Oct. 6, 1925. 1,555,922

C. F. JOHNSON

FLOORING AND PROCESS OF MAKING THE SAME

Filed Sept. 8, 1924

Fig. 1.

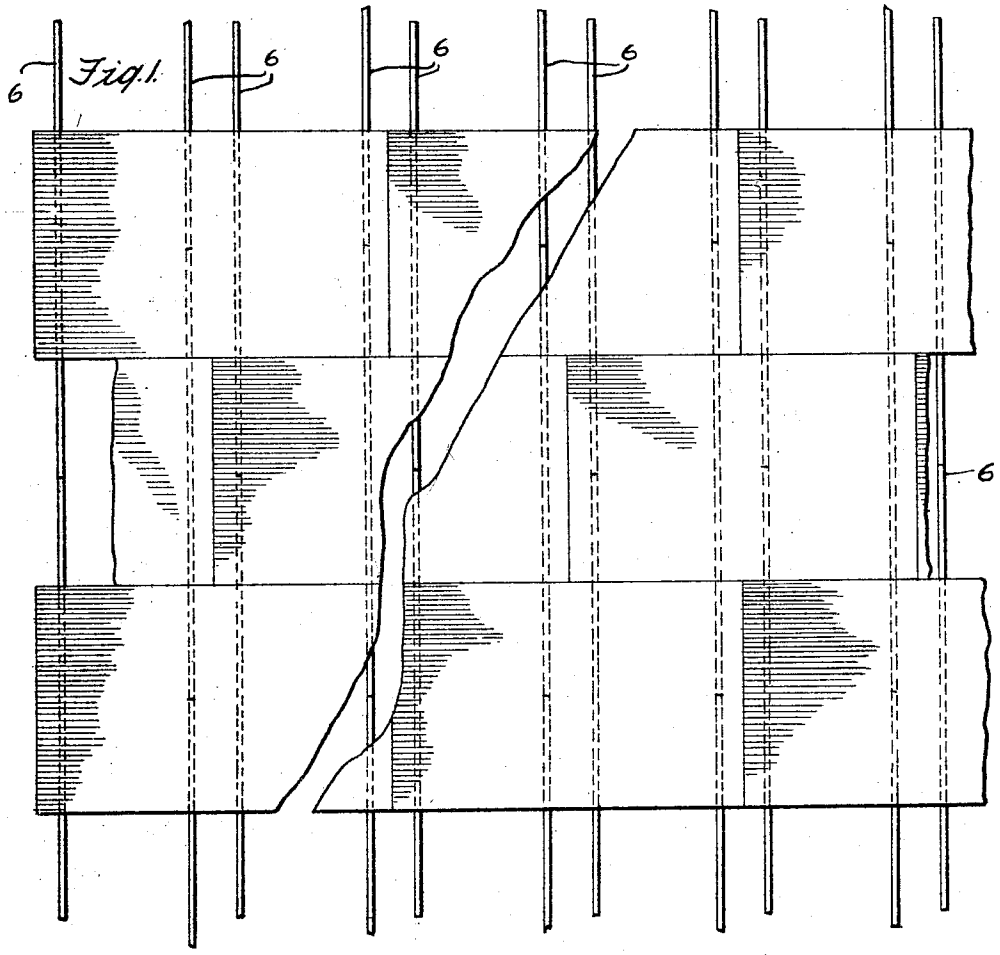


Fig. 2

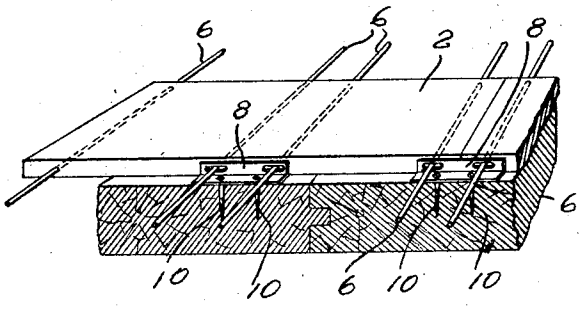
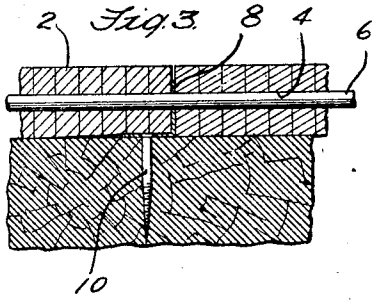


Fig. 3.



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UNITED STATES PATENT OFFICE.

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FLOORING AND PROCESS OF MAKING THE SAME.

Application filed September 8, 1924. Serial No. 736,540.

To all whom it may concern:

Be it known that I, CHARLES FRED JOHNSON, a citizen of the United States, residing at 346 Main Street, Johnson City, New York, have invented a certain new and useful Improvement in Flooring and Processes of Making the Same, of which the following is a clear, full, and exact description.

This invention relates to flooring and particularly to flooring of the type manufactured by the assignee of the present invention and which in some of its forms has been disclosed in co-pending applications of Ansel C. Denning, deceased, Serial No. 414,461, filed October 4, 1920, Serial No. 478,623, filed June 18, 1921, and Serial No. 580,654, filed August 9, 1922.

This flooring, which is formed of strips of fibrous sheet material including waste leather in its composition, the strips being assembled upon rods, has had its most extensive use in factories and places presenting similar conditions. The flooring, however, has many characteristics, such as its heat, sound and electrical insulating properties and its durability which render it particularly desirable for use in other places, such as churches, schools, etc., where the appearance of the floor is an important consideration. The appearance is dependent to a large extent upon the manner in which the flooring is laid, upon the facility with which the elements of the floor are assembled in such contiguity and regularity as to present an appearance of uniformity, and upon the permanence of the relationship of the parts thus established.

The invention aims generally, therefore, so to improve the construction of flooring of the type of that disclosed in the above-identified applications of Ansel C. Denning, deceased, as to facilitate the laying thereof in a presentable manner and to permit the floor, as laid, to be so secured in its laid condition as to insure the permanence of its presentable appearance. The invention aims also so to improve the construction of flooring of this type, and particularly of the sections of the flooring as they are shipped in commerce, as to facilitate its handling and shipment and also its appearance in its unlaid condition.

An important feature of the invention is a new process of forming the flooring block or section, and a further important feature of the invention is the novel process of laying the flooring and the novel means for securing it in laid condition whereby greater uniformity is obtained both in the appearance of the floor as a whole and in the resistance of its elements to displacement.

Other objects and important features of the invention will appear from the following description and claims when considered in connection with the accompanying drawings, in which—

Figure 1 is a plan view, partly broken away, of a section of flooring embodying the present invention;

Fig. 2 is a perspective view of a block and a section of an adjoining block, this view illustrating particularly the manner of attaching the floor to the under floor and the means for effecting such attachment; and

Fig. 3 is a detail section illustrating the manner of interlocking the blocks and of attaching the floor to the under floor at the junction of two blocks.

As hereinabove pointed out, the flooring, which constitutes the subject matter of the present invention, is of the general type of that disclosed in the co-pending applications hereinabove identified of Ansel C. Denning, deceased, and, like the flooring disclosed in said applications, is composed of strips 2 of fibrous sheet material which may be of a composition similar to that heretofore employed, these strips being cut from the sheet and punched with rod-receiving holes 4 and thereafter formed into blocks in a manner which differs in many respects from that employed in forming the blocks described in the co-pending applications hereinabove referred to.

As in the case of the flooring disclosed in the co-pending application Serial No. 580,654, filed August 9, 1922, the fibrous sheet material is preferably waterproofed, and this waterproofing is preferably done after the strips are cut from the sheet so as to insure penetration of the waterproofing material into the exposed edges of the strips as well as into the faces which are contiguous in the block. Such waterproofing may be effected either by assembling the strips loosely upon rods 6, as set forth in said last-mentioned co-pending application, and then immersing the assembled block thus formed in the waterproofing compound, thus insur-

ing exposure of all faces of the strips to the waterproofing; or the strips may be immersed in the waterproofing compound or otherwise treated therewith individually.

After having preferably been waterproofed as just described, the strips are assembled into block form, and to this end, according to the present invention, they are preferably assembled loosely upon rods passing through the rod-receiving openings in the strips until a block of substantially the desired dimensions has been formed, the block thus formed being then immersed in an adhesive compound whereby the faces of the strips are covered with adhesive, and particularly the contiguous faces, after which the block is subjected to pressure lengthwise of the rods to squeeze the strips into intimate contact and insure the sticking together of the strips under the action of the adhesive. The block is then allowed to dry and the substantially permanent construction thus formed then has the rods removed, thus leaving the rod-receiving openings in condition readily to receive the rods again in the floor laying process hereinafter to be described.

To insure accurate fitting of the blocks to each other in the floor and uniformity of size and appearance, and also to improve the appearance of the blocks as they are shipped in commerce, the block, after the strips have been united by the adhesive in the manner hereinabove described, is preferably then taken to a die press, where it is cut to the desired size and contour.

As in the process of making the blocks of the copending applications, the block of the present invention may, at some stage in its manufacture, have its face, which will be exposed in the floor, sanded or otherwise smoothed off, this sanding operation usually preferably preceding the waterproofing operation in order to prevent clogging of the sanding wheel with the waterproofing material.

As hereinabove pointed out, an important feature of the invention is the process of laying the novel flooring hereinabove described, and the novel means and method of securing this flooring in laid condition so as to meet the various atmospheric and other conditions to which the floor is subjected, and to insure the permanence of its presentable appearance.

As is herein shown, the flooring blocks constructed in the manner hereinabove set forth, are laid so as to break joints in one direction, the rod-receiving openings in the blocks being so spaced that when the blocks are caused to break joints, as shown, by having the line of contact between two adjacent blocks intersect the next block at its middle, the rod-receiving openings of this last-mentioned block will register with the rod-receiving openings of the aforementioned contiguous blocks where the blocks overlap. As herein shown, each of the blocks is provided with four rod-receiving openings and therefore where the blocks are caused to break joints midway of their lateral dimensions, two of the openings of the block breaking the joint will register with two of the openings of one of said blocks contiguous at the joint and the other two openings of said joint-breaking block will register with two of the openings of the other contiguous block.

In the laying of the floor, as herein shown, rods are inserted in the blocks so as to extend from the openings in one block into the registering openings in the joint-breaking block, this being continued throughout the floor in such manner that there is an interlocking of all of the blocks in the direction of the rod-receiving openings.

To secure the blocks in position in the floor and to secure them to the under floor against vertical displacement, means are provided, according to the present invention, for engaging the rods, preferably between the blocks. Such means may consist, as herein shown, of brackets 8 of sheet metal bent up into angular form and provided with somewhat elongated rod-receiving openings, these brackets being adapted to be secured to the under floor by screws or nails or nail screws 10. The elongation of the rod-receiving openings in these brackets permits a limited lateral movement of the rods in the case of expansion of the floor due to excessive moisture or other peculiar atmospheric conditions, thereby preventing buckling of the floor or of the individual blocks.

As herein shown in Figs. 2 and 3, these brackets, which are made of relatively thin sheet metal, have their upright portions somewhat narrower than the vertical width of the strips from which the blocks are made, whereby the upper edges of the brackets stop considerably short of the surface of the floor and are thus not exposed in the finished floor.

As shown in Fig. 1 of the drawings, the rods 6 are preferably of such length that they will not only extend through the block but somewhat beyond the ends of the openings, thus permitting an interlocking of the blocks, such as shown in Fig. 1, in which there are in each block two rods which extend entirely through the block and substantially half way through those blocks which have openings registering with the openings in which these rods are situated, and also rods extending into the other two openings of this block from each of two pairs of blocks on opposite sides of this block and meeting substantially at the middle of the first mentioned block. Any

desired grouping of the rods to obtain a substantially even distribution of their interlocking action may be utilized; for example, that shown in Fig. 1, in which alternate rods extend entirely through the blocks, while the other openings in the blocks are occupied by rods from opposite blocks meeting at the middle.

It will be noted that each of the brackets 8 is provided with two rod-receiving openings so spaced as to engage two rods and also so spaced as to engage a rod of each of two adjoining blocks as shown in Fig. 2.

What is claimed as new is:

1. The process of making a flooring block which consists in threading upon rods strips of sheet material of a width corresponding to the desired thickness of the block and provided with rod receiving openings, said strips being coated upon their abutting faces with adhesive, pressing the strips into intimate contact and, after the adhesive has set, removing the rods and then cutting the block to the desired contour and size.

2. The process of making a flooring block which consists in cutting from sheet material strips of a width corresponding to the desired thickness of the block, punching holes in said strips, threading said strips upon rods, immersing the block thus formed in a bath of adhesive, pressing the strips along said rods into intimate contact and then removing said rods.

3. The process of making a flooring block which consists in cutting from sheet material strips of a width corresponding to the desired thickness of the block, punching holes in said strips, threading said strips upon rods, immersing the block thus formed in a bath of adhesive, pressing the strips along said rods into intimate contact, drying the block, removing the rods and then cutting the block to the desired contour and size.

4. The process of making a flooring block which consists in cutting from fibrous sheet material strips of a width corresponding to the desired thickness of the block, punching in each strip correspondingly spaced holes, waterproofing the strips, threading said strips upon rods extending through each of said openings and pressing said strips, while coated with an adhesive upon each abutting face and while held upon said rods, along said rods into intimate contact, permitting the adhesive to set thoroughly and then removing the rods and cutting the block to the desired contour and size.

5. A floor formed of blocks having registering openings, rods in said openings extending across the joints between successive blocks whereby the blocks are interlocked, and means extending up between successive blocks and engaging said joint-spanning rods for connecting the floor to the under floor.

6. A floor formed of blocks having openings therethrough parallel to each other and also parallel to the face of the block, said blocks being laid upon an under floor in such manner as to break joints and to have openings of one block register with openings of adjacent blocks, rods in said openings extending from one block into the adjacent blocks, and means confining said joint-spanning rods against movement away from the under floor constructed to permit lateral movement of said rods.

7. A floor formed of blocks each having openings registering with the openings of succeeding blocks, rods of lengths greater than the lengths of the openings through the block, each rod extending through an opening in a block into blocks adjoining said first mentioned block at the ends of said opening, each of said blocks having a plurality of openings and having in one opening a rod extending entirely through the block and receiving in another opening receiving portions of other rods which extend through blocks upon opposite sides of said first-mentioned block, and means for confining said joint-spanning rods against movement away from the under-floor.

8. The process of laying a floor which consists in forming floor blocks with parallel rod receiving openings, laying said blocks to break joints but with rod openings of each block registering with rod openings of adjacent blocks, introducing rods into said openings during the laying operation in such manner as to extend from the openings of one block into the openings of adjacent blocks and thus interlock the blocks against relative movement out of the plane of the floor, and connecting said joint-spanning rods to the under floor at points between the blocks.

9. A floor formed of blocks having registering openings, rods in said openings extending across the joints between successive blocks whereby the blocks are interlocked, and means extending up between successive blocks and engaging said joint-spanning rods for connecting the floor to the under-floor, said means comprising angle plates each having a horizontal portion adapted to lie underneath one of the blocks and to be attached to the under-floor and having a vertical portion extending between the blocks and through which one of the rods extends.

Signed at Johnson City, N. Y. this 4th day of September, 1924.

C. FRED JOHNSON.