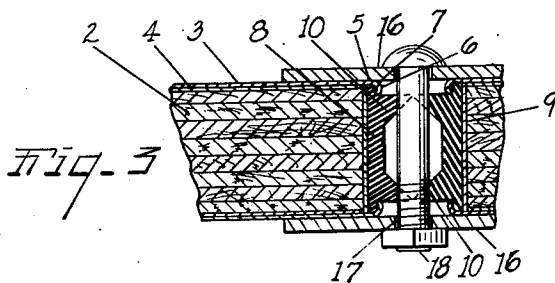
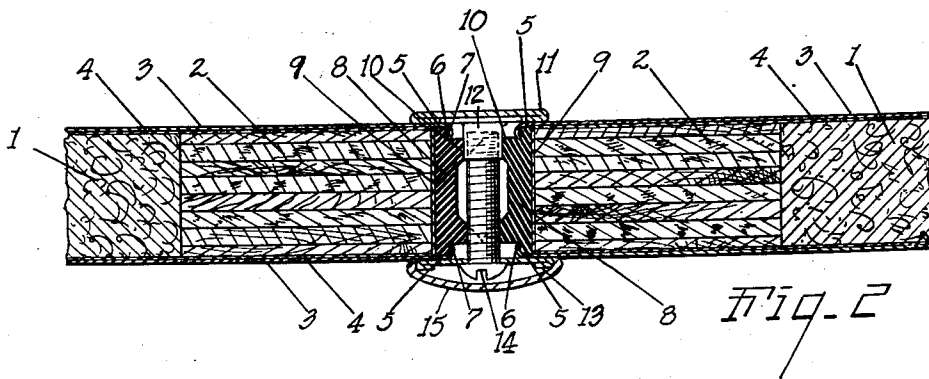
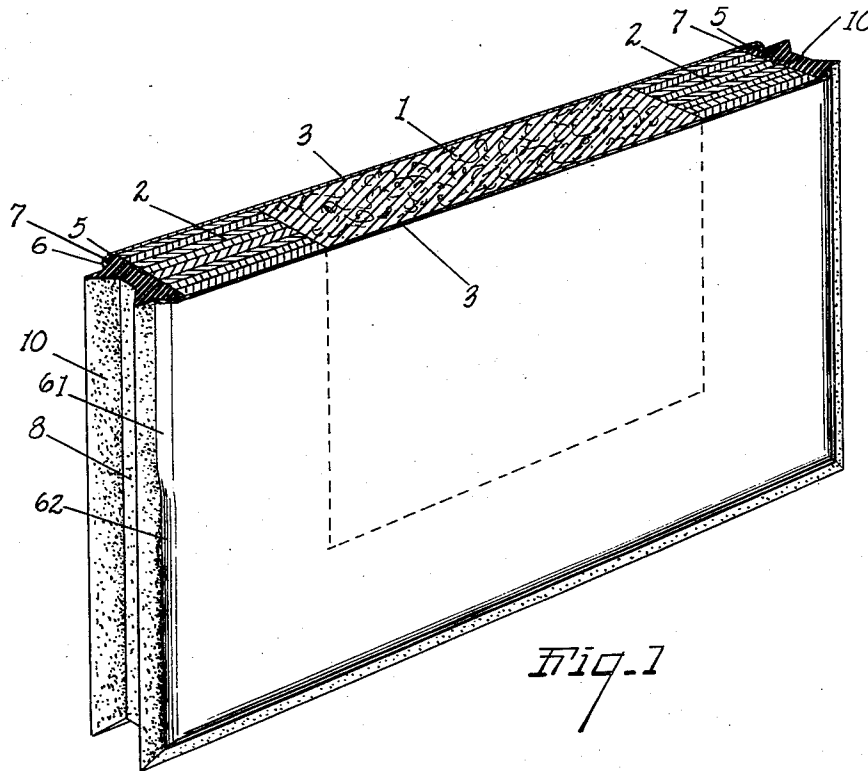


Aug. 22, 1939.

C. T. HATCH ET AL
INSULATING WALL PANEL
Filed Feb. 24, 1938

2,170,637



INVENTOR.
Charles T. Hatch
Ivar R. Swanson
BY *Earl & Chappell*
ATTORNEYS.

UNITED STATES PATENT OFFICE

2,170,637

INSULATING WALL PANEL

Charles T. Hatch and Ivar R. Swanson, Albion, Mich., assignors to Union Steel Products Company, Albion, Mich.

Application February 24, 1938, Serial No. 192,299

14 Claims. (Cl. 189—34)

This invention relates to improvements in insulating wall panels.

The main objects of our invention are:

First, to provide an improved insulating wall panel of high insulating value and one that is very easily assembled in a wall structure, the joint also affording a relatively good insulation.

Second, to provide an insulating panel which is well adapted for use in bakery equipment, such, for example, as proof boxes in which it is desired to maintain uniform temperature.

Third, to provide an insulating panel which is durable in structure and one in which the various elements thereof are so connected or secured together that they do not come apart or separate in use.

Objects relating to details and economies of our invention will appear from the description to follow. The invention is defined and pointed out in the claims.

A structure embodying the features of our invention is illustrated in the accompanying drawing, in which:

Fig. 1 is a fragmentary perspective view of an insulating panel embodying the features of the invention, no attempt being made to show the parts in their relative proportion and certain parts being shown conventionally.

Fig. 2 is a fragmentary perspective view of a wall structure embodying the invention, likewise without any attempt to show the parts in relative proportions.

Fig. 3 is a fragmentary sectional view of a modified form of our invention.

Our improved insulating panel comprises a core or body sheet 1 of fibrous insulating material. The material commercially known as "Insulite" may be satisfactorily used. This insulating core is provided with a wood frame or border 2 preferably formed of multi-ply veneer as illustrated. The metal side plates 3, which are of relatively thin sheet metal, are secured upon the sides of the core and the border member by adhesively securing, as indicated by the adhesive glue 4, to the sides of the border members. By securing the metal plies or side plates to the border members, a permanent joint is secured.

We are aware that panels have been made of fibrous insulating material with metal side plates or side plates secured to the face of the insulating material, but such a structure is quite unsatisfactory in that there is a very great likelihood of the fibrous insulating material peeling or splitting off at the inside of the adhesive and such panels are, therefore, quite unsatisfactory. How-

ever, with our improvements, permanent panels may be produced, that is, panels in which the several parts are maintained in permanent relation.

To provide a joint, the metal side plates are extended beyond the border members as shown at 5, and they terminate in inturned flanges 6 providing a channel 7. The joint strips 8, preferably of quite yielding rubber, are conformed to fit in the channels 7 extending around the panel and are adhesively secured to the edges of the border strips as indicated at 9. In assembling the joint strips, they are placed in channels 7 as shown, after which the flanges 6 are crimped or spun inwardly and reversely to clamp the strips securely. In Fig. 1 we indicate a portion 61 of the flange 6 in flat form prior to this crimping operation, while the reference numeral 62 indicates the flange in final inturned curved position.

The joint strips have longitudinal spaced ribs 10 projecting from the channels in position to engage corresponding ribs on an adjacent joint strip as illustrated in Fig. 2, thereby forming an effective insulating joint between the panels and likewise preventing cockroaches and other insects from running between the panels.

To secure the adjacent panels in assembled position, we employ a clamping cleat or batten strip 11 engaging one side of the adjacent panels having welded thereto a number of T-nuts 12. A further batten strip or cleat 13 engages the other side of adjacent panels and is apertured to receive the screws 14 which threadedly engage nuts 12. The batten strips 11, 13 are preferably cadmium plated to resist rusting in the acid-laden atmosphere to which they are exposed. The nuts and screws are preferably electro-galvanized and suitably treated for the same purpose. The outer covering or finish strip 15 is snapped over strip 13 and is either stainless steel or cold rolled steel cadmium plated, depending on the quality of the finish desired.

The foregoing panel securing means is well insulated and in addition provides a smooth rust-resisting surface on both sides of the panel, which is attractive in appearance. The threads of the clamping screws are entirely shielded from rusting by the strips 11, 13, and 15.

It will be noted that in our improved panel there are no metal-to-metal parts through the panel as results from joining the side plates to the edge of the panel by an interlocking seam, which has been heretofore the practice, and further, the elastic joint members are forced into

the channel and preferably adhesively secured in place, with the result that a moisture-proof joint is provided.

Another advantage is that the parts are assembled without soldering, which not only is an expensive step in the manufacture, but is quite necessary to prevent penetration of moisture where the side plates or plies are seamed together.

The panel joint is quite efficient in its insulating qualities as there is an insulated chamber between the joint cleats and a relatively small cross-sectional area of heat conductive material connecting the sides of the panel.

In a modification of our invention, as illustrated in Fig. 3, we utilize cleats 16 apertured at 17 to receive bolts 18 and locked by nuts 19. In this simplified embodiment, the panel clamping means may be rust-proofed or not as desired.

We have illustrated and described our improvements in embodiments which we have found highly satisfactory. We have not attempted to illustrate certain other embodiments and adaptations as it is believed that this disclosure will enable those skilled in the art to embody or adapt our improvements as may be desired.

Having thus described our invention, what we claim as new and desire to secure by Letters Patent is:

1. An insulating panel comprising a core sheet of fibrous insulating material, border strips of multi-ply wood veneer of a thickness corresponding to the thickness of the core body, metal side plates disposed on the sides of said core sheet and said border strips and adhesively secured to the sides of said border strips with the edges of said plates projecting beyond said border strips and terminating in inturned oppositely disposed spaced flanges providing outwardly facing channels, and rubber joint strips fitting in said channels and adhesively secured to the edges of said border strips, said flanges being crimped into clamping engagement with said joint strips, said joint strips having spaced longitudinal projecting ribs.

2. An insulating panel comprising a core sheet of fibrous insulating material, border strips of multi-ply wood veneer of a thickness corresponding to the thickness of the core body, metal side plates disposed on the sides of said core sheet and said border strips and adhesively secured to the sides of said border strips with the edges of said plates projecting beyond said border strips providing outwardly facing channels, and joint strips fitting in said channels and adhesively secured to the edges of said border strips, said joint strips having parts projecting from said channel to be engaged by a joint member.

3. An insulating panel comprising a core sheet of fibrous insulating material, border strips of multi-ply wood veneer of a thickness corresponding to the thickness of the core body, metal side plates disposed on the sides of said core sheet and said border strips and secured to the sides of said border strips, and yielding compressible joint strips secured to the edges of said border strips, said joint strips having spaced longitudinal projecting ribs.

4. An insulating panel comprising a core sheet of fibrous insulating material, border strips of multi-ply wood veneer of a thickness corresponding to the thickness of the core body, metal side plates disposed on the sides of said core sheet and said border strips and secured to the sides of said border strips, and elastic compressible

joint strips secured to the edges of said border strips to project beyond said side plates.

5. An insulating panel comprising a core sheet of fibrous insulating material, a border strip of relatively hard non-metallic material disposed at the edge of said core sheet, metal side plates disposed on the sides of said core sheet and said border strip and adhesively secured to the sides of said border strip with the edges of said plates projecting beyond said border strip and terminating in inturned oppositely disposed spaced flanges providing an outwardly facing channel, and a rubber joint strip fitting in said channel and adhesively secured in said channel, said joint strip having spaced longitudinal projecting ribs.

6. An insulating panel comprising a core sheet of fibrous insulating material, a border strip of relatively hard non-metallic material disposed at the edge of said core sheet, metal side plates disposed on the sides of said core sheet and said border strip and secured to the sides of said border strip with the edges of said plates projecting beyond said border strip to provide a channel, and a joint strip secured in said channel to project therefrom.

7. An insulating panel comprising a core sheet of fibrous insulating material, a border strip of relatively hard non-metallic material disposed at the edge of said core sheet, metal side plates disposed on the sides of said core sheet and said border strip and secured to the sides of said border strip, and a yielding compressible joint strip secured to the edge of said border strip.

8. An insulating panel comprising a core sheet of fibrous insulating material, a border strip of relatively hard non-metallic material disposed at the edge of said core sheet, metal side plates disposed on the sides of said core sheet and said border strip and secured to the sides of said border strip, said side plates projecting substantially beyond the edge of the border strip to provide a channel, and a non-metallic compressible joint strip secured to said channel to project therefrom for coaction with a corresponding joint strip of an adjacent panel when the panels are assembled in a wall structure.

9. An insulating wall panel comprising a core sheet of insulating material, a border strip of relatively hard non-metallic material disposed at the edge of said core sheet, metal side plates disposed on the sides of said core sheet and said border strips and secured to the sides of the said border strips with the edges of the plates projecting beyond the border strips to provide a channel, and a resilient joint strip secured in said channel to project therefrom.

10. An insulating wall panel comprising a core sheet of insulating material, a border strip of relatively hard non-metallic material disposed at the edge of said core sheet, metal side plates disposed on the sides of said core sheet and said border strips and secured to the sides of the said border strips, and a resilient joint strip secured to said border strip in longitudinally projecting relation to the edges of said side plates.

11. A wall structure comprising panels, each panel comprising a core sheet of fibrous insulating material, border strips of relatively hard non-metallic material disposed at an edge of said core sheet, metal side plates disposed on the sides of said core sheet and border strips and adhesively secured to the sides of the border strips with the edges of the side plates projecting beyond the border strips and terminating in in-

turned oppositely disposed spaced flanges providing an outwardly facing channel, rubber joint strips fitting in said channels and adhesively secured to the edges of the border strips, said flanges being crimped into clamping engagement with said joint strips, said border strips having spaced longitudinal projecting ribs adapted to engage the ribs of a similar joint strip in an adjacent channel, and a pair of joint cleats clamped upon a pair of adjacent panels.

12. A wall structure comprising panels, each panel comprising a core sheet of fibrous insulating material, border strips of relatively hard non-metallic material disposed at an edge of said core sheet, metal side plates disposed on the sides of said core sheet and border strips and secured to the sides of the border strips with the edges of the side plates projecting beyond the border strips providing an outwardly facing channel, yielding rubber strips secured in said channel to project therefrom, and a pair of joint cleats clamped upon a pair of adjacent panels.

13. A wall structure comprising panels, each panel comprising a core sheet of fibrous insulat-

ing material, border strips of wood disposed at the edges of said core sheet, metal plates disposed on the sides of said core sheets and adhesively secured to the sides of said border strips, rubber joint strips adhesively secured to the edges of said border strips, said joint strips having spaced longitudinal projecting ribs, joint securing means engaging and extending between the projecting joint strip ribs of a pair of adjacent panels, and means enclosing said securing means to prevent rusting thereof.

14. A wall structure comprising panels, each panel comprising a core sheet of insulating material, border strips of relatively hard non-metallic material disposed at the edges of said core sheet, metal plates disposed on the sides of said core sheet and secured to the sides of said border strips, yielding joint strips secured to the edges of said border strips, and coacting joint cleats clamped upon a pair of adjacent panels, said cleats being of rust-resisting material.

CHARLES T. HATCH.
IVAR R. SWANSON.