April 9, 1963 A. J. KING, JR., ET AL 3,084,406

MOSAIC FLOORING BLOCK AND METHOD OF FORMING THE SAME

Filed Jan. 9, 1961

FIG. 1.

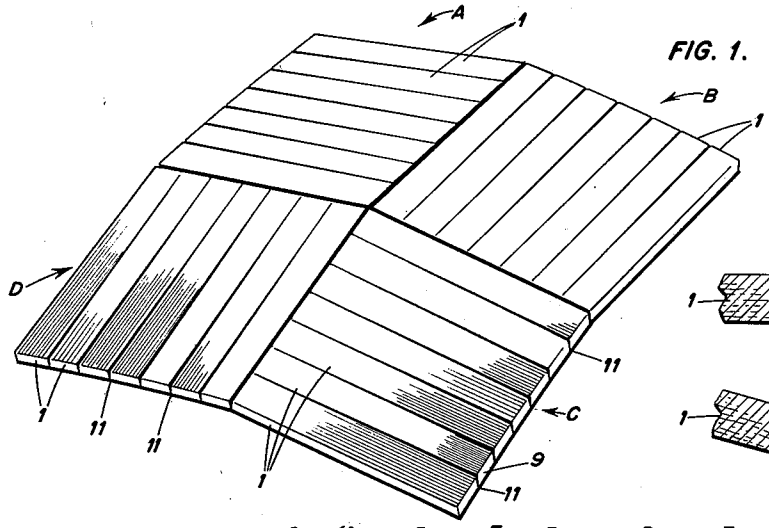
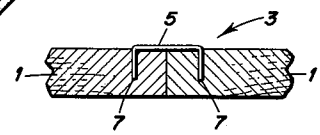


FIG. 3.



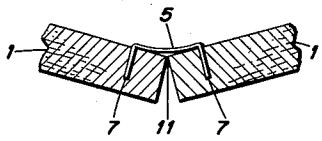
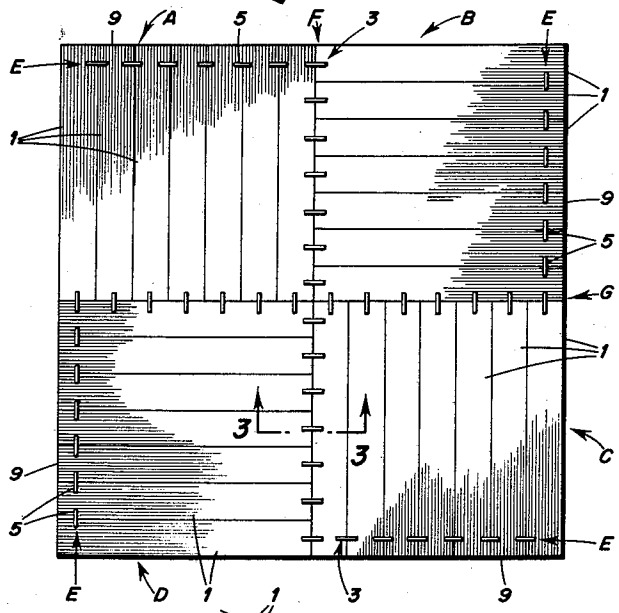


FIG. 4.

FIG. 2.



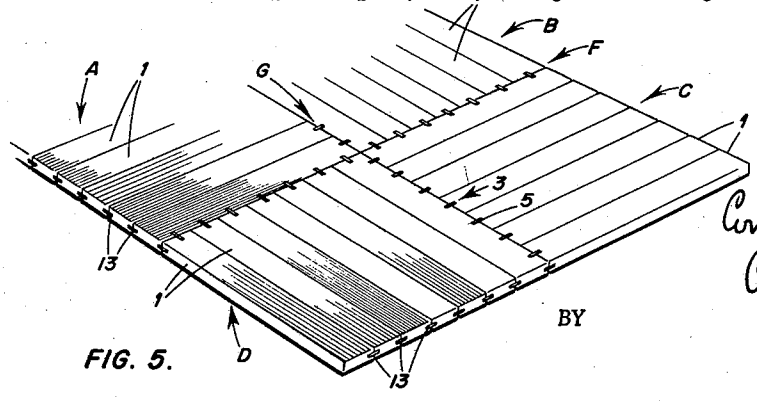


FIG. 5.

INVENTORS
Andrew J. King, Jr.
Arthur B. Fain

BY

Peck & Peck
ATTORNEYS

United States Patent Office 3,084,406 Patented Apr. 9, 1963

3,084,406

MOSAIC FLOORING BLOCK AND METHOD OF FORMING THE SAME

Andrew J. King, Jr., and Arthur B. Fain, Sevierville, Tenn.; said Fain assignor to said King

Filed Jan. 9, 1961, Ser. No. 81,414
2 Claims. (Cl. 20—78.6)

This invention relates broadly to the art of parquet flooring, and in its more specific aspects it relates to the construction of parquet blocks which are formed from a plurality of components or squares composed of slats; and the nature and objects of the invention will be readily recognized and understood by those skilled in the art to which it relates in the light of the following explanation and detailed description of the accompanying drawings illustrating what I at present believe to be the preferred embodiment or mechanical expressions of my invention from among various other forms, arrangements, combinations and constructions, of which the invention is capable within the spirit and scope thereof.

It is customary in the parquet flooring field to form the parquet blocks at the mill and ship them to the site of installation where they are individually laid or set in an adhesive which has been applied on the foundation upon which the floor is to be laid. The parquet blocks comprise squares which are integrated to form the block unit and each square is composed of a plurality of relatively narrow wooden slats. It will be understood that for shipment and to retain a mosaic or the like design, some means must be provided for holding the individual squares together to form the block unit and for holding the individual slats together to form the squares. This necessity for connecting the various components of a parquet block together so that they will maintain their desired relative unit forming positions during shipment and installation has been a problem which has not heretofore been satisfactorily solved by the parquet flooring industry, and it is a problem which we have solved in a simple, practical and highly satisfactory manner.

It has been conventional practice in this art to assemble and co-relate the slats which form the squares and the squares which form the block, in a squaring jig and then to apply by adhesive or the like a paper over one surface of the assembled block. It has also been proposed to adhesively apply a foil over one surface of the assembled block. With the components of the block in assembled condition and held in such condition, the block may be transported to the site of use and then laid.

Parquet flooring blocks which are maintained in assembled position during shipment and laying, by means of a sheet adhesively applied to a surface thereof, present a variety of problems to the installer and can result in an improperly laid parquet floor if great care is not exercised.

For instance, when a sheet maintaining means is used, moisture impregnation occurs from the adhesives and resins, and a retack problem occurs, and this results in shrinkage of the block unit which, obviously, is undesirable from every standpoint.

In the laying operation of blocks having paper or the like maintaining sheets thereon, adhesive is applied over a section of the foundation and then the sheets on four or five blocks are dampened whereupon the four or five blocks are laid in the adhesive with the sheet side up. It is then necessary to use a brush or sponge to again dampen the sheet and to then peel it off.

It will be appreciated that there will often be some displacement of the individual slats after removal of the paper and before the adhesive has set and this requires

the installer to positionally adjust the individual slats to properly relate them in the block unit, and then the slats are seated by tapping them with a tapping block, rubber mallet or with the hands.

These operations are repeated for each section of flooring until the foundation is covered with the parquet flooring blocks.

It will be recognized that the use of paper or the like sheets to maintain the components of a parquet block in assembled relation produces substantial time losses not only in the production of the blocks, but also in the installation thereof, and also may, and often does, result in an imperfect installation.

We have devised means for maintaining the components of a parquet flooring block in assembled relation, which overcomes the above-mentioned, and other, disadvantages which are inherent when a sheet is used which must be removed when the blocks are laid. Not only have we eliminated these disadvantages, but we have provided parquet block component maintaining means from which many positive advantageous results flow.

In developing our invention we have provided substantial economies in time and expense in both the production and installation phases of the parquet flooring block by providing mechanical means for connecting the individual slats of a square together and for connecting the squares together to form the unitary parquet flooring block. The connecting or attaching means which we have evolved is applied with facility and eliminates the drying step heretofore necessary in the production of blocks having adhesive sheet means for maintaining the block components in assembled properly related position.

The mechanical connecting means by which we connect and co-relate the components of the parquet flooring block together are of such character and so related to said components that the assembled block will withstand relatively rough handling in storage, shipment and installation, and such mechanical means is relatively inexpensive to produce and may be applied to the block components expeditiously and with little or no skill required from the workman assembling the components in the block formation.

As we have stated above, one of the major drawbacks of the maintaining sheet of the prior art is that it must be dampened for removal during the laying operation which, among other factors, is costly in time. It has, therefore, been one of our prime purposes to devise means for maintaining block components in assembled condition which is a permanent part of the block and is laid with it and is at no time removed therefrom. This highly desirable result has been accomplished by us without in any way sacrificing economy, time, or sure and long-lasting connection of the block components.

The mechanical connecting means which we have devised requires no adhesives or the like, thus we have effectively eliminated the problem of moisture impregnation and its deleterious effects on the block.

As far as we are aware, parquet flooring of the type in which we are particularly interested is finished (i.e. sanded, polished, etc.) after it is laid and not at the mill. It is believed that the reason for this resides in the fact that the sheet maintaining means previously used is of insufficient strength to withstand the displacing pressures applied to the block components during a finishing operation, and the sheet is applied on the top surface of the block which obviously prevents refinishing. The connecting means for the block components which we have developed is endowed with sufficient strength to withstand such displacing pressures so that blocks may be finished at the mill where the blocks are produced and assembled. This is significant for many reasons: for instance, sub-

stantial economies may be effected by finishing at the mill rather than on the job, closer design results may be obtained and production line methods may be followed.

The connecting means of our invention is in the form of a metal staple having a degree of flexibility or malleability, which is fixed to and extends between adjacent slats in a square and between adjacent squares. The staples function somewhat as a hinge medium between slats and are fastened in position under tension, causing a flexing upwardly of the block away from the lower side in which the staples are forced.

From our experience in this field we have learned that in many cases the foundation upon which the parquet flooring blocks are to be laid does not provide a fully plane surface; however, due to the upward arching or flexing of our block and the degree of flexibility in the staples the components of the block will accommodate the foundation contours and/or such contours in the adhesive which has been applied to the foundation.

In laying parquet flooring blocks of the character of those of this invention it is desirable that the adhesive not penetrate between the slats, and as will become apparent as this description proceeds, the connecting means we employ causes the lower edges of adjacent slats to be in abutting relation to thereby prevent penetration of adhesive therebetween.

The metal staple connecting means is not removed when the blocks are laid in the adhesive and there can be no displacement of the slats during the laying operation, or at any time; hence, the installer need not individually set displaced slats. When a block has been laid, the installer merely rolls a roller over the block to insure proper setting of the components thereof.

Realizing that after years of use parquet floors may need refinishing, we have attached our connecting means on the underside of the blocks and removed from the upper surface thereof to leave a depth of wood for refinishing purposes.

With the foregoing general objects, features and results in view, as well as certain others which will be apparent from the following explanation, the invention consists in certain novel features in design, construction, mounting and combination of elements, as will be more fully and particularly referred to and specified hereinafter.

Referring to the accompanying drawings:

FIG. 1 is a perspective view of a parquet flooring block illustrating the arched construction thereof prior to being laid.

FIG. 2 is a bottom plan view of the parquet flooring block.

FIG. 3 is a view taken on line 3—3 of FIG. 2.

FIG. 4 is an enlarged sectional view showing the flexing between adjacent slats before the block is laid.

FIG. 5 is a bottom plan view of a modified form of parquet flooring block.

In the accompanying drawings, particularly FIGS. 1 and 2 thereof, we have illustrated the preferred form of parquet or mosaic flooring block as being composed of four squares designated in their entireties by the letters A, B, C and D, which are connected together in a manner to be described to provide an assembled flooring block unit. These four squares constitute the major components of our flooring block.

Each square A, B, C and D is composed of a plurality of individual wooden slats or elements **1** which are dimensionally equal and are relatively thin, are elongated and relatively narrow. For instance, and merely by way of example, and not as a limitation, each slat may be on the order of 5/16" in thickness, 6 5/8" long and 7/8" wide. In the example illustrated in the drawings each square is composed of seven slats and the block is composed of four squares providing a 12 11/16" square block. These slats **1** constitutes the minor components of our flooring block.

In forming a square, seven slats are positioned with the longitudinal edges of adjacent slats in abutting relation and adjacent slats are connected together by means of metal staples designated generally by the numeral **3**. Each staple comprises a bridging portion **5** from each end of which a prong **7** depends. The staples selected for this use have a degree of flexibility or malleability so that they will function in the desired manner. The staples are inserted or caused to penetrate into the slats adjacent to but inwardly spaced from one of the transverse edges **9** thereof and one prong is inserted or forced into one slat and the other prong is inserted or forced into the next adjacent slat with the bridging portion **5** extending across the adjacent longitudinal edges of adjacent slats. When all four squares A, B, C and D have been formed by connecting each group of seven slats together, it will be apparent that each square will have a row or series of slat connecting staples which we shall term the slat connecting series of staples E. When the squares have been formed as described, they may be brought into juxtaposition to form the flooring block as disclosed in FIG. 2 of the drawings, with the series of staples E of each square being positioned adjacent the free edge of each square which is composed of the transverse edges or ends of the slats.

With the squares A, B, C and D brought together to block forming position as described, two edges of each block will be in abutting relation with adjacent edges of two other block, and one of said two edges will comprise the longitudinal edge of the end slat and this edge will abut the edge of the adjacent square which is composed of the transverse end edges of the slats, while the other of said two edges will be composed of the transverse end edges of the slats and this edge will abut the edge of the next adjacent square which is composed of the longitudinal edge of the end slat. Thus, in the parquet block unit transverse edges of slats will abut a longitudinal edge of an end slat of a square.

To connect the squares together into block forming position we use the staples **3** which have been described and we connect the transverse end of each slat with the end slat which they abut, thereby providing two series or rows of square connecting staples F and G.

It will now be recognized that upon completion of the slat connecting series E and the square connecting series F and G, a unitary parquet flooring block is provided in which the various components are permanently connected together with a degree of flexibility.

While we have described, by way of example, one method of forming the squares and assembling them into a block unit, it is within our contemplation to assemble the slats to form the squares and to position the squares into block forming position in various manners.

The staples we use preferably have prongs **7** which are of reduced length relative to the thickness of the slats, and since the blocks are laid with the staples in down position, there is a substantial thickness of wood between the prong ends and the upper or face surface of the block. Due to this construction the blocks may be refinished a number of times with no danger of the surface being worn down to the ends of the prongs.

While we have disclosed staples having straight prongs, it is within the spirit and scope of this invention to use staples having barbed prongs or any other form of staple which is suitable for use as a connecting medium for the components of a parquet flooring block.

It is preferable to apply the connecting staples to the slats when they are lying flat because this places the staples under slight tension which gives the prongs a tendency to spread which causes arching of the entire unit, as illustrated in FIG. 1 and as shown in FIG. 4 in an exaggerated manner for purposes of illustration. Not only does this slight tension of the staples produce this arching or flexing action, but each staple acts as a hinge connector between adjacent slats so that when the block is picked up in readiness for being laid in the adhesive, there can be limited relative movement between adjacent

components of the block unit. FIG. 4 is illustrative of the hinging action of a staple.

In FIG. 1 of the drawings we have illustrated a block in readiness to be laid into the adhesive, and have shown how the block will flex upwardly due to the tension of the staples and their limited hinging action under the weight of the components. With adjacent slats 1 of the block in angular relation with respect to one another due to the limited hinging action of the staples 3, the lower stretches of adjacent edges of adjacent slots will be in relatively tight abutting relation as at 11 so as to prevent penetration of adhesive between adjacent slats. Now, as the block is pressed down into the adhesive, it will flatten out and the slats will assume substantially co-planar relation, but due to the flexibility and hinging action of the staples which lends a degree of flexibility between the block components, the block unit will adjust itself to varying contours of the surface upon which it is being laid.

It will be understood that the staple connecting means, while being endowed with limited flexibility or bendability, functions with sufficient strength and rigidity to maintain the block components in proper positions so that the blocks may be pre-finished at the mill and prior to being laid, and of course the staples hold the components together during the necessary handling in shipment and storage.

It should be understood that one of the features of our invention is the use of a multiplicity of separate, individual connecting means for the slats and squares, which are permanently attached to the block and are not adapted for removal when the block is laid. And it is within our contemplation to utilize staples or connecting means which function to maintain the slats and squares in position, whether or not the staples are flexible or bendable.

In FIG. 5 of the drawings we have illustrated a modified form of parquet flooring block and in the following description thereof we have used the same reference characters as used above to designate similar parts.

In this form of the invention the parquet flooring block is formed of the four squares A, B, C, D and the four squares are formed of the plurality of slats 1 as heretofore described. The squares A, B, C and D are connected into block forming positions, as in the preferred form of our invention, by two series of staples F and G.

The slat connecting means for connecting the individual slats of each square together comprise staples designated by the numeral 13 which have the same characteristics as the staples or connecting means 3 described in connection with the preferred form of the invention. We connect the individual slats together by inserting a staple 13 across the outside transverse ends of the adjacent slats in each square, the staples being positioned so one prong of a staple is inserted in a transverse outside end of a slat and the other prong is inserted in the transverse outside end of the next adjacent slat so that the body of the staple extends between and connects adjacent slats. It will be apparent that the staples 13 may be countersunk in the slats so that the block units may be laid in abutting relation.

It will now be appreciated that we have devised a parquet flooring block which has eliminated the disadvantages inherent in prior parquet flooring blocks, and is endowed with useful and advantageous characteristics.

We claim:

1. A flooring block composed of major components and each major component being composed of a plurality of slats having longitudinal and transverse edges, the slats being arranged with the longitudinal edges of adjacent slats in abutting relation providing a major component having opposite transverse edges formed by the transverse edges of the slats and opposite longitudinal edges each formed by a longitudinal edge of a slat the transverse edges and the longitudinal edges of each major component being of equal length, a series of separate, bendable staples, each being connected to and extending between adjacent slats and across the longitudinal edges thereof to connect the slats together to form a major component, said major components being arranged in a flooring block with a transverse edge of one major component in abutting relation with a longitudinal edge of an adjacent major component, and a plurality of bendable staples connected to and extending across abutting longitudinal and transverse edges of the major components to form a flooring block, and each flooring block being composed of a number of major components which are a multiple of four, said staples being connected to said major components adjacent to but spaced from said longitudinal and transverse edges, and said series of separate, bendable staples being connected to the slats adjacent to the transverse edge of the major component which is remote from the opposite transverse edge which is in abutting relation with the longitudinal edge of an adjacent major component, whereby said slats are held in position along both transverse edges thereof.

2. A flooring block in accordance with claim 1, wherein one of said plurality of bendable staples is fixed to and extends from a point adjacent the transverse edge of each slat over said transverse edge and the longitudinal edge of the next adjacent major component to a point on the next adjacent major component.

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