible corrugated core sheet freely enclosed within said envelope.

2. Sealing pad comprising a flexible envelope, and a flexible core sheet enclosed within said envelope, said core sheet being corrugated in perpendicular directions.

3. Sealing pad comprising a flexible waterproof envelope, and a flexible core sheet enclosed within said envelope, said core sheet being corrugated in perpendicular directions.

4. Sealing pad comprising a flexible envelope, and a flexible corrugated core sheet enclosed within said envelope, the peaks of certain corrugations of said core sheet freely contacting the adjacent sides of said envelope.

5. Sealing pad comprising a flexible envelope and a flexible core sheet, enclosed within said envelope, said core sheet being corrugated, said corrugations being lineally co-extensive with the sheet and arranged in perpendicular directions.

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