Nov. 22, 1960 F. B. WALLACE 2,960,745

METHOD OF CONSTRUCTING A FOOTING-AND-FLOOR CONSTRUCTION

Filed May 4, 1956

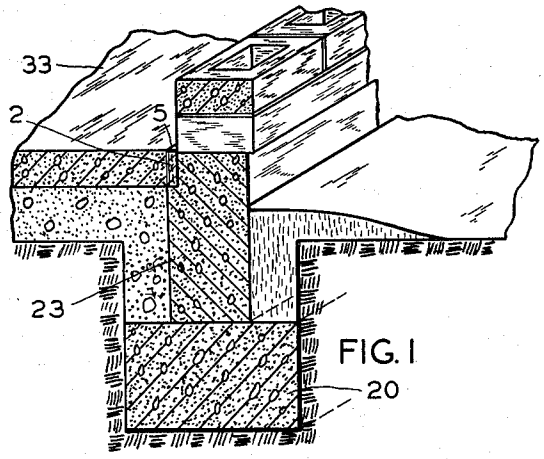


FIG. 1

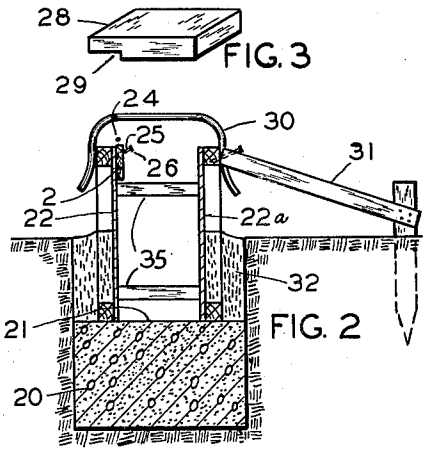


FIG. 2

FIG. 3

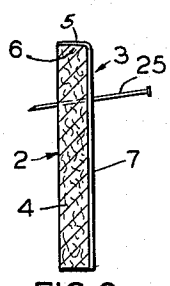


FIG. 8

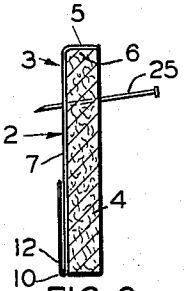


FIG. 9

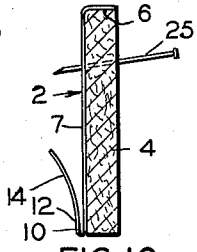


FIG. 10

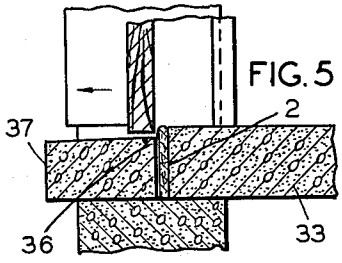


FIG. 5

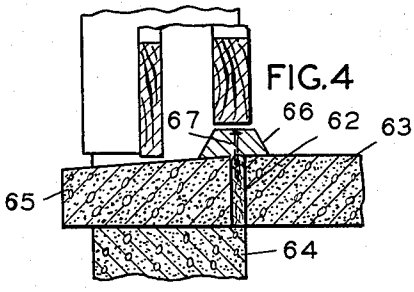


FIG. 4

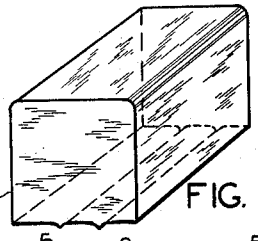


FIG. 7

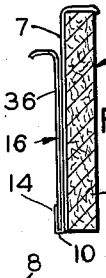


FIG. 13

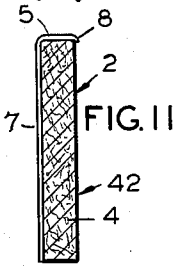


FIG. 11

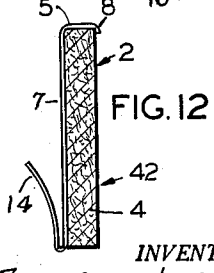


FIG. 12

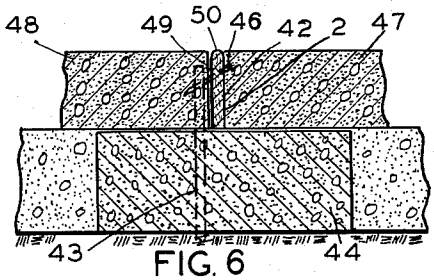


FIG. 6

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METHOD OF CONSTRUCTING A FOOTING-AND-FLOOR CONSTRUCTION

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3 Claims. (Cl. 25—155)

This invention concerns particularly the method of constructing floor structures of poured concrete floors and the foundation structures for such floors including footings of poured concrete and stems poured on said footings.

More particularly the invention concerns the method of constructing a concrete floor structure which includes metal covered expansion strips of resilient material incorporated between the foundation stem and the floor slab. These strips not only constitute expansion members to prevent cracking, but also act as termite barriers and as finished edges along the floor slabs where there are door openings or recesses in the foundation's stem.

The invention also includes the method of leveling and screeding the foundation stem and the floor by means of a metal encased expansion member attached to the pouring forms during the process of construction.

Another object is to provide a method for pouring, leveling, and screeding concrete foundation stem structure, and adjacent floor slabs by means including expansion strip above described, and by incorporating the metal covered expansion strip within the floor or foundation structure.

Another object is to provide in a construction method a foundation stem pouring form for concrete foundation work which has a metal covered expansion strip attached to its top edge so that the metal edge of the expansion strip is level and may be used as a guide in screeding the stem as well as the adjacent floor after pouring; said strip being adapted, as a leveling guide, to afford screeding of the stem at different levels with reference to the floor.

Other objects will appear hereinafter.

I attain the foregoing objects by means of the process hereinafter described.

Said drawings being made a part of this application illustrate the novel steps of this invention as follows:

Figure 1 is a sectional end view of an exemplary construction showing the inclusion of my improved metal shielded expansion strip in a typical foundation structure;

Figure 2 is a sectional end view of foundation structure in the process of construction and showing the inclusion of my improved expansion strip during the process of construction;

Figure 3 is a perspective view of a special form of screed used in connection with the structure shown in Figure 2;

Figure 4 is a sectional elevation of a typical form of foundation structure including the provision of threshold and other structure for a swing-in type of outer door;

Figure 5 is a similar sectional elevation showing the structure suitable for a swing-out type of outside door;

Figure 6 is a sectional elevation of a portion of a slab floor showing the inclusion of one of my expansion strips between adjacent slabs of the floor;

Figure 7 is a perspective view of a special jointer to be used in the installation of the expansion strip in the floor structure shown in Figure 6;

Figure 8 is a sectional end view of the basic form of expansion strip exemplifying my improved structure;

Figure 9 is a modified form thereof showing the provision of the second expansion plate that may be used as a termite shield;

Figure 10 shows the expansion strip as shown in Figure 9 with the modification made when the expansion strip is used as a termite shield;

Figure 11 is an end view of an expansion strip with a top plate which has curved edges suitable for finished work such as is shown in Figure 6;

Figure 12 shows a modification of the type shown in Figure 11 with the modification making it suitable for use as a termite shield; and

Figure 13 shows an end elevation of a strip suitable for use in swing-out door foundation structure such as is shown in Figure 5.

Similar numerals refer to similar parts in the several views.

Expansion strips 2, such as are used in my invention shown particularly in Figures 8, 9, 10, 11, 12 and 13, are composed of a tar impregnated strip 4 of felt, wood fiber or the like, partially covered by a shield, such as metal angle piece 3, which has a top flat portion or plate 5 enclosing the top edge 6 of the felt strip 4, and a vertical portion 7, attached thereto which covers the side of the felt strip 4 and forms a shield for one of its vertical faces. A bead 8 is formed along the outer edge of top plate portion 5 in the forms shown in Figures 11, 12 and 13, to stiffen and set onto said top edge of the strip and to provide a means for retention of the shield.

A longitudinal fold 10 is formed along the bottom edge 12 of the vertical plate 7 in the forms shown in Figures 9 and 10.

When the strip 2 is nailed against the face of a form (as in Figure 2) the strip form, shown in Figure 9, may be used when termite protection is desired. After the form plate 22 is removed, as herein described, the upturned portion 14 may be bent outward from the face of plate 7, as shown in Figure 10, by the use of any hand tool which has a sharp end that may be inserted between plate 7 and plate 14. The portion 14 will then become a termite shield, and may be included in any pour adjacent plate 7.

Additionally the upturned portion 14 formed by fold 10 may, as shown in Figure 13, be attached to a second metal angle strip 16 and used as an expansion seal where one floor slab level is lower than the adjacent slab level, or its equivalent.

One of the uses for the composite strips 2, of the type above described, is for forming concrete foundation structure, of the footing and stem type, together with adjacent poured concrete floor slab structures as shown in Figures 1 and 2.

In this operation footing 20 is poured to provide a rough but generally level top face 21. After this footing has set, forms 22 are erected and assembled to pour the stem 23, using clamps 30, staked braces 31, and earth fill 32, as well as removable inside spacer 35 for support to hold the form side plates 22 and 22*a* in position.

On the inner face of the innermost stem form plate 22, the combination metal and felt strips 2, of the type above described, are attached by nails 25 in such a manner that the point end portions of the nails secure the strip to the form plate while the head end portion 26 is left protruding inward toward the space to be filled by the stem pour. The top of the stem pour is then

screeded with a notched screed such as 28, so that the level of the stem will be below that of the predetermined floor level which is determined by the top edge of the composite strip 2. This depth is gauged by the notch 29 of screed 28. In screeding the notch rides on the top edge of the strip 2 and the remainder of the screed block is sized to correspond to the width of the stem.

When the stem has set the form plates 22 and 22*a* are removed leaving the strip 2 in place embedded in the stem and held by the heads and shanks of nails 25. It is to be understood that strips 2 may be prepared with the nails in place and shown in Figures 8, 9 and 10.

After the stem is poured the floor 33 is poured, using a screed which is guided and leveled by the top edge of strip or strips 2, as they are held in the stem.

It is to be noted that in positioning the strips 2 on the inner face of form plate they are leveled independently of the top edge of the stem form. To do this a horizontal taut line 24 is stretched along and above the top edge of the inner form plate 22, and the strip or strips 2 attached with their top edges leveled with reference to this line.

Where a door or other opening is desired in the building structure a recess or gap is provided and metal strips 2 or 62 are used. The metal casing 3 of the felt strips 4 forms a finished top edge, as it does in Figure 1. In Figure 5 the shielded strip 2 of the type shown in Figure 13, is particularly suited for swing-out doors, indicated by the arrow.

In such cases, as shown in Figure 5, an angle piece 36, shown in Figure 13, is used, and this is set in a concrete sill 37. The second metal angle 36 aids in forming a metal finish for the inner edge of the sill 37, and expansion is provided between the adjacent plates 36 and 7, as well as between plate 7 and the adjacent face of strip 4.

A similar structure, shown in Figure 4, is used where swing-indoors are desired. Here the combination fiber and metal strip 62 is set adjacent the floor slab 63. When first poured a recess or gap is formed in the stem 64 corresponding to the width of the door opening. The slab 63 and the concrete sill 65 is poured at the same time so that pressures balance on each side of strip 62. A threshold 66 is then added and may be easily attached by nails or screws 67 to the strip 62.

Referring to Figure 5 floor slab 33 is poured at the same time as sill 37. In any case where the sill must be poured later the strips 2 or 62 are provided with temporary rigid support forms.

The strips, generally indicated by numeral 2, are also useful in forming finished expansion joints between floor slabs as shown particularly in Figure 6. In this particular structure the strip 42 is held by stakes 43 (indicated by dotted lines) with nails 46 and then the intermediate footing 44 is poured to support the stakes 43 and the screed and expansion strip 42. When the floor slab 47 and floor slab 48 are poured they are balanced in the pouring in order to not damage the strips 42. The result is that the strip 42 is included between the floor slabs and its upper metal covered edge 50 forms a smooth hard finished surface which is ideally suited for the purpose.

In order to eliminate feather edges of the floor slabs adjacent the metal top of the strip 42 a double jointer 52 is run along the strip 42 and the concrete to provide rounded edges on the concrete which are adjacent the similarly rounded edges or folds of the metal casing of the strip. In this case the strip 42, shown in Figures 11 or 12, is preferred.

I claim:

1. In a poured concrete footing-and-floor construction of a predetermined level, the method comprising the steps of forming a footing-trench bordering a floor area, erecting removable inner and outer footing-stem forming plates within and in spaced relation from the bottom of said trench with an upper edge projecting above said trench, removably attaching to the inner surface of said inner form plate leveled expansion strip means having inwardly projecting anchoring means and having a rigid upper linear guide edge projecting above the upper edge of said inner form plate, pouring a footing-stem between said form plates and using said rigid upper linear guide edge as a screed guide to level said footing-stem, removing said form plates from said footing-stem after it has set with said leveled expansion strip means anchored therein, placing fill material in said trench and below said expansion strip means, pouring a floor slab onto said fill material and adjacent said footing-stem and onto the side of said expansion strip means previously attached to said inner form plate, and screeding said floor slab using the rigid upper linear guide edge of said expansion strip means as a screeding guide to level said floor slab.

2. The method of claim 1; including providing said expansion strip means with a metal shield including a portion overlying the expansion strip means and comprising said rigid linear guide edge.

3. The method of claim 2; including securing said metal shield to said expansion strip means by fastening means extending transversely through said expansion strip means and shield with a head portion thereof projecting inwardly of said inner form plate to insure anchoring of said expansion strip means in said footing-stem.

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