

Aug. 22, 1933.

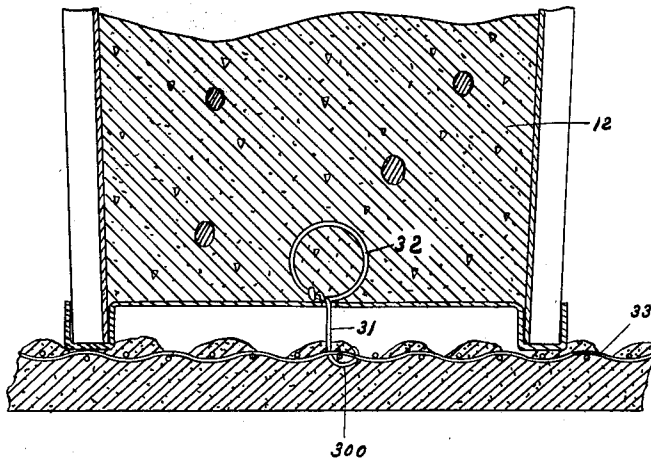
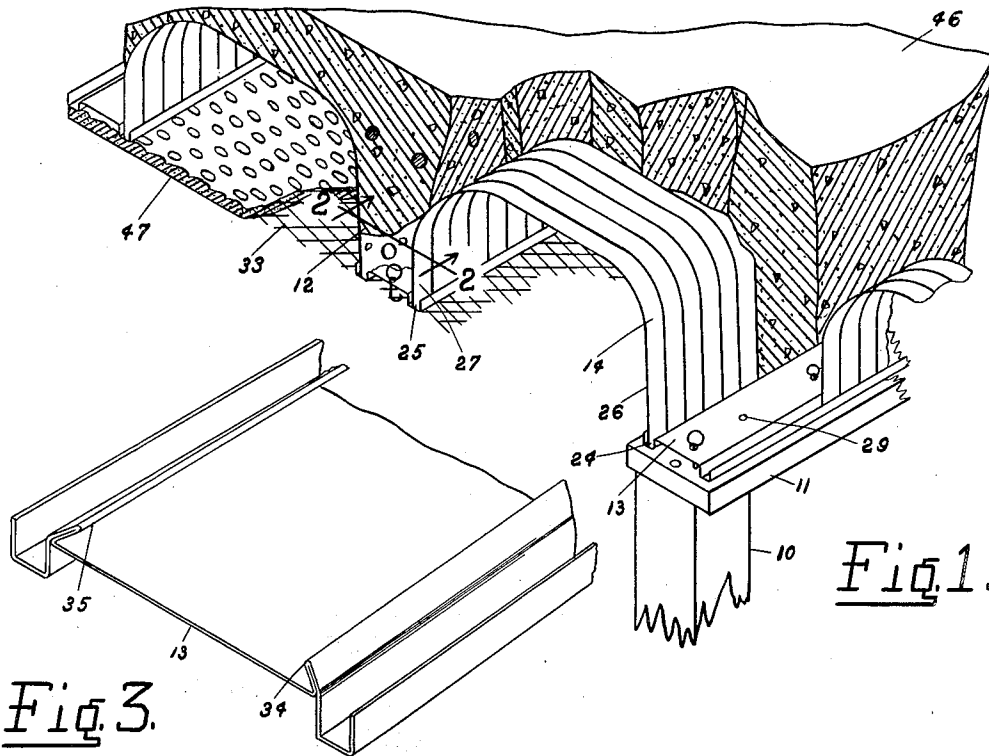
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1,924,035

CONCRETE FLOOR CONSTRUCTION

Filed July 1, 1930

2 Sheets-Sheet 1



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Fig. 4.

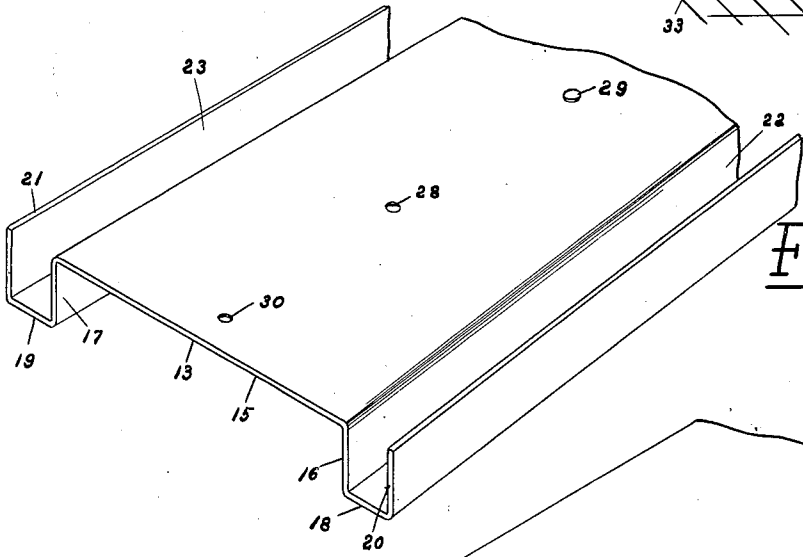
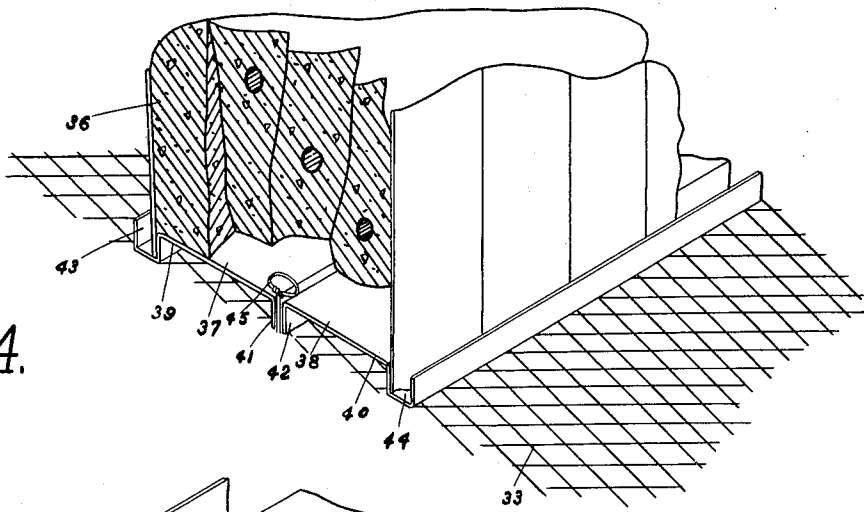


Fig. 6.

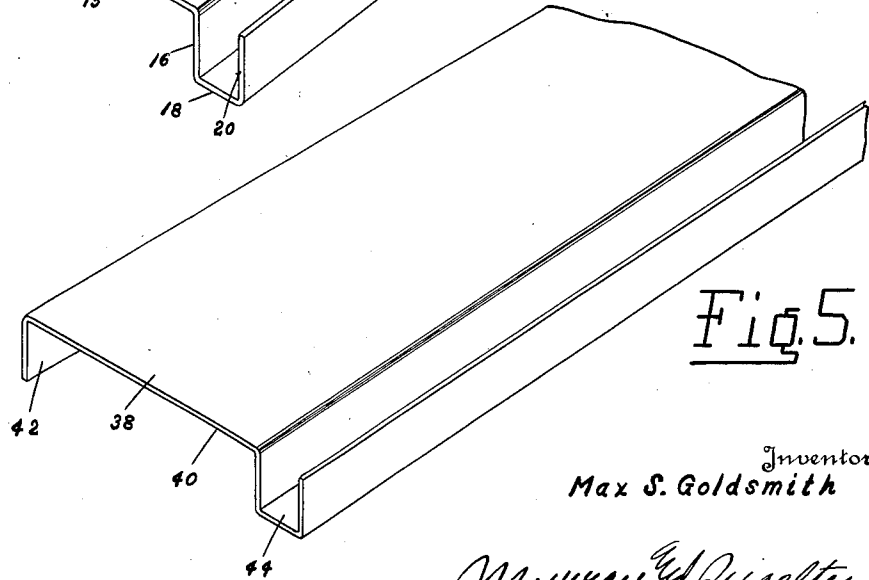


Fig. 5.

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1,924,035

CONCRETE FLOOR CONSTRUCTION

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Application July 1, 1930. Serial No. 465,118

4 Claims. (Cl. 72-66)

This invention relates to concrete floor construction and especially to the forming of concrete beams and joists and the attachment thereof of lath.

5 An object of the invention is to provide means for assuring accurate concrete beams and joists.

Another object is to provide means whereby straight and true concrete joists and beams are formed.

10 Another object is to provide simple means that will permit ready erection or installation of the form work which constitutes a mold for the concrete.

Another object is to provide simple and inexpensive means that may be readily placed and which are adapted to provide substantial and adequate support and attachment of lath to the concrete structure.

Another object of the invention is to provide 20 a structure wherein there is provided a space between the lath and all parts of the concrete, whereby to provide a uniform surface to which plaster may be applied.

These and other objects are attained by the 25 means described herein and disclosed in the accompanying drawings, in which:

Fig. 1 is a perspective view, parts being broken away, showing a fragment of a rib and slab structure forming a part of the floor and ceiling, and 30 embodying the invention.

Fig. 2 is an enlarged sectional view on line 2-2 of Fig. 1.

Fig. 3 is a perspective view showing a fragment of a spacer pan forming a detail of the 35 invention.

Fig. 4 is a fragmental perspective view of the character shown in Fig. 1, and showing a modified form of the invention.

Fig. 5 is an enlarged detailed view of a fragment of a spacer pan of the character disclosed in Fig. 4.

Fig. 6 is a perspective view of a fragment of a spacer pan of the character shown in Fig. 1.

The temporary structure disclosed in Fig. 1 45 may be of the general character, so far as construction is concerned, as is disclosed in my Patent No. 1,168,627.

The shoring 10 supports soffits 11 that may be at spaced intervals and which may be of any 50 suitable type or kind, for example the open centering type of temporary form or the solid decking type of temporary centering or support structure.

At those places where concrete ribs 12 are to 55 be formed over the temporary supporting struc-

ture such as soffits 11, there are mounted spacer devices or pans 13, that may be of the general configuration as are the inverted U-shaped tiles or pans 14. Although the tiles or arched forms 14 shown herein are illustrated as corrugated 60 and as sheet metal, it is to be understood that the invention is not restricted to arched forms or the specific characteristics mentioned.

Each of the spacer devices 13 comprises a base or body portion 15, depending arms 16 and 17, 65 disposed along the lateral edges of the body 15, flanges 18 and 19, connected with and extending along the arms 16 and 17 respectively and flanges 20 and 21, which in turn are carried by the flanges 18 and 19, respectively, and extend along the 70 flanges 18 and 19 respectively. The arm 16 together with the flanges 18 and 20 provide a channel or groove extending longitudinally of and along one lateral portion of the body 15. In like 75 manner, the arm 17 and flanges 19 and 21 provide a similar groove along the opposite lateral portion of the body 15. The width of the body 15 corresponds to the width of the beam that is to be formed and the grooves or channels 22 and 23, formed along the body 15, receive and hold 80 or interengage with the free ends 24 and 25 of the arms or walls 26 and 27, respectively, of the inverted pans or arched forms 14. At intervals, the body 15 may be provided with suitable apertures 28 through which fastening means, such as 85 nails 29, may be passed for effecting temporary fixation of the spacers 13 upon the temporary centering or flooring 11. Other apertures, 30, are provided in the body 15 and through the apertures 30 may be inserted flexible arms 31 of inserts 300. Preferably the inserts 300 are provided 90 with an eye or a loop, indicated at 32, and which loop is disposed above the body 15 so that, when concrete is molded over the member 13, the eye of the insert will be firmly embedded in the concrete beam or joist 12. After the temporary centering or form work is removed, lath 33 may be supported by the arms 31 of the insert or hanger 300. 95

In some types of construction it may be desirable to provide members 34 and 35 upon spacer members or pans 13, the members 34 and 35 serving to jointly mold the lower portion of the concrete, so as to form a key for locking the spacer 13 in position and to the concrete. 100

In the modification illustrated in Fig. 4, a plurality of spacer pans are provided beneath and at each joist 36. In this type of construction, the combined widths of the body members 37 and 38, of the spacer members 39 and 40 respectively, 105 110

should correspond to the width of the beam 36 at its lowermost portion. Each of the pans 39 and 40 are provided with an end flange such as 41 and 42 and the end flanges are adapted to abut one another for attaining proper positioning thereof relative one another and for effecting a supporting strut for and beneath the center of the concrete rib 36. The grooves or channels 43 and 44, formed along the portions of the pans 39 and 40 and opposed to the portions thereof carrying the depending flanges 41 and 42, function in the same manner as do the channels 22 and 23 formed along the spacer 13 illustrated in Figs. 1 and 6. The hanger inserts 45 may be positioned between the flanges 41 and 42, as illustrated in Fig. 4, or suitable apertures, corresponding to the apertures 30 shown in spacer 13, may be provided for cooperation with the hangers 45. Likewise, apertures such as 28 in spacer 13, may be provided in the spacers 39 and 40 for temporary fixation of the same to the temporary centering.

After the concrete slabs and ribs 46 and 12 respectively have been formed and the plastic has set sufficiently to permit removal of the centering and shoring 11 and 10 respectively, metal lath 33 may be secured to the under surface of the resultant floor structure, by means of the hanger inserts such as 300. By reference to Figs. 1 and 4, it will be obvious that a space is provided above all of the lath 33 wherefore the plaster 47 is applied over a uniform surface. It will also be noted that the depth of the pans or spacer members, such as 13, determine the spacing of the plaster from the lower edge or base of the concrete ribs 36, wherefore, by modifying the depth of the spacers 13, variable spacing of the plaster ceiling from the ribs 36 may be attained.

Although the invention has been disclosed herein in terms of sheet metal, spacer members 13 and arched forms 14 and metal lath, it is to be understood that the invention is not limited to elements of the specific materials indicated. It is also to be understood that the invention is not limited to structures wherein metal lath is affixed after the temporary centering and shoring is removed, it being obvious that the metal lath may be applied over the temporary centering or flooring, and that the spacer members 13 and arched forms 14 may be erected over the metal lath and that suitable tie means, such as inserts 300, may be employed for retaining the lath in position, so that after removal of the temporary centering 11 and shoring 10, no further work, in connection with attachment of the lath to the resultant structure, need be resorted to.

In some instances it may be desirable to fabricate spacer members 13 of material sufficiently substantial or heavy to permit elimination of the temporary centering, the members 13 being supported from the steel frame work of the building or by other means, commonly used in the art.

In some instances it may be desirable to use forms such as are shown in my Patent No. 1,747,294, in lieu of the tiles shown herein, wherefore it is to be understood that the terms tile or arched form used herein, comprehend such other

devices as will lend themselves to formation of rib molds for the concrete.

What is claimed is:

1. In a concrete floor in the course of construction, the combination of temporary support means, rows of elongated hollow inverted U-shaped members on the support means, the rows of members being contiguous along their lateral edges, the lateral edges of alternate rows of the members having pockets, the intermediate rows of members having their lateral edges received in the pockets the rows of inverted members spacing concrete formed thereover, from the temporary support means, and together providing abutment means along the under faces thereof and against which abutment faces lath may be secured in spaced relation to the concrete.

2. In a concrete floor in course of construction, the combination of temporary flooring, rows of laterally contiguous inverted U shape members, the rows of U shape members being longitudinally coterminous and of different heights for providing beam molds between the adjacent higher members, and insert members having a portion disposed in the beam molds for bonding with the concrete to be formed in the beam molds, and having a tying portion extending through the shallower U shape members for securing lath against the under edges of the U shape members in spaced relation to concrete formed over the U-shape members.

3. In a concrete floor in the course of construction, the combination of parallel rows of hollow spacer members, rows of tiles between the spacer members and comprising depending walls having their lower edges interengaged with the spacer members along the lateral edges of the spacer members, the tiles and spacer means providing a continuous surface for defining spaced rib molds over the spacer members and between the tiles, lath beneath the tiles and spacer members, and means extending above and below the spacer means for securing the spacer members to the concrete and for securing lath against the lower edges of the spacer members and tiles in spaced relation below the ribs formed in the rib molds.

4. In a concrete floor in the course of construction, the combination of parallel rows of hollow spacer members, the spacer members comprising key forming parts between which concrete or the like may be received, rows of tiles between the spacer members and comprising depending walls having their lower edges interengaged with the spacer members along the lateral edges of the spacer members, the tiles and spacer means providing a continuous surface for defining spaced rib molds over the spacer members and between the tiles, lath beneath the tiles and spacer members, and means extending above and below the spacer means for securing the spacer members to the concrete and for securing lath against the lower edges of the spacer members and tiles in spaced relation below the ribs formed in the rib molds.

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