

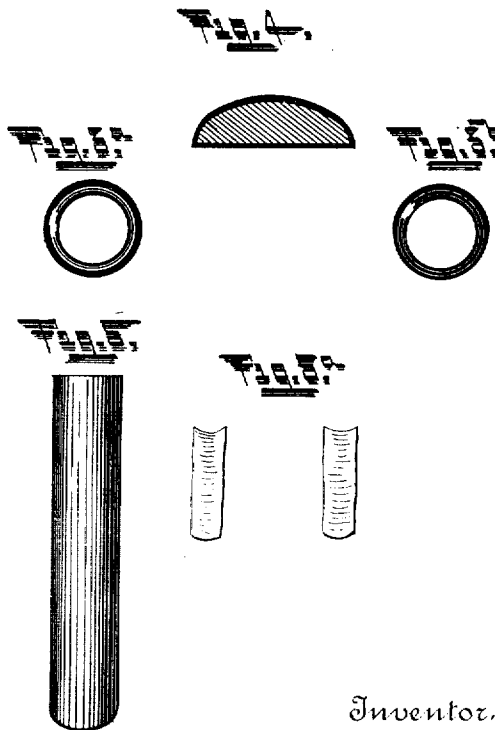
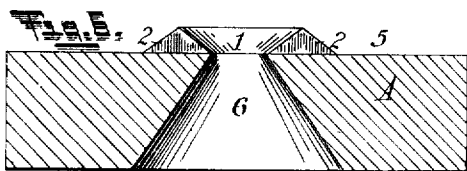
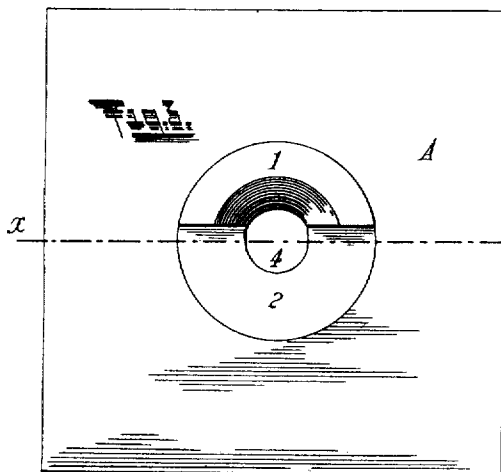
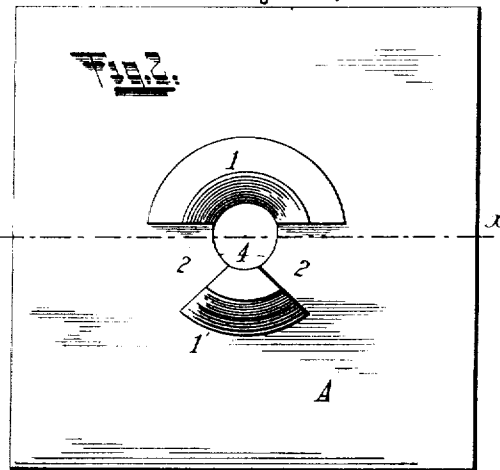
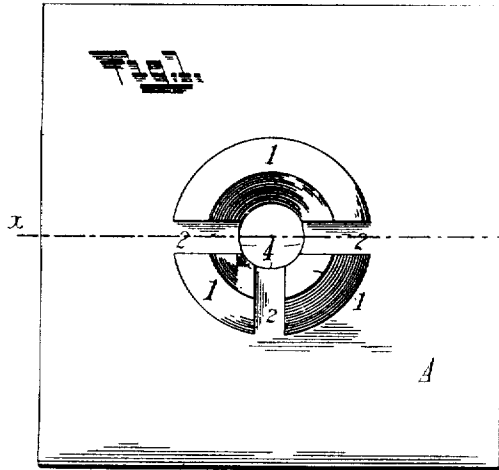
(No Model.)

2 Sheets—Sheet 1.

J. S. PALMER.
METHOD OF PREPARING HOLLOW STOCK FOR THE MANUFACTURE OF
JEWELRY.

No. 383,238.

Patented May 22, 1888.



Witnesses.

Will. T. Norton.
Geo. L. Penney.

Inventor.

John S. Palmer.

By his Attorneys *John J. Halsted & Co.*

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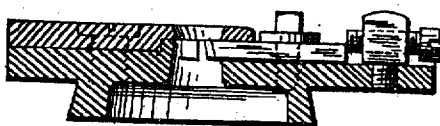
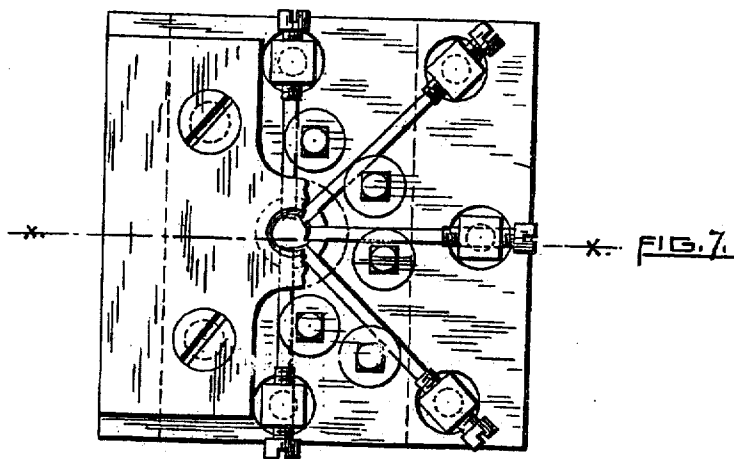
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UNITED STATES PATENT OFFICE.

JOHN S. PALMER, OF PROVIDENCE, RHODE ISLAND.

METHOD OF PREPARING HOLLOW STOCK FOR THE MANUFACTURE OF JEWELRY.

SPECIFICATION forming part of Letters Patent No. 383,238, dated May 22, 1888.

Application filed January 27, 1888. Serial No. 252,115. (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 Thinning or Shaving Away Parts of Plated Shells in the Manufacture of Jewelry; 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.

In the manufacture of finger-rings, chains, or other articles of jewelry from plated metal—that is, from metal “shells” or “thimbles,” which are composed of a base metal surfaced, plated, or overlaid with a more precious metal, such as gold—the process, as hitherto practiced by me, of drawing these shells through the drawing plate or plates, necessarily leaves the outer plate of surfacing gold with a thickness substantially uniform, so that the gold in the finished articles of jewelry fabricated therefrom is just as thick where (as in a finger-ring) but little wear comes, as in those parts where there is the greatest wear.

The object of my present method is to improve these drawn or reduced shells after they have been thus elongated by drawing, and to cause such parts of the shell as need but little gold to be shaven, scraped, or planed off by the die itself as the shell is punched or forced through the die or succession of dies, and whereby those portions of the shell which it is desired to preserve in greater and sufficient thickness shall not be further reduced, nor shaven, scraped, or planed, the process thus permitting the article to be of much greater durability and to last longer than usual before the plate can be worn through, while at the same time not in the least increasing the amount of precious metal embodied in it.

I may say here, in a general way, that the shells or thimbles to be treated by my new method may be first shaped and drawn through the die plate or plates (presently to be described) substantially in the same manner as shown in my former patents, No. 211,342, dated January 14, 1879; No. 215,536, dated

May 20, 1879, and No. 342,840, dated June 1, 1886; but in these patents there was no process or provision for cutting off, planing off, or scraping off any portions of the precious metal composing the outer plate, or for accomplishing the results attained by my present invention.

I will now proceed to describe my method, aided by the accompanying drawings, serving in a measure to illustrate it, in which—

Figure 1 represents a punch or die plate adapted for cutting or scraping or planing from the shell, without drawing out or elongating said shell, a longitudinal portion of the metal. Fig. 2 is a kindred plate, adapted, however, to scrape or plane off another portion—as, for instance, the ridges left by or between the sharp edges in Fig. 1. Fig. 3 is a punch-plate or die, which may be used after these; Fig. 3^a, an end view of a much-enlarged thimble prior to being shaved off; Fig. 3^b, a similar view after being shaved off by the plates. Fig. 4 illustrates an end view of a piece which has been rolled out for a half-round plain ring from a thimble prepared by my new method; Fig. 5, an elevation of a thimble much enlarged, but not to the extent shown in Figs. 3^a and 3^b. Fig. 5^a indicates some gold chips cut off by the cutting edges; Fig. 6, a vertical central section in the line *xx* of Figs. 1, 2, and 3; Fig. 7 a plan, and Fig. 8 a longitudinal section in the line *xx* of Fig. 7, showing adjustable cutters.

Commencing with a shell or thimble composed, as stated, of metal plated with precious metal of substantially uniform thickness, I force or punch it through a punch-plate or die, A, which has an elevated and rounded ridge, 1, surrounding its mouth, except at certain portions, marked 2, and which ridged portions serve as receiving and guiding edges, but which do not reduce, sever, scrape, or plane away any of the precious metal from the shell, while the portions marked 2 do serve as such cutters, these portions being constituted by leaving or making channels, open spaces, or cuts through such ridge, the inner edges of these open spaces being cutting, planing, or scraping edges 4, such edges being the acute angle in the metal formed by the meeting of the plane of the top surface, 5, of the plate

with the conical opening 6 in the plate. These cutting-edges may be fixed or adjustable and project slightly into the central opening, 4; or, in other words, the receiving or smaller mouth of this opening, instead of being a true circle, may at the parts where the scraping or planing is to take place slightly project into or encroach upon such circle, as shown by way of illustration in Figs. 1, 2, and 3.

The result of my practical experience is that the best ends are attained by shaving off lengthwise of the shell by a plate, substantially like that shown in Fig. 1, first a portion of the surface in parallel lines of shallow grooves to about the depth required; and then with another punch or die, (see Fig. 2,) adapted for the purpose, to shave off in similar parallel lines of shallow grooves the small ridges left between the channels and to about the same depth as before; and next to pass the thimble through a third punch-plate having no channels, such a plate, for instance, as shown in Fig. 3. This latter plate is not intended to make any grooves or channels in the gold, but to leave practically smooth and even that part of the surface which has been previously channeled.

A series of plates like Fig. 3, each smaller than the other will accomplish the result, but cannot be guided as well as the channeled plates, and therefore will not cut as evenly.

From the above it will be seen that in practicing my new method the plates used differ from regular or known drawing-plates, in that they have cutting edges at any and only certain desired points, and also have rounded edges, which latter serve as a guide to regulate the depth of the cut.

The same punch which may have been used to draw the shells with which my new process commences may be employed to push them through my improved cutting plates, and the three operations of punching them through these novel cutting plates, of the general character shown in Figs. 1, 2, and 3, prepare the shells ready to be rolled out according to the process described in my patent, No. 217,398, dated July 8, 1879.

It will be evident that the cutting-channels may be differently arranged as circumstances may demand.

The separate plates can be very cheaply sharpened or reproduced.

The chips (see Fig. 5th) are compressed or

compacted in the act of cutting, and when leaving the shell are much shorter than the shell. This is the natural result of cutting so nearly at right angles to the length of the thimble.

By my process I can make much better and far more durable goods with the same amount of gold by making the articles from heavier plate to commence with, so that when finished they will be thicker where the wear is greatest, and by reason of the shaving thinner where the wear is least.

My cutting-plates are in no sense drawing-plates for elongating and drawing down the stock; and it must be remembered that the holes in these my cutting-plates are all of the same size as those in which the shells were last drawn down prior to the commencement of my above-described cutting process, less the projecting cutting edges, which project into the holes of my cutting-plates, and each successive one of my cutting-plates, whether more or less in number, is intended to be at its cutting portion or portions only so much smaller than its preceding one as to be a guide to hold it in proper position for the succeeding cuts.

For many articles of jewelry now manufactured by the trade it will be quite sufficient to pass the shell through a single plate like that shown in Fig. 3—that is, provided with only a single shaving-edge.

It will be evident that the cutters, instead of being fixed or integral with the die-plate, may, as previously stated, be made separate and adjustable on such plate, or that the gold can be taken off by a milling or grinding process.

I claim—

1. The described method of imparting to plated thimbles or shells a varying thickness, consisting in submitting the same to the action of reducing devices adapted for shaving off or otherwise removing the desired portion of the plate at the required parts, substantially as set forth.

2. The described method of imparting to plated thimbles or shells a varying thickness of plate, consisting in passing the thimble or shell through die-plates adapted for shaving off or removing a desired portion of the plate at the required parts, substantially as set forth.

JOHN S. PALMER.

Witnesses:

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