STONE CUT AND METHOD OF MAKING

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ABSTRACT

A stone cut and method for cutting a stone that increases the number of facets on the stone as well as the scintillation, brilliance, and light reflectivity of the stone. The stone cut and method includes cutting angles and increasing the number of facets that, either separately or together, manage the external and internal light flow dynamics of a round cut diamond to a higher level of efficiency, effectiveness, and performance.
Fig. 4
FIG. 7
STONE CUT AND METHOD OF MAKING

CROSS REFERENCE TO RELATED APPLICATION


FIELD OF THE INVENTION

[0002] Generally, the present invention relates to a cut precious stone and a method for cutting a precious stone. More particularly, the method for cutting the precious stone and the cut of the precious stone of the present invention produces a precious stone with more brilliance, scintillation, and light dispersion.

BACKGROUND OF THE INVENTION

[0003] Traditionally, gemstones have been cut in many shapes and configurations. Typically, precious stones, such as diamonds, are cut to accent high coefficients of brilliancy, scintillation, and dispersion of light. In general, gemstones, particularly diamonds, are cut such that light entering upper portions of the stone are totally reflected and refracted within the stone, and light also emerges back through the top portion of the stone to the eye of the observer.

[0004] Many different stone cuts have attempted to bring out the greatest possible life of a diamond, i.e., give a diamond the most “fire” as possible. One such cut for diamonds that has received much glory and admiration is the round or “brilliant” cut. The round or brilliant cut is popular for diamonds gemstones as well. A brilliant-cut diamond is generally a round diamond with fifty-eight sides. A girdle (the outer edge of the gem) forms a junction between a pavilion (the lower section) and a crown (the upper section) of the gemstone. The crown typically includes many flat faces, or facets, the largest typically being the table, which is substantially parallel to the girdle. The pavilion includes many facets that cover the pavilion and can extend from a lower tip of the pavilion (the culet) to the girdle or some portion thereof. The crown of a typical brilliant-cut gemstone generally includes star facets, bezel or upper main facets, and upper girdle facets, while the pavilion generally includes pavilion main facets and lower girdle facets.

[0005] Many gemstone cuts vary with respect to which facets are cut onto the gemstone and which are emphasized on the particular gemstone cut. It has become generally accepted that the more facets a gemstone has, the more brilliancy, scintillation, and light dispersion the gemstone will portray, up to a point where the gemstone becomes too busy. The goal of a gemstone cut is to prevent leakage of incident light through the bottom portion of the gemstone and to manage external and internal light flow to maximize the return of white and color through the top of the gemstone. The traditional round brilliant cut model, due to its unique faceting arrangements, has limited ability to return white light significantly. This results in the general observation of a dark tone appearance with the round brilliant cut diamond. The dark tone appears even with diamonds that are cut to very perfect proportions having very white body color. This observation becomes even more pronounced with round brilliant cut diamonds that are cut to less than ideal proportions where leakage of light is significant. The loss of light through the bottom of the diamond creates dead zones.

[0006] Furthermore, due to the light return and internal light flow efficiencies of the round brilliant cut model, the proportions that are necessary for this model to achieve optimal light performance requires extraordinary loss of rough diamond material during the cutting process. Although, at the optimal light performance level for the traditional model, the diamond appears more impressive than the poorly cut diamonds, the magnitude and quality of brilliancy, dispersion and scintillation that a round shape diamond cut is capable of achieving is not maximized. Nonetheless, the current desire of many cutters to cut diamonds to the ideal cut proportions of the traditional round brilliant cut is discouraged by the requirements of significant weight loss of the rough diamond material. This provides one explanation for the high numbers of round brilliant diamonds with poorly cut proportions that are produced every year.

[0007] Therefore, it would be advantageous to cut a gemstone, such as a diamond, with proportions that prevent light leakage and with a faceting arrangement that is more efficient and effective in returning more white light, color light, and scintillation. Also, it would be more advantageous to provide a faceting arrangement that can harmonize and properly balance the gemstone’s key components of light performance, its brilliancy, dispersion, and scintillation. Thereby, a higher level of visual and aesthetic beauty would be provided to the gemstone. A faceting arrangement that improves the total light return efficiency of the diamond by changing the pathway which light travels within the diamond would also be advantageous. Thereby, the weight loss during cutting would be significantly reduced. Overall, it would be desirable to produce a gemstone with a faceting arrangement that returns more brilliancy, fire (dispersion), and scintillation, and that appears lighter and that can be cut with less weight loss to achieve a greater light performance than the traditional model.

SUMMARY OF THE INVENTION

[0008] An embodiment of the present invention provides a stone cut and a method for cutting a stone providing increased scintillation, brilliancy, and dispersion of light. The cut, in accordance with one aspect of the invention, has a girdle, crown, and pavilion, and includes an increased number of facets on either or both the crown or the pavilion over the traditional number of facets. The increased number of facets may be obtained by providing additional upper girdle facets (over the traditional number) surrounding the perimeter of the stone above the girdle. According to an embodiment of the present invention, the upper girdle facets preferably extend from a lower side along the girdle of the stone to a common upper vertex located toward a table on the crown. Preferably, there are three upper girdle facets per side of the table.

[0009] According to another embodiment of the present invention, the increased number of facets may be obtained by providing additional lower girdle facets (over the traditional number) on the pavilion of the stone. The increased number of facets on the pavilion portion results from an increase in the number of lower girdle facets. Preferably, the lower girdle facets are positioned between each pair of
pavilion main facets and extend from an upper side along a
girdle of the stone to a portion of the pavilion. Also
preferably, there are three lower girdle facets between each
pavilion main facet.

[0010] In accordance with another embodiment of
the present invention, the pavilion main facets, on the pavilion
of the stone extending upwards from the culet, vary in
thickness. The pavilion main facets can alternate in thickness
between thick and thin. In one embodiment of the
present invention, the thick pavilion main facets are about 50
percent thicker than the thin pavilion main facets.

[0011] According to yet another embodiment of
the present invention, one of the lower girdle facets is rotated
about an axis.

[0012] These and other features and advantages of
embodiments of the present invention will be readily apparent
from the following detailed description of the invention,
the scope of the invention being set out in the appended
claims.

BRIEF DESCRIPTION OF THE DRAWINGS

[0013] The detailed description will be better understood
in conjunction with the accompanying drawings, wherein
like reference characters represent like elements, as follows:

[0014] FIG. 1 shows a top plan view of an embodiment of
a stone cut according to an embodiment of the present
invention;

[0015] FIG. 2 shows a bottom view of a stone according to
an embodiment of the present invention;

[0016] FIG. 3 shows a side view of a stone having a crown
as in FIG. 1 and a pavilion as in FIG. 2;

[0017] FIG. 3A shows a side view of the stone of FIG. 3
having rotated girdle facets;

[0018] FIG. 4 shows angles and dimensions of a stone as
shown in FIG. 3;

[0019] FIG. 5 shows a top view of another embodiment of
the present invention of a stone cut according to another
embodiment of the present invention;

[0020] FIG. 6 shows a bottom view of a stone as shown
in FIG. 5;

[0021] FIG. 7 shows a bottom view of a stone cut accord-
ing to another embodiment of the present invention; and

[0022] FIG. 8 shows a top view of a stone cut as in FIG.
7.

DETAILED DESCRIPTION OF THE
INVENTION

[0023] According to FIGS. 1-3, stone 10, such as a
diamond, cut according to an embodiment of the present
invention, is generally similar to a brilliant-cut diamond.
Stone 10 has a generally round shape, when viewed from the
top downward or bottom upward, and a generally pyramidal
shape when viewed from the side. Stone 10 generally has
girdle 60 defining the outer edge and widest portion of stone
10 in a top downward or bottom upward view; crown 40
defining the upper portion above girdle 60; pavilion 80
defining the lower portion below girdle 60; and culet 20
defining the lowest portion of pavilion 80. For purposes of
explanation, features of stone 10 will be referenced with
respect to central axis 12 that extends from culet 20 (FIG.
3), at a lower portion of stone 10, through the center of table
102, as represented by the dashed line 12 of FIG. 3.
Furthermore, the outer edge of stone 10, girdle 60, will be
referred to as the periphery of stone 10.

[0024] FIG. 1 shows a top view of an embodiment of
the present invention of stone 10 cut with many flat faces, or
facets, on crown 40. For example, according to one embodi-
ment of the present invention, crown 40 has fifty-one (51)
facets. The largest facet on crown 40 is table 102. According
to the embodiment of the present invention of FIG. 1, table
102 has a ten-sided configuration or a decagon shape with
ten vertices adjoining adjacent sides of the decagon.
However, table 102 may have fewer or more sides instead.

[0025] Each side of table 102 of FIG. 1 forms one side of
a substantially triangular shaped star facet 104. Adjacent star
facets 104 adjoin at vertices nearest table 102, thereby
encircling table 102 with a ring of star facets 104. Also
located on crown 40 are ten upper main or bezel facets 106.
Bezel facets 106 are substantially kite shaped with four sides
or edges and four vertices. It is preferred that an axially
center-most upper vertex V1 of each of bezel facets 106
adjoins table 102 at the point where vertices of adjacent star
facets 104 adjoin table 102 and each other. It is also
preferable that the axially center-most lower vertex V2 of
each of bezel facets 106 extends to girdle 60. Therefore, one
set of opposed upper and lower vertices V1 and V2 of each
of bezel facets 106 extends between girdle 60 and table 102,
while circumferentially adjoining lateral vertices V3 and V4
of bezel facets 106 adjoin with the lower-most vertex of star
facets 104.

[0026] The remaining surface area of crown 40 is occu-
pied by upper girdle facets 110, 112, and 114. Upper girdle
facets 110, 112, and 114 are positioned around the periphery
of crown 40 between the lower-most vertices V2 of adjacent
bezel facets 106 and with a bottom side along girdle 60.
Traditionally, there are two upper girdle facets positioned
between each adjacent pair of bezel facets 106. However, in
accordance with the principles of embodiments of the
present invention, the embodiment of FIG. 1 preferably
has three upper girdle facets 110, 112, and 114 between each
adjacent pair of bezel facets 106. Upper girdle facets 110,
112, and 114 preferably extend from girdle 60 to a common
vertex 120, extending towards table 102 and which prefer-
ably adjoins the lower-most vertex of star facet 104 and
the adjoining lateral vertices, V3 and V4, of bezel facets 106.
The inclusion of a third upper girdle facet 114 preferably
between each pair of bezel facets 106 increases the scintil-
lation and light dispersion of stone 10. Moreover, the
additional upper girdle facet provides a crown of a round-
shaped diamond with an additional set of facets typically
equal to the number of sides of the polygon-shaped table
102 of stone 10. For example, as shown in FIG. 1, when
table 102 is in the preferred shape of a decaagon, ten extra
facets are incorporated onto crown 40 of stone 10 by
configuring three upper girdle facets 110, 112, and 114 (i.e.,
by providing an extra girdle facet) between each pair of
bezel facets 106. Therefore, according to this embodiment,
a total of fifty-one (51) facets are preferably provided on the
crown of a stone 10 with a decaagon-shaped table 102. This
is roughly a twenty-five percent increase in the number of crown facets over a traditional round stone with a decagon-shaped table 102.

[0027] FIG. 2 is a bottom view of a stone 10 showing pavilion 80. Generally, there are preferably pavilion main facets 202, lower girdle facets 220, 222, and 224, and a culet 20 on the pavilion of stone 10. The pavilion main facets 202 are preferably configured substantially in a kite shape with a lower vertex on culet 20 and an upper vertex on girdle 60. According to an embodiment of the present invention, the upper vertex of pavilion main facets 202 preferably terminates at girdle 60 in alignment with the lower-most vertex of corresponding bezel facets 106.

[0028] Culet 20 can preferably be a point, as shown in the figures, or a planar polygonal surface with a number of sides equal to and determined by the number of pavilion main facets 202. A planar polygonal culet surface is preferably formed by providing a facet instead of a point for culet 20. The culet facet may also mimic the configuration of table 102, thereby taking on as many sides as that of table 102, only in a reduced size. Accordingly, in the embodiment of the present invention shown in FIG. 2, culet 20, if cut to be a facet instead of a point, is preferably in the shape of a decagon because pavilion 80 has ten pavilion main facets 202.

[0029] Lower girdle facets 220, 222, and 224 preferably have a top side along girdle 60 and a lower vertex extending toward culet 20. Although traditionally there are only two lower girdle facets between adjacent pavilion main facets 202 on a round diamond, in the embodiment of the present invention shown in FIG. 2, there are preferably three lower girdle facets 220, 222, and 224 on pavilion 80 between each pair of adjacent pavilion main facets 202. A first lower girdle facet 220 preferably has one side in common with a side of a first pavilion main facet 202 and another side in common with a side of a third lower girdle facet 224. Additionally, a second lower girdle facet 222 preferably has one side in common with a side of a second pavilion main facet 202 (adjacent the first pavilion main facet) and preferably has another side in common with a second side of the third lower girdle facet 224. The additional lower girdle facet increases the scintillation and dispersion of stone 10.

[0030] According to another embodiment of the present invention, a lower girdle facet is preferably rotated clockwise or counterclockwise about an axis extending from culet 20 to girdle 60 and preferably (though not necessarily) lying in the plane of the lower girdle facet such that the facet is not tangent to a common imaginary general circumference of stone 10 about which the other lower girdle facets lie and to which the other lower girdle facets are tangent. Therefore, generally a micro-facet (not shown) is created between the edges of the rotated lower girdle facet and its neighboring facets. According to a preferred embodiment of the present invention, the lower girdle facet is preferably rotated at least about 0 degrees and at most about 10 degrees. It is more preferred that the lower girdle facet be rotated at least about 0 degrees and at most about 4 degrees. However, as will be appreciated by one of ordinary skill in the art, the angle of rotation may vary from such preferred minimum and maximum values if the desired improved scintillation and light dispersion is nonetheless achieved.

[0031] For example, as shown in FIG. 3A, if lower girdle facet 224 is rotated clockwise about an axis extending from culet 20 to girdle 60 and where the axis lies along the common edge of lower girdle facets 220 and 224, the adjacent edges of lower girdle facet 224 and lower girdle facet 222 are not coextensive. Accordingly, a new micro-facet M is created between adjacent edges of lower girdle facets 222 and 224, respectively. Additionally, a tapered micro-facet (not shown) is also created between lower girdle facet 224 and girdle 60. This tapered micro-facet begins at the upper left edge of lower girdle facet 224 at girdle 60 and expands along girdle 60 to a maximum width at the right edge of lower girdle facet 224 bordering lower girdle facet 222.

[0032] Likewise, lower girdle facet 224 could be rotated counterclockwise about an axis extending from culet 20 to girdle 60 and preferably (though not necessarily) lying in the plane of the lower girdle facet 224, creating a micro-facet between the respective edges of lower girdle facet 224 and lower girdle facet 220. Furthermore, lower girdle facet 224 can be rotated clockwise or counterclockwise about an axis parallel to girdle 60. In this respect, rotating the lower girdle facet 224 clockwise about an axis that is parallel to girdle 60 and that extends from left to right causes a slight flattening of the corner of the lower girdle facet that intrudes into the general diameter of stone 10 along the left and right edges of lower girdle facet 224 with lower girdle facets 220 and 222, respectively. Moreover, lower girdle facet 224 may be rotated about an axis located at some point between adjoining edges of lower girdle facet 220 and lower girdle facet 224 and adjoining edges of lower girdle facet 222 and lower girdle facet 224, thereby creating micro-facets around the perimeter of lower girdle facet 224.

[0033] It will be appreciated by one of ordinary skill in the art that each lower girdle facet of stone 10 can be rotated in the same direction and at the same degree or each lower girdle facet of stone 10 can be rotated in different directions and/or degrees. Furthermore, the axis of rotation can be directed in any orientation.

[0034] A stone in accordance with the principles of the present invention may have a crown 40 as in FIG. 1 or a pavilion 80 as in FIG. 2, or both, as in FIG. 3. Thus, an additional upper girdle facet may be provided between each bezel facet 106 of a round cut stone, without altering the traditional number of lower girdle facets. Similarly, an additional lower girdle facet may be provided between each pavilion main facet 202 of a round cut stone, without altering the traditional number of upper girdle facets. Or, additional upper girdle facets, as in FIG. 1, and additional lower girdle facets, as in FIG. 2, may be provided on the same stone 10.

[0035] From a side perspective view of a stone with additional upper girdle facets and lower girdle facets, such as in FIG. 3, the combination of upper girdle facets 110, 112, and 114, and lower girdle facets 220, 222, and 224 form a substantially smaller kite-shaped facet within a larger kite-shaped facet. In particular, the girdle sides of upper girdle facets 110, 112, and 114 are adjacent the girdle sides of lower girdle facets 220, 222, 224, respectively, of pavilion 80. Upper girdle facets 110 and 112 and lower girdle facets 220 and 222 form what appears to be a larger kite-shaped facet with a smaller kite shaped facet therein, formed by the combination of the additional upper girdle facet 114 and the additional lower girdle facet 224, as illustrated in FIG. 3.
Exemplary preferred measurements of a stone 10 cut as in FIG. 3 are provided in FIG. 4, where the dimensions are given as a percentage of the width or diameter L of stone 10. There are a number of different standards for an "ideal cut" diamond according to the American Gem Society (AGS) and Gemological Institute of America (GIA). However, due to the increased number of upper and lower girdle facets of the embodiments of the present invention, stone 10 can deviate from the "ideal cut" standard set by these reputable organizations and exceed the visual equivalent and/or benefits of an "ideal cut" stone. In accordance with this deviation, girdle 60 has a preferred thickness T, between crown 40 and pavilion 80 of at least about 0.50 percent and at most about 4 percent of the total diameter L of stone 10. In a more preferred embodiment, girdle 60 has a thickness T of at least about 0.50 percent and at most about 2.95 percent of the total diameter L of stone 10. Table 102 preferably has a cross-section width L1 of not less than about 50 percent and not more than about 66 percent of the diameter L of stone 10. It is more preferred that table 102 has a cross-section width L1 of not less than about 52 percent and not more than about 60 percent of the diameter L of stone 10 at girdle 60. Angle \( \theta_1 \), between the horizontal or girdle 60 and the side of crown 40, is not less than about 30 degrees and not more than about 37 degrees. In a more preferred embodiment of the present invention, angle \( \theta_1 \) is preferably not less than about 33.7 degrees and not more than about 35.8 degrees. Angle \( \theta_2 \), between the horizontal or girdle 60 and a side of pavilion 80, is preferably at least about 39 degrees and at most about 43 degrees. More preferably, angle \( \theta_2 \) is at least about 40.5 degrees and at most about 41.5 degrees. Crown height III of the present invention is preferably at least about 11 percent and at most about 18 percent of the total diameter L of stone 10. More preferably, crown height III is at least about 14 percent and at most about 16.5 percent of the total diameter L of stone 10. Pavilion depth, as indicated by H2, is preferably not less than about 40 percent and not more than about 46 percent of total diameter L of stone 10. It is more preferable that pavilion depth H2 be not less than about 42.2 percent and not more than about 43.8 percent of total diameter L of stone 10.

According to another embodiment of the present invention, as shown in FIG. 5, crown 40 is preferably in the shape of a twelve-sided polygon, i.e., a dodecagon-shaped table 502. Abutting each side of dodecagon-shaped table 502 are preferably star facets 504. Adjacent star facets 504 encircle dodecagon table 502 with adjacent star facets 504 adjoined at lateral vertices. Because star facets 504 extend from a side of dodecagon-shaped table 502, there is preferably an equal number of star facets 504 as sides of dodecagon-shaped table 502, or twelve star facets 504. Additionally, there is preferably a substantially kite-shaped bezel facet 506 extending from each vertex V of dodecagon-shaped table 502 and terminating at girdle 60. Two or three upper girdle facets 510, 512, 514 may be provided between the lower portion of each bezel facet 506. Furthermore, as shown in FIG. 6, there preferably are an equivalent number of pavilion main facets 602 extending from cutlet 604 toward and terminating at girdle 60. Pavilion main facets 602 are substantially kite shaped. Located between each adjacent pair of pavilion main facets 602 may be two or three lower girdle facets 606, 608, and 610. It will be appreciated by one of ordinary skill in the art that placing a twelve-sided table or twelve pavilion main facets on a stone may only be appropriate for a stone of a certain size, i.e., a quarter of a carat or more, because a small stone may become too busy and, thus, take away from the effectiveness of the cut.

As will be appreciated by one of ordinary skill in the art, the number of sides of the polygon shape of the table of a stone cut in accordance with the principles of the embodiments of the present invention can be altered without changing the scope of the present invention. Generally, fewer than eight sides on the polygonal table does not provide the desired scintillation, and more than twelve sides on the polygonal table generally result in a diamond that is too busy. Similar principles are true for the associated crown and pavilion facets. However, depending on the size and quality of the initial stone, the number of polygonal sides of the table and other crown and pavilion facets may be altered. Thus, fewer or more sides on the table and/or facets on the stone are nonetheless within the scope of the present invention.

According to another embodiment of the present invention, as shown in FIGS. 7 and 8, an exemplary stone 800, shown cut to be a precious gem, preferably has pavilion main facets 870 that alternate in thickness. Generally, stone 800 has a table 802, which is the largest facet on the crown on stone 800, the table 802 preferably having the same number of sides as the number of pavilion main facets 870.

FIG. 7 shows a pavilion portion of stone 800. The pavilion portion has a cutlet 850 at a bottom-most point. In another embodiment of the present invention, cutlet 850 could be a facet instead of a point, as described above. Substantially kite-shaped pavilion main facets 870 preferably extend from cutlet 850 to girdle 860. Pavilion main facets 870 preferably vary in width. It is preferred that a first pavilion main facet 872 be at least about 30 percent wider, at its widest part, than a neighboring second pavilion main facet 874 and at most about 60 percent wider than the neighboring second pavilion main facet 874. It is more preferable that a first pavilion main facet 872 be at least about 40 percent wider than a neighboring thin pavilion main facet 874, and at most about 50 percent wider than a neighboring thin pavilion main facet 874. According to one exemplary embodiment, there are preferably ten pavilion main facets 870 around the pavilion or stone 800. Of those ten, five preferably have larger angles, about 42 degrees, and five preferably have smaller angles, about 30 degrees, thus totaling 360 degrees and resulting in the alternating widths of pavilion main facets 870. It will be appreciated by one of ordinary skill in the art that the overall size of stone 800 and the number of pavilion main facets in total on stone 800 will be determining factors in the varying width of pavilion main facets 870. A further determining characterization for the width variation between pavilion main facets 870 is the overall reflectivity of light from stone 800.

Alternating the width of the pavilion main facets 870 changes the internal symmetry of stone 800. Light that enters stone 800 is reflected differently from a traditional round cut stone because of the varying width of pavilion main facets 870. The altering width of pavilion main facets 870 produces five-fold symmetry in stone 800 with a ten-sided pavilion. A result of pavilion main facet width alteration is an increase in brilliance and scintillation and improved internal light flow.

According to another embodiment of the present invention, stone 800 can include three (rather than two, as in
traditional round-cut stones) upper girdle facets 820, 822, and 824. Upper girdle facets 820, 822, and 824 are preferably positioned between adjacent bezel facets 806. Upper girdle facets 820, 822, and 824 preferably extend from girdle 860 and terminate at a common vertex at adjoining lateral vertices of bezel facets 806. Furthermore, according to yet another embodiment of the present invention, stone 800 can include three (rather than two, as in traditional round-cut stones) lower girdle facets 880, 882, and 884. Lower girdle facets 880, 882, and 884 are positioned between adjacent pavilion main facets 870. Lower girdle facets 880, 882, and 884 extend from a region on the pavilion to girdle 860. Lower girdle facets 880, 882, and 884 align with upper girdle facets 820, 822, and 824, respectively at girdle 860.

[0043] According to another embodiment of the present invention, lower girdle facets can be rotated such that the facet is not tangent to a common imaginary general circumference of stone 10 about which the other lower girdle facets lie and to which the other lower girdle facets are tangent. Lower girdle facets can be rotated counterclockwise or clockwise about an axis extending from culet 850 to girdle 860. A lower girdle facet may also be rotated about an axis parallel to girdle 860. Depending on the axis of rotation, rotation of a lower girdle facet generally generates a microfacet (not shown) at the boundary between the rotated lower girdle facet and neighboring facets. The rotation of lower girdle facets is similar to rotation of lower girdle facets described above.

[0044] In yet another embodiment of the present invention, as shown in FIG. 8, table 802 preferably has ten sides, or has a decagon shape. As illustrated in FIG. 8, extending from each side of table 802 is a generally triangular-shaped star facet 804. Star facets 804 abut each other at lateral vertices forming a ring around table 802. Extending from each vertex of table 802 is a bezel facet 806. Bezel facets 806 extend from table 802 to girdle 860. Two or three upper girdle facets 820, 822, 824 may be provided between the lower portion of each of bezel facets 806.

[0045] It will be appreciated features described above with respect to one embodiment typically may be applied to another embodiment, whether or not explicitly indicated. The various features hereinafter described may be used singly or in any combination thereof. Therefore, the present invention is not limited to only the embodiments specifically described herein. Furthermore, the principles of this invention can be applied to other gemstone cuts without exceeding the scope of the invention as contemplated by the inventor.

[0046] The present invention also contemplates methods for forming the embodiments of the stone as described above. According to one embodiment, the method preferably includes forming a pavilion portion having a culet and forming a crown portion having a table with a predetermined number of sides. The method also preferably includes forming a girdle which separates the pavilion portion from the crown portion. Additionally, the method preferably includes forming three upper girdle facets per side of the table where the upper girdle facets extend from the girdle to a vertex at the table. Pavillion main facets are also preferably formed with this method extending from the girdle region toward the culet region. The pavillion main facets preferably extend from near the culet toward the girdle on the pavilion portion of the stone. According to another method of the present invention, which may or may not be performed in conjunction with the above-described method, three lower girdle facets are preferably formed on the pavilion portion of the stone. The lower girdle facets are preferably positioned between adjacent pavilion main facets. According to another method of the present invention, which may or may not be performed in conjunction with either or both of the above-described methods, the thickness of the pavilion main facets may be varied in an alternating circumferential pattern. According to yet another method of the present invention, which may or may not be performed in conjunction with any, several, or all of the above-described methods, at least one lower girdle facet is preferably rotated such that the facet is not tangent to an imaginary general circumference of the stone. The method may further include forming multiple lower girdle facets on the pavilion portion of the stone where the lower girdle facets are at multiple angles not tangent to a common imaginary general circumference of the stone.

[0047] While the foregoing description and drawings represent the preferred embodiments of the present invention, it will be understood that various additional modifications and substitutions may be made therein without departing from the spirit and scope of the present invention as defined in the accompanying claims. In particular, it will be clear to those skilled in the art that the present invention may be embodied in other specific forms, structures, arrangements, proportions, and with other elements, materials, and components, without departing from the spirit or essential characteristics thereof. One skilled in the art will appreciate that the invention may be used with many modifications of structure, arrangement, proportions, materials, and components and otherwise, used in the practice of the invention, which are particularly adapted to specific environments and operative requirements while not departing from the principles of the present invention. The presently disclosed embodiments are therefore to be considered in all respects as illustrative and not restrictive, the scope of the invention being indicated by the appended claims, and not limited to the foregoing description.

What is claimed is:

1. A stone, comprising:
   a pavilion portion having a culet;
   a crown portion having a table;
   a girdle separating said pavilion portion from said crown portion;
   a plurality of pavilion main facets extending between said girdle and said culet;
   at least three lower girdle facets positioned between adjacent pavilion main facets, each of said at least three lower girdle facets having a top side along said girdle, wherein only two of said at least three lower girdle facets have a common lower vertex extending towards said culet and a third lower girdle facet of said at least three lower girdle facets has a separate lower vertex extending towards said culet;
   a plurality of bezel facets extending between said girdle and said table; and
   at least three upper girdle facets positioned between adjacent bezel facets, each of said at least three upper girdle facets having a common upper vertex extending
towards said table, wherein each of said at least three upper girdle facets has a bottom side along said girdle.

2. The stone of claim 1, wherein said crown includes a plurality of star facets encircling said table, and a bezel facet positioned between adjacent star facets and said girdle.

3. A stone, comprising:
   a pavilion portion having a culet;
   a girdle separating said pavilion portion from said crown portion;
   a plurality of pavilion main facets extending between said girdle and said culet; and
   at least three lower girdle facets between each adjacent pair of said pavilion main facets, wherein at least one of said at least three lower girdle facets is rotated so that said at least one of said at least three lower girdle facets is not tangent to a circumference about said stone.

4. The stone of claim 3, wherein a middle of said three lower girdle facets is rotated.

5. A stone, comprising:
   a pavilion portion having a culet;
   a crown portion having a table with a predetermined number of sides;
   a girdle separating said pavilion portion from said crown portion; and
   at least three lower girdle facets for each side of said table, each of said at least three lower girdle facets having a common lower vertex extending towards said culet; and
   at least three upper girdle facets for each side of said table, each of said at least three upper girdle facets having a common upper vertex extending towards said culet.

6. A method for cutting a stone, said method comprising:
   forming a pavilion portion having a culet;
   forming a crown portion having a table with a predetermined number of sides;
   forming a girdle separating said pavilion portion and said crown portion; and
   forming at least three lower girdle facets between pairs of pavilion main facets, each of said at least three lower girdle facets having a common lower vertex extending towards said culet; and

7. A method for cutting a stone, said method comprising:
   forming a crown portion having a table;
   forming a pavilion portion having a culet;
   forming a girdle separating said crown portion from said pavilion portion;
   forming a plurality of bezel facets extending between said girdle and said table;
   forming a plurality of pavilion main facets extending between said culet and said girdle;
   forming at least three upper girdle facets between adjacent bezel facets, said at least three upper girdle facets having a common upper vertex extending towards said culet and a third lower girdle facet of the at least three lower girdle facets having a separate lower vertex extending toward said culet.

8. The method of claim 7, further comprising:
   forming said table on said crown with a plurality of sides;
   forming a star facet extending from each side of said table;
   forming bezel facets between said star facets, said bezel facets each extending from a lower vertex at said girdle to an upper vertex at said table.

9. A method for cutting a stone, said method comprising:
   forming a crown portion;
   forming a pavilion portion including a culet;
   forming a girdle separating said crown portion from said pavilion portion; and
   forming a lower girdle facet on said pavilion portion rotated not to be tangent to a general circumference of said stone.

10. The method of claim 9, further comprising forming multiple lower girdle facets on said pavilion portion rotated to not be tangent to the general circumference of said stone.

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