J. S. Warner,

Crystal Grinder.

No. 98820. Patented Jan. 11. 1870.

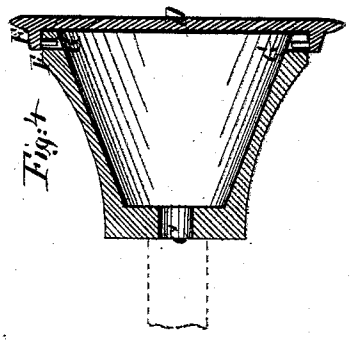


Fig: 4.

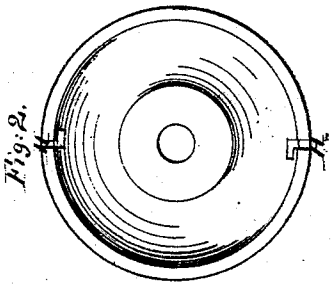


Fig: 2.

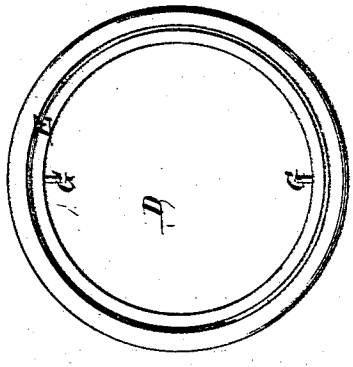


Fig: 3.

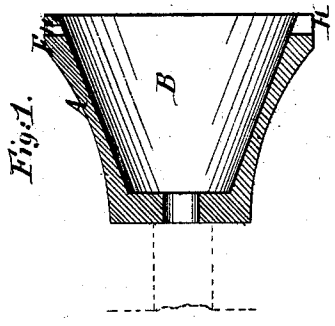


Fig: 1.

Witnesses:

M. Dorlandt

Alex F. Roberts

Inventor:

J. S. Warner

Per Munn & Co

Attorneys.

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

United States Patent Office.

J. S. WARNER, OF OGDENSBURG, NEW YORK.

Letters Patent No. 98,820, *dated January* 11, 1870.

IMPROVED CHUCK FOR GRINDING CRYSTALS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, J. S. WARNER, of Ogdensburg, in the county of St. Lawrence, and State of New York, have invented a new and improved Crystal-Grinder; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

This invention relates to an improved chuck, to be used for grinding crystals for watches, either on the edges, to reduce the diameters, or on the sides of the edges; and consists of a cup-shaped chuck, fitted to be attached to the lathe-mandrel at the base, and provided with a face-plate, capable of being readily attached to the edge, or the part resembling the top of the cup, or detached therefrom. The face of the crystal is ground against the side of this plate, using emery and oil, and holding it, by first attaching it to a stick, by sealing-wax, or otherwise, and when the face is sufficiently ground, the plate is removed, and the edge finished inside the cup-shaped part.

Figure 1 is a sectional elevation of the cup-shaped part, which is attached to the mandrel;

Figure 2 is a front elevation of the same;

Figure 3 is a side elevation of the face-plate; and

Figure 4 is a section of both attached together.

Similar letters of reference indicate corresponding parts.

A is the cup-shaped part, having a conical space, B, of sufficient diameter and depth to receive the largest or smallest crystals, and to act, by its inner wall, on the edges, to reduce and finish them, emery and oil being used, and the crystals being held on sticks, to which they are attached by sealing-wax or other suitable means. This cup A is attached, at the centre of the base C, to the mandrel of a lathe, or other rotary spindle, to be rotated when the crystals are presented to it, as above.

D is the face-plate, adapted for attachment to the part A, at the open end, and for grinding the faces of the edges of the crystals, by holding them against the front thereof, oil and emery being used in like manner. The crystals commonly require to be ground in both these ways in fitting, and it is important to be able to change readily from the one to the other.

For this purpose, I have provided a flange, E, on the face-plate, which fits a short cylindrical part, F, of the cup, and has two radial pins G, which, together with the right-angular notches H in the edge of the cup, form "bayonet"-connections, by which the two parts may be readily connected or disconnected.

Having thus described my invention,

I claim as new, and desire to secure by Letters Patent—

A crystal-grinding chuck, composed of the cup-shaped part A and face-plate or disk D, the cup being arranged for attachment to the mandrel, and the disk detachably connected to the cup, all substantially as specified.

The above specification of my invention signed by me, this 27th day of November, 1869.

J. S. WARNER.

Witnesses:

GEO. W. MABEE,

ALEX. F. ROBERTS.