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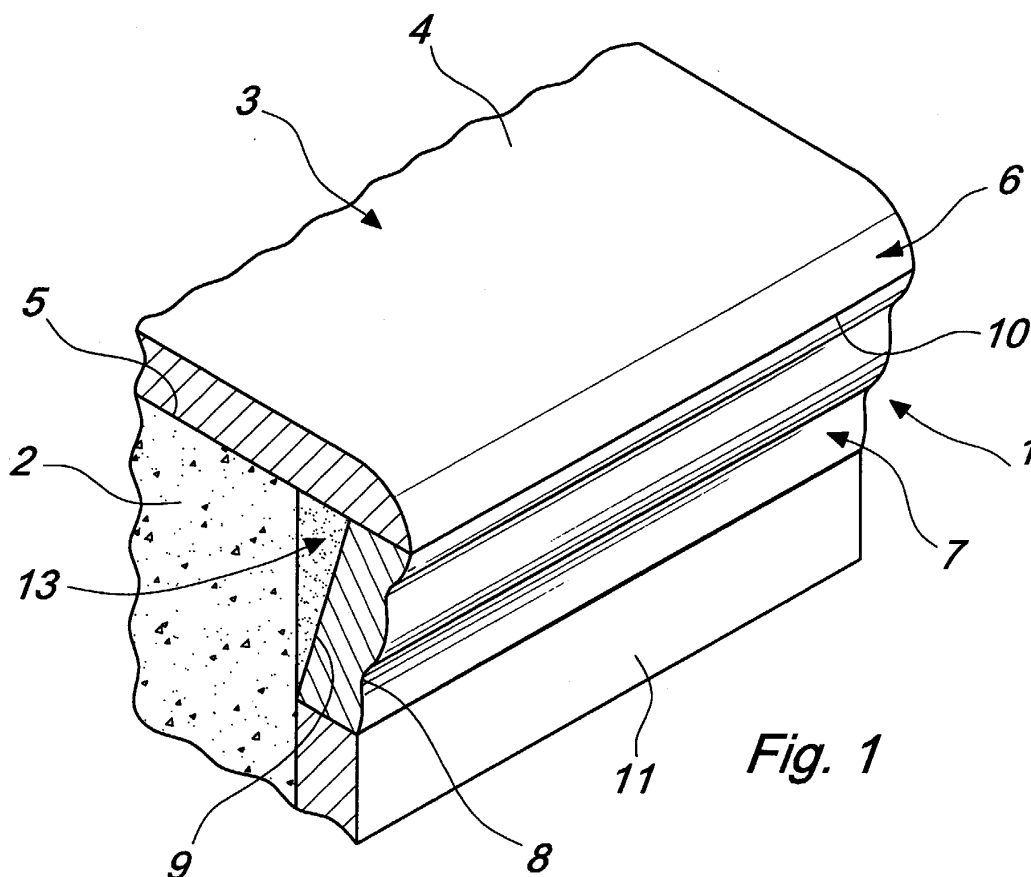
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(54) **Method for producing claddings for steps, particularly of the ceramic or stone type, and component obtainable with the method**

(57) A method for manufacturing claddings for steps, particularly of the ceramic or stone type, comprising the steps of: contouring an edge (6) of a plate-like element (3), which is provided with an exposed surface

(4), which constitutes the trading surface of the step; cutting a strip (7) from a second plate-like element; profiling the exposed surface (8) of the resulting strip; and assembling the plate-like element (3) and the strip (7).



**Fig. 1**

## Description

**[0001]** The present invention relates to a method for producing claddings for steps, particularly of the ceramic or stone type, and to the component that can be obtained with the method.

**[0002]** It is known that the treads of steps, despite their wide variety of shapes and dimensions, are generally provided so that they protrude like a ledge with respect to the risers and have protruding edges that are trimmed with suitable shaped profiles, so-called bull-noses, which have a rounded profile and a certain overall thickness.

**[0003]** A first known method for producing claddings for steps entails the formation of tiles which are already provided, on one or more edges, with protruding trim elements which are shaped like a torus, a bird's beak or otherwise.

**[0004]** This solution causes severe problems in the molding of the tiles, owing to the uneven thickness of the material inside the mold.

**[0005]** In order to obviate the above problem, the current trend is to provide the cladding of the tread and the trim profile separately.

**[0006]** One known method consists for example in coupling a bullnose to a plate-like element, such as a tile or the like, by interposing a supporting element which is associated with the bullnose at the front and has, at the rear, a seat for accommodating the tile that forms the tread of the step.

**[0007]** In this case, if a bullnose made of a different material is placed adjacent to the cladding of the tread, the resulting visual effect is not uniform and does not provide surface continuity.

**[0008]** In order to solve this problem, alternative methods have been developed which provide for the production of plate-like elements with which one or more front strips made of the same elements are associated by means of adhesives, by interlocking or other methods; the strips are then machined, for example by grinding, in order to reproduce a molded profile.

**[0009]** The known kinds of method and the corresponding products, however, are not devoid of drawbacks, including the fact that the treading surface of the step still appears to be interrupted by the joining line between the component that constitutes the tread and the trimming edge, and this fact does not allow to obtain an optimum aesthetic result and entails problems in cleaning the stairway, since over time accumulations of dirt form at said line.

**[0010]** Moreover, these known solutions are rather onerous.

**[0011]** In the first case, the machining of the supporting element, which is subjected to intense load and wear stresses, has a heavy effect on the cost of the operations.

**[0012]** In the second case, instead, in order to achieve stable and durable assembly of the strips it is necessary

to machine their laying surfaces in order to ensure good mutual bonding.

**[0013]** Moreover, the machining of the strips, already assembled to the components for cladding the tread, is rather laborious and awkward, entailing high production costs.

**[0014]** The aim of the present invention is to eliminate the drawbacks noted above of conventional methods and products, by providing a method for manufacturing claddings for steps, particularly of the ceramic or stone type, and a component obtainable with the method, which allow to obtain claddings that are uniform, without variations in the shade of the colorings and without discontinuities, ensuring an optimum aesthetic result.

**[0015]** Another object of the invention is to provide a method that is simple and rapid and allows to increase productivity and reduce the costs of the corresponding machining operations.

**[0016]** Finally, an object of the invention is to facilitate the operations for laying claddings on stairs, by allowing to obtain surfaces that have the same appearance as the adjacent floors and/or landings.

**[0017]** This aim and these and other objects that will become better apparent hereinafter are achieved by the present method for producing claddings for steps, particularly of the ceramic or stone type, characterized in that it comprises the steps of: contouring at least one edge of a substantially plate-like element, which is provided with an exposed surface, which is suitable to constitute the treading surface of a step, and with a laying surface; cutting at least one strip from a second substantially plate-like element; profiling the exposed surface of said strip; and assembling said contoured element and said profiled strip.

**[0018]** The component for cladding steps, particularly of the ceramic or stone type, is characterized in that it comprises a substantially plate-like element, which has an exposed surface and at least one contoured edge, and at least one strip which has a profiled exposed surface and is arranged below the element at the contoured edge, the strip being associated with the element by interposing fixing means suitable to rigidly couple them.

**[0019]** Further characteristics and advantages of the present invention will become better apparent from the following detailed description of a preferred but not exclusive embodiment of a method for producing claddings for steps, particularly of the ceramic or stone type, and of the component that can be obtained with the method, illustrated only by way of non-limitative example in the accompanying drawings, wherein:

Figure 1 is a perspective sectional view of a cladding for steps, obtained in accordance with the method according to the invention;

Figure 2 is a perspective view of a strip having a profiled exposed surface;

Figure 3 is a sectional view of a contoured element and of a profiled strip, in the unassembled condition;

Figure 4 is a sectional view of a component according to the invention;

Figure 5 is a sectional view of the component of Figure 4, applied to a step.

**[0020]** With reference to the figures, the reference numeral 1 generally designates a component for cladding a step 2.

**[0021]** The component 1 comprises a substantially plate-like element 3, which is provided with an exposed surface 4 that forms the treading surface of the step 2 and a resting surface 5.

**[0022]** The element 3 has an edge 6 that protrudes from the step 2 and is contoured so as to have a convex profile, for example a bird's beak profile.

**[0023]** At the edge 6, the element 3 is associated in a lower region with a strip 7 obtained from a second substantially plate-like element, not shown in the figures, which is provided with a profiled exposed surface 8, such as a molding, and with a laying surface 9.

**[0024]** Advantageously, the element 3 and the second element from which the strip 7 is obtained are made of the same material, for example ceramic, marble or other material.

**[0025]** If such elements are ceramic components, particularly tiles, they can be taken from the same production batch used to clad the adjacent floor and/or landing, so as to have the same decoration and the same color shades, allowing to obtain better cladding uniformity.

**[0026]** The strip 7 is arranged under the element 3, so that the contoured edge 6 and the profiled exposed surface 8 are connected along the joining line 10 below the exposed surface 4 of the element 3.

**[0027]** The strip 7 is inclined with respect to the laying surface 5 of the element 3, so as to connect the laying surface 5 to a riser 11 of the step 2 after installing the component 1.

**[0028]** The step 7 has opposite side walls 12 that are beveled so as to allow abutment against the laying surface 5 of the element 3 and against the riser 11.

**[0029]** Suitable fixing means 13, such as adhesives or the like, are interposed between the element 3 and the strip 7 in order to monolithically couple them.

**[0030]** The fixing means 13 occupy at least part of the gap formed between the first element 3 and the strip 7.

**[0031]** The method according to the invention is as follows. A step for contouring the edge 6 so as to obtain a convex profile is performed, followed by a step for cutting the strip 7 obtained from a second substantially plate-like element, a step for profiling the exposed surface 8 of the strip 7 so as to obtain a profiled surface that is similar to a molding and a step for assembling the contoured element 3 and the profiled strip 7.

**[0032]** The contouring and profiling steps consist in removing material by means of profiling machines of a known type.

**[0033]** Prior to the assembly step, a step for beveling

the side walls 12 is usually required and is performed at angles that depend on the inclination of the strip 7 with respect to the laying surface 5.

**[0034]** The assembly step consists in positioning the strip 7 under the first element 3, so that the contoured edge 6 blends, in a lower region, with the profiled exposed surface 8 along the joining line 10, interposing the fixing means 13 in order to monolithically couple the first element 3 and the strip 7.

**[0035]** Assembly is preferably performed prior to laying the component 1, but it is also possible to assemble the first element 3 and the strip 7 during installation.

**[0036]** The final step consists in finishing the contoured edge 6 and the profiled exposed surface 8, obtained by polishing and filling.

**[0037]** If the first element 3 and the step 7 are glazed on their surface, the initial color of the surface decoration can be restored in the finishing step.

**[0038]** By profiling the strip before assembly, the time required by the process is reduced considerably and the process is easier and therefore more efficient.

**[0039]** Moreover, the component is particularly tough and durable, since the profiled strip, being arranged below the treading surface, is not subject to load and/or wear stresses.

**[0040]** The component according to the invention can also be applied to previously clad steps, by adapting the protrusion of the first element with respect to the riser and the inclination of the strip with respect to the treading surface of the step so as to hide the bullnose applied previously.

**[0041]** If the steps to be clad are corner or end steps, the plate-like element has two or more contiguous contoured edges which are blended in a lower region with respective strips whose adjacent ends are cut so as to provide a suitably blended butt joint.

**[0042]** In practice it has been found that the described invention achieves the intended aim and objects.

**[0043]** The invention thus conceived is susceptible of numerous modifications and variations, all of which are within the scope of the inventive concept.

**[0044]** All the details may further be replaced with other technically equivalent ones.

**[0045]** In practice, the materials used, as well as the shapes and the dimensions, may be any according to requirements without thereby abandoning the scope of the protection of the appended claims.

**[0046]** The disclosures in Italian Patent Application No. MO2002A000034 from which this application claims priority are incorporated herein by reference.

**[0047]** Where technical features mentioned in any claim are followed by reference signs, those reference signs have been included for the sole purpose of increasing the intelligibility of the claims and accordingly, such reference signs do not have any limiting effect on the interpretation of each element identified by way of example by such reference signs.

## Claims

1. A method for manufacturing claddings for steps, particularly of the ceramic or stone type, **characterized in that** it comprises the steps of: contouring at least one edge of a substantially plate-like element, which is provided with an exposed surface, which is suitable to constitute the treading surface of a step, and with a laying surface; cutting at least one strip from a second substantially plate-like element; profiling the exposed surface of said strip; and assembling said plate-like element and said strip.
2. The method according to claim 1, **characterized in that** said assembly step consists in positioning said profiled strip under the laying surface of said contoured element at said edge, interposing fixing means that are suitable to monolithically couple said element and said strip.
3. The method according to one or more of the preceding claims, **characterized in that** said contoured edge is blended, in a lower region, with the profiled exposed surface of said strip.
4. The method according to one or more of the preceding claims, **characterized in that** said element and strip are made of the same material.
5. The method according to one or more of the preceding claims, **characterized in that** said contouring step comprises the removal of material from said edge so as to obtain a convex profile.
6. The method according to one or more of the preceding claims, **characterized in that** said profiling step comprises the removal of material from the exposed surface of said strip, which is suitable to obtain a profiled surface, such as a molding.
7. The method according to one or more of the preceding claims, **characterized in that** said fixing means are constituted by adhesives or the like inserted in the gap formed between said contoured element and said profiled strip.
8. The method according to one or more of the preceding claims, **characterized in that** it comprises a step for beveling at least two mutually opposite side walls of said strip, which is suitable to allow the abutment of said strip against said contoured element and against the riser of said step.
9. The method according to one or more of the preceding claims, **characterized in that** it comprises a step for finishing said contoured edge and the exposed surface of said profiled strip.
10. A component for cladding steps, particularly of the ceramic or stone type, **characterized in that** it comprises a substantially plate-like element, which has an exposed surface and at least one contoured edge, and at least one strip in which the exposed surface is profiled, said strip being arranged under the element at the contoured edge, said strip being associated with the element by interposing fixing means suitable to monolithically couple them.
11. The component according to claim 10, **characterized in that** said element and said strip are made of the same material.
12. The component according to one or more of claims 10 and 11, **characterized in that** said contoured profile is blended, in a lower region, with the profiled exposed surface of said strip.
13. The component according to one or more of claims 10 to 12, **characterized in that** the joining line between said element and said strip is arranged below the exposed surface of said element.
14. The component according to one or more of claims 10 to 13, **characterized in that** said strip is arranged substantially at an angle with respect to the exposed surface of said element.
15. The component according to one or more of the preceding claims 10 to 14, **characterized in that** said fixing means are constituted by adhesives or the like and occupy at least part of the gap formed between said element and said strip.

