An interlocking paver stone system comprises a first paver stone having a generally oval configuration and a second paver stone having a generally star configuration having a first point, a second point, a third point, a fourth point, a first curved side between the first point and the second point, a second curved side between the second point and the third point, a third curved side between the third point and the fourth point, and a fourth curved side between the fourth point and the first point.
INTERLOCKING PAVING STONE SYSTEM

BACKGROUND OF THE INVENTION

[0001] This invention relates to an interlocking paving stone system and more particularly to an interlocking paving stone system for covering an area such as a driveway, patio, or a path. More specifically, an interlocking paving stone system is disclosed having a pair of uniquely shaped paving stones that can be combined or locked together to form a stable load-bearing surface in a particular pattern.

[0002] Paving stones are used to construct various surfaces and structures such as roads, footpaths, steps, and patios. Paving stones have been constructed from various materials. Examples of such materials include rocks, stones, and preformed or molded concrete blocks. Paving stones may be fabricated from concrete or a concrete mixture by using a mold of a desired size and shape. The concrete is placed into a mold and formed under high pressure and then removed from the mold to cure. Once the stones are cured, they may be arranged and placed on pallets for storage or shipping. In order to construct a surface or structure from paving stones, a base is prepared to provide a flat surface upon which the stones may be placed. The base may consist of various layers of rock and sand with the topmost layer being sand. The stones are laid in place in various configurations or patterns over the topmost layer. Once the stones are in place, sand may be spread over the stones to fill in the gaps between the stones. A machine, such as a vibrating compactor, may be used to agitate the sand into the gaps and to move sand in the topmost layer into the gaps. In this manner, the paver stones are locked into place.

[0003] In recent years, preformed concrete paving stones have been popular because such blocks can be mass produced and are relatively inexpensive. Additionally, such blocks are durable and may include various finishes, textures, and colors. Even though these blocks are relatively inexpensive, they typically require extensive installations to construct various surfaces or structures. Additionally, some patterns are complex and require many types of stones to construct a surface. Homeowners and commercial landscapers will avoid using numerous blocks due to the difficulty encountered in building a surfacing project unless there is a simple or easy way to construct such projects using fewer stones. The present invention is designed to obviate and overcome many of the disadvantages and shortcomings associated with present paving stones. In particular, the present invention is an interlocking paving stone system that may be used to easily construct various surfaces or structures.

SUMMARY OF THE INVENTION

[0004] In one form of the present invention, an interlocking paving stone system comprises a first paving stone having a generally oval configuration and a second paving stone having a generally star configuration having a first point, a second point, a third point, a fourth point, a first curved side between the first point and the second point, a second curved side between the second point and the third point, a third curved side between the third point and the fourth point, and a fourth curved side between the fourth point and the first point.

[0005] In another form of the present invention, an interlocking paving stone system comprises a first paving stone having a generally oval shaped body having a top and a bottom and a second paving stone having a generally star shaped body having a top, a bottom, a first point, a second point, a third point, a fourth point, a first curved side between the first point and the second point, a second curved side between the second point and the third point, a third curved side between the third point and the fourth point, and a fourth curved side between the fourth point and the first point.

[0006] In still another form of the present invention, an interlocking paving stone system comprises a first paving stone having a generally oval shaped body and a second paving stone having a generally star shaped body having a first point, a second point, a third point, a fourth point, with each of the points being rounded, a first curved side between the first point and the second point, a second curved side between the second point and the third point, a third curved side between the third point and the fourth point, and a fourth curved side between the fourth point and the first point.

[0007] In light of the foregoing comments, it will be recognized that a principal object of the present invention is to provide an interlocking paving stone system that is of simple construction and design and which can be easily employed with highly reliable results.

[0008] Another object of the present invention is to provide an interlocking paving stone system that is easy to use to construct both residential and commercial landscaping projects or applications.

[0009] A further object of the present invention is to provide an interlocking paving stone system that is capable of being manufactured using a mold with each mold being capable of producing a plurality of the stones of the system.

[0010] Another object of the present invention is to provide an interlocking paving stone system that can be used to construct various load or traffic carrying surfaces such as roads, footpaths, steps, and patios.

[0011] A still further object of the present invention is to provide an interlocking paving stone system in which each of the blocks can be tumbled to present a natural or weathered appearance.

[0012] Another object of the present invention is to provide an interlocking paving stone system that uses two different stones to form a pattern with the stones being of contrasting colors.

[0013] These and other objects and advantages of the present invention will become apparent after considering the following detailed specification in conjunction with the accompanying drawings, wherein:

BRIEF DESCRIPTION OF THE DRAWINGS

[0014] FIG. 1 is a perspective view of a preferred embodiment of an interlocking paving stone system constructed according to the present invention.

[0015] FIG. 2 is a top view of the interlocking paving stone system constructed according to the present invention.

[0016] FIG. 3 is a perspective view of a first paving stone of the interlocking paving stone system.
FIG. 4 is a top view of the first paver stone of the interlocking paver stone system;

FIG. 5 is a side view of the first paver stone of the interlocking paver stone system;

FIG. 6 is a perspective view of a second paver stone of the interlocking paver stone system;

FIG. 7 is a top view of the second paver stone of the interlocking paver stone system;

FIG. 8 is a side view of the second paver stone of the interlocking paver stone system; and

FIG. 9 is a perspective view of a path constructed with the interlocking paver stone system of the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring now to the drawings, wherein like numbers refer to like items, number 10 identifies a preferred embodiment of an interlocking paver stone system constructed according to the present invention. With reference now to FIGS. 1 and 2, the system 10 comprises a first paver stone or block 12 and a second paver stone or block 14 that are both used to form a pattern 16. The pattern 16 may be continued in any direction as required to construct various surfaces or structures such as a road, a footpath, steps, a floor, or a patio. The shapes of each of the stones 12 and 14 lock the stones 12 and 14 together to form the pattern 16.

The shapes and dimensions of each of the stones 12 and 14 and how the stones 12 and 14 interact with each other will be discussed more fully herein.

FIG. 3 shows a perspective view of the first paver stone 12. The first paver stone 12 has a side 18, a top 20, and a bottom 22. The first paver stone 12 has a generally oval or cameo shaped body 24. The top 20 has a beveled edge 26 and a secondary top edge 28. The top 20 and edges 26 and 28 serve to provide additional visual impact for the pattern 16. However, it is possible and contemplated that the top may be flat. The top 20 also has a generally oval or cameo shape. The side 18 is rounded and is adapted to receive the second stone 14 to hold the pattern 16 together.

With reference now to FIG. 4, a top view of the stone 12 is illustrated. The stone 12 is shown to have the top 20 surrounded by the beveled edge 26 which surrounded by the edge 28. The paver stone 12 has the dimensions of 5.5 inches wide by 7.5 inches long. Again, the top 20 is shown having a generally oval or cameo shape.

FIG. 5 depicts a side view of the first paver stone 12. The stone 12 is illustrated having the bevel edge 26 at a 30° angle with respect to the edge 28. The edge 28 has a dimension of 0.13 inches from the side 24 to the bevel edge 26.

The height of the stone 12 is 2.25 inches from the bottom 22 to the edge 28 and the height of the stone 12 is 2.38 from the bottom 22 to the top 20. As can be appreciated, the stone 12 may take on other dimensions as required and the above dimensions are only for purposes of illustration.

With reference now to FIG. 6, a perspective view of the second paver stone 14 of the system 10 is shown. The stone 14 has a generally star shape having a first point 50, a second point 52, a third point 54, and a fourth point 56. The stone 14 has a first curved or rounded side 58 between the first point 50 and the second point 52, a second curved side 60 between the second point 52 and the third point 54, a third curved side 62 between the third point 54 and the fourth point 56, and finally a fourth curved side 64 between the fourth point 56 and the first point 50. The curved sides 58, 60, 62, and 64 are adapted to receive and mate with the side 18 of the first paver stone 12. The second paver stone 14 has a bottom 66 and a top 68. The top 68 has an upper surface 70, a beveled edge 72, and a secondary upper surface 74. The upper surface 70 has a generally star shape.

A top view of the second paver stone 14 is shown in FIG. 7. The second paver stone 14 has the points 50, 52, 54, and 56 and the curved sides 58, 60, 62, and 64 that form the star shape of the stone 14. The paver stone 14 is also shown having the surfaces 70 and 74 and the beveled edge 72. The points 50, 52, 54, and 56 are illustrated as being rounded. The paver stone 14 has the dimensions of 5.88 inches wide by 7.88 inches long. In essence, the length from the first point 50 to the third point 54 is longer or greater than the length from the second point 52 to the fourth point 56.

FIG. 8 depicts a side view of the second paver stone 14. The stone 14 is illustrated having the beveled edge 72 at a 30° angle with respect to the surface 74. The beveled edge 72 has a dimension or a height of 0.13 inches above the surface 74. The height or thickness of the stone 14 is 2.25 inches from the bottom 66 to the surface 74 and the height or thickness of the stone 14 is 2.38 from the bottom 66 to the upper surface 70. As can be appreciated, the stone 14 may take on other dimensions as required and the above dimensions are only for purposes of illustration.

Although not shown, the paver stones 12 and 14 of the present invention may be formed by using separate mold boxes or a single mold box that may be used to form both of the stones 12 and 14. Further, each mold box may be able to produce several or many of the stones 12 and 14. Generally, the process entails molding the stones 12 and 14 by using a mixture of cement, water, and other materials.

The mixture is placed or poured into a mold box. Then the stones 12 and 14 are fabricated by compressing and vibrating the mixture in the mold box by the application of pressure to the mixture by use of a block machine or similar machine. It is also known to use a press head having a press plate for applying pressure to the mixture in the mold box. Once the stones 12 and 14 are formed they may be cured or formed through any method known in the art. For example, curing may take the form of air curing for a number of days or steam curing, but normally one day is allowed or needed for curing. Once cured or formed, the stones 12 and 14 may be placed on pallets for storage or transportation.

Many combinations of concrete mixtures may be employed in manufacturing the paver stones 12 and 14. Some considerations in determining the particular concrete mixtures include compression strength requirements, density, and adsorption. Further, the costs of the materials, such as sand, gravel, cement, pigment additives, and rock have an impact on the mixture to be used. For example, gravel may
be cheaper than river rock in some areas of the country and the paver stones 12 and 14 may be formed of a mixture having more gravel than rock due to the difference in cost. The stones 12 and 14 may be constructed with colored pigments to form different colored blocks. In particular, the stone 12 may be formed from one color and the stone 14 may be constructed of a second or different color. In this manner the stones 12 and 14 may have contrasting colors that add to texture or detail of the pattern 16 presented by the stones 12 and 14. It should be recognized that the paver stones 12 and 14 of the present invention may be constructed of various materials that are available. Preferably, the stones 12 and 14 will be formed of relatively lightweight so that the stones 12 and 14 can be easily manufactured, stored, transported, and bid in position to form a surface or the pattern 16. Alternatively, the paver stones 12 and 14 may be fabricated from brick, ceramic, plastic, or rubber.

[0032] Referring now to FIG. 9, the construction of a path 100 is accomplished by the following method. Initially an area of ground 102 is excavated to the desired length and width of the path 100. A bedding of rock, crushed rock, and an upper layer of sand 104 are provided upon which the paver stones 12 and 14 are to be laid. A second paver stone 106 is placed on the layer of sand 104 and then two first paver stones 108 and 110 are mated with the second paver stone 106. In particular, because of the shapes of the stones 106, 108, and 110, the sides 112 and 114 of the second paver stone 106, which correspond to the curved sides 58 and 60 of the stone 14, are able to mate against the sides 116 and 118 of the stones 108 and 110, respectively. Another second paver stone 120 is then laid in place to mate up against the stones 108 and 110. For example, the curved sides 122 and 124 of the stone 120 is positioned against the sides 116 and 188 of the stones 108 and 110. Two other cameo shaped paver stones 126 and 128 having sides 130 and 132, respectively, are then laid in place against the stone 120. Further, the star shaped stone 120 has curved sides curved sides 134 and 136. The curved side 134 butts up against the side 130 of the stone 126 and the curved side 136 mates against the side 132 of the stone 128. Continuing the process another star shaped paver stone 138 is laid in place against the stones 126 and 128. It should be noted that the stones 106, 120, and 138 have rounded points 140 and there is a gap 142 formed between the points 140. Although not shown, after the required number of stones 12 and 14 are positioned sand is spread over the entire path 100 to fall between the gaps 142 and any other gaps that may exist between the various sides of the stones 12 and 14. The sand is then vibrated to fill the gaps 142 and also to work the sand 104 up into the gaps 142 from below the stones 12 and 14. The sand is used to further lock the stones 12 and 14 together. After compaction of the sand, any excess sand may be removed.

[0033] Other advantages associated with the use of the interlocking paver stone system 10 include the reduced number of different components or parts that need to be manufactured, transported, stored, or inventoried. Since at most only two separate mold boxes need to be constructed, manufacturing costs are significantly reduced. In particular, only having two molds can greatly reduce manufacturing costs. The interlocking paver stone system 10 is also easy to install or build with and various projects or structures may be built using the interlocking paver stone system 10. Examples of projects or applications that may be constructed using the interlocking paver stone system 10 include paths, sidewalks, patios, garage floors, steps, streets, driveways, and floors.

[0034] Another particular aspect of the interlocking paver stone system 10 is that the stones 12 and 14 may be tumbled to give a natural or weathered appearance to the stones. Once the stones 12 and 14 are formed they may be put into a machine that tumbles the stones 12 and 14 together. After the tumbling process is complete, the paver stones 12 and 14 may be used in the same manner as above described. Tumbling enhances the appearance of the stones 12 and 14 and this allows the stones 12 and 14 to be sold at a premium. Additionally, the stones 12 and 14 may be distressed to provide the appearance of a natural or weathered look. After the stones 12 and 14 are formed they may be put into a distressing machine. After the stones 12 and 14 are distressed, the stones 12 and 14 may be assembled into any structure, as previously described. Again, distressing the stones 12 and 14 adds to the appearance of the stones 12 and 14 that allows the stones 12 and 14 to be sold at a premium.

[0035] From all that has been said, it will be clear that there has thus been shown and described herein an interlocking paver stone system which fulfills the various objects and advantages sought therefor. It will become apparent to those skilled in the art, however, that many changes, modifications, variations, and other uses and applications of the subject interlocking paver stone system are possible and contemplated. All changes, modifications, variations, and other uses and applications which do not depart from the spirit and scope of the invention are deemed to be covered by the invention, which is limited only by the claims which follow.

1. An interlocking paver stone system comprising:
   a first paver stone having a generally oval configuration, a top, a secondary top, and a beveled section between the top and the secondary top; and
   a second paver stone having a generally star configuration having a first rounded point, second rounded point, a third rounded point, a fourth rounded point, a first curved side between the first rounded point and the second rounded point, a second curved side between the second rounded point and the third rounded point, a third curved side between the third rounded point and the fourth rounded point, and a fourth curved side between the fourth rounded point and the first rounded point.

2. The interlocking paver stone system of claim 1 wherein the top of the first paver stone is oval in shape.

3. The interlocking paver stone system of claim 2 wherein the beveled section is beveled at a 30° angle with respect to the secondary top.

4. The interlocking paver stone system of claim 1 wherein the first paver stone has a rounded side that is adapted to mate with any of the curved sides of the second paver stone.

5. The interlocking paver stone system of claim 1 wherein the first paver stone is a first color and the second paver stone is of a contrasting color.

6. The interlocking paver stone system of claim 1 wherein the second paver stone has a top, a secondary upper surface, and a beveled section between the top and the secondary upper surface.
7. The interlocking paver stone system of claim 6 wherein the beveled section is beveled at a 30° angle with respect to the secondary upper surface.

8. The interlocking paver stone system of claim 6 wherein the top of the second paver stone is star shaped.

9. The interlocking paver stone system of claim 8 wherein the secondary upper surface of the second paver stone is star shaped.

10. An interlocking paver stone system comprising:

   a first paver stone having a generally oval shaped body having a top surface, a secondary top surface, and a beveled section between the top surface and the secondary top surface, and a bottom; and

   a second paver stone having a generally star shaped body having a top, a bottom, a first rounded point, a second rounded point, a third rounded point, a fourth rounded point, a first curved side between the first rounded point and the second rounded point, a second curved side between the second rounded point and the third rounded point, a third curved side between the third rounded point and the fourth rounded point, and a fourth curved side between the fourth rounded point and the first rounded point.

11. The interlocking paver stone system of claim 10 wherein the top surface of the first paver stone is oval in shape.

12. The interlocking paver stone system of claim 11 wherein the beveled section is beveled at a 30° angle with respect to the secondary top surface.

13. The interlocking paver stone system of claim 10 wherein the first paver stone has a rounded side that is adapted to mate with any of the curved sides of the second paver stone.

14. The interlocking paver stone system of claim 10 wherein the top of the second paver stone further comprises an upper surface, a secondary upper surface, and a beveled section between the upper surface and the secondary upper surface.

15. The interlocking paver stone system of claim 14 wherein the beveled section is beveled at a 30° angle with respect to the secondary upper surface.

16. The interlocking paver stone system of claim 14 wherein the secondary upper surface of the second paver stone is star shaped.

17. An interlocking paver stone system comprising:

   a first paver stone having a generally oval shaped body, a top, a secondary top, and a beveled section between the top and the secondary top with the top extending above the secondary top; and

   a second paver stone having a generally star shaped body having a first point, second point, a third point, a fourth point, with each of the points being rounded, a first curved side between the first point and the second point, a second curved side between the second point and the third point, a third curved side between the third point and the fourth point, and a fourth curved side between the fourth point and the first point, the second paver stone having a top having an upper surface, a beveled edge, and a secondary upper surface with the upper surface being star shaped, the beveled edge being between the upper surface and the secondary upper surface, and the secondary upper surface being star shaped and having rounded points.

18. The interlocking paver stone system of claim 17 wherein the upper surface of the second paver stone extends above the secondary upper surface.

19. The interlocking paver stone system of claim 18 wherein the upper surface of the second paver stone is star shaped.

20. The interlocking paver stone system of claim 17 wherein the first paver stone has a rounded side that is adapted to mate with any of the curved sides of the second paver stone.