

(No Model.)

A. LAMBERT.
TOOL FOR BENDING RING SHANKS.

No. 496,125.

Patented Apr. 25, 1893.

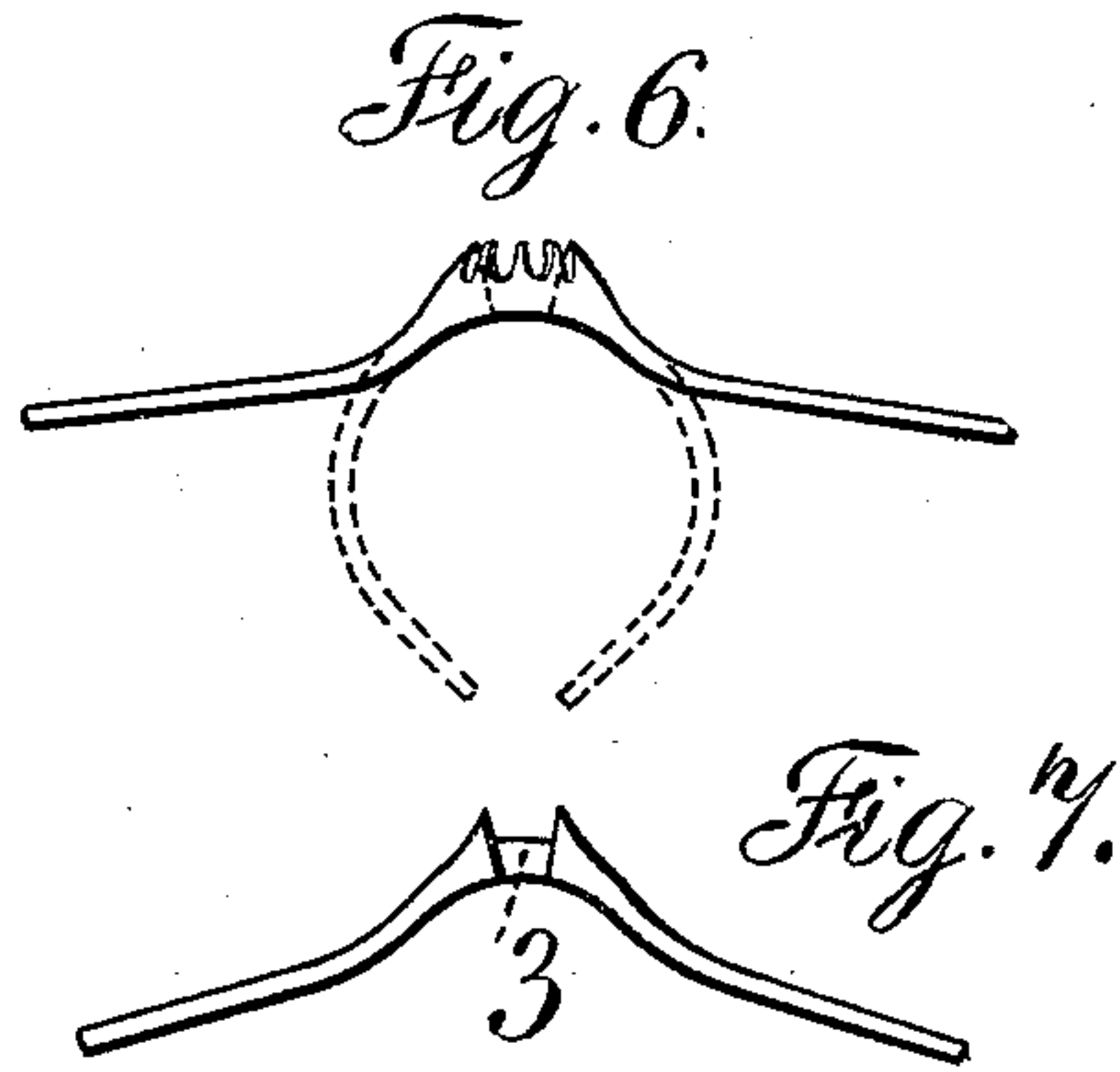
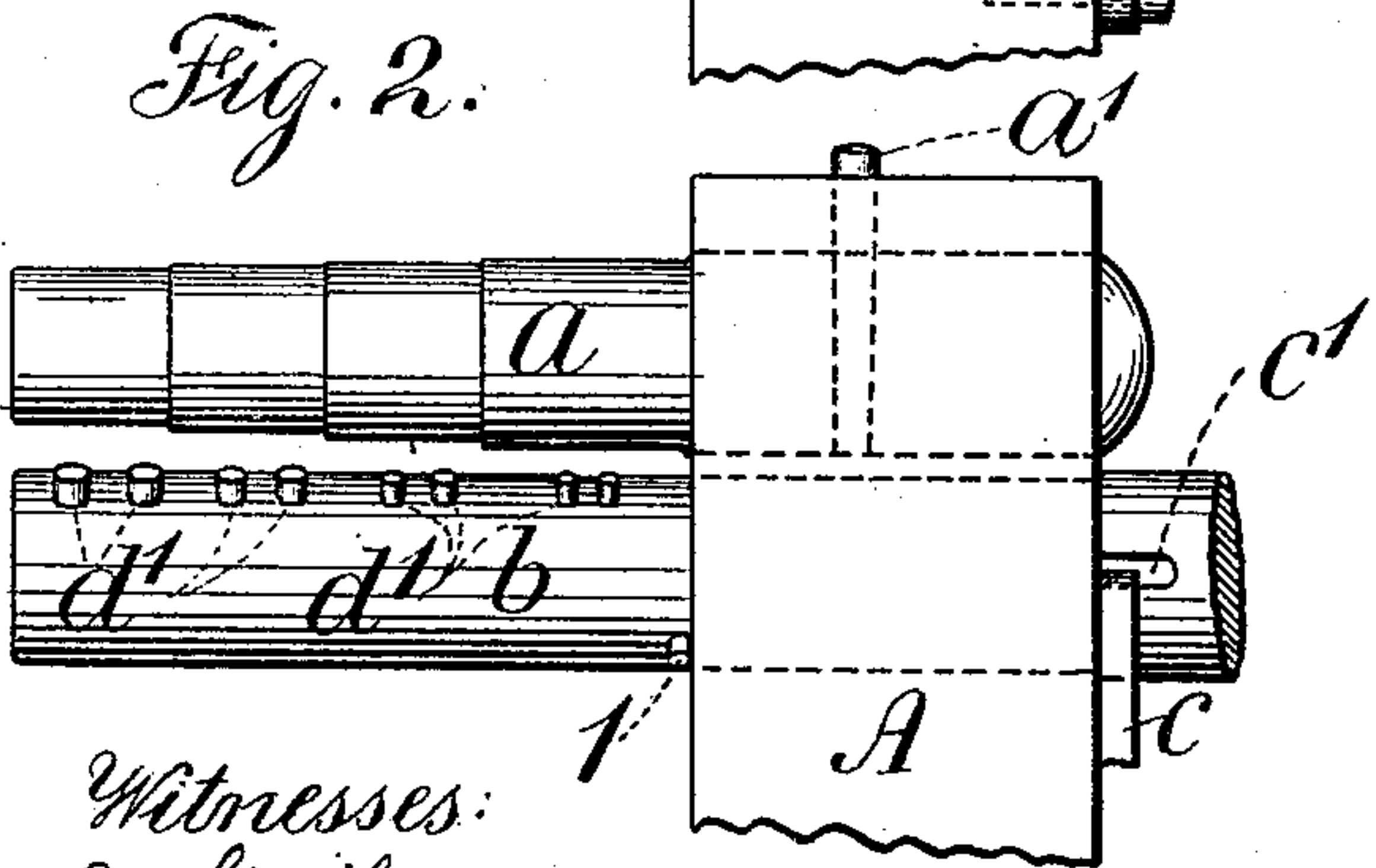
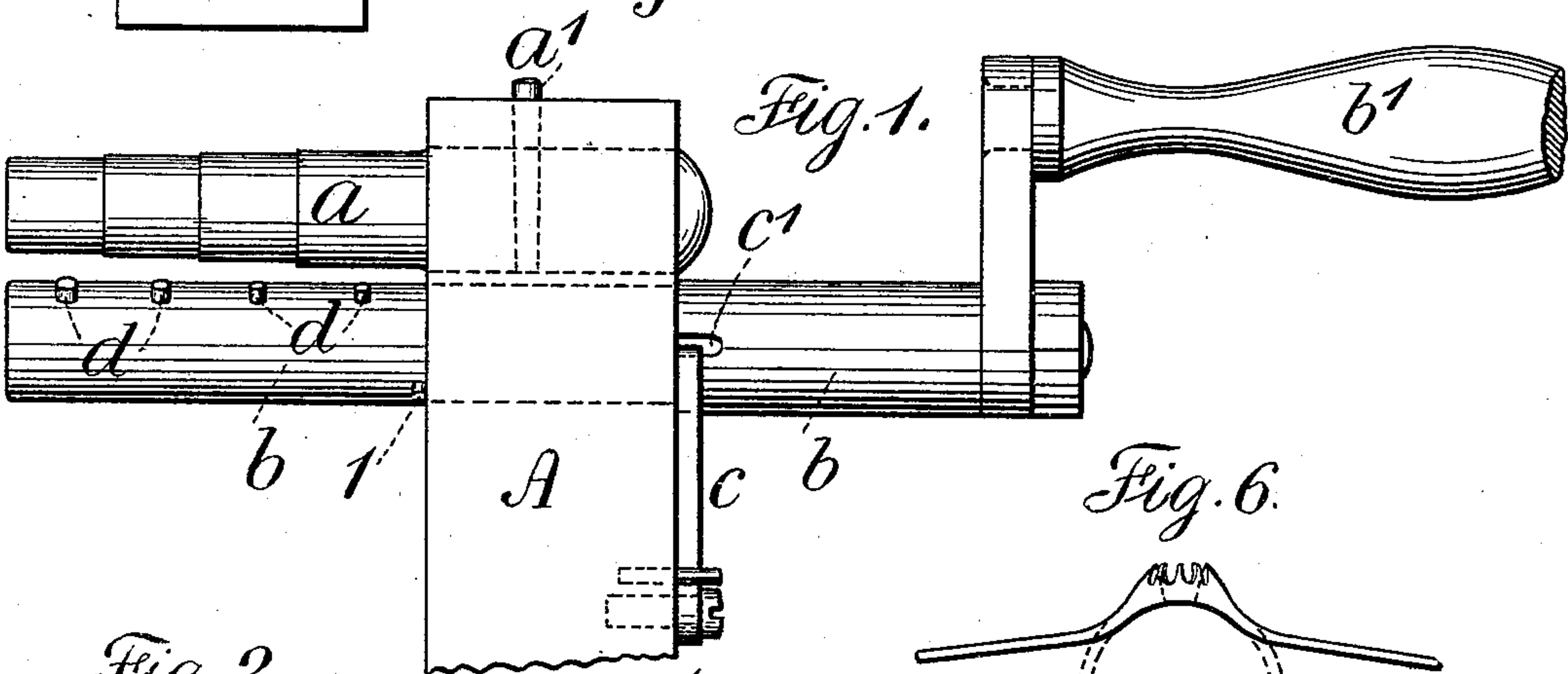
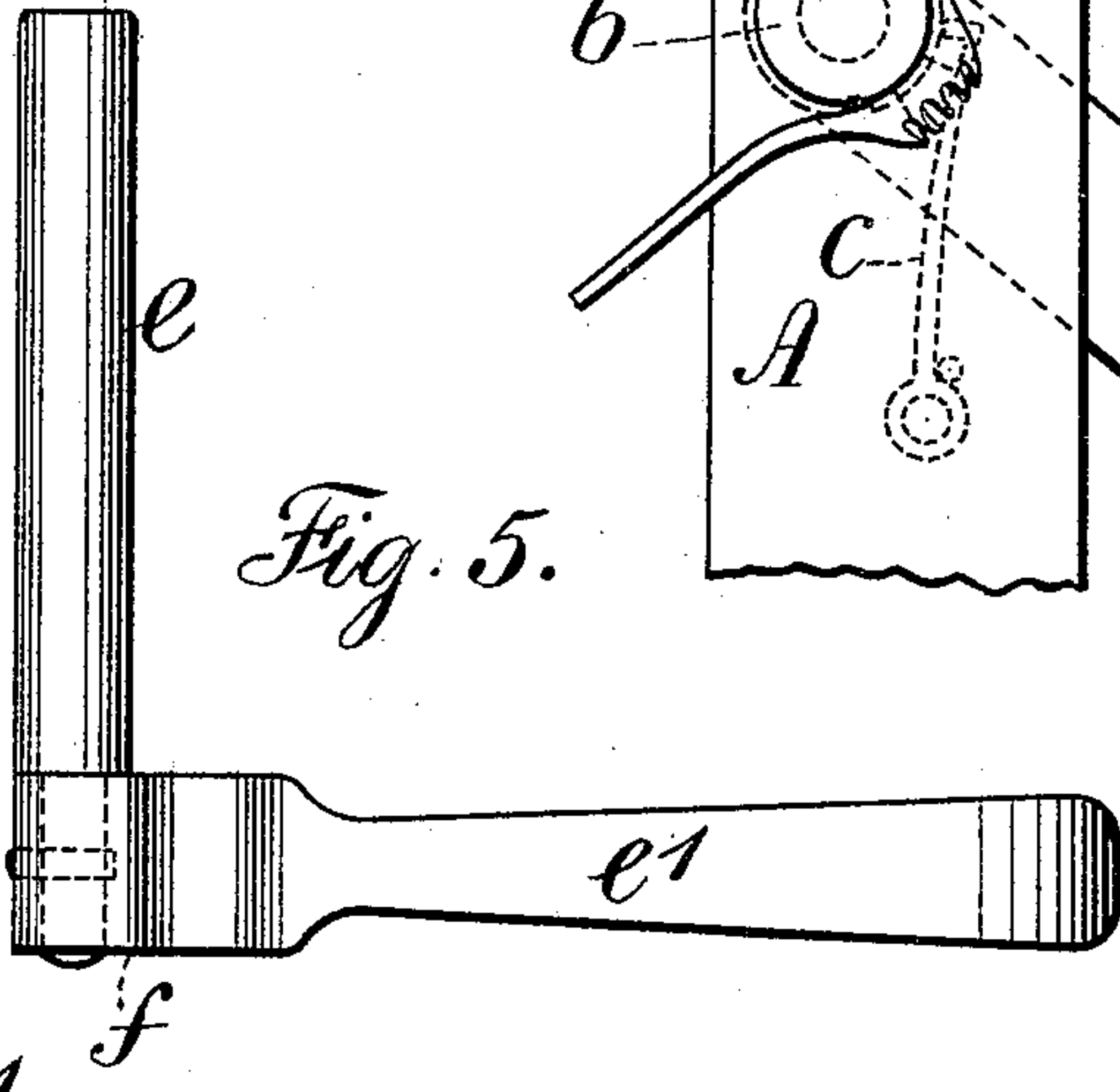
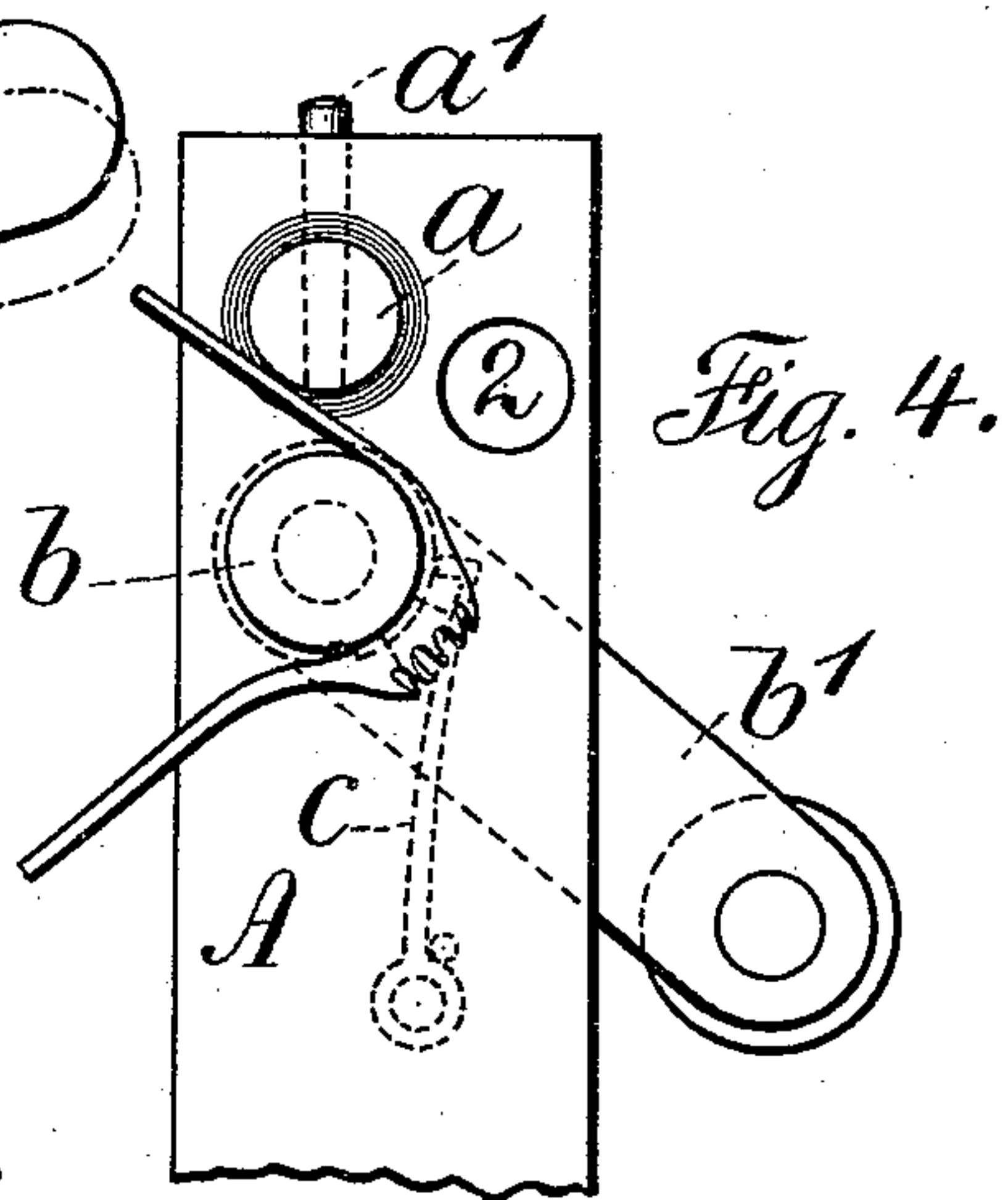
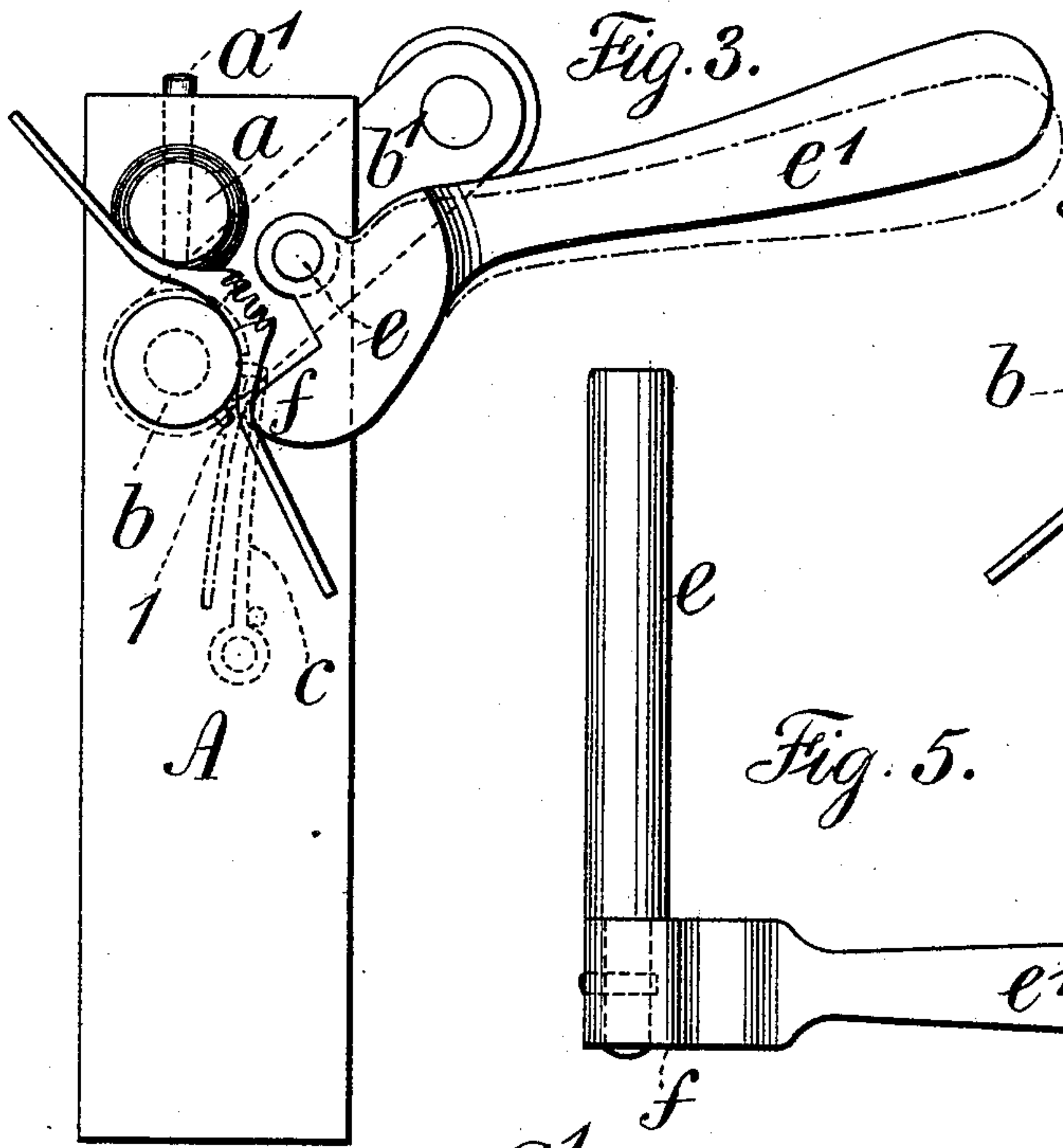


Fig. 7.

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UNITED STATES PATENT OFFICE.

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TOOL FOR BENDING RING-SHANKS.

SPECIFICATION forming part of Letters Patent No. 496,125, dated April 25, 1893.

Application filed December 19, 1892. Serial No. 455,601. (No model.)

To all whom it may concern:

Be it known that I, ALONZO LAMBERT, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented an Improvement in Tools for Bending Ring-Shanks, of which the following is a specification.

In the manufacture of finger rings, especially those having a jewel setting, the usual manner heretofore practiced has been to either cast the shank and hammer it into the round form upon a mandrel or to drop forge the metal of the shank and setting and thereafter hammer the shank to the round form on a mandrel. This is a slow, tedious and expensive method and one requiring considerable skill on the part of the metal worker.

My improvement relates to a device for bending the shanks of finger rings in a simple, quick and reliable manner. I provide a standard that may be secured in the jaws of a vise or to a work-bench. Projecting from said standard is a stationary stud, and adjacent thereto and passing through the standard is a rotary mandrel operated by a handle. The rotary mandrel has connected to it devices that are adapted to engage the setting of the ring shank in such a way that when the rotary mandrel is revolved, the shank of the ring is drawn beneath the stationary stud and around the rotary mandrel, first at one side of the setting and then at the other side. In this condition the ends of the shank can be cut off to any desired extent according to the size of the finished finger ring, the complete bending and soldering of the opposite ends of the shank being thereafter readily and quickly performed by the old method of hammering and bending, and I prefer to employ in connection with the aforesaid devices a handle and projecting jaw connected to a shaft having a bearing in the aforesaid standard and to which jaw a partial movement can be given in starting the bending of the ring shank.

In the drawings, Figure 1 is a side elevation representing my improvements in one position. Fig. 2 is a similar view in another

position. Fig. 3 represents an end elevation of my improved devices corresponding with the position Fig. 1, and showing the beginning of the bending operation. Fig. 4 is an end elevation showing a more advanced stage of the bending operation. Fig. 5 is a plan of the device for giving the preliminary bending, and Figs. 6 and 7 represent by elevations forms of finger ring shanks.

A represents the standard which may be secured between the jaws of a vise or in a socket in a work-bench. The standard A is provided with a stationary stud *a* which passes through said standard and may be secured by a pin *a'*. The stud *a* is divided lengthwise into several portions of different diameters, the diameters decreasing toward the extreme end of the stud, the object of this being to provide for the various thicknesses of ring shanks in the bending operation between the surfaces of the stationary stud *a* and the surface of the rotary mandrel *b*. This rotary mandrel *b* passes through the standard A directly beneath the stud *a*, and one end is provided with a handle *b'* by which the same is turned. The end of the mandrel *b* adjacent to the handle *b'* is of slightly larger diameter than the portion which passes through the standard A, thus a bearing shoulder is provided at one side of the standard A, and a pin *l* is provided at the other side of the standard, which together with the shoulder before named prevents any longitudinal movement of the rotary mandrel *b* in the standard A.

A spring catch *c* is provided and fastened to one surface of the standard A and notches *c'* are provided in opposite faces of the rotary mandrel *b* that are engaged by the end of the spring catch *c*. In this manner two stopping positions are provided for the rotary mandrel *b*.

On one face of the rotary mandrel *b* is a line of single pins *d* of gradually increasing diameter; these single pins *d* are placed in the mandrel *b* approximately central to the various bands of decreasing diameter of the stationary stud *a*, and upon the opposite side or

face of the mandrel *b* are double pins *d'* similarly placed and also of increasing size.

e represents a bar, to one end of which is connected a handle *e'*, and a projecting jaw *f* is formed with the handle *e'*, and the bar *e* enters a hole at 2 passing through the standard A.

Figs. 6 and 7 represent ring shanks and settings of two different forms in the shape preferably given by the drop forging operation. The one shown in Fig. 6 has a crown setting with a central hole. The one shown in Fig. 7 has a central web 3 that connects together the sides of the setting. These are the two forms usually made in manufacturing finger rings, and the single pins *d* of increasing size are provided for the form of setting shown in Fig. 6, and the double pins *d'* of increasing size are provided for the form of settings shown in Fig. 7.

The operation of the parts is as follows:— Taking a blank of the form shown in Fig. 6, the setting is placed over one of the pins *d* that will fit the center hole therein and its shank at one side is placed between the stud *a* and the rotary mandrel *b*, in the position shown in Fig. 3. The sizes of the pins and the width of the spaces between the mandrels being proportioned to approximately agree with the size of the settings and thickness of the shanks. The handle *b'* is then grasped to steady the parts. The bar *e* is then inserted into the standard A and its projecting jaw *f* is brought against the shank, as seen in Fig. 3. A downward movement of the handle *e'* into the dotted position Fig. 3 gives to the shank a preliminary bending into the position shown by dotted lines in the same figure. The handle *e'* and connected parts are then removed from the standard A and the ring blank is lifted off from the rotary mandrel and reversed, so as to bring the shank just bent into position beneath the stationary stud *a*. This preliminary bending gives the setting of the shank a chance to hug the rotary mandrel and the after rotation of the mandrel *b* into and beyond the position shown in Fig. 4, bends down the shank being operated upon by drawing the shank under the stationary stud and around the rotary mandrel. The operations just described are then repeated for the opposite side of the shank that has not been operated upon, and when the two shanks are bent in this manner they will assume approximately the dotted position Fig. 6. In this condition of the shank and its setting the respective ends are cut off according to the desired size of the finished finger ring, and the complete bending and soldering of the ends of the shank are thereafter accomplished in the usual manner. Precisely these operations are gone through with for the form of shank and setting shown in Fig. 7, the double pins of increasing size and increasing distance apart being necessary to grasp and hold the form of setting Fig. 7,

because the web 3 of said setting goes between the pins *d'* and these pins act upon the shoulders of the setting when the rotary mandrel is revolved to bend the shank at each side.

With my improved device it is possible to impart to the shank at each side of the setting a gradually curved form that is even and smooth throughout and in which the metal of the shank is not injured by any uneven hammering operation, and the after operations of bringing together and soldering the ends of the shank for the desired size of finger ring are greatly facilitated and expedited.

The stud *a* is shown as round in cross section, but I do not limit myself in this respect as the same may be of any shape in cross section providing there is a curved under surface.

I am aware that a device having a series of rotary mandrels for bending ring shanks has heretofore been made, but some of said mandrels were grooved and there were no devices therein employed for engaging and holding the shank or its setting while the same was being bent.

I claim as my invention—

1. The combination with a standard, of a stationary stud, connected to the standard, a rotary mandrel passing through said standard beneath the stud, and means for operating the same, and pins secured in said rotary mandrel for engaging the setting of the ring blank and holding the same centrally while the parts of the shank are being successively bent around the rotary mandrel and beneath the stud, substantially as set forth.

2. The combination with a standard, of a stationary stud, a rotary mandrel passing through said standard beneath the stationary stud, and mechanism connected to said rotary mandrel for engaging the setting of the ring blank and holding the same while the shank is being bent around the rotary mandrel and beneath the stationary stud, and a handle and devices connected therewith for engaging the shank adjacent to the setting and imparting a preliminary bend, substantially as set forth.

3. The combination with a standard, of a stationary stud connected thereto and divided lengthwise into several portions of different diameters, a rotary mandrel passing through said standard and located beneath the stationary stud and provided with a handle for turning the same, and pins or equivalent devices of gradually increasing size secured to said rotary mandrel, substantially as and for the purposes set forth.

4. The combination with a standard, a stationary stud and a rotary mandrel, of the bar *e* adapted to enter and move in the standard, the handle *e'* and the projecting jaw *f*, substantially as and for the purposes set forth.

5. The combination with the standard A, of the stationary stud *a* connected thereto and

divided lengthwise into several portions of
different diameters diminishing toward the
extreme end, the rotary mandrel *b* and a han-
dle *b'* for operating the same, pins in said
5 mandrel of increasing diameter and set at the
approximate centers of the several portions
of the stationary stud for engaging the set-
ting of the ring blank, and a catch *c* upon one
side of the mandrel adapted to engage one or

more notches *c'* in the rotary mandrel, sub- io
stantially as and for the purposes set forth.

Signed by me this 13th day of December,
A. D. 1892.

ALONZO LAMBERT,

Witnesses:

GEO. T. PINCKNEY,
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