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F. M. VENZIE

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BUILDING CONSTRUCTION

Filed April 8, 1932

Fig. 1.

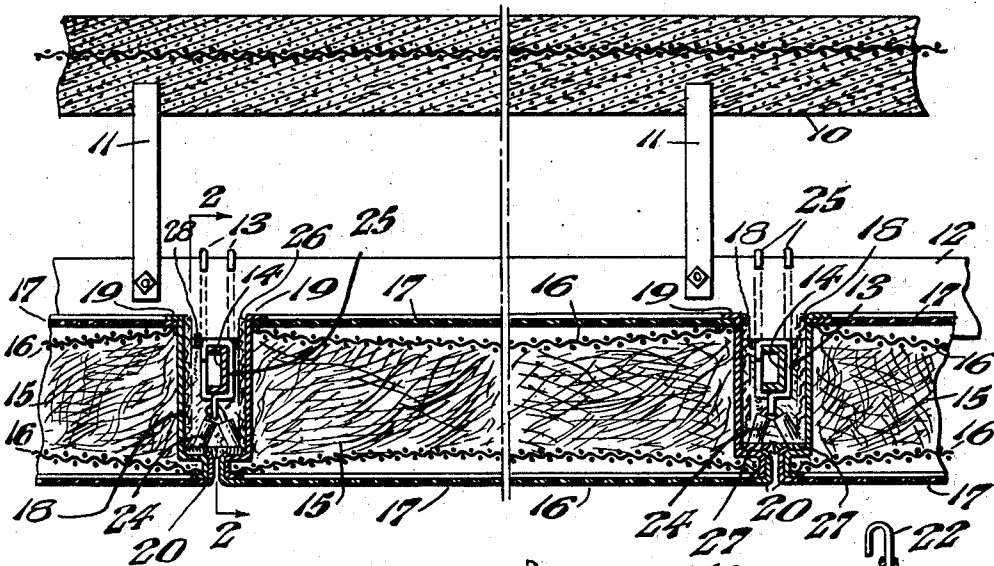


Fig. 2.

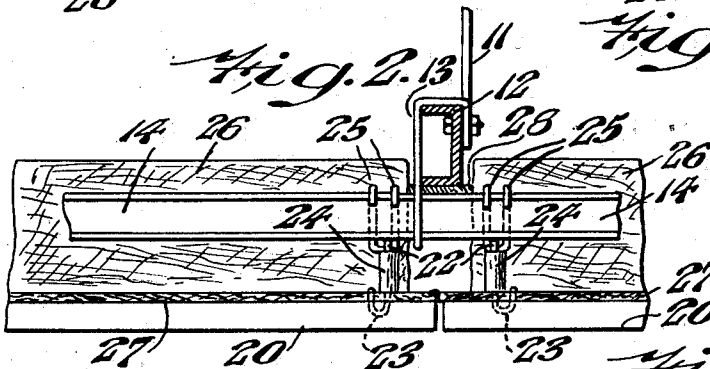


Fig. 5.



Fig. 3.

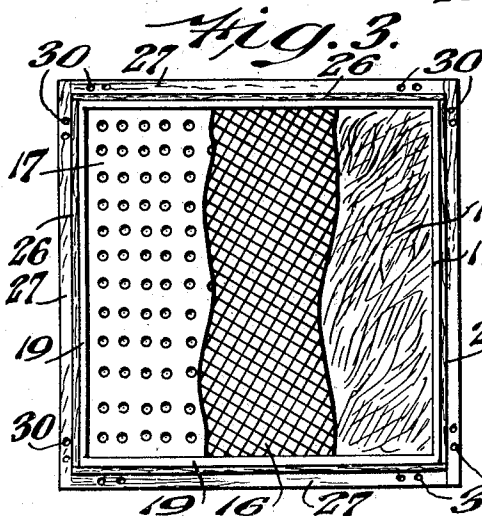
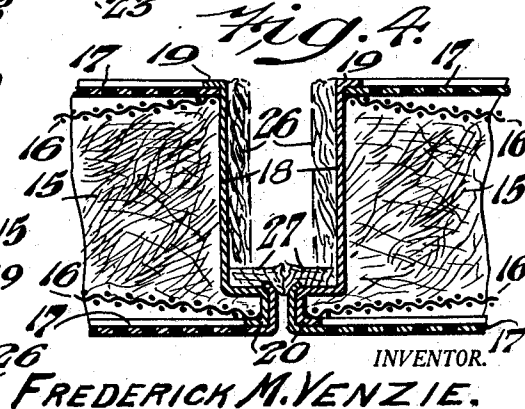


Fig. 4.



INVENTOR.
FREDERICK M. VENZIE.

BY
William J. Ineson
ATTORNEY.

UNITED STATES PATENT OFFICE

FREDERICK M. VENZIE, OF PHILADELPHIA, PENNSYLVANIA

BUILDING CONSTRUCTION

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This invention, generally stated, relates to a building construction and has more particular relation to a ceiling, wall, or partition construction.

5 The leading object of the present invention may be said to reside in the providing of a construction of the character stated which possesses sound proofing characteristics.

10 A further object of the present invention is to provide a structure of the character stated in which channel irons are designed to support rectangular slabs or panels possessed of sound proofing characteristics, 15 which slabs or panels are encased in perforated metallic shells, which slabs or panels and their shells in turn are supported by the channel irons.

20 A further object of the present invention is to provide a construction of the character stated in which sound proofing slabs or panels are resiliently supported by means of channel irons whereby a cushioned effect is maintained so that a yielding of the slabs 25 or panels occurs as sound waves impinge thereagainst.

30 A still further object of the present invention is to provide a construction of the character stated in which the slabs or panels are supported with respect to channel irons by means of resilient members encased in coverings calculated to overcome noise producing effects.

35 A still further object of the present invention is to provide a construction of the character stated in which channel irons are arranged cross-wise with respect to one another the abutting channel irons having introduced therebetween a soft resilient member. 40

45 A still further object of the present invention is to provide a structure of the character stated in which adjacent slabs or panels have introduced therebetween with respect to the cross channel irons mineral wool or other sound absorbing material.

50 Other and further objects relate to the providing of general details of construction, arrangement, combination, and connection

of parts for attaining the results sought by the foregoing objects.

With these and other objects in view, the invention consists of the novel construction hereinafter described and finally claimed. 55

The nature, characteristic features and scope of the invention will be more fully understood from the following description taken in connection with the accompanying drawing forming part hereof, and in which: 60

Fig. 1 is a fragmentary view, principally in longitudinal section, of a building construction embodying features of the invention; 65

Fig. 2 is a view in cross-section taken upon the line 2—2 of Fig. 1, looking in the direction of the arrows; 70

Fig. 3 is a top or plan view, partially sectioned, illustrating a slab or panel as shown in the foregoing figures. 75

Figure 4 is a fragmentary view in longitudinal section of certain of the parts shown in Fig. 1 with the channel irons and suspension hooks removed; and 80

Fig. 5 is a detail view partly in elevation and partly in section illustrating a cushion member as illustrated in Figs. 1 and 2. 85

For the purpose of illustrating my invention I have shown in the accompanying drawing one form thereof which is at present preferred by me, since the same has been found in practice to give satisfactory and reliable results, although it is to be understood that the various instrumentalities of which my invention consists can be variously arranged and organized and that my invention is not limited to the precise arrangement and organization of the instrumentalities as herein shown and described. 90

Referring to the drawing in detail, the reference numeral 10 designates a floor of cementitious material. Suspended beneath the floor 10 by means of strips 11 are channel irons 12. Suspended from the channel irons 12 by means of hangers 13 are other channel irons 14, which channel irons 14 are of lighter construction than are the channel irons 12 and are arranged at right angles with respect to the channel irons 12. Beneath the channel irons 12 and arranged be- 95 100

tween adjacent channel irons 14 are the slabs or panels best seen in Fig. 3. These slabs or panels are suspended from the channel irons 14 so as to have cushioned relation with respect to the supporting structure in a manner to presently appear. Each slab or panel is of rectangular configuration the body of which is comprised of felt, mineral wool, or other sound absorbing material designated 15. This sound absorbing material 15 is arranged between upper and lower wire mesh members 16, which members 16 are slightly arched as best seen in Fig. 1 in contradistinction to being flat. These members 16 are arched in reverse directions. The body of sound absorbing material 15, as well as the arched members 16 are housed in a metal casing comprised of upper and lower perforated plates 17 and non-perforated end plates 18. The end plates 18 at their tops are flanged as at 19. The bottoms of the end plates are also flanged as at 20. The flanged portions 20 form recesses as best seen in Fig. 4 and around these recessed portions are extended the ends of the lower of said perforated plates 17, as is also best seen in Fig. 4. In practice the slabs or panels above described are resiliently supported by devices best seen in Fig. 5. Each device consists of a coiled spring 21 having at its top a hook 22 and at its bottom a hook 23. The spring 21 is housed by means of a casing 24 which may be paper, cloth, or the like, the purpose being to prevent noises in the functioning of the spring 21. The hooks 22 accommodate wire hangers 25, see Fig. 2, which engage the channel irons 12. The hooks 23 in turn engage with the perforations 30 which are present in the marginal flanges of the ends of the metal casings 18. These perforated portions are best seen in Fig. 3. In this manner the slabs or panels are resiliently supported from the channel irons 14. In order further to deaden noises the spaces between adjacent slabs or panels are occupied by linings 26 of felt, mineral wool or the like, vertically considered; and horizontally considered the spaces contain linings 27 of mineral wool or other sound absorbing material. This arrangement is best seen in Fig. 4. The structure is also provided between channel irons 12 and channel irons 14 with strips of felt designated by reference numeral 28, best seen in Fig. 2.

The reason for the arching of the wire mesh members 16 is not only to hold the sound absorbing material 15 but to provide upper and lower spaces so that as sound goes through the perforation of the face metal plates 17 will spread in the vacant spaces formed by said arches and will be absorbed entirely or 100% by the sound absorbing material in back of the wire mesh members. This applies to the top as well as to the bottom of a slab or panel.

What is claimed is:

1. In a building construction comprising in combination longitudinal angle irons and transverse angle irons the last mentioned angle irons being supported in spaced relation from the first mentioned angle irons, panels possessed of sound absorbing characteristics arranged between said transverse angle irons, and means for supporting said panels in cushioned relation from said transverse angle irons.
2. In a building construction comprising in combination longitudinal angle irons and transverse angle irons the last mentioned angle irons being supported in spaced relation from the first mentioned angle irons, metal covered panels possessed of sound absorbing characteristics arranged between said transverse angle irons, and means for supporting said panels in cushioned relation from said transverse angle irons.
3. In a building construction comprising in combination longitudinal angle irons and transverse angle irons the last mentioned angle irons being supported in spaced relation from the first mentioned angle irons, panels possessed of sound absorbing characteristics arranged between said transverse angle irons, and means including encased coiled springs for supporting said panels in cushioned relation from said transverse angle irons.
4. In a building construction comprising in combination longitudinal angle irons and transverse angle irons the last mentioned angle irons being supported in spaced relation from the first mentioned angle irons, panels possessed of sound absorbing characteristics arranged between said transverse angle irons, means for supporting said panels in cushioned relation from said transverse angle irons, and strips of felt arranged between said longitudinal and transverse angle irons to deaden noise.
5. A building construction comprising in combination longitudinal angle irons and transverse angle irons the last mentioned angle irons being supported in spaced relation from the first mentioned angle irons, panels possessed of sound absorbing characteristics arranged between said transverse angle irons, including upper and lower wire mesh screens arranged upon arcs of circles, and means for supporting said panels in cushioned relation from said transverse angle irons.
6. A building construction comprising in combination longitudinal angle irons and transverse angle irons the last mentioned angle irons being supported in spaced relation from the first mentioned angle irons, the space between adjacent transverse angle irons being filled with sound absorbing material, panels possessed of sound absorbing characteristics arranged between said transverse angle irons, and means for supporting said

panels in cushioned relation from said transverse angle irons.

7. A building construction comprising in combination longitudinal upper angle irons, 5 laterally arranged, spaced angle irons therebeneath at right angles thereto, rectangular panels of sound absorbing characteristics arranged between adjacent laterally arranged angle irons, metal covers for said panels the 10 space between adjacent panels being filled with non-absorbing material which surrounds said lateral angle irons.

8. A building construction comprising in combination longitudinal upper angle irons, 15 laterally arranged, spaced angle irons therebeneath at right angles thereto, rectangular panels of sound absorbing characteristics arranged between adjacent laterally arranged angle irons, perforated flat metal 20 covers for said panels the space between adjacent panels being filled with non-absorbing material which surrounds said lateral angle irons.

9. A building construction comprising in combination longitudinal upper angle irons, 25 laterally arranged, spaced angle irons therebeneath at right angles thereto, rectangular panels of sound absorbing characteristics arranged between adjacent laterally arranged angle irons, metal covers for said 30 panels the space between adjacent panels being filled with non-absorbing material which surrounds said lateral angle irons, said metal covers having perforated flanges 35 and resilient hook members engaging said perforated flanges for support of said panels.

10. A building construction comprising in combination longitudinal upper angle irons, 40 laterally arranged, spaced angle irons therebeneath at right angles thereto, rectangular panels of sound absorbing characteristics arranged between adjacent laterally arranged angle irons, metal covers for said panels the 45 space between adjacent panels being filled with non-absorbing material which surrounds said lateral angle irons, and coiled spring members encased in yielding covers interposed between said lateral angle irons and adjacent ends of said panels.

11. A building construction comprising in combination longitudinal upper angle irons, 50 laterally arranged, spaced angle irons therebeneath at right angles thereto, rectangular panels of sound absorbing characteristics 55 arranged between adjacent laterally arranged angle irons, metal covers for said panels the space between adjacent panels being filled with non-absorbing material which surrounds said lateral angle irons, the 60 opposed ends of said covers being unperforated and flanged.

FREDERICK M. VENZIE.