(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) Publication number : **0 674 051 A1**

(12) EUROPEAN PATENT APPLICATION

(21) Application number : **95850051.4**

(22) Date of filing : **10.03.95**

(51) Int. Cl.[6] : **E01C 17/00,** B29C 45/04

(30) Priority : **24.03.94 FI 941370**

(43) Date of publication of application :
27.09.95 Bulletin 95/39

(84) Designated Contracting States :
AT BE CH DE DK ES FR GB GR IT LI NL PT SE

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(54) Tufted plastic mat.

(57) The invention relates to a tufted plastic mat such as those used, e.g., as a door, balcony or similar walking space mat, said tufted mat comprising at least two layers, namely an upper layer (1) and a lower layer (2) so that the upper layer is formed by grass-like tufts (1), while the lower layer is formed by a solid layer or lattice structure (2) of plastic material to which structure the tufts of the plastic material are attached in a permanent manner. The invention is implemented by providing the upper (1) or/and the lower layer (2) of the tufted plastic mat with patterns (3) of high reflectivity in the dark by fabricating the reflective patterns in a single process with the other parts of the mat from a material different from the bulk material of the mat.

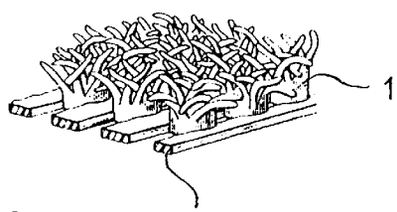

FIG. 1.

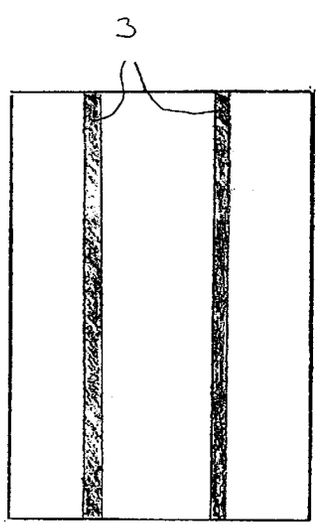

FIG. 2.

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The invention relates to a tufted mat made of a plastic material for use as a door, balcony or similar walking space mat, said tufted mat comprising at least two layers, namely an upper layer and a lower layer so that the upper layer is formed by grass-like tufts, while the lower layer is formed by a solid layer or lattice structure of plastic material to which structure the tufts of the plastic material are attached in a permanent manner.

Tuft mats of the above-described type made from a plastic material have recently gained wide popularity. They find particular use as door mats, porch mats and on balconies and yards. Their benefits include a pleasing look resembling that of real grass and their capability of effectively removing sand and other solid particles of dirt from footwear by virtue of their coarse surface. The detached sand accumulates onto the upper surface of the solid backing layer (in the case of a solid backing, not of a lattice backing), but still remains invisible under the tufts. During cleaning, accumulated sand and other dirt particles can be removed from the mat by shaking.

One production method of such a tufted plastic mat is disclosed in US Pat. No. 3,590,109. Further reference to the prior art can be found in EP patent application 204682 A2.

It is an object of the present invention to achieve a tufted plastic mat of a chiefly conventional structure with additional properties offering improved visibility in dark and lighted conditions. The invention is characterized in that the upper or/and the lower layer of the tufted plastic mat is/are provided with patterns of high reflectivity in the dark by fabricating the reflective patterns in a single process with the other parts of the mat from a material different from the bulk material of the mat.

A preferred embodiment of the invention is characterized in that the reflective patterns are stripes running longitudinally over the mat surface so that desired longitudinal tuft rows of the mat are made from a reflective material.

Another preferred embodiment of the invention is characterized in that the reflective patterns are stripes made to the lower layer of the mat from a reflective material so as to run longitudinally over the mat.

A still another preferred embodiment of the invention is characterized in that the reflective material is achieved by blending a reflective pigment to the conventional bulk plastic from which the mat is made.

By virtue of the invention the visibility of the mat is improved in both dark and lighted conditions. Moreover, the reflective pattern enhances the look of the mat.

In the following, the invention will be examined in more detail by means of exemplifying embodiments with reference to the attached drawings, in which:

Figure 1 is a perspective view of the structure of a tufted plastic mat; and

Figure 2 is a highly simplified and schematic top view of the tufted plastic mat with the reflective patterns manufactured in accordance with the invention.

With reference to Fig. 1, a conventional type of tufted plastic mat is shown made using the technology described in the US Pat. No. 3,590,109. Alternatively, the mat can be made using the techniques disclosed in cited EP patent application 204682. Detailed description of the manufacturing method can be omitted herein as any conventional manufacturing technique of tufted mats can be used. The essential characteristic of the manufacturing technique is that the tufts 1 are made in a continuous moulding process and thus become an integral part of the lower layer 2 of the mat. The mat is advantageously made entirely from a plastic material.

Fig. 1 of cited EP patent application 204682 illustrates a nozzle through which the plastic material is cast into tuft mould pockets made to the surface of a cylindrical mould. For each longitudinal tuft row is provided a separate nozzle, whereby the nozzles are situated in parallel as viewed in the direction of the normal to the image plane of Fig. 1 in cited EP patent application 204682.

The practical implementation of the invention can be accomplished by, e.g., feeding via one or a greater number of nozzles such reflective material that provides a straight reflective stripe in the ready-made mat at the desired point(s). Obviously, the manufacturing technique can be modified so that patterns of any desired shape can be made from the reflective material. The orientation of the pattern(s) such as line(s) is also determined by the manner in which the mat pieces are cut from the continuous web of the mat.

Further, it is possible to make the reflective patterns also or only to the lower layer of the mat. This can be accomplished similarly in conventional moulding equipment by feeding the reflective material via properly positioned nozzles.

To those versed in the art it is obvious that the invention is not limited by the exemplifying embodiments described above, but rather, can be varied within the scope of the appended claims.

Claims

1. A tufted plastic mat such as those used, e.g., as a door, balcony or similar walking space mat, said tufted mat comprising at least two layers, namely an upper layer (1) and a lower layer (2) so that the upper layer is formed by grass-like tufts (1), while the lower layer is formed by a solid layer or lattice structure (2) of plastic material to which structure the tufts of the plastic material are attached in a

permanent manner, **characterized** in that the upper (1) or/and the lower layer (2) of the tufted plastic mat is/are provided with patterns (3) of high reflectivity in the dark by fabricating the reflective patterns in a single process with the other parts of the mat from a material different from the bulk material of the mat.

2. A tufted mat as defined in claim 1, **characterized** in that the reflective patterns (3) are provided by desired stripes of the mat running longitudinally over the mat surface so that said tuft rows are made from a reflective material.

3. A tufted mat as defined in claim 2, **characterized** in that the reflective patterns (3) are stripes made to the lower layer of the mat from a reflective material so as to run longitudinally over the mat.

4. A tufted mat as defined in any of foregoing claims 1-3, **characterized** in that the reflective material is achieved by blending a reflective pigment to the conventional bulk plastic from which the mat is made.

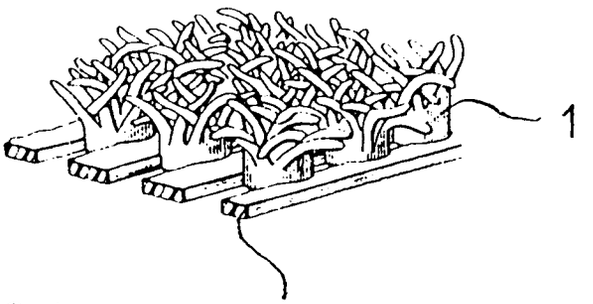

FIG. 1.

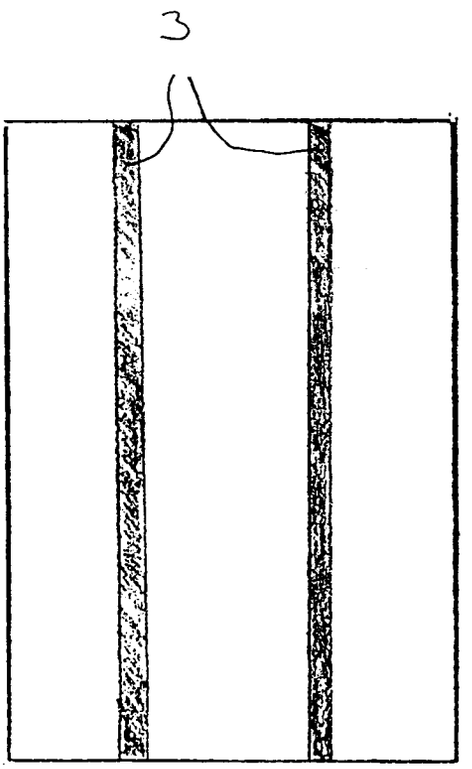

FIG. 2.

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EUROPEAN SEARCH REPORT

Application Number EP 95850051.4

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.6)
D,Y	US - A - 3 590 109 (DOLEMAN et al.) * Fig. 8,9; columns 4-6,11, 12 *	1	E 01 C 17/00 B 29 C 45/04
Y	GB - A - 2 228 758 (WILLIS) * Fig. 1,2,6-8; page 2, period 2.3 *	1	
A		2-4	
A	FR - A - 2 504 568 (HEINZE GMBH & CO. KG) * Fig. 1; pages 2,3; claims *	1-4	
A	AT - B - 287 046 (STÄRK) * Totality *	1	

TECHNICAL FIELDS SEARCHED (Int. Cl.6)

B 29 C
E 01 C

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
VIENNA	30-06-1995	LANG

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
Y : particularly relevant if combined with another document of the same category
A : technological background
O : non-written disclosure
P : intermediate document

T : theory or principle underlying the invention
E : earlier patent document, but published on, or after the filing date
D : document cited in the application
L : document cited for other reasons

& : member of the same patent family, corresponding document

EPO FORM 1503 03.82 (P0401)