

Feb. 12, 1952

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2,585,082

INSULATED METAL PANEL

Filed Jan. 2, 1947

Fig. 1.

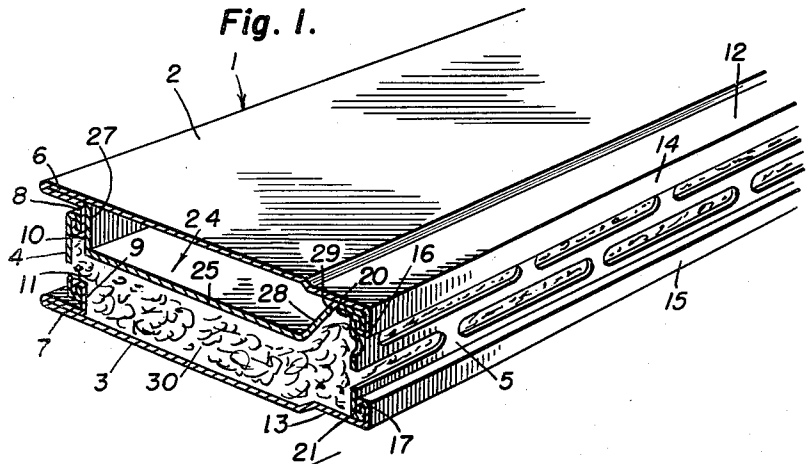


Fig. 2.

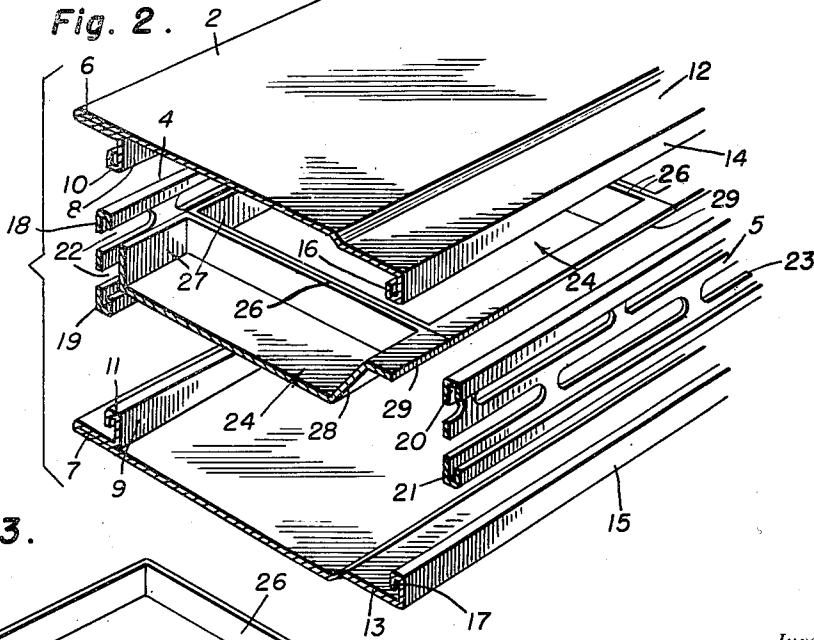
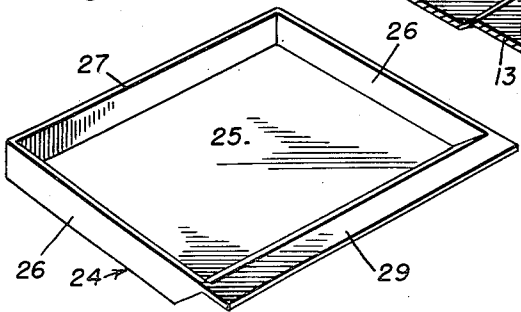


Fig. 3.



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UNITED STATES PATENT OFFICE

2,585,082

INSULATED METAL PANEL

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Application January 2, 1947, Serial No. 719,851

1 Claim. (Cl. 189—34)

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My invention relates to improvements in insulated metal panels for use especially, although not necessarily, in constructing oven and building walls, and the like.

The invention is designed with the primary object in view of providing a lightweight, strong, hollow metal panel doubly insulated with tightly sealed, dead air insulation space on one side thereof.

Other and subordinate objects, also comprehended by my invention, together with the precise nature of my improvements, and the advantages thereof, will be readily understood when the succeeding description and claim are read with reference to the drawing accompanying and forming part of this specification.

In said drawing:

Figure 1 is a fragmentary view in perspective, partly in cross section, of a panel constructed in accordance with my invention in a preferred embodiment thereof;

Figure 2 is a similar view with the parts of the panel separated; and,

Figure 3 is a view in perspective of one of the partition members.

Reference being had to the drawing by numerals, according to my invention, as illustrated, a hollow panel 1 is provided of generally rectangular cross section with duplicate side plates 2, 3 and duplicate edge strips 4, 5 all of cold rolled steel, aluminum, or other metal and forming a structure in which said plates and strips are interlocked in a manner now to be described.

The side plates 2, 3, at one edge of the panel 1, are bent inwardly of said panel to provide longitudinal edges 6, 7 of double thickness, and right angled lateral flanges 8, 9 extending along said edges 6, 7 and terminating in out-turned channel edges 10, 11. At the other edge of the panel 1, the side plates 2, 3 are provided with edge portions 12, 13 offset inwardly of said panel in planes parallel with the median plane of the panel, and which terminate in intumed, right angled flanges 14, 15, similar to the flanges 8, 9, and terminating in intumed channel edges 16, 17 otherwise similar to the channel edges 10, 11.

The edge strip 4 is formed with longitudinal channel edges 18, 19 interlocking with the channel edges 10, 11 to form a crimped double tongue and groove joint, and the edges of the strip 5 are similarly formed with longitudinal channel edges 20, 21 interlocking with the channel edges 16, 17 to likewise form a crimped double tongue and groove joint. The joints may be welded together, if desired, the welding not being shown. Longi-

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tudinal rows of elongated air inlet apertures 22, 23 are provided in the edge strips 4, 5, respectively, and staggered in the rows, relatively, to prevent undue weakening of said strips.

Hollow, open top partition members 24, or pans, of rectangular form, and cold rolled steel, aluminum, or other metal are provided in the space defined by the side plates 2, 3 and the edge strips 4, 5, each partition member comprising a flat bottom 25, right angled ends 26, a right angled side 27, and an outwardly slanting side 28 formed with an edge flange 29. The partition members 24 are shallower than substantially one-half of the distance between the side plates 2, 3 and fit between the flanges 8, 14 of the side plate 2 with the open tops thereof facing said plate, the right angled side 27 fitting flat against the flange 8, and the flanges 29 fitting against the flange 14 and in between the edge portion 12 of said plate 2 and the channeled edge 20 of the edge strip 5. Preferably, the side 27 of each partition member 24 is welded to the flange 8 of the side plate 2, and the flange 29 of each partition member 24 is similarly welded to the edge portion 12 of said plate 2, the welding not being shown. The partition members 24 are arranged end to end to form dead air insulating pockets in the panel 1 on one side thereof. The usual fibre, or like, insulation 30 is provided in the panel 1 between the bottoms 25 of the partition members 24 and the side plates 3 of said panel.

As will now be seen, the described panel 1 is air insulated on one side and solidly insulated on the other side, the edge portions 12, 13 provide a reduced longitudinal edge on the panel, and the longitudinal edges 6, 7 provide a channeled opposite longitudinal edge in which the reduced edge of an adjacent panel may be fitted in building a wall.

The foregoing will, it is believed, suffice to impart a clear understanding of my invention, without further explanation.

Manifestly, the invention, as described, may be modified without departing from the inventive concept, and right is herein reserved to such modifications as fall within the scope of the appended claim.

I claim:

A panel of rectangular form comprising a pair of laterally spaced side plates, a pair of edge strips, said plates and said edge strips having longitudinal interlocking channel edges securing the strips and plates together, means in said panel forming air insulating pockets on one side

of the panel comprising hollow open-top rectangular pans arranged in end-to-end engaging relation and having at one side thereof a lateral edge flange fitting between one of the side plates and a channel edge of one edge strip to hold the pans in place at said flanged side thereof and insulation material between said pans and the other side plate, said pans opposite the laterally flanged side thereof being provided with a right angled side fitting flush against and being fixed to and supported by the channel edge of said one side plate.

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