Feb. 20, 1951 G. H. RAKOWITZKY 2,542,704

GEM HOLDER FOR GRINDING MACHINES

Filed Sept. 25, 1947

Fig. 1.

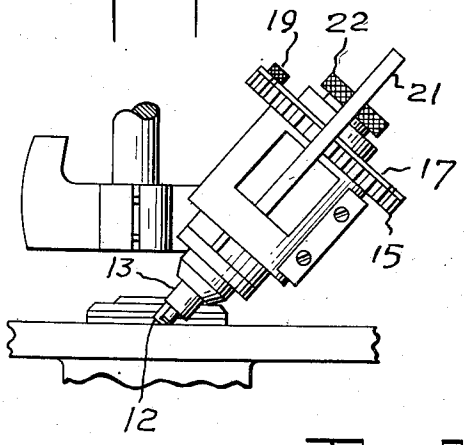


Fig. 2.

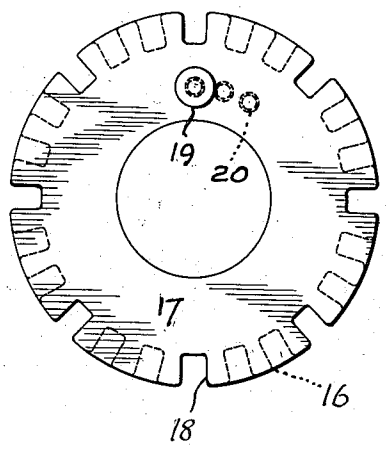


Fig. 6.

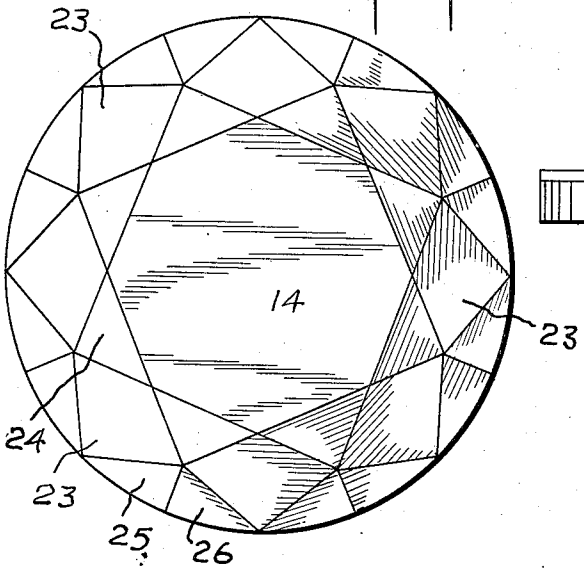


Fig. 3.

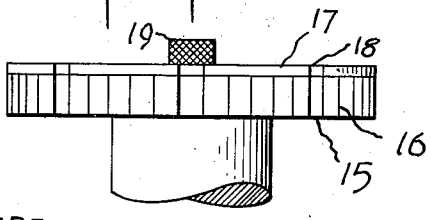


Fig. 4.

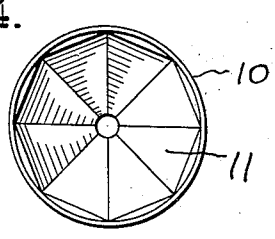
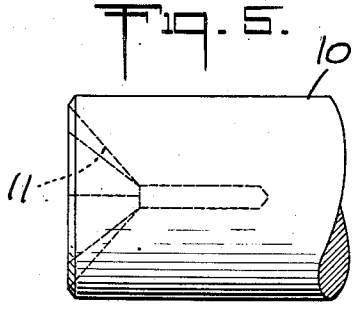


Fig. 5.



INVENTOR
Gregor H. Rakowitzky
BY
James Aiken
ATTORNEY

Patented Feb. 20, 1951 2,542,704

UNITED STATES PATENT OFFICE

2,542,704

GEM HOLDER FOR GRINDING MACHINES

Gregor H. Rakowitzky, Brooklyn, N. Y.

Application September 25, 1947, Serial No. 776,096

1 Claim. (Cl. 51—229)

1

This invention relates to a holder for carrying a diamond during the grinding and polishing of the crown facets after the grinding and polishing of the pavilion facets of the stone.

One object of the invention is to provide improved holding means whereby the crown facets are ground in accurately disposed relation to the previously ground pavilion facets, and whereby the gem may be turned to grind successive crown facets in properly disposed relation to the previously ground pavilion facets and whereby additional facets may be ground on the crown of the gem at different angles to the axis of the gem and all in accurately disposed relation to the previously ground facets in the pavilion of the gem.

Another object is to provide a holder with a metallic socket accurately shaped to conform to the facets on the pavilion of a gem in combination with a circular divider having a series of spaced recesses corresponding to the facets to be formed in the crown of the gem and a superimposed member with spaced recesses corresponding to the first mentioned series of spaced recesses.

Still another object of the invention is to provide the holder with a ring with recesses spaced around the periphery thereof in combination with a second ring having a lesser number of spaced recesses and means for locking the rings together whereby a retaining key member may successively enter all the recesses of the second ring and a number of the recesses in the first mentioned ring and whereby the rings may be adjusted relatively to each other to determine which series of recesses in the first mentioned ring are accessible to the retaining key.

With these and other objects in view, my invention consists in the improved construction and arrangement of parts of the gem holder as hereinafter more fully described by way of illustration or example and with reference to the accompanying drawing whereon

Fig. 1 is a side view of the holder.

Fig. 2 is a face view of the superimposed dividing rings.

Fig. 3 is a side view of the same.

Fig. 4 is an end view of the center stem.

Fig. 5 is a side view thereof, and

Fig. 6 is an enlarged view of the crown of a finished gem.

The gem holder is adapted for use, particularly in a method or machine as described in my pending United States patent application Serial No. 528,884 filed March 31, 1944, which is-

2

sued as Patent No. 2,429,961, dated October 7, 1947, and the holder is preferably adapted to be carried in a casing or sleeve device similar or substantially similar to that described in my said prior patent application.

The stem 10 of the holder is provided in its lower extremity with a recess having flat angularly disposed metal faces 11 so formed and disposed that they accurately correspond to the pavilion facets of a gem and a hook device 12 carried on the end of a pin secured in a socket in a tubular part 13 is adapted to engage the flat crown facet 14 of the gem and to hold the pavilion facets of the gem firmly seated in the socket in the center stem 10 so that rotation of said stem within the tubular part 13 by means of the collar 22 rotates the diamond about its central axis.

Secured to the central stem 10 so that relative angular movement is entirely precluded is a collar or ring 15 having a series of peripheral recesses 16 equally spaced around the periphery thereof and superimposed upon this collar 15 is a ring 17 having similar recesses 18 corresponding to one-third of the recesses 16 in the collar 15. The ring 17 is formed with an aperture for a set screw 19 which engages one or other of three screw-threaded openings 20 in the collar 15 so that the ring 17 may be adjusted in an angular direction with respect to the collar 15 and may be clamped in any of three relative positions, and the equally spaced recesses 18 in the ring 17 may thus be caused to coincide with any one of three series of recesses 16 in the collar 15.

In operation the pivoted retaining key 21 is swung toward the center line of the holder in order to engage coinciding recesses 16, 18 in the collar 15 and ring 17 and as the recesses in the collar are all disposed in accurately predetermined relation to the faces 11 in the lower end of the stem 10 and consequently to the pavilion facets in the gem engaging such faces, the arrangement insures that the gem is presented to the grinding surface in such manner that each crown facet formed therein has a definite relation to each pavilion facet previously formed in the gem and after the grinding of each crown facet the holder is turned about its longitudinal axis by means of the collar 22 until the retainer 21 has been caused to engage, in turn, each of the recesses in the disc. In this manner eight similar facets 23 may be formed around the crown of the gem and after adjustment of the holder in the well known manner to vary its angle

of inclination with respect to the surface of the grinding wheel, the ring 17 is adjusted in an angular direction with respect to the collar 15 in order that the retaining key lever 21 may be permitted to enter a second series of recesses 16 in the collar 15 and after all such recesses have in turn been occupied by the said key, further angular adjustment of the holder with respect to the grinding surface may be effected and the ring may be again adjusted in an angular direction with respect to the collar in order that the key may successively enter all the recesses of the third series in the collar and all the facets thus formed in the crown of the gem have a definite and predetermined relation to the facets previously formed in the pavilion of the gem.

The arrangement of the recesses in the members 15 and 17 as shown at Fig. 2 may be modified to suit the particular form of gem being ground and the crown formation shown at Fig. 6 is an example in which facets 23, 24, 25 and 26 may be successively formed by the use of superimposed annular members such as those above described but with suitably spaced recesses.

Although the drawings and the above specification disclose the best mode in which I have contemplated embodying my invention, I desire to be in no way limited to the constructional details and arrangement of parts disclosed therein, since in the further practical application of my invention many changes may be made in the construction, arrangement, and dimensions thereof as circumstances require or experience suggests without departing from the spirit of the invention within the scope of the appended claim.

What I claim is:

A holder for carrying a gem during the grinding and polishing of the crown facets, comprising a center stem, means for carrying the stem in

properly disposed angular relation with respect to the grinding surface, angularly disposed and converging flat metallic faces in a socket in the lower end of the stem, such faces being accurately disposed to conform to the facets of the pavilion of the gem, a hook device engaging the table facet of the gem to hold the same with its pavilion facets in close contact with the faces of the said socket, a collar immovably secured with respect to said stem, a plurality of series of peripheral recesses in the collar, a ring having a single series of peripheral recesses corresponding to each of the series of recesses in the collar, means for locking the ring in angularly adjusted position with respect to the collar with the recesses in the ring coinciding with the recesses of one of the series in the collar, and a key for engaging the collar recesses coinciding with the ring recesses to hold the said stem with the gem in a predetermined position to grind a crown facet in accurately disposed relation to a previously formed pavilion facet.

GREGOR H. RAKOWITZKY.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
615,083	Lyon	Nov. 29, 1898
1,243,491	De Vries et al.	Oct. 16, 1917
2,435,971	Ludel	Feb. 17, 1948
2,449,423	Spira	Sept. 14, 1948

FOREIGN PATENTS

Number	Country	Date
545,392	Germany	Mar. 1, 1932