July 29, 1947. R. BÉHIN 2,424,547

WALL CONSTRUCTION

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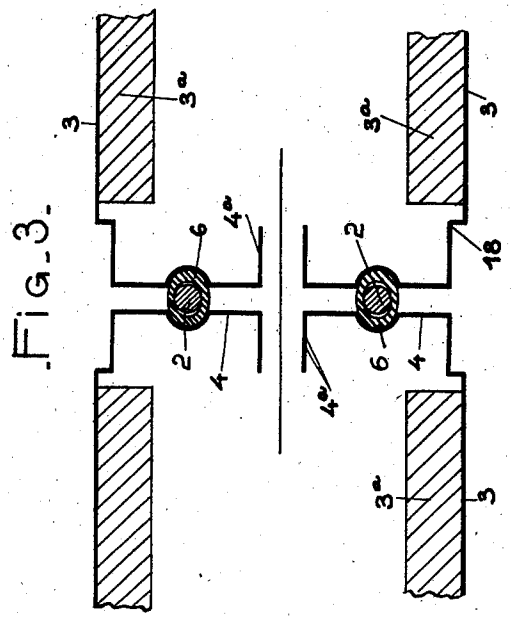


Fig. 3.

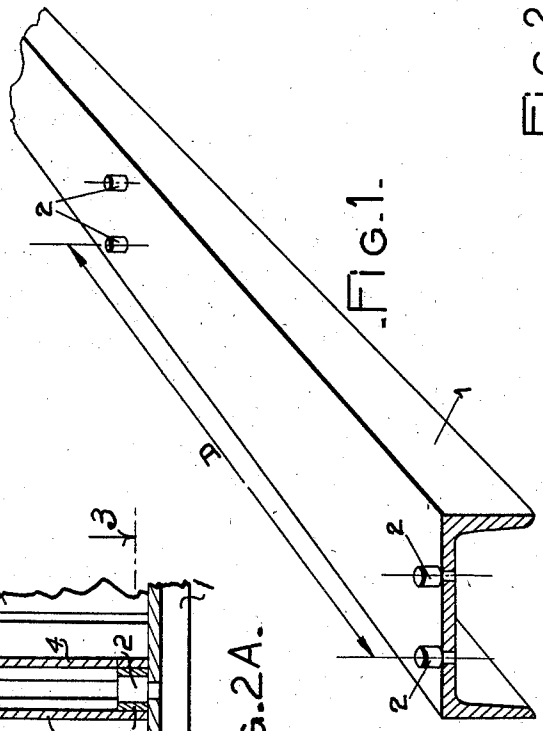


Fig. 1.

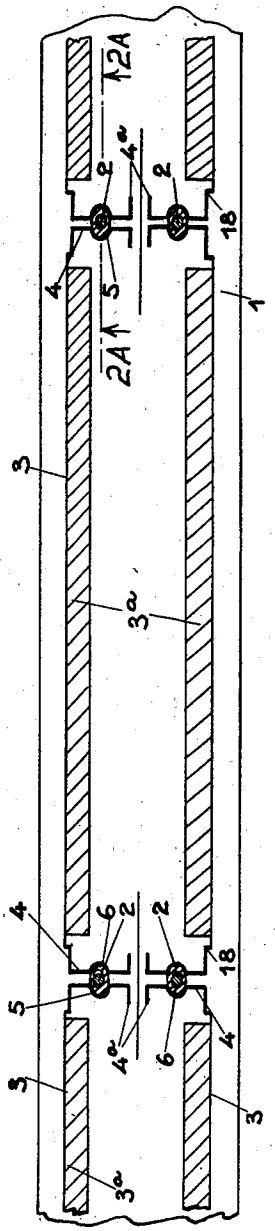


Fig. 2.

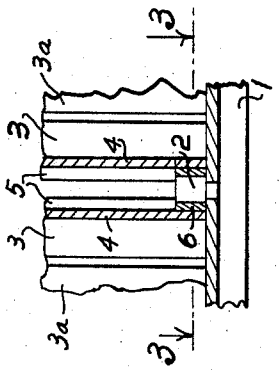


Fig. 2A.

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Fig. 4.

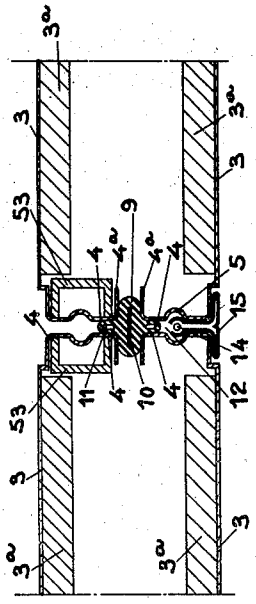
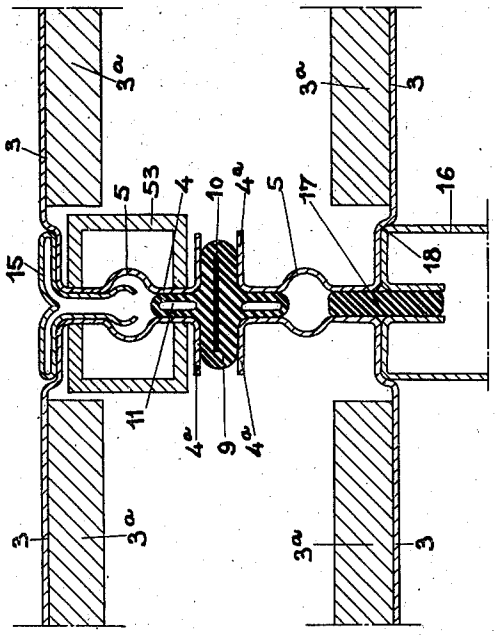


Fig. 5.



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WALL CONSTRUCTION

Raymond Béhin, Gennevilliers, France; vested in the Attorney General of the United States

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In France April 26, 1939

7 Claims. (Cl. 189—34)

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The present invention refers to means for the construction of houses with standard panels, namely, sheet metal elements.

The construction of a sheet metal house can not be executed in a practical manner except when carried out with standard parts produced in large quantities and fabricated with extreme care.

In a general way, the invention involves a structural steel base provided with projecting dowels for centering purposes, the spacing of the dowels being absolutely true, said base forming what may be termed as a chain-bond. On this chain-bond and between the centered dowels the standard parts are to be erected, appropriate spacings being interposed between the parts.

The invention furthermore includes other special points which are mentioned in the following text making reference to the attached drawing, given only as an example in which:

Figure 1 is a perspective view of a channel iron forming a chain-bond base of a building structure.

Figure 2 is a plan view including a horizontal section showing the erection of the standard panels upon the base member.

Figure 2A is a vertical sectional view taken along the line 2A—2A in Figure 2.

Figure 3 is a partial view similar to Figure 2 but on a larger scale, and taken along line 3—3 in Figure 2A.

Figure 4 is a section showing a special joint construction between the ends of adjacent vertical panels.

Figure 5 is a section showing a special joint construction wherein one vertical panel is positioned perpendicular to the adjacent ends of two other alined vertical panels.

The metal shapes or channel base members 1 have projecting pins or dowels 2 equidistantly spaced by a distance D corresponding to the width of the standard panels 3. A flexible collar 6 is adapted to fit over each projecting pin 2. These panels, as shown in Figure 2, are each composed of a metal sheet 3 interiorly provided with an isothermic layer 3a of appropriate material. The edges of these panels are partly bent down as at 4 to form a web, which web provides rigidity and reinforcement. Each web member 4 has a longitudinal groove 5 facing a similar longitudinal groove 5 in the web member 4 of the adjacent alined panel 3. All panels have the same shape including the reinforcing webs or ends 4 with the associated grooves or longitudinal rabbets 5. These rabbets generally offer

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accommodations for joints, as previously mentioned; however, when the vertical panels are properly erected, the lower part of each rabbet 5 stands securely against a flexible collar 6 on the corresponding dowel head or pin 2 of the metallic base structure 1 in such manner that the final positioning of the panels may be quickly effected and with a great deal of precision. (See Figures 2 and 2A.) For the vertical partitions as shown in Figure 2, the panels are erected in pairs thereby providing a double partition with an intermediate air space.

Between two pairs of vertical panels a special joint 9 of rubber is used as shown on Figure 4. This joint, in section, has the shape of a cross. Two of the oppositely projecting cross legs are fixed between the bent down webs 4 and the other two oppositely projecting cross legs are fixed between marginal bent over edges 4a, the latter edges extending at right angles to the associated web portions 4. The joints also serve as a binder between the two adjacent panels, as well as to absorb expansion due to temperature changes.

These rubber joints 9 are internally reinforced by metal bands 10 and 11. The spaces 12, made available by the grooves 5, are utilized for the passage of electric wiring or other usages 14. The wiring is some times placed between the grips of spring steel pincer members 15 which are T-shaped in cross section. These pincer members 15 are forced in place as shown in Figure 4 and are thereafter pressed in position. These pincer members 15 constitute at the same time a joint cover.

In Figure 5 an erected perpendicular partition 16 is shown. For this purpose a joint 17 is provided and the perpendicular partitions 16 are kept in place by the joint 17 and the offsets 18.

It will be noted in the drawings that the offset or outer flange portion 18, the web portion 4, and the inner flange portion 4a cooperate to form a U-shaped channel portion at each end of the panels. The outer flange portion 18 is inset from, and parallel to, the main plane of the panel, and the opening of the channel faces in the direction of the panel.

The construction means of the above-described invention is characterized by the following features and advantages:

1. The standard parts are composed of metal panels, the edges or ends of which are bent down at a 90° angle, and the marginal parts of these extremities are also bent over to form a U-shaped section.

2. These bent edges are provided with grooves which at the lower extremities are fitted to the dowels which in turn determine the centering for the vertical partitions and which permit the fitting of a joint or an electric feeder or other structure between adjacent panels.

3. The standard panels provide an isothermic lining for the vertical partitions.

4. The standard panels are fitted to one another in a manner similar to the tongue and groove construction of parquet floors.

5. The material ensuring the proper joining of the parts also serves to form a water-tight joint as well as an expansion joint.

6. The grooves provided on the bent down edges or ends of the panels provide: (*a*) means for fitting a joint cover; (*b*) the adaptation of rubber joints; (*c*) the establishment of a ball bearing trackway for sliding panels; (*d*) the provision of accommodations for electric or other conduits.

What I claim as my invention and desire to secure by Letters Patent is:

1. A wall construction comprising a base member having spaced pins projecting upwardly therefrom, a panel adapted to occupy a vertical position with respect to said base, said panel having a vertically extending channel formed with a vertically disposed groove in its web, said groove operatively receiving some of the pins so as to position the panel relative to said base member.

2. A wall construction, according to claim 1, wherein a portion of the outer flange of said channel is inset from the main plane of the panel and is arranged substantially parallel to said main plane of the panel.

3. A wall construction, according to claim 1, wherein the opening of the channel faces in the direction of the panel.

4. A wall construction comprising a base member having spaced pins rising therefrom, a wall member comprising adjacent panels arranged to occupy vertical positions of rest on said base, said panels each having vertical channels formed on their ends and positioned laterally inwardly with respect to the main planes of the panels, said channels each comprising a first flange directed outwardly toward the adjacent panel, an inwardly directed web on the said flange, and a second flange on the web directed inwardly, the webs of adjacent channels being arranged substantially parallel to each other, the webs of the adjacent channels being formed with facing vertical grooves operatively engaging some of the said pins so as to positively position the panels relative to the base.

5. A wall construction comprising a base member having upstanding spaced pins, a wall comprising two panels resting on said base in substantially end to end relation, vertical channels formed on the adjacent ends of the panels and displaced toward the inward sides of the panels, with the openings of the channels facing in the direction of the panels on which they are formed, the webs of the channels being substantially parallel and formed with facing vertically extending grooves operatively receiving some of the said pins whereby the adjacent ends of the panels are positively positioned relative to each other and the base member.

6. A wall construction comprising a base having upstanding laterally spaced pins, a wall comprising substantially parallelly spaced lines of panels resting on said base, the ends of the panels in each line being formed with vertical channels displaced toward the inner side of the panels with the openings of the channels facing in the direction of the panels on which they are formed, with the webs of channels of panels whose ends are adjacent being substantially parallel and formed with facing vertical grooves, said grooves providing means along the lines of panels for operatively engaging the pins along the corresponding side of the base, whereby the adjacent panels in each line are anchored with respect to each other and the base and the lateral spacing of the lines of panels is maintained.

7. A wall construction, according to claim 6, wherein resilient spacing means operatively connects paired channels of one line of panels with paired channels of the other line of panels for mutual support of the lines of panels.

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