Feb. 4, 1936. F. E. BRUCE 2,029,808

WOOD FLOOR

Filed Sept. 10, 1934

FIG. 1.

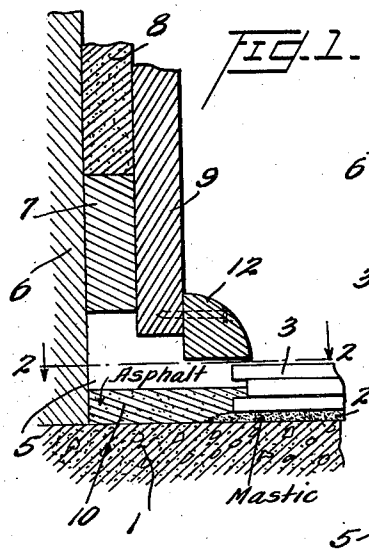


FIG. 2.

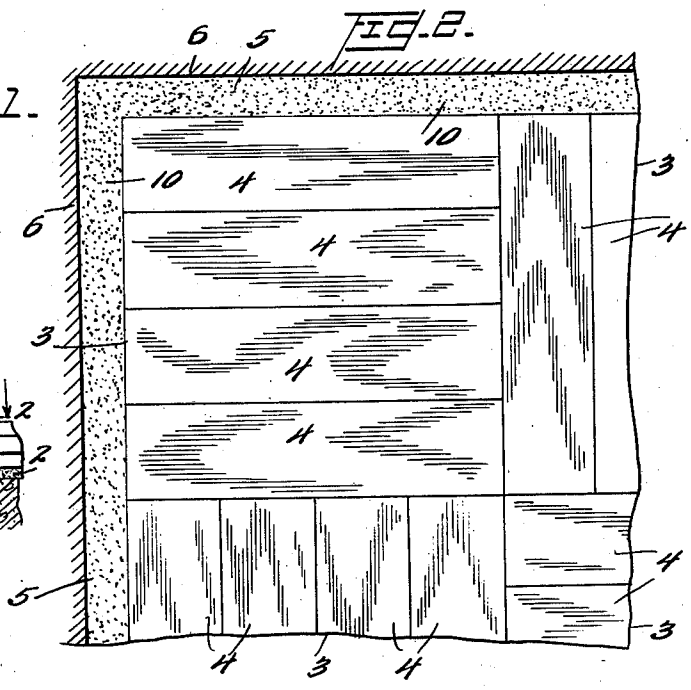


FIG. 3.

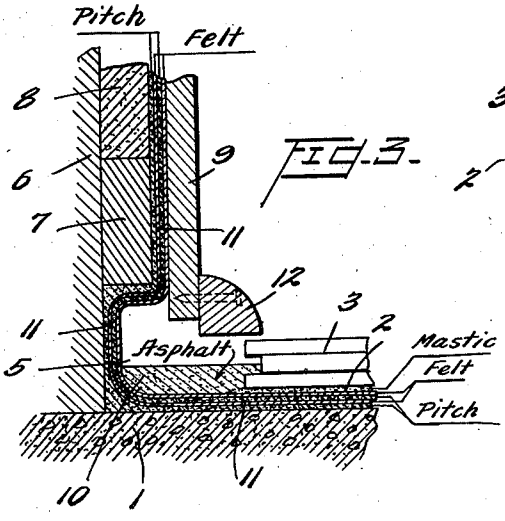


FIG. 4.

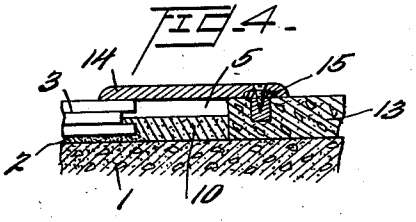
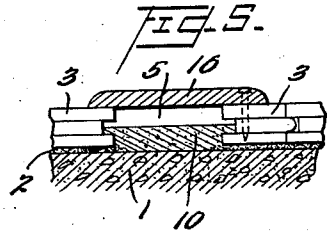


FIG. 5.



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UNITED STATES PATENT OFFICE

2,029,808

WOOD FLOOR

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Application September 10, 1934, Serial No. 743,459

6 Claims. (Cl. 20—7)

My invention relates to a wood floor laid in mastic, of the type disclosed in the patent to Gray, No. 1,925,068, dated August 29, 1933, and has for its object controlling undue movement of the floor before the mastic has set sufficiently, and at the same time permitting expansion of the floor after the mastic has set. In floors of the type referred to, a layer of substantially permanently plastic mastic is trowelled on the subfloor about $\frac{3}{32}$ of an inch thick and then the wood blocks are laid in this mastic. The mastic that is usually used is one with an asphalt base, cut back with a volatile petroleum solvent to permit ease of spreading. The invention is also applicable for use with a low melting point mastic that is applied in a warmed condition, without the use of a volatile solvent. In either case, it takes a certain amount of time for the mastic to set, through volatilization of the solvent or cooling of the mastic, as well as other reactions. Until the mastic has set sufficiently, anyone walking on the floor, or other weights placed on the floor may cause the blocks to slide out of place, in view of the fact that the floor can not be set up close against the wall due to the presence of the necessary expansion space.

Referring to the drawing for a more complete disclosure of the invention,

Fig. 1 is a section transversely of the wall of a room,

Fig. 2 is a section on line 2—2 of Fig. 2,

Fig. 3 is a section similar to Fig. 1 of a modification,

Figs. 4 and 5 are sections of modifications.

Over the hard subfloor 1, which may be concrete, is troweled the plastic mastic 2, about $\frac{3}{32}$ of an inch thick and on the mastic, the blocks 3 are laid, usually with the grain of the wood in the strips 4 of adjacent blocks, at right angles to each other. The blocks are tongued and grooved along their edges for interengagement. To take care of expansion of the wood floor, due to moisture absorption, an expansion space 5 is left along the walls 6 of the room, which may extend under the wood ground 7, above which is the wall plaster 8, and the base board 9. Into this expansion space, I pour hot liquid asphalt 10 of about 170° F. melting point, which will quickly solidify on cooling. After it has cooled and under the high pressure of any slow movement of the floor due to moisture absorption, the joint will permit the floor to expand and thus avoid buckling of the floor which would take place in the absence of an expansion space. Various materials of a similar type to the specified asphalt may be used, the necessary requirement being that the material shall be sufficiently stiff when solidified at the time of installing so as to prevent slippage of the floor on the mastic but not so stiff but that it will slowly plastically yield under sustained pressure. The expansion space should not be completely filled, thus allowing room for the asphalt to rise up in it as it is compressed. Where a mastic, of the composition disclosed in the Gray patent is used, is partly or wholly spread into the expansion space, the hot liquid asphalt will readily blend with it.

Where the wood floor is subject to excessive moisture condition from below the floor, it is the practice to lay over the concrete subfloor, a two ply membrane waterproofing 11, Fig. 3, of alternate layers of coal tar pitch and tarred felt, which is brought up the wall at right angles for several inches above the finished floor. In such a case, the expansion joint material is easily applied and on account of its character has no tendency to rupture the waterproof membrane. After pouring of the asphalt joint, the shoe 12 is secured to the base board to cover the expansion space 5.

If the blocks 3 are laid adjoining a concrete or terrazzo floor 13, Fig. 4, which may be mopped with water, a metal shoe 14 covers the expansion space 2, and a strip of rubber 15 will prevent the water from seeping into the expansion area.

The expansion space 5 may be located under the threshold 16, Fig. 5, of a doorway between communicating rooms and the expansion joint material poured therein. The same construction may be used at various intermediate points in the floor area, where the usual allowance for expansion at the wall lines is not sufficient to take care of normal expansion of the floor.

I claim:

1. A wood floor laid on a substantially permanently plastic mastic, an expansion space for the floor, an expansion joint, in the expansion space, of plastic material which is sufficiently stiff at normal temperatures to hold the floor from sliding out of place, and sufficiently plastic to permit movement of the floor by flowing under the sustained pressure due to expansion of the wood from moisture absorption, the material of the expansion joint being substantially stiffer than the mastic in which the floor is laid, under the conditions of use in the floor.

2. A wood floor laid on a substantially permanently plastic mastic that is of troweling consistency at the time the floor is laid and which requires a period of time in order to set, an expan-

sion space for the floor, an expansion joint, in the expansion space, of plastic material which is sufficiently stiff at normal temperatures to hold the floor from sliding out of place until the mastic has set and sufficiently plastic to permit movement of the floor by flowing under sustained pressure due to expansion of the wood from moisture absorption, the material of the expansion joint being substantially stiffer than the mastic in which the floor is laid, under the conditions of use in the finished floor.

3. A wood floor laid on a substantially permanently plastic mastic that is of troweling consistency at the time the floor is laid and which requires a period of time in order to set, an expansion space for the floor, an expansion joint in the expansion space formed by pouring in the said space a hot liquid material which is sufficiently stiff at normal temperatures to hold the floor from sliding out of place until the mastic has set and sufficiently plastic to permit movement of the floor by flowing under sustained pressure due to expansion of the wood from moisture absorption, the material of the expansion joint being substantially stiffer than the mastic in which the floor is laid, under the conditions of use in the finished floor.

4. A wood floor laid on a substantially permanently plastic asphaltic mastic that is of troweling consistency at the time the floor is laid and which requires a period of time in order to set, an expansion space for the floor, an expansion joint in the expansion space formed by pouring in the said space hot liquid asphalt of a melting point high enough so that it will be sufficiently stiff at normal temperatures to hold the floor from sliding out of place until the mastic has set and sufficiently plastic to permit movement of the floor by flowing under sustained pressure due to expansion of the wood from moisture absorption, the material of the expansion joint being substantially stiffer than the mastic in which the floor is laid, under the conditions of use in the finished floor.

5. A wood floor laid on a substantially permanently plastic asphaltic mastic that is of troweling consistency at the time the floor is laid and which requires a period of time in order to set, an expansion space for the floor, an expansion joint in the expansion space formed by pouring in the said space hot liquid asphalt having a melting point of about 170° F. and which will be sufficiently stiff at normal temperatures to hold the floor from sliding out of place until the mastic has set and sufficiently plastic to permit movement of the floor by flowing under sustained pressure due to expansion of the wood from moisture absorption, the material of the expansion joint being substantially stiffer than the mastic in which the floor is laid, under the conditions of use in the finished floor.

6. A wood floor, a hard subfloor on which the wood floor is laid, a room wall, an expansion space between the edge of the wood floor and the wall, a sheet of waterproofing material on the subfloor extending over the expansion space and up alongside the wall, a layer of substantially permanently plastic mastic spread over the waterproofing material and in which the wood floor is laid and which requires a period of time in order to set, an expansion joint in the expansion space formed by pouring in the said space a hot liquid material which is sufficiently stiff at normal temperatures to hold the floor from sliding out of place and sufficiently plastic to permit movement of the floor by flowing under sustained pressure due to expansion of the wood from moisture absorption, the material of the expansion joint being substantially stiffer than the mastic in which the floor is laid, under the conditions of use in the finished floor.

FRANK E. BRUCE.