Jan. 15, 1935. J. R. HALL 1,988,201

REENFORCED FLOORING AND METHOD

Filed April 15, 1931

Fig. 1.

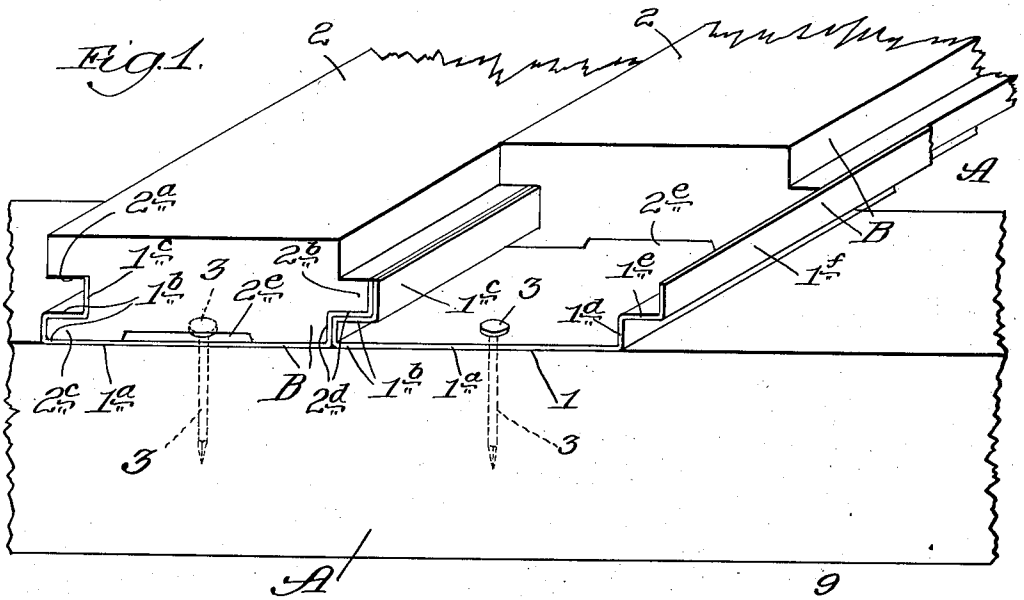

Fig. 2.

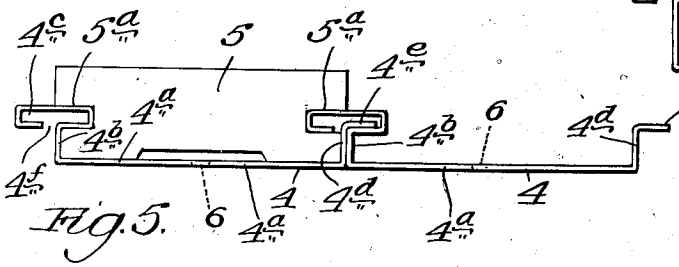

Fig. 3.

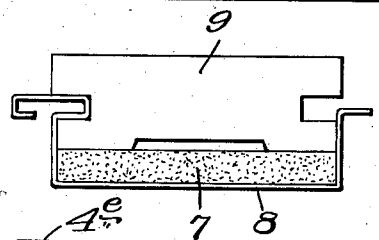

Fig. 4.

Fig. 5.

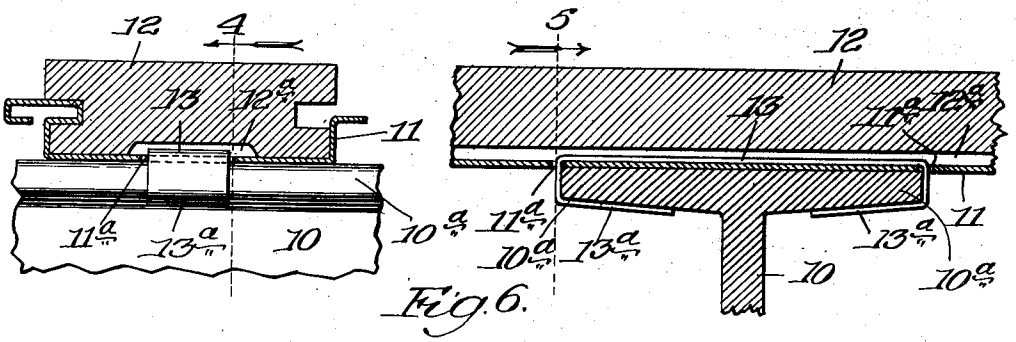

Fig. 6.

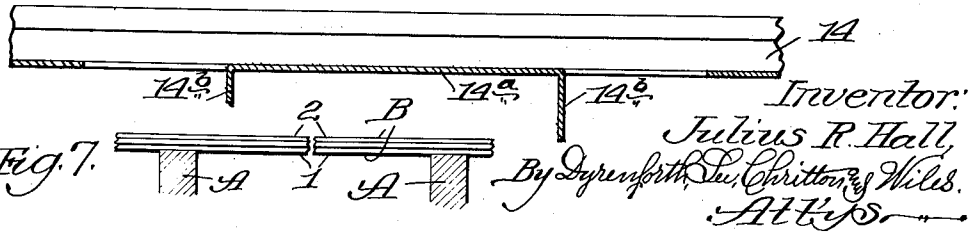

Fig. 7.

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REENFORCED FLOORING AND METHOD

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5 Claims. (Cl. 20—8)

This invention relates particularly to reenforced flooring and a method of laying the same.

The primary object is to provide a construction which will enable wooden flooring strips, or their equivalent, to be suitably reenforced and to be laid in such manner as to permit removal of the flooring without injury thereof, if desired.

In accordance with the preferred construction, and method, an armor-strip is first laid on a suitable foundation, such as joists; and a flooring-strip, of wood, or the like, is then introduced into the armor-strip. This method is followed as the laying of the floor progresses, the strips being brought into proper interlocked relation.

The invention is useful in permanent buildings and is also useful in temporary buildings, for example temporary buildings for exposition purposes.

The invention is illustrated in a preferred embodiment in the accompanying drawing, in which—

Fig. 1 is a broken elevational perspective view (partly in section) illustrating a preferred embodiment; Fig. 2, a fragmentary end elevational view of a modification, illustrating the manner in which the armor-strips are interlocked; Fig. 3, an end elevational view of a slight modification of the construction shown in Fig. 2, in which a heat and sound insulating material is introduced between the flooring-strip proper and the armor-strip; Fig. 4, a broken sectional view taken as indicated at line 4 of Fig. 5, showing one method by which the armor-strip may be applied to a metal joist; Fig. 5, a broken section taken as indicated at line 5 of Fig. 4; Fig. 6, a broken longitudinal sectional view of an armor-strip of slightly modified form, adapted to be applied to steel joists; and Fig. 7, a broken sectional elevational view, showing the manner in which the armor-strips bridge the spaces between joists.

In the construction shown in Fig. 1, A designates a joist which may be of any suitable form and material; B, B, designate armored flooring-strips supported on the joist.

Each armored flooring-strip is shown as comprising an armor-strip 1 and a flooring-strip 2, preferably of wood, but which may be an artificial board of strong fibrous character.

The armor-strip 1 preferably is formed from rather strong sheet-metal, which is suitably stiff, but which is moderately resilient. The sheet-metal strip is suitably formed to provide a bottom wall 1^a, a projecting hollow flange 1^b, and an upwardly extending flange 1^c at one edge of the bottom wall; and to provide, further, at the other edge of the bottom wall, an upturned flange 1^d supporting an outwardly extending horizontal wall 1^e, from which projects upwardly a vertical flange 1^f.

Each flooring-strip 2 is shown of the usual form of a flooring-strip having at one edge a groove 2^a and at the opposite edge a tongue 2^b. As thus described, the strip 2 has, below the groove 2^a, a flange 2^c, which fits within the hollow metal flange 1^b; and the strip 2, has also, below the tongue 2^b, a corner groove, or cutaway portion 2^d.

It will be seen that the corner-flange 2^c of the wooden strip projects into the hollow-metal flange 1^b, while the portions 1^d, 1^e and 1^f of the armor, or sheathing-strip conforms to the corner notch 2^d and the edge-surface of the flange 2^b.

In laying the flooring, according to the preferred method, an armor-strip 1 is secured to the joists or other foundation, as by means of nails 3; and a flooring-strip 2 is then inserted in the armor-strip, the metal being sufficiently resilient to permit the introduction; a second armor-strip 1 is then brought into proper interlocking relation, as shown in Fig. 1, and is secured to the joists, after which a second flooring-strip 2 is introduced. This method is continued in the laying of the flooring.

Each flooring-strip 2 is shown provided at its lower surface with a longitudinal groove 2^e, which provides space for the heads of nails, or other securing members, as desired.

In the modification shown in Figs. 2 and 3, the flooring is shown as comprising armor-strips 4 and flooring-strips 5. The bottom walls of the armor strips are provided with perforations 6, if desired; or, the perforations may be formed by driving nails through the bottom walls in the operation of securing the armor-strips to the joists.

The flooring-strip 5 is provided at each edge with a longitudinal groove 5^a.

The armor-strip 4 is shown as comprising a bottom wall 4^a having one edge equipped with an upturned flange 4^b which carries a hollow key 4^c adapted to fit into the grooves of adjacent flooring-strips 5.

At the other edge of the bottom wall 4^a is an upturned flange 4^d which carries a flange 4^e. The flange 4^e is adapted to be entered in the hollow key-flange 4^c, through an opening 4^f.

In the modification shown in Fig. 3, the construction is similar to that described in Figs. 2 and 3, except that the armor-strip is made deeper and a layer of heat-insulating and sound-proof

material 7 is interposed between the armor-strip and the flooring-strip.

In Fig. 3, the armor-strip is designated 8, and the flooring-strip is designated 9.

The filler 7 may be of any suitable fibrous material adapted to deaden sound.

In the modification shown in Figs. 4 and 5, 10 designates a steel-joist; 11, an armor-strip; and 12, a flooring-strip, which is provided at its lower side with a central longitudinal groove 12a. The armor-strip 11 is shown as of the same form as that applied in the structure shown in Fig. 2. It has its bottom provided, however, with slot-like perforations 11a. A metal-strap 13 is employed to secure the armor-strip to the head portion 10a of the metal beam. The end portions of the strap are passed through the perforations and clinched below the flanges of the head, as indicated at 13a.

In the modification shown in Fig. 6, 14 designates an armor-strip having a bottom wall 14a provided with integral downwardly struck members 14b, which may be clinched upon the flanges of an I-beam, thus rendering unnecessary the use of the separate securing strap shown in Fig. 5.

The invention enables wooden flooring-strips to be removably secured to a foundation. The armor provides a degree of protection against fire; and when the improved flooring is used in connection with metal I-beams, the flooring is rendered fireproof in a considerable measure. Furthermore, the armor for the base-portion of the flooring-strip serves to very substantially strengthen the flooring-strip, thus enabling finish-flooring to be applied directly to the joists, thus rendering unnecessary the use of a coarse board flooring beneath the finish-flooring.

If desired, a solution of a suitable mastic or some other suitable binder such as an artificial resin, may be applied at the joints in the laying of the flooring. The material may have a suitable body to provide a satisfactory locking of the joints so that the floor will be proof against leakage, if submerged with water.

While the flooring-strips 2 preferably are of ordinary lumber, artificial lumber may be substituted, or a suitable composition possessing suitable hardness and a high degree of strength against flexure may be employed.

It may be noted that the improved construction enables flooring-strips of any length which may be at hand to be introduced into the armor-strips. That is, it is not necessary that the length of the flooring-strip shall be the same as the length of the armor-strip, but the flooring-strip may be built up from a number of short lengths, thus enabling odds and ends to be utilized without serious detriment to the flooring.

By reference to Fig. 7, it will be noted that the armored flooring-strips B bridge the spaces between the joists A. The armor-strips 1 are first applied to the joists (in proper sequence), and the flooring-strips 2 are then introduced in proper sequence. This is the preferred method of laying the flooring.

The foregoing detailed description has been given for clearness of understanding only, and no unnecessary limitations should be understood therefrom, but the appended claims should be construed as broadly as permissible, in view of the prior art.

What I regard as new, and desire to secure by Letters Patent, is:

1. A flooring comprising: a plurality of armor-strips having interlock-members in interlocking engagement with adjacent armor-strips, said armor-strips being adapted to encase the base portion of a flooring-strip; and separately formed flooring-strips carried by the armor-strips and having corresponding interlock-members engaging said first-mentioned interlock-members.

2. A flooring comprising: joists; armor-strips bridging the joists and covering the spaces therebetween, said armor-strips being provided with interlock-members in interlocking engagement with adjacent armor-strips; and flooring-strips mounted in said armor-strips having corresponding interlock-members engaging the interlock-members of said armor-strips.

3. A reenforced flooring-strip comprising: a fibrous flooring-strip having at its edges interlock-members; and a base-encasing armor-strip receiving the base-portion of the flooring-strip, and having flanges equipped with interlock-members engaging said first-mentioned interlock-members, adapted to interlock with the interlock members of a like armor-strip.

4. A flooring comprising: joists; armor-strips bridging the joists and covering the spaces therebetween, said armor-strips being provided with interlock-members; sound-proofing material in the base portion of said armor-strips; and flooring-strips mounted in said armor-strips having corresponding interlock-members engaging the interlock-members of said armor strips.

5. A flooring device comprising an armor-strip having a base wall and having its edges equipped with interlock-members, said armor-strip being adapted to encase the base-portion of a flooring-strip having corresponding interlock-members, and adapted to interlock with the interlock members of a like armor-strip.

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