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H. SORENSEN

1,867,185

HOLDING MEMBERS FOR REINFORCEMENT TENSIONING MEANS

Filed March 25, 1931

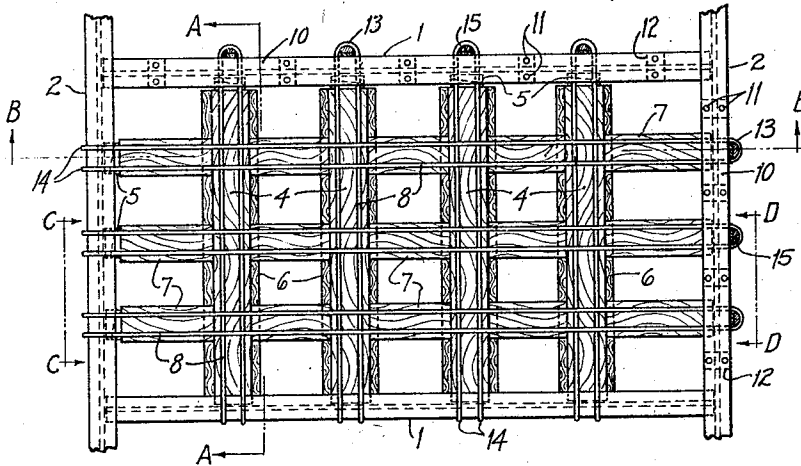


FIG. 1

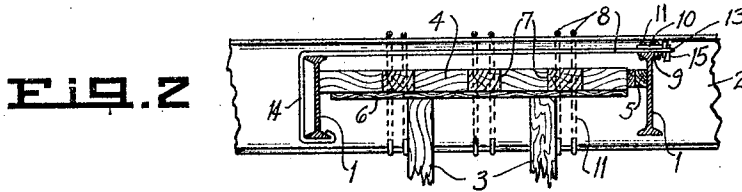


FIG. 2

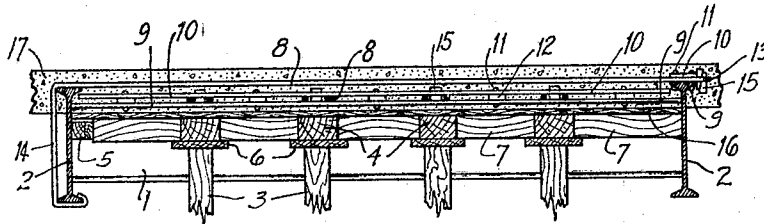


FIG. 3

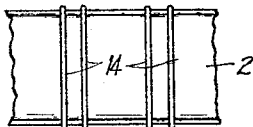


FIG. 4

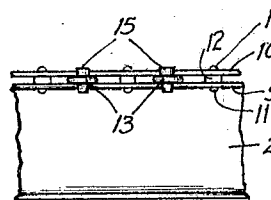


FIG. 5

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HOLDING MEMBERS FOR REENFORCEMENT TENSIONING MEANS

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My invention relates to a modification of the construction disclosed in my U. S. Patent No. 1,785,214, Dec. 16th, 1930, and while my invention may be used for any purpose for which it is adapted, I have described it applied to fireproof floors in the following specification and its accompanying drawing.

In the drawing:—

Fig. 1 is a plan view illustrating my invention.

Fig. 2 is a section of Fig. 1 taken at A—A.

Fig. 3 is a section of Fig. 1 taken at B—B, but to which I have added the forms and the concrete for the floors.

Fig. 4 is an elevation looking from C—C on Fig. 1.

Fig. 5 is an elevation looking from D—D on Fig. 1.

In the drawing, where similar numerals designate similar parts, numeral 1 designates a pair of opposed beams. 2 designates another pair of opposed beams. 3 designates upright strut holders. 4 designates struts. 5 are strut wedges. 6 are flanges on struts. 7 are other struts. 8 are the reenforcements. 9 are flanges on beams 1 and 2. 10 are bars. 11 are rivets. 12 are plates. 13 are loops in reenforcements 8. 14 are ends of reenforcements 8. 15 are wedges for loops 13. 16 are concrete forms. 17 designates the concrete.

Dealing with Fig. 1:—The one pair of opposed beams 1 and the other pair of opposed beams 2 form a bay in a fireproof floor. These two pairs of beams 1 and 2 are firmly welded together. Upon uprights 3, as shown in Fig. 2 and in Fig. 3, I place spaced strut members 4, which reach between and contact the webs of beams 1. In order to give these strut members 4 a snug fit against the webs of beams 1, I tap wedges 5 between the one end of strut members 4 and the web of beam 1. Along the bottom edges of strut members 4 I attach flanges 6, to which I will make further reference below. Strut members 7 have the same length as the distance between each of the spaced strut members 4. I now place strut members 7, upon flanges 6, between each of the spaced strut members 4. Flanges 6 serve the purpose to hold strut

members 7 in place, and these strut members 7 form, between each of strut members 4, a lateral strut formation in their relation to members 4. I also place strut members 7 between the last of the strut members 4 and the webs of the opposed beams 2, and I use wedges 5, as above described, to give strut members 7 a snug fit against the webs of beams 2.

In the manner, which I have just now described, the inside of the above referred to bay is given a strut formation in every direction, because members 4 act as strut formations between beams 1, while members 7 act as strut formations between beams 2.

I may use any desired device to lock reenforcements 8 to beams 1 and 2 while under tension, but I have, in the drawing, illustrated a similar method, which I have shown in my U. S. A. Patent No. 1,794,425, March 3rd, 1931, and which consists of the following arrangements:—

To the top flange 9, of the one of the opposed beams 1 and 2, I firmly connect bar 10 by means of rivets 11, through spaced plates 12.

Reenforcements 8 are each made out of one long rod, which is doubled together in its middle, so that each of the reenforcements 8 consists of a double rod, having at its one extreme a loop 13, while its other extreme consists of two ends 14. The loops 13 are passed through the openings which are formed between the parts 9, 10 and 12. The ends 14 are wrapped round the other of the opposed beams 1 and 2, as shown in Fig. 2 and Fig. 3, and have a very firm grip upon beams 1 and 2, as they are wrapped three times round the flanges of said beams 1 and 2.

After that is done wedges 15 are driven into the loops 13. The action of wedges 15, against the edges of flange 9 and bar 10, will lock reenforcements 8 to beams 1 and 2 while under tension.

I prefer to make beams 1 somewhat smaller in depth than beams 2, so that beams 1 may contact the webs of beams 2 between the flanges of beams 2. The crossed reenforcements 8 will thereby obtain free play for their initial tensioning.

The crossed strut formations 4 and 7 will prevent any deflections of beams 1 and 2, when wedges 15 are driven into loops 13, and thereby hold the tension in the crossed reinforcements 8. Should any one of beams 1 or 2 deflect the tension in reinforcements 8 is lost.

I now place concrete forms 16 on the strut formations 4 and 7 and thereupon fill concrete 17 around the initially tensioned reinforcements 8 and their attachments to beams 1 and 2, as shown in Fig. 3. The forms 16 isolate concrete 17 from the strut formations 4 and 7. After concrete 17 has set into cohesion with the initially tensioned reinforcements 8, I remove strut formations 7 and 4, as well as forms 16, and the hardened concrete 17, itself, will then act as a strut to hold the tension in reinforcements 8.

In my above referred to Patent No. 1,785,214 I have stated the general advantages, which are obtained by my invention, and those same advantages I secure throughout the whole of the bay in the floor by my invention herein described.

Various modifications of the structure may be made without departing from the spirit of my invention.

I claim:—

1. In a device to impart initial tension into the reinforcements of a bay composed of two pairs of opposed beams in a concrete floor including means to hold said reinforcements to said beams while under tension, the combination of one set of spaced strut members intermediate the one of said opposed pairs, lateral spaced strut members intermediate the individual members of said first set, said lateral members extending from said first members to the other pair of said opposed beams, means to hold said lateral members in place, and said first members and said lateral members isolated from the concrete, whereby said members may be removed after said concrete has set into cohesion with said reinforcements.

2. In a device to impart initial tension into the reinforcements of a bay composed of two pairs of opposed beams in a concrete floor including means to hold said reinforcements to said beams while under tension, the combination of one set of spaced strut members intermediate the one of said opposed beams, lateral spaced strut members intermediate the individual members of said first set, said lateral members extending from said first members to the other pair of said opposed beams, means to hold said lateral members in place, wedges adapted to give said members a snug fit against said beams, and said first members and said lateral members isolated from said concrete, whereby said members may be removed after said concrete has set into cohesion with said reinforcements.

3. In a device to impart initial tension into

the reinforcements of a bay composed of two pairs of opposed beams in a concrete floor including means to hold said reinforcements to said beams while under tension, the combination of one set of spaced strut members intermediate the one of said opposed pairs, lateral spaced strut members intermediate the individual members of said first set, said lateral members extending from said first members to the other pair of said opposed beams, flanges on said first members adapted to hold said lateral members in place, wedges adapted to give said members a snug fit against said beams, and said first members and said lateral members isolated from said concrete, whereby said members may be removed after said concrete has set into cohesion with said reinforcements.

HENRY SORENSEN.