May 20, 1941. M. R. PRICE 2,242,835

BACKING FOR WALL OR CEILING TREATMENT

Original Filed Nov. 4, 1938

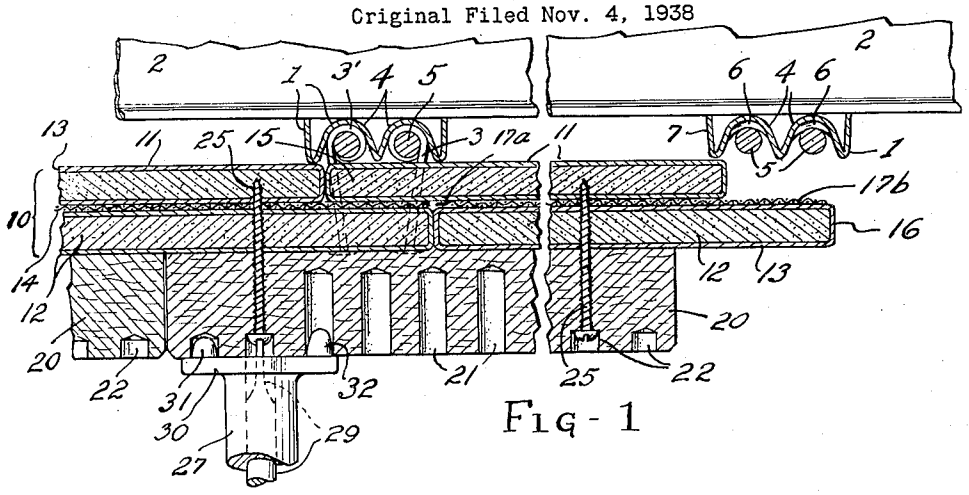


FIG - 1

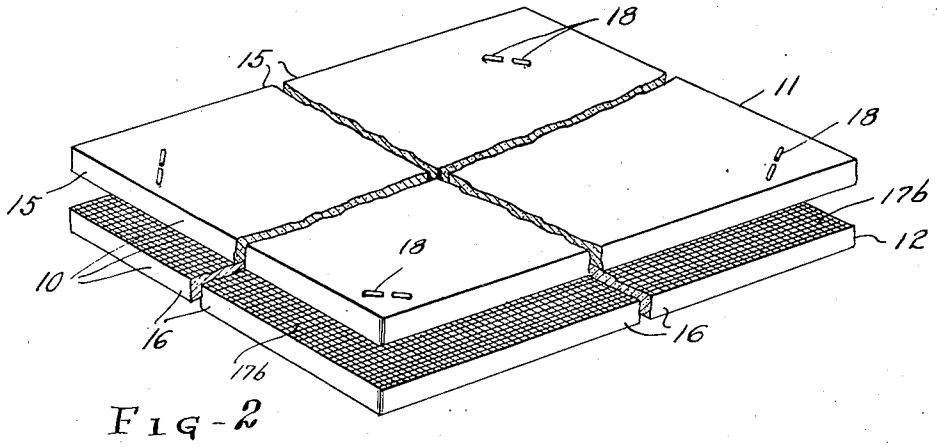


FIG - 2

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BACKING FOR WALL OR CEILING TREATMENT

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Original application November 4, 1938, Serial No. 238,863. Divided and this application September 11, 1939, Serial No. 294,251

5 Claims. (Cl. 72—124)

This application is a division of my application Serial No. 238,863, filed November 4, 1938.

The invention relates to a composite building unit, in the nature of a wall board, adapted to be assembled with other similar units in forming a base or ground for wall or ceiling facing treatment such, for example, as acoustical tile. The primary object is to provide an improved construction of the nature outlined above.

A specific object is to provide a backing unit adapted to span conventionally spaced supports such as rafters, studding, and the like, which unit will hold nails and screws effectively when driven thereinto and be sufficiently tough and rigid to resist distortion and fracture incident to forces customarily applied in driving nails and screws.

A further object is to provide substantially rigid, tile-backing unit sections which can be rapidly positioned and secured and be effective to block passage of dust and other matter therethrough between adjacent sections.

In the drawing, Fig. 1 is a fragmentary sectional assembly view of a suspended ceiling construction incorporating an embodiment of the invention, and Fig. 2 is a fragmentary perspective view showing the four corner portions of the backing unit according to Fig. 1.

Referring to Fig. 1, the upper part of this view illustrates a nailing ground which is shown and claimed in my Patent 2,160,794, issued May 30, 1939. This comprises double channel ground strips 1 supported as by suitable clips or tie wires in parallel relation to each other on the under sides of bars 2, such as structural channels customarily used in suspended ceiling construction. The above constitutes a wall framework, and so far as the present invention is concerned, the wall may be vertical or horizontal, or otherwise disposed.

The ground strips are of special shape and adapted to clinch nails such as 3, when driven through members to be fastened (e. g. units 10 to be described presently), and which in order so to be clinched, can encounter the strip at any point across the face of the strip which is exposed in a direction normal to the wall, and when driven at various angles. Instead of the special nailing ground of the suspended ceiling shown, the units 10 may be nailed to rafters or studs, or over any wall covering.

In the preferred construction of ground strips 1, the individual channels 4 have rods 5 supported between their side walls and in spaced relation to their bottoms as by being welded to outstruck portions 6 disposed at intervals along the channels. The nails 3 are like horse-shoe nails at their shank portions, i. e. flat and gradually tapered so that they will readily be bent in the proper direction by engagement with the sloping walls, and will curl around the rods as at 3'. Preferably, the shanks of the nails are round, so that when driven through wood, for instance, there is less tendency to split the wood than if the necessarily larger shank portions were also of elongated rectangular section. The ground strips have reversely bent flanges 7 at their sides, and these flanges cooperate with the channels to form base supports and stiffeners for the strips.

The units 10, as shown, comprise conventional plaster board or lath sections 11 and 12 with paper envelopes 13 of suitable paper stock, and with gypsum cores. Between the boards or layers 11 and 12 are web-like members 14, for instance, .0113 diam. open wire fabric of a mesh from 10 to 16 strands per inch (12 preferred). The layers or boards 11 and 12 are offset from each other diagonally as suggested in Fig. 2, so that overhanging and underhanging tongues 15 and 16 are provided respectively on two edges of the unit, permitting erection essentially in the manner of ship-lap boards. The labyrinth joint is important in order to prevent dust from coming through to the outer face of the unit and defacing the exposed surface of the final treatment.

The lapped joints by reason of prearrangement of the ground strips occur at the strips substantially as illustrated in Fig. 1, so that two nails, one in each channel, will each penetrate portions of both adjacent units 10. The webs 14 extend over at least two of the tongues, or substantial portions of them. As shown in Fig. 1, the web material stops, as at 17a, at the beginning of the relatively overhanging tongue, but continues entirely across the face of the relatively underhanging tongue, as at 17b, Figs. 1 and 2.

The material for the web 14 is selected in accordance with the type of fastener which is to coact with it. Metal fabric has been found to have good anchoring power with ordinary nails, barbed nails, drive screws, and ordinary screws. The units 10 may be secured together by adhesive which, in event of using a reticulate material for the web 14, passes through the voids and permits direct bonding with both layers 11 and 12 of the unit. Instead, or additionally, the members forming the units can be fastened or

stitched together as by wire staples 18, such as commonly used for binding paper sheets.

The plaster board for the layers 11 and 12 is preferred, because of its low cost, its inherent rigidity, unlikelihood of buckling and creeping, and because it serves as a fairly effective fire stop. Moreover, it is an easy matter to penetrate the outer layer with nails or screws, and the paper (usually chipboard) envelope assists in retaining such fasteners. When the fasteners are driven through the wire mesh, the locally displaced paper immediately adjacent the fasteners swells in thickness, tightly binding the strands of the mesh and tending to hold the same against being sprung away from the fasteners.

The facing treatment shown comprises the Acousti-Celotex type of tile 20. These have closely spaced holes 21 for nearly their full thickness leading inwardly from the exposed faces, and distributed evenly over such faces. At the corners, as now made, a few of the holes 22 are shallower than the others, to provide for practical concealment of nail or screw heads, while leaving enough material under the head to make certain that the latter will not pull or be driven through. The tile may be fastened by adhesive, as usual, or merely nailed or screwed onto the improved ground as indicated. The fasteners 25 in Fig. 1 are ordinary wood screws.

To assist in guiding the fasteners into place, a tool such as shown in Fig. 1 at 27 can be used to advantage for Acousti-Celotex and can be appropriately modified to serve effectively in securing other forms of facing. This represents a guiding head for a screw driver shaft 29 which is slidable and rotatable in an axial bore in the head. Arms 30 on the head have short pins 31 and 32 for aligning the working axis of the screw driver with the opening in which it is desired to drive the fastener. The shaft may be driven by hand in a variety of ways, or by power in the event more rapid operation is desired.

I claim:

1. As a nail or screw holding backing for wall or ceiling treatment such as tile, a self sustaining unit comprising sheets of paper-covered plaster board with a relatively thin sheet-like element of material capable of being readily penetrated at any point by a nail or screw when driven into contact therewith through the plaster board and capable of maintaining snug holding engagement with such nail or screw, said element being intimately embraced between the adjacent paper cover sheets.

2. As a nail or screw holding backing for wall or ceiling treatment such as tile, a self sustaining unit comprising sheets of paper-covered plaster board with relatively tough wire mesh cloth capable of holding nails or screws when driven thereinto disposed therebetween and sandwiched by the paper covers of adjacent sheets, and means to secure the sheets and wire mesh together in rigid relationship.

3. As a base or support for wall treatment such as tile, a self sustaining unit comprising inner and outer sheets of building board material which is permeable by nail or screw members but unadapted to hold such members to support the treatment, and an intermediate tough web adapted to hold nails or screws when penetrated thereby, said sheets being secured together in offset relationship edgewise whereby to provide overhanging and underhanging tongues of equal breadth on opposite edges of the unit so formed, and said web extending across one of the tongues.

4. A backing unit for wall or ceiling treatment such as tile, said unit comprising rectangular plaster board sheets laminated with thin and relatively tough nail or screw-holding material between them, the sheets being diagonally offset from each other to provide overhanging and underhanging tongues, and being secured together by means which passes through the web.

5. The unit according to claim 4 wherein the nail or screw-holding material extends across the tongues on two sides of the unit so that the web material will be present between the relatively overlapped portions of adjacent units when installed.

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