

EDGE MEMBER-INCORPORATING ARTIFICIAL LAWNBACK GROUND OF THE INVENTION

This invention relates to an artificial lawn of a synthetic resin, and more particularly to an artificial lawn having an edge member attached to at least one side of the peripheral edge of the artificial lawn.

Artificial lawns subjected to an edging treatment are disclosed, for example, in Japanese Laid-Open (Kokai) Utility Model Application Nos. 120632/75 and 32799/82.

In the former, the peripheral edge portion of a base mounted on the underside of the artificial lawn is raised to provide a picture frame-like edge portion, and an inwardly-opening recess is formed in the raised edge portion. The edge of the artificial lawn is inserted into the recess.

In the latter, a number of pointed retainer pawls which are thrust into the underside of the artificial lawn are formed on an upper surface of a base of metal in an upstanding manner, and a grip-type holder member of a channel-shaped cross-section made of a suitable flexible synthetic resin is formed on the edge portion of the base. The edge portion of the artificial lawn is gripped by the holder member, with the pointed retainer pawls thrust into the underside of the artificial lawn.

In the former, however, the edge portion of the artificial lawn is gripped by the recessed portion merely because of the resiliency of the raising of the artificial lawn and the

elasticity of the raised edge portion. Therefore, the mat is liable to become disengaged from the recessed portion, and when a person steps on the raised edge portion, the raised edge portion can not support such load and hence yields downwardly. This gives an unusual feeling to the person. In addition, the bristles within the raised edge portion are compressed, so that the resiliency thereof are lowered, which results in the fact that the edge portion of the artificial lawn is more liable to be disengaged from the raised edge portion.

In the latter, the fixing operation for thrusting the retainer pawls into the artificial lawn and the sliding operation for sliding the edge portion into the holder member must be done at the same time. Therefore, the installation is troublesome, and the re-adjustment of the arrangement is difficult. In addition, holes are formed in the artificial lawn, and the retainer pawls are deformed. Therefore, there have been encountered problems such as a problem that the disassembly and re-use are not undertaken satisfactorily.

SUMMARY OF THE INVENTION

The present invention seeks to provide an edge member-incorporating artificial lawn, in which an edge member can be easily attached to the edge of the artificial lawn and can be positively retained thereon, and the edge portion will not yield downwardly even when a load is applied thereto from above.

The above object has been achieved by an edge member-incorporating artificial lawn comprising a base, artificial grass made of a flexible synthetic resin and including a number of blocks of lawn grass-like thin pieces planted on said base, parallel gaps being provided between said blocks and being spaced a predetermined distance from one another, and an edge member having at least an upper wall and a lower wall, an inner end portion of said upper wall being directed downwardly to provide a depending engaging portion, characterized in that a lower end of said depending engaging portion is spaced from said lower wall a distance at least equal to the thickness of said base, said edge member has a cavity which is disposed between said upper and lower walls inwardly of said depending engaging portion, and at least one row of said blocks disposed adjacent to an edge of said artificial lawn is pressed into said cavity.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is a fragmentary perspective view of a preferred embodiment of an edge member-incorporating artificial lawn of the present invention, with parts partly omitted, this view showing an edge member and an artificial lawn combined together;

Fig. 2 is an enlarged fragmentary view, showing the edge member and the artificial lawn before they are connected together;

Fig. 3 is an enlarged fragmentary view, showing the edge member and the artificial lawn after they are connected together; and

Fig. 4 is an enlarged fragmentary view, showing the edge member of the another embodiment of the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

A preferred embodiment of an edge member-incorporating artificial lawn of the present invention will now be described with reference to the drawings. The invention itself is not to be restricted by the embodiment described below so long as it does not depart from the scope of the invention.

Fig. 1 is a fragmentary perspective view with parts partly omitted, showing the edge member and the artificial lawn

connected together. Fig. 2 is an enlarged, fragmentary side-elevational view, showing the two before they are connected together. Fig. 3 is a view similar to Fig. 2 but showing the two after they are connected together.

Reference numeral 1 denotes an edge member-incorporating artificial lawn which comprises the artificial lawn 2 and the edge member 3 fitted on the edge portion of the artificial lawn.

The artificial lawn 2 is made of a flexible synthetic resin, and comprises a plate-like base 4 and a number of lawn-like blocks 6 of lawn grass-like thin pieces 5 planted on the base 4 in an upstanding manner. Gaps 7 are provided between the number of blocks 6 and are spaced a suitable distance from one another. Those portions of the base where the gaps 7 are provided are slightly greater in thickness than the remainder, if necessary. The lawn grass-like thin pieces 5 of each block 6 are formed by dividing a hollow tubular portion, formed integrally on the base 4, into strips each having a tapering, slightly rounded upper end; however, the thin pieces 5 may have any other lawn grass-like configuration. Further, if necessary, a laminate of a coarse fabric and a thin paper sheet as well as a protective sheet 8 may be affixed to the underside of the base 4.

The edge member 3 has strip-like lower and upper walls 9 and 10, an engaging portion 11 depending from the inner edge of

the upper wall 10, and an upstanding rib 12 extending between the upper and lower walls and extending in the longitudinal direction intermediate the opposite lateral sides of each of the upper and lower walls. The edge member 3 can be made of a flexible synthetic resin. Examples of such resins include an olefin resin such as polyethylene and polypropylene, a styrene resin such as polystyrene, rubber-reinforced polystyrene and ABS resin, a polyvinyl chloride resin, polyamides, polycarbonate, polyesters. The edge member 3 may be composed of either one of the above materials or a mixture thereof depending on the required nature of the material. Alternatively, the edge member 3 can be made of suitable metal such as aluminum.

A generally half of the upper wall 10 is slanting outwardly downwardly and is continuous at its outer edge with the lower wall 9, thus providing a converging inclined surface. The inner half of the upper wall 10 is a flat. The height between this flat portion and the lower wall 9 is smaller than the height of the lawn grass-like thin pieces 5, and is preferably about $1/2$ to $2/3$ of the latter height. The distance between the lower end of the depending engaging portion 11 and the lower wall 9 is at least slightly greater than the thickness of the base 4 of the artificial lawn 2 so that the base 4 can be slidably inserted into this space. A cavity 13 is defined by the inner portions of the lower and upper walls 9 and 10 and

the rib 12, and at least one row of blocks 6 disposed immediately adjacent to the edge of the artificial lawn 2 can be pressed into the cavity 13.

For assembling the edge member-incorporating artificial lawn 1 according to the present invention, one axial end of the edge member 3 is held against the one side of the artificial lawn 2, and then is pressed to slide the edge member in its longitudinal direction, so that at least one row of blocks disposed immediately adjacent to the edge of the artificial lawn 2 is forced into the cavity 13 of the edge member 3, with the depending engaging portion 11 inserted in a row of gaps 7 formed between the row of the block 6 in the cavity 13 and another row of blocks 6 disposed adjacent thereto. As a result, the lawn grass-like thin pieces 5 of the thus press-fitted blocks 6 are deformed and compressed to form a generally solid mass pressed against the inner surfaces of the cavity 13 of the edge member 3 and firmly engaging the depending engaging portion 11. Then, the edge member-incorporating artificial lawn is installed at a desired place, as on a floor. In this case, an adhesive layer may be formed on the underside of the edge member 3 (and if desired, an adhesive layer may be also formed on the underside of the artificial lawn 2), and alternatively a non-slip element may be provided on such portions.

If necessary, a stop member of such a configuration as to close the cavity 13 or a stop member substantially identical in shape to the end of the edge member 3 may be connected to the end of the edge member 3 so as to prevent the sliding movement of the artificial lawn 2. Another edge member may be additionally be attached to a row of blocks intersecting the row of blocks on which the first-mentioned edge member is mounted, so that the two edge members abut against each other at their one ends to form a corner portion. Further, the edge members 3 may be provided on the entire peripheral edge of the artificial lawn much like a picture frame.

As described above, in the edge member-incorporating artificial lawn 1 according to the present invention, the edge member 3 can be attached to the artificial lawn merely by forcing the row of blocks 6 into the cavity 13 of the edge member 13 and then sliding the edge member in its longitudinal direction. Thus, the attachment of the edge member 3 can be carried out quite easily. Similarly, the edge member can also be easily removed merely by sliding the same. The edge member 3 will not be disengaged from the artificial lawn in a direction intersecting the direction of sliding movement of the edge member, and the edge portion of the artificial lawn on which the edge member 3 is attached will not be curled.

The upper wall 10 of the edge member is supported by the rib 12 and the depending engaging portion 11, and the base 4 is

interposed between the lower end of the portion 11 and the lower wall 9. Therefore, even when a person steps on the upper wall to apply a large load to the upper wall, the upper wall will not yield or be deformed. Therefore, the depending engaging portion 11 will not be deformed, and the gap 7 receiving the lower end of the engaging portion 11 will not be enlarged. Therefore, the edge member will not be disengaged from the artificial lawn 2.

The protective sheet 8 affixed to the underside of the artificial lawn serves to prevent damage to the base and the floor when the artificial lawn either in a rolled-up condition or in an extended condition is moved. Also, when the artificial lawn is to be bonded to the floor by an adhesive, the protective sheet enhances the bonding force.

In the above embodiment, instead of providing the rib 12, the outer portion of the edge member 3 may be solid, and also a lightening cavity may be formed in such a solid portion. Further, the outer portion of the edge member extending outwardly from the rib 12 may be omitted or removed.

A non-slip element may be mounted on the upper surface of the upper wall of the edge member. The upper surface of the upper wall may be roughened. Further, upstanding lawn grass-like thin pieces may be formed on the upper surface of the upper wall in a manner similar to the artificial lawn, and a non-slip element may be mounted on the lower surface of the

lower wall, as shown in Fig. 4.

Further, the construction of the lawn grass-like thin pieces is not restricted to the above construction and can be modified freely. Its arrangement can be modified freely so long as there is provided the gap along the edge in parallel relation thereto.

As described above, in the edge member-incorporating artificial lawn according to the present invention, the edge member can be easily attached to the artificial lawn, and upon attachment, the two are firmly connected together. Even when there is applied a force tending to disengage the edge member from the artificial lawn, the artificial lawn and the edge member will not be curled and will not be disengaged from each other. The force of connection between the two at the time of the assemblage can be maintained over a prolonged period of use. The attachment and detachment of the edge member can be done easily, and in accordance with the installation space, the size of the artificial lawn and the length of the edge member can be easily changed. Even when the artificial lawn and the edge member are subjected to damage, they can be easily replaced by new ones. Further, when the position of installation is required to be changed, this can be easily done, and the installation ability can be markedly improved.

Further, according to the present invention, even when a person steps on the edge member, the edge member will not yield

or be deformed so much. Therefore, the person will not have an unusual feeling. Thus, in use, a better feeling can be obtained.



CLAIMS

1. An artificial lawn comprising a base, artificial grass made of a flexible synthetic resin and including a number of blocks of lawn grass-like thin pieces planted on said base, parallel gaps being provided between said blocks and being spaced a predetermined distance from one another, and an edge member having at least an upper wall and a lower wall, an inner end portion of said upper wall being directed downwardly to provide a depending engaging portion, characterized in that a lower end of said depending engaging portion is spaced from said lower wall a distance at least equal to the thickness of said base, said edge member has a cavity which is disposed between said upper and lower walls inwardly of said depending engaging portion, and at least one row of said blocks disposed adjacent to an edge of said artificial lawn is pressed into said cavity.

2. An edge member-incorporating artificial lawn as claimed in claim 1, wherein the height between said upper and lower walls of said edge member is smaller than the height of said artificial grass.

3. An edge member-incorporating artificial lawn as claimed in claim 2, wherein said height is $1/2$ to $2/3$ of



the height of said artificial grass.

4. An edge member-incorporating artificial lawn as claimed in claim 1, wherein a non-slip element is mounted on the upper surface of the upper wall of said edge member.

5. An edge member-incorporating artificial lawn as claimed in claim 4, wherein said non-slip element is formed by roughening the upper surface of said upper wall of said edge member.

6. An edge member-incorporating artificial lawn as claimed in claim 1, wherein a non-slip element is mounted on the lower surface of said lower wall.

7. An edge member-incorporating artificial lawn as claimed in claim 1, further comprising a protective sheet affixed to the under side of said base.

8. An edge member-incorporating artificial lawn as claimed in claim 1, wherein said edge member is made of a flexible plastic resin.

9. An edge member-incorporating artificial lawn as claimed in claim 1, wherein said edge member is made of aluminium.