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N. F. AMBURSEN

MEANS FOR SUPPORTING NAILING STRIPS

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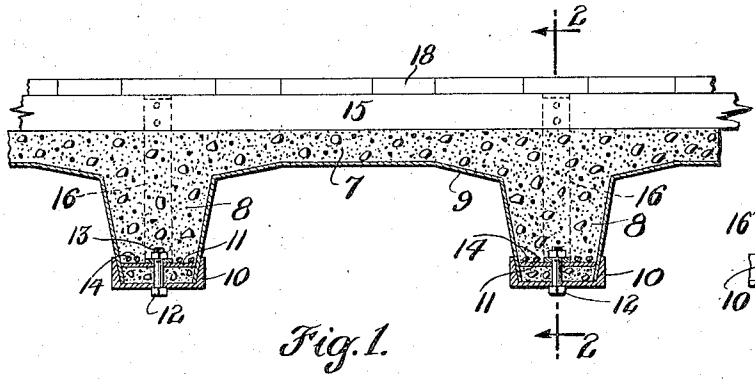


Fig. 1. Fig. 2.

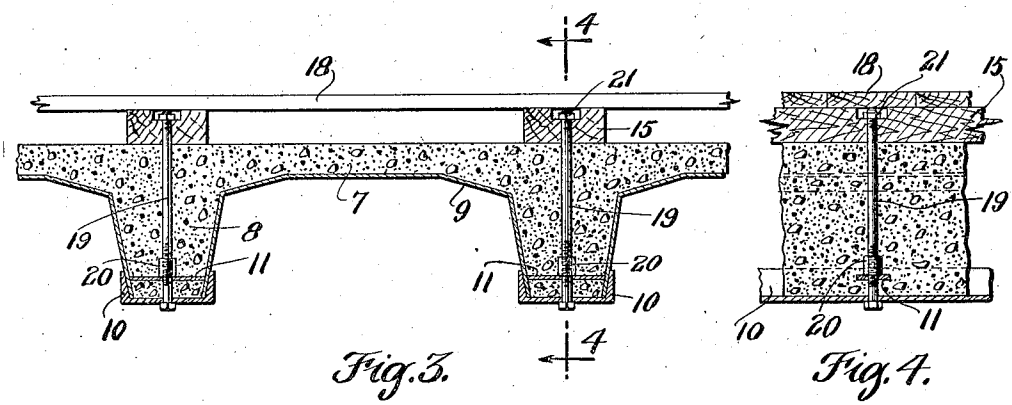


Fig. 3. Fig. 4.

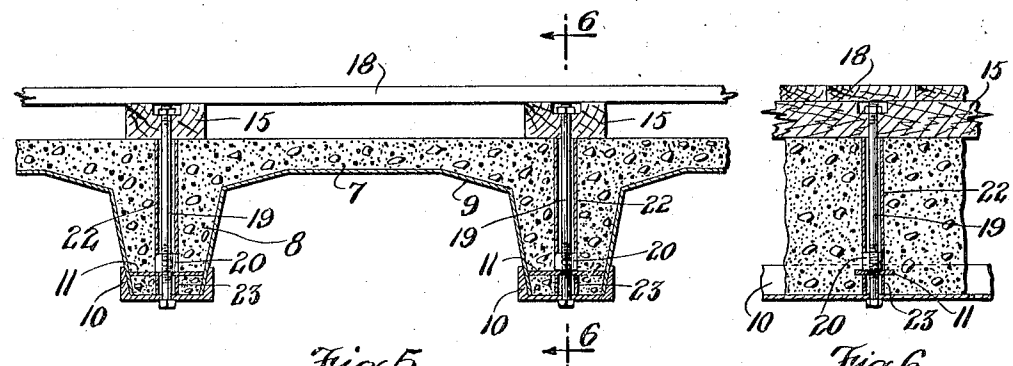


Fig. 5. Fig. 6.

WITNESS:

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UNITED STATES PATENT OFFICE.

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MEANS FOR SUPPORTING NAILING STRIPS.

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To all whom it may concern:

Be it known that I, NILS F. AMBURSEN, a citizen of the United States, residing at Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Means for Supporting Nailing Strips, of which the following is a specification.

This invention relates to means for supporting nailing strips on concrete floors and the like. Heretofore, in concrete work, the nailing strips for the flooring have been embedded directly in the concrete itself, or embedded in what is termed a cinder concrete fill poured on top of the concrete. Among the disadvantages encountered in such arrangement, the most serious is that the wooden nailing strips swell, displacing the adjacent plastic material and afterwards shrink, becoming loose in the concrete. The strips are not anchored securely in place and when the flooring is laid, it in turn is not properly anchored and very frequently becomes seriously damaged, if not totally ruined by the absorption of moisture from the concrete or from the concrete and the cinder fill,—in which connection it is to be noted that there is sufficient moisture to cause warping and distortion even though the floor be laid some weeks after the concrete has been poured. Furthermore, in addition to the expense involved in laying the extra depth of concrete or cinder fill, it is necessary to prepare the nailing strips by beveling the sides off.

One of the primary objects of my invention is the provision of improved means for supporting and anchoring the nailing strips whereby the expenses and the disadvantages incident to the foregoing practice are obviated.

Another object of the invention resides in the utilization of certain parts of the mold structure as a means for securing the anchors.

Still another object of the invention resides in the provision of an improved anchoring means so constructed that the nailing strips may be securely drawn home against the concrete under tension.

The foregoing, together with such other objects as may hereinafter appear or are incident to my invention I obtain by means of a construction, the preferred embodiment of which I have illustrated in the accompanying drawings, wherein

Figure 1 is a cross section through a joist floor, with the forms in position, illustrating one embodiment of my invention; Figure 2 is a cross section taken on the line 2—2 of Figure 1; Figure 3 is a section corresponding to Figure 1, illustrating a modification of my invention; Figure 4 is a cross section taken on the line 4—4 of Figure 3; Figure 5 is a section similar to Figures 1 and 3, illustrating still another modification of my invention; and Figure 6 is a cross section taken on the line 6—6 of Figure 5.

Referring now to Figures 1 and 2, it will be seen that the floor slab 7 and the joist 8 are formed by means of the pans 9, the lower ends of which are supported by the longitudinally extending supporting members 10, the members 10 in turn being supported from the false work, in any preferred manner, as is well understood in this art.

In order to properly position the sides of the pans with reference to the supporting members 10, I provide a plurality of suitably spaced spreaders 11. The spreaders are positioned by means of the bolts 12 and nuts 13, and in addition to serving as means for properly supporting the sides of the pans they serve as a means for supporting the reinforcing 14. In carrying out my invention I utilize the bolts 12 and nuts 13 as the means for securing the anchors for the flooring nailing strips 15. As shown in Figures 1 and 2 these anchors are in the form of yokes or straps 16, the base of each of which is adapted to rest upon a spreader 11 and is apertured to receive the bolts 12. The free ends of the yokes or straps project upwardly above the level of the concrete as indicated in dotted lines in Figure 2.

After the parts have been assembled and positioned as described, the concrete is poured and the nailing strips are placed in position by inserting them between the upwardly projecting free ends of the yokes 16 a few days after the pouring. The nailing strips are then leveled up as required by wedging or filling in and they are drawn home tightly by bending over the free ends of the yokes, one at a time, with a suitable tool which grips the end of the yoke leg and at the same time bears downwardly against the nailing strip when a bending pressure is

exerted. While the parts are thus under tension nails 16 are driven into the sides of the yoke leg and afterwards the free ends are bent and hammered down and the nails 17 driven in.

It will be seen from the foregoing that this arrangement provides a very simple means for securely anchoring nailing strips in position under tension so that when the flooring is laid later on it will be securely anchored in turn, and that even if it should be affected by the moisture remaining in the concrete at such time, and swell, it will return to proper position when dry.

A further advantage incident to the arrangement is that I am enabled to reduce the number of parts required to a minimum by utilizing the spreaders and the bolts 12 as a means for securing the yokes 16. In this connection, it is to be noted that upon the removal of the bolts 12 to take down the members 10 and the pans 9, the spreaders 11 and the nuts 13 will remain in the concrete and the latter may be used as a means for supporting hangers for ceiling or other members to be supported, the hangers having threaded ends adapted to screw into the nuts 13.

Referring now to Figures 3 and 4 it will be seen that the same fundamental principle is involved, although the specific form of the anchoring means is different from that described. In this case the anchoring means comprises the threaded rods 19 which are turned into special nuts 20 which are substituted for the nuts 13 employed in the construction shown in Figures 1 and 2. The mold parts are assembled as before described, the rods 19 are screwed into the nuts 20, after which the concrete is poured. The nailing strips 15, which in this case are apertured at suitable intervals to receive the rods 19, are laid and are clamped in position by means of the nuts 21, the nailing strips being countersunk or counterbored so that the ends of the rods 19 and the nuts 21 will lie below the upper surface thereof. After a suitable interval the flooring 18 is laid and securely anchored through the medium of the construction just described. This construction in addition to the advantages noted in connection with that shown in Figures 1 and 2 is very simple to assemble.

In order to still further expedite the operations and cut down the expense involved in delay, I have provided a construction shown in Figures 5 and 6 by means of which I am enabled to place the nailing strips 15 in position either before the concrete is poured or while the concrete is still fresh and in a soft condition. To this end I provide a spacing member for each bolt 19, preferably in the form of a sleeve 22 which is slipped over the rod and rests on the nuts 20 for example, the upper ends of the sleeve being flush with the concrete. By this arrangement the nailing strips 15 are supported independently of the concrete and anchored as before, which makes it possible to place the same in position before the concrete has been poured or while it is still soft. If desired a spacing means, such as the sleeve 23 may be interposed between the spreaders 11 and the channels 10.

I claim:

1. In concrete structure and the like, the combination with a concrete member and a spreader for spacing apart the pans used to form said member embedded therein, of an anchor for a nailing strip above the spreader engaging and definitely positioned by said spreader and embedded in the concrete.

2. The combination of a mold means for constructing concrete structures and the like including pans, a spreader intermediate the pans adapted to space the pans apart, means for supporting said spreader, and an anchor for a nailing strip above the spreader engaging said supporting means.

3. In apparatus for molding concrete structures, the combination with a plurality of spaced pans, and means for closing the space between pans at the bottom; of a spreader for spacing the pans adapted to be embedded in the concrete, and means including an anchor for a nailing strip coacting with said closing means and said spreader to secure anchor, spreader, closing means and pans in proper position.

4. In apparatus for molding concrete structures, the combination of a plurality of spaced pans, a spreader for spacing the pans adapted to be embedded in the concrete, means for closing the space between pans, and a nailing strip anchor passing through the spreader and said closing means and adapted to be embedded in the concrete.

5. In apparatus for molding concrete structures, the combination of a plurality of spaced pans, a spreader for spacing the pans adapted to be embedded in the concrete, a channel for closing the space between pans, and a nailing strip anchor passing through the spreader and the channel and adapted to position the spreader and to remain in the concrete.

6. In apparatus for molding concrete structures, the combination of a plurality of spaced pans, a spreader for spacing the pans adapted to be embedded in the concrete, a channel for closing the space between pans, and a nailing strip anchor passing through the spreader and the channel and adapted to position the spreader and to remain in the concrete, said anchor having a head engaging the channel.

7. In apparatus for molding concrete structures, the combination of a plurality of spaced pans, a spreader for spacing the pans adapted to be embedded in the concrete, means for closing the space between pans, a nailing strip anchor passing through the spreader and said closing means, and tubular means about the anchor, for spacing the nailing strip with reference to the spreader, adapted to be embedded in the concrete.

In testimony whereof I have hereunto signed my name.

NILS F. AMBURSEN.