Title: TILE FOR SYNTHETIC GRASS SYSTEM

Figure 1

Abstract: A tile for use in a synthetic grass system. The tile is intended to be laid in the center of an area upon which the synthetic grass assembly will be installed. This allows additional tiles to be installed in a faster amount of time by creating two areas from which the tiles may be installed.
The present application claims the benefit of provisional application no. 60/997,469 filed on October 2, 2007, the entirety of which is incorporated herein.

The present invention relates to a tile and a tile array intended for use beneath synthetic grass systems, as well as a method of installing same.

Beneath a synthetic grass system it is not uncommon to utilize a drainage system. These drainage systems include, among other things, an array of tiles.

Utilizing tiles beneath a synthetic grass system has multiple benefits. For example, tiles can be utilized to aide in drainage by maximizing the distance between the synthetic grass system and the base, typically which comprises crushed stone. The added space allows water to drain from the synthetic grass system to the base without flooding the synthetic grass system.

Additionally, utilizing a tile beneath a synthetic grass system can increase the shock absorbing characteristics of the synthetic grass system. It is important for safety that the synthetic grass system maintains a certain level of "give." A tile can add to the shock absorbing characteristics of the synthetic grass system through utilization of a material that is slightly flexible—especially when compared to the crushed stone base beneath the tiles.

Installation of the tiles consists of an installation team laying down the tiles and connecting adjacent ones. However, based upon the configuration of the tiles, installation begins at one end of the surface to be covered and slowly proceeds in one direction.

It would be advantageous to provide a tile and/or tile array that decreases the installation time associated with installing tiles beneath a synthetic grass system.
Therefore, it is an object of the present invention to provide a tile that can decrease the installation time associated with installation of an array of tiles beneath a synthetic grass system.

**SUMMARY OF THE INVENTION**

*Para 9*  In one aspect of the invention, the invention comprises a tile to be installed beneath a synthetic grass system. The tile is laid down in the center of the field and allows for additional tiles to be installed on either side of tile at the same time. This allows two installation teams to install the additional tiles at the same time.

*Para 10*  In another aspect of the invention the tile laid down in the center of the field has male attachment members located on three sides thereof. Complementary attachment members are on the fourth side. The complementary attachment members are configured such that they are pressed down and are detachably secured to the attachment members. This allows the installation teams to quickly press down on additional tiles as they are installed and does not require previously laid tiles to be picked up in order to be attached to additional tiles. Once again, this will decrease the amount of time required for installing the tiles, and decrease the overall time required to install the synthetic grass system.

*Para 11*  These and other aspects of the present invention will be appreciated and readily understood by those of skill in the art in view of the description of the preferred embodiments.

**DESCRIPTION OF THE DRAWINGS**

*Para 12*  FIG. 1 is a top perspective view of a tile according to the present invention.

*Para 13*  FIG. 2 is a bottom perspective view of a tile according to the present invention.

*Para 14*  FIG. 3 is a top view of a tile according to the present invention.

*Para 15*  FIG. 4 is a first side view along line AA in FIG. 3.

*Para 16*  FIG. 5 is a top view of an array of tiles according to the present invention.
DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[Para 17] While this invention is susceptible of embodiment in many different forms, there is shown in the drawings and will be described in detail below, at least one specific embodiment with the understanding that the present disclosure is to be considered as an exemplification of the principles of the invention and is not intended to limit the invention to the embodiment illustrated.

[Para 18] It should be understood that like or analogous elements and/or components, referred to herein, are identified throughout the drawings by like reference characters. In addition, it should be understood that the drawings are merely a representation, and some of the components may have been distorted from actual scale for purposes of clarity.

[Para 19] A tile 10 according to the present invention includes a top portion 12 having a first side 14, a second side 16, a third side 18, a fourth side 20, and a top surface 22. The first side 14 and the third side 18 are located opposite each other, and similarly, the second side 16 and the fourth side 20 are located opposite of each other.

[Para 20] The top portion 12 includes a top surface 22 formed, for example, by a plurality of intersecting members 24. The intersecting members 24 form a plurality of open spaces 26. These open spaces 26 may provide the tile 10 with the drainage characteristics and qualities needed below an artificial grass system. At the points where the intersecting members 24 meet, the top surface 22 may include a plurality of projections 27. These projections 27 may increase the friction of top surface 22 of the tile 10, for example, on the backing of an artificial grass carpet laid on top of the tile 10.

[Para 21] The tile 10 may also include a bottom portion 28 which includes a bottom surface 30 with a plurality of legs 32 extending therefrom.

[Para 22] The tile 10 may be comprised of two sections 34, 36 flexibly attached to each other by one or more joints 38. The joints 38 allow for the two sections 34, 36 to have some flexibility
relative to each other, and may comprise, inverted u-shaped joints 40, or any other joint that will keep the two sections 34, 36 together but provide some flexibility.

[Para 23] It is contemplated that a plurality of tiles 10 will be connected together, and it is contemplated that the connected tiles 10 will form a center strip 42. In order to connect the individual tiles 10 together, the tile 10 may include at least one attachment member 44 and at least one complementary configured attachment member 46. In a preferred embodiment the attachment members 44 are male attachment members and may further comprise, for example, bar attachment members. In this embodiment, the complementary configured attachment members 46 are female attachment members and may comprise inverted u-shaped channels. These types of attachment members are preferred in that they allow a tile to be "pressed down" onto another tile on the ground. Other types of attachment means and members and the number thereof are likewise contemplated for use. In a preferred embodiment, the first side 14, second side 16 and forth side 20 all include attachment member 44 and the third side 18 has complementary configured attachment member 46.

[Para 24] If the strip 42 is formed of a plurality of tiles 10, described in the previous paragraphs, the strip 42 will have two sides 48, 50 with attachment members 44 on both sides 48, 50 which are identical to each other. This will allow additional tiles 52 to be detachably secured to both sides 48, 50 of the center strip 42 at the same time through the use of attachment members 44 and the complementary configured attachment member 46. It is preferred that the additional tiles 52 are those described in U.S. Pat. Application No. 11,973,645 (published on September 11, 2008 as Pub. No. 2008/0216437). Additionally, as described above, it is preferred that the attachment members 44 on the center strip 42 allow for the additional tiles 52 to be detachably secured with a downward force.

[Para 25] This center strip 42 may be used to form an array of tiles 54 which may form a base for a synthetic grass system. The array 54 generally includes at least one first tile 56 having a first configuration and at least one second tile 58 and one third tile 60, each having a second
configuration. The second configuration is different than the first configuration. The first tile 54 may include a top and a bottom and four sides, wherein three of the sides include an attachment member such as attachment member 44 and the fourth side includes a complementary attachment member, such as complementary attachment member 46. It is contemplated that the first tile 56 is the tile 10 described herein.

[Para 26] The second tile 58 and third tile 60 are connected to opposite sides of the first tile 56. The second tile 58 and third tile 60, as noted above, have the same configuration. For brevity, a contemplated configuration will only be described in relation to the second tile 58. The second tile 58 includes four sides 100, 102, 104, 106. A set of adjacent sides 102 and 104 include the same attachment means, such as for example, attachment members 44. A second set of adjacent sides 100 and 106 include a complementary attachment member such as for example, complementary attachment member 46. Thus, unlike the first tile 56, which has three sides having the same attachment means, the second tile 58 has only two sides with the same attachment means.

[Para 27] Again, utilizing a center strip 42 will allow for an installation team to work faster and install the base in both directions. Therefore, in another aspect of the invention, the present invention is a method of installing a tile base for a synthetic grass system. The method generally includes the steps of providing a first center tile for positioning at an approximate center of a site intended for an artificial turf field, providing a second center tile, attaching the second center tile to the first center tile to form a center strip, attaching a first tile to a first side of the center strip, wherein the first tile has a different configuration than the first and second center tiles, and, attaching a second tile to a second side of the center strip, wherein the second tile has a different configuration than the first and second center tiles.

[Para 28] The method also may include pushing down the second center tile onto an attachment member of the first center tile.
The method may further include pushing down on the first tile onto an attachment member on the first side of the center strip. Similarly, the method may include pushing down on the second tile onto an attachment member on the second side of the center strip. Finally, the method contemplates that attaching the first tile to the first side of the center strip and step of attaching the second tile to the second side of the center strip are performed at approximately the same time.
 CLAIMS

What is claimed is:

1. A tile for use with a synthetic grass system comprising:
   a first side, a second side, a third side and a fourth side and a top surface;
   the first side and the third side being located opposite each other; and,
   the first side, the second side and the fourth side each including an attachment member and *
   the third side including a complementarily attachment member.

2. The tile of claim 1 further comprising a top surface having a plurality of intersecting members.

3. The tile of claim 2 further comprising at least one projection disposed at a point of
   intersection of the intersecting members and extending away therefrom.

4. The tile of claim 1 further comprising a bottom surface with a plurality of legs extending
   away therefrom.

5. The tile of claim 1 further comprising a first section and a second section, the first section and
   the second section being connected by a flexible joint.

6. The tile of claim 5 wherein the flexible joint is a u-shaped joint.

7. The tile of claim 1 wherein the attachment member further comprises a male attachment
   member and the complementary attachment member is a female attachment member.
8. The tile of claim 7 wherein the male attachment member comprises a bar attachment member.

9. The tile of claim 7 wherein the female attachment member comprises an inverted u-shaped attachment member.

10. A method of installing a tile base for a synthetic grass system, the method comprising the steps of:
    providing a first center tile for positioning at an approximate center of a site intended for an artificial turf field;
    providing a second center tile;
    attaching the second center tile to the first center tile to form a center strip;
    attaching a first tile to a first side of the center strip, wherein the first tile has a different configuration than the first and second center tiles;
    attaching a second tile to a second side of the center strip, wherein the second tile has a different configuration than the first and second center tiles.

11. The method of claim 10, wherein the step of attaching the second center tile to the first center tile to form the center strip further comprises pushing down the second center tile onto an attachment member of the first center tile.

12. The method of claim 10, wherein the step of attaching the first tile to the first side of the center strip further comprises pushing down on the first tile onto an attachment member on the first side of the center strip.
13. The method of claim 10, wherein the step of attaching the second tile to the second side of the center strip further comprises pushing down on the second tile onto an attachment member on the second side of the center strip.

14. The method of claim 10 wherein the steps of attaching the first tile to the first side of the center strip and the step of attaching the second tile to the second side of the center strip are performed at approximately the same time.

15. An array of tiles forming a base for a synthetic grass system, the array comprising:
   a plurality of tiles, a first tile from the plurality of tiles having a first configuration and a second tile and a third tile both having a second configuration;
   the second configuration being different than the first configuration;
   wherein the first tile comprises a top and a bottom and four sides; and,
   wherein three of the sides include an attachment member and the fourth side includes a complementary attachment member, wherein the second tile and the third tile are attached to opposite sides of the first tile.

16. The array of claim 15, wherein the first tile further comprises a first section and a second section connected by a flexible joint.

17. The array of claim 16, wherein the flexible joint is a u-shaped joint.

18. The array of claim 15, wherein the first tile, second tile and third tile each include a top surface comprising of a plurality of intersecting members.
19. The array of claim 16 further comprising a fourth and fifth tile, the fourth tile attached to the second tile, and the fifth tile attached to the third tile, wherein the fourth and fifth tile have a configuration being the same as the configuration of the third tile.
### A. CLASSIFICATION OF SUBJECT MATTER

**IPC(8) - ED4F 13/08 (2008.04)**  
**USPC - 52/392**  
According to International Patent Classification (IPC) or to both national classification and IPC

### B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
**IPC(8) - ED4F 13/08, A01N 3/00, A63B 69/39, ED3C 13/08 (2008.04)**  
**USPC - 52/392, 592 1, 473/160, 162**

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)  
PatBase

### C. DOCUMENTS CONSIDERED TO BE RELEVANT

<table>
<thead>
<tr>
<th>Category*</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
<th>Relevant to claim No</th>
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<td>Y</td>
<td>US 6,669,572 B1 (BARLOW) 30 December 2003 (30 12 2003) see entire document</td>
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### D. Further documents are listed in the continuation of Box C

- Special categories of cited documents
  - "A" document defining the general state of the art which is not considered to be of particular relevance
  - "E" earlier application or patent but published on or after the international filing date
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  - "&" document member of the same patent family

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