April 3, 1928. 1,664,737

C. A. CUTLER

SURFACE BLOCK

Filed Aug. 2, 1926 3 Sheets-Sheet 1

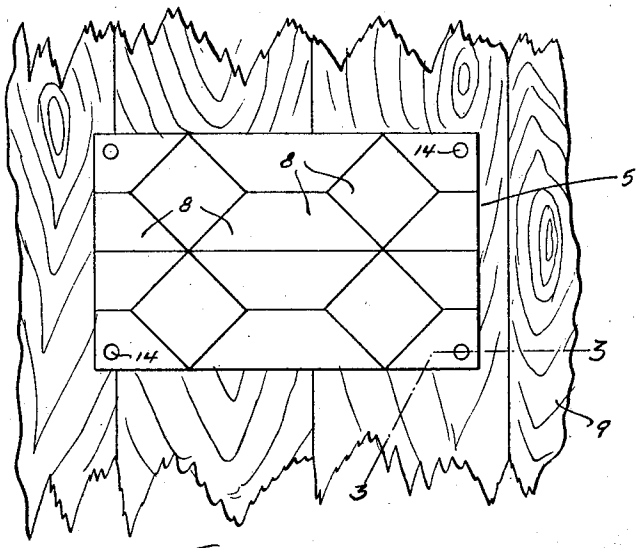


Fig. 1.

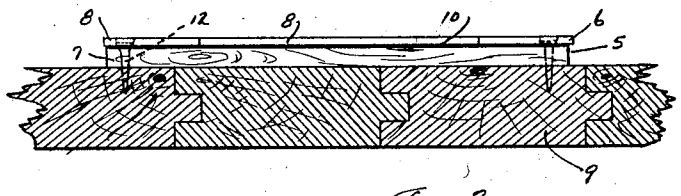


Fig. 2.

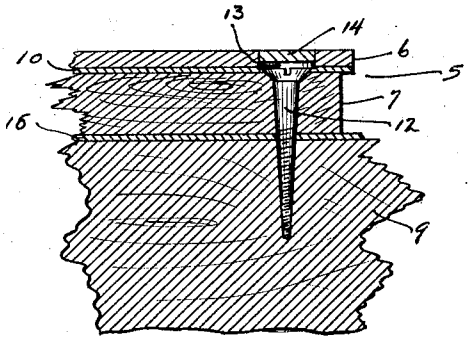


Fig. 3.

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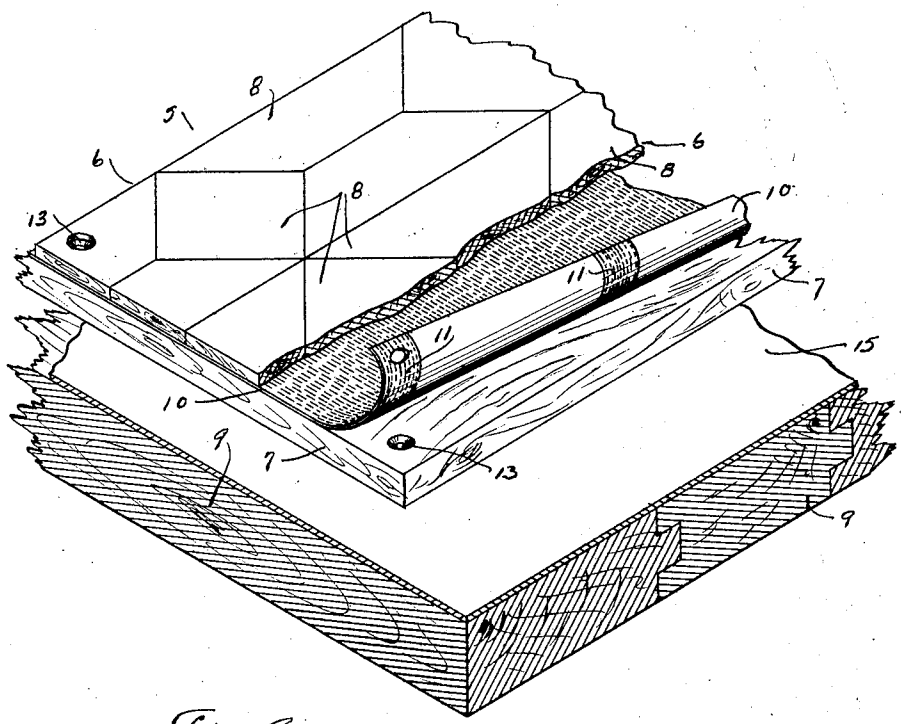


Fig. 4.

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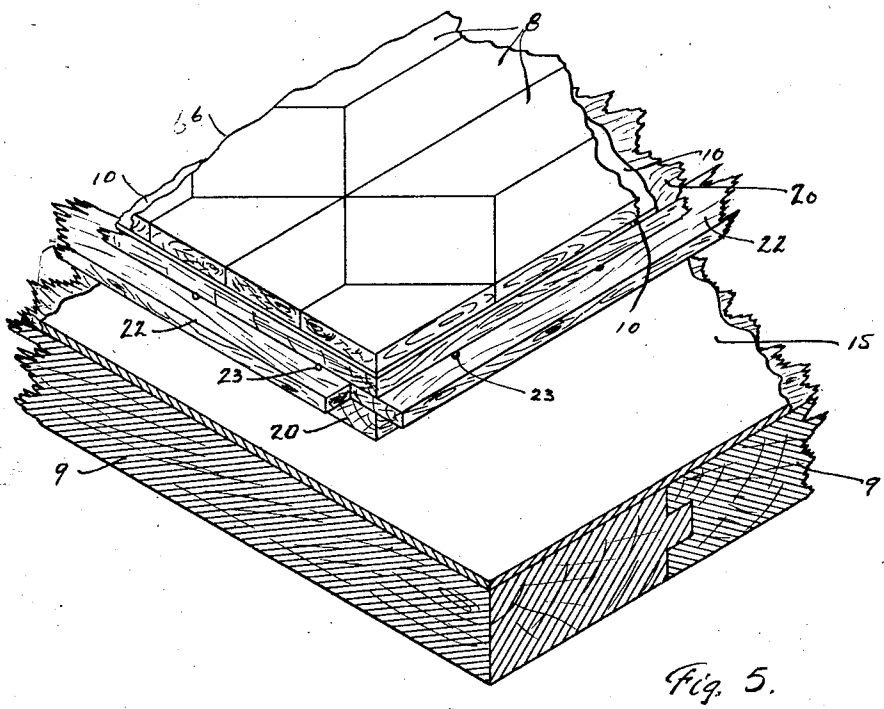


Fig. 5.

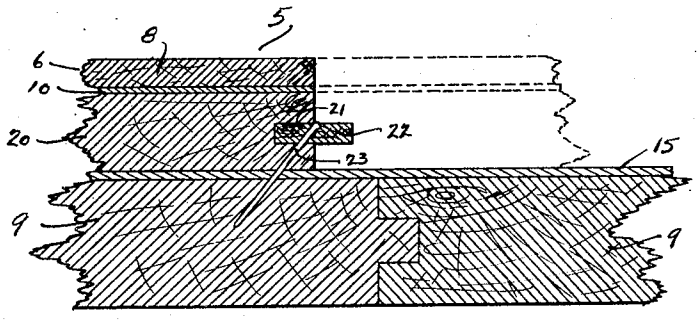


Fig. 6.

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Patented Apr. 3, 1928. 1,664,737

UNITED STATES PATENT OFFICE.

CLIFFORD A. CUTLER, OF BUFFALO, NEW YORK.

SURFACE BLOCK.

Application filed August 2, 1926. Serial No. 126,511.

My invention relates in general to a surface block for use as a covering for floors, panels, and other surfaces which are made up of two or more kinds of wood in layers, in which the beauty and desirable qualities of more expensive woods may be provided at moderate cost.

As it is well known to those skilled in the art, when it is desired to use choice or hard woods for surfaces of floors, panels, and furniture tops, thin layers of such woods are used and some common wood is used to make up the thickness and strength needed. The more expensive woods, such as brier-wood, mahogany, rosewood, walnut, and the like, have a lesser expansion and contraction for a given increase or decrease in moisture content than such woods as chestnut, beech, birch, or plain red oak. Since all woods change their moisture content in direct relation to the surrounding atmosphere, there is a considerable difference in their respective dimensions. Experience has taught that if the surface wood is intimately and rigidly fastened to a base of common wood, as by being glued, there is bound to be a distortion or warping, due to the one being longer or shorter than the other, since, because of such intimate fastening of the woods, the adjacent surfaces can not slide one over the other. This is true whether one wood is applied to the surface of another in the form of many small blocks, as in marquetry, or as one single piece. In present day practice, an attempt is made to overcome such distortion and warping, when complicated patterns are made, by fastening each piece by nailing it to the surface below so that the crevices between the adjacent edges of the blocks will take up any increase in size without permitting warping to a degree which will interfere with the intended use of the article. In flooring constructed by this old method, it is not unusual to see crevices or cracks of considerable dimension between adjacent pieces, caused by shrinkage after the floor was laid. Such shrinkage, of course, is undesirable in flooring since it detracts considerably from the beauty of the flooring, but in paneling and tops for furniture, such a condition would render the surface unfit for use.

It has been an object of my invention to provide a surface block in which small or large pieces of the choice woods may be fastened to pieces of the common woods in such a manner that expansion and contraction will be adequately taken care of, and crevices between the pieces due to shrinkage obviated.

A further object has been to provide a methed by which a block having the above characteristics may be made.

By means of my blocks and method of making the same, the cost of flooring and paneling is greatly reduced, since I may use small pieces of choice woods, which are too small for other practical uses, and, therefore, may be had at a very reasonable price.

The above objects and advantages, as well as those to be hereinafter enumerated, are accomplished by the surface block shown in the accompanying drawings, of which:

Fig. 1 shows a plan view of one of my surface blocks.

Fig. 2 is an end elevation of the same, showing it attached to subflooring.

Fig. 3 is an enlarged fragmentary, sectional elevation taken on line 3—3 of Fig. 1.

Fig. 4 is a perspective view of my surface block, with portions thereof broken away, showing its construction.

Fig. 5 is a fragmentary, perspective view of a block made in accordance with my invention, and showing a modified form of fastening.

Fig. 6 is an enlarged, fragmentary, sectional view of the form of block shown in Fig. 5.

While I have shown in the accompanying drawings my surface block as applied to flooring, it is, of course, obvious that block per se is equally adaptable for paneling; for the tops of furniture, and like purposes.

In the form of invention shown in Figs. 1 to 4 of the drawings, 5 represents one of my surface blocks, which comprises a surface portion 6 and a base 7. If small pieces of material are to be used, as in the making of marquetry, the surface 6 is preferably made in attractive design from a plurality of small blocks 8 of any desired pattern or configuration. These blocks are fitted together so as to make one rectangular block of definite dimensions. It is desirable to make the blocks all of the same dimensions, so that they may be used interchangeably. The blocks are preferably made of such a size that they will bridge any inequalities in the subfloor 9, to which the surface block is attached.

The base 7 of my block is made of any common wood, such as wormy chestnut, or

inexpensive three-ply stock. The base is made of such dimensions that the surface portion will project slightly beyond the edge of the base, as clearly shown in Fig. 3, thus permitting the surface portions in adjacent blocks to be placed tightly together, and at the same time allowing a certain amount of expansion of the base without any tendency to force the surface blocks apart.

Arranged between the surface portion 6 and the base 7 is a piece of fabric 10, such as cotton ducking. The pieces 8 forming the surface portion of the block are securely and intimately fastened to the ducking by being glued over their entire under surfaces. By this means, each of the pieces is securely held in its respective place in the pattern. The pieces will not easily be broken loose, since they are secured to the top surface of the base 7 by glue applied to the fabric in strips 11, spaced apart and running lengthwise of the fabric and parallel to each other. This method of fastening the fabric to the base provides spaces between the strips of glue that allow for the slight expansion or contraction of the surface wood in excess or less degree than the base wood, thus relieving the condition that would cause the block to warp.

The block is fastened to the subflooring 9, preferably by a number of screws 12, one passing through each corner of the block and entering the subflooring. The surface 6 of the block, where each screw passes through, is provided with a countersunk recess 13, whereby the head of the screw is set in below the surface of the block a considerable distance. When the screws are in place, a wooden button 14, of similar material as that of the surface portion 6, is placed in the recess 13 with its top surface flush with the surface of the block. Should there be any tendency for the block to warp at the corners, the screws 12 will overcome this tendency. Before the blocks are screwed into place, a piece of felt 15 is preferably placed over the subflooring 9.

The form of block shown in Figs. 5 and 6 has a surface portion 6 made of a plurality of small blocks 8, as in the form of surface block shown in Figs. 1 to 4, inclusive. The base 20 of this block is provided on each of its four side edges with a groove 21. These grooves are preferably formed midway the thickness of the base, and each is provided with a spline 22. Each spline is of a width substantially twice the depth of the grooves 21, and each spline engages with the grooves of adjacent blocks, whereby the blocks are securely held together so that their upper surfaces will be held and maintained flush with each other. As the blocks are being laid, brads 23 are driven at an angle into the base and through the spline, as clearly shown in Fig. 6, so that the surface blocks will be securely held to the subflooring 9. A piece of felt 15 is placed between the surface blocks and the subflooring 9, as in the other form of the invention. Each of the surface blocks is formed like those of the other form and is provided with the ducking 10 which is interposed between the blocks 8 and the base 20, as described in connection with the other form of the invention.

It is, of course, clear that any of the choice woods may be used to form my surface block, but I have found brierwood admirably adapted to this purpose. Such wood does not splinter or sliver, and it is so hard and dense that it wears smooth, but not slippery. It is impenetrable to such finishing materials as varnish, shellac, and lacquer, and, therefore, makes a very serviceable floor at moderate cost. It does not stain with oil, water, and many other things that stain other woods. It has a beautiful grain and natural color, and can be finished in any desirable shade to match the surroundings. The difficulty heretofore has been that the small pieces in which brierwood could only be secured has made their use impractical because of the present method of making flooring, panels, and the like. In my surface block made by the herein described method, I am able to make practical use of this brier-wood no matter how small the pieces may be.

In carrying out my method in the making of a surface block, as hereinbefore described, I first cut the pieces of choice woods into the sizes and shapes needed for the design to be made, and in any thickness desired, according to the nature and use to which the block is to be put. The pieces are then carefully assembled in the design or pattern desired and a piece of fabric such as cotton ducking, is glued over the entire under surface of the piece forming the block. After the glue is quite dry, the piece of ducking with the surface of small pieces of wood fastened thereto, is fastened to the base of the cheaper wood with glue placed in narrow strips upon the under side of the fabric backing and in a direction across the grain of the backing wood. When the form shown in Figs. 1 to 4 is being made, screw holes are now formed, one in each corner of the finished block, and the block is ready to be used as a flooring or other surface covering. It is obvious that when the modified form shown in Figs. 5 and 6 is being used, splines 22 are placed within the grooves 21 and nails driven through the splines and the base 20.

From the foregoing it will be clear that since my surface blocks are made complete in a factory, unskilled labor may be employed in laying the surface. Moreover, because the blocks are relatively small and interchangeable, they may be easily removed when repairs are necessary to piping or wiring un-

der the floors or back of panels, thus obviating the destruction of flooring or paneling, which is necessary with the present day type of flooring and paneling. In the event that a block becomes marred or damaged, it can be easily and quickly replaced by another block.

My method renders the manufacture of marquetry relatively inexpensive, since the method of assembling the small pieces may be carried on, and the blocks thus formed, on a bench in a frame, and the finished blocks thereafter taken to the place of use, where they may be laid by unskilled labor. Moreover, the blocks may be stained, varnished, or lacquered before being taken to the place of use. Furthermore, my blocks permit a complete design to be laid out by the dealer so that it may be viewed by the purchaser before being installed, in the same manner as a rug would be selected. The approved pattern can be boxed and shipped to the place where it is to be used and screwed down in exactly the same pattern as previously seen by the purchaser. Moreover, changes in border, or changes in pattern or design may be easily accomplished by a rearrangement of the blocks or by the substitution of other ones.

As hereinbefore pointed out, I have found that brier-wood is a very desirable material from which to form the surface portion of my block, but unusual and attractive effects may be brought about by using small pieces of other choice woods, such as walnut and mahogany, as well as a combination of these woods with brier-wood.

Another advantage of my surface block is that when it is used for flooring, the noise is deadened and absorbed by the use of ducking between the surface and base of the block, and the use of felt under the block.

Having thus described my invention, what I claim is:

1. A surface block comprising a surface portion of choice wood, a base of common wood, and a piece of fabric arranged between the surface portion and the base, the surface portion being secured to the fabric by means of adhesive material applied over its entire under surface and the base being secured to the fabric by means of interspaced strips of adhesive material.

2. A surface block comprising a surface portion formed of a plurality of small pieces of choice wood, a single piece base of common wood, a piece of fabric arranged between the surface portion and the base, the surface portion being secured over its entire under surface to the fabric by means of adhesive material, and the base being secured to the under side of the fabric by interspaced strips of adhesive material.

In testimony whereof, I have hereunto signed my name.

CLIFFORD A. CUTLER.