

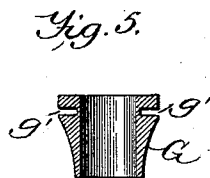
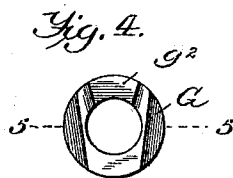
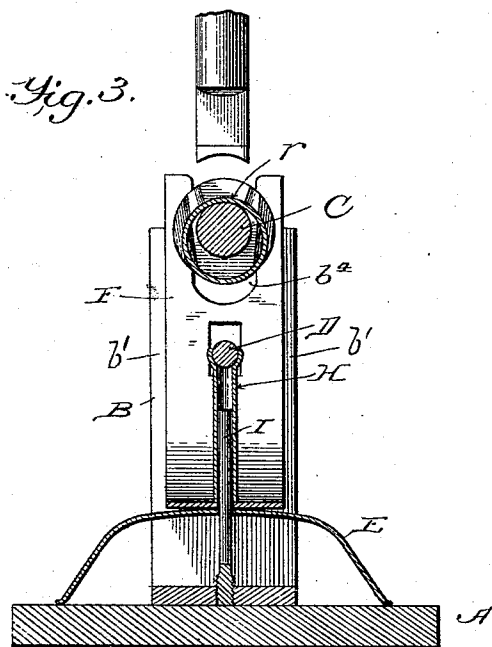
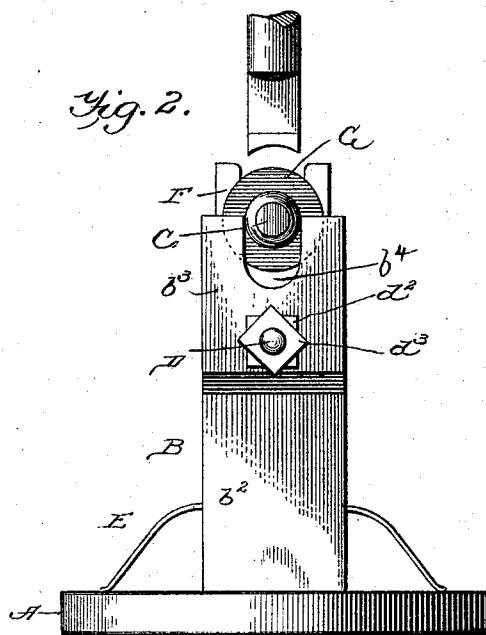
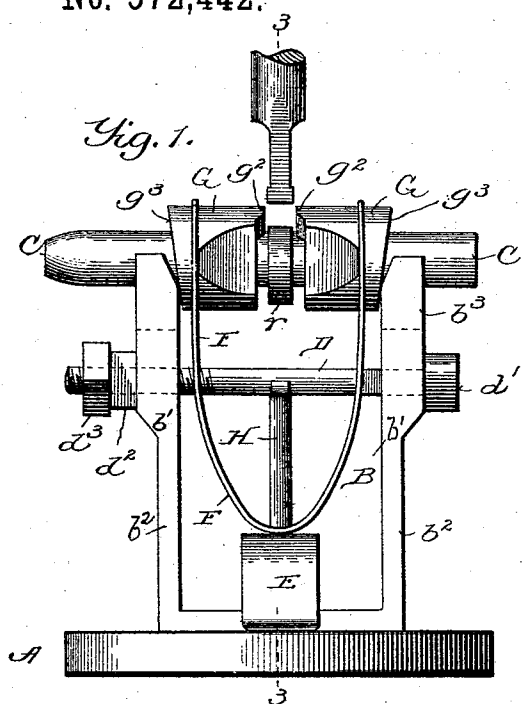
(No Model.)

J. S. PALMER.

MEANS FOR SQUARING EDGES OF AND FINISHING FINGER RINGS.

No. 572,442.

Patented Dec. 1, 1896.



WITNESSES:

Harry S. Rohrer.
Arthur Garner

INVENTOR
John S. Palmer
BY
John F. Halsted & Son
his ATTORNEYS.

UNITED STATES PATENT OFFICE.

JOHN S. PALMER, OF PROVIDENCE, RHODE ISLAND.

MEANS FOR SQUARING EDGES OF AND FINISHING FINGER-RINGS.

SPECIFICATION forming part of Letters Patent No. 572,442, dated December 1, 1896.

Application filed August 10, 1896. Serial No. 602,331. (No model.)

To all whom it may concern:

Be it known that I, JOHN S. PALMER, of Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Means for Squaring the Edges of and for Finishing Finger-Rings; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

My invention relates to the manufacture of plated and other finger-rings, and has for its objects the giving to the edges and also to the surfaces of the rings a perfect finish without throwing up or leaving a fin at the edges, and whereby a filled or plated ring may have as square and true an edge as a gold ring that has been filed and "lapped." My improvements also serve to prevent damage to the nice edges of the punch in lifting it out of the machine.

The invention consists in special devices or mechanism for effecting these objects, and in the drawings I have illustrated a machine adapted for the purpose, and in which—

Figure 1 shows in front elevation a form of machine embodying my invention; Fig. 2, an end elevation; Fig. 3, a transverse section on the line 3 3 of Fig. 1; Fig. 4, a detail showing an end view of one of the beveled collars; and Fig. 5 a section in line 5 5 of Fig. 4.

A is a metal bed or base, preferably of steel, for supporting the mechanism. Firmly mounted upon this base is a spring standard or frame B, having two similar upright bars b' , which, while they are sufficiently stout and strong to form a rest for the arbor C when the blow is given to the punch, yet they have sufficient spring power to act effectively to force in the edges of the ring in advance of the effect of the punch itself upon the face of the ring. Each blow or action of the punch which acts upon the outer face of the ring by the same act also trues or finishes its edges. The uprights b' of this spring-frame are made at their lower parts b^2 of about one-half the thickness of their upper parts b^3 . This not only makes them more durable, so that the frame

will last a long time, but it also allows of the adjustment of the distance apart of the upper parts b^3 to adjust or adapt the apparatus for operating upon rings of different breadths. This adjustment is effected by means of an adjusting-rod D, which passes through both the uprights b' , and has a head d' at one end and at its other end is threaded and provided with an adjusting-nut d^2 and a locking-nut d^3 . The nuts are to be tightened and adjusted to just the necessary tension to do the work properly.

The arbor C is loosely received in deep cuts b^4 , made in the tops of spring-frame B, and in which cuts it is free to be forced down by the action of the pattern-punch, as hereinafter stated, and also free, after the action of the punch, to rise by the agency of the spring E acting upon another spring, F, which at each of its ends engages one of the beveled collars G. This arbor is readily turned by the hand or fingers of the operator; but it is more convenient to turn the ring. These collars G are mounted on the arbor C, which passes through them both, and can be easily turned therein, and are much thicker than the ring requires and extending considerably above it, as shown. Each of the collars is engaged by one of the yoked or forked ends of spring F, the forked parts entering slits g' in opposite sides of the collar. The collars, by the action of spring F, are normally pushed on the arbor in directions away from each other, and each has its outer end inclined or beveled, as shown at g^3 , to serve, when the arbor is forced down, to act as a cam against the inner side of its adjacent upright b' of the spring-frame B to force the collars toward each other. The inner faces of these collars have each a projecting part g^2 , between which the edges of a ring r , hung loosely on the arbor between the two collars, is to be tightly gripped. The adjustment of the force of uprights b' by means of the nuts on the rod or bar D adapts the machine for treating rings of different widths, or varying, say, one-sixteenth of an inch in width. For greater variations, a pair of longer or shorter collars may be substituted for those on the arbor.

H is a sleeve or long tubular collar placed on a short fixed spindle I, secured to the bed of the machine, this collar having a curved

top adapted to span or engage the rod D on its under side.

Spring E serves normally to force upward the spring F and with it the arbor when the downward pressure or force of a blow upon the punch and upon the arbor has been taken off.

The sleeve II is for the purpose of limiting the upward throw caused by the upward pressure of spring E upon spring F, and when in this upward movement of spring F the inclines or bevels g^3 of the collars G and the arbor also rise sufficiently the ends of this spring at once throw back the two collars and the ring is released, so that it may be again moved around as far as desired in order to receive the next blow of the punch.

All other means known to me for treating plated rings, so far as I am aware, damage the nice edges of the punch in lifting it out, but by my present invention the punch is relieved and released by the upward throw of spring F.

Parts of the machine may be of hardened steel.

Any other equivalent arrangement of spring to produce the same result may be used in place of the spring-frame.

It will be understood that the punch may be forced downward as needed by any known press or other means, and that its concave surface, which acts upon the outer face of the ring, may have any desired pattern upon it, or that it may be plain for plain or smooth-surfaced rings, and the punches used may be of various widths to suit the widths of the rings under treatment.

The operation is as follows: A ring to be treated is hung loosely upon the arbor between the two collars, which, together with the arbor, are at this stage raised beyond the action of the inclines, the collars being also spread apart by the spring F. When the punch is forced down, it freely enters this increased space between the collars and above the ring to allow it to reach the top of the outer face of the suspended ring and without any danger of damage from the punch striking on top of the collars, and the continued downward movement of the punch on this face of the ring forces down the arbor. This forcing down of the arbor causes the outer inclines on the collars, acting against the strong uprights, which are firmly held by the rod and its tightening-nuts, to force the collars toward each other and to closely grip the opposite edges of the ring between the projections F^2 , and the pressure, of any degree required, squares up these edges, making a perfect finish without throwing up any fin, the uprights acting as a spring of sufficient power to force in the edges of the ring in advance of the effect upon its face by the punch. When the punch retreats or moves upward, the spring E, which has been compressed during the downward movements, throws upward again to their normal or starting positions the spring F and the arbor and its collars and the ring,

the collars being moved more apart by this spring while the punch is between them, but yet released from them and from contact with the ring, and the grip on the ring is released and it is left free to be turned by hand farther around on the arbor to receive the next blow, these actions being repeated until the whole of the ring has had its edges smoothed and its surface either given a smooth or an ornamental surface, according to the character of the punch employed. This spring-frame, by means of the collars, acts first upon the edges of the ring, as it causes them to spring hard against the edges of the punch as soon as the punch comes in contact with the face of the ring, and this pressure increases by the forcing in of the collars until the punch bears sufficiently hard to smooth the face of the ring or to press in any kind of ornamentation which the punch may have upon it. The pressure of the collars against the edges of the ring increases until the arbor reaches its bed; but the action upon the edges is limited to the width of the hardened-steel punch.

When treating in my machine solid gold or silver rings instead of plated ones, there would be quite a saving, as compared with filing, both in labor and time, besides avoiding the waste in filings of the precious metals.

I claim—

1. In a machine for squaring the edges of finger-rings, the combination of a vertically-movable arbor, a frame or standard having upright spring-bars serving to support said arbor, collars movable on the arbor and adapted to contact with the frame, and means for varying the distance between the uprights of the frame.

2. In combination with a spring-frame having the deep cuts in the top of its uprights, the vertically-movable arbor adapted to be lodged in and removable from such cuts, and the collars carried on such arbor and removable therefrom and provided with means for contacting with the uprights, all substantially as and for the purposes set forth.

3. In a machine for squaring the edges of gold, silver, or plated finger-rings under the action of a punch, the combination with an arbor for holding a ring to be treated, and with collars adapted to grip the ring at its opposite sides, of an upright frame constructed and arranged to support the arbor to allow the downward movement thereof under the action of the punch and provided with means to move the collars inwardly to bind closely upon the edges of the punch.

4. The combination with a spring-frame and its adjusting-rod and vertically-movable arbor, of collars on the arbor having their outer ends inclined and arranged to contact with the frame on the downward movement of the arbor, a base-spring, and an upper spring resting on the base-spring and arranged to normally move the collars apart.

5. In a machine for squaring the edges of rings, the combination with a vertically-mov-

able arbor for holding the ring, collars on and free to be moved lengthwise of the arbor to grip the edges of the ring, a spring serving to raise the shaft and its collars, a spring to move the collars from each other to release their hold on the punch, and means for moving the collars toward each other as the arbor moves downwardly, substantially as and for the purposes set forth.

10 6. In combination with the vertically-movable arbor, the spring E, resting on the bed of the machine, the spring F, resting on spring E, and bearing the arbor, the frame and its rod D, the fixed spindle I, and the sleeve H, thereon bearing on said rod to limit the upward throw of the arbor, as and for the purposes set forth. 15

JOHN S. PALMER.

Witnesses:

EBEN. W. WATERHOUSE,
CHARLES PRESTWICH.