June 5, 1956 A. H. BROWN 2,748,591

WALL PANELS

Filed July 22, 1952

FIG. 1

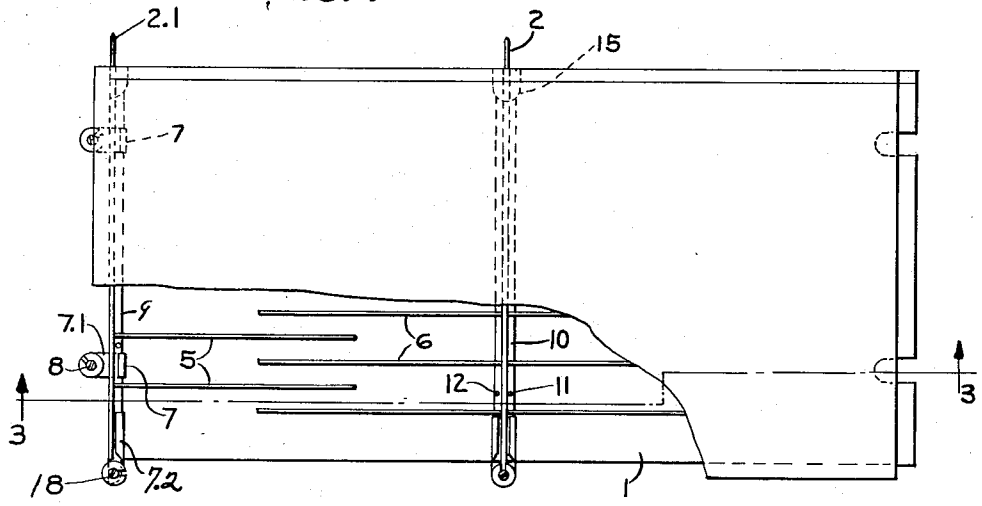


FIG. 2

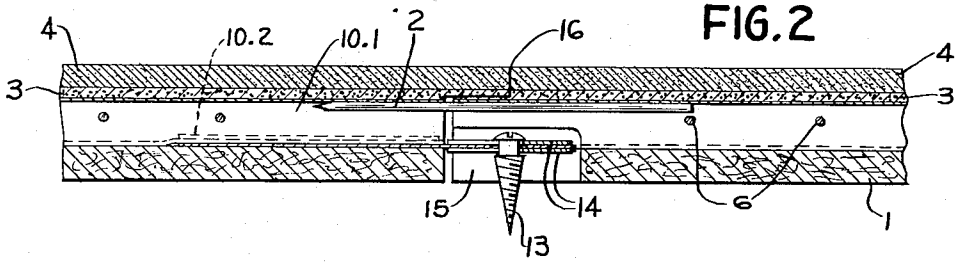


FIG. 3

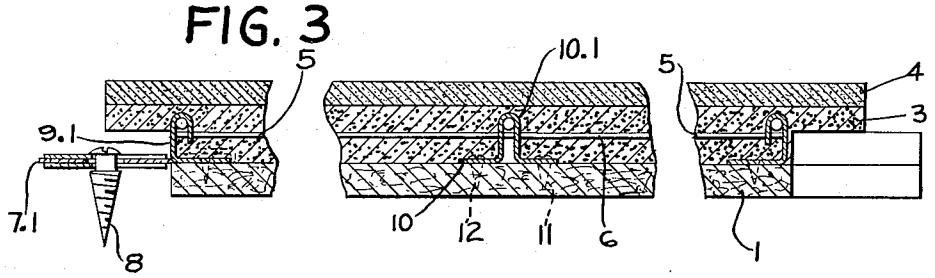
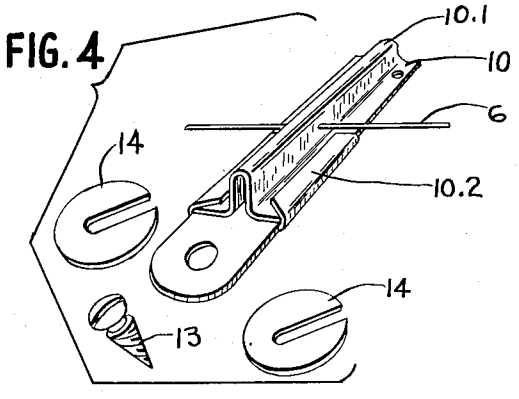


FIG. 4



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WALL PANELS

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2 Claims. (Cl. 72—16)

My invention relates to combination panels of fiber and plaster or similar material for finishing the inner walls and ceilings of houses and other buildings.

The objects of my invention are to provide improved panels capable of separate mass production, of convenient size and shape for application to and assembly in the side walls and ceilings of houses or other buildings; to form reenforced panels of fire-proof material or of very slow-burning construction which can be readily assembled; to provide such panels with means for conveniently attaching same to the studding of the side walls or to ceiling joists or rafters; to provide means for adjusting and securing such panels to side walls in vertical planes so as to overcome slight irregularities in the studding or framing of the side walls; to provide panels with surfaces suitable for decoration by drawing, painting, carving or engraving.

I accomplish these objects by the means illustrated in the accompanying drawings, in which—

Figure 1 is a front elevation of one of the panels with parts broken away to disclose the underlying parts;

Figure 2 is a fractional sectional view of a lower panel and its juncture with the adjoining upper panel;

Figure 3 is a sectional elevation on the line 3—3 of Figure 1 with parts broken away;

Figure 4 is an exploded view of the details of the panel fastening means.

Similar numerals refer to similar parts throughout the several views.

My invention includes the construction as a substitute for the inside lath and plaster side walls and ceilings in frame houses or similar buildings of interconnected series of light, thin, non-inflammable panels which may be separately constructed and conveniently applied to the inner edges of the studding or to the lower edges of rafters or ceiling joists. Each panel has three layers including a thin base of approximately one-quarter of an inch of fibrous material united by a suitable binder, a thin intermediate layer of plaster approximately one-half to five-eighths of an inch in thickness, and a thin surface layer of plaster from one-eighth to one-quarter of an inch in thickness and of material which will allow a smooth, hard finish and may be readily ornamented by designs pressed or otherwise formed thereon.

Each of my panels includes a body made up of a base 1 of fibrous material such as is used in building paper, tar or asbestos paper or fiber boards and is preferably about one-quarter of an inch in thickness.

Upon the base of each panel at the middle thereof I mount a transverse flange bar or plate 10 which may be secured to the base 1 by screws or tacks 11 and 12. The middle portion of said bar 10 is folded upwardly throughout its length as at 10.1. The portion 10.1 has transverse bores formed therein through which rods or wires 6 may extend laterally parallel to the base 1. The plate 10, its raised portion 10.1 and the wires 6 are all embedded in the intermediate plaster layer 3.

At the ends of the panel similar plates are mounted

upon the base parallel with the center plate and with an upward projection 9.1 formed thereon which loops over a reenforcing rod 5 mounted therein as shown in Figure 3. These outer reenforcing transverse bars and the rods or wires 5 are also embedded in the intermediate section 3.

A layer 3 of plaster made of a mixture of sand or other granular or fibrous matter and lime, stucco, cement, plastic or other suitable material, is then placed on the face of the fibrous base and is approximately one-half to five-eighths of an inch in thickness and covers or encloses the reenforcing wires and flanges.

The end bar 9 is an angle bar preferably of thin metal and has a flange 9.1 formed at a right angle to the plane of the panel.

The middle bar has centrally disposed inverted U-shape flange 10.1 formed at a right angle thereto at the middle of the bar. In the flange 9.1 a plurality of small bores are provided in which wires or small rods 5 are mounted. In the flange 10.1 of the middle bar similar small holes or bores are provided in which wires or small rods 6 are mounted. The adjacent ends of the rods 5 and 6 are overlapped within the plaster layer 3.

The bar 9 has a sleeve 7.2 mounted upon one end thereof which is to be secured to the studding by a screw 18 and the middle bar is provided with a corresponding sleeve 10.2 which can be secured to the studding by a long screw 13 or other suitable means.

A pair of slotted washers 14 may be fitted on the neck of the screws 18 and 13 on opposite sides of the sleeves 7.2 and 10.2 and will hold the sleeves at a distance from the studding determined by the depth to which the screw is inserted in the studding.

One end of each flanged bar of each panel is formed with a tine or rod 2–2.1 which is fitted to enter a corresponding opening in the adjacent end of the flange of the corresponding flange bar of the next succeeding or adjoining panel and to fit closely therein.

Lateral sleeves 7 may be united to the end flange bars 9 of the panel with extensions 7.1 fastened to the next laterally adjoining panel or to the studding by screws 8.

Suitable cavities 15 may be provided in such adjoining panels to permit attachment as described, by screws, nails or other suitable means. All cavities left in any of the panels may be filled up flush with the surface after the panels have been secured upon the walls and a filler used for that purpose which corresponds with the material of which the outer coating of the panel is made.

The outer surface of each panel may be decorated by marking, painting, carving or engraving thereon any desired designs and may be made smooth and flat or figured or engraved as desired.

The adjoining panels may be so placed that the abutting edges thereof fit so closely together as to render the seam or juncture practically invisible and make the wall appear unitary.

Spaced seams 16 may be left between adjoining panels to be filled by a white, black or colored filler which will emphasize the paneled appearance of the wall and act for a part of the decoration thereof.

In the use of my invention, the panels are formed separately in rectangular frames comprising strips of wood or metal which will not stain the plaster or be deteriorated by any acid or alkaline content of the panels. The strips forming such rectangular frames will have a height corresponding to the desired thickness of the completed panels. The base or fibrous member of each panel will be laid down first in its frame as described. The flange bars will then be attached to the base and the frame will be provided with sufficient openings to accommodate the prongs and the sleeves.

The reenforcing wires may be attached to the flange

bars either before or after the bars are fastened to the base. The intermediate or first plaster layer will then be applied and will be of sufficient thickness to engage the reenforcing wires. After this intermediate plaster coat is applied and either after it has dried or while still damp, the finishing coat 4 of plaster will be applied. After that has dried, any desired design may be applied to the panel and the designs may be so arranged that they will interlock with the adjoining panel designs.

After the panels have been completed, they are separately attached to the studding of the side walls and the rafters or joists of the ceiling. The panels on the side walls may be trued up by a plumb line used to determine the depth to which the screws should be driven into the studding. In frame houses generally it has been common practice to space the studding to which the lathing and plastering for the inner walls are applied, as well as the ceiling joists, at intervals of about sixteen inches apart. I prefer, therefore, to construct my wall panels of forty-eight inch lengths so they can be applied to four studs or joists at a time or to make them of thirty-two inches in length to apply to three studs as shown in Figure 1. A convenient height for the panels will be thirty inches or two feet and panels of that size can be readily and conveniently handled by carpenters. However, the dimensions may be varied to suit the convenience of the men who will have to make or apply the panels in each given case.

In order to attach the panels to the studding or joists, the sleeve members **10.2** are allowed to project far enough beyond the edge of the base **1** to clear the edge of the panel far enough to allow the screws **13** to be driven into the studding at the lower edge of the panel as shown in Figure 2, referring to the left end of Figure 2 as the upper portion thereof. The washers **14** may be placed upon the screw **13** by slipping the slotted portions upon the reduced neck of the screw on opposite sides of the extended end of the sleeve **10.2**. The depth to which the screw is driven into the studding will determine the height of the sleeve **10.2** and the bar **10** above the studding.

An aperture **15** is provided in the upper edge of the next lower panel to permit the assembling of two adjoining panels as shown in Figure 2. The right or lower panel will carry a pin or bar **2** which will project upwardly into the next adjoining panel above it. The flange bar **10** is preferably located at the middle of the panel and the panels are preferably of a length equal to twice the distance at which the studding or joists are secured.

At one end of each panel a flange bar **9** having a single flange, is mounted and carries a sleeve **7.2** adapted to be secured to a studding by a screw **18** while smaller sleeves **7** are attached to the flange bar **9** and have lateral extensions **7.1** secured thereto which may be fastened to the studding by screws **18** in the same manner as the screws **13** heretofore described are secured.

In assembling the panels in a wall or ceiling, the panel is first placed and held in the desired position and the screws **8**, **13** and **18** are inserted through the sleeve portions in bores or openings provided for that purpose and driven part way into the studding or joists. The washers **14** are then slid upon the screws upon opposite sides of the sleeve extensions which they are to secure. The screws

can then be driven into the studding or joists as much farther as is desired for each particular job or as far as the thickness of the base **1** will permit. Thus the base **1** may be held in close contact with the studding or joists, but if desired, a small air space may be left between them.

When the wall has been covered by the panels, the cavities and seams may be filled or pointed up as desired.

Various modifications may be made in the size, proportions, number of parts and arrangement of parts composing my panels without departing from the spirit of my invention as claimed, and I do not limit my claims to the precise forms shown in the drawings.

I claim:

1. An improved article of manufacture adapted for use in constructing the inside side walls and ceilings of the rooms of frame buildings and consisting of a comparatively light weight panel having a firm thin base member of non-inflammable fibrous composition approximately one-fourth inch in thickness, an intermediate layer of plaster approximately five-eighths of an inch in thickness bonded to the base, and a thin finishing surface layer of plaster applied and united to the intermediate layer and having a smooth, hard outer surface, said intermediate layer having a centrally positioned transversely extending reinforcing bar of inverted U-shape cross-section, embedded therein and carrying a plurality of wire rods mounted in the bar and extending laterally from the bar at right angles thereto and embedded in the intermediate plaster layer, said reinforcing bar having integral flanges extending laterally from the terminal edges of the bar, said flanges being secured to the base, a substantially flat sleeve embracing one end of the flanges of the central bar, a section of said sleeve extending beyond an edge of the panel, said section being adapted to receive a fastener for securing the panel to a studding or joist, and additional transverse supporting bars mounted at each end of the base with wire rods united thereto and extending laterally inwardly at right angles thereto and embedded in said intermediate layer overlapping and spaced in alternation with the wire rods first mentioned.

2. An article of manufacture as described in claim 1, said central transverse bar having a metal rod secured in one end thereof, one end of said metal rod being received in the inverted U-shaped portion of the bar and the other end thereof projecting outwardly of the panel in the plane of the intermediate layer, the other end of the inverted U-shaped bar being adapted to receive and hold an outwardly extending end of a corresponding metal rod mounted in a similar transverse bar in an adjacent panel.

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