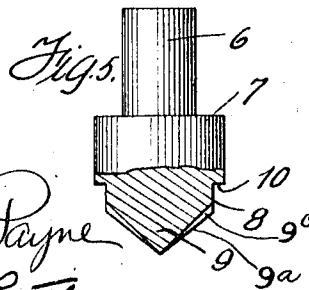
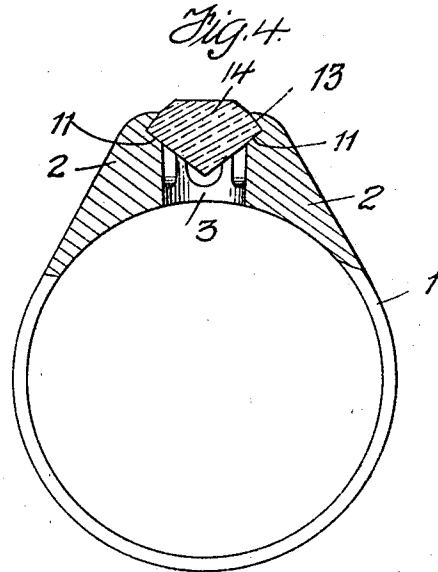
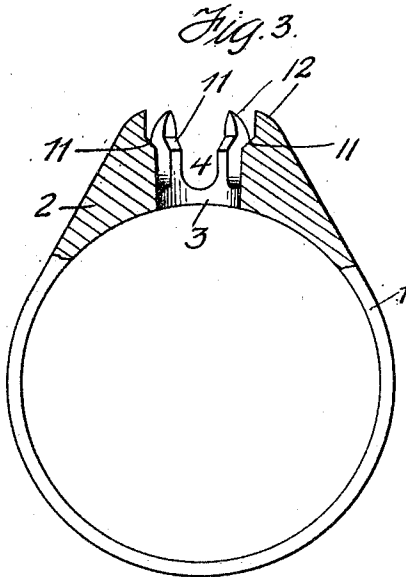
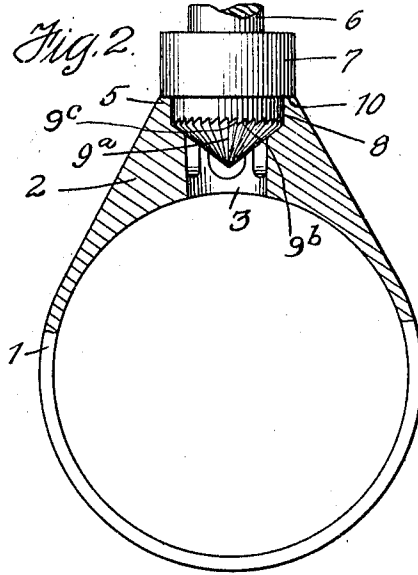
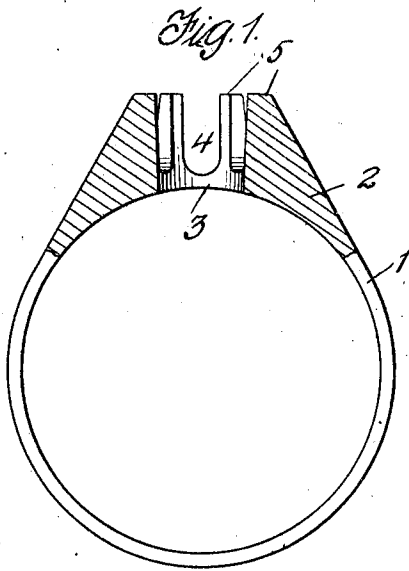


J. J. BUSER.
 DIAMOND AND STONE SETTING TOOL.
 APPLICATION FILED APR. 27, 1909.

980,060.

Patented Dec. 27, 1910.



Witnesses

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JOSEPH J. BUSER, OF FREEDOM, PENNSYLVANIA.

DIAMOND AND STONE SETTING TOOL.

980,060.

Specification of Letters Patent. Patented Dec. 27, 1910.

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To all whom it may concern:

Be it known that I, JOSEPH J. BUSER, a citizen of the United States of America, residing at Freedom, in the county of Beaver and State of Pennsylvania, have invented certain new and useful Improvements in Diamond and Stone Setting Tools, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to diamond and stone setting tools, and the invention has for its primary object the provision of simple and effective means for providing the stone holding prongs of a ring with a seat for a stone that will insure a perfect mounting whereby the prongs of the ring can positively and equally engage the peripheral edges of the stone for retaining the same in engagement with the ring.

Another object of the invention is to provide a simple and durable tool for providing a ring with a seat for holding a stone, the tool boring a seat that corresponds in diameter to the stone to be set and consequently provides a seat that will evenly support the stone and fixedly retain the same relative to the ring.

A further object of this invention is to provide a tool that will permit of rings being quickly prepared for a stone setting, eliminating all guess work by which rings have been heretofore prepared for the reception of a stone.

With the foregoing and other objects in view, the invention consists of the novel construction, combination and arrangement of parts as hereinafter more specifically described and illustrated in the accompanying drawings, wherein is shown the preferred embodiment of the invention, but it is to be understood that changes, variations and modifications can be resorted to which come within the scope of the claim hereunto appended.

In the drawings, Figure 1 is an elevation of a ring partly broken away and partly in section illustrating the prongs thereof prior to being bored. Fig. 2 is a similar view illustrating the boring tool producing a section in the prongs of a ring, Fig. 3 is a similar view illustrating the boring tool removed, Fig. 4 is a similar view showing a stone set in the ring, Fig. 5 is an elevation of a boring tool partly broken away and

partly in section, and Fig. 6 is a bottom plan of the same.

In the drawings, 1 designates a ring or band having a swelled or enlarged portion 2 provided with a central radially disposed opening 3 and with horizontal converging recesses 4, these recesses being drilled upon axial lines radiating from the longitudinal axis of the opening 3. The opening 3 in connection with the recesses 4 provides a plurality of circumferentially arranged and equally spaced prongs 5, thus providing a blank ring adapted to receive a stone when the prongs 5 are properly cut, this type of blank ring being common among jewelers.

A boring tool in accordance with this invention and which is utilized to provide the prongs 5 with a seat for the reception of a setting or stone comprises a cylindrical shank 6 having one end thereof formed with an integral collar 7 of greater diameter than the shank 6. Formed integral with and projecting from the collar 7 is a head consisting of a body-portion 8 and a cone-shaped end 9. The body-portion 8 is of less diameter than and formed integral with the collar 7 whereby said collar 7 will project beyond the plane of the body-portion 8 and said projecting portion constitutes a stop for limiting the movement of the tool. The periphery of the body-portion 8 of the head is smooth throughout as well as the lower face of the projecting portion of the collar 7, said smooth periphery of the body-portion 8 constitutes a means for polishing the inner face of the prongs 5 after being cut in a manner as hereinafter referred to. The length of the body-portion 8 of the head is utilized to indicate the depth of the seat, that is to say, the operator when he desires to cut a seat, gauges the depth desired by the length of the body-portion 8 of the head. The cone-shaped end 9 of the head is provided throughout with teeth, each formed with a cutting edge 9^a, the cutting edge of each of the teeth is disposed throughout at a lateral inclination with respect to a medial line through the cone-shaped end 9, and each cutting edge extends from the apex of the conical end 9 to that terminus of the body-portion with which the cone-shaped end is formed integral. Each tooth has both of its faces extending at an inclination, the faces of each tooth are indicated by the reference characters 9^b and 9^c, the inclination of the

face 9^b being greater than the inclination of the face 9^c. The face 9^b gradually increases in width from the apex of the end 9 to the outer terminus of its respective tooth and the face 9^c gradually increases in depth from the apex of the end 9 to the outer terminus of its respective tooth. By extending the faces 9^c inwardly at an inclination in the manner as stated, the cutting edge of one tooth extends over the face 9^b of an adjacent tooth.

The head is of a less diameter than the collar 7, whereby an annular shoulder 10 will be provided for limiting the inward or boring movement of the tool, consequently, the depth of the seat will correspond to the depth of the head from the shoulder 10 to the outer end of the teeth of the head, while the seat produced by the tool will have an inclination or angle corresponding to that of the conical shaped end of the head.

Preparatory to setting a stone, as a diamond, the diameter of the stone is ascertained, and then a tool having a head of a corresponding diameter is selected. The tool is then placed in a lathe (not shown), or a suitable instrument, whereby the tool can be rapidly revolved. By presenting the swelled or enlarged portion 2 of the ring 1 to the conical end 9 of the head, the inner sides of the prongs 5 can be bored or drilled, to provide each prong with an angularly disposed seat 11, the seats of said prongs being in a horizontal plane, relative to one another, while the inclination or angularity of all the seats tends to converge toward the longitudinal axis of the opening 3.

As shown in Fig. 2 of the drawings, the opening 3 provides clearance for the apex of the conical end 9 of the head 8, while the shoulder 10 of the collar 7 limits the depth of the seats 11 relative to the outer ends of the prongs 5. After the prongs 5 have been provided with seats 11, a suitable instrument, as a file (not shown), is used for tapering the sides of the prongs, as at 12, whereby said prongs will not present any sharp edges or surfaces besides reducing the cross sectional area of the prongs, and thus rendering the same more pliable for the operation of bending the prongs inwardly to engage

the peripheral edges or faces 13 of a diamond or stone 14.

By reference to Fig. 3 of the drawings, it will be observed that the seats 11 are even throughout, and that portion of the prongs extending above the seats are of an equal length, thereby insuring an equal gripping of the peripheral edges of the stone when the prongs 12 are bent downwardly upon the edges of the stone.

The tool can be used for providing studs, stick-pins, brooches, and different kinds of jewelry with settings for stones.

Having now described my invention, what I claim as new, is;—

A cutting tool for forming seats in the prongs of rings for the setting of precious stones comprising a solid cylindrical shank having its periphery smooth throughout, a collar formed integral therewith at one terminus thereof and of the same diameter throughout and of greater diameter than the shank and having each end flat and uninterrupted, and a head consisting of a solid cylindrical body portion having an integral cone-shaped cutting end, said body portion formed integral with the outer end of and of less diameter than said collar whereby the collar will project beyond the plane of said body portion so as to constitute a stop to limit the cutting movement of the tool, said body portion being of greater diameter and of less length than the shank and having a smooth periphery to constitute a polishing medium for the cut away portions of the prongs during the cutting operation and further constituting a gage for the depth of the seat, and said cone-shaped end provided throughout with closely arranged teeth formed with cutting edges, said cutting edges extending from the apex of said cone-shaped end to that terminus of the body portion in which said end terminates, said integral cutting end of greater length than said body portion.

In testimony whereof I affix my signature in the presence of two witnesses.

JOSEPH J. BUSER.

Witnesses:

ALFRED F. KRAMER,
ARTHUR H. RIDER.