May 7, 1935. F. M. VENZIE 2,000,110

FLOOR SLAB CONSTRUCTION

Filed Dec. 5, 1931

Fig. 1.

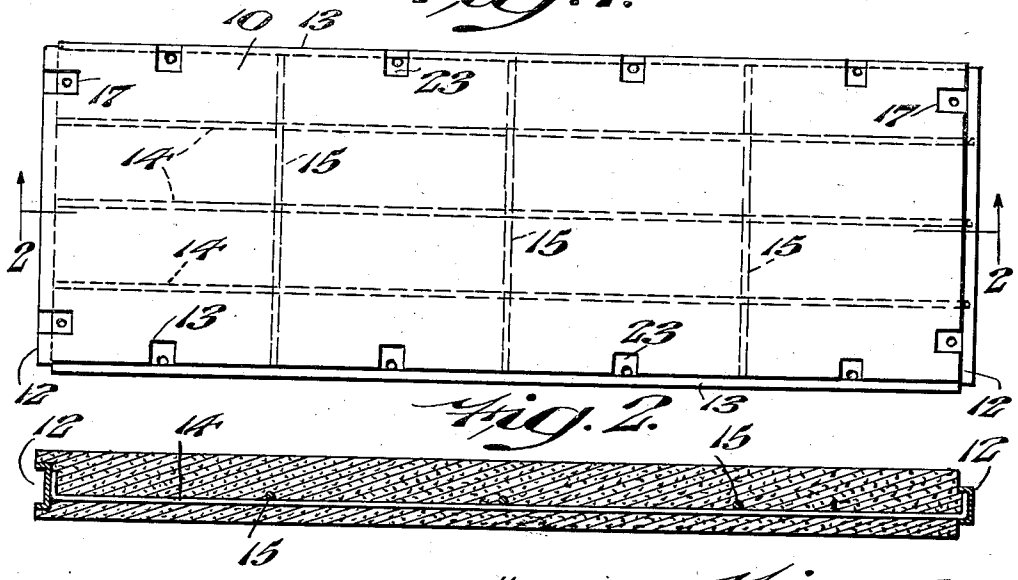


Fig. 2.

Fig. 3.

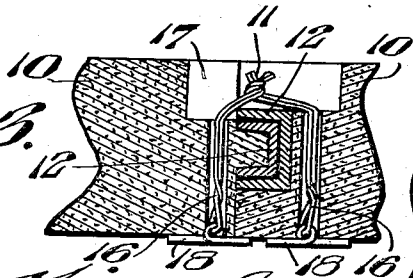


Fig. 4.

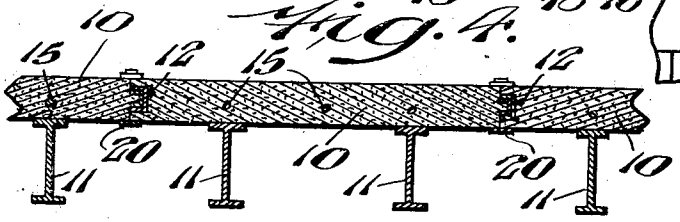


Fig. 6.

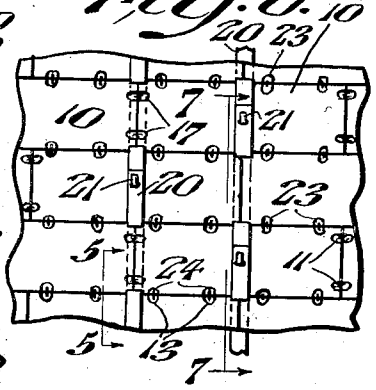


Fig. 5.

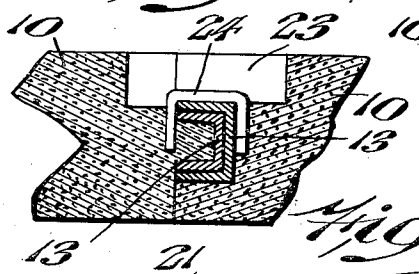


Fig. 7.

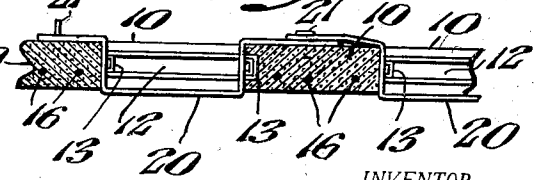


Fig. 8.



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FLOOR SLAB CONSTRUCTION

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Application December 5, 1931, Serial No. 579,326

7 Claims. (Cl. 72—68)

This invention, generally stated, relates to a building structure and has more especial relation to a floor slab construction. In the laying of floor slabs upon floor beams it frequently happens that the workmen find that the ends of adjacent slabs instead of resting upon the upper flanges of the I-beams come to rest intermediate of adjacent floor beams. The result is that the floor slabs at these particular junctures are apt to sag, and in fact do sag.

The leading object of the present invention may be said to reside in the provision of a floor construction in which the above recited faults are overcome and a floor of pre-cast slabs provided in which adjacent ends of floor slabs are interlocked with respect to one another at points unsupported by the floor beams.

A further object of the present invention is to provide a pre-cast slab in which channel irons are embedded both at the ends and the sides of the slabs, whereby the channel irons of adjacent slabs may have interlocked relation one with another.

A still further object of the present invention is to provide as a new article of manufacture a pre-cast slab both the ends and sides of which have embedded therein channel irons, which channel irons are connected by longitudinally and laterally extended reinforcing bars.

A still further object of the present invention is to provide a construction of the character stated in which the pre-cast slabs in interlocked relation by means of channel irons may be coupled together at their adjacent ends by means of tie-pieces.

A further object of the present invention is to provide a construction of the character stated in which tie-bands of integral structure are utilized for coupling together adjacent ends of pre-cast slabs at points in which the slab ends span floor beams.

A still further object of the present invention is to provide a structure of the character stated in which pre-cast slabs having interlocked channel irons in their sides and ends are coupled together both longitudinally and laterally considered by means of detachable auxiliary securing devices.

Other and further objects of the present invention reside in the provision of general details of construction and in the arrangement, connection, and combination of parts for attaining the results sought by the foregoing objects.

The invention consists of the novel construction hereinafter described and finally claimed.

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 thereof, and in which:

Fig. 1 is a top or plan view of a pre-cast slab embodying the invention;

Fig. 2 is a longitudinal sectional view taken upon the line 2—2 of Fig. 1;

Fig. 3 is a view in cross-section taken upon the line 3—3 of Fig. 1;

Fig. 4 is a view principally in section illustrating the pre-cast slabs as supported upon floor beams;

Fig. 5 is a view in cross-section taken upon the line 5—5 of Fig. 6;

Fig. 6 is a fragmentary view in plan hereinafter referred to;

Fig. 7 is a view in section taken upon the line 7—7 of Fig. 6; and

Fig. 8 is a view in perspective of the attaching band shown in Figs. 6 and 7.

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.

Referring to the drawing in detail, and with especial relation to Fig. 1, the reference numeral 10 designates a plurality of pre-cast slabs arranged side by side and in practice are supported upon floor beams 11, best seen in Fig. 4. Each pre-cast slab 10 at its end has embedded therein a channel iron 12. These channel irons are of different cross-sectional areas, as best seen in Fig. 2, for a purpose presently to appear. Each slab 10 has embedded in its sides longitudinally extended channel irons 13 similar in all respects to channel irons 12. As clearly shown in Fig. 2, the channel irons 12 are connected together by a longitudinally extended reinforcing bar 14 embedded in the slab 10. As clearly shown in Fig. 1, the channel irons 13 are connected by cross bars 15 embedded in a slab 10. In practice the slabs 10 are arranged upon upper flanges of the floor beams 11 as shown in Fig. 4. The workman in general practice finds that the floor beams 11 are not equally spaced, and it frequently happens that the ends of the slabs span an open space

between adjacent floor beams. By reason of my construction when this occurs the end channel irons 12 fit one within another, as clearly shown in Fig. 3, to form an interlock between ends of adjacent slabs. Each slab end is vertically perforated as at 16, see Fig. 3, and is cut away thereabove as at 17. I introduce through these vertical apertures 16 tie-pieces designated 18 formed of wire, the terminals of which after passing through the apertures 16 are twisted together as at 19 within the slotted portions 17 of the slab ends, thereby to tie or couple together adjacent ends of slabs 10. In practice the slotted portions 17 are filled with cementitious material after the tie-pieces are adjusted. Laterally considered the pre-cast slabs 10 are coupled together by means of metal bands 20, best seen in Fig. 8. Each band comprises an integral structure having struck out at one end thereof a tongue 21, and provided at its other end with an aperture 22, whereby when the band 20 is caused to engage around adjacent slabs 10, as best seen in Figs. 6 and 7, the aperture 22 of the band 20 may be inserted over a tongue 21 and the tongue 21 bent to form an interlock. In order to facilitate the introduction of the bands 20 with respect to the slabs 10 the sides of the slabs are cut away as at 23. As shown in Fig. 5, staples 24 are introduced through the cut away parts 23 to couple together the interlocked parts of the channel irons. In practice the cut away parts 23 are filled in with cementitious material when the flooring is complete.

While I have used the term "channel iron", I wish it understood that any other form of metal support may be employed.

What is claimed is:

1. In a building construction of the character stated, floor beams, pre-cast floor slabs supported by said beams, a channel iron embedded in each slab end, a channel iron embedded in each slab side, adjacent channel irons of adjacent slabs being arranged to lie one within the other when said slabs are positioned side by side.

2. In a building construction of the character stated, floor beams, pre-cast floor slabs supported by said beams, a channel iron embedded in each slab end, a channel iron embedded in each slab side, the adjacent channel irons of adjacent slabs being arranged to lie one within the other when said slabs are positioned side by side, and reinforcing rods embedded in each slab extended longitudinally and laterally for tying together the channel irons embedded in each slab.

3. In a building construction of the character stated, floor beams, pre-cast floor slabs supported by said beams, a channel iron embedded in each slab end, a channel iron embedded in each slab side, the channel irons of adjacent slabs being arranged to have interlocking relation when said slabs are positioned side by side, and detachable means for securing together adjacent ends of said slabs at the place of interlock.

4. In a building construction of the character stated, floor beams, pre-cast floor slabs supported by said beams, a channel iron embedded in each slab end, a channel iron embedded in each slab side, the channel irons of adjacent slabs being of different sized cross-sectional areas and arranged to have male and female interlocking relation when said slabs are positioned side by side.

5. In a building construction of the character stated, floor beams, pre-cast floor slabs supported by said beams, a channel iron embedded in each slab end, a channel iron embedded in each slab side, the channel irons of adjacent slabs being arranged to have interlocking relation when said slabs are positioned side by side, the ends of said slabs being apertured vertically to accommodate tie-pieces, and tie-pieces for coupling together adjacent ends of said slabs.

6. In a building construction of the character stated, floor beams, pre-cast floor slabs supported by said beams, a channel iron embedded in each slab end, a channel iron embedded in each slab side, the channel irons of adjacent slabs being arranged to have interlocking relation when said slabs are positioned side by side, and detachable bands for interlocking connection around said slabs at the places where said channel irons interlock.

7. In a building construction of the character stated, floor beams, pre-cast floor slabs supported by said beams, a channel iron embedded in each slab end, a channel iron embedded in each slab side, the channel irons of adjacent slabs being arranged to have interlocking relation when said slabs are positioned side by side, and detachable means for securing together adjacent ends of said slabs at the place of interlock, said slabs being cut away to accommodate insertion of said detachable means.

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