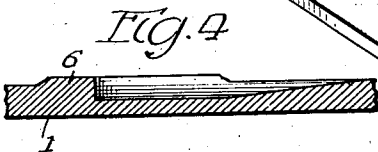
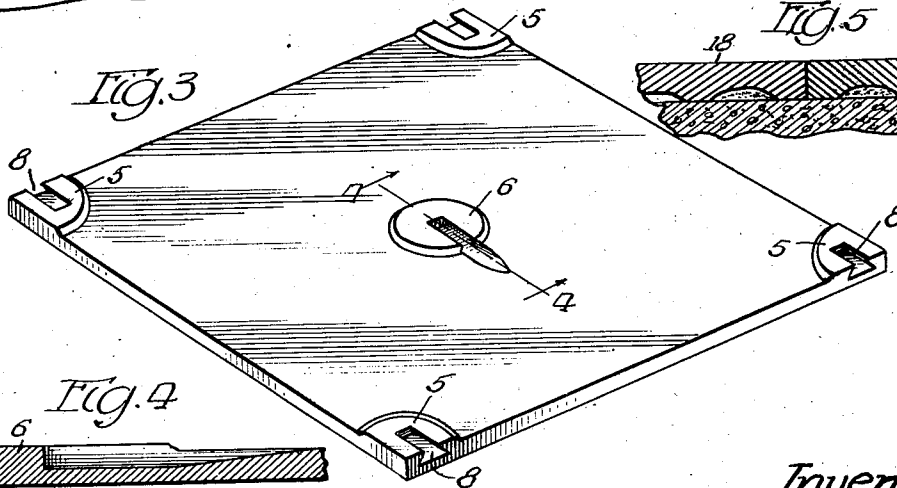
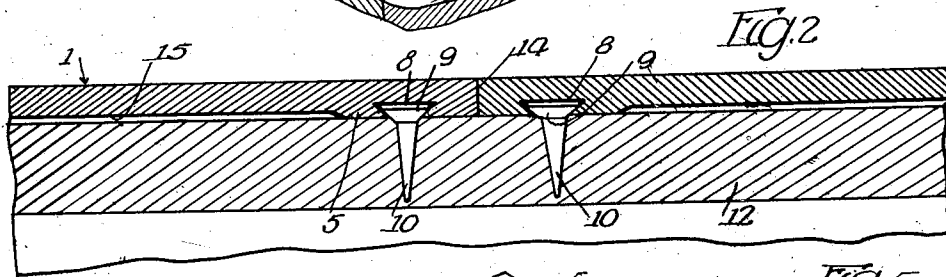
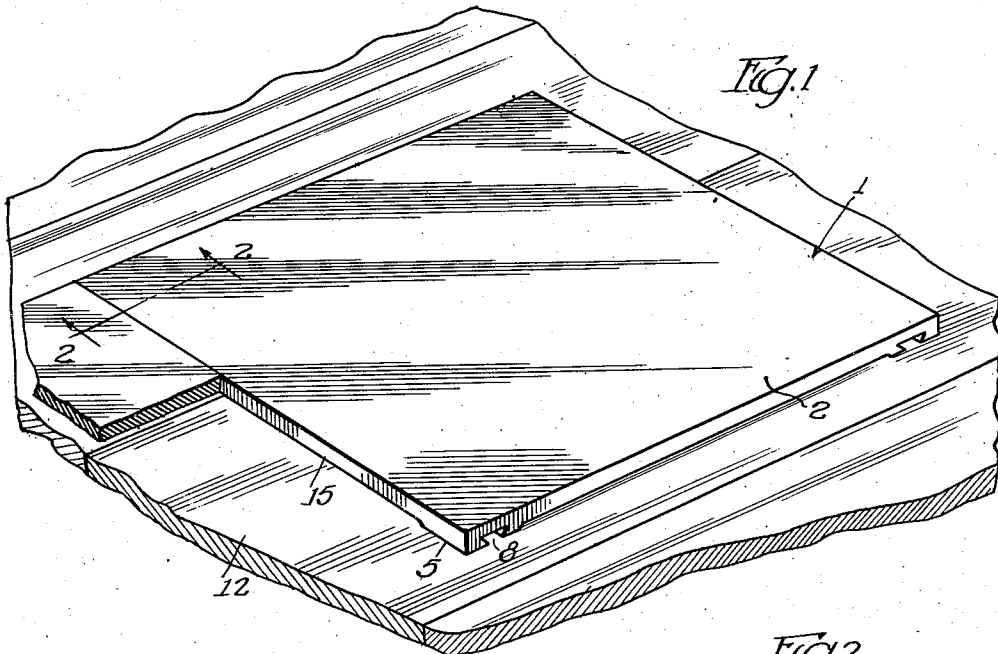


July 3, 1945.

J. ROE
FLOOR SLAB

2,379,595

Filed April 7, 1943



Inventor
James Roe
By *Morris Spector*
Att'y

UNITED STATES PATENT OFFICE

2,379,595

FLOOR SLAB

James Roe, Chicago, Ill., assignor of one-half
to Albert Kahn, Chicago, Ill.

Application April 7, 1943, Serial No. 482,203

5 Claims. (Cl. 94—3)

This invention relates to the construction of a floor surface, and more particularly to preformed slabs to be laid to constitute a floor surface.

It is in many instances desirable to provide an appreciable amount of resiliency in a floor surface as this is conducive to greater comfort during walking and results in other advantages. This was frequently accomplished by providing a floor surface of yielding or highly compressible material such as, for instance, rubber, or by providing a yielding sub-surface of felt or the like. Such arrangements are objectionable not only because they greatly increase the cost, but also because the resiliency is generally of only a temporary nature. It is one of the objects of the present invention to provide a flooring where permanent resiliency is obtained in a simple manner, without increasing the cost of the flooring. This is accomplished, in the preferred embodiment of this invention, by a construction which provides a thin layer of air under a flexible floor surfacing material so that the floor surface is free to flex, under load, to the extent of the thickness of the air layer. This air layer is very thin, just thick enough to allow the small necessary give to the floor surface. As a result, if the load on the floor is more than that due to normal walking, the additional stress is taken by the floor sub-surface, thus avoiding undue straining of the floor surfacing material.

It is a further object of the present invention to provide a floor surface block which when laid will form a floor surface having the required resiliency. The block may be of any desired shape such as, for instance, square, hexagonal, or the like. The top surface of the block is smooth, to constitute a part of the finished floor surface. On the underside of the block there is provided a number of very short legs or supports. These legs or supports may be of a height of the order of $\frac{1}{2}$ of an inch and serve to support the body of the block that distance above the floor sub-surface. Between the legs the block is free to flex under load to a maximum extent of the height of the legs at which time the part that has flexed abuts against the floor sub-surface, thus limiting further straining of the block. Upon release of the load the surface of the block returns to its normal position under its natural resiliency.

It is a further object of the present invention to provide a floor block with means for receiving nails to facilitate nailing of the block to a wooden sub-surface.

It is a still further object of the present in-

vention to provide a floor block of high strength combined with low cost and exceedingly pleasing surface appearance. This is accomplished by making the block of a plastic material, such as, for instance, a thermoplastic material, of which there are many known types which have the necessary strength, resiliency, fire resisting qualities, and other characteristics required for such service. Such plastics may be made in any desired ornamental colors and with any desired degree of gloss or finish. The flooring blocks may be cast or molded with the projecting feet constituting an integral part of the molded article, or the blocks may be formed as rolled sheets, cut to size, and the short feet thereafter applied thereto as by welding or by use of a plastic cement, or the like.

It is a still further object of the present invention to provide an improved floor block or slab having a finished surface on at least one side so that no other floor covering is necessary.

The attainment of the above and further objects of the present invention will be apparent from the following specification taken in conjunction with the accompanying drawing forming a part thereof.

In the drawing:

Figure 1 is a perspective view of a floor slab embodying the present invention, as laid upon a floor;

Figure 2 is an enlarged longitudinal sectional view at a joint between two adjacent floor slabs, said view being taken along the line 2—2 of Figure 1;

Figure 3 is a perspective view of the underside of the block of Figure 1;

Figure 4 is an enlarged sectional view taken along the line 4—4 of Figure 3; and

Figure 5 is a fragmentary sectional view corresponding to the central part of Figure 2, and illustrating a modified construction.

The improved floor block or slab is indicated in general by the reference numeral 1. This block may be of any desired shape but is here shown as of square shape for convenience in handling and laying in position. The block has a flat smooth upper surface 2 and is of substantially uniform thickness throughout its area, except for a series of legs 5, one at each corner of the block, and, optionally, a leg 6 at the center of the block. These legs are very short, extending below the bottom surface of the slab an amount of the order of $\frac{1}{2}$ of an inch. The slab may be made in any desired manner but in the preferred construction the entire slab constitutes

a casting or a molded article. The material of which it is made, and this is an important feature of the present invention, is one which when cast provides a smooth, pleasing upper surface and which has the necessary resiliency so that it may be flexed a limited amount without producing undue strain in the material or stressing the material beyond its elastic limit. One suitable material is a thermoplastic material, although it is within the purview of the present invention to use plastics other than the "thermoplastics." Any plastic material that has the necessary strength, flexibility, durability and fire resisting properties is suitable. The block may be made in any desired sizes, the preferred size being under six inches square because those sizes are best adapted for handling during the laying of a floor. However, larger sizes may be used. In the case of smaller sizes of blocks the center leg 6 may be omitted. In the case of larger sizes of blocks more than one leg may be provided intermediate the corner legs, the object being to provide sufficient support between adjacent legs to prevent the block from permanently sagging into engagement with its supporting substructure when used. Each one of the legs is provided with a V-shaped groove 8. When the block is to be laid on a floor the head 9 of a nail 10 is inserted into the V-shaped groove 8, dovetailing therein. The block is then set on a floor base, in this case a wooden floor base 12, and the nails driven home by hammer pressure exerted over the top of the block. If desired a coating 14 of an adhesive or cement may be applied to the edge of each block where it is to abut against the adjacent block to permanently seal the joint between blocks. This adhesive may be any desired plastic cement or material which acts as a solvent for the plastic of the blocks, so that the two adjacent blocks are united in one as the solvent dries. This is optional. If the blocks are to be laid on a floor surface of concrete or the like the nails 10 are omitted and, instead, the underside of each leg may be coated with a suitable cement to secure the legs of the tiles to the supporting floor surface 12. In that case the legs 5 are provided with vacuum cups 18 for maintaining the legs in pressure engagement with the sub-floor during setting of the adherent, as illustrated in Figure 5.

It is to be noted that the entire slab is supported above the top of the surface 12 by an amount equal to the height of the legs 5 which, in the preferred construction, is of the order of $\frac{3}{4}$ of an inch. As a result, when the slab is subject to load, as by a person walking across the floor, the slab may give, due to its resiliency, until the bottom surface 15 of the slab rests upon the sub-floor 12. The maximum amount of give when the slab legs 5 are $\frac{3}{4}$ of an inch high is $\frac{1}{4}$ of an inch. When that amount of yield has taken place the bottom surface 15 of the slab rests upon the sub-floor 12, thereby preventing further straining of the slab 1. The stress on the slab 1 is thus so limited that the elastic limit of the material is never exceeded. Therefore, when the load on the flooring is released the slab resumes its normal flat shape, due to its own inherent resiliency.

While I have here spoken of a cast or molded slab, it is within the purview of the present invention to make the slab 1 in the form of a rolled sheet, without the legs 5, which may then be separately secured to the underside of the slab 1 in any desired manner, as by means of

a plastic cement or adherent. Furthermore, slabs of a size in excess of six inches square may be made without the center leg 6 and, if desired, the legs 5 may be somewhat more than $\frac{1}{2}$ of an inch in height. Such slabs may be made as a standard commercial product for general floor use and in those instances where such a larger slab affords too much resiliency, the center leg 6 may be cemented to the underside of the slab after manufacture of the same.

In compliance with the requirements of the patent statutes I have here shown and described a preferred embodiment of my invention. It is, however, to be understood that the invention is not limited to the precise construction here shown, the same being merely illustrative of the principles of the invention. What I consider new and desire to secure by Letters Patent is:

1. A floor tile comprising a slab of resilient material having supporting legs for elevating the main body of the slab above a supporting surface, the supporting legs being of a height to the bottom of the slab substantially less than the thickness of the slab and each of the legs having a nail passage opening therethrough at right angles to the plane of the floor tile, the slab being of material sufficiently resilient to permit bowing of the portion thereof between adjacent legs an amount in excess of the height of the legs and within the elastic limits of the material.

2. A floor comprising a continuous sub-surface member, and a surfacing layer resting thereon, said surfacing layer comprising contiguous tiles each of which has a plurality of spaced short legs spacing each tile from the sub-surfacing layer intermediate its edges, each tile comprising a preformed sheet of sufficient resiliency to permit sufficient flexing of the same under load to bring the intermediate part thereof into abutment with the sub-surface member without exceeding the elastic limits of the material so that upon release of the load the said intermediate part of the tile automatically resumes its normal position spaced from the sub-surface member, each leg having means for securing the tile to the sub-surface member.

3. A floor tile comprising a slab of resilient material having supporting legs at each corner thereof for elevating the main body of the slab above a supporting surface, the supporting legs being of a height below the bottom of the slab substantially less than the thickness of the slab, the slab being rimless so that the slab is free to flex at its very edges under mechanical load between adjacent legs, the slab being of material sufficiently resilient to permit bowing of the portion thereof between adjacent legs an amount in excess of the height of the legs and within the elastic limits of the material, the slab having at each leg thereof a nail-receiving opening terminating in a part adapted to receive and hold the head of a nail, the head holding part being spaced above the base of the leg an amount in excess of the thickness of the leg so that the body portion of the slab is thinner at the nail head than it is between the supporting legs to facilitate hammering of a holding nail in place by hammer blows upon the resilient slab body over the nail head.

4. A floor tile comprising a slab of resilient material having supporting legs at each corner thereof for elevating the main body of the slab above a supporting surface, the slab being rimless so that the slab is free to flex at its very

edge under mechanical load between adjacent legs, the slab being of material sufficiently resilient to permit bowing of the portion thereof between adjacent legs an amount in excess of the height of the legs and within the elastic limits of the material, the slab having at each leg thereof a nail-receiving opening terminating in a part adapted to receive and hold the head of a nail, the head holding part being spaced above the base of the leg an amount in excess of the thickness of the leg so that the body portion of the slab is thinner at the nail head than it is between the supporting legs to facilitate hammering of a holding nail in place by hammer blows upon the resilient slab body over the nail head, the body having an additional supporting leg intermediate the edges thereof which also has a nail-receiving opening therein of the same depth as the other nail-receiving openings, and the body portion adjacent said additional leg having an inclined groove on the underside there-

of for the passage of a nail head into the nail-receiving opening in the said additional leg.

5 A floor tile comprising a slab of resilient material having supporting legs at each corner thereof for elevating the main body of the slab above a supporting surface, the slab being rimless so that it is free to flex at its very edge under mechanical load between adjacent legs, the peripheral edges of the slab each making a sharp right angle corner with the top of the slab so as to permit forming a substantially continuous planar surface of the tops of a plurality of abutting tiles, the slab being of material sufficiently resilient to permit bowing of the portion thereof between adjacent legs an amount in excess of the height of the legs and within the elastic limit of the material, each leg having means formed therein for facilitating securing of the tile to the supporting surface.

JAMES ROE.