

Jan. 20, 1942.

A. A. HEEREN
BUILDING SLAB
Filed Oct. 6, 1938

2,270,672

Fig. 1

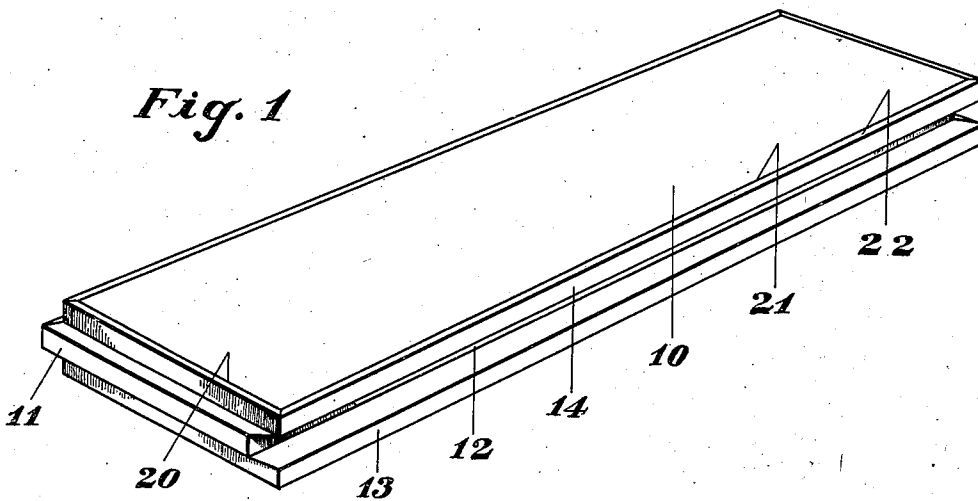


Fig. 3

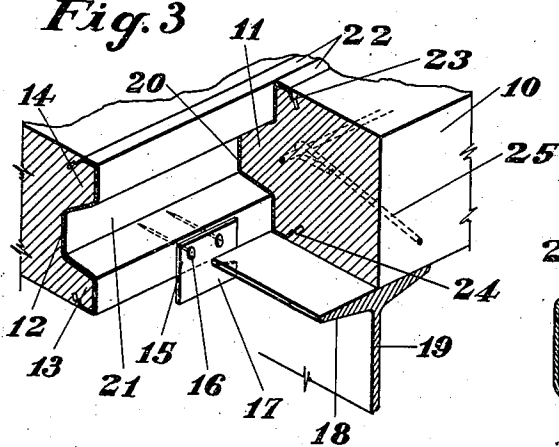
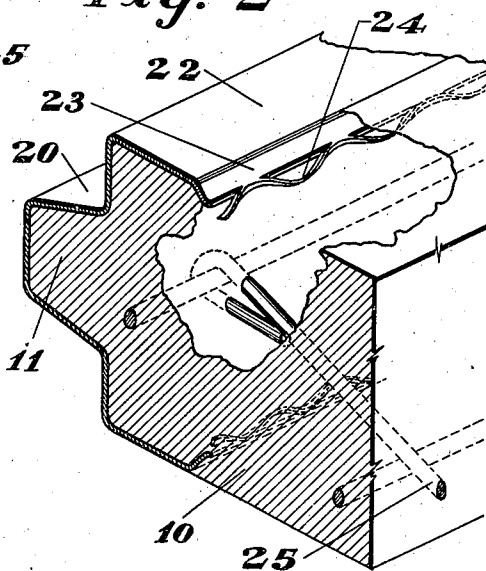


Fig. 2



INVENTOR
ARTHUR A. HEEREN
BY *L. A. Paley*
ATTORNEY

UNITED STATES PATENT OFFICE

2,270,672

BUILDING SLAB

Arthur A. Heeren, Chicago, Ill., assignor to United States Gypsum Company, Chicago, Ill., a corporation of Illinois

Application October 6, 1938, Serial No. 233,620

7 Claims. (Cl. 72-68)

This invention relates to building constructions and has reference more particularly to building slabs of cementitious material having metal bound edges.

Building slabs are commonly constructed of cementitious compositions having as a base gypsum, Portland cement, etc. These slabs are usually provided with sheet metal tongue and groove edges for interfitting one with the other to form a floor or other structural part of a building. The metal reinforced edges improve the strength of the slabs and also prevent chipping of the edges during handling, shipping and erection. In a slab of this nature, such as that disclosed in patent to Heeren and Johnson No. 2,014,841, it has been found that margins of the metal edging have a tendency to work loose from the faces of the cementitious slab, as when the slab is sawed to shorter length, so that the full reinforcing value of the metal edging is not obtained.

An object of this invention therefore, is to provide marginal anchoring means for the metal edging to prevent the edges of the metal runner from loosening from the faces of the slab.

Another object of the invention is to obtain maximum reinforcing value from the edge runners of a slab even if the slab is sawed to shorter length.

A further object of the invention is to provide marginal anchoring means for the edge runner which will not produce cleavage planes in the slab; also to improve building slabs 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 view of the improved building slab,

Fig. 2 is a sectional perspective view on a large scale of an edge of the slab, and

Fig. 3 is a sectional perspective view of adjoining slabs in a floor construction.

Referring to the drawing by numerals, I provide a slab body 10 of cementitious material, such as gypsum or Portland cement composition. This slab may be of any convenient size, such as 2' x 15' x 10'. One edge and end of each slab is provided with tongues 11 and the opposed edge and end with grooves 12. The groove 12 is formed by a lower ledge 13 and an upper ledge 14, the former being somewhat shorter than the latter so as to provide clearance for the reception of an attaching clip 15. Nails 16 attach the body of clip 15 to the lower ledge 13, and a hook 17 on the lower side of said clip engages under the up-

per flange 18 of a structural beam 19. The tongues 11 and grooves 12 are lined with mating metal runners 20 and 21 respectively, said runners having inwardly turned flanges 22 lying in the planes of the slab faces. The salient feature of my invention comprises the means for anchoring the flanges 22 to the slab 10. In order to accomplish this, I provide an inwardly inclined flange 23 on the inner edge of each flange 22. Expanded metal loops 24 are formed on the inner edge of the flanges 23, said loops being embedded in the cementitious body 10 and forming a firm anchorage for the flanges 22. A suitable reinforcing mat 25 of welded wire or the like is also embedded in the body of the slab. Thus when the slab is sawed to short lengths, the flanges 22 will not be separated from the body of the slab as heretofore, thus resulting in a floor slab having a uniformly high strength. No cleavage planes are formed in the slab due to the variable character of the loops 24.

I would state in conclusion that, while the example illustrated constitutes a practical embodiment of my invention, I do not wish to limit myself precisely to these details, since manifestly the same may be considerably varied without departing from the spirit of the invention as defined in the appended claims.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. In a building slab, a body of cementitious material, tongue and groove metal runners embracing opposite edges of said body, inwardly extending flanges on said runners, said flanges lying in the planes of the faces of said body, and anchoring loops extending obliquely from the inner edges of said flanges and embedded in said body in substantially opposed spaced relation, said loops being so formed as to prevent the formation thereby of cleavage planes through said body.

2. In a building slab, a body of cementitious material, tongue and groove metal runners embracing opposite edges of said body, inwardly extending flanges on said runners, said flanges lying in the planes of the faces of said body, inclined anchoring flanges formed on the inner edges of said first flanges and extending into the body of said slab substantially opposite each other, and anchoring loops struck out from the inner edges of said inclined flanges for effecting secure anchoring of said runners and for preventing the formation of cleavage planes through said body between said inner edges of said inclined flanges.

3. In a building slab, a body of cementitious material forming a relatively thin slab on the order of two inches in thickness, tongue and groove metal runners embracing opposite edges of said body, inwardly extending flanges on said runners lying in the planes of the faces of said body, inclined anchoring flanges formed on the inner edges of said first flanges and extending into the relatively thin body of said slab substantially opposite each other, and anchoring means struck out from the innermost edges of said inclined flanges for increasing the anchoring effect of said flanges and for preventing the formation of cleavage planes through said relatively thin body at said innermost edges.

4. A precast slab of set cementitious material having metal members embracing opposite edge portions, said members having complementary faces, each of said members having flanges extending rearwardly from said complementary faces substantially in the plane of the faces of said slab, and portions extending inwardly from said flanges and embedded in said slab for anchoring said metal members thereto, said portions comprising expanded metal loops extending in planes at an oblique angle to said portions disposed substantially opposite each other tightly to anchor said members to said slab without creating a cleavage plane through said cementitious material.

5. A precast slab of cementitious material having metal members embracing opposite edge portions thereof, said slab being on the order of two inches in thickness and said metal members having inwardly extending flanges lying substantially in the planes of the opposite faces of said slab, and anchoring portions extending into said slab

from said flanges, said portions terminating in expanded metal loops extending in planes at an oblique angle to said portions disposed substantially opposite each other within said slab securely to anchor said metal members thereto without creating cleavage planes through the relatively thin slab of cementitious material.

6. A precast slab of set cementitious material having metal members embracing opposite edge portions thereof, said members having complementary faces, each of said members having flanges extending rearwardly from said complementary faces substantially in the planes of the faces of said slab, and portions extending obliquely inwardly from said flanges and embedded in the body of the slab, said portions being disposed substantially opposite and inclined toward each other and provided with slit and expanded loops whose strands lie athwart of the planes of said portions so as to intercept any potential line of cleavage that might develop in the slab along the planes of said portions.

7. In a building slab having a cementitious body and tongue and groove metal runners embracing opposite edges of said body, the improvement comprising rearwardly extending flanges integral with said runners and lying substantially in the facial plane of the slab, inwardly extending continuations of said flanges embedded in the body of the slab, a portion of said continuations being slit and expanded so as to produce a series of loops whose strands are inclined to the plane of the continuations, thereby intercepting any potential lines of cleavage capable of development in the body of the slab as a result of the insertion of the continuations thereinto.

ARTHUR A. HEEREN.