

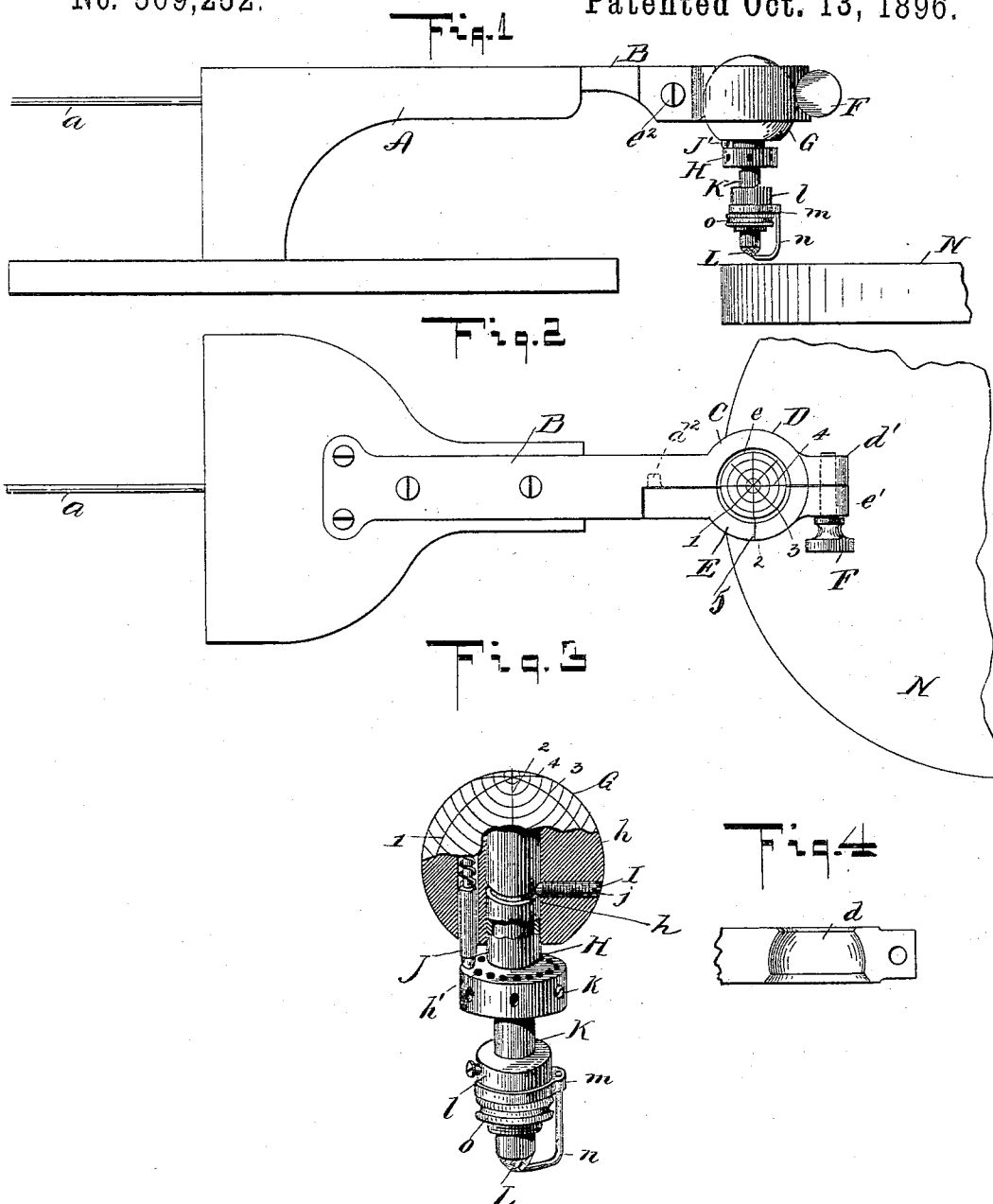
(No Model.)

A. L. STRASBURGER.

APPARATUS FOR MANIPULATING PRECIOUS STONES WHILE BEING
POLISHED.

No. 569,252.

Patented Oct. 13, 1896.



WITNESSES:

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UNITED STATES PATENT OFFICE.

ALVIN L. STRASBURGER, OF NEW YORK, N. Y.

APPARATUS FOR MANIPULATING PRECIOUS STONES WHILE BEING POLISHED.

SPECIFICATION forming part of Letters Patent No. 569,252, dated October 13, 1896.

Application filed November 8, 1895. Serial No. 568,309. (No model.)

To all whom it may concern:

Be it known that I, ALVIN L. STRASBURGER, a resident of the city, county, and State of New York, have invented certain new and useful Improvements in Apparatus for Manipulating Precious Stones While They are Being Polished, of which the following is a specification.

My invention relates to a device for holding and manipulating diamonds and other precious stones while they are being polished; and it consists in the construction and arrangement of devices hereinafter set forth and claimed.

My invention will be understood by reference to the accompanying drawings, forming part hereof, and to which reference will be made herein in describing my invention.

In the drawings, Figure 1 is a side view of a device embodying my invention. Fig. 2 is a plan view thereof. Fig. 3 is an enlarged broken-away detail view of parts hereinafter referred to. Fig. 4 is a fragmental side elevation of a portion of the adjusting-head.

In the drawings, A is a suitable rest block or table, from which a rod *a* extends in one direction and a stem B in an opposite direction. This stem B terminates in an adjusting-head or socket. This adjusting-head or socket is made in two parts. One part consists of the curved member D, provided with a curved groove *d* and tapped ear *d'*, and a recess *d''*. The other member of the adjusting-head or socket consists of the curved member E, provided with a curved groove *e*, similar to the groove *d* in the member D, a tapped ear *e'*, and an aperture for the passage of a screw *e''*, which passes through the member E and into aperture *d''* of the member D. Passing through the tapped ears *d'* *e'* is a thumb-screw F, by which the members D E are rendered adjustable. Hung in the socket or adjusting-head is a holder G. This holder is spherical or spheroidal and fits in the socket, the grooves *d* and *e* embracing it and serving to hold it in place. The grip of the socket upon this holder may be varied by turning the screw F, so that when it is desired to swing the carrier the screw F may be loosened and the carrier swung, and when it has been swung to the desired position the

screw F may be adjusted to tighten the grip of the sections D and E upon the holder.

The holder G is provided with a scale upon an exposed side thereof, shown in the present instance as consisting of intersecting lines 1 2 3 4, which coöperate with an index 5 on the edge of the holder to indicate the extent of movement of the holder in azimuth, and also with a scale for indicating the extent of movement of the holder in altitude, shown in the present instance as consisting of a series of concentric circles having their common center at the point of intersection of the azimuth-scale and coöperating with the edge of the socket to measure the extent of movement or adjustment in altitude.

The holder G is bored out for the reception of a carrier-sleeve H, which is circumferentially slotted, as with a slot *h*, for the reception of a screw I, entered into the recess *j* in the holder.

J is a spring-impelled bolt, which enters depressions *h'* in the carrier-sleeve to lock the carrier and the carrier-sleeve rigidly together, the said bolt being entered into a recess in the carrier.

K is a gem-carrier, which is entered into the carrier-sleeve and is held in place therein by a set-screw *k*, passing through the carrier-sleeve and engaging with the gem-carrier. It is desirable in some cases to mount a sleeve *l* upon the gem-carrier and to have another sleeve *m* provided with a gem-retaining prong *n* on the gem-carrier, the said sleeve *m* being held in place between the sleeve *l* and a screw sleeve or nut *o*.

From the foregoing description it will be obvious that my apparatus is specially useful in holding and manipulating gems during polishing, it being necessary to hold the facets of the gem accurately to the stone. This result has heretofore been attained only with great difficulty, and even then the heat generated in polishing the stone has been sufficient in some cases to melt the soft metal which held the gem.

The operation of this form of my invention is as follows: A gem L to be polished is mounted in the end of the gem-carrier. A facet of the gem is selected for the stone to work upon. If the facet be at an angle to

the horizontal plane, the set-screw F is manipulated to loosen the grip of the socket or adjusting-head upon the holder G, and the holder is thereupon swung until the desired inclination has been given to the gem-carrier. This inclination may be determined beforehand and the proper marks in the scale of the holder brought into registry with the indices of the adjusting-head. When the holder has been properly adjusted, the thumb-screw F is adjusted to clamp the said holder tightly in the adjusting-head C, so that the gem will be held in the proper position for polishing the facet selected. It will be noted that the gem may be carried in the gem-carrier in any suitable manner; but it is preferable in some instances to carry it by bringing the end of the prong *n* upon the "table" of the gem and to screw the screw-collar *o* down tightly.

It will be obvious that by my device I am enabled to attain a great variety of adjustments, so that the facets of the gem may be accurately brought up to the stone; that is to say, by providing my gem-carrier with a universal joint I am enabled to attain this great variety of adjustments and at the same time to obtain a very perfect indication of the angles which the facets of the gems make to the horizontal and to each other.

I am aware that universal joints have been used before in machinery. I am also aware that gem-carriers are not broadly new. So, therefore, I do not wish to be broadly claiming either of these old arrangements; but

What I claim, and desire to secure by Letters Patent, is—

1. In an apparatus of the character described, the combination of an adjusting-head, a holder carried by the adjusting-head and adjustable in altitude and azimuth in said adjusting-head, means for securing said holder in its adjusted position, an independent gem-carrier carried by the holder and movable independently thereof and means for

determining the extent of movement of said gem-carrier.

2. In an apparatus of the character described, the combination of an adjusting-head comprising sections D E provided with grooves *de*, as described, and with adjustable means for holding the sections together, a spherical holder carried in the adjusting-head and exposed on opposite sides thereof, a gem-carrier carried by the holder, and an index upon an exposed side of the spherical holder and upon the adjusting-head to give readings of the altitude and azimuth of the holder, with relation to the adjusting-head.

3. In an apparatus of the character described, the combination of an adjusting-head, a spherical holder carried by the adjusting-head and adjustable in altitude and azimuth in said adjusting-head, indices upon said spherical holder and adjusting-head to indicate the position of the holder with relation to the head, an independently-movable gem-carrier carried by the holder and means for determining the extent of movement of the gem-carrier in the holder and for locking the gem-carrier in the position to which it has been moved.

4. In an apparatus of the character described, the combination of an adjusting-head, a spherical holder carried by and adapted to turn in the adjusting-head, indices upon said spherical holder and adjusting-head to indicate the position of the holder with relation to the head, an independently-movable gem-carrier carried by the holder and provided with a disk having a series of depressions and a spring-pressed bolt carried by the holder and adapted to enter the depressions in the disk and lock the gem-carrier to the holder, substantially as described.

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Witnesses:

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