Feb. 18, 1936. O. S. BOWMAN 2,031,249

WATERPROOF AND FIREPROOF FLOOR CONSTRUCTION

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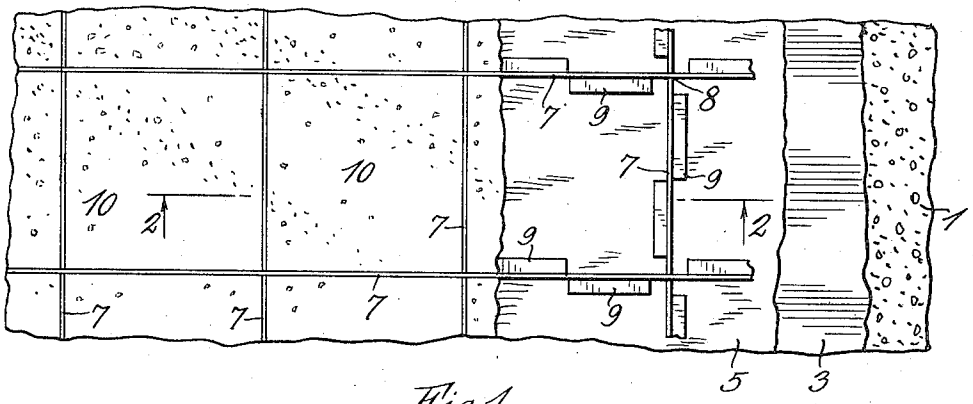


Fig. 1.

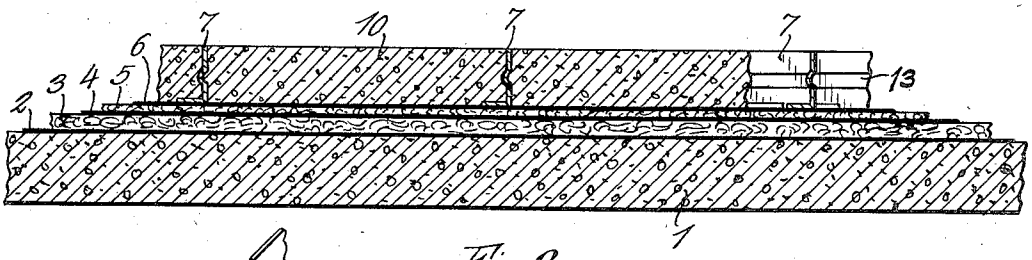


Fig. 2.

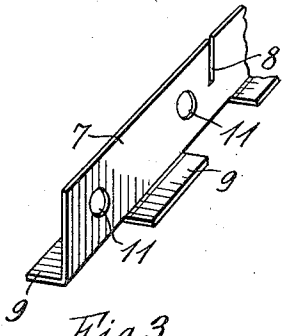


Fig. 3.

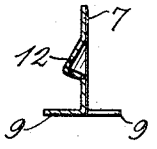


Fig. 4.

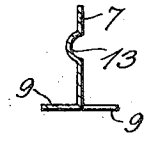


Fig. 5.

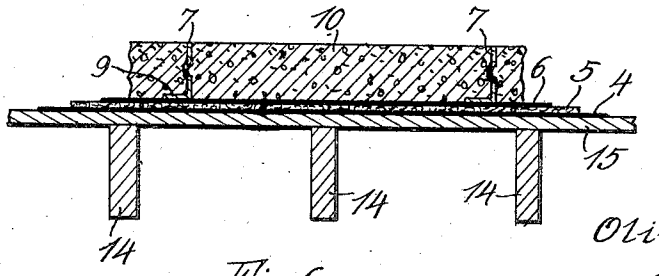


Fig. 6.

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WATERPROOF AND FIREPROOF FLOOR CONSTRUCTION

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5 Claims. (Cl. 94—3)

This invention relates to improvements in both resilient and rigid hard surfaced fireproof and waterproof floor construction.

It is often necessary to build floors, some of which are inside buildings and some of which are exposed to the elements which must have such a construction that they will be both waterproof and fireproof.

It is also desirable to be able to build floors on wooden supports which have a hard waterproof and fireproof surface; but with a reasonable degree of resilience.

It is the object of this invention to produce a floor construction of the type indicated which shall be simple and substantial and which can be very easily and cheaply constructed.

Another object of this invention is to produce a hard surfaced floor construction that, in addition to its fireproof and waterproof characteristics, shall also be slightly yielding so as to resemble a wooden floor in regard to its flexing characteristics.

The above objects are attained by means of a construction and an arrangement of parts that will now be described in detail, and for this purpose reference will be had to the accompanying drawing in which two embodiments of the invention have been illustrated, and in which:

Fig. 1 is a top plan view of a floor constructed on a concrete slab or base in accordance with this invention, portions being removed to better show the construction;

Fig. 2 is a section taken on line 2—2, Fig. 1;

Fig. 3 is a perspective view of one of the separator strips employed in this construction;

Fig. 4 is a transverse section of a separator strip showing the same provided with a different kind of anchoring means for the floor blocks;

Fig. 5 is a section similar to that shown in Fig. 4 and shows another anchoring means; and

Fig. 6 is a transverse section showing a slightly modified form of construction which is used when the floor is supported on a wooden base.

In Fig. 2 reference numeral 1 represents a concrete base or support on which the floor is laid. This base is part of the fireproof construction of a building. When the floor is put in place, the upper surface of the concrete support is first mopped with hot asphalt so as to provide a layer 2 of this material. After the asphalt has been put in place, a layer of resilient fibrous material 3 which may be cellotex, masonite or similar types of artificial board construction is placed on the asphalt. The upper surface of the fibrous material is now coated with hot asphalt so as to provide a layer 4, and secured to this layer is a layer 5 of tarred felt. The upper surface of the felt is now covered with a layer of hot asphalt, after which separator strips 7 are put in place. The separator strips are made of sheet metal and have upwardly extending edges provided at spaced intervals with notches 8. The lower edge of each strip is provided with alternate lugs 9 that form feet on which the strip rests. When these strips are put into place, the lugs 9 adhere to the asphalt and hold the strips in place. The strips extend at right angles to each other as shown in Fig. 1 and provide rectangular spaces for the reception of the floor material which is preferably some Portland cement mixture and which has been designated by reference numeral 10. The cement is poured into the compartments while it is in plastic condition and will harden in place. The cement blocks are anchored to the floor construction, first, by means of the asphalt to which they adhere, and then when strips like those shown in Fig. 3 are employed, cement will extend through the openings 11 and form anchoring lugs. When strips like that shown in Fig. 4 are used, the projections 12 take the place of the openings 11 and serve to anchor the blocks in place. While, when the modification shown in Fig. 5 is employed, the corrugation 13 serves the function of opening 11 and part 12.

In Fig. 6 the fireproof floor has been shown as supported on a wooden floor construction, comprising joists 14 and floor boards 15. When this construction is used, the fibrous material 3 is dispensed with and the asphalt layer 4 is applied directly to the upper surface of the floor boards. Located on the upper surface of the asphalt 4, a layer of tarred felt 5 may be laid, which is covered with a layer 6 of asphalt to which the separating strips are attached in the manner above described. The concrete blocks 10 are moulded in place in the same manner explained in connection with the construction above described. The floor construction shown in Fig. 6 is resilient, due to the fact that the joists will bend slightly when subjected to a weight, and therefore the resilient layer 3 has been omitted, because the function of this resilient layer of fibrous material is to give resilience to the floor construction. Where very heavy service is contemplated the resilient layer 3 may also be omitted from the concrete slab thus producing a substantially rigid floor. When the surface of the supporting floor 15 is smooth and hard, the layer of felt 5 and the asphalt layer 6 can be omitted and the separator strips seated in the asphalt layer 4.

It will be readily seen from the above description that a floor constructed in accordance with this invention is entirely waterproof because the several layers of asphalt prohibit the water from entering and passing through the floor and it can therefore be exposed to the elements without danger of deleterious effects.

The construction shown and described above is very simple and floors made in accordance with the method outlined can be cheaply installed and when in place will give excellent satisfaction and resist the action of water in addition to being fireproof. The construction shown in Fig. 6 is semifireproof and can be used where such constructions are permitted. The concrete **7** may be composed of terrazzo or other aggregate which can be ground and polished. The resilient layer **3** as well as the felt strip **5**, can be made of asbestos or other nondecaying material, if desired.

Having described the invention what is claimed as new is:

1. A floor construction comprising, a base, a layer of felt secured to the upper surface of the base by an asphalt adhesive, the upper surface of the felt having a coating of asphalt, separator strips having their lower edges sealed in the asphalt coating on the upper surface of the felt, and blocks of cementitious material formed in place between the separator strips.

2. A fireproof and waterproof floor construction comprising a rigid supporting base, a layer of asphalt on the upper surface of the base, a layer of resilient fibrous material supported on the asphalt layer and secured to the base by the latter, a coating of asphalt on the upper surface of the fibrous material, a layer of felt on the upper surface of the last named asphalt layer, the upper surface of the felt having a coating of asphalt, separator strips having their lower edges embedded in the asphalt and held in place thereby and cementitious material in the space between the strips.

3. A floor construction comprising, a supporting base, a coating of asphalt on the upper surface thereof and separator strips having their lower edges embedded in the asphalt which serves as an adhesive for holding them in place.

4. A resilient, waterproof hard surface floor, comprising resilient joists, sheeting attached to the joists, asphalt on the sheeting, felt on the asphalt, asphalt coating on the felt, separator strips embedded in the asphalt, and cementitious material in the compartments formed by the strips, and anchored by means of the asphalt and strips.

5. Terrazzo flooring comprising a sub-floor, a cushion coating of plastic material engaging the sub-floor, substantially vertical divider strips held in desired positions by the cushion coating, and terrazzo topping engaging the plastic coating between the divider strips.

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