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(54) **GEMSTONE**

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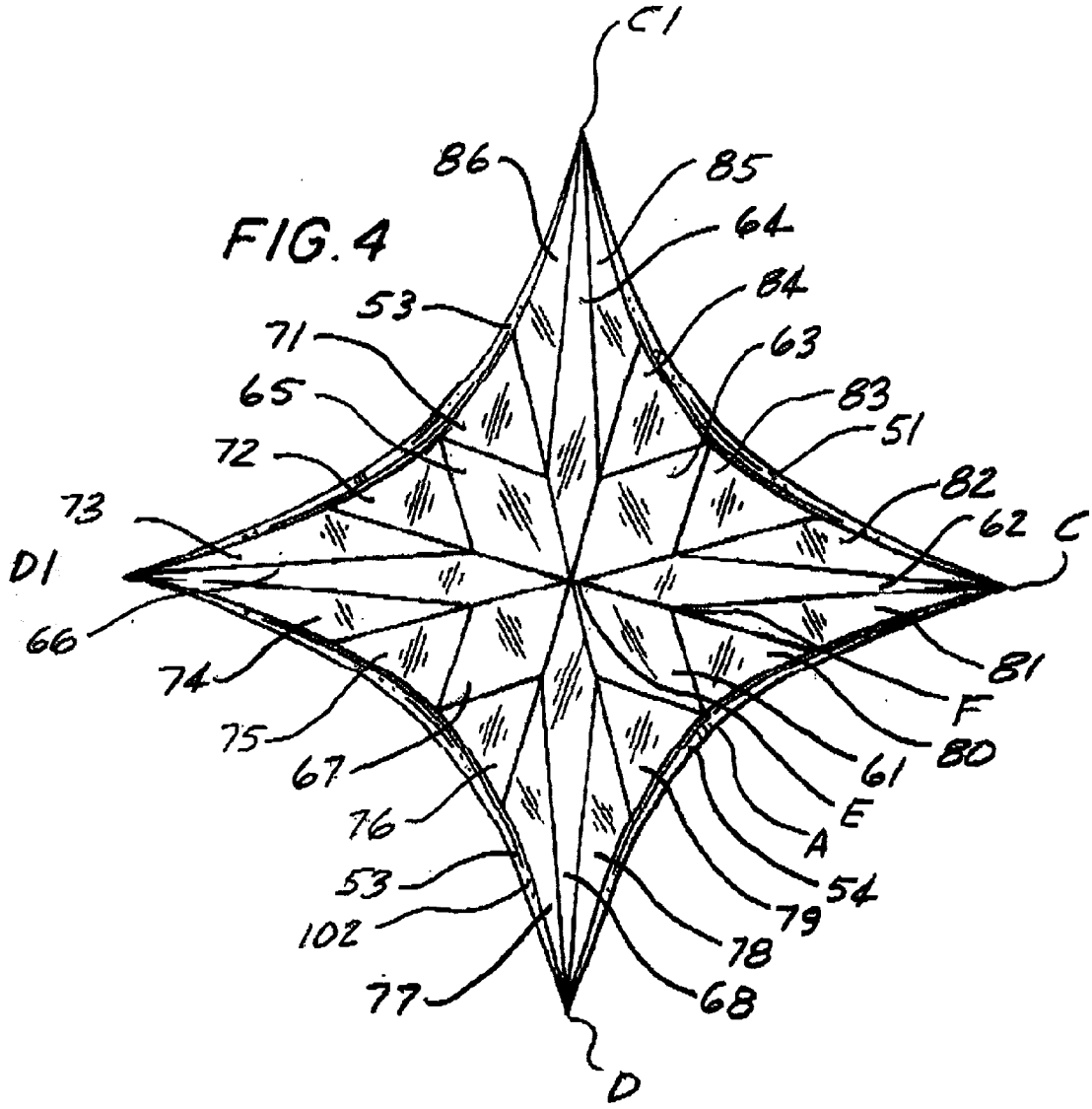
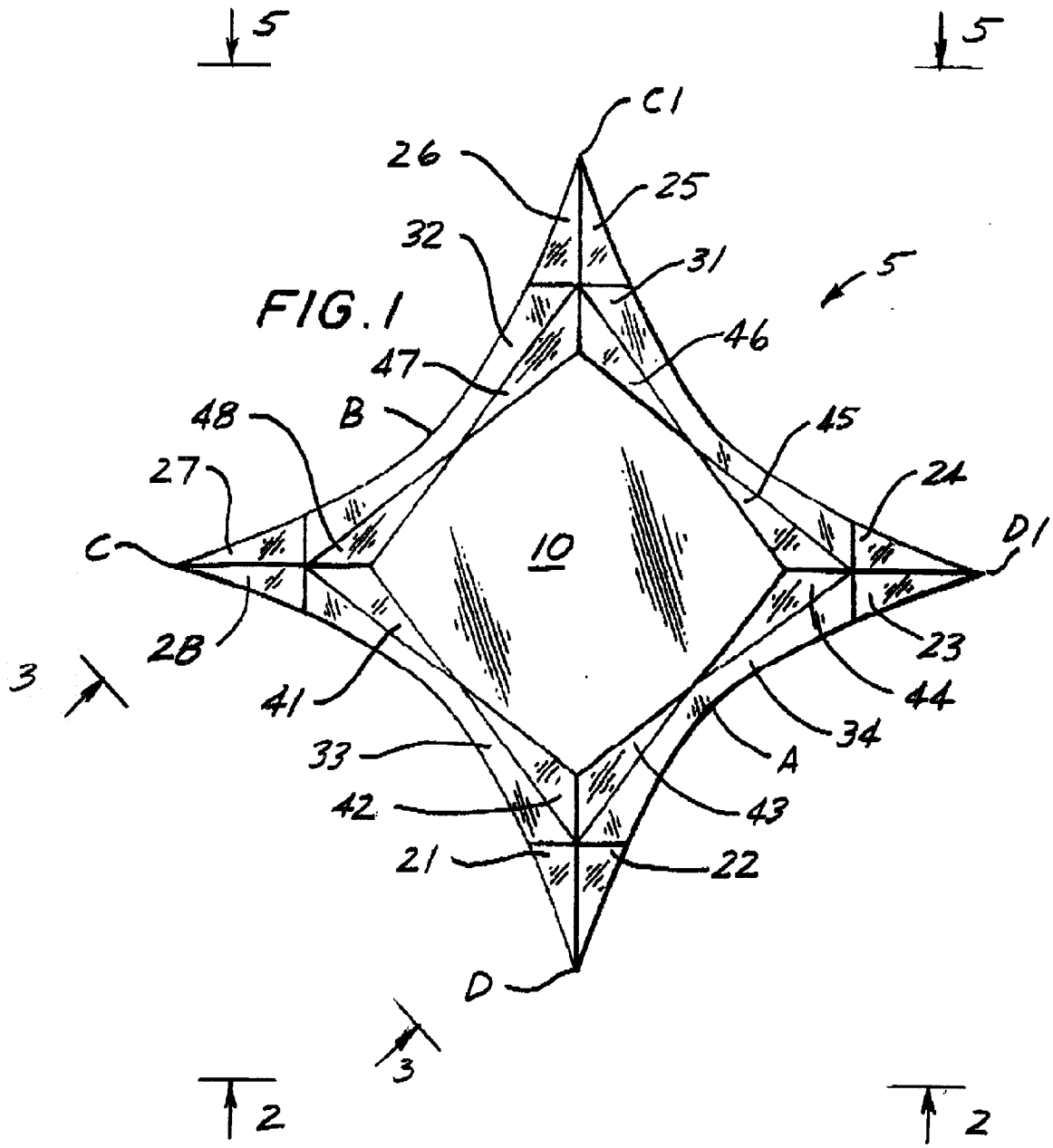
(57) **ABSTRACT**

A gemstone includes four equal concave portions, a table, a girdle, an upper portion and a lower portion. The upper portion has two stairs. The lower portion includes four surfaces which are broken by eight additional surfaces. Each of the eight surfaces is broken by another two surfaces.

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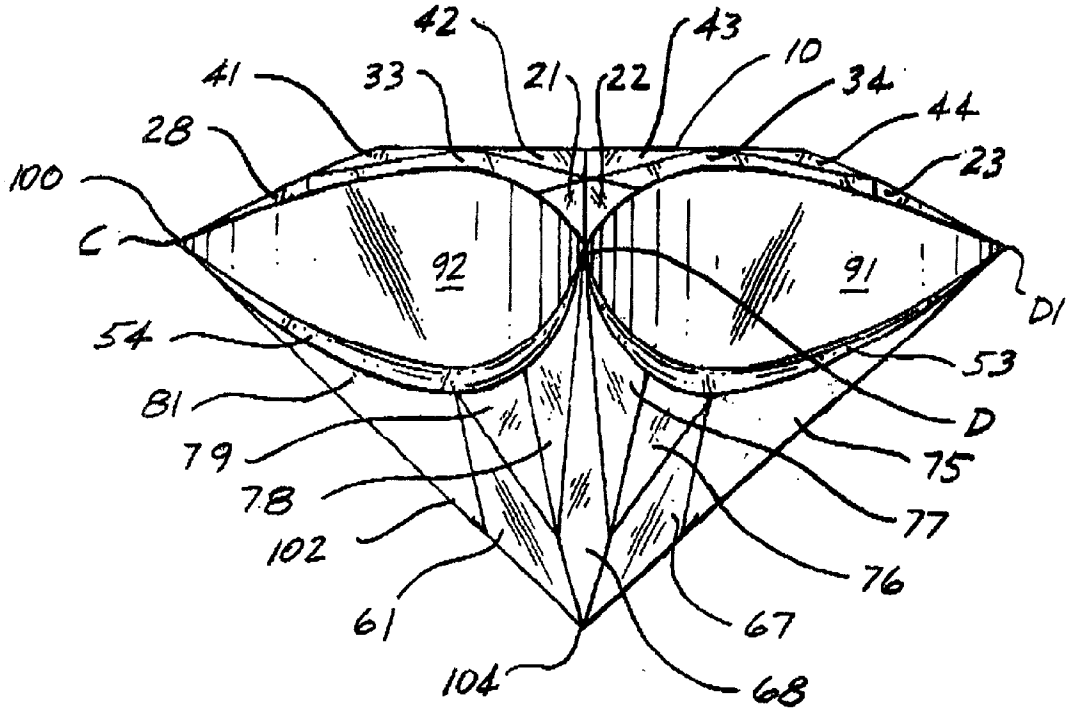
5
C1
26
25
32
31
5
46
47
48
B
45
27
24
C
10
D1
28
23
3
41
44
34
33
A
42
43
21
22
D
3
2
2

FIG. 1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43
41
33
21
22
10
34
44
28
23
100
C
92
91
D1
54
53
81
D
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75
78
77
102
76
61
67
104
68

FIG. 2

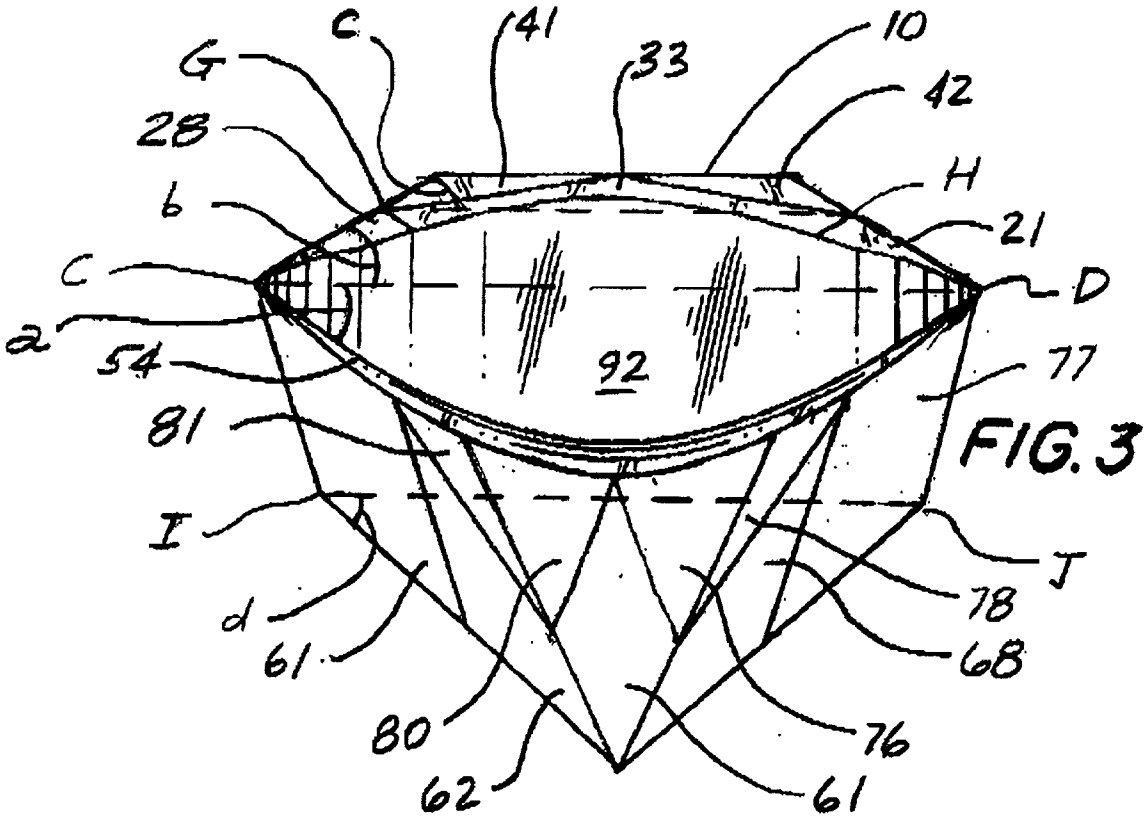
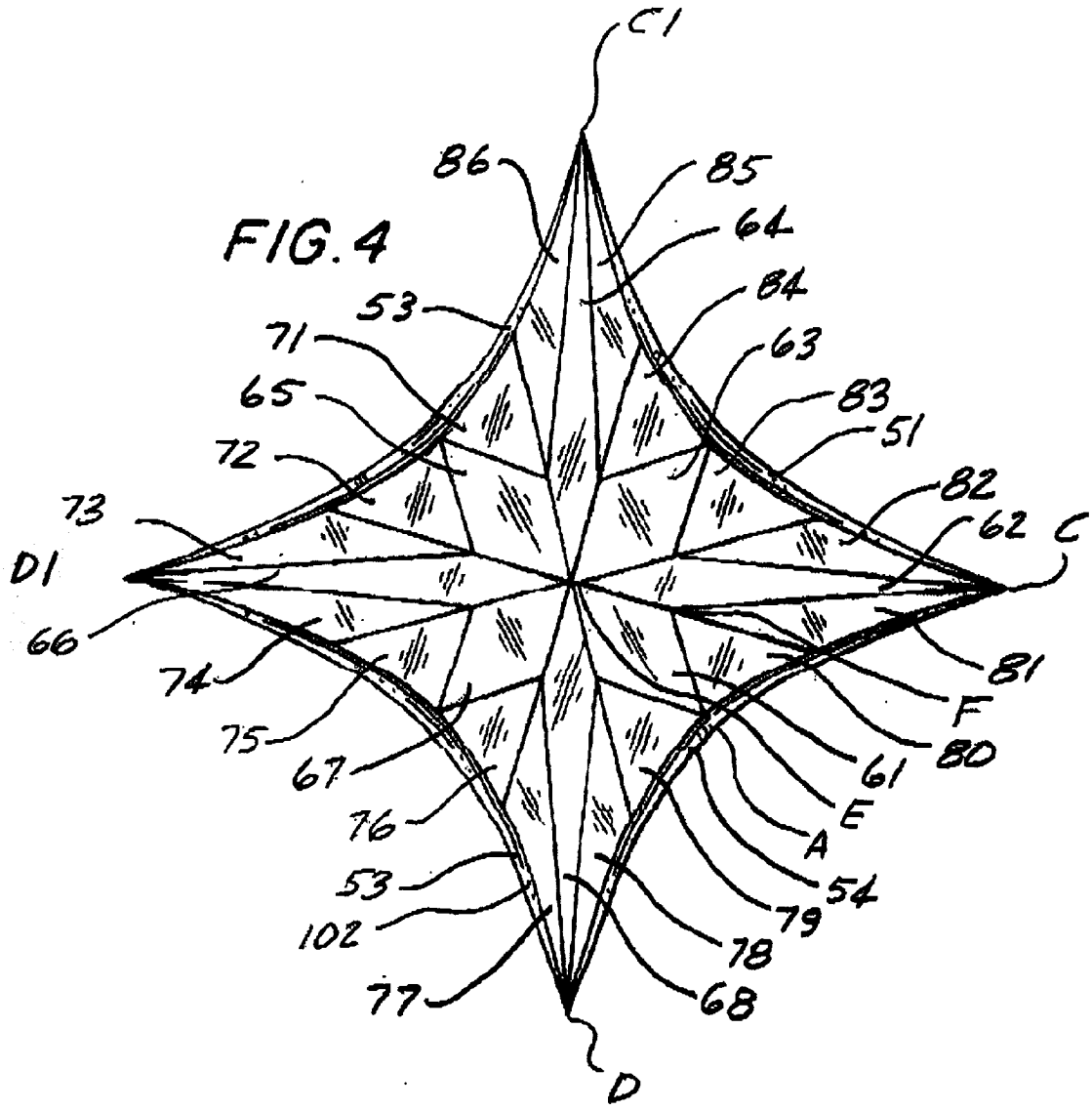


FIG. 3

FIG. 4


C1
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83
51
72
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C
D1
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A
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102
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68
D

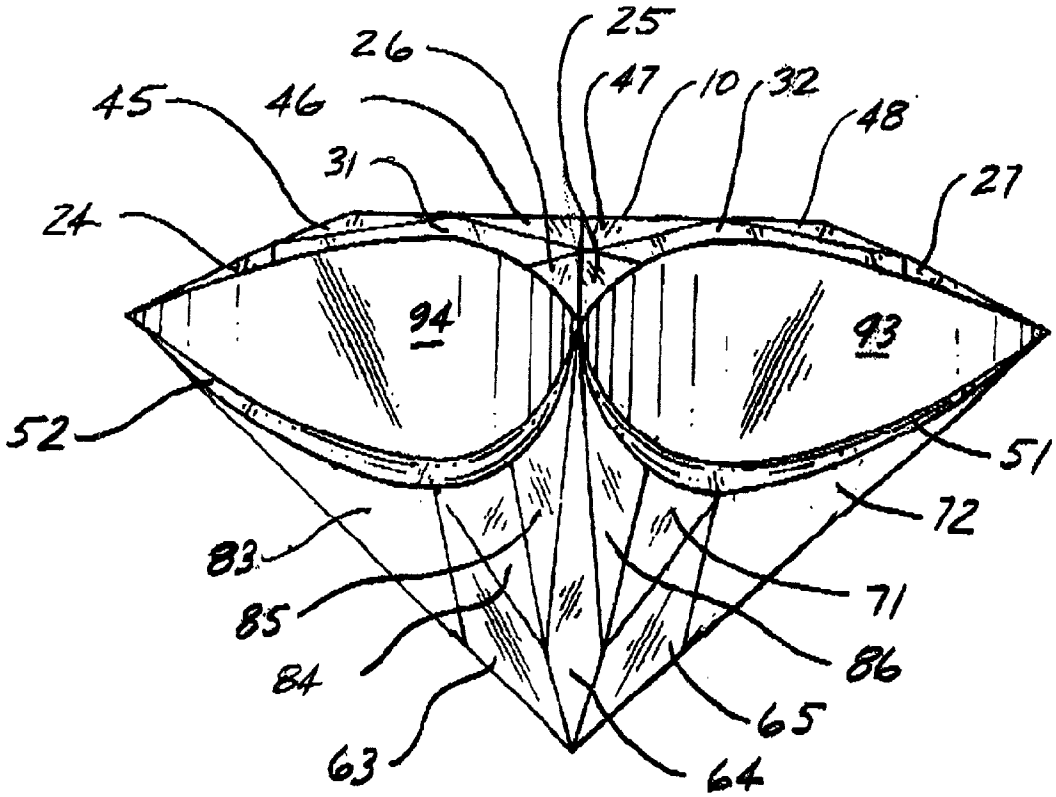

FIG. 5

GEMSTONE

FIELD OF THE INVENTION

[0001] The present invention relates generally to the field of gemstones and more particularly, to a square gemstone with concave portions.

BACKGROUND OF THE INVENTION

[0002] The prior art related to gemstones includes the following U.S. patents.

[0003] U.S. Pat. No. 5,970,744 to Greef for a Cut Cornered Square Mixed-Cut Gemstone shows a gemstone with a step-cut crown, with two steps and a table, a girdle and a pavilion. The crown and pavilion are substantially square with four equal sides and corners about one-third the length of the sides. The pavilion sides and corners are defined by eight rib lines which extend substantially continuously from the girdle to a culet.

[0004] U.S. Pat. No. 6,007,907 to Wolf for a Composite jewelry Stone shows a composite stone which includes a first half-stone having a mating edge with a first length and a second half-stone having a mating edge with a second length which is approximately equal to the first length. At least two baguettes are mounted between the first half-stone and the second half-stone. The mating edges of the baguettes and the first half-stone and the second half-stone are in general alignment.

[0005] U.S. Pat. No. 6,065,307 to Freilich for Corner Cut Precious Stones shows a combination stone setting formed utilizing princess or square cut stones having their corners removed with at least two of the stones joined edge to edge forming a space where the corners were removed. A square cut stone is placed in the space thus formed.

[0006] U.S. Pat. No. 6,029,474 to Bunz for a Polished Gemstone shows a gemstone on which at least four facets of equal size have been cut in the upper part and the lower part above and below the girdle plane. The facets have a parallel base edge wherein an angle, alpha, between an upper part facet and the girdle plane is less than the angle, beta, between a lower part facet and the girdle plane. The gemstone includes an additional set of facets which extend fan-like from a girdle plane.

[0007] Despite the developments of the prior art, there remains a desire for a gemstone configuration which provides increased brilliance.

OBJECTS AND SUMMARY OF THE INVENTION

[0008] It is an object of the present invention to provide a gemstone which incorporates a plurality of curved facets. PLEASE ADD ADDITIONAL OBJECTS

[0009] Additional objects and advantages of the present invention will be explained hereinafter.

[0010] In accordance with the present invention, there is provided a gemstone which, in general, has four equal concave portions. The table of the gemstone is in the order of 67 to 73% of the diameter. The gemstone has in its upper portion two stairs which are defined as the crown. The first stair, which is closest to the girdle, is in the order of 40-45 degrees. The second stair is in the order of 30-35 degrees.

[0011] The second stair includes two additional surfaces that are at approximately 25 degrees.

[0012] The lower portion of the gemstone includes four polished surfaces each starting from a corner. Each polished surface is at approximately 58 to 62 degrees. These surfaces are broken relatively close to the girdle by eight additional surfaces at approximately 39-41 degrees which reach the culet of the gemstone. Breaking the surfaces from approximately 60 to 40 degrees upgrades the sparkling quality of the gemstone. Each of the eight faces is broken by another two surfaces at approximately 42.5 to 43.5 degrees.

DESCRIPTION OF THE DRAWINGS

[0013] Other important objects and advantages of the invention will be apparent from the following detailed description of the invention taken in connection with the accompanying drawings in which:

[0014] **FIG. 1** is a top plan view of a gemstone in accordance with the present invention;

[0015] **FIG. 2** is a side elevation view of the gemstone of **FIG. 1**, taken along the line **2-2** of **FIG. 1**;

[0016] **FIG. 3** is a side elevation view of the gemstone of **FIG. 1** taken along the line **3-3** of **FIG. 1**;

[0017] **FIG. 4** is a bottom plan view of the gemstone of **FIG. 1**;

[0018] **FIG. 5** is a side elevation view of the gemstone of **FIG. 1** taken along the line **5-5** of **FIG. 1**.

DETAILED DESCRIPTION OF THE INVENTION

[0019] With reference to the drawings wherein like numerals indicate like elements throughout, there is shown in FIGS. **1-5** a gemstone **5** in accordance with the present invention. The gemstone **5** includes four equal concave portions **91, 92, 93, 94**, a table **10** and a girdle **100**. As is best shown in **FIG. 1**, the table is about 67 to 73% of the diameter. The girdle lies substantially in a plane which is defined as the girdle plane and which is generally denoted by the reference numeral **100**. The gemstone **5** also includes a lower portion generally designated by the reference numeral **102** which is below the girdle plane **100**. The lowest point or inlet is designated by the reference numeral **104**.

[0020] The upper portion of the gemstone **5** includes two stair portions which form the crown.

[0021] In **FIG. 1**, the distance between points A and B is about 65 to 75% of the distance between the points C and D. Facet **10** is the table of the gemstone **5**.

[0022] The first stair portion which is closest to the girdle is at an angle of about 40-45 degrees relative to the girdle plane **100**. The first stair portion is formed by the facets **21, 22, 23, 24, 25, 26, 27, 28**.

[0023] The second stair portion which is at an angle of about 30-35 degrees relative to the girdle plane **100** includes the facets **31, 32, 33, 34**. Facets **41, 42, 43, 44, 45, 46, 47,**

48 form stairs which are built on the facets **31, 32, 33, 34** and are at an angle of about 25 degrees relative to the girdle plane **100**.

[**0024**] As shown in **FIG. 4**, the lower portion **102** of the gemstone **5** includes four relatively large, equal size facets **51, 52, 53, 54**. The angular relationship of the facets **51, 52, 53, 54** and the girdle plane **100** will be explained presently. The facets **51, 52, 53, 54** are broken by eight additional facets **61, 62, 63, 64, 65, 66, 67, 68** at about 40-41 degrees relative to the girdle plane **100**.

[**0025**] Each of the facets **61, 62, 63, 64, 65, 66, 67, 68** has two additional facets **71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86** at about 42.5 to 43.5 degrees relative to the girdle plane **100**. The additional facets **71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86** upgrade the sparkling quality of the gemstone. The additional facets **71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86** thus form a third set of sixteen facets.

[**0026**] With further reference to **FIG. 4**, the point designated by the reference letter E is the culet. The distance from the point designated by the reference letter A to the point designated by the reference letter F is about 80 to 85% of the distance from the point designated by the reference letter A to the point designated by the reference letter E.

[**0027**] The point A may be further defined at the innermost point of the concave portions **91, 92, 93, 94**. The point F may be further defined typically as the lowest point of intersection between the adjacent facets **80, 81** which are part of the set of additional facets **71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86**.

[**0028**] With reference to **FIG. 2**, the point designated by the reference letter D is the same point previously designated by the reference letter D in **FIG. 1**. The facets **91, 92, 93, 94** are concave.

[**0029**] The curvature of the facets **91, 92, 93, 94** is defined by the relationship between the distances AB and CD as shown in **FIG. 1**. The distance AB divided by the distance CD is equal to a constant.

[**0030**] With reference to **FIG. 3**, an imaginary line (shown as a broken line) has been drawn between points A and B which is parallel to the table (facet **10**). The angle designated by the letter "a" between this line AB and the facets **51, 52, 53, 54** will be about 60 to 65 degrees. The angle designated by the letter "b" between this line AB and the first stairs at the crown will be about 40 to 45 degrees.

[**0031**] With further reference to **FIG. 3**, additional imaginary lines (shown as broken lines) have been drawn between the points designated by the reference letters G and H and between the points designated by the reference letter I and J. The angle designated by the reference letter "c" between the line G to H and the surfaces **31, 32, 33, 34** is about 30-35 degrees. The angle designated by the reference letter "d" between the line I to J and the surfaces **61, 62, 63, 64, 65, 66, 67, 68** is about 40 to 41 degrees.

[**0032**] The foregoing specific embodiment of the present invention as set forth in the specification herein is for illustrative purposes only. Various deviations and modifications can be made within the spirit and scope of this invention, without departing from the main theme thereof.

What is claimed is:

1. A gemstone comprising a girdle, a crown with said crown disposed above said girdle;

a table with said table disposed above said crown; and

a plurality of concave portions.

2. The gemstone as claimed in claim 1 in which said plurality of concave portions comprise four equal concave portions.

3. The gemstone as claimed in claim 1 in which said crown comprises a first stair and a second stair, with said first stair disposed closest to said girdle and with said second stair disposed furthest from said girdle.

4. The gemstone as claimed in claim 1 in which said girdle lies substantially in a girdle plane and in which said first stair is at an angle of about 40 to 45 degrees relative to said girdle plane.

5. The gemstone as claimed in claim 1 in which said girdle lies substantially in a girdle plane and in which said second stair is at an angle of about 30 to 35 degrees relative to said girdle plane.

6. The gemstone as claimed in claim 3 in which said first stair comprises eight facets.

7. The gemstone as claimed in claim 3 in which said second stair comprises four facets.

8. The gemstone as claimed in claim 7 in which each of said four facets on said second stair comprises two additional facets.

9. The gemstone as claimed in claim 8 in which each of said two additional facets on said second stair is at an angle of about 25 degrees relative to said girdle plane.

10. The gemstone as claimed in claim 1 further comprising a lower portion with said lower portion disposed below said girdle and with said lower portion comprising four facets.

11. The gemstone as claimed in claim 10 in which each of said four facets on said lower portion comprises two additional facets, thereby forming a first set of additional facets.

12. The gemstone as claimed in claim 11 in which each of said two additional facets comprises two additional facets, thereby forming a second set of additional facets.

13. The gemstone as claimed in claim 10 in which said four facets in said lower portion is at an angle of about 60 to 65 degrees relative to said girdle plane.

14. The gemstone as claimed in claim 11 in which each of said two additional facets of said first set of additional facets on said four facets of said lower portion is at an angle of about 40 to 41 degrees relative to said girdle plane.

15. The gemstone as claimed in claim 12 in which each of said two additional facets of said second set of additional facets is at an angle of about 42.5 to 43.5 degrees relative to said girdle plane.

16. The gemstone as claimed in claim 12 in which each of said two additional facets formed on said second set of additional facets forms a third set of sixteen facets.

17. The gemstone as claimed in claim 1 in which said plurality of concave portions comprises four concave facets.

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