

(No Model.)

C. R. SMITH.

ROLL FOR ORNAMENTING RING STOCK.

No. 433,050.

Patented July 29, 1890.

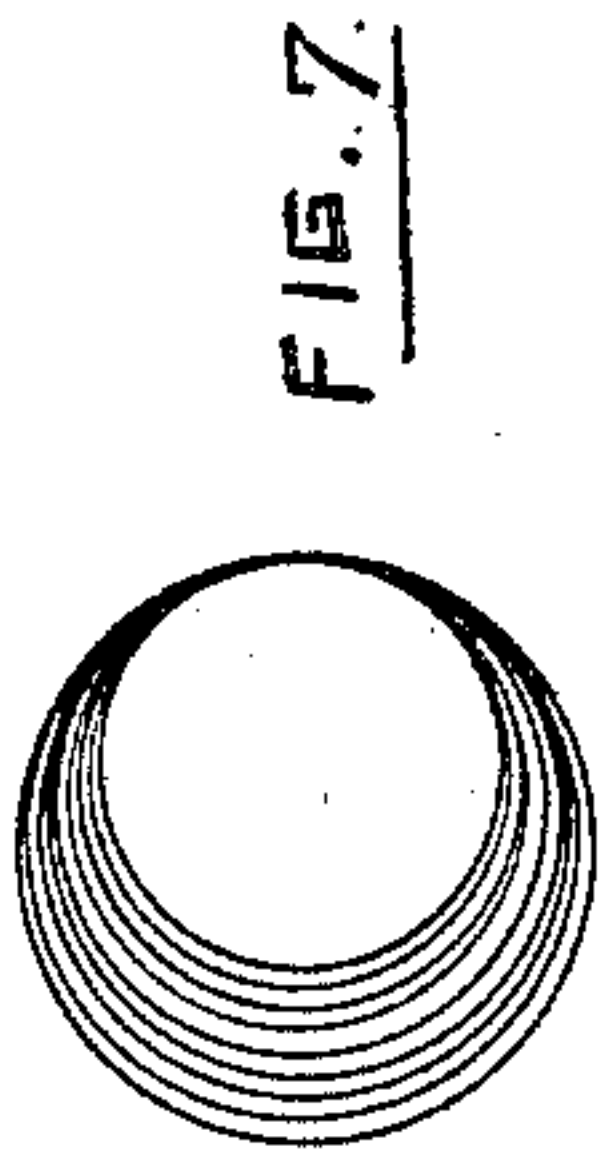
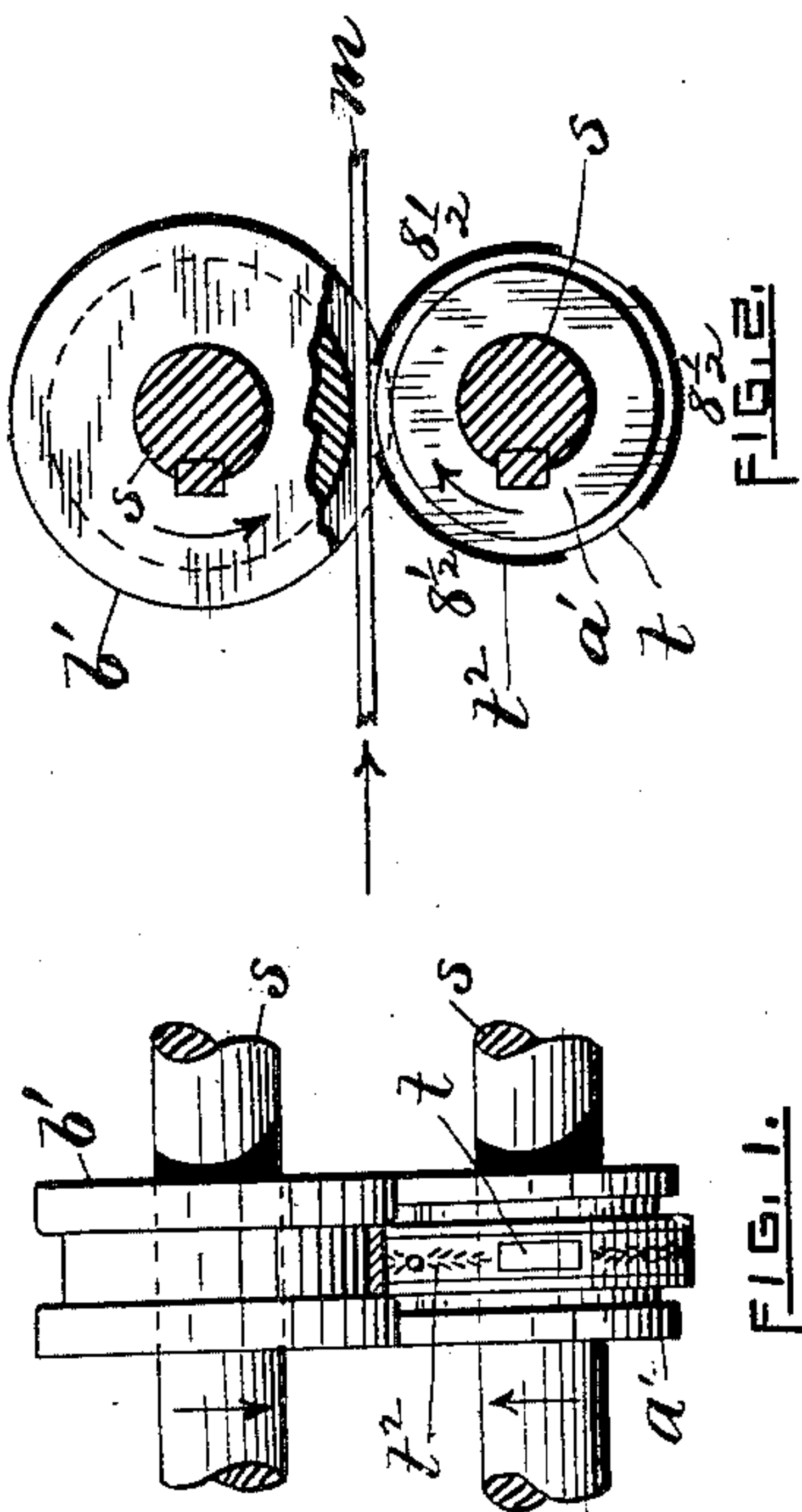
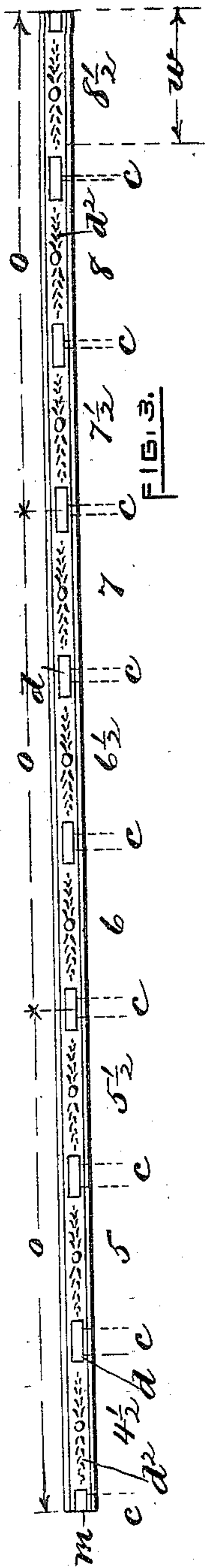


FIG. 3.

FIG. 1.

FIG. 7.

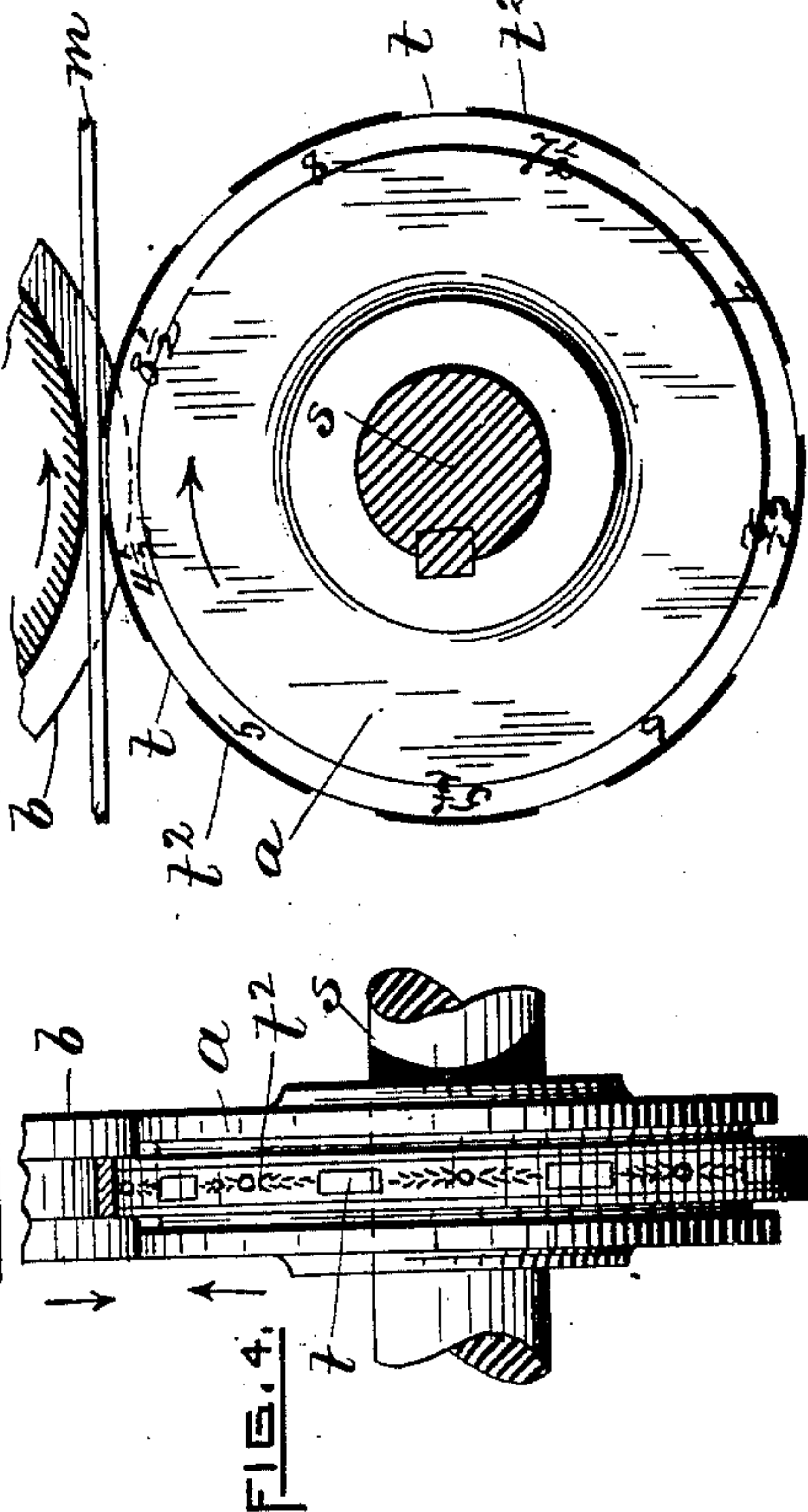
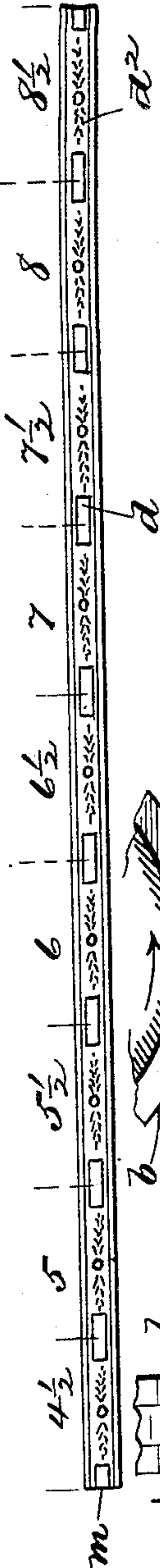


FIG. 4.

FIG. 5.

WITNESSES.

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ROLL FOR ORNAMENTING RING-STOCK.

SPECIFICATION forming part of Letters Patent No. 433,050, dated July 29, 1890.

Application filed May 26, 1890. Serial No. 353,199. (No model.)

To all whom it may concern:

Be it known that I, CHARLES R. SMITH, a citizen of the United States, residing at Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Rolls for Ornamenting Ring-Wire; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as 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 mechanism for ornamenting wire, but more especially plated or gold wire used by manufacturers of finger-rings. It has heretofore been the usual practice, so far as I am aware, to pass the wire through suitably-driven rolls, one of which has engraved on its periphery or face a series of suitable designs or figures which are repeated at regular or uniform distances round its circumference. Such engraved rolls are generally of small diameter, the circumference being equal to a length of wire which, when severed, rolled, and united, would make three rings just alike in size. In order to produce stock, say, for nine rings, three revolutions of the roll would be required. It is common, however, to first cut the plain wire to lengths of several feet. Such wire, after passing through the rolls just described, would present an engraved or ornamented surface having the figure or design repeated at regular intervals throughout its length. One objection to such former method of preparing ring-wire is that a great percentage (at least ten per cent.) of waste stock is produced. This will be apparent when it is understood that practically some nine regular or standard sizes of rings are generally kept in stock. Additional sizes than these are of course made, (larger or smaller,) but are, as a rule, made only "to order." Now the nine sizes vary by one-half numbers from $4\frac{1}{2}$ to $8\frac{1}{2}$, the latter size being largest, which also corresponds with the size engraved upon the roll. Consequently the entire length of wire is apparently figured or adapted for No. $8\frac{1}{2}$ rings only. The entire piece of wire is next cut up into

equal lengths, or No. $8\frac{1}{2}$ sizes. I would state here that usually the engraved figure or design is a "pattern," as it is termed, a portion of it being smooth or plain and forming a "table" on which letters, &c., may be subsequently cut by the engraver, as desired. Practically when the piece is bent to form the abutting ends or joint will be at the center of the table. From this end it will be seen that to produce a small-sized ring—say No. $4\frac{1}{2}$ —a considerable portion of the wire must be cut from each end of the (No. $8\frac{1}{2}$) piece in order to get it to the proper length, the table being correspondingly shortened. Should it be necessary that this portion or face of the ring be longer, it can be extended only by the aid of the engraver's tools.

The object of my present invention is to so prepare and produce ring-stock that the great loss or waste above referred to is entirely overcome or dispensed with. To that end the engraved design or pattern formed on the circumference of the suitably mounted and operated roll is repeated in a gradually-varying ratio—that is to say, assuming that the distance round the roll corresponds with the said nine finished sizes of rings, one revolution of the roll will ornament an amount of wire equal to nine rings of different sizes; or, in other words, a piece of wire, after passing once through the rolls and having then a length just equal to the circumference of the figured roll, can be cut into nine shorter pieces having unequal lengths without appreciable waste of wire, the said nine short pieces when properly bent and jointed producing a corresponding number of rings of different sizes.

In the appended sheet of drawings, Figure 1 represents a side elevation of a pair of ring-rolls as ordinarily constructed and arranged. Fig. 2 is an end view of the same. Fig. 3 represents a piece of ornamental wire having a length equal to three times the circumference of the figured roll, or a length sufficient to produce nine rings. Fig. 4 is a side view of my improved roll. Fig. 5 is an end view thereof. Fig. 6 represents a piece of ornamented wire having a length equal to the circumference of the rolls, or a length just sufficient or equal when severed to produce nine rings having

different sizes; and Fig. 7 is a diagram, enlarged, illustrating variations in the diameters or sizes of finger-rings.

Referring again to the drawings, a' and b' designate a common form and arrangement of ring-rolls. The engraved roll a' has a circumference practically equal to a length of wire required to make three of the larger size, or No. $8\frac{1}{2}$ rings. The intermediate portion of the roll's face has a pattern or figure² engraved thereon, three times repeated, alternating with plain or unengraved parts t . (See Figs. 1 and 2.) The roll is secured to an arbor or shaft s , adapted to be mounted and driven as common. b' indicates the plain or back roll, adapted to be similarly mounted and driven. As drawn, the engraved roll is at the bottom; the other roll being above it. The arrangement of the rolls can, however, be reversed with equally good results. The rolls are separated sufficiently to receive between them a piece of plain wire m , being as drawn rectangular in cross-section. Now upon revolving the rolls the engraved figure or ornamentation of the roll a' is transferred or impressed into the adjacent face or surface of the wire, each revolution being indicated by o , Fig. 3, the piece of wire represented in said figure being substantially equal to that produced by three revolutions of the roll a' , thereby adapting the piece of wire to be cut into nine equal lengths to produce without waste of stock a similar number of No. $8\frac{1}{2}$ rings. Practically now, in order to make smaller rings, the ends of the No. $8\frac{1}{2}$ pieces must be cut off corresponding to the size or length required.

c , Fig. 3, indicates the amount of waste wire thus cut off, the amount gradually increasing as the numbers decrease; and, as indicated, the total waste, in case all the nine sizes of rings be produced from the piece, being indicated by w at the right of said figure, the same being nearly ten per cent. of the whole. The pattern or engraved portions d^2 , as well as the plain or table portions d , are alike and alternate throughout the length of wire, Fig. 3, so that to produce a small-sized ring the table can be increased or extended only by the aid of the engraver, because the removed portion c obviously reduces the length of the table. I would state that practically it is found that the wire is elongated somewhat during its passage through the rolls, the amount being equivalent, say, to the difference in length between two or three numbers or sizes. This difference is usually

provided for by making the rolls correspondingly smaller in diameter.

My improved roll a , for ornamenting ring wire or stock, is represented in Figs. 4 and 5. The circumference of the roll I preferably make equal to the combined length of nine rings, so that a piece of wire having been subjected to one revolution of the rolls will have been properly ornamented or figured, as in Fig. 6, thereby adapting the piece of wire to be cut into nine unequal lengths, which may be bent and formed without waste into a like number of rings, the sizes varying, say, from No. $4\frac{1}{2}$ to No. $8\frac{1}{2}$, as indicated in said Fig. 6. The upper roll b (partially shown) is, except in size, substantially the same as the corresponding roll b' , before described.

I would add that it is not imperative that the circumference of the roll a be equal to a length of wire required to produce a series of nine rings, as it is obvious that the roll may be made larger or smaller, as desired, although the lengths of the several engraved patterns or ornamentations engraved thereon should vary one from the other and not be alike, as is the usual practice, or as represented in Figs. 1 and 2 by a' .

I claim—

1. An engraved or figured roll of the class hereinbefore described, having its periphery provided with a series of patterns so arranged that the roll in making a revolution is adapted to impress into suitable metal or material a corresponding number of patterns having varying lengths.

2. A roll for ornamenting ring-wire, having formed on its peripheral surface a series of engraved patterns occupying arcs of varying lengths, substantially as hereinbefore described.

3. The combination, with a suitably-mounted plain or back roll, of a mounted ornamental figure or pattern embossing roll arranged in relation thereto, having said ornamentations arranged around its periphery, so as to produce in a piece of wire a corresponding series of figures or patterns occupying arcs of varying lengths, said wire being adapted to be severed into pieces of unequal length and formed into rings without waste, substantially as shown, and hereinbefore described.

In testimony whereof I have affixed my signature in presence of two witnesses.

CHARLES R. SMITH.

Witnesses:

CHARLES HANNIGAN,
GEO. H. REMINGTON.