May 26, 1931. T. KNUTSON 1,807,315

CONCRETE FORM FOR FLOORS

Filed March 20, 1926

Fig. 1.

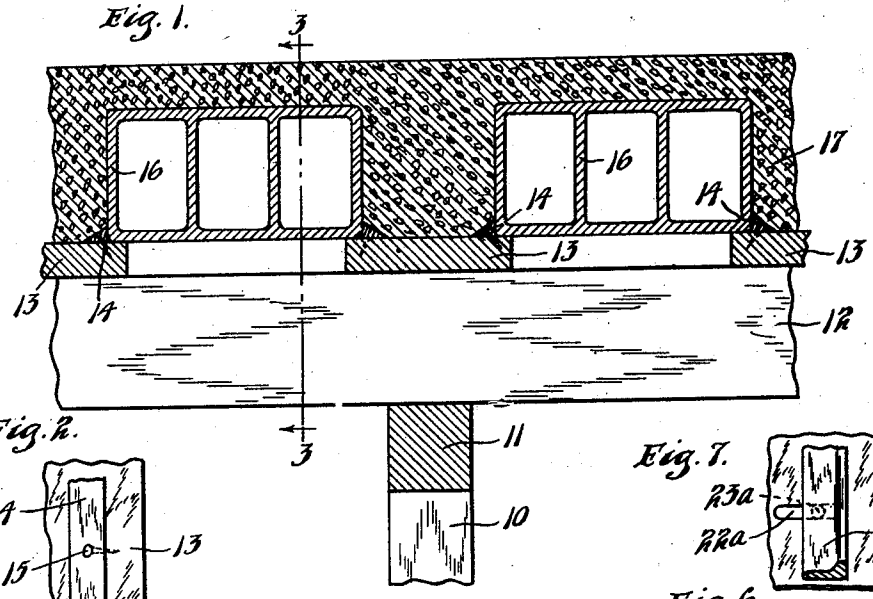


Fig. 2.

Fig. 7.

Fig. 6.

Fig. 4.

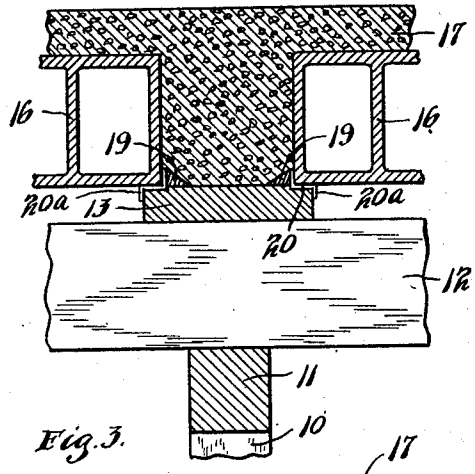


Fig. 3.

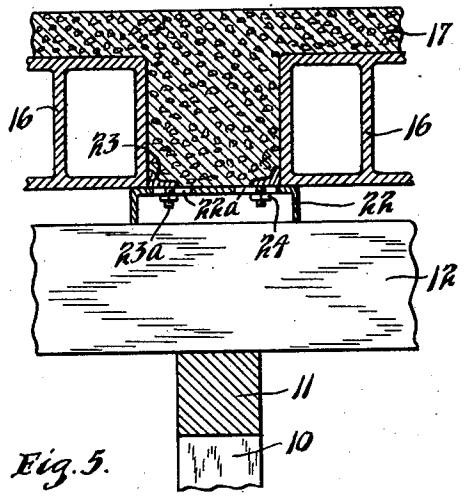
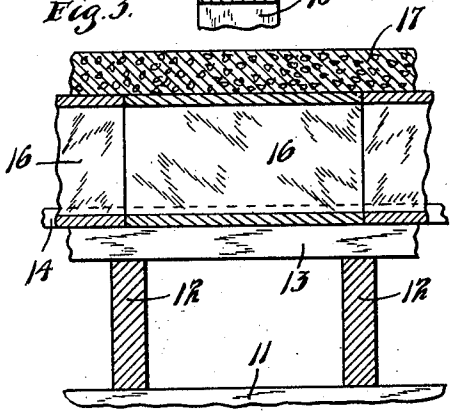


Fig. 5.



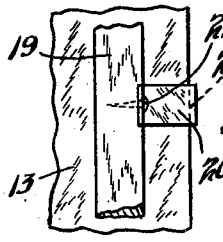
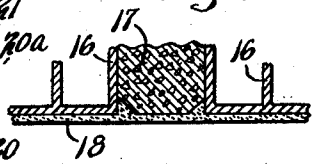


Fig. 8.



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UNITED STATES PATENT OFFICE

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CONCRETE FORM FOR FLOORS

Application filed March 20, 1926. Serial No. 96,204.

This invention relates to a floor or similar construction made of concrete, and to a form used in making such a floor.

It is the common practice in modern building construction to construct floors of concrete and hollow tile. When the form is constructed to pour the floor, a supporting frame is provided and planks or plank-like members are arranged in spaced parallel relation on said frame. The tiles are then placed in position spanning the adjacent pairs of planks or plank-like members, after which the concrete is poured. The tiles are then embedded in the floor and the said frame and planks or plank-like members are removed. The bottom of the floor is usually finished as by plastering, to form the ceiling on the room below the floor. It has been a more or less common practice heretofore to use planks having grooves or rabbets at their edges, in which the edges of the tiles were placed. The forming of these grooves or rabbets in a plank destroys the usefulness thereof for other purposes and entails considerable labor and expense.

It is an object of this invention to provide a form using planks or plank-like members having longitudinally extending means secured thereto and extending longitudinally of the edges thereof. Such means may take the form of wooden strips secured to wooden planks or metal strips secured to or held at the sides of the planks or plank-like members.

It is a further object of the invention to provide a form using such planks or plank-like members referred to in the preceding paragraph with relation to which the said strips may be adjusted.

These and other objects and advantages of the invention will be fully set forth in the following description made in connection with the accompanying drawings, in which like reference characters refer to similar parts throughout the several views and in which:—

Fig. 1 represents a cross section through a floor and form therefor, using the present invention;

Fig. 2 is a partial top plan view of one of the planks and strips used;

Fig. 3 is a vertical section taken on line 3—3 of Fig. 1 as indicated by the arrows;

Fig. 4 is a section similar to that shown in Fig. 1, showing a modified form of strip;

Fig. 5 is a partial plan view of the plank and strip shown in Fig. 4;

Fig. 6 is a section similar to Fig. 1, showing a modified form of the tile holding member and strip;

Fig. 7 is a partial plan view of the tile holding member and strip shown in Fig. 6; and

Fig. 8 is a vertical section through the finished floor and ceiling.

Referring to the drawings, particularly Figs. 1, 2 and 3, a form structure for a concrete floor is shown comprising posts 10 having horizontally extending beams or members 11 at their upper ends which support the spaced beams or joists 12. The planks 13 are placed transversely of members 12 in spaced relation. In accordance with the present invention the planks 13 have secured adjacent their edges the beveled strips 14. While these strips may be of any desired shape in cross section, in the embodiment of the invention illustrated they are shown as substantially triangular in cross section and said strips are arranged with one vertical side facing the adjacent edge of the plank. The strips 14 will be secured to the planks 13 in any suitable manner, as by the nails 15.

With the form constructed as described, and the planks 13 in place, the tiles 16 will now be placed in position and are properly gauged or held in place by the strips 14. The tiles so held in place by the strips will not be displaced by workmen walking on the same and over the form and will be held in proper longitudinal alinement. The concrete 17 is now poured to the desired thickness and extends over the tiles 16 and between the same. When the concrete is set, the form including the members 10 to 15 will be removed. The bottom of the floor will thus beformed by the bottom of the concrete layer 17 and the bottom of the tiles 16. With the construction of the form described, it will be seen that the bottom of the concrete layer 17 is also flush with the bottom of the tiles 16. When the

plaster is now placed on the bottom of the floor as indicated at 18 in Fig. 8, the layer of plaster will have the same thickness under the concrete that it has under the tiles. The plaster will, of course, fill up the small space occupied by the strips 14 and this additional thickness of plaster will simply act as an additional bond for the plaster or ceiling. It is desirable to have as great a thickness of plaster under the tiles as possible and it is more desirable to have at least as great a thickness under the layer of tiles as under the layer of concrete. When the rabbeted planks heretofore referred to are used, there is a much thinner layer of plaster under the tiles than under the concrete. This is just the opposite of what is desired and the opposite of what makes the most durable construction. By the use of the strips therefore, this objectionable construction is eliminated and a greater thickness of plaster is obtained under the tiles.

When the forms are dismantled, the strips 14 can be easily removed from the planks 13 and the planks used for some other purpose if desired. The strips can be retained for the next time they are needed and they can be placed on a plank at a different distance from the edge, if necessary. The strips are quite inexpensive and easily secured and placed in position.

With the structure shown in Figs. 4 and 5, the planks 13 are used as already described, with the other parts of the form and strips 19 are used with the planks 13. While these strips as stated may be of any desired cross section, they are illustrated as of triangular shape in cross section. The strips 19 are also shown as having secured at longitudinally spaced intervals thereon the clips 20 which have their ends bent substantially at right angles in opposite directions, thus forming a Z shaped article. One side of the clip 20 is connected to the vertical outer edge of the strips 19 by the nails 21. The strips 19 are then positioned on the planks 13 by merely placing the other end 20*a* of the clips 20 against the vertical side edge of the plank 13 adjacent which the strips 19 are positioned. The clips 20 will be made of very thin material such as thin sheet iron or tin and will occupy substantially no thickness. The tiles 16 can be either placed on top of the clips 20 with the latter resting on top of the plank 13 or the intermediate portion of the clip may be hammered slightly into the plank as shown in Fig. 4.

With the construction shown in Fig. 4 the tiles will be supported in the same manner as already described, by the strips 19. The strips, however, are not attached to the planks 13, but are merely held in proper position thereon by the clips 20. With the construction shown in Fig. 4 the strips 19 will be removed when the form is dismantled and kept until the next time they are needed, when they can be readily positioned on the planks.

In Figs. 6 and 7 the members 10, 11 and 12 will be used and arranged as above described. In place of the wooden planks, metal channel members 22 are used, which preferably will be made of stiff sheet metal. The members 22 have spaced slots 22*a* extending transversely thereof adjacent their edges at suitable intervals and strips 23 are provided having downwardly extending threaded studs 23*a* thereon adapted to receive the nuts 24. By tightening the nuts 24 the strips can be held in the proper position relative to the edge of members 22. The strips 23 are generally of angle shape with rounded ends and fillets and have a vertical face disposed towards the edge of the member 22. The tiles 16 will be placed with their edges against the outer vertical faces of the strips 23 and the concrete will be poured as heretofore described. The form shown in Figs. 6 and 7 will be removed after the concrete is set and the bottom of the floor will be plastered as above described and as indicated at 18 in Fig. 8.

From the above description it will be seen that applicant has provided a simple and improved structure of form for a concrete floor, using tiles. As stated, the use of the strips saves a great deal of labor and expense as well as lumber and results in a much superior structure of floor and ceiling. The thickness of the plaster is reduced under the concrete and increased under the tiles which is just what is desired. The invention has been amply demonstrated in actual practice and found to be very successful and efficient.

It will, of course, be understood that various changes may be made in the form, details, arrangement and proportions of the parts, without departing from the scope of applicant's invention, which, generally stated, consists in a device capable of carrying out the objects above set forth, in the novel parts and combinations of parts disclosed and defined in the appended claim.

What is claimed is:

A concrete form structure for floors, comprising spaced supporting means, spaced members extending transversely of said means having top surfaces, tiles spanning the spaces between said members and resting on the edges thereof, strips carried by said members having faces extending parallel to, within and adjacent the longitudinal edges of said members against the outer sides of which faces said tiles engage, said strips being adjustable and adapted to be positioned different distances from the edges of said members, and means for holding said strips in stationary position.

In testimony whereof I affix my signature.

THOR KNUTSON.