June 7, 1938. C. VALENTI 2,120,195

CONCRETE SLAB HOUSE CONSTRUCTION

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Fig. 1.

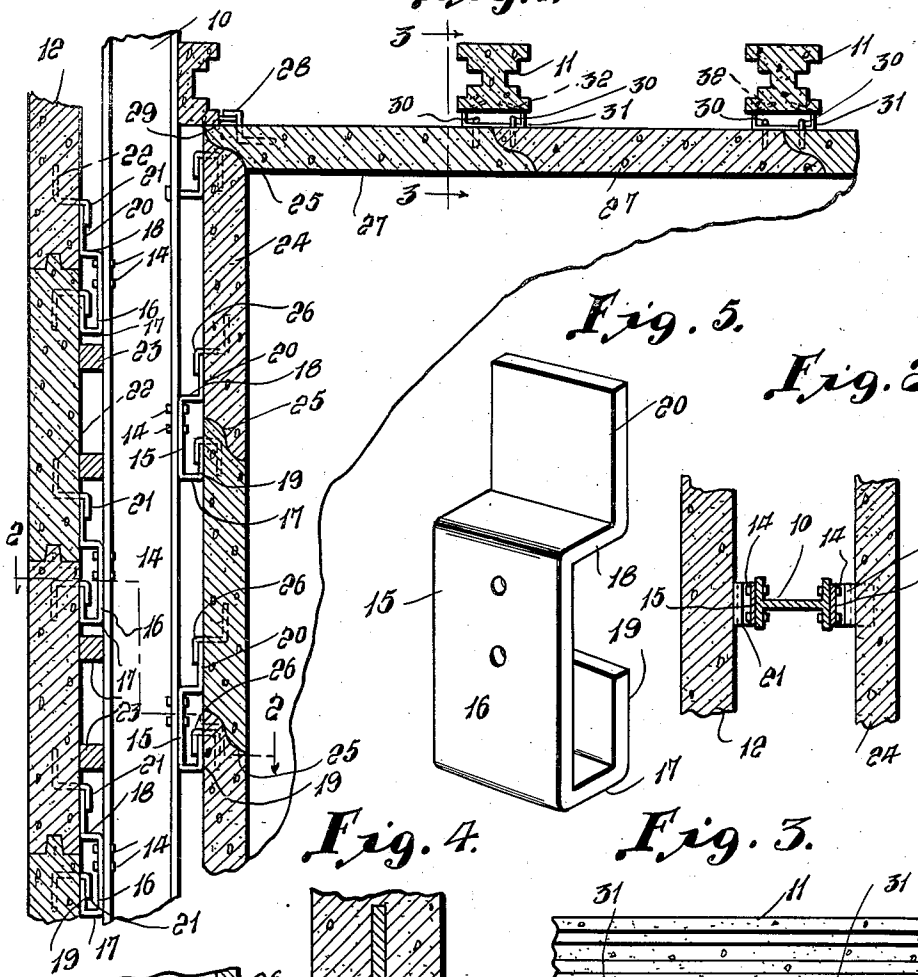


Fig. 5.

Fig. 2.

Fig. 4.

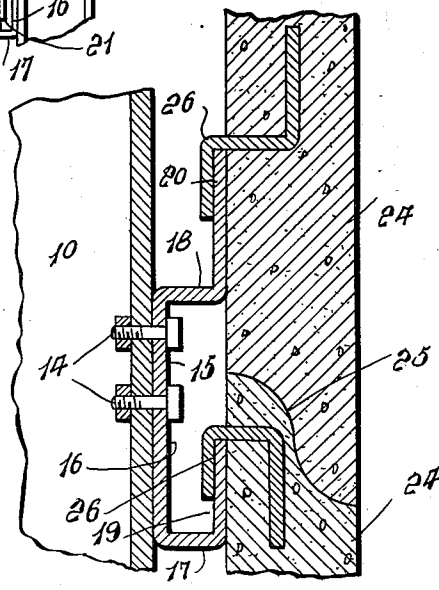


Fig. 3.

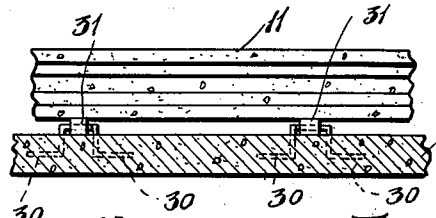
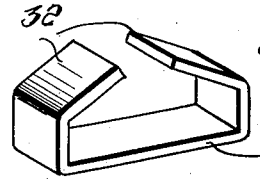


Fig. 6.



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CONCRETE SLAB HOUSE CONSTRUCTION

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Fig. 8.

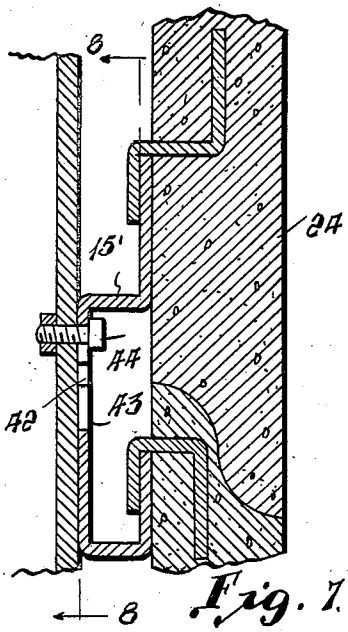


Fig. 7.

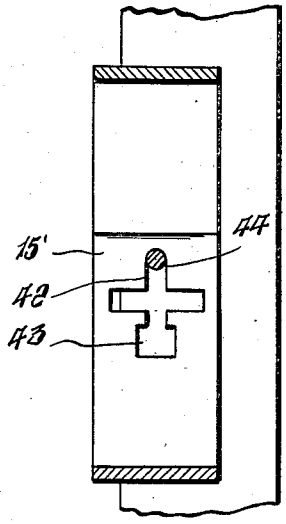


Fig. 10.

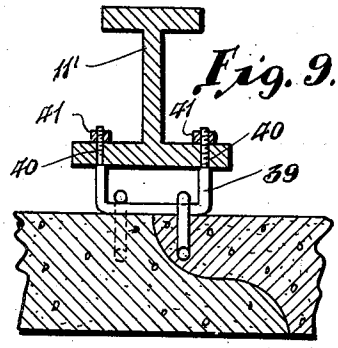


Fig. 9.

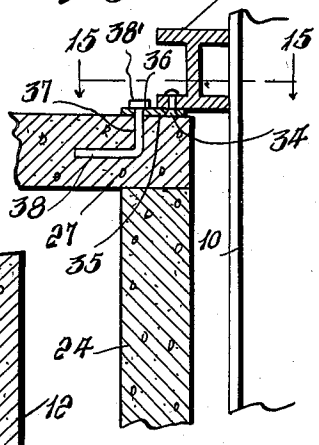


Fig. 14.

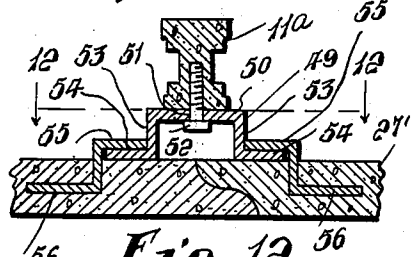


Fig. 11.

Fig. 12.

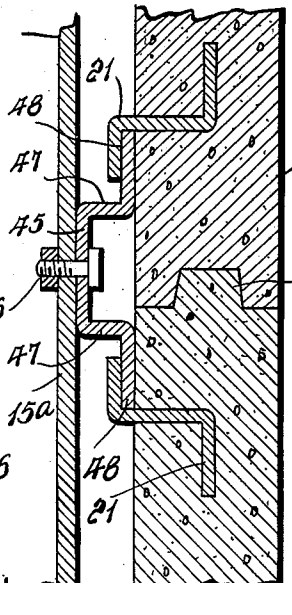


Fig. 15.

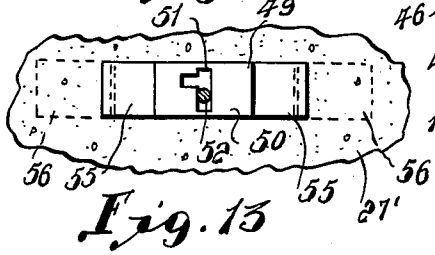
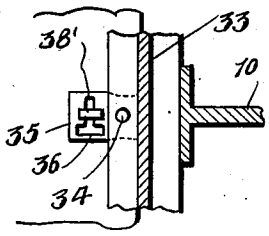


Fig. 13



Patented June 7, 1938 2,120,195

UNITED STATES PATENT OFFICE

2,120,195

CONCRETE SLAB HOUSE CONSTRUCTION

Carl Valenti, Pittsburgh, Pa.

Application September 2, 1937, Serial No. 162,204

6 Claims. (Cl. 72—19)

This invention relates to the construction of houses or other buildings primarily adapted to use slabs of concrete or the like in the construction of the walls thereof, whether the interior or exterior side walls, the ceiling or the floor.

It is particularly aimed to provide novel means whereby the slabs may be readily connected to the joists, studs, beams or other structural elements and be of such a nature that all of the material or parts necessary may be made in the factory and delivered to the job or place of use, especially to erect small, economical houses with air-spaced and insulated walls, floor, ceiling and roof.

It is also aimed to provide such structure wherein the slabs and associated parts may be used in applying the slabs to houses or buildings already built.

The more specific objects and advantages will become apparent from a consideration of the description following taken in connection with accompanying drawings illustrating an operative embodiment.

In said drawings:—

Figure 1 is a fragmentary vertical sectional view through a house or building embodying my improvements;

Figure 2 is a horizontal sectional view taken on the plane of line 2—2 of Figure 1;

Figure 3 is a vertical sectional view taken on the plane of line 3—3 of Figure 1;

Figure 4 is an enlarged vertical sectional view of portions of slabs forming the inner side wall of the building and associated parts;

Figure 5 is a detail perspective view of a side wall slab attaching bracket;

Figure 6 is a detail perspective view of a ceiling suspending clip;

Figure 7 is a view similar to Figure 4 showing a modified form of attaching bracket;

Figure 8 is a vertical section taken on the line 8—8 of Figure 7;

Figure 9 is a vertical sectional view showing a modified form of ceiling slab attaching means;

Figure 10 is a vertical sectional view showing a modified form of attaching means for the outside wall slabs;

Figure 11 is a vertical sectional view through a modified form of means for attaching ceiling slabs;

Figure 12 is a horizontal section taken on the line 12—12 of Figure 11;

Figure 13 is a vertical section of a further modified form for attaching ceiling slabs;

Figure 14 is a vertical section through a modified form of ceiling and side wall joints, and

Figure 15 is a horizontal section taken on the line 15—15 of Figure 14.

Referring specifically to the drawings wherein like reference characters designate like or similar parts, a house or other building is but fragmentarily shown, embodying parts of inner and outer side walls and ceiling but it is to be understood that the same principles may be practiced in the construction of the floor, roof, and other walls or parts. Specifically, the side of the building frame comprises fabricated metallic I beams as at 10 and for the support of the ceiling, has concrete or other beams or joists as at 11.

The outside walls may consist of slabs 12 of concrete or the like which are interlocked as at 13 with the aid of mortar, any other sealing medium or the like and the exterior of which slabs after they have been applied may be finished with stucco or any other suitable material. Bolted to the beams 10 as at 14 are attaching brackets 15 for the slabs. Such brackets are shown specifically in Figure 5. They have attaching portions or walls 16, forwardly extending walls 17 and 18 from which rise in spaced relation, lower and upper hook flanges 19 and 20 respectively. Said slabs 12 have hooks 21 engageable over the hooks 19 and 20, and such hooks 21 have attaching portions 22 embedded in the material of the slabs.

It will be realized that in the construction described, the slabs 12 may be readily attached by engaging the hooks 21 with the flanges 19 and 20, following which the joints at 13 are pointed up, having previously had an application of concrete, mortar or other sealing medium applied thereto, and following which, the exterior may be finished with stucco or any other desired way. If desired, spacing battens 23 may be interposed between the slabs 12 and the beams 10, preferably fastened to the latter.

The interior wall may consist of a series of slabs 24 preferably of the same material as those at 12 and which are joined along concavo-convex surfaces at 25, with mortar or a sealing medium interposed. Such slabs have hooks 26 with ends embedded therein and which hooks 26 are detachably engaged with adjacent flanges 19 and 20 of the brackets 15 adjacent to the same, and fastened like the other brackets, by bolts 14 to the beams 10. It will be realized that these slabs 24 may be readily applied to the adjacent brackets 15 and the joints as at 25 effectively closed or sealed.

At the ceiling, the wall preferably consists of a series of slabs **27** of the same material and shape and with the same joints as the slabs **24**. Marginal slabs or rows may be supported from an adjacent concrete beam or joist **11** through the engagement of hooks **28** thereon with projections **29** anchored in the beam.

Brackets, loops or clips **31**, as detailed in Figure 6, have terminals **32** anchored or embedded in certain of the joists **11** and they are overlapped by free terminals of hooks **30**, preferably from opposite sides, anchored in the slabs **27**, the slabs **27** thus being suspended from the joist **11**.

In lieu of the concrete or cementitious joists **11**, metallic joists or I beams may be employed as at **33**, in Figure 14 and by means of rivets **34**, plates **35** are secured to such joists or beams. The adjacent slab **27** has a fastening **38** embedded therein provided with a head at **38'** which is adapted to pass through a T-shaped slot **36** of the plate **35** and then rest thereon to support the adjacent portion of the ceiling.

As shown in Figure 9, where a joist **11'** of metal is used in place of that at **11**, a modified form of the loop or bracket **31** is provided at **39** in the form of U-bolt having its legs passing through flanges of the joist **11'** and secured thereto by nuts **41** threaded on the legs **40**.

The bracket **15**, rather than being permanently fastened or bolted in place may be detachably applied as by means of an enlarged slot **42**, having an enlarged entrance opening **43** by means of which the bracket, here designated **15'**, may be engaged over a head of a bolt **44** on the beam **10**, and supported by such bolt. This form of bracket **15'** may be used for either slabs **12** or **24** as preferred.

In Figure 10, a modified form of bracket is used for the support of the slabs **12**, the same being designated **45** and bolted as at **46** to a stud or beam **10**. This bracket **45** has parallel portions **47** offsetting oppositely extending flanges **48** which are detachably engageable by the hooks **21**.

In lieu of the suspension of the ceiling slabs **27** from the elements **31**, they may be suspended from brackets **49**, of the same shape as used at **45**, the same having attaching portions **50** and L-shaped slots **51** engaged by bolts or screws **52** fastened to cement joists **11***a*. The heads **52** of such bolts are passed through slots **51** and the brackets thereafter rest on such heads. Said brackets have U-shaped portions at **53** from which hook flanges **54** extend in opposite directions and are engageable by hook members **55** embedded at **56** in slabs **27'** identical with those at **27**.

Figure 13 illustrates the ceiling slab supported from a metal beam or joist **11***b* in lieu of the joist **11***a*. In this form, the bolt **53'** corresponding to that at **53** is connected to one of the flanges of the beam **11***b*. Otherwise the structure is identical with that of Figures 11 and 12.

Particular attention is called to the fact that the hooks of the different forms are employed at adjacent edges of adjacent slabs and engage the same or a common bracket, thereby insuring that the joints between the edges of the slabs will be smooth and flush.

Various changes may be resorted to provided they fall within the spirit and scope of the invention.

I claim as my invention:—

1. In building construction, structural means having an attaching bracket, terminal attaching portions on said bracket disposed in the same plane, slabs, said slabs each having means engaging one of said portions, the joint of said slabs being between said means.

2. In building construction, structural means having an attaching bracket, terminal attaching portions on said bracket disposed in the same plane, slabs, said slabs each having means engaging one of said portions, the joint of said slabs being between said means, said slabs being interengaged at the joint and the last mentioned means being hooks.

3. In building construction, structural means having a bar-like member forming an attaching bracket, terminal attaching portions on said bracket, slabs, said slabs each having means engaging one of said portions, the joint of said slabs being between said means, said bracket having an offset attaching portion, and hooks in a common plane offset from the plane of attachment.

4. In building construction, structural means having a bar-like member forming an attaching bracket, terminal attaching portions on said brackets, slabs, said slabs each having means engaging one of said portions, the joint of said slabs being between said means, said bracket having an offset attaching portion, and hooks in a common plane offset from the plane of attachment, said hooks being spaced apart and extending in the same direction.

5. In building construction, structural means having an attaching bracket, attaching portions on said bracket, slabs, said slabs adjacent a joint each having means engaging one of said portions, said bracket having an attaching portion, and hooks in a common plane offset from the plane of attachment, said hooks extending in opposite directions.

6. Building construction according to claim 3 wherein the structural element has a headed member, said offset attaching portion having a slot provided with an enlargement to facilitate engagement with the headed member.

CARL VALENTI.