

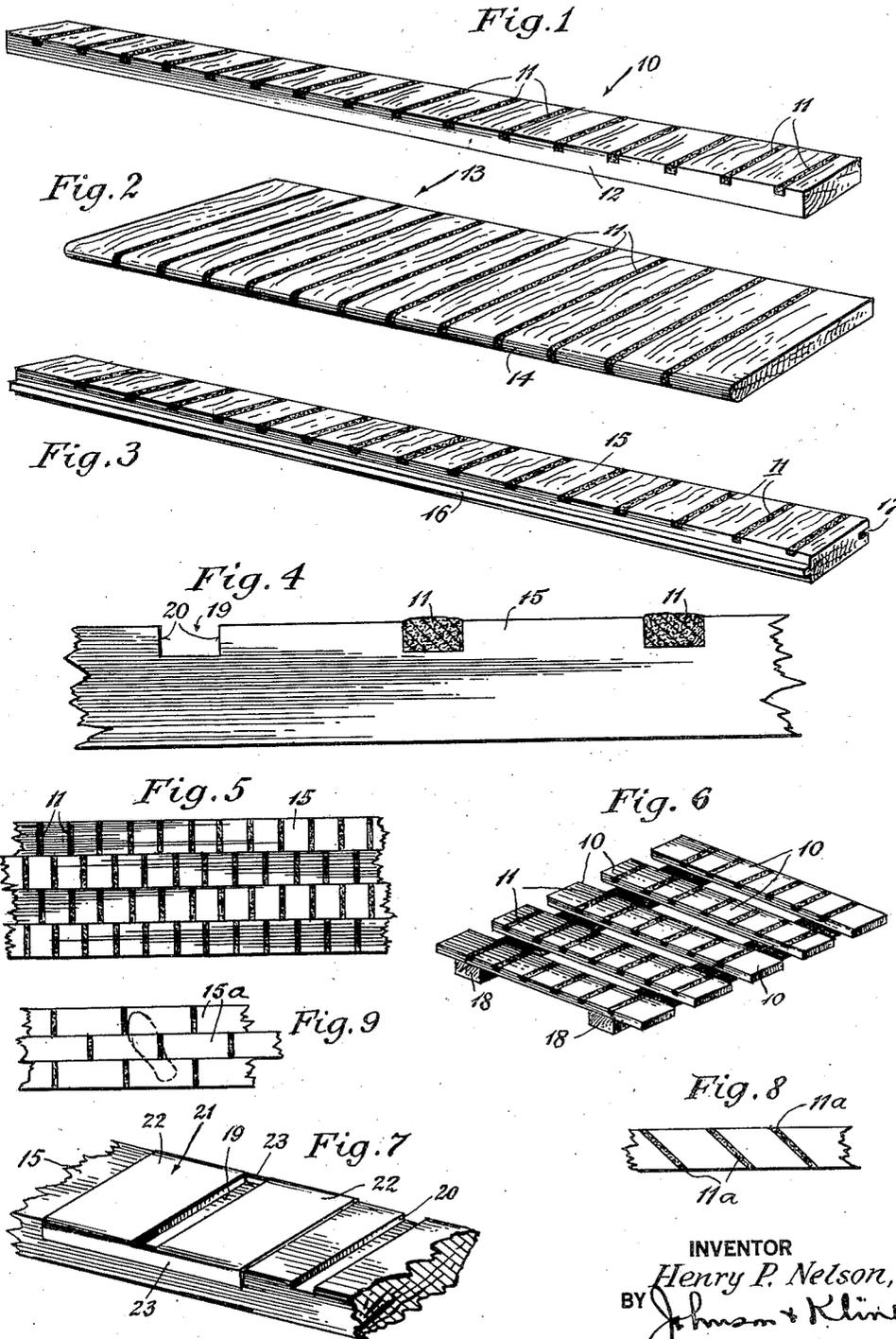
Feb. 14, 1950

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2,497,837

BOARD FOR FLOORING AND THE LIKE

Original Filed Oct. 6, 1942



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UNITED STATES PATENT OFFICE

2,497,837

BOARD FOR FLOORING AND THE LIKE

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Substituted for application Serial No. 460,929, filed October 6, 1942. This application filed September 27, 1947, Serial No. 776,493

5 Claims. (Cl. 20—6)

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This invention relates to boards for use in making floors, gratings, steps, treads, and the like and to the structural elements of which these are made, and more particularly to improvements for rendering them wear-resisting and slip-preventing.

This application is a substitute for my copending application Serial No. 460,929, filed October 6, 1942, now abandoned.

In industry, there are many places where persons stand or walk on which it is impossible to avoid accumulations of slippery liquids. For instance, in plating or dyeing rooms, screw machine shops, in slaughter houses and similar situations, the floor upon which workers must stand or walk is unavoidably slippery and many accidents and personal injuries have resulted from these conditions. To mitigate these conditions somewhat, grates or other platforms having spaced boards have been provided so as to reduce the accumulation of slippery liquids, but the boards of these grates soon became impregnated with the liquid and hence were slippery as the floor itself would be. In other situations, especially where trucks and the like are to be moved, it is impractical to provide gratings, and the only alternative heretofore was to cover the floor with sand or sawdust, and this in many cases was inadequate and unsatisfactory.

Again, in other situations, for instance outdoor platforms and stairs which are liable to become wet by rain or otherwise, there is the danger of persons walking thereon slipping and seriously injuring themselves.

These difficulties, dangers and inconveniences have been overcome and obviated by the present invention by the provision of boards, which may be in the form of slats for making gratings, or of flooring for making floors, or of treads for making stairs, in which there are embedded in the working surfaces thereof inlays of wear-resisting, slip-preventing abrasive material so disposed that some part of the abrasive material will always be under the foot of a person walking on the surfaces made from such boards.

Throughout the specification and claims the term "board" is used to define a piece of sawed lumber of little thickness, usually not exceeding 2½ inches, but of considerable surface area and of a length greatly exceeding its width, which width usually does not exceed 12 inches.

In the broader aspects of this invention, these inlays may be made in any suitable manner and may be disposed in the boards in many different ways. However, a further feature of this inven-

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tion resides in the provision of these inlays transversely of the board, more preferably perpendicular to the longitudinal edges of the board, and so placed and positioned that the board which has its grain running longitudinally thereof may be cross-cut into desired length without interference with or by the slip-preventing inlays.

When the board is say three inches wide or more, the inlays are preferably placed close enough together so that a person's shoes upon engaging the board will engage the surface of at least one of the inlays. When the boards are narrow, the inlays may be placed somewhat farther apart, provided that by laying the boards in staggered or echelon arrangement, some part of at least one of the inlays will be in position to engage a person's shoe.

According to the present invention, the inlays are preferably made in depressions provided in the board by molding an air-hardening plastic abrasive-carrying compound of a cementitious nature which adheres to the surfaces of the depression or groove and requires no other means for anchoring itself therein. In this way it can be assured that the inlay completely fills the groove in the board and is substantially flush with the working surface thereof, notwithstanding variations in the width and depth of the grooves which must of necessity be tolerated when manufacturing the product on a commercial basis. When making the product in this way, I have found it convenient to provide a mask to be placed over the board and expose only the groove in which the plastic abrasive material is to be placed, and this mask may have projecting portions closing the ends of the groove to keep the plastic material from extruding therefrom.

It should be understood that the present invention not only embraces the boards provided with wear-resisting, slip-preventing inlays, but also floors, platforms, gratings, and stairs made from such boards.

Other features and advantages will hereinafter appear.

In the accompanying drawings which illustrate the present invention in several embodiments:

Figure 1 is a perspective view of a board of the present invention which may be used for making platforms, gratings, etc.

Fig. 2 is a perspective view of a stair tread made according to the present invention.

Fig. 3 is a perspective view showing a section of flooring made accordance to the present invention.

Fig. 4 is a view looking at the longitudinal edge of a board embodying the present invention, and showing at the left a groove in the board which has not yet been filled with the abrasive cementitious material and at the right and center two grooves so filled.

Fig. 5 is a plan view of a portion of a flooring showing the board so arranged that the inlays are disposed in echelon.

Fig. 6 is a perspective view of a grating made according to the present invention.

Fig. 7 is a perspective view showing the mask or form used in molding the plastic abrasive material in the grooves in the board.

Fig. 8 is a plan view showing a modified arrangement of the inlay made according to the present invention.

Fig. 9 is a plan view of a modified form of flooring made according to the present invention.

The board of the present invention may be and under present conditions probably should be made of hard or relatively hard wood such as oak or maple or the like so as to be quite wear-resisting itself and impervious to moisture. Such materials are usually used to make floors, gratings, steps, etc. However, substitution for such natural woods may be used.

According to the present invention and referring to Fig. 1 particularly, the board or slat 10 is provided with a succession of inlays 11 of wear-resisting, slip-preventing material. Preferably these inlays are rather narrow, i. e., having a width less than one-half of the width of the space between them and extend transversely across the board substantially perpendicular to the longitudinal edges 12 of the board. If desired, and if conditions warrant, the inlays may be disposed diagonally across the board as indicated at 11a in Fig. 8.

In either event, it is preferable that the inlays be so disposed that the board may be cross-cut perpendicular to the longitudinal edge 12 to any desired length, and for this purpose the spacing between the inlays and the width of the inlays is preferably such that the board may be cross-cut without interference by or with the abrasive material.

Referring to Fig. 2, in making a board for use as a stair tread 13 or as a threshold or doorsill, again it is preferable that the inlays 11 extend transversely across the board, that is perpendicular to the nose 14 of the board.

For flooring, the board 15 (see Fig. 3) may be provided with tongues 16 and grooves 17 as usual and may have on its working surface wear-resisting, slip-preventing inlays 11. As in the case of the board 10 and tread 13, the inlays 11 are preferably perpendicular to the longitudinal edge of the flooring. The inlays 11 are preferably substantially flush with the working surface 15 of the board as shown in Fig. 4.

According to the present invention, the slats 10 may be cut to desired length and may be secured together by cleats 18 so as to form a grating as shown in Fig. 6. Such a grating with its wear-resisting and slip-preventing inlays 11 on its upper surface may advantageously be used in places where a considerable quantity of liquid falls on the walking surface and should be allowed to drop between the slats and run off. Preferably, the slats 10 are so cut and secured to the cleats 18 that the inlays in adjacent boards are staggered or in echelon.

In making floors using the flooring boards 15

shown in Fig. 3, the boards may be secured against each other as usual, and here also it is preferable that the inlays 11 and adjacent boards be disposed in staggered or echelon arrangement.

While this arrangement may also be employed for the grating as shown in Fig. 6, it is especially important in connection with the flooring made according to the present invention, because by so disposing the inlays of adjacent boards, even should the heel of a person strike the board between two inlays, it would not slide far before engaging the inlay of the next adjacent board.

With regard to the disposition of the inlays in the boards and their spacing, it is preferred that the inlays be so placed that at least part of one inlay will be under the foot of a person walking on the surface. If the boards are of the usual width, say three inches wide, it has been found very satisfactory to have the spacing between the inlays approximately two and one-half inches.

If, however, the boards are narrow, as for instance the boards 15a in Fig. 9, it is possible to space the inlays greater distances from each other in each board so long as adjacent inlays in the same or adjacent boards are within foot-width distances of each other. This phrase "within foot-width distances" is used herein and in the appended claims as defining a distance not so great that a foot may be placed on a board or boards without contacting one of the inlays.

The inlay, according to the present invention, may be made in the board in any suitable recessed depression or groove. According to the present invention, the groove 19 is preferably a rectangular groove with the walls 20 perpendicular to the working surface 15, since this groove may easily be made in the board with a milling or molding cutter, but, of course, any suitable form of groove or depression may be employed.

In the broader aspects of the invention, the inlay may be preformed and placed in the groove and secured therein by suitable adhesive material. However, it is preferable and extremely advantageous to employ a plastic abrasive-containing cementitious compound such as disclosed in my Patent No. 2,201,700. A quantity of this material may be placed in the groove and troweled smooth at its top so as to be flush with the working surface 15 and at its sides to be flush with the longitudinal edges 12 of the board. This material is air-hardening and when hardened in the groove is held therein by the adhesion between the material and the bottom and side walls of the groove.

In providing the inserts in the board, I have found that the mask 21 shown in Fig. 7 may be conveniently used. This mask has two top plates 22, one at each side of the groove 19, and adapted to rest on the working surface 15 and side plates 23 which unite the top plates 21 and close the ends of the groove. With this mask, the mass of abrasive-bearing cementitious material is simply placed in the groove and then troweled off substantially flush with the working surface 15, the side plates 25 molding the ends of the insert. The mask 21 keeps the board at the side of the groove substantially clean and free of abrasive material. When the insert is molded, the mask is removed and applied to the next succeeding groove.

While the improved structural elements of the present invention as well as the assembled floors, grating, etc. are advantageous in preventing persons from slipping on the surfaces, it should be understood, of course, that these products may be used on platforms for storing or transferring

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material and will serve to prevent the material from slipping off the platform casually or accidentally.

Variations and modifications may be made within the scope of this invention and portions of the improvements may be used without others.

I claim:

1. A safety board for use in making gratings, treads and flooring to stand or walk upon comprising a piece of sawed lumber having a length greatly exceeding its width and having the grain of the wood running longitudinally whereby the board may be sawed crosscut substantially perpendicular to a longitudinal edge to produce sections of desired lengths for use, said board having a succession of relatively shallow, transversely extending, continuous grooves in its top face extending for the full width of the board and substantially perpendicular to the edge, said grooves being spaced along the board at approximately foot-width intervals, the full length of grooves holding inlays of wear-resisting, slip-preventing abrasive mineral material extending at least to the top face of the board, said inserts having a width less than one-half of the width of the space therebetween, said inserts being positioned and spaced with respect to one another so as to leave clear zones through which the board may be crosscut with a wood-working saw between adjacent inserts without the latter interfering with or contacting the saw blade to produce sections of any desired length for use.

2. A safety board for use in making gratings, treads and flooring to stand or walk upon comprising a piece of sawed lumber having a length greatly exceeding its width and having the grain of the wood running longitudinally whereby the board may be sawed crosscut to produce sections of any desired length for use, said board having a succession of relatively shallow transversely extending grooves in its top face spaced along the board at approximately foot-width intervals, said grooves holding inlays of wear-resisting, slip-preventing abrasive mineral material extending at least to the top face of the board, said inserts being of a width, less than one-half of the width of the space therebetween so as to leave clear zones through which the board may be crosscut with a wood-working saw between adjacent inserts without the latter interfering with or contacting the saw blade to produce sections of any desired length for use.

3. A safety stair tread comprising a piece of sawed lumber forming a board having a length greatly exceeding its width and having the grain of the wood running longitudinally whereby the board may be sawed crosscut to produce sections of desired lengths for use, said board having a rounded nose portion and a succession of relatively shallow grooves in its top face extending across the board to and around the rounded nose of the board and spaced along the board at ap-

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proximately foot-width intervals, said grooves holding inlays of wear-resisting, slip-preventing abrasive mineral material extending at least to the top face of the board, said inserts having a width less than one-half of the width of the space therebetween and being positioned and spaced with respect to one another to leave clear zones through which the board may be crosscut with a wood-working saw between successive inserts without the inserts interfering with or contacting the saw blade to produce treads of any desired length for use.

4. A safety floor board comprising a piece of sawed lumber having a length greatly exceeding its width and having the grain of the wood running longitudinally whereby the board may be sawed crosscut to produce sections of desired lengths for use, said board having a tongue on one longitudinal edge and a matching groove in the other longitudinal edge and having a succession of transversely extending narrow, continuous grooves in its top face spaced along the board at approximately foot-width intervals, said latter grooves being so shallow as to be located entirely above the tongue and the longitudinal edge groove and holding inlays of wear-resisting, slip-preventing abrasive mineral material extending at least to the top face of the board, said inlays each having a width less than one-half of the width of the space therebetween so as to leave clear zones through which the board may be crosscut with a wood-working saw between adjacent inserts without the inserts interfering with or contacting the saw blade to produce sections of any desired length for use.

5. The method of making a wear-resisting slip-preventing board which includes cutting transverse grooves in the working surface of the board longitudinally spaced within foot-width distances of each other, placing a shield over the board adjacent the groove so as to cover the adjacent portions of the board and close the ends of the grooves, and filling the grooves with cementitious abrasive material to substantially the level of the working surface of the board.

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