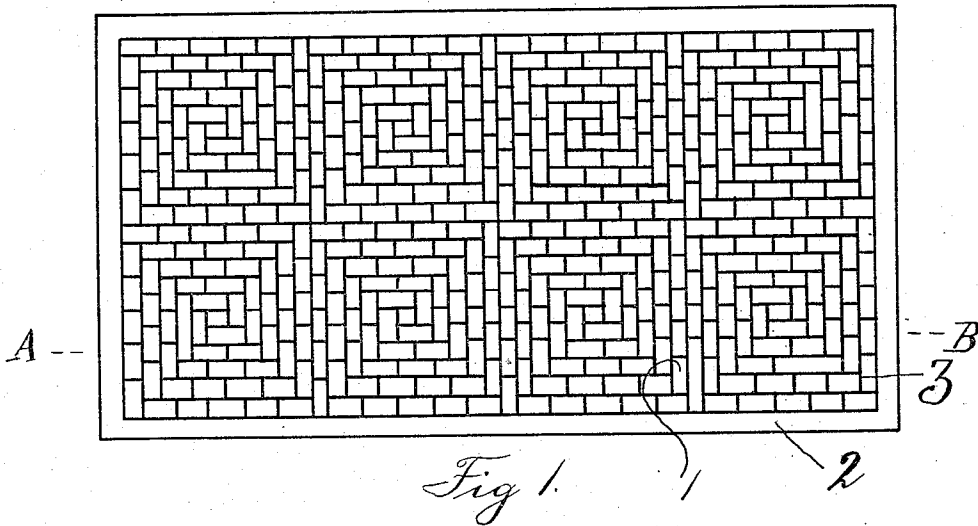
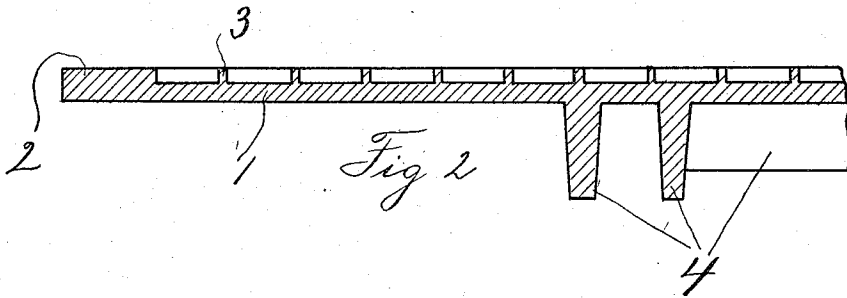


C. J. HENRY.
TILE MOUNTING BOARD.
APPLICATION FILED NOV. 23, 1917.

1,280,730.

Patented Oct. 8, 1918.



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TILE-MOUNTING BOARD.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, CHARLES J. HENRY, a citizen of the United States, residing at Perth Amboy, in the county of Middlesex and State of New Jersey, have invented certain new and useful Improvements in Tile-Mounting Boards, of which the following is a specification.

The present invention comprises a device for creating decorative effects which require great accuracy in arranging the ceramic tiles, or similar materials, of which said decorations are formed.

My invention will be set forth with greater particularity in the appended claim and a complete understanding of my new invention may be had from the following description taken in connection with the accompanying drawing of which Figure 1 is a top view of the board, and Fig. 2 shows in a somewhat enlarged proportion, a part of a vertical section on line A—B of Fig. 1.

As shown in both these figures the board consists of a plane base 1 made of a metal or other solid material which resists corrosion by the oxygen of the air or other corrosive agents, nor subject to deformation by other influences of the atmosphere, for instance, by moisture, change of temperature or other factors.

The base 1 is surrounded by an elevated rim 2 of the same material as base 1. The inner field limited by rim 2 is subdivided into a great number of little fields by means of a plurality of ribs 3, which are of the same material as the base and rim. I have already stated that the material of which all these parts of my new invention are made, must have certain definite chemical and physical properties and I further beg to state that all parts are homogeneously united with each other whenever two or three of them join, as is shown by an inspection of the drawing; the materials answering such requirements are for instance certain metals, especially aluminum, tin, zinc, iron under certain conditions, for instance when coated with tin or zinc, or alloys which are not liable to corrode and sometimes have an almost negligible coefficient of expansion, or other nonmetallic materials capable of passing from a certain plastic state into solidity, for instance the condensation products of formaldehyde and phenol, of which bakelite is the best known, of hard rubber, of celluloid or similar materials.

It is thus evident which characteristic properties the material coming in question, must possess and also that one could find a greater number of metals and non-metallic substances which would answer the purpose of my invention; as many such substitutes, would, however, be prohibitive owing to their price, I have enumerated only those which can easily be obtained in the market.

The board described below is preferably made in one "cast" from a mold or a die by pressing it from a metal sheet; for reasons further pointed out below, I prefer to make the whole board from aluminum by casting it in a correspondingly arranged mold. It is obvious that the lateral circumferences of the fields are thus formed by a continuous net of ribs 3 homogeneously joined with each other and at the outskirts also with rim 2, both the ribs and rim being then also homogeneously joined to the base 1.

The operation consists in filling the little fields of conventional form with ceramic tiles of corresponding shape and of such measurements as to fill the field as accurately as possible; all the tiles are laid bottom downward. After all have been filled the upper side of the tiles is given a coat of glue and then a piece of heavy paper is pressed upon it. As the paper absorbs the moisture of the glue, the paper stiffens very quickly so that the whole board can be turned over to cause the simultaneous discharge of all the tile which now firmly adhere to the paper.

To facilitate this turning over of the board reinforcing ribs 4 are provided at the bottom of the board; these ribs run either parallel to the sides or have diagonal connections between said parallel ribs which also allow the operator to easily put his hand under the board when turning same.

The set of tiles thus obtained is usually 1 ft. wide and 2 ft. long and is called a slab. These slabs are the elements by which the decorative effect of floors, occasionally also of walls is obtained. In setting, or affixing slabs to the floor, one spreads an even layer of a binding mass, usually some kind of a cement mortar, on the floor and then lays a slab on top of same; in order to accomplish a perfect union between the bottom of the tiles and the binding mass one exerts a slight pressure on the tiles by lightly hammering on a small wooden board as it is passed over the slab. Thus the tiles are pressed into the

cement and offer a smooth clear surface when one pulls off the paper which had previously been softened with water to dissolve the glue.

5 It is in the almost mathematically correct lines of the interstices, which are substantially congruent all through the design, and the very considerable reduction of the cost of the slabs used in the production of this
10 flooring that the merits of my invention consists.

The decorations produced by grouping together for instance a collection of colored tiles with white tiles may of course greatly
15 vary with the change of color as well as with the location of the colored tiles with respect to the white tiles; such variations are still increasing in number owing to the shape of the tiles themselves, whether they are round,
20 square, rectangular, hexagonal, octagonal or any other shape; one may give to the tiles. Already a plain white flooring admits of a great number of designs by giving the tile a particular shape. A hexagonal tile having
25 each side about 1 in. long is very much in favor for tiled floors in bath rooms, halls, kitchens, operating rooms, in hospitals, etc. Inspecting such a floor composed of little hexagonal or rectangular tiles one will notice,
30 in glancing along one of the lines formed by the adjoining tiles, that within a yard's length the interstices formed by the adjoining tiles change from a hair's width to more than the diameter of a match; one will even
35 find occasionally, that rather considerable deviations from the desirable width, which should not be more than the thickness of a playing or visiting card, continue for the length of a foot or even more. It stands to
40 reason that the beauty of such a floor is very much marred by such defects, especially as they become more visible in length of time, for the cement filling, originally as white, or at least nearly as white as the tile itself
45 turns black as its pores absorb the dirt when the floor is washed.

Occasionally one notices that the interstices in certain places are wider, or narrower, as the case may be, than those in another part of the floor and such unevenness
50 is of course very easily noticed and renders the floor also rather unattractive.

All these shortcomings displayed by finished tile laid with slabs made with the
55 mounting boards or devices used by the prior art are avoided by making the slabs with my new invention described above. The prior art uses simply a wooden board into which a system of slits are cut according to the decorative design one wants to produce. Owing
60 to the curved or bent lines required by the various designs it stands to reason that it was not easy to cut the slits accurately all along the line, especially in the corners.
65 Moreover in these slits, short steel ribs, little

higher than one quarter inch, were mounted, to hold the various tiles, thus facilitating the laying out of the desired design, whereupon the tiles were glued and covered with
papers similarly as in the application of my 70 new invention. But it is easily seen that such wooden devices can never produce a decorative effect which will display that almost mathematical accuracy which is absolutely necessary to make a floor, or wall, 75 which will please the eye. To understand this impossibility, I need only mention that the boards are twice as long as wide, and being of wood, the board of course will expand considerably in length by the influence
80 of moisture and as the fields adapted to receive the tiles are limited by the steel rail, the expansion of the board will of course widen the interstice between two adjoining tiles and thus cause the irregularities so often
85 noticed in the lines of floors.

Because of the influence of moisture the board will of course expand also along its width and this is often for the worst, because the board is given to warp, whereby
90 the beauty of the produced article is affected in a much greater degree as the floor in such cases is disfigured by even greater and more noticeable irregularities. Such dislocation of the tiles is avoided by my invention, for
95 the solid unity, between the board as the one limitation downwardly, and the rim and ribs as border partitions sidewardly, is the essential factor achieving this end.

Inasmuch as the steel ribs in the wooden 100 mounting boards of the prior art are only pressed by the hand into the fine slits cut by a knife, it is but natural that the steel ribs often loosen and fall out of said slits when the boards are turned to discharge the tiles
105 from the board. The workman has to put them back and each such resetting of these ribs widen the slit so that the tendency of the ribs to fall out of the slits increases continuously; naturally the workman loses
110 much time in picking up every single rib and resetting same into the board. Moreover in case the board has warped, the workman has often to correct the finished slab because tiles filling fields in the warped part
115 of the board did not lie flat and are so badly dislocated that the workmen must singly reset each of these dislocated tiles by manipulations requiring great care not to tear the paper which otherwise would cause further
120 loss of time. It is evident that the inherent shortcomings of the wooden parts of the device of the prior art are a considerable handicap for the workman and cause him much loss of time. My new invention is entirely
125 free of such handicaps and therefore the workman can turn out a very much greater number of slabs, for aside from saving all the loss of time, my new invention causes him also less fatigue, because my tile 130

mounting board described above is of extremely light weight and can therefore be handled more freely and easily.

5 It is of course understood that my new tile mounting board enabling me to produce floors with practically mathematically accurate interstices between the tiles, all over the floor, can also be produced by combining for instance a metal board with a rim and
10 ribs of various metals, provided they have approximately a sufficiently like coefficient of expansion that the expansion within the relatively short range of temperature usually prevailing in the working room is negligible so that the expansion taking place cannot cause a noticeable disfigurement of the

fields of the board and the ribs may be fastened to the board of the rim respectively by welding same electrically together or it will be within the spirit of my invention if
20 said steel ribs are carefully soldered to the board and rim respectively, the factors causing a mechanical disfigurement of the desired product being thereby also practically
25 avoided.

I claim:

A tile mounting board of conventional form, said board being homogeneously made of material resistant to atmospheric actions and having an exceedingly low and uniform
30 coefficient of expansion.

CHARLES J. HENRY.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."