May 16, 1933. G. MAIER 1,908,774

DEVICE FOR PRODUCING IMITATION GEMS

Filed Dec. 9, 1931

Fig. 1.

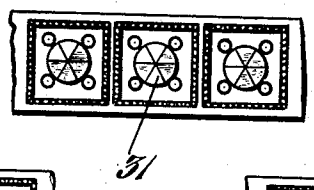

Fig. 2.

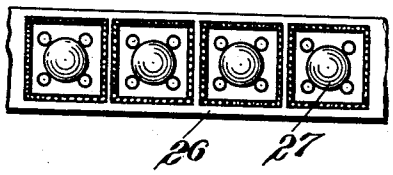

Fig. 3.

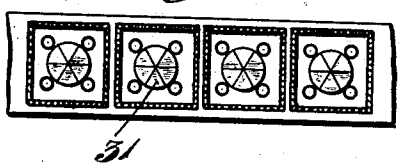

Fig. 4.

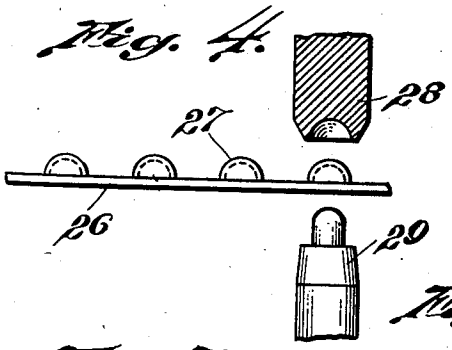

Fig. 5.

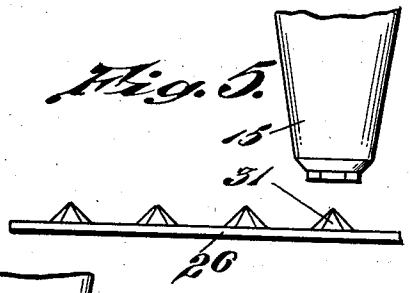

Fig. 6.

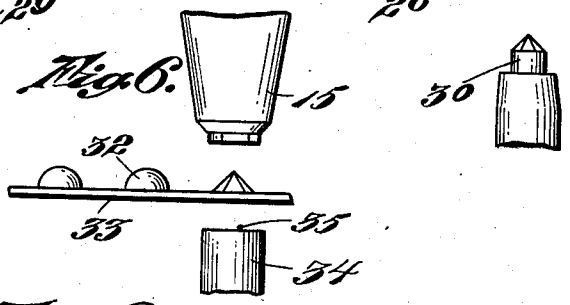

Fig. 7.

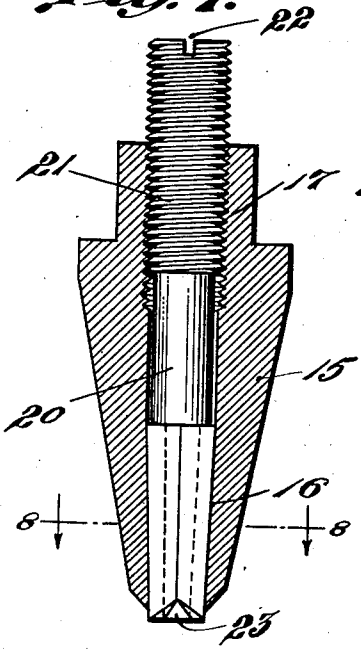

Fig. 8.

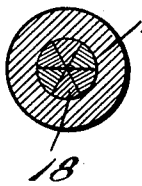

Fig. 9.

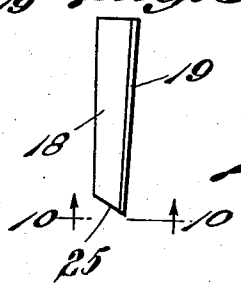

Fig. 10.

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UNITED STATES PATENT OFFICE

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DEVICE FOR PRODUCING IMITATION GEMS

Application filed December 9, 1931. Serial No. 579,953.

This invention relates to the production of imitation gems, more particularly marcasite stones, and has for its object to provide an imitation stone having sharp edges and faceted surfaces of a high polish to give a deep brilliancy and more closely resemble natural stones.

Another object of this invention is the provision of a tool which may provide sharp edges for the faceted surfaces of the gems with each of said surfaces highly polished.

A further object of the invention is the provision of construction by which the cost of labor in producing marcasite stones will be materially reduced by eliminating the necessity of hand touching up the surfaces of the stones which are formed by dies heretofore used.

With these and other objects in view, the invention consists of certain novel features of construction, as will be more fully described, and particularly pointed out in the appended claims.

Fig. 1 is a top plan view of a series of imitation gem settings with imitation gems provided therein.

Fig. 2 is a top plan view of one step in the process of forming these imitation stones, showing the rounded raised surface upon which the faceted surfaces are impressed.

Fig. 3 is a view similar to Fig. 2 and showing the faceted surfaces impressed therein.

Fig. 4 is a side elevation of a piece of sheet stock embossed to provide domed or curved surfaces which may be one step in the process of forming these imitation gems.

Fig. 5 is a view similar to Fig. 4, showing the raised surfaces as being pressed to form the faceted surfaces desired and the dies used.

Fig. 6 shows a view similar to Figs. 4 and 5 but modified from Figs. 4 and 5 in that the curved raised surfaces are solid instead of hollow, and the supporting die is provided with a flat top instead of a complementary surface conforming to the hollow die.

Fig. 7 is a sectional view through the tool or body of the hollow or upper die for forming the gems.

Fig. 8 is a section on line 8—8 of Fig. 7.

Fig. 9 is a side elevation of one of the sections.

Fig. 10 is a view looking at the face of one of the sections, as indicated by the line 10—10 of Fig. 9.

It is common in the provision of imitation marcasite stones to emboss a section by means of hollow die with the approximate shape of the marcasite stones and to then touch up each of the surfaces by hand to bright-cut the facets to give a high polish thereto and sharpen the edges to effect a deeper brilliancy in imitation stones. This operation is expensive and by the invention which is herein disclosed, I eliminate this disadvantage.

In the old form of hollow die of solid construction it has not been possible to polish each of the faceted surfaces formed and obtain sharp edges as any polishing rounded these edges to an appreciable extent, and in order that a hollow die may be formed in which the surfaces may be highly polished and yet sharp edges provided, I have formed a die in sections, with the number of sections equal to the facets desired so that there is a section for each facet and a surface is provided on each section which may be highly polished, so that these sections when assembled and held together provide a complete hollow die with highly polished surfaces and sharp edges, forming a perfect negative of the shape of the gem such as a marcasite stone, and thus it is possible to remove the sections from time to time to highly polish each facet forming surface, (as for instance on a glass plate); and the following is a detailed description of the

present embodiment of this invention illustrating the preferred means by which these advantageous results may be accomplished.

With reference to the drawing, 15 designates the body of the die which is provided with a conical opening 16 in its front or outer end and a threaded cylindrical opening at its opposite or inner end. The die is formed from a plurality of sections 18 here shown as six in number, and each is of a sector shape having an area one-sixth of the area of the cross-section of the die. The outer surface 19 of the die is conical in form to fit the conical surface 16 in the body 15, while a member 20 is provided in the opening in the body through which pressure is applied to the sections by means of a threaded member 21 having a slot 22 for turning for the application of pressure on the die, thus forcing the sections of the die outwardly and at the same time into close circumferential relationship by reason of the taper.

The die is hollow as at 23 at one end to provide the negative of the faceted surfaces desired, here shown as six. A surface in a single plane as indicated at 25 is provided on each section 18 and may thus be highly polished upon any abrasive surface or a glass plate to obtain the polish desired and provide sharp edges, thus when the six sections, each highly polished are assembled their contacting edges form sharp angles.

It is of course understood that should a different number of surfaces be required, a different number of sections would be provided, or, in other words, one section is provided for each facet to be formed and the sections would be suitably arranged so as to fit and provide a shape similar to the shape of the opening in the body in which they are mounted.

The work 26, shown in Fig. 4, is of sheet form and is embossed or domed as at 27 by a pair of dies 28 and 29 of a suitable shape. If formed in this shape the hollow die 23 is forced into engagement with the convex surface of this dome, while the same is supported from below by a support die 30 to impress the shape of the hollow die on this surface which will be highly polished and provided with sharp edges due to the shape of the hollow die which is impressed thereon, thus forming a gem or marcasite stone 31.

In some instances the raised portion 32 is provided solid and struck up from the work 33, and in such instances the upper hollow die is forced into engagement with the solid portion which is supported from below by a block 34, having a plain surface 35 thereon.

I find by the use of a tool of this character that small sections may be embossed to form imitation marcasite stones with sharp corners and of a high polish eliminating the necessity of hand touching of the gems, and yet a gem is provided which is of great brilliance and a gem of a suprisingly sparkling effect is obtained from the faceted surfaces.

The foregoing description is directed solely towards the construction illustrated, but I desire it to be understood that I reserve the privilege of resorting to all the mechanical changes to which the device is susceptible, the invention being defined and limited only by the terms of the appended claims.

I claim:

1. A tool for forming faceted surfaces comprising a body, a die mounted therein composed of a plurality of sections, each section provided with a surface in a single plane and cooperating with the surfaces of the other sections to form the negative of the faceted surface desired.

2. A tool for forming faceted surfaces comprising a body, a die mounted therein composed of a plurality of sections, each section provided with one faceted surface and cooperating with the surfaces of the other sections to form the negative of the faceted surface desired.

3. A tool for forming an impressed design comprising a body, a die mounted therein composed of a plurality of sections, each section provided with a portion of the design desired and cooperating with the surfaces of the other sections to form the negative of the complete design desired, and means for maintaining said sections rigidly in position at all times.

4. A tool for forming faceted surfaces comprising a body, a die mounted therein composed of a plurality of sections, each section carrying a surface in a single plane and cooperating with the surfaces of the other sections to form the negative of the faceted surface desired, each of said faceted surfaces being highly polished.

5. A tool for making faceted surfaces comprising a body having a conical opening in the front end of the body and a threaded opening at its opposite end, a hollow die formed of a plurality of sections and together fitting said conical opening, and means including a threaded member engaging said threaded opening for forcing the die sections outwardly along said conical surface whereby they tightly contact one with another.

6. A tool for making faceted surfaces comprising a body having a conical opening in the front end of the body and a threaded opening at its opposite end, a hollow die formed of a plurality of sections and together fitting said conical opening, and means including a threaded member engaging said threaded opening for forcing the die sections outwardly along said conical surface whereby they tightly contact one

with another, each of said sections being provided with a faceted surface and all of said sections together constituting a faceted hollow die.

7. A tool for making faceted surfaces comprising a body having a conical opening in the front end of the body and a threaded opening at its opposite end, a hollow die formed of a plurality of sections and together fitting said conical opening, and means including a threaded member engaging said threaded opening for forcing the die sections outwardly along said conical surface whereby they tightly contact one with another, each of said sections being provided with a faceted surface and all of said sections together constituting a faceted hollow die, and each of said surfaces being highly polished.

In testimony whereof I affix my signature.

GUSTAV MAIER.