United States Patent [19]

Polakiewicz

[11] **3,763,665**

[45] **Oct. 9, 1973**

[54] **BRILLIANT WITH OCTAGONAL TABLE AND SURROUNDING TRAPEZOIDAL FACETS**

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[73] Assignee: **Belamco,** Antwerpen, Belgium

[22] Filed: **Mar. 8, 1971**

[21] Appl. No.: **121,758**

[52] **U.S. Cl.** ..... **63/32,** D45/1 A

[51] **Int. Cl.** **A44c 17/00**

[58] **Field of Search** 63/32; D45/2

[56] **References Cited**

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Attorney—Stevens, Davis, Miller & Mosher

[57] **ABSTRACT**

A brilliant with a crown side and a collar side which connect to one another along an edge circle.

The crown side comprises an octagonal table; along each one of the table sides is located an additional small trapezoidal facet the height of which is at the most equal to one-fifth of the larger base and the lengthwise direction of which is the lengthwise direction of that side to which it connects.

The thirty-two triangular facets of the crown side and of the collar side which are contigous to the edge circle are duplicated.

The collar is subdivided into a middle facet and two side facets.

2 Claims, 7 Drawing Figures

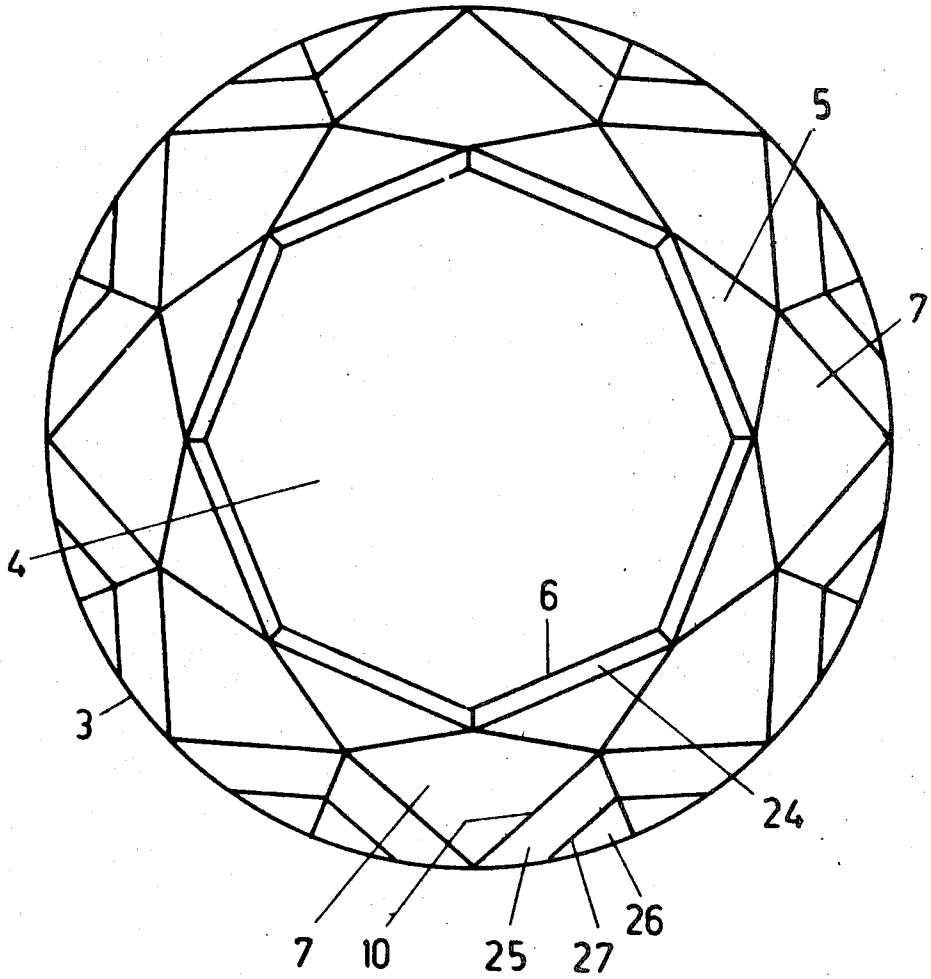


Fig.1 PRIOR ART

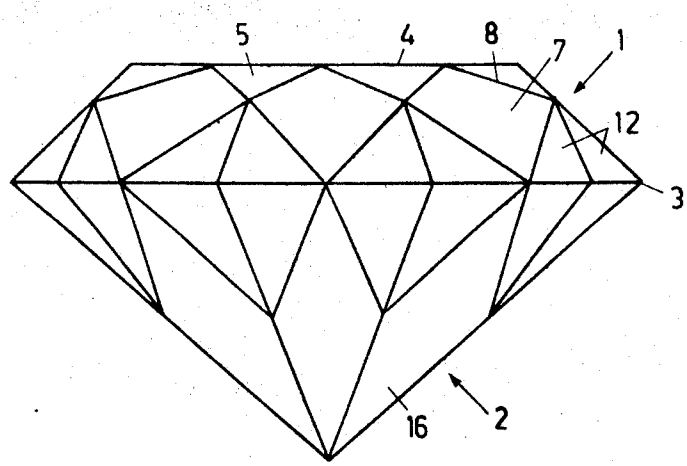


Fig.2 PRIOR ART

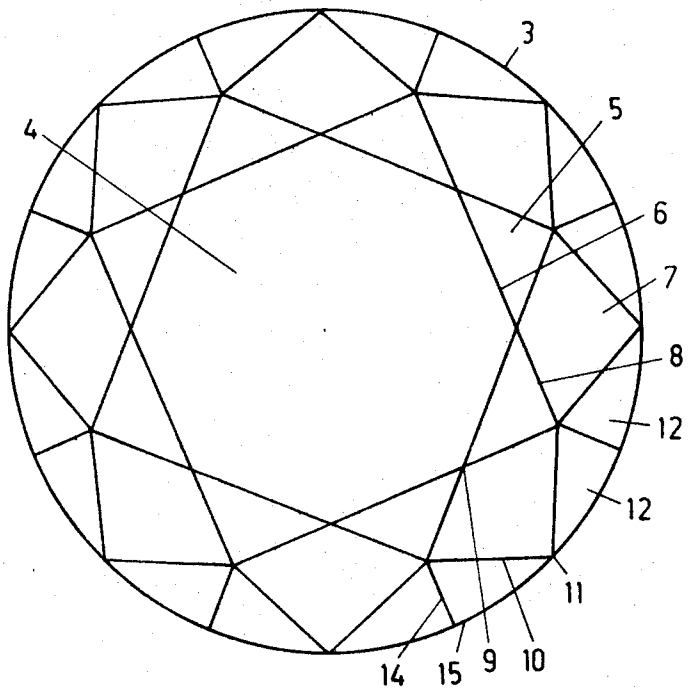


Fig. 3 PRIOR ART

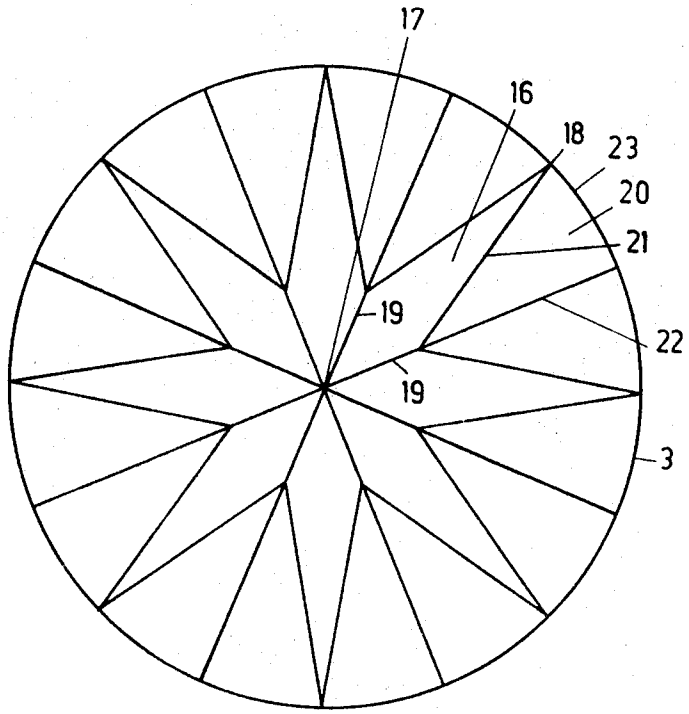


Fig. 4

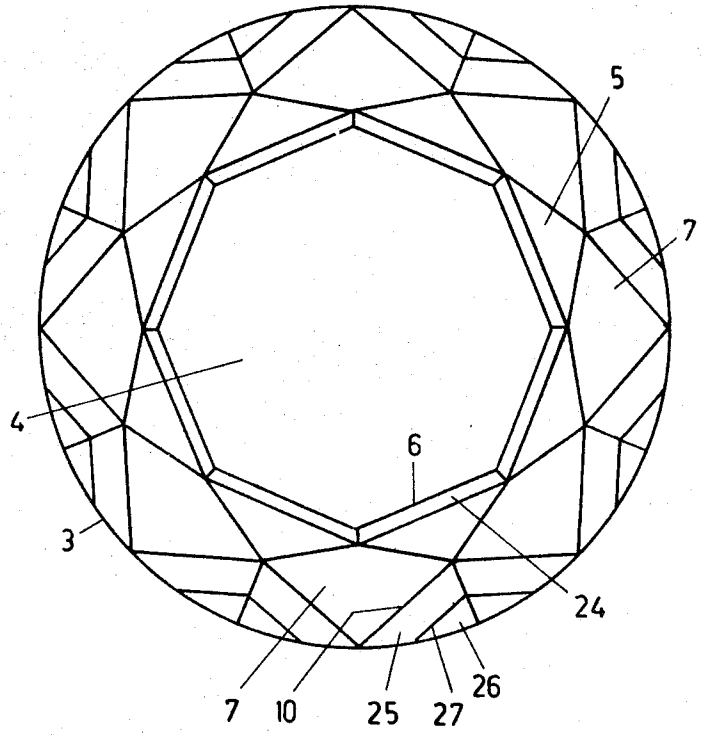


Fig. 5

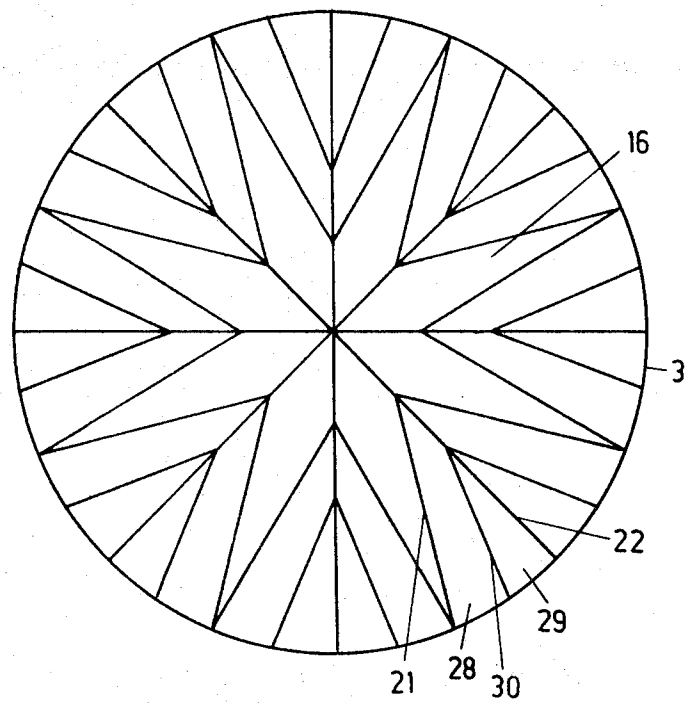


Fig. 6

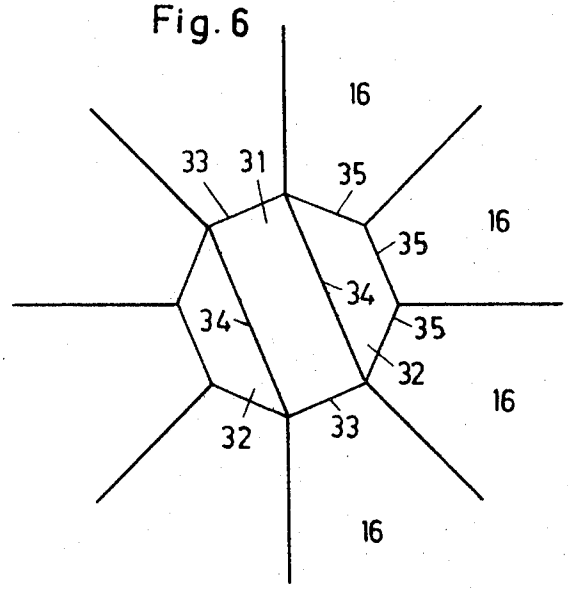
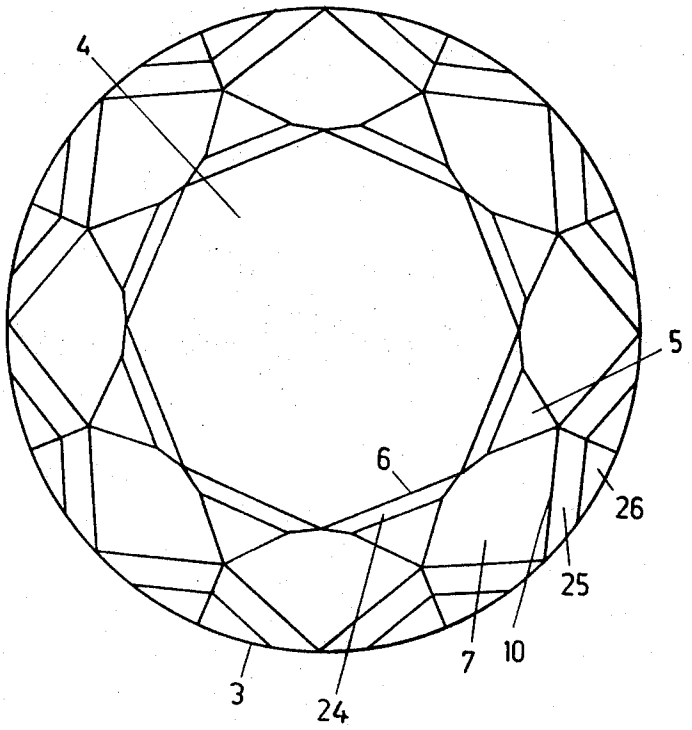


Fig. 7



BRILLIANT WITH OCTAGONAL TABLE AND SURROUNDING TRAPEZOIDAL FACETS

The invention relates to a brilliant with a crown side and a collar side which connect to one another along an edge circle, the crown side of which is comprised of:

a. a table in the shape of a regular octagon,

b. eight triangular facets each one of which has a side common to the octagonal table,

c. eight quadrangular facets which lie between the triangular facets, which each have a side common to each one of both triangular facets between which they lie and with that apex thereof which is common to those two sides which are not common to a triangular facet lying on the edge circle, and

eight pairs of triangular facets located between the quadrangular facets, whereby both triangular facets of each pair have a first side common to a quadrangular facet, a second side common to one another and the third side thereof on the edge circle, and the collar side of which is comprised of :

a. eight quadrangular facets with a common central apex, the overlying apex thereof lying on the edge circle and having sides coinciding two by two which converge in the common apex,

and

b. eight pairs of triangular facets located between the quadrangular facets, whereby both triangular facets of each pair have a first side common to a quadrangular facet, a second side common to one another and the third side thereof on the edge circle.

Brilliants of this kind with the described 57 facets among which the table, are generally known. They sometimes have a small 58 facet, the so-called collar, which is formed by grinding down parallel to the table, by the level of the central apex of the collar side.

The invention provides a brilliant which differs from the known brilliants as described above, by various features which give more value to the brilliant according to the invention, notably because it reflects more light.

In a first embodiment of the invention along each one of the eight table sides is located an additional small trapezoidal facet the height of which is at the most equal to one fifth of the larger base and the lengthwise direction of which is the lengthwise direction of that side to which it connects.

In an advantageous embodiment of the invention, the additional small trapezoidal facets have their smaller bases common to the table sides.

In another advantageous embodiment, the additional small trapezoidal facets have their larger bases common to the table sides.

According to a second feature of the invention the sixteen triangular facets of the eight pairs of the crown side are duplicated and the additional ribs due to the duplication are substantially in parallel relationship with those sides said triangular facets have common with quadrangular facets.

According to a third feature of the invention the sixteen triangular facets of the eight pairs of the collar side are duplicated and the additional ribs due to the duplication are substantially in parallel relationship with those sides said triangular facets have common with quadrangular facets.

According to a fourth feature of the invention, level with the central apex is provided a collar with a middle facet and two side facets, the middle facet being a rectangle having as two sides thereof those ribs which are formed by the ground-down apexes of two opposite quadrangular facets and having the two other sides common to the side facets, said side facets being trapezoids the larger base of which is a side of the middle facet and the three remaining sides of which are ribs formed by the ground-down apexes of the remaining quadrangular facets of the collar side.

Other details and features of the invention will stand out from the description given below by way of non limitative example and with reference to the accompanying drawings, in which:

FIG. 1 is a side view of a known brilliant, which is thus not made according to the invention.

FIG. 2 is a top view of the brilliant shown in FIG. 1.

FIG. 3 is a bottom view of the brilliant shown in FIGS. 1 and 2.

FIG. 4 is a top view of a brilliant according to the invention.

FIG. 5 is a bottom view of the brilliant shown in FIG. 4; those three facets which form the collar are not shown in this figure.

FIG. 6 shows on a larger scale part of the showing of FIG. 5, the three collar facets being shown.

FIG. 7 is a top view of a second brilliant according to the invention.

In the various figures, the same reference numerals pertain to similar elements.

The brilliant as shown in FIGS. 1 to 3, which is not made according to the invention, will only be described to better show off the feature of the invention according to figures 4 to 7.

The brilliant shown in FIGS. 1 to 3 comprises a top or crown side 1 and a bottom or collar side 2 which connect to each other along an edge circle 3.

The middle part of the crown side 1 is formed by a table 4 in the shape of a regular octagon.

A triangular facet 5 is connected to each side of said octagon. Each one of the eight triangular facets 5 has thus a side 6 common with table 4.

Between the eight triangular facets 5 are located eight quadrangular facets 7. Each one of said quadrangular facets 7 has one side 8 common with each one of those two triangular facets 5 between which it is located. The apexes 9 where the sides 8 of the quadrangular facets 7 meet, coincide with an apex of said table. Those sides 10 which the quadrangular facets 7 have not in common with the triangular facets 5, converge in apexes 11 which are located on said edge circle 3.

Between the eight quadrangular facets 7 come to lie eight pairs of triangular facets 12. Said triangular facets have a first side 10 common with a quadrangular facet 7, they have a second side 14 common with the other triangular facet from the same pair and they have their third side 15 located on the circle 3.

The crown side is thus comprised of thirty-three facets, that is the table 4, eight triangular facets 5, eight quadrangular facets 7 and sixteen triangular facets 12.

The collar side 2 comprises eight quadrangular facets 16 that form a star and which have a common central apex 17. The apexes 18 of the eight quadrangular facets 16 which face the central apex 17, lie on the circle 3 and coincide with the apexes 11. Those sides 19 of the quadrangular facets 16 which converge in the central apex 17, coincide two by two.

Between the eight quadrangular facets 16 are located eight pairs of triangular facets 20. Both triangular fac-

ets of each pair have a first side 21 common to a quadrangular facet 16; they have a second side 22 common to the other triangular facet of the same pair. The third side 23 of the facets 20 lies on said circle 3.

The brilliant according to the FIGS. 1 to 3 thus has on the collar side 24 facets, that is eight quadrangular facets from the star and 16 triangular facets from those facet pairs which are located between the star quadrangular facets.

Altogether the brilliant shown in FIGS. 1 to 3 has thus 57 facets, that is 33 from the crown side and 24 from the collar side.

The brilliant as shown in FIGS. 4 to 6, which is designed according to the invention, differs from the brilliant as shown in FIGS. 1 to 3 which corresponds to the known art, by the four features described hereinafter.

A first different feature is in the fact that along each one of the eight sides 5 of the table 4, an additional small trapezoidal facet 24 is ground. Said small trapezoidal facet 24 extends essentially along that side 6 against which it lies. The smaller base of the small trapezoidal facet 24 coincides with the side 6 of the table 4. The larger base of the small trapezoidal facet 24 coincides with that side of the triangular facet 5 which in the embodiment of FIGS. 1 to 3 coincides with one side of the table 4.

The height of the trapezoid may at the the most be equal to one fifth of the larger base thereof, because the small trapezoidal facet 24 should extend mainly along a single direction in parallel relationship with the bases. Said lengthwise direction coincides with that side 6 of the table 4 to which the small trapezoidal facet is connected. In FIG. 4 the height of the trapezoid is only about one-tenth of the larger base.

A second different feature lies in the fact that the sixteen triangular facets 12 of the eight facet pairs from the crown side, are duplicated. Each facet 12 is thus divided in a facet 25 and a facet 26, whereby the angle by which the facet 26 meets the plane of the edge circle 3 is naturally larger than the angle included between said plane and facet 25. The facets 25 and 26 meet along a rib 27. The rib 27 thus determines the duplication of the triangular facet 12. The ribs 27 are in substantial parallel relationship with those sides 10 where the now duplicated facets 12 are connected to the quadrangular facets 7.

The sixteen triangular facets 20 of the eight pairs of facets from the collar side are also duplicated. Each facet 20 is thus divided in a facet 28 and a facet 29, whereby the angle by which the facet 29 meets the circle plane is by nature larger than the angle included between the facet 28 and that same plane. The facets 28 and 29 meet along a rib 30. Said rib 30 thus determines the duplicated design of the triangular facet 20. The ribs 30 are approximately parallel to those sides 21 where the now duplicated facets 20 are connected to the quadrangular facets 16.

A fourth different feature lies in the design of the collar. It is already known by the known brilliants to have level with the central point of the collar side, a small surface which is essentially in parallel relationship with the crown side table.

In the embodiment shown in FIGS. 4 to 6, at the level of the central apex 17 from the embodiment shown in FIGS. 1 to 3 there is provided a middle facet 31 and two side facets 32. The middle facet is a perfect rectangle and it is in accurate parallel relationship with table 4 of the crown side 1. The sides 33 of the middle facet 31 are ribs which are formed by the ground-dowm apexes of two opposite quadrangular facets 16. The two remaining sides 34 of the middle facet 31 are each common with side facet 32.

The side facets 32 are trapezoids the larger base of which is a side 34 and the three remaining sides 35 are ribs formed by the ground-down apexes of the remaining quadrangular facets 16 from the collar side.

As compared with the known brilliant shown in FIGS. 1 to 3, the brilliant according to FIGS. 4 to 6 has forty-three facets more, that is the eight small trapezoidal facets along the table, the 32 small additional facets formed by the duplication of the 26 triangular facets 12 from the crown side and of the 16 triangular facets 20 from the collar side, the middle facet 31 and the two side facets 32 by the level of the central apex 17 of the collar side. The brilliant as shown in FIGS. 4 to 6 has thus a hundred facets instead of 57.

The embodiment which is shown in top view in FIG. 7 only differs from the embodiment of FIGS. 4 to 6 by the fact that the small trapezoidal facets along table 4 have the larger bases thereof common with the table sides 6. Their smaller bases are thus connected to the triangular facets 5, so that the apexes 9 fo the quadrangular facets 7 are actually replaced by two small ribs and said quadrangular facets 7 become hexagonal.

The invention is in no way limited to the above embodiments and many changes may be brought therein without departing from the scope of the invention as defined by the appended claims.

Although the best results are obtained with a brilliant having the four above-defined differences, it is not absolutely necessary to have all four of these differences in each embodiment. A brilliant comprising but one, two or three of these different feature also falls within the scope of the invention.

I claim:

1. Brilliant with a crown side, a collar side, and an edge circle connecting said crown side to said collar side, said crown side comprising:

a. a table in the shape of a regular octagon,

b. eight small facets each in the shape of a trapezoid with a large base, a small base and two sides connecting said bases, said small base coinciding with a side of said table the height of said trapezoid being at the most equal to one-fifth of said large base,

c. eight triangular facets, each one of which has a side common with a large base of one of said small facets,

d. eight quadrangular facets which lie between said triangular facets, which each have a side common with each one of both triangular facets between which they lie and with the apex thereof which is common to the remaining two sides lying on said edge circle,

e. eight pairs of generally trapezoidal facets, whereby both facets of each pair have a base common to a side of one of said quadrangular facets, a side common with one another and another side thereof on said edge circle, and

f. eight pairs of triangular facets, whereby both facets of each of said pairs of triangular facets have a first side common with a base of one of said generally trapezoidal facets, a second side common to one

another and the third side thereof on said edge circle, said collar side comprising:

g. a central collar with a middle facet being a rectangle and two side facets being trapezoids, the larger bases of which are sides of said middle facet,

h. eight pentagonal facets with sides common with the two sides of said middle facet which are not common with said side facets and with the six remaining sides of said side facets, an apex of each of said eight pentagonal facets lying on the edge circle and said pentagonal facets having sides coinciding two by two which terminate at apexes of said middle facet and said side facets,

i. eight pairs of quadrangular facets located between said pentagonal facets, whereby both quadrangular facets of each pair have a first side common with one of said pentagonal facets, a second side common to one another and a third side on said edge circle, and

j. eight pairs of triangular facets, whereby both facets of each of said pairs of triangular facets have a first side common with one of said quadrangular facets of said eight pairs, a second side common to one another and the third side thereof on said edge circle.

2. Brilliant with a crown side, a collar side, and an edge circle connecting said crown side to said collar side, said crown side comprising:

a. a table in the shape of a regular octagon,

b. eight small facets each in the shape of a trapezoid with a large base, a small base, and two sides connecting said bases, said large base coinciding with a side of said table, the height of said trapezoid being at the most equal to one-fifth of said large base,

c. eight triangular facets each one of which has a side common with a small base of one of said small facets,

d. eight hexagonal facets which lie between said triangular facets, which each have two sides common with sides of said trapezoids and a side common with each one of both triangular facets between which they lie and with that apex thereof which is common to the remaining two sides lying on said edge circle,

e. eight pairs of generally trapezoidal facets, whereby both facets of each pair have a base common with a side of one of said hexagonal facets, a side common to one another and another side thereof on said edge circle, and

f. eight pairs of triangular facets, whereby both facets of each of said pairs of triangular facets have a first side common with a base of one of said generally trapezoidal facets, a second side common to one another and the third side thereof on the edge circle,

said collar side comprising:

g. a central collar with a middle facet being a rectangle and two side facets being trapezoids, the larger bases of which are sides of said middle facet,

h. eight pentagonal facets with sides common with the two sides of said middle facet which are not common with said side facets and with the six remaining sides of said side facets, an apex of each of said eight pentagonal facets lying on the edge circle and said pentagonal facets having sides coinciding two by two which terminate at apexes of said middle facet and said side facets,

i. eight pairs of quadrangular facets located between said pentagonal facets, whereby both quadrangular facets of each pair have a first side common with one of said pentagonal facets, a second side common to one another and a third side on said edge circle, and

j. eight pairs of triangular facets, whereby both facets of each of said pairs of triangular facets have a first side common with one of said quadrangular facets of said eight pairs, a second side common to one another and the third side thereof on said edge circle.

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UNITED STATES PATENT OFFICE

CERTIFICATE OF CORRECTION

Patent No. 3,763,665 Dated October 9, 1973

Inventor(s) JULES POLAKIEWICZ

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

On the Title Page please insert --Foreign Application Priority Data --

-- January 29, 1971 Belgium 99,174 --

Signed and sealed this 4th day of June 1974.

(SEAL)
Attest:

EDWARD M.FLETCHER,JR.
Attesting Officer

C. MARSHALL DANN
Commissioner of Patents

FORM PO-1050 (10-69)

USCOMM-DC 60376-P69
* U.S. GOVERNMENT PRINTING OFFICE : 1969 O—366-334.