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(54) **Multi-faceted gemstone for multi-stone jewelry item**

(57) A gemstone (10) has a front, a back and a bottom. The gemstone comprises a lower pavilion (14) and an upper crown (12). The crown (12) has a top surface and a pair of depending opposed planar sides (28). The top surface of the crown has a convex shape such that the top surface arcuately runs in a lateral direction from said front to said back of said gemstone.

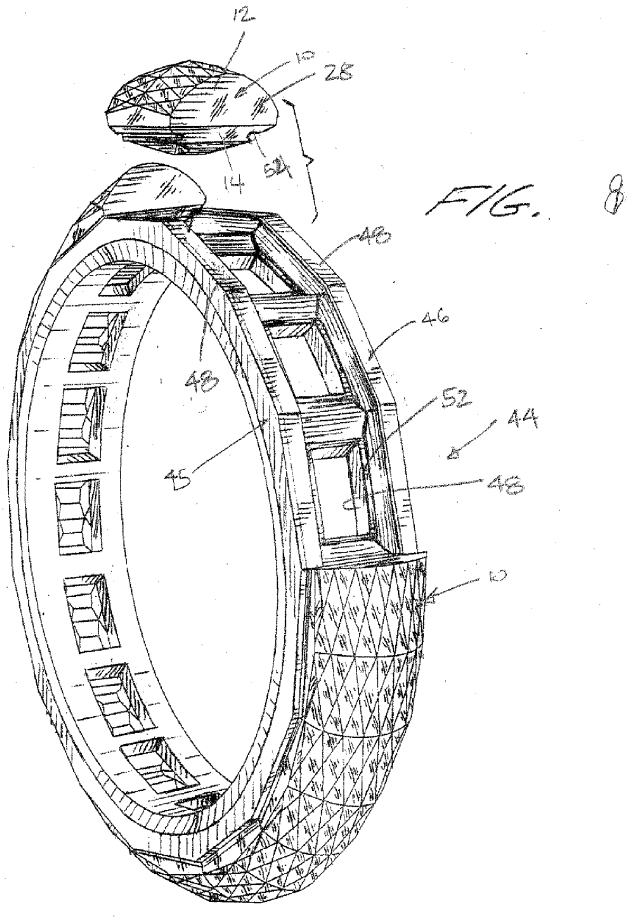


FIG. 8

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Description

Field Of The Invention

[0001] This invention relates generally to gemstones and more particularly to a multi-faceted gemstone particularly suitable for use in a multi-stone jewelry item.

Background Of The Invention

[0002] Present day gemstone cuts are well known. These include brilliant, princess, emerald, asscher, marquise, oval, radiant, pear, heart and cushion cuts. While diamonds with these cuts are frequently used as single stones mounted on pieces of jewelry, such as engagement rings, more difficulty is encountered when these diamonds are mounted in pieces of jewelry where it is desired to provide a continuous diamond look, that is, a look wherein it appears that the jewelry is made from a single diamond. An example of such a jewelry piece is a wedding ring where the stones are placed on the circular periphery of the ring. Nonetheless, when such diamonds are mounted, they fail to provide the desired continuous look. For example, the joints between adjacent diamonds are noticeable to the naked eye thus detracting from the aesthetics of the piece of jewelry.

[0003] Accordingly, there is the need to provide a new diamond cut that can be used on pieces of jewelry enabling the diamonds to provide a continuous diamond look.

Summary Of The Invention

[0004] Accordingly, one aspect of the present invention is to provide a new diamond cut that can be mounted on a piece of jewelry to provide a continuous diamond look.

[0005] Another aspect of the present invention to provide a new diamond cut that can be mounted on a piece of jewelry to provide a continuous diamond look while at the same time enhancing the aesthetic look of the jewelry piece.

[0006] A still further aspect of the present invention is to provide a new diamond cut that can vary in shape and cut faceting but nonetheless can be mounted on a piece of jewelry to provide a continuous diamond look.

[0007] These and other aspects of the invention are achieved by providing a gemstone having a front, a back and a bottom, with the gemstone having a lower pavilion and an upper crown. The crown has a top surface and a pair of depending opposed planar sides. The top surface of the crown has a convex shape such that the top surface arcuately runs in a lateral direction from said front to said back of said gemstone.

[0008] These and other aspects of the invention, together with features and advantages thereof, will become apparent from the following detailed description of several preferred embodiments, when taken in conjunction with the accompanying drawings.

Brief Description Of The Drawings

[0009]

Fig. 1A is a top plan view of a gemstone according to one embodiment of the present invention;
Fig. 1B is a front elevation view thereof;
Fig. 1C is a side elevation view thereof;
Fig 1D is perspective view thereof;
Fig. 1E is a cross sectional view of the invention taken along line 1-1 of Fig. 1A;
Fig. IF is a bottom plan view thereof;
Fig. 2A is a top plan view of a gemstone according to a second embodiment of the present invention;
Fig. 2B is a front elevation view thereof;
Fig. 3A is a top plan view of a gemstone according to a third embodiment of the present invention;
Fig. 3B is a front elevation view thereof;
Fig. 4A is a top plan view of a gemstone according to a fourth embodiment of the present invention;
Fig. 4B is a front elevation view thereof; Fig. 4C is a side elevation view thereof; Fig 4D is perspective view thereof;
Fig. 5A is a top plan view of a gemstone according to a fifth embodiment of the present invention;
Fig. 5B is a front elevation view thereof;
Fig. 6A is a top plan view of a gemstone according to a sixth embodiment of the present invention;
Fig. 7A is a top plan view of a gemstone according to a seventh embodiment of the present invention;
Fig. 7B is a cross sectional view of the invention taken along line 7-7 of Fig. 7A;
Fig. 8 is a perspective view of a wedding ring according to the present invention showing a gemstone of the present invention being inserted into the ring mounting and also showing several additional gemstones already in place;
Fig. 9 is an enlarged view showing a gemstone of the present invention being inserted into the ring mounting;
Fig. 10 is a perspective view of the wedding ring of Fig. 8 with all the gemstones in place;
Fig. 11 is a cross sectional view taken along the line 11-11 of Fig. 10; and Fig. 12 is a cross sectional view taken along the line 12-12 of Fig. 10.

Detailed Description Of The Invention

[0010] Referring particularly to Figs. 1A- 1E, a gemstone according to the present invention is generally designated 10. Gemstone 10 has a front 10a, a back 10b and a bottom 10c. Gemstone 10 includes a crown generally designated 12 and a pavilion generally designated 14, Advantageously and in contrast to gemstones of the prior art, gemstone 10 does not include a table nor does it include a girdle. Crown 12, which has a front side 12a, a rear side 12b, a first or right side 12c, a second or left side 12d and a top 12c, defines multi-faceted crown sur-

face 15 located along top 12e of crown 12. Multi-faceted crown surface 15 has a convex shape such that crown surface 15 arcuately runs in a lateral direction essentially from the front to the back of gemstone 10. Although crown surface 15 is arcuate in the lateral direction, it is non-arcuate in the longitudinal direction of the crown. Multi-faceted crown surface 15 has a first multifaceted crown surface portion 16 and a second multi-faceted crown surface portion18, each having a plurality of facets 20. Facets 20 may include rhombus shaped facets 22 and triangular shaped facets 24. Crown 12 also includes pentagonal front and rear facets 26 (only the front facet being shown) and opposed planar right and left side facets 28 (only the right side facet being shown), the latter each having a facet surface or face 28a and a generally curved upper edge 28b. Only at side 27 of side facets 26 is upper edge 28b non-curved. Right and left side facets 28 are substantially larger than facets 20 located on multi-faceted crown surface 15. These side facets have a height H3 (measured from apex 28c of upper edge 28b to the beginning of pavilion 14) and a width W3 (in this embodiment, W and W3 are the same). Advantageously, H3 is in the range of between 20% to 85% of W since above 85% sufficient light will not refract through the gemstone and below 20% the gemstone will be overpowered by its setting.

[0011] Multi-faceted crown surface 15 has front and rear edges 17a and 17b, respectively, and right and left side edges 17c and 17d. In this embodiment, front and rear edges 17a and 17b are straight and right and left side edges 17c and 17d are curved (see Fig. 1A), the latter because the opposed planar side facets 28 are inwardly directed one to the other as they run from the multi-faceted crown surface 15 towards the bottom of the gemstone. First multi-faceted crown surface portion 16 and second multi-faceted crown surface portion 18 divide multi-faceted crown surface15 into two parts along a boundary line or peak 30 which bisects the multi-faceted crown surface. Peak 30 arcuately runs in a lateral direction along the crown from substantially the front to the back of the gemstone. Peak 30 has an apex 30a which is located halfway between the front and back of crown 12. As shown in Fig. 1 B, first multi-faceted crown surface portion 16 slopes downwardly defining a first crown angle a which advantageously is in the range from 0° to 20°. Likewise, second multi-faceted crown surface portion 18 slopes downwardly in the opposite direction defining a second crown angle b which also may be in the range from 0° to 20°. It has been found that in angles greater than 20° the continuous diamond look is compromised. In the embodiment illustrated in Fig. 1 B, first crown angle a and second crown angle b are equal angles. In other words, the slope of first multi-faceted crown portion 16 is the same as the slope of second multi-faceted crown portion 18, but the latter is a positive slope and the former is a negative slope.

[0012] As shown in Fig. 1C, Fig. 1D and Fig. 1E, multi-faceted crown surface 15 is curved front-to-back, once again because the opposed planar side facets 28 are inwardly directed one to the other as they run from the multi-faceted crown surface 15 to pavilion 14, with the curve generally conforming to the upper edges 28b of side facets 28. That is, side edges 17c and 17d define generally curved upper edge 28b of side facets 28. Because there is no table, the curve of multi-faceted crown surface 15 is substantially continuous, that is, crown surface 15 curves substantially continuously from front edge 17a to rear edge 17b. Advantageously, the height H1 of crown 12 is in the range of between 50% and 85% of the W of gemstone 10 since above 85% sufficient light will not refract through the gemstone and below 50% the gemstone will be overpowered by its setting. In this embodiment, upper-most edge 29 of multi-facet crown surface 15 has segments that are generally parallel to the segments of front edge 17a and rear edge 17b of multi-faceted crown surface 15. That is, both uppermost edge 29 and front and rear edges 17a and 17b correspond to first crown angle a and second crown angle b, respectively.

[0013] As mentioned, gemstone 10 also includes pavilion 14, having a height H2 which is advantageously in the range of between 25% and 50% of gemstone width W. Above 50% the gemstone will be overpowered by its setting and below 25% difficulties are encountered in setting the gemstone. As shown in Fig. 1 F, pavilion 14 is also multifaceted to maximize the internal brilliance of the gemstone. By way of example, pavilion 14 is formed with a plurality of straight or parallel facets 32, a plurality of triangular facets 34, a plurality of curved facets 36 and a plurality of trapezoidal facets 38. In the preferred embodiment, there are 14 straight facets, 2 triangular facets, 4 cured facets and 4 trapezoidal facets.

[0014] Fig. 2A and Fig. 2B illustrate a gemstone 10 according to a second embodiment of the invention In this embodiment, first crown angle a and second crown angle b are both 0°, that is, multi-faceted crown surface 15 (similar or corresponding parts in the various embodiments use the same reference numerals) is formed with only a single multi-faceted surface portion 40 having facets 20, such as rhombus-shaped facets 22 and triangular shaped facets 24. Because crown angle a is 0° (the slope of surface portion 40 is zero), and there is no boundary line or peak 30 (compare Fig. 1A with Fig. 2A). In other words in front elevation view (Fig. 2B), uppermost edge 29 of multi-faceted crown surface portion 40 is a generally horizontal, as is front edge 17a, with both these edges parallel one to the other. In this embodiment, the crown also includes front and rear facets 33 which are relatively narrow and trapezoidal in shape.

[0015] In the third embodiment illustrated in Fig. 3A and Fig. 3B, multi-faceted crown surface 15 has two peaks 30 formed by two angled first and second multi-faceted crown surface portions 16 and 18 which are separated by a horizontal multifaceted crown surface portion 40. Once again, upper-most edge 29 of multi-faceted crown surface portion15 is generally parallel to the front

edge 17a and rear edge 17b of multi-faceted crown surface portion 15, with the front edge 17a sloped upwardly (a positive slope), horizontal (zero slope) and sloped downwardly (negative slope), left to right, as viewed in Fig. 3B. Rear edge 17b is similarly sloped but at the rear of the gemstone. In this embodiment, crown 12 has front and rear hexagonal crown facets 42 formed of front and rear edges 17a and 17b and having a bottom edges corresponding to a top edge 39 of trapezoidal facet 38 on pavilion 14 and having narrow side edges.

[0016] Figs. 4A - 40 show a fourth embodiment of the invention. The gemstone also has a first crown angle a and a second crown angle b. However in this embodiment, the right and left side edges 17c and 17d of multi-faceted crown surface 15 are straight and not curved when the gemstone is viewed from the top because the opposed side facets 28 are substantially vertical as they run from the multi-faceted crown surface 15 to pavilion 14. In this embodiment, W3 and W are not the same, with W3 being in the range of 50% to 100% that of W (when W3 is 100% of W, the gemstone becomes that shown in the first embodiment). Like the first embodiment, multi-faceted crown surface 15 has first multi-faceted crown surface portion16 and second multi-faceted crown surface portion 18, separated by peak 30. Rear edge 17b of first multi-faceted crown surface portion 16 also defines a third crown angle c and a fourth crown angle d is formed by the front edge 17c of first multi-faceted crown surface portion 16 as is shown in Fig. 4A. Third crown angle c and fourth crown angle d, both of which may be in the range from 0° to 20°, taper gemstone 10 rear-to-front and front-to-rear, respectively, when viewed from the top of the gemstone. Likewise, rear edge 17b of second multi-faceted crown surface portion 18 defines a fifth crown angle e and front edge 17a of crown surface portion 18 defines a sixth crown angle f, which also taper gemstone 10 rear-to-front and front-to-rear, respectively, when viewed from the top of the gemstone. These angles are may be in the range from 0° to 20°. In the embodiment of Fig. 4A and Fig. 4B, third crown angle c, fourth crown angle d, fifth crown angle e and sixth crown angle f are all substantially equal angles one to the other. However, because gemstone 10 now includes crown angles d and f, the front of gemstone 10 now includes another boundary line or peak 45. As shown in Fig. 4D, peak 45 extends from peak 30, along front facet 26 of crown 12, with peak 45 continuing along trapezoidal facet 38 and triangular facet 34 of pavilion 14. Peak 45 essentially bisects these facets into crown facets 26a and 26b, pavilion facets 38a and 38b and pavilion facets 34a and 34b. These facets, along with curved pavilion facets 36a (the other curved pavilion facet not being shown in Fig. 4D) are disposed at crown angles d and f, respectively.

[0017] In the embodiment of Fig. 5A and Fig. 5B, fourth crown angle d and sixth crown angle f are 0°. However in this embodiment, the straight right and left side edges 17c and 17d of gemstone 10 taper from back-to-front. This is because opposed side facets 28 are inwardly directed one to the other as they run from the rear to the front of gemstone 10. This taper forms seventh crown angle g and eighth crown angle h. These angles are in the range of 45° to 90° (the latter providing a gemstone without taper of the right and left gemstone sides).

[0018] Fig. 6A illustrates a gemstone 10 according yet another embodiment of the invention in which the gemstone is tapered from left to right. In this embodiment, right side edge 17c is shorter than left side edge 17d. In other words, the width WI of the gemstone on the left side is greater than the width W2 of the gemstone on the right side. The taper percentage, W2/WI, may range from 75% to 100%, with the lower percentage indicative of the greatest taper and the highest percentage having no taper.

[0019] Fig. 7B, the cross section of gemstone 10 looking along line 7-7 of Fig. 7A, shows that the cross section of gemstone 10 may also be varied. Thus, comparing cross sectional view of Fig. 7B with the cross sectional view of Fig. 1 F, the latter is more "peaked" shaped as compared to the former which is "rounder".

[0020] Figs. 8-12 show gemstone 10 of the present invention, previously described with respect to the first embodiment, mounted on a piece of jewelry such as a wedding ring 44. More specifically, a plurality of gemstones 10 are mounted side-byside along the outer periphery 46 of a circular metal band 45. Band 45 includes a series of straight and parallel rails 48 and a plurality of gemstone receiving openings 50 sized to receive the gemstones. Gemstone receiving opening 50 includes inwardly directed flanges 52 which cooperate with and fit into notches 54 defined along the front and rear of pavilion 14 thereby keeping the gemstone in place. As shown in Fig. 9 and Fig. 11, circular band 45 includes periphery walls 56. These walls flex outwardly slightly enabling gemstone 10 to snap fit into place.

[0021] Each gemstone 10 is cut such that when the gemstone is inserted into its gemstone receiving opening 50, the sides of adjacent gemstones abut each other. More specifically and as shown in part in Fig. 12, facet face 28a of right side facet 28 abuts facet face 28a of left side facet 28 of the adjacent gemstone and facet face 28a of left side facet 28 abuts facet face 28a of right side facet 28 of the other adjacent gemstone.

[0022] Fig 10 shows all of gemstones 10 in place along the outer periphery 46 of circular band 45 forming a completed wedding ring 44. It will be appreciated that after setting gemstones 10 into circular band 45, the gemstones give the appearance of one single diamond which forms wedding ring 44. In this regard, the joints 58 between adjacent gemstones formed at the upper edges 28b of abutting side facets 28 are not readably visible nor is the outer periphery 46 of circular metal band 45. This provides a pleasing aesthetic appearance for the wedding ring.

[0023] Thus, the present invention provides a multi-faceted gemstone having a new diamond cut that can be used on pieces of jewelry enabling the gemstones to pro-

vide a continuous diamond look. The diamond cut also provides an enhanced aesthetic look for the jewelry piece. The multi-faceted gemstone is particularly adapted to abut corresponding like gemstones so that when the gemstones are mounted on a piece of jewelry, the joints between adjacent gemstones are not readily visible.

[0024] While the present invention has been described with preference to several preferred embodiments, the invention should not be so limited. Thus, while gemstones 10 according to the first embodiment have been shown as mounted on the outer periphery 46 of band 45 of wedding ring 44, it will be appreciated that the present invention is not limited to placement of the gemstones on the ring's periphery. The gemstones may be mounted on one or more "sides" of the metal band of the wedding ring. Gemstones 10 according to the fifth embodiment of the present invention are particularly suited for such mounting, since the side or planar facets of the gemstone are directed inwardly towards one another as they run from the back to front of the gemstone and when the gemstones are placed next to and abut each other, they form a "circular" pattern. The gemstones also may be mounted on a metal band having an outer periphery that is generally square, rectangular, triangular or polygon in overall shape, instead of the traditional circular shape. Gemstones 10 according to the fourth embodiment of the present invention are particularly suited for mounting in a straight pattern, due to the fact that the side or planar facets are vertical and/or parallel to each other.

[0025] The gemstones may also be mounted to form other pieces of jewelry such as, by way of example, earrings, pendants, necklaces and bracelets.

[0026] Likewise, although the invention has been disclosed using a diamond gemstone, the gemstone need not be diamond. It can be another precious stone or even a non-precious stone.

[0027] The scope of the invention will now be set forth in the following claims:

Claims

1. A gemstone having a front, a back and a bottom, the gemstone comprising a lower pavilion and an upper crown, the crown having a top surface and a pair of depending opposed planar sides, the top surface of the crown having a convex shape such that the top surface arcuately runs in a lateral direction from said front to said back of said gemstone.

2. The gemstone of claim 1, wherein said top surface is non-arcuate in configuration as it runs in a longitudinal direction along the crown from one of said planar sides to the other of said planar sides.

3. The gemstone of claim 2, wherein the top surface of the crown is divided into a plurality of top surface portions with each pair of adjacent top surface portions being separated from one another by a linear peak that arcuately runs in a lateral direction along the crown from said front to said back of said gemstone.

4. The gemstone of claim 3, wherein each top surface portion is non-arcuate in configuration as it runs in a longitudinal direction along the crown.

5. The gemstone of claim 4, wherein each top surface portion has a slope in a longitudinal direction along the crown that is constant.

6. The gemstone of claim 5, wherein the slope of at least one of said top surface portions is positive and the slope of at least one of said other top surface portions is negative.

7. The gemstone of claim 6, wherein the slope of one of said top surface portions is the same as the slope of at least one of said other top surface portions.

8. The gemstone of claim 5, wherein the slope of at least one of said top surface portions is different than the slope of at least one of said other top surface portions.

9. The gemstone of claim 6, wherein the top surface of the crown comprises only two top surface portions with said two top surface portions being separated from one another by a single linear peak that arcuately runs in a lateral direction along the crown from said front to said back of said crown.

10. The gemstone of claim 9, wherein said single linear peak has an apex location therealong substantially halfway between said front and said back of said crown.

11. The gemstone of claim 10, wherein said gemstone has a height defined by the distance between said apex location along said linear peak and said bottom.

12. The gemstone of claim 9, wherein each of said two top surface portions runs away from said single linear peak in a downwardly longitudinal direction along the crown.

13. The gemstone of claim 1, wherein said planar sides are disposed in a vertically oriented direction as they run from said top surface to said lower pavilion.

14. The gemstone of claim 1, wherein said planar sides are inwardly directed towards one another as they run from said top surface to said lower pavilion.

15. The gemstone of claim 1, wherein said planar sides

are inwardly directed towards one another as they run from said back to said front.

16. An article of jewelry comprising:

at least one gemstone having a front, a back and a bottom, the gemstone comprising a lower pavilion and an upper crown, the crown having a top surface and a pair of depending opposed planar sides, the top surface of the crown having a convex shape such that the top surface arcuately runs in a lateral direction from said front to said back of said gemstone;
and a support for mounting at least one of said gemstones.

17. The article of jewelry of claim 16, wherein said article includes at least two gemstones, a planar side of one of said gemstones abutting a planar of said other gemstone when the gemstones are mounted on said support.

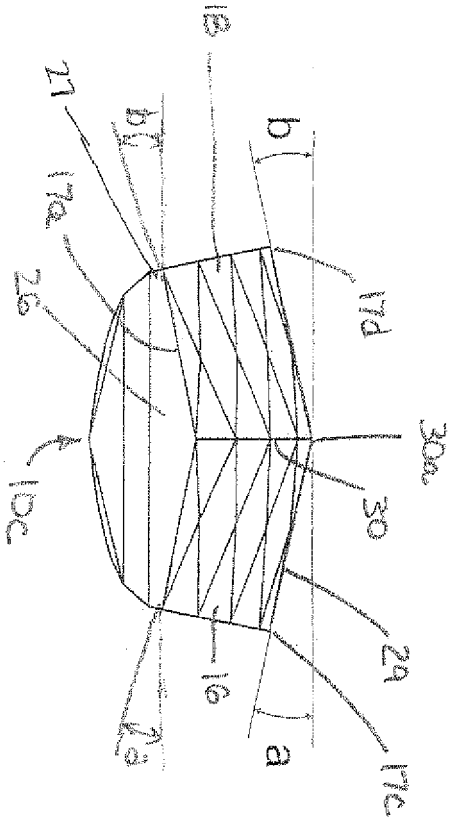


FIG 1B

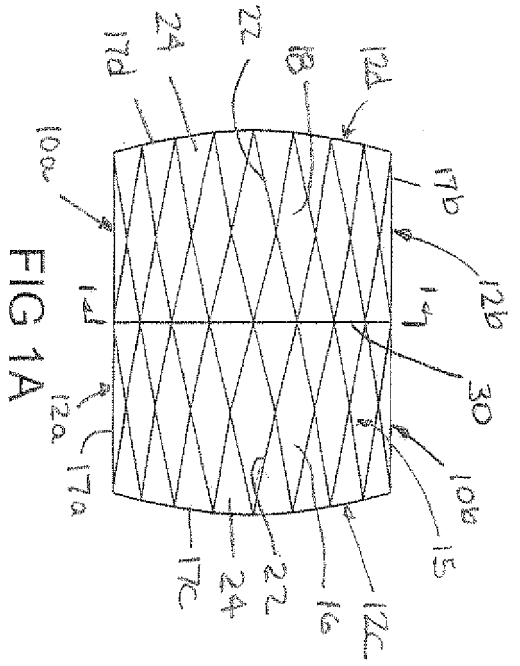


FIG 1A

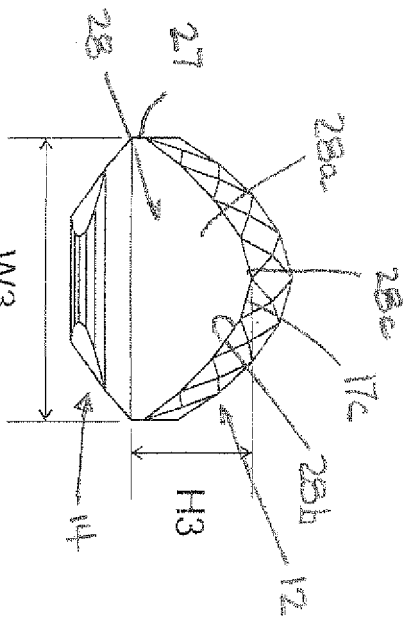


FIG 1C

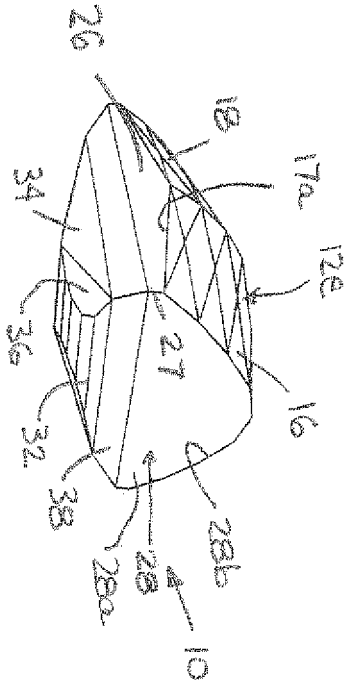


FIG 1D

FIG 1E

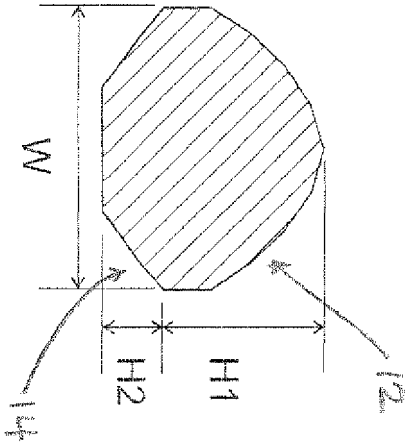
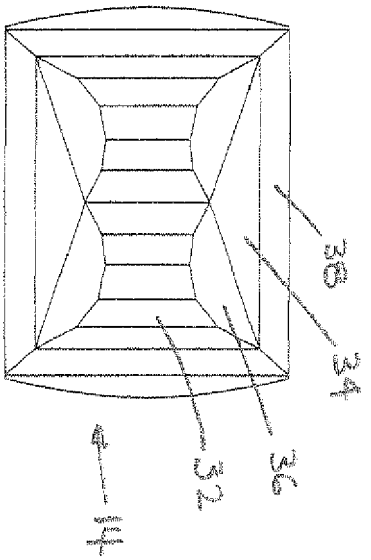


FIG 1F



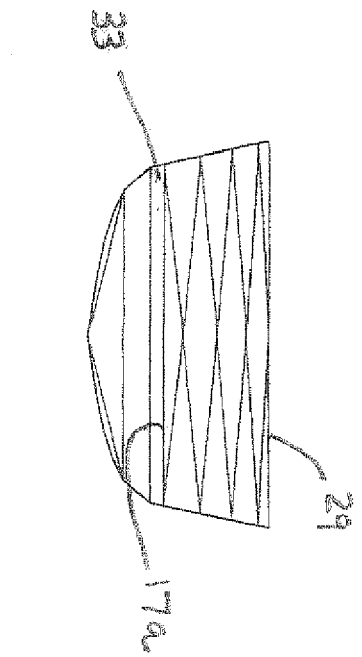


FIG 2B

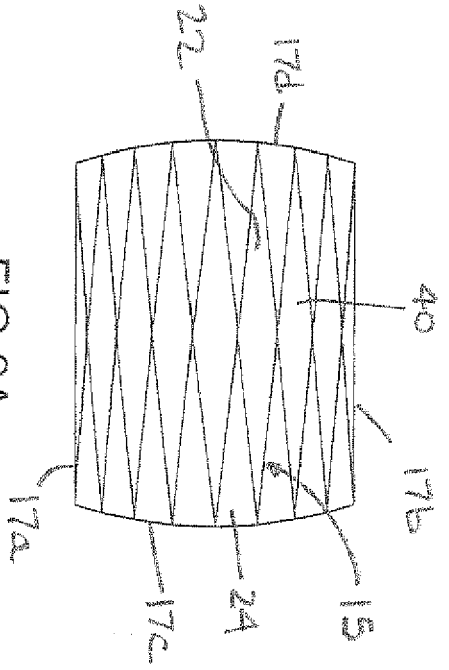


FIG 2A

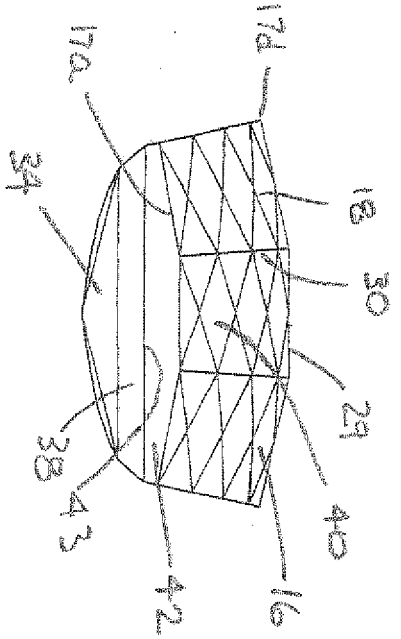


FIG 3B

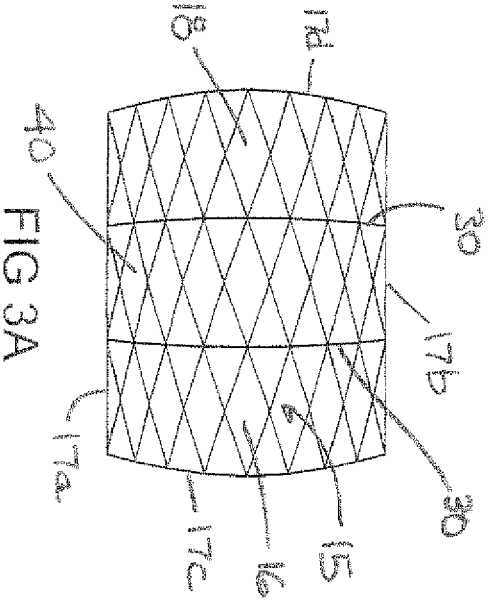


FIG 3A

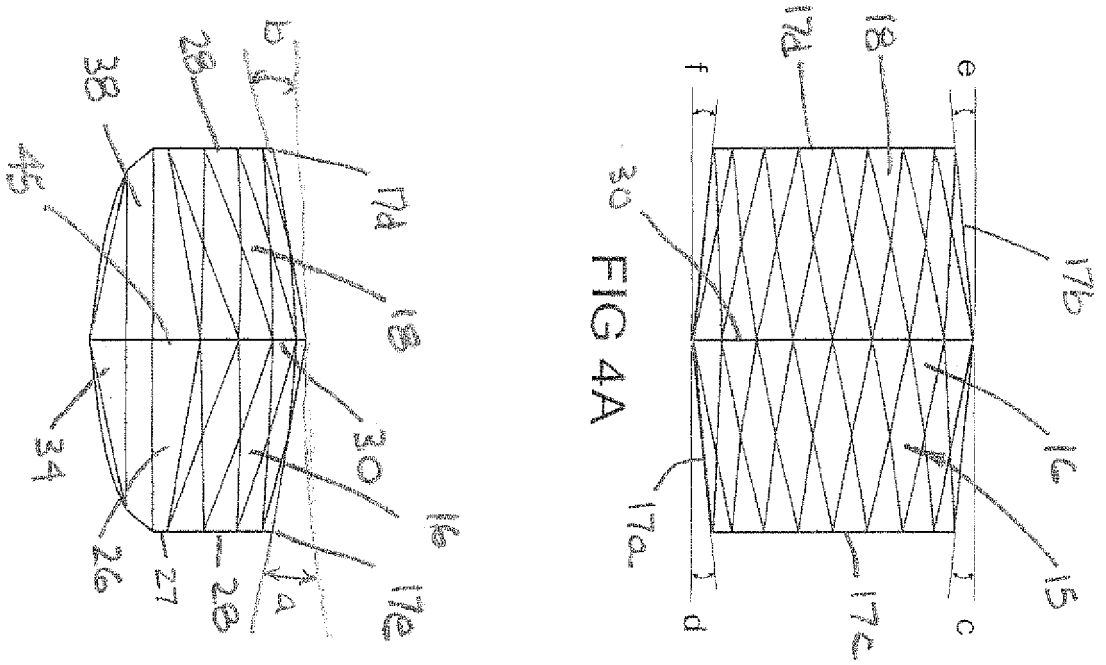


FIG 4A

FIG 4B

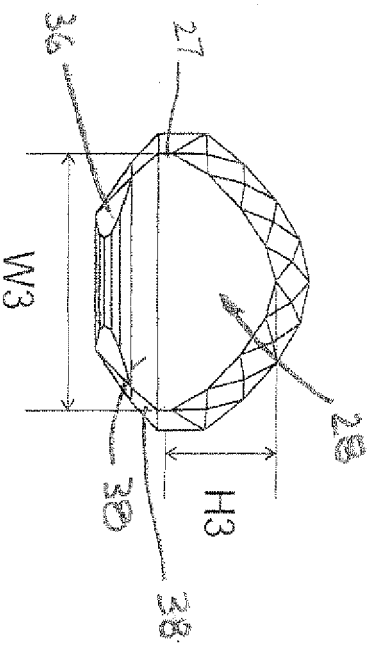


FIG 4C

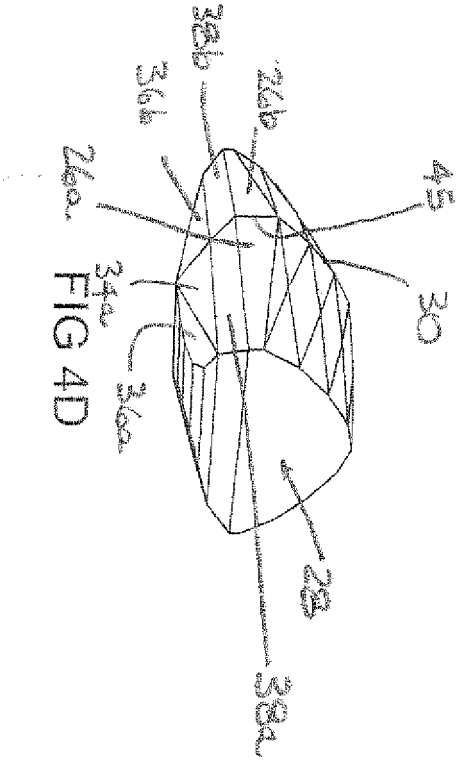


FIG 4D

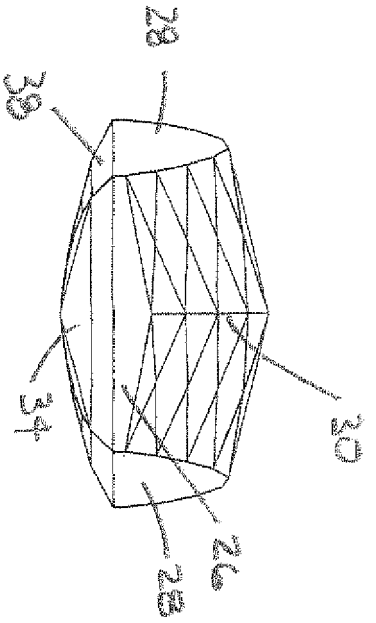


FIG 5B

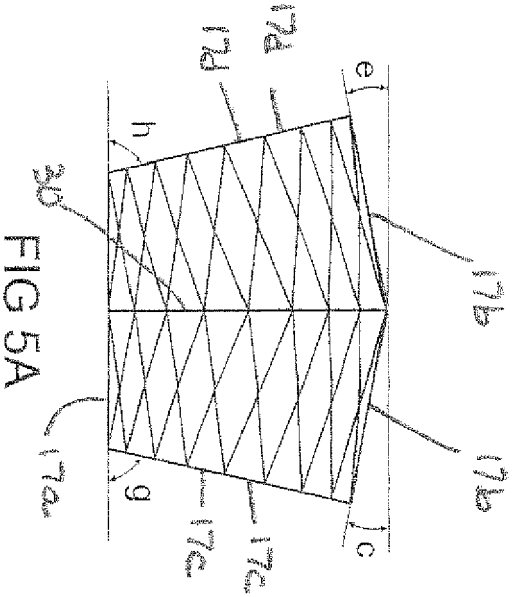


FIG 5A

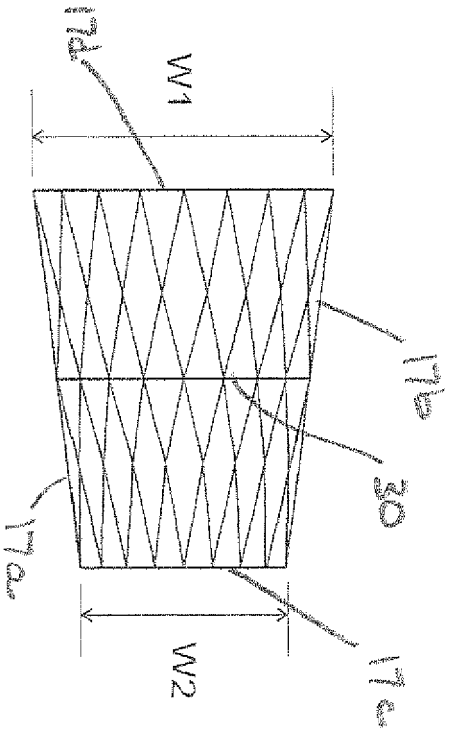


FIG 6A

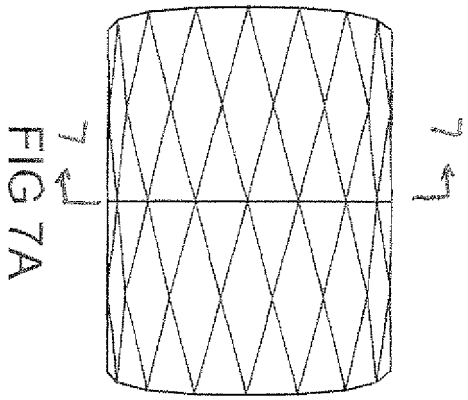


FIG 7A

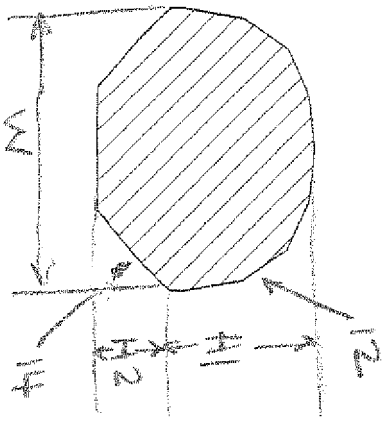


FIG 7B

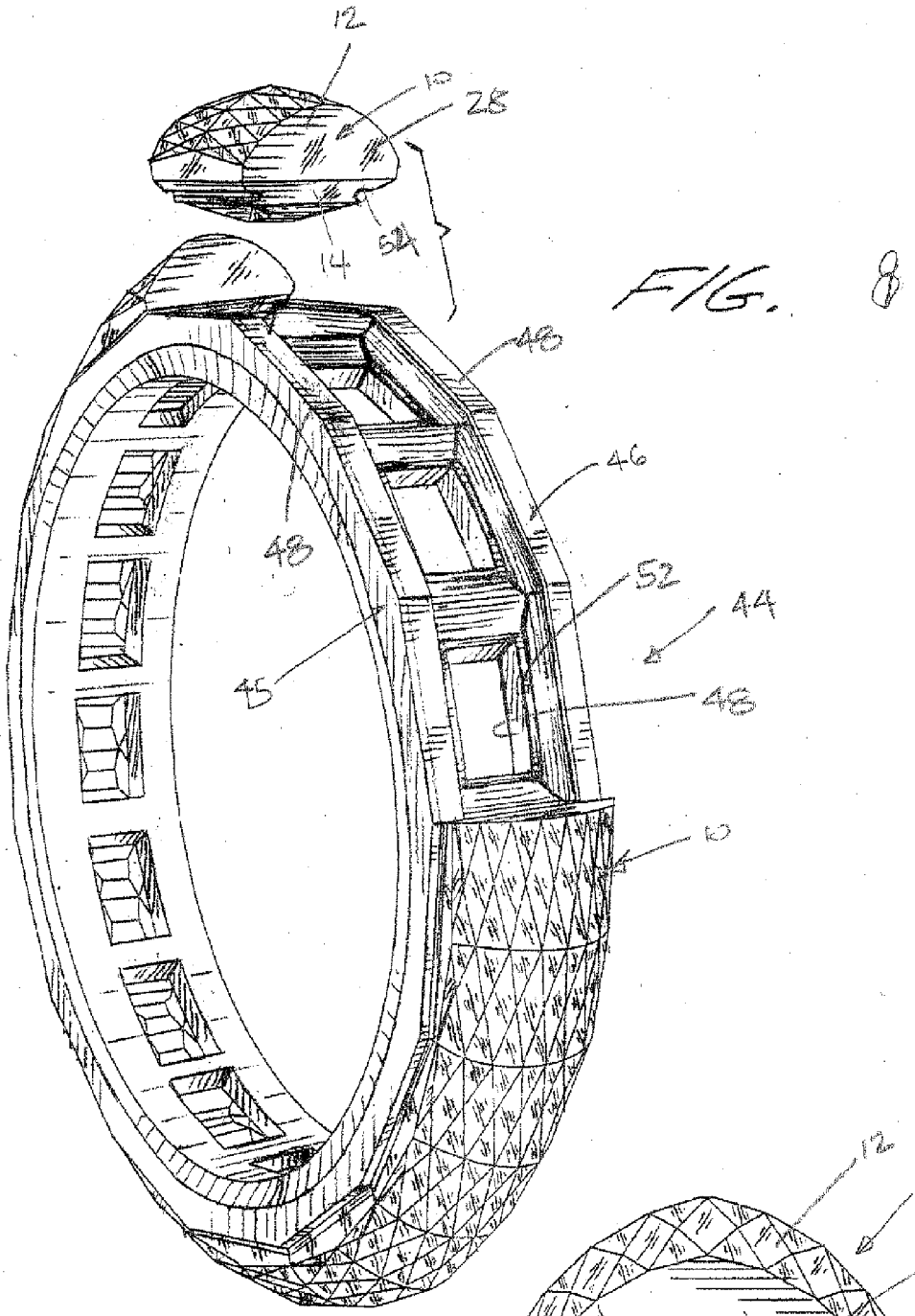


FIG. 8

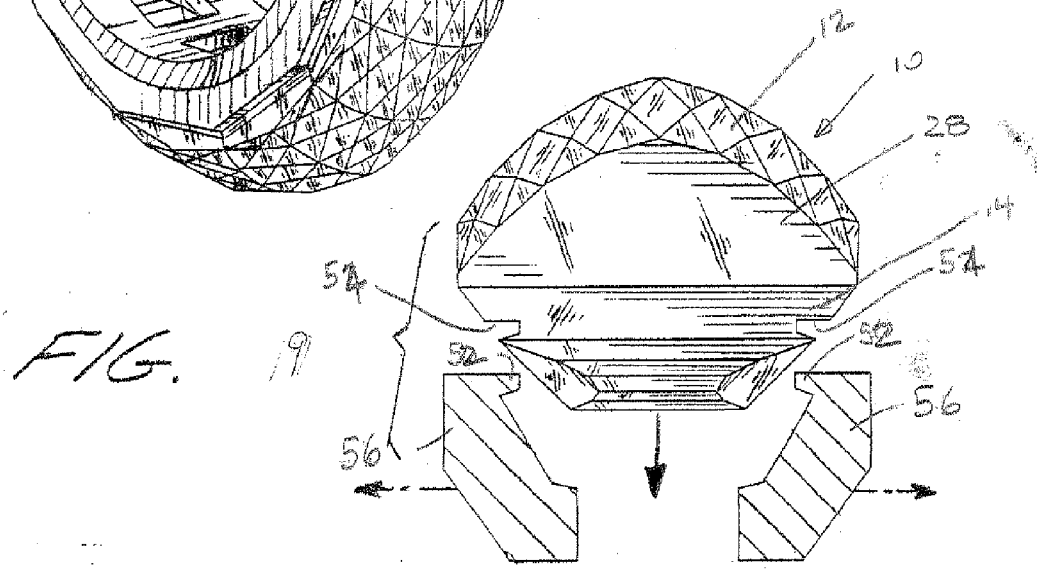


FIG. 9

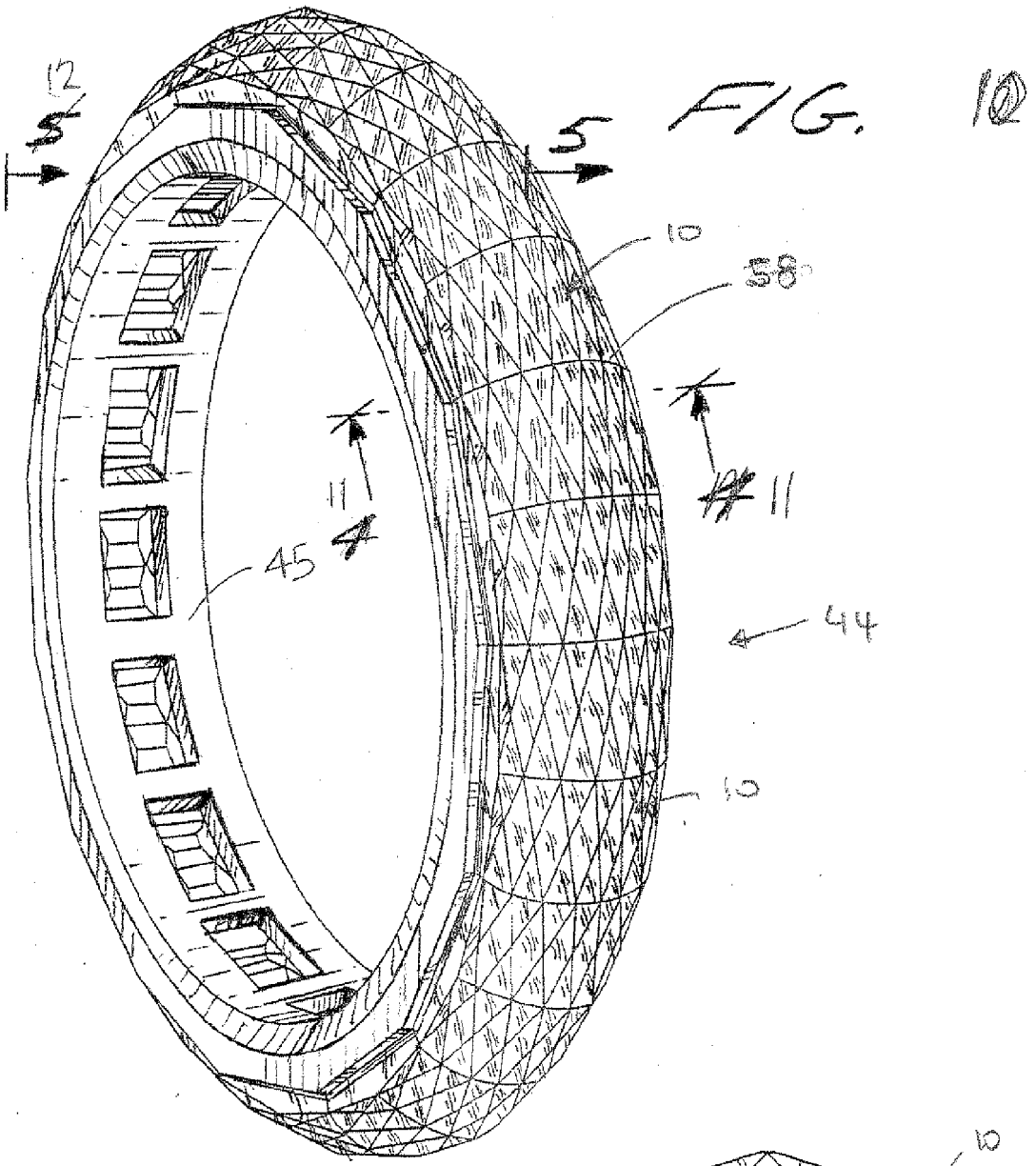


FIG. 10

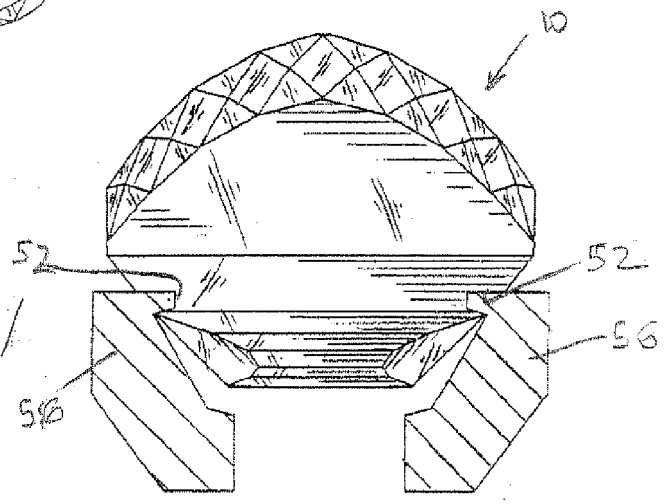


FIG. 11

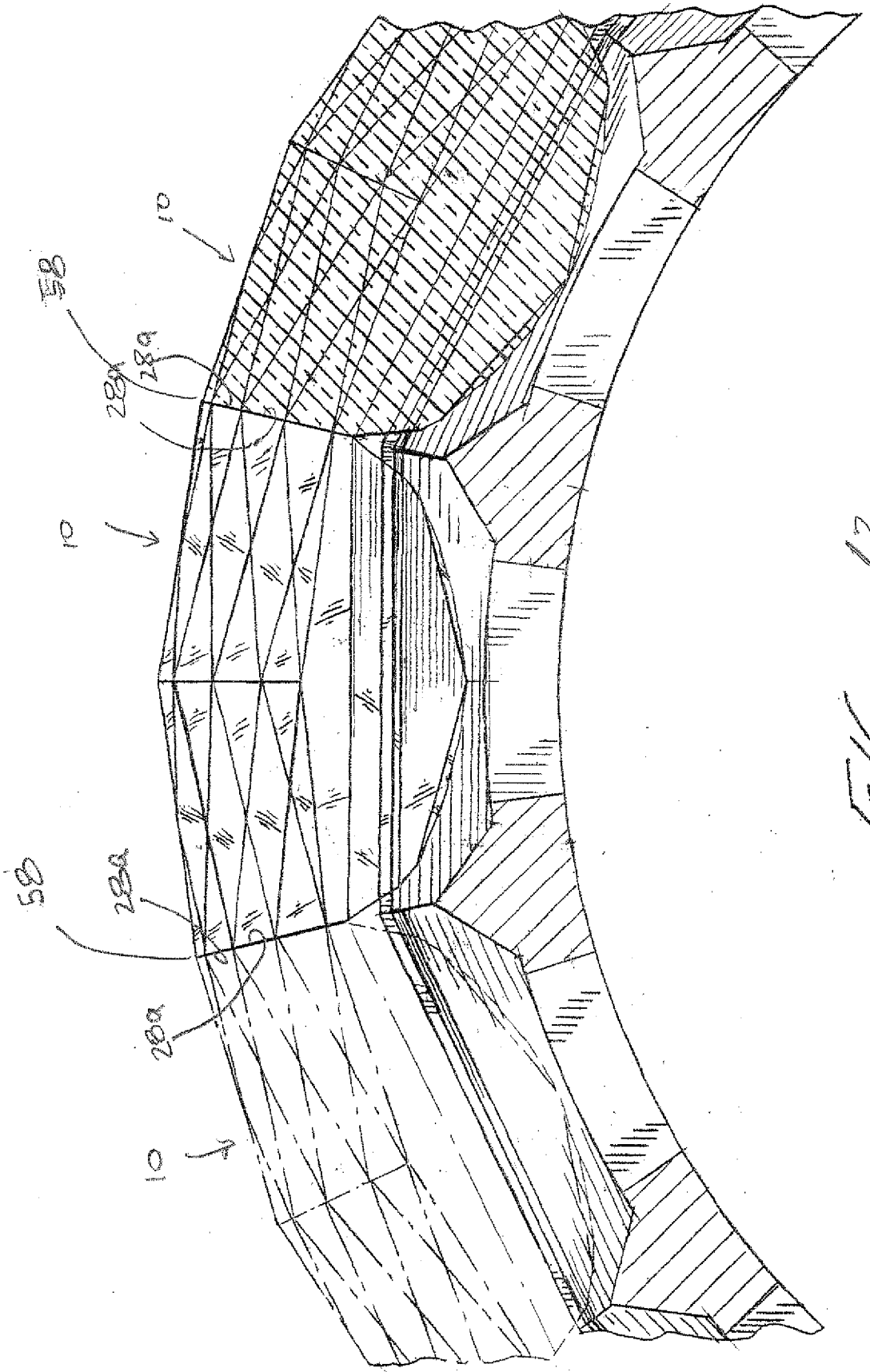


FIG. 12