F. MILHENING.

SETTING FOR PRECIOUS STONES AND THE LIKE.

APPLICATION FILED APR. 13, 1916.

1,207,973.

Patented Dec. 12, 1916.

2 SHEETS—SHEET 1.

Fig. 1.

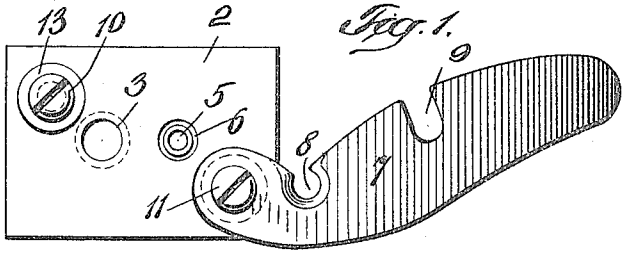


Fig. 4.

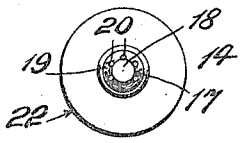


Fig. 5.

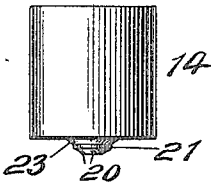


Fig. 6.

Fig. 3.



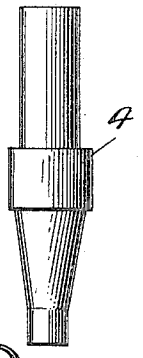


Fig. 2.

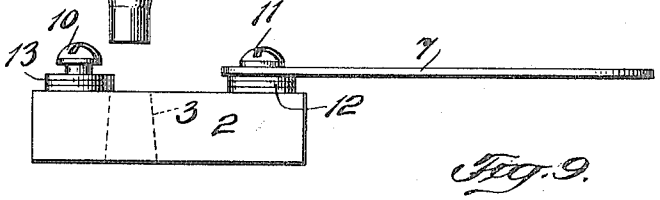


Fig. 9.

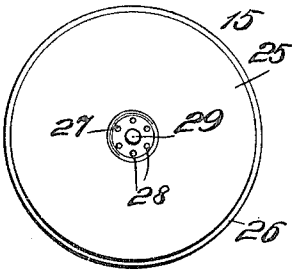


Fig. 7.

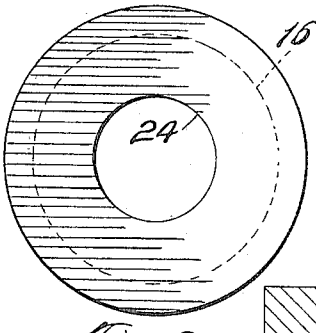
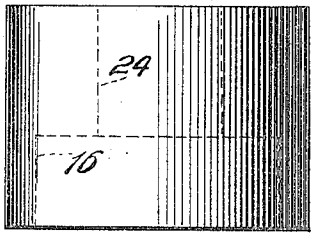
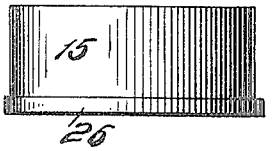


Fig. 8.





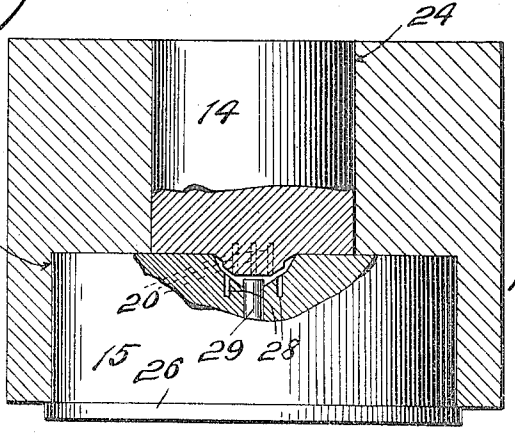


Fig. 10.

WITNESSES:

INVENTOR

FRANK MILHENING

BY Joseph L. Levy

ATTORNEY

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

F. MILHENING.

SETTING FOR PRECIOUS STONES AND THE LIKE.

APPLICATION FILED APR. 13, 1916.

1,207,973. Patented Dec. 12, 1916.

2 SHEETS—SHEET 2.

Fig. 11.

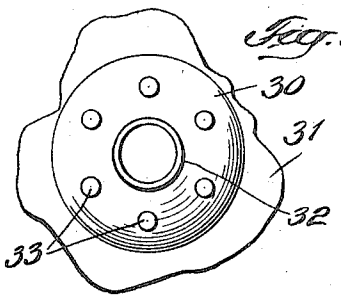


Fig. 14.

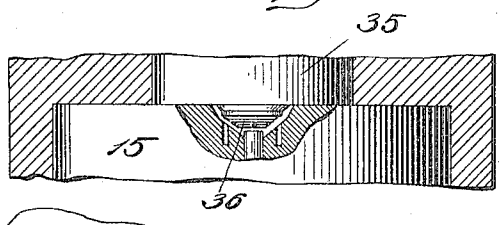
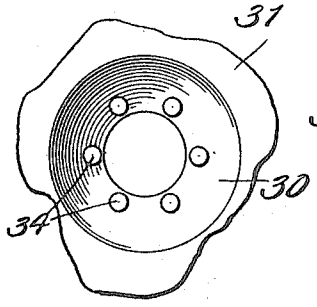


Fig. 12.



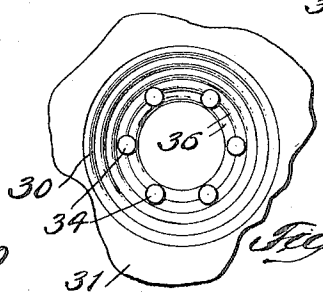
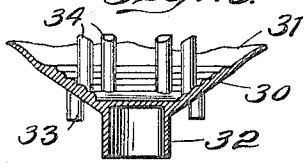


Fig. 15.

Fig. 16.



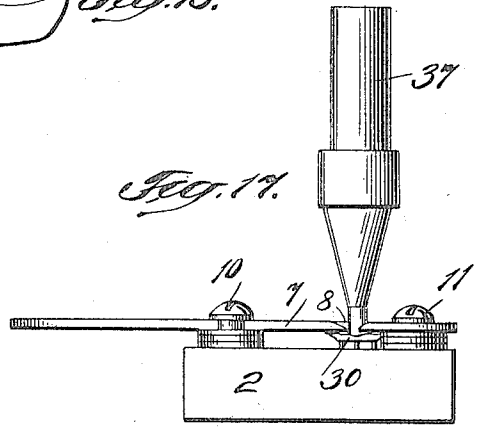
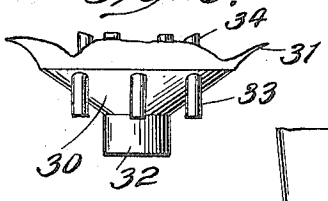


Fig. 17.

Fig. 13.



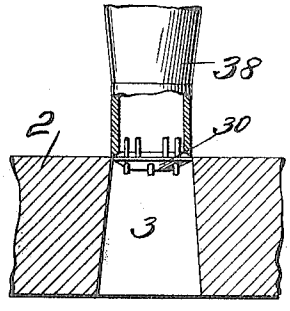


Fig. 18.

Fig. 19.

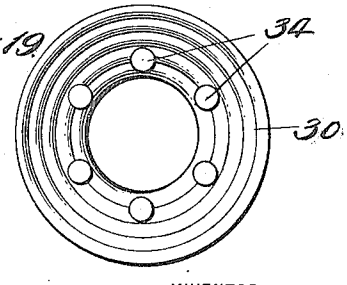
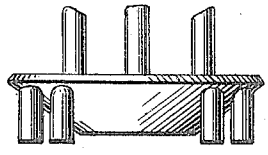


Fig. 20.



WITNESSES:

Julius A. Katz.

A. Radzinsky

INVENTOR

FRANK MILHENING

BY

Joseph L. Levy

ATTORNEY

THE NORRIS PETERS CO., PHOTO LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

FRANK MILHENING, OF CHICAGO, ILLINOIS, ASSIGNOR TO J. MILHENING, INC., OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

SETTING FOR PRECIOUS STONES AND THE LIKE.

1,207,973. Specification of Letters Patent. Patented Dec. 12, 1916.

Application filed April 13, 1916. Serial No. 90,937.

To all whom it may concern:

Be it known that I, FRANK MILHENING, a citizen of the United States, and a resident of the city of Chicago, county of Cook, and State of Illinois, (whose post-office address is 135 South State street, in said city,) have invented a new and useful Improvement for Settings for Precious Stones and the like, of which the following is a specification.

The object of my invention is to make a gem setting which will securely hold and properly display any gem or similar article which may be placed therein. This object is accomplished by my invention, as will hereinafter more particularly appear.

For a more particular description of my invention, reference is to be had to the accompanying drawing, forming a part hereof, in which—

Figure 1 is a plan view of a die and its stripper, the die being used for the blanking operation, as well as the inside and outside finishing operations; Fig. 2 is a side elevation of the structure shown in Fig. 1 and a blanking cutter for the first operation; Fig. 3 shows a blank; Fig. 4 is a plan view of a force for partially shaping the blank; Fig. 5 is a side elevation of the same; Figs. 6 and 7 are a plan view and a side elevation respectively, of a die for shaping the blank under the influence of a force; Figs. 8 and 9 are a plan view and a side elevation respectively, of a collar for holding the force and die in proper relation; Fig. 10 is a sectional view of these parts when held in proper relation; Figs. 11, 12 and 13 are an inverse plan, a plan and a side elevation respectively of the article after it has been shaped as shown in Fig. 10; Fig. 14 is a view similar to Fig. 10 showing the next operation in shaping the article; Figs. 15 and 16 are a plan view and a sectional view respectively, of the device when shaped as shown in Fig. 14; Fig. 17 is a side elevation showing the inside finishing operation; Fig. 18 is a sectional view showing the outside finishing operation; and Figs. 19 and 20 are a plan view and a side elevation respectively, of the finished product, or the gem setting device above mentioned.

Throughout the various views of the drawings, similar reference characters designate similar parts.

The blank 1, shown in Fig. 3, is made of silver, platinum, or any other suitable metal, for holding a gem. It is made by placing a strip on a die 2, with an opening 3 of the exact diameter desired, and then the blanking cutter 4 is driven against the sheet metal and forces the blank of the desired diameter through the hole 3 and thereby makes the blank 1 of the kind and character shown.

It will be understood that the die 2 and blanking cutter 4 are placed in a suitable press so that the blank 1 will be properly made, and as this press may be of any suitable and conventional kind, it is not shown.

In addition to the hole 3, the die 2 has a second hole 5 with a concentric groove 6 about the same, and a stripper 7 with a recess 8 adapted to be placed over the opening 5, when the walls of a second recess 9 engage a cap screw 10. The stripper 7 swings on a pivot 11, which is preferably a cap screw, and this stripper is kept the requisite distance from the die by means of suitable washers 12. Corresponding washers 13 are placed about the cap screw 10. After the blank 1 is formed, as shown in Fig. 3, it is converted into the shape shown in Figs. 11, 12 and 13 by the apparatus which will now be described. This apparatus consists of the force 14, a lower die 15 and a collar or guide 16. The force 14 is a cylinder 22 with a frustrated cone 17 projecting from its lower surface. This cone 17 is shaped so as to conform to the interior of the article shown in Figs. 11, 12 and 13, and has a flat bottom 18 which is adjacent to a conical portion 19 which carries small holes 20 and adjacent to its conical portion 19 is a cylindrical portion 21 which is connected to the cylindrical body 22 of the force 14 by means of a tapering part 23. The diameter of the body 22 of the force 14 is such that this body fits snug with a sliding fit in the upper part of the center hole 24 of the collar 16.

The lower die 15 consists essentially of a cylindrical disk 25 with the same diameter as the lower part of the hole 24 except that its lower edge 26 is not finished true, although its top and bottom faces are finished true. In the center of this upper face is a circular recess 27 made to conform to the projection 17 on the bottom of the force 14 and provided with suitable holes 28 near its periphery and not opposite the holes 20 in the force 14. The center of the recess 27

has a knock out pin 29 which rises upwardly therein for a slight distance so as to limit the inward movement of the force 14.

When the parts are assembled as shown in Fig. 10, and the blank 1 is placed on the knock out pin 29, and pressure is applied to the force 14 in a press of the conventional kind, a product results which is shown in Figs. 11 to 13, inclusive; that is, the disk 1 is transformed into the frustum of a cone 30 with a fin 31 of surplus metal at the periphery and a central boss 32 of surplus metal at its lower edge and downwardly extending pins 33 which extend from the exterior, and upwardly extending pins 34 of a greater length which come from the interior and are adapted to hold a jewel.

The next operation is to place the partially finished article 30, as shown in Fig. 14, wherein the force 35 is brought to bear the same as the force 14 and embraces a number of reflecting ridges 36 adjacent to the pins 34. Except for this change, the article 30 remains unchanged by this operation. The resulting product of the process shown in Fig. 14 appears in Figs. 15 and 16.

When the jewel holder 30 is in the condition indicated by Figs. 15 and 16, the next step is to place the downwardly extending pins 33 in the groove 6 of the die 2, and then swing the stripper 7 over the same and secure it in place, and then a press forces the inside finishing cutter 37 through the opening 5 in the die 2, as shown in Fig. 17, and this removes the boss 32 from the bottom of the jewel holder 30.

The next step is to remove the outside fin 31 and this is done by withdrawing the inside finishing cutter 37 and the stripper 7 then separates it from the jewel holder 30, and then the outside finishing cutter 38 is placed in position, as shown in Fig. 18, over the opening 3 in the die 2, and then the jewel holder is finished by removing the fin 32, as shown in Figs. 19 and 20. The outside finishing cutter 38 is given substantially the same exterior shape as the interior finishing cutter 37, or the blanking cutter 4.

While I have shown and described one embodiment of my invention, it is obvious that it is not restricted thereto, but is broad enough to cover all structures that come within the scope of the annexed claims.

Having thus described my invention, what I claim is:

1. A gem setting comprising a shell, a plurality of reflecting ridges on the concave surface of said shell and projections extending from the concave surface and exterior surface of the shell.

2. A gem setting comprising a shell, said shell being substantially the frustum of a cone, an opening in the center thereof and projections extending from the inner and outer surfaces of said shell.

3. A gem setting comprising a shell, a plurality of reflecting ridges formed on the interior or concave surface of said shell and extending parallel to the outer edge of said shell and a plurality of projections extending from the shell.

4. A gem setting comprising a shell having a plurality of projections, said shell being substantially the frustum of a cone and having a plurality of annular reflecting ridges arranged on its concave surface.

5. A gem setting comprising a conical shell, the inner or concave surface of said shell having a plurality of annular reflecting ridges extending parallel to the outer edge of the shell and a series of projections extending from both sides of the shell.

Signed at the city of Chicago, county of Cook, and State of Illinois, this 6th day of April, 1916.

FRANK MILHENING.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."