March 15, 1938. F. W. CHERRY 2,111,528

FLOOR STRUCTURE AND METHOD OF MAKING

Filed Oct. 16, 1936

Fig. 1.

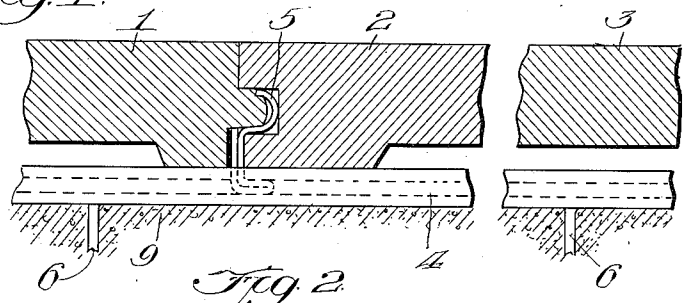


Fig. 2.

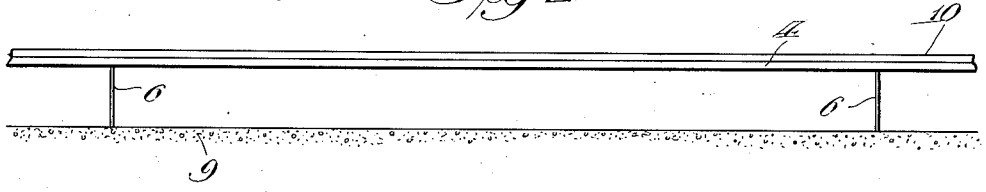


Fig. 4.

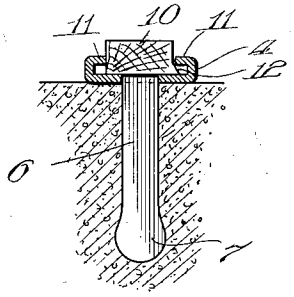


Fig. 5.

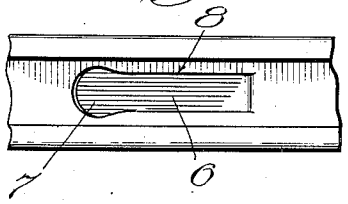


Fig. 3.

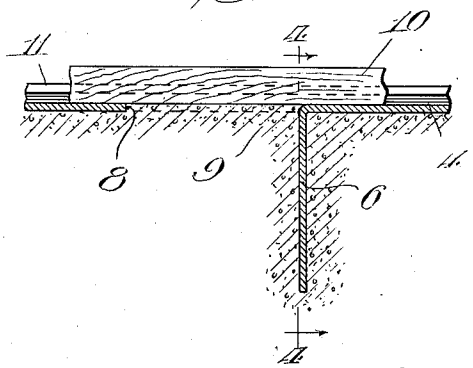
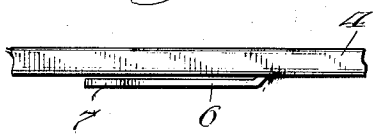


Fig. 6.



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2,111,528

FLOOR STRUCTURE AND METHOD OF MAKING

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Application October 16, 1936, Serial No. 105,875

3 Claims. (Cl. 20—8)

The present invention relates to that type of floor in which floor boards are laid upon and anchored to channel-shaped metal supporting strips resting upon a suitable sub-floor, and has for its object to make it possible easily to tie such strips firmly to the underlying sub-floor.

Floors of this type are particularly adapted to fireproof buildings or other place where there is a concrete sub-floor. Viewed in one of its aspects, the present invention may be said to have for its object to permit the floor-board supporting strips to be quickly and accurately placed upon and anchored to a concerete floor after the latter has been poured, thereby avoiding any interference on the part of such strips during the pouring of the sub-floor.

In accordance with my invention I provide the channel-shaped strips with adequate downward projections or tongues which may easily be pressed into wet concrete which then flows into intimate contact with the same and, upon setting, holds the strips firmly down upon the surface of the concrete. Therefore, viewed in one of its aspects, the present invention may be said to relate to a novel channel-shaped, self-anchoring metal strip on which floor boards are adapted to rest and to which are firmly secured.

Since the metal strips are intended to be applied to the concrete sub-floor while the latter is still wet, some considerable time may elapse before the floor boards are laid. Consequently, workmen walking over the sub-floor, and moving wheelbarrows or trucks, may deform or otherwise damage the channel-shaped strips before they are protected by the floor boards. One of the objects of the present invention is to provide means for protecting the channel-shaped strips until the floor boards can be laid thereon. In carrying out this part of my invention, I fashion long wooden strips somewhat thicker than the depth of the channels, which strips may be snapped into the channels of the metal strips and be held sufficiently tight to prevent displacement when walked upon or when a wheel barrow or truck is rolled over the same, but which may readily be removed at the time of laying the floor boards.

The preferable way of producing the anchoring tongues or projections is to punch them out of the metal forming the bottom wall of the strip, leaving each projection or tongue attached at one end to the wall of which it originally formed a part. Thus, when the projections or tongues are bent down at right angles to the body portions of the metal strips, holes are left in the bottoms of the latter. The wet concrete may ooze up through these holes, and upon setting, interfere with the application of the holding clips for the floor boards. By causing the wooden protective strips to be held tightly in the channels, they may be made to serve as closures for these holes. Therefore, viewed in one of its aspects, the present invention may be said to have for its object to provide my improved channel-shaped strips with means to protect them from injury as explained above, and at the same time, seal the holes in the bottoms of the strips to prevent the entrance of wet concrete through such holes when the strips are pressed down upon a wet bed of concrete.

The various features of novelty whereby my invention is characterized will hereinafter be pointed out with particularity in the claims; but, for a full understanding of my invention and of its objects and advantages, reference may be had to the following detailed description taken in connection with the accompanying drawing, wherein:

Figure 1 is a vertical section through one of my improved floor constructions, including the concrete sub-floor; Fig. 2 is a view on a smaller scale than Fig. 1, showing one of the channel-shaped metal strips positioned directly above a wet concrete sub-floor and about to be pressed down until its projections or tongues are embedded in the latter; Fig. 3 is a view more or less similar to Fig. 2, but on a larger scale, the channel-shaped strip being shown in section, and there appearing a smaller fragment than is illustrated in Fig. 2; Fig. 4 is a section on line 4—4 of Fig. 3 as it would appear if the channel shaped strip in Fig. 3 were not shown in section; Fig. 5 is a top view of a fragment of one of the channel-shaped strips, showing one of the anchoring tongues in the position occupied by the same at the time of the delivery of the strip to the user; and Fig. 6 is an edge view of that portion of the strip appearing in Fig. 5.

Referring to Fig. 1 of the drawing, 1, 2 and 3 indicate fragments of three tongue and groove floor boards extending transversely of and resting upon a series of parallel channel-shaped metal strips 4, of which only one is shown. The floor boards are fastened to and held down upon the underlying metal strips by means of suitable clips 5. This construction may take any desired form, as, for example, that disclosed in my prior Patent No. 2,004,193, dated June 11, 1935.

The metal supporting strips should be fastened to the sub-floor. In the case of a wood sub-floor,

the strips may be secured by driving any suitable fastenings into the wood. By my present invention, however, I provide means for successfully fastening the strips to a concrete floor. To this end I form on the bottoms of the channels suitable downwardly projecting anchoring elements which may easily be forced into a wet body of concrete which then fills all voids adjacent to the anchoring devices caused by the downward passage of said devices into the concrete. Then, when the concrete sets, the anchoring devices cannot be pulled out. These anchoring devices conveniently take the form of long narrow tongues 6 punched out of the bottom walls of the strips, the tongues remaining attached to the strips at their bases. The tongues preferably are of variable cross section at different points lengthwise thereof. In the arrangement shown, the free ends of the tongues are enlarged somewhat, as indicated at 7; the shape being such that keyhole slots or holes 8 are left in the strips when the tongues are bent down.

In the process of manufacturing the strips, the tongues are simply pressed out of the metal of the strips far enough to insure that the metal has been completely severed along the sides and free ends of the tongues, the tongues lying parallel with and only slightly below the strips, as shown in Fig. 6.

When the user is ready to apply a series of the strips to a sub-floor, he bends the tongues down until they extend at right angles to the strips, as illustrated in Figs. 1, 2, 3 and 4.

The strips are applied to the concrete floor 9 immediately after the pouring of the same and while it is still wet. The first step in applying a strip is to position it above the wet concrete, in the desired location, with the lower ends of the tongues resting on the concrete, as illustrated in Fig. 2. Pressure is then applied to the strip above each tongue so that the tongues are forced down until they are completely embedded in the concrete and the bottoms of the channels rest firmly on the concrete as shown in Figs. 1, 3 and 4. Obviously, the wet concrete will tend to flow up through the holes 8 in the channels. Therefore, to prevent this from occurring, I set into each of the metal channels a long wooden strip 10 that rests on the bottom of the channel and fits tightly enough to insure that it will serve as a satisfactory closure for the holes in the channel. The strips 4 are of the usual channel shape, the marginal portions along the free edges of the side walls being bent inwardly to produce overhanging flanges 11. The wooden strips 10 are made about as wide as the distance between the inner edges of the opposed flanges, but are widened on one side adjacent to the under face so as to have in this zone a longitudinal rib 12 of triangular cross section. When a wooden strip is pressed into the channel, first being tilted so that the rib is inserted beneath one of the flanges, it is locked down through the action of the flange that overhangs the rib, and thus is held seated tightly against the upper face of the bottom wall of the channel. These wooden protective strips are placed in the channels before the latter are applied to the sub-floor and they are left there until the workmen are ready to lay the wood floor boards. Thereupon, the wooden strips may be easily pried out of the channels and be preserved for future use.

The wooden strips are considerably thicker than the depth of the channels so that when inserted in the channels, they project substantially above the later. While the wooden strips are in place, should a workman happen to step upon one of the channels, his foot will come down upon the wooden strip instead of upon the top of the channel itself. This is also true when a wheel of a wheelbarrow or truck runs over a channel. In other words, while the wooden strips are in place, there is little danger of injury to the channels, and when the workmen are ready to lay the floor boards, all that is necessary to do is to pry out the protective strips and apply the boards and strips in the usual way. The individual wooden strips may be of any desired lengths, a suitable number being placed end to end to fill up each channel. Therefore, when I say that each channel is filled with a long strip, I do not mean that each strip must be made in one piece long enough to extend throughout the entire length of the channel.

While I have illustrated and described with particularity only a single preferred embodiment of my invention and a single preferred method of carrying it out, I do not desire to be limited to the details thus illustrated and described; but intend to cover all forms and arrangements and all methods coming within the definitions of my invention constituting the appended claims.

I claim:

1. A member for supporting and holding floor boards, prepared for anchoring the same to a foundation, comprising a channel-shaped metal strip, sections of metal in the bottom of the channel being partially severed from the strip and projecting downwardly, and a temporary filling strip fitted into the channel of the strip to close the openings in the bottom of the latter.

2. A member for supporting and holding floor boards, prepared for anchoring the same to a foundation comprising a channel-shaped metal strip, sections of metal in the bottom of the channel being partially severed from the strip and projecting downwardly, and a temporary filling strip fitted into the channel of the strip to close the openings in the bottom of the latter, said strip being thicker than the depth of the channel whereby the strip projects above the top of the strip and protects the latter until the floor is to be laid thereon.

3. In combination, a foundation, a member for supporting and holding floor boards resting upon and secured to said foundation, said member comprising a channel shaped metal strip, and a temporary filling strip fitted into the channel of said member and projecting somewhat above said member to protect the latter until the floor is laid thereon.

FRANK W. CHERRY.