April 7, 1925. 1,533,074

A. C. DENNING

FLOOR AND PROCESS OF LAYING FLOOR

Filed Oct. 4, 1920

Fig 1

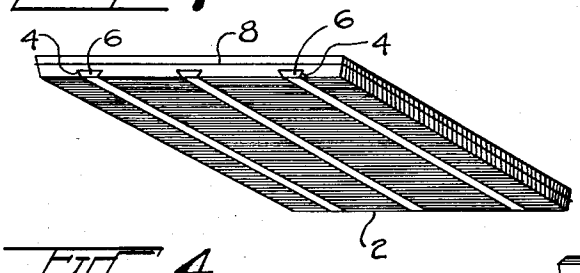


Fig 2

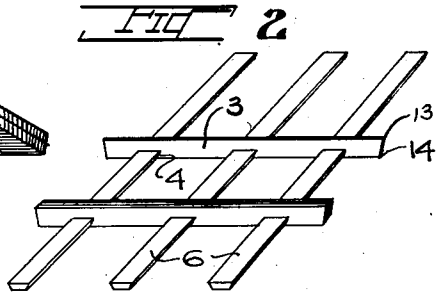


Fig 4

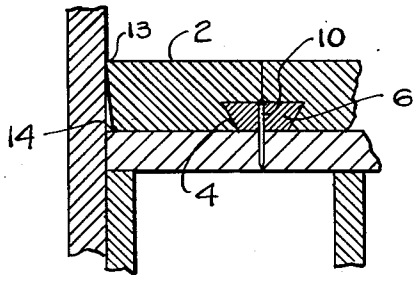


Fig 5

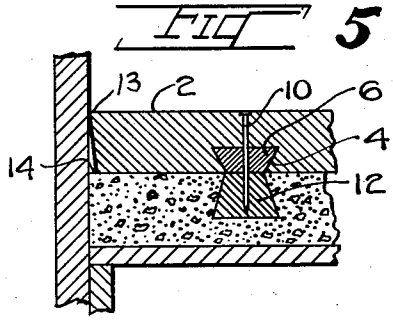


Fig 3

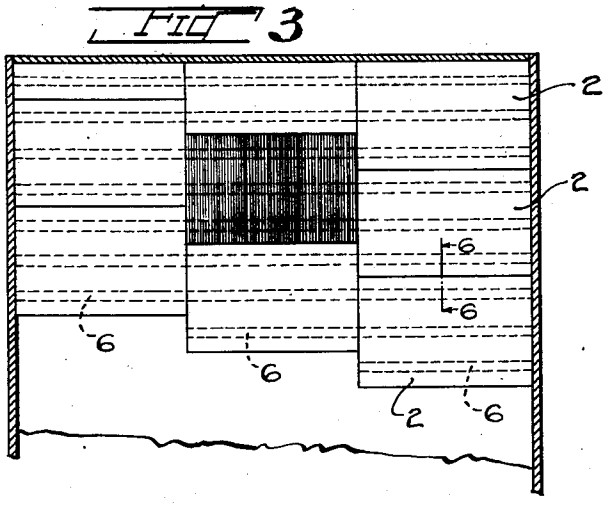
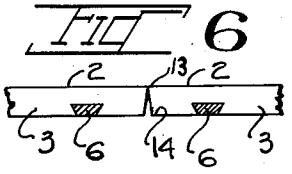


Fig 6



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UNITED STATES PATENT OFFICE.

ANSEL C. DENNING, OF JOHNSON CITY, NEW YORK; WORKERS TRUST COMPANY, ADMINISTRATOR OF ESTATE OF ANSEL C. DENNING, DECEASED, ASSIGNOR TO ENDICOTT JOHNSON CORPORATION, OF ENDICOTT, NEW YORK, A CORPORATION OF NEW YORK.

FLOOR AND PROCESS OF LAYING FLOOR.

Application filed October 4, 1920. Serial No. 414,461.

To all whom it may concern:

Be it known that I, ANSEL C. DENNING, a citizen of the United States, residing at Johnson City, New York, have invented certain new and useful Improvements in Floors and Processes of Laying Floors, of which the following is a clear, full, and exact description.

This invention relates to floors and a general object of the invention is an improvement in respect both to floor construction, to the materials employed in floor construction, and to the process of assembling and laying floors.

The particular object of the invention is a floor construction which will permit the use of compositions of vegetable or animal fibre in such manner as to obtain the greatest benefit of the peculiar characteristics of such compositions with respect to durability, elasticity, sound-deadening qualities, etc.

An important feature of the invention is the construction of a fibre floor so that the fibres are substantially on end. Other important features of the invention are the novel means and the novel process by which the improved floor is laid under substantially uniform lateral pressure.

Further 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—

Fig. 1 is a perspective view of one form of block or section which may be employed in constructing the novel floor of the present invention;

Fig. 2 is a detail view showing the mode of assembling the fibre sections to form a block such as shown in Fig. 1;

Fig. 3 illustrates a section of floor constructed of blocks of the type shown in Fig. 1, this figure showing particularly the manner of laying the floor with broken joints;

Fig. 4 is a sectional detail showing the manner of attaching the floor of the present invention to a wooden under floor;

Fig. 5 shows the manner of attaching the floor of the present invention when a concrete under floor is employed; and

Fig. 6 is a detail view showing the manner in which the blocks abut at their side edges.

In the illustrated embodiment of the invention the floor blocks or sections 2, one of which is shown in Fig. 1, are preferably composed of strips 3 of fibre board which are punched or died out in the form shown in Figs. 1 and 2 from a sheet of fibre board, each of these strips 3 being provided with dovetail openings 4 in its lower edge adapted to receive splines 6, of corresponding shape in cross section, upon which the strips or sections 3 are threaded in the manner shown in Fig. 2. It will be noted that the shape of the dovetail openings 4 is such that the sections 3 are interlocked with the splines 6 against all movement relative thereto except movement lengthwise of the splines.

After a sufficient number of strips or sections 3 have been brought into abutting relation to each other upon the splines 6 to form a block having the desired surface dimensions, the block is preferably subjected to pressure lengthwise of the splines 6, or transverse to the strip plane to insure close contact of the sections 3, and while under such pressure a small steel wire 8 is passed around the block and its ends are joined to hold the strips or sections in the compressed condition produced by the pressure to which they have been subjected, thereby bottling up this pressure, as it were. It will be noted that each of the strips or sections 2 is arranged edgewise in the block, whereby the fibres of which the fibre board is composed will be substantially on end in the block, that is, these fibres will lie in planes which are perpendicular to the faces of the block. In order further to insure arrangement of a substantial portion of the fibres normal to the wear surface of the block the strips may be cut transversely to the original run of the sheet from which they are formed.

In laying the floor it is important to secure uniform lateral pressure throughout the floor and to this end the tying or otherwise binding of the assembled blocks under pressure, as by the wires 8, contributes. One method of laying the floor is illustrated in Figs. 3, 4 and 5. In Fig. 3 it will be noted that the blocks are so laid that the joints are broken and to insure interlocking of the blocks one or more of the splines are prefer-

ably moved lengthwise in those blocks which abut endwise so that the splines of one block will extend into the sections of the abutting block.

If the floor be laid on a wooden under-floor the sections are nailed at intervals directly to the under-floor, the nailing being done preferably through the splines 6 which are preferably of wood, as shown at 10 in Figs. 4 and 5. The nailing may be done directly down through the top of the block or floor section, as shown in Fig. 5. If the floor is to be laid upon a concrete floor, the concrete floor is preferably provided with embedded strips 12 of wood, corresponding in position to the splines 4 in the blocks, into which the nails 10 may be driven.

After a section of floor composed of several of the blocks or sections such as is shown in Fig. 1 has been laid, for example a section ten feet square, the wires 8 are cut, thus releasing the stored up pressure in the blocks and permitting it to distribute itself uniformly through the abutting ends of the blocks, each of the blocks having been subjected to the same pressure before tying with the wires 8. The lateral pressure throughout the floor, that is, the lateral pressure normal to the strip plane, will thus be substantially uniform. It will be obvious that marked variations in the pressure in the strip plane due to the floor laying operation will not occur.

To prevent buckling of the floor by swelling, it is important not only that the lateral pressure upon the floor should be substantially uniform, such pressure being obtained in the manner above specified, but also that this pressure be not too heavy. In other words, it is preferable to lay the floor under comparatively light lateral pressure so that if it tends to swell it will compress itself further instead of buckling. The pressure to which the blocks are subjected before tying with the wires 8 is, therefore, preferably comparatively light, a suitable pressure for a block 16″ wide, 24″ long, and 1″ thick being about 25 lbs. endwise pressure distributed over the end of the block (not 25 lbs. per square inch).

To insure tight joints at the surface of the floor between the abutting sides of the blocks, that is, between those sides of the blocks at which the ends of the strips which go to make up one block engage the ends of the strips which go to make up the other block, when the blocks are laid as shown in Fig. 3, it is preferable that the upper edges of each block upon these two sides overhang slightly the lower edges as shown in Fig. 6. To this end, in forming the strips 3 of which the blocks are composed, each strip is preferably made slightly longer on its upper edge so that the upper corner 13 will overhang the lower corner 14 at each end of the strip, a sufficient overhang in blocks of the dimensions hereinabove set forth being about 1/32nd of an inch at each end, the upper edge of the strip being 1/16th of an inch longer than the lower edge and the strip being tapered at each end from the upper edge to the lower edge.

It will be understood, of course, that the composition of the fibre sheet from which the strips 3 are formed may vary considerably according to the requirements of the floor to be constructed therefrom, and that the dimensions of the blocks, particularly the thickness of the floor, may also vary from those above given. A suitable fibre composition from which floors of the type herein described have been made for factory use and which have successfully met the conditions of such use, is one in which about 20% of chrome leather has been combined with mixed papers and treated in a beating engine and formed into a sheet upon a cylinder wet machine after the manner of paper-making.

Although the floor is herein shown as laid with all of the fibre strips running in the same direction across the floor, it will be understood that the invention is not restricted to the particular arrangement of the blocks in the floor herein shown and described, although certain advantages hereinabove pointed out are obtained from the particular manner of laying the floor set forth.

Claims to subject matter which is common to this application and to either or both of my co-pending applications Serial No. 478,623, filed June 18, 1921, and Serial No. 580,654, filed August 9, 1922, will be made in the appropriate one of said co-pending applications it being my intention to make all generic claims to subject matter common to both of my said co-pending applications and the present application in the application Serial No. 580,654, filed August 9, 1922.

I claim—

1. A floor formed of blocks, each of which comprises strips of fibrous sheet material standing in abutting relation edge up and transverse strips inset into the lower edges of said floor forming strips and interlocked therewith, said strips of fibrous material having otherwise no interconnection.

2. A floor formed of strips of fibrous material standing in abutting relation edge up and comprising transverse connecting strips with which said first mentioned strips are interlocked, said floor being formed of blocks of the aforesaid construction with the joints broken and with some of the connecting strips extending into the adjacent blocks whereby the blocks are interlocked.

3. A floor formed of strips of fibrous sheet material standing in abutting relation edge up and comprising transverse strips passing

through openings in said first mentioned strips and confining said first mentioned strips against movement in the strip plane, said floor being formed of blocks of the aforesaid construction with the joints broken and with some of the connecting strips extending into the strip openings of the adjacent blocks whereby the blocks are interlocked.

4. A floor block comprising strips of sheet material arranged on edge in abutting relation and provided with registering transverse openings, transverse strips substantially fitting said transverse openings in said first mentioned strips and adapted to confine said first mentioned strips against movement in the strip plane, said transverse strips being slidable in the transverse openings in the block whereby a connecting strip of one block may be moved into a strip opening of an adjacent block when laying a floor and thereby interlock said blocks.

5. A floor formed of strips of fibrous sheet material standing in abutting relation edge up and comprising transverse strips passing through openings in said first mentioned strips and confining said first mentioned strips against movement in the strip plane, said floor being formed of blocks of the aforesaid construction with the joints broken and with some of the connecting strips extending into the strip openings of the adjacent blocks whereby the blocks are interlocked, and means to connect said transverse strips to the under floor or support.

6. The process of laying a floor of the character described under uniform lateral pressure which consists in tying together by bands passed around the sides thereof blocks formed of strips of sheet material standing in abutting relation edge up and subjected to the desired pressure normal to the strip plane, laying these blocks to form a section of floor, fastening said blocks in position and then cutting said bands.

Signed at Johnson City, N. Y., this 30th day of September, 1920.

ANSEL C. DENNING.

Witnesses:
STELLA LOEFFLER,
ARTHUR G. CRIMMINS.