Dec. 8, 1936. J. H. NOLD ET AL 2,063,457

BUILDING CONSTRUCTION

Filed Feb. 25, 1935

Fig. 1

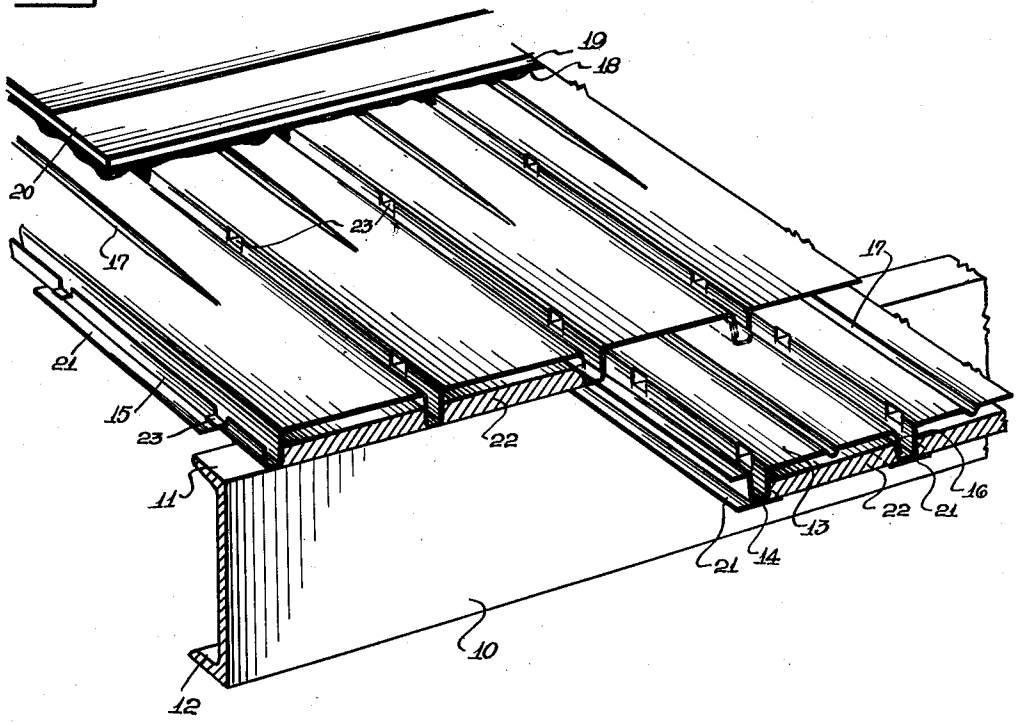


Fig. 2

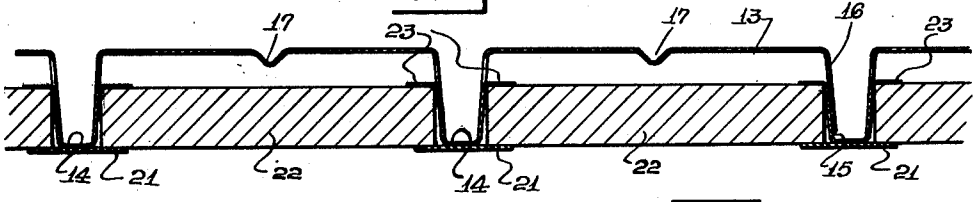


Fig. 3

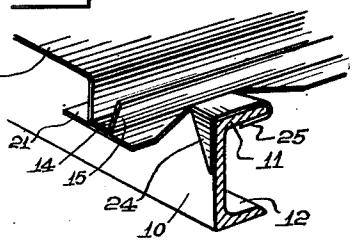


Fig. 5

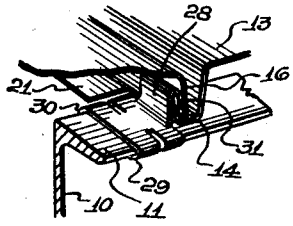
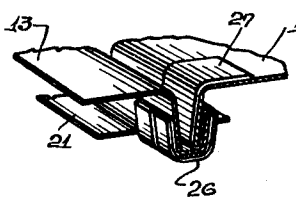


Fig. 4



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2,063,457

BUILDING CONSTRUCTION

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Application February 25, 1935, Serial No. 7,960

4 Claims. (Cl. 108—13)

This invention relates to building construction, and has reference more particularly to ribbed metal sheets or decks faced with fibrous material suitable for thermal and sound control.

In the use of metallic roof and floor decks, such as that described in Patent No. 1,900,721, it is desirable to apply a fibrous board or sheet to the bottoms of said decks so as to provide an absorption medium for acoustical correction, and also to thermally insulate the decks against the passage of heat.

An object of this invention therefore, is to provide a ribbed metal deck with a facing of fibrous material for sound absorption and heat insulation.

Another object of the invention is to provide a construction of the class described in which the decks are secured to each other and to the supporting beams in a convenient manner to permit easy erection and so as to permit the insertion of the fibrous material; also to improve building construction in other respects hereinafter specified and claimed.

Reference is to be had to the accompanying drawing forming a part of this specification, in which

Fig. 1 is a perspective sectional view of our improved form of building construction,

Fig. 2 is a transverse sectional elevation through the improved building structure,

Fig. 3 is a perspective sectional view through the structure showing the manner of attachment to supporting beams,

Fig. 4 is a perspective sectional elevation showing the manner of attaching one deck to the adjoining deck, and

Fig. 5 is a perspective sectional view showing a modified form of attaching the decks to supporting beams.

Referring to the drawing by numerals, beams 10 may conveniently be in the form of channel sections having outstanding upper flanges 11 and lower flanges 12. Metal decks 13 are in elongated form and are provided with downstanding integral ribs 14 extending longitudinally of the deck intermediate the longitudinal edges thereof. One longitudinal edge of each deck is formed into an upwardly opening channel 15, and the opposite edge is provided with a downstanding flange 16 adapted to be telescopically received in the channel 15 of the adjacent deck. Reinforcing ribs 17 are formed in the deck plates 13, said ribs extending from one end of the deck to a point somewhat short of the other end. The bottoms of the ribs 14 and channels 15 are adapted to rest upon the beam flanges 11 to form a roof or floor. In the case of using the decks for a roof, a bituminous mastic 18 is mopped hot onto the upper surface of the decks and insulating fiber boards 19 are caused to adhere to the mastic. A weather-protecting layer of asphalt roofing 20 is then applied to the fiber boards 19 by mopping in place with a hot bituminous mastic.

An elongated strip of metal 21 is secured to the bottom of each of the ribs 14 and the channel 15, as by spot welding. Fiber board strips 22 are supported at their outer edges on the strips 21, said boards being preferably of wood or other fibers and being of a porous nature suitable for the acoustical obsorption of sound and for thermal insulation. The boards 22 are held firmly in position to prevent lifting upon upward pressure on said boards when the lower surfaces are cleaned, by flanges 23 which are struck out from the walls of ribs 14. The ends of adjacent roof decks telescope together as seen in Fig. 1, and the strips 21 are shorter than said decks to permit said telescoping. At the points where the ribs 14 and strips 21 of the decks rest upon the beam flanges 11, (Fig. 3) said strips 21 are cut on diagonal lines with shears or other suitable tool, to form flanges 24 and 25. The flange 24 is bent downwardly against the web of beam 10 and flange 25 is bent around the beam flange 11 so as to firmly anchor said decks to the beams 10. The adjacent decks are secured together one to the other, by means of clips 26 which follow the contour of channels 15 and flanges 16, said clips having a flange 27 which is bent down on top of a deck to lock said decks together.

Instead of the anchoring device shown in Fig. 3, a modified form of clip 28 (Fig. 5) may be used. This clip has fingers or flanges 29 which are bent around the beam flanges 11, and opposed flanges 30 which lie in abutting relation against the web of channel beam 10, thus anchoring the clip to said beam. The clip 28 also has a return bent flange 31 which engages the upstanding flange of channel 15.

The roof deck above described presents a simple structure for either roofs or floors having combined structural strength, sound absorption and thermal insulation. The decks are firmly anchored to the supporting beams. The roof presents a neat, finished appearance from below.

We would state in conclusion that while the illustrated examples constitute practical embodiments of our invention, we do not wish to limit ourselves precisely to these details, since manifestly, the same may be considerably varied with-

out departing from the spirit of the invention as defined in the appended claims.

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

1. In a building construction, a composite building deck comprising a metallic sheet having depending integral ribs, sheets of fibrous material between said ribs, flat strips of metal secured to the bottoms of said ribs and supporting the outer edges of said fibrous sheets, and flanges struck out from said ribs and engaging the top faces of said fibrous sheets to prevent said fibrous sheets from lifting upon the application of upward pressure on said fibrous sheets.

2. In a building construction, a composite building deck comprising a metallic sheet having depending, integral ribs, sheets of fibrous material between said ribs, flat strips of metal secured to the bottoms of said ribs and supporting the longitudinal edges of said fibrous sheets, flanged beams supporting said deck, and flanges formed from said strips of metal, said flanges engaging said beam flanges to secure said decks to said beams.

3. In a building construction, a composite building deck comprising a metallic sheet having depending, integral ribs, sheets of fibrous material between said ribs, strips of metal secured to the bottoms of said ribs and supporting the longitudinal edges of said fibrous sheets, flanges struck out from said ribs and forming openings in said ribs, said flanges engaging the top faces of said fibrous sheets to prevent said fibrous sheets from lifting upon the application of upward pressure on said fibrous sheets, and a weather protecting layer above said metallic sheet and closing said rib openings.

4. In a sound and thermal insulated roof deck unit, a metallic sheet having depending, integral, longitudinal ribs, sheets of fibrous material between said ribs, and separate flat strips of metal secured to the bottoms of said ribs, the outstanding edges of said strips supporting the longitudinal edges of said fibrous sheets.

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