Nov. 27, 1934. H. M. NEWTON 1,982,476

FLOORING

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FIG. 1.

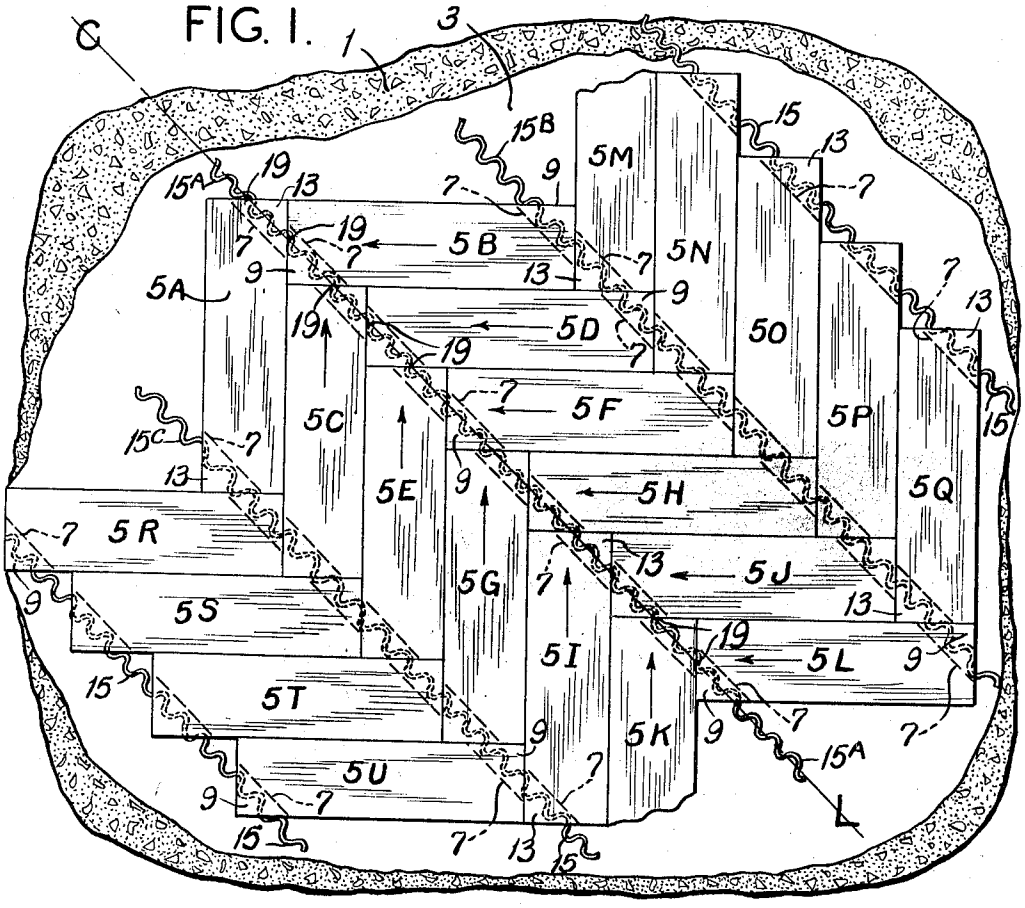


FIG. 2.

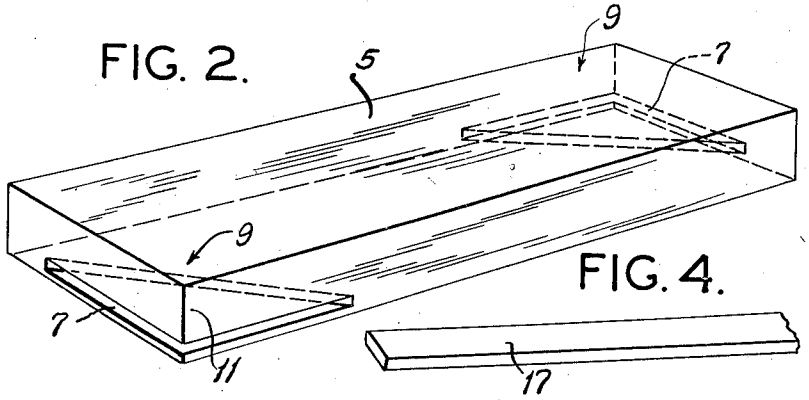


FIG. 4.

FIG. 3.



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FIG. 5.

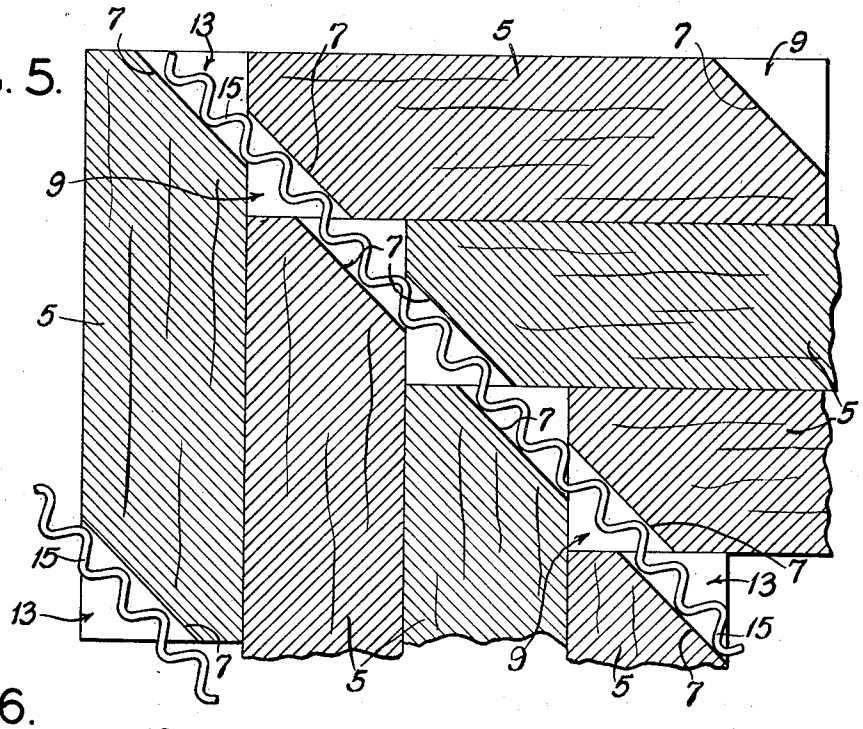


FIG. 6.

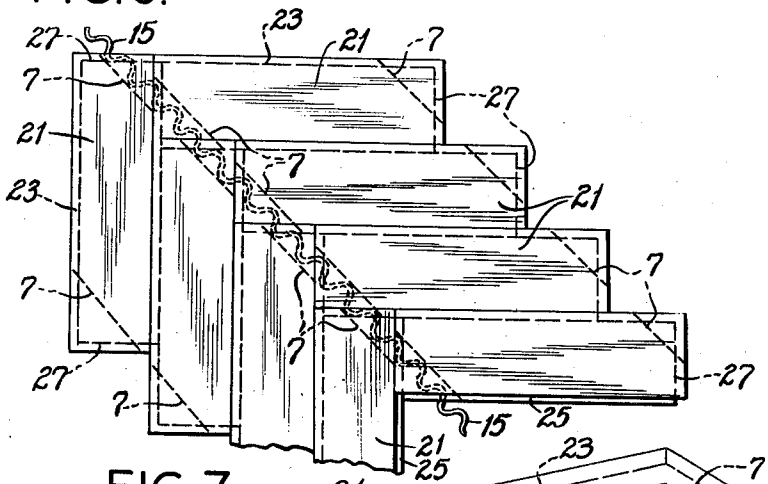
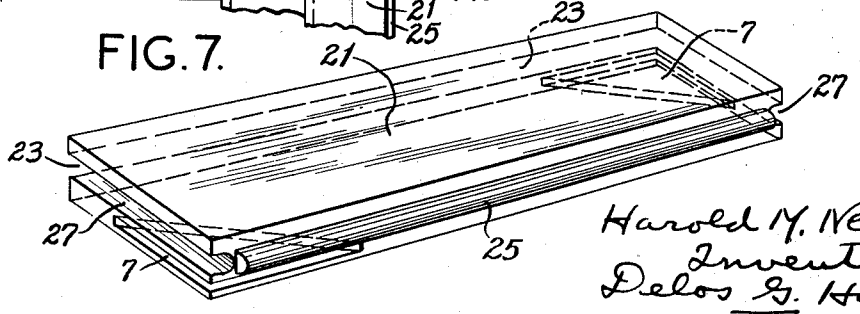


FIG. 7.



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UNITED STATES PATENT OFFICE

1,982,476

FLOORING

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Application August 26, 1933, Serial No. 686,867

9 Claims. (Cl. 20—6)

This invention relates to flooring or pavement, and with regard to certain more specific features, to a wood or similar type of flooring or pavement.

Among the several objects of the invention may be noted the provision of a herringbone or similar floor having provision for an improved keying system; the provision of a floor of this class in which individual short pieces or lengths seek their own proper level on the more or less irregular base and which are keyed in such manner that the said advantageous conditions are maintained; provision of a floor of the class described which may be easily laid and repaired; and the provision of one which is stronger and economical to manufacture and maintain. Other objects will be in part obvious and in part pointed out hereinafter.

The invention accordingly comprises the elements and combinations of elements, features of construction, and arrangements of parts which will be exemplified in the structures hereinafter described, and the scope of the application of which will be indicated in the following claims.

In the accompanying drawings, in which are illustrated several of various possible embodiments of the invention,

Fig. 1 is a plan view of a partially laid floor, embodying one form of the invention;

Fig. 2 is an isometric view of one of the floor units or lengths;

Fig. 3 is a fragmentary, enlarged detail of one form of key;

Fig. 4 is a fragmentary, enlarged view of another form of key;

Fig. 5 is a horizontal section taken through a portion of the flooring of Fig. 1, said section being taken at the elevation of the keys;

Fig. 6 is a fragmentary plan view similar to Fig. 1, showing a modification; and,

Fig. 7 is an isometric view of a unit or length of the floor of Fig. 6.

Similar reference characters indicate corresponding parts throughout the several views of the drawings.

I have discovered that the best form of flooring is that which is made up of a plurality of short lengths of wood or the like, each unit of which, when applied to irregular foundations, immediately seeks its own ultimate level. These short lengths may be subsequently machined and/or sanded to effect a common flat top surface and thereafter, each transmits to the foundation its proportional part of the load imposed upon the floor. I have found that longer lengths of wood bridge irregularities in the foundation and later bend at the bridging portions, thus tending to throw their loads to other pieces by way of the key means used, and thus to introduce fatigue and final breakdown along edges of adjacent lengths. Short pieces are also advantageous in that for a given quality of ultimate finish, a lower initial grade of lumber may be used. This is because short pieces may easily be cut to avoid knots and other blemishes, whereas this is more difficult to accomplish with long pieces. Furthermore, for reasons which need not be detailed, it is at present considered that a herringbone pattern for the layout of the short pieces is desirable. The purpose of the present invention, therefore, is to properly key herringbone flooring at minimum expense, and with maximum advantage.

Referring now more particularly to Fig. 1, there is shown at numeral 1 for example, a concrete base upon which asphaltic or like mastic 3 is spread to form a seat for the wooden flooring per se.

A flooring block per se is isometrically shown at numeral 5 in Fig. 2 the same comprising a simple rectangular block having triangular notches 7 placed in opposite corners 9 by a saw or otherwise. These notches 7 may be cut at any elevation in the blocks including the mid plane but I find that it is preferable to cut them towards the bottom of the block so as to leave a substantial amount of material 11 available at the top of the block to resist wear and deformation. If the notches 7 were cut halfway between the upper and lower faces of the blocks, all blocks would be identical and such a form is contemplated herein for thick blocks.

When the notches 7 are nearer the bottom, as illustrated, then right- and left-hand forms of block are used. What may be referred to as a right-hand block is shown in Fig. 2. A left-hand block is the same except that the notches 7 are cut in the opposite corners 13, indicated in Figs. 1 and 5.

The purposes of the notches 7 is to receive the key members such as shown in Figs. 3 and 4. The form of Fig. 3 is preferable and comprises a length of wire 15 crimped as shown. The diameter of the wire is such as to provide a snug fit in the notches 7.

Another form of key composed of flat wire 17 is shown in Fig. 4. The fit between this flat wire and the notches 7 is also a snug one. Other forms of keys may be used, as will appear.

To lay a floor, one of the blocks "5A" is laid

down, preferably parallel to the side of the room, though not necessarily so. A length of the key (say key 15A) is forced into one of the notches 7, the remainder of the key lying at a diagonal with respect to the block and room.

Thus the block lettered "5A" is first laid down and the key 15A is inserted in notch 7, then block 5B is applied in the direction of the arrow shown thereon, its notch 7 encompassing a portion of the key 15A. Next block 5C is applied in the direction of the arrow shown thereon. Next, block 5D, as shown. The consecutive letters of the alphabet, taken in connection with numeral 5 and the respective arrows, indicate the procedure for laying one herringbone pattern in Fig. 1.

The adjacent herringbone patterns are built up analogously, as indicated by the serial indexes. It is to be understood that this is not the only way of laying the floor, but it is an indication of how each strip may be used for aligning the next and applying the same to the key which is already laid in position. It will also be understood that when the series of blocks 5B—5L are in position, that the key 15B may be applied to the opposite plurality of the notches 7 in said blocks. The same is true of the key 15C in the notches of the series of blocks 5A—5K.

If the flat wire key of Fig. 4 is used, the same procedure is followed, as would be true of any other key. It is to be understood that keys of any material may be used such as wood, composition, metal and the like, and that they may be flat, round, straight, or crimped, and/or of various other forms which will serve the purpose.

From the above it will be seen that it is preferable to have the center line CL of the respective key pass through the centers 19 of the ends of the block, as indicated in Fig. 1. Therefore, the depths of the notches 7 should be such as to include the centers 19 plus a distance which will accommodate substantially one-half the width of the key being used. The depth may of course be greater but for a symmetrical arrangement should not be less. However, in making the notches 7, material should not be cut away to such a depth that the adjacent, unnotched corner is unnecessarily weakened.

From the above it will also be seen that each block can seek its own level with respect to the irregular mastic 3 on the irregular concrete 1, and thus transmit its proper proportion of the load which is imposed upon the floor. This action is further facilitated when no tongues or grooves are used on the sides of the blocks 5, as illustrated in Figs. 1 to 5.

At the same time that the above advantages are obtained, opposite corners of the individual pieces are properly anchored but adjacent, diagonally disposed corners are maintained strong by not being notched. Any warping that may occur to an individual piece is not transmitted to any adjacent pieces to any substantial degree. Thus extended bridging of the floor is minimized. Also, the flooring is diagonally braced in the plane of the blocks whereby resistance to endwise movement is made a maximum for all blocks, with a minimum amount of keying material.

To make a repair, it can be ascertained in which direction the keying material runs because it is always parallel to the direction of the herringbone pattern. It may then be cut by introducing a sharp tool between adjacent blocks and cutting a key. After a few blocks are lifted out, separation of the remainder from the keys is easy. Thus the flooring may be taken up with less trouble than ordinary tongue and groove flooring.

In Figs. 6 and 7 is shown how the invention may be applied to flooring in which it is desired to use tongued and grooved material. A block of this material is indicated at numeral 21, the same being provided with a groove 23 and a tongue 25. Endwise grooves 27 are also used. Below the tongues and grooves are placed the notches 7 in the manner as above directed. The flooring is assembled in the same way as above set forth. It is to be understood that the non-tongued modification is the most desirable as it minimizes bridging but some may prefer tongued and grooved material.

In view of the above, it will be seen that the several objects of the invention are achieved and other advantageous results attained.

As many changes could be made in carrying out the above constructions without departing from the scope of the invention, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

I claim:

1. Flooring comprising lengths of flooring material of rectangular shape having notches in diagonally disposed corners thereof, the other diagonally disposed corners being unnotched, said lengths being laid herringbone fashion, and said notches being of such depth as to form continuous passages at the ends of blocks adjacently placed, and a key positioned in said passage.

2. Flooring comprising lengths of flooring material of rectangular shape, triangular notches in diagonally disposed corners thereof, the other diagonally disposed corners be unnotched, said flooring being laid herringbone fashion, and said notches being of such depth as to form continuous passages at the ends of blocks adjacently placed, and at least one continuous key positioned in said passage.

3. Flooring comprising a series of lengths of flooring material, said lengths of material being abutted herringbone fashion and at least one key member passing through certain corners of said lengths at the points of abutment, but certain other corners having no keys passing therethrough, said lengths having notches only at the points of abutment where said keys are accommodated, said key being diagonally arranged with respect to the respective lengths.

4. Flooring comprising a series of lengths of flooring material, said lengths of material being abutted herringbone fashion, at least one key member passing through certain corners of said lengths at the points of abutment, said lengths having notches at certain points of abutment for accommodating said key, said key being diagonally arranged with respect to the respective lengths, and said notches having a triangular form, one being located in oppositely disposed corners of each length leaving solid the other oppositely disposed corners of each length.

5. Flooring comprising right- and left-hand blocks abutted herringbone fashion having right-angular corners, said blocks having triangular notches in oppositely located corners thereof and below the planes of the mid portions thereof, the notches in the right-hand blocks being in one diagonally located set of corners only and the notches in the left-hand set being in another diagonally located set of corners only, whereby said notches become aligned when the blocks

are abutted herringbone fashion, and key means in the aligned notches.

6. Flooring comprising right- and left-hand blocks abutted herringbone fashion, said blocks having substantially triangular notches in oppositely located corners thereof and below the planes of the mid portions thereof, the notches in the right-hand blocks being in one diagonally located set of corners and the notches in the left-hand set being in another diagonally located set of corners, whereby said notches become aligned when the blocks are abutted herringbone fashion, and key means interposed in the aligned notches, said notches being of a depth adapted to include the centers of the ends of the blocks and at least one-half of the key width but excluding the other corners of the block.

7. Flooring comprising right- and left-hand tongued and grooved blocks abutted herringbone fashion, said blocks having notches across oppositely located corners thereof, the notches in the right-hand blocks being in one diagonally located set of corners and the notches in the left-hand set being in another diagonally located set of corners, whereby said notches become aligned when the blocks are abutted herringbone fashion, and diagonal key means interposed in the aligned notches, said notches being of a depth adapted to include the centers of the ends of the blocks and at least one half of the key width but excluding the other corners of the blocks.

8. Flooring comprising right- and left-hand blocks abutted herringbone fashion, said blocks having triangular notches across oppositely located corners thereof and below the planes of the mid portions thereof, the notches in the right-hand blocks being in one diagonally located set of corners and the notches in the left-hand set being in oppositely disposed diagonally located corners, whereby said notches become aligned when the blocks are abutted herringbone fashion and key means interposed in the aligned notches, said key being wider than high, said key comprising wire of a diameter adapted to snugly fit the notches and being laterally crimped.

9. Flooring comprising right- and left-hand blocks abutted herringbone fashion, said blocks having triangular notches across oppositely located corners thereof and below the planes of the mid portions thereof, the notches in the right-hand blocks being in one diagonally located set of corners and the notches in the left-hand set being in oppositely disposed diagonally located corners, whereby said notches become aligned when the blocks are abutted herringbone fashion and key means interposed in the aligned notches, said key being wider than high, said key being of rectangular section.

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