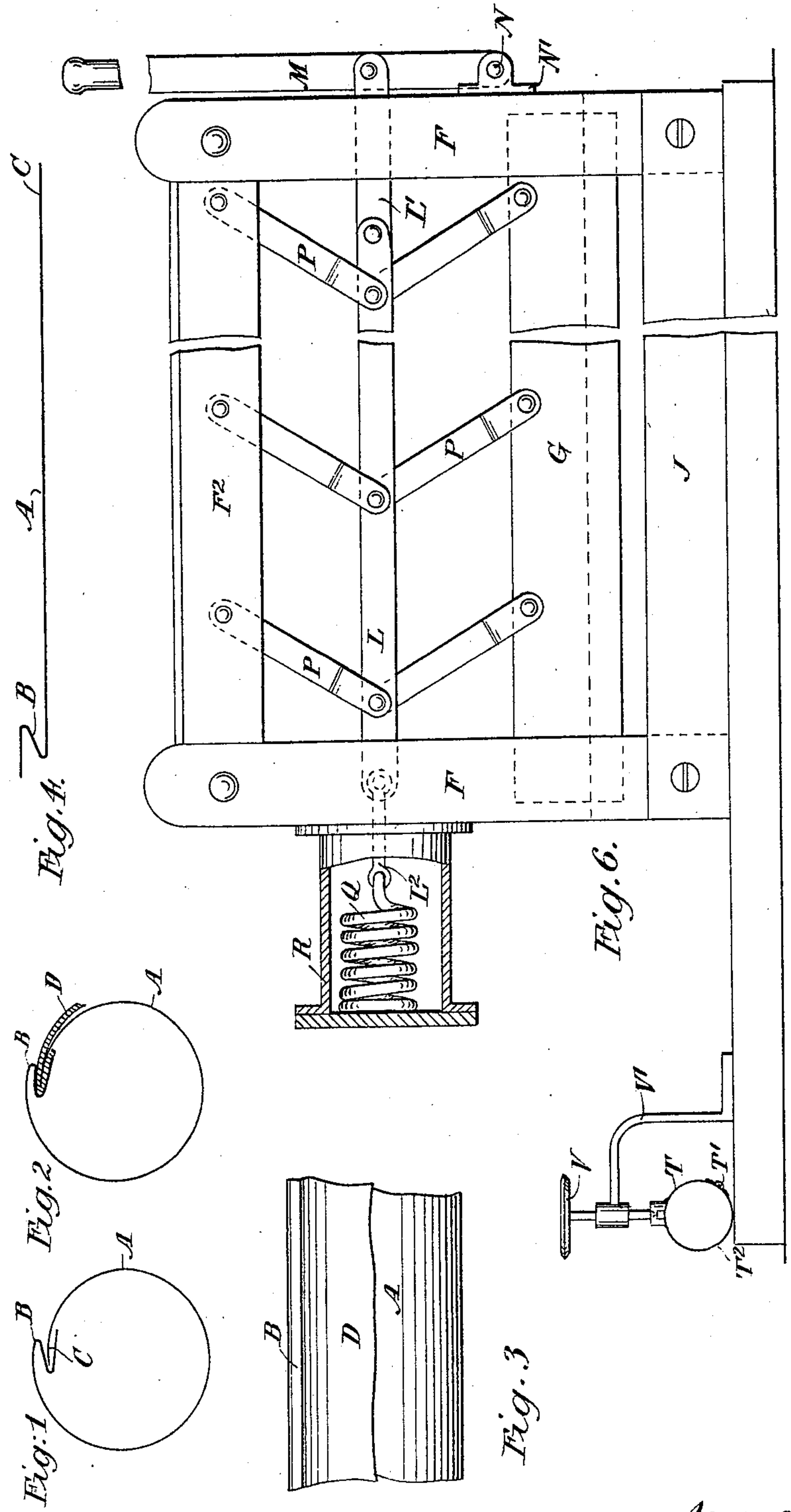


(No Model.)

E. A. POWELL.
APPARATUS FOR FORMING BLIND ROLLERS.

No. 587,490.

Patented Aug. 3, 1897.



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(No Model.)

2 Sheets—Sheet 2.

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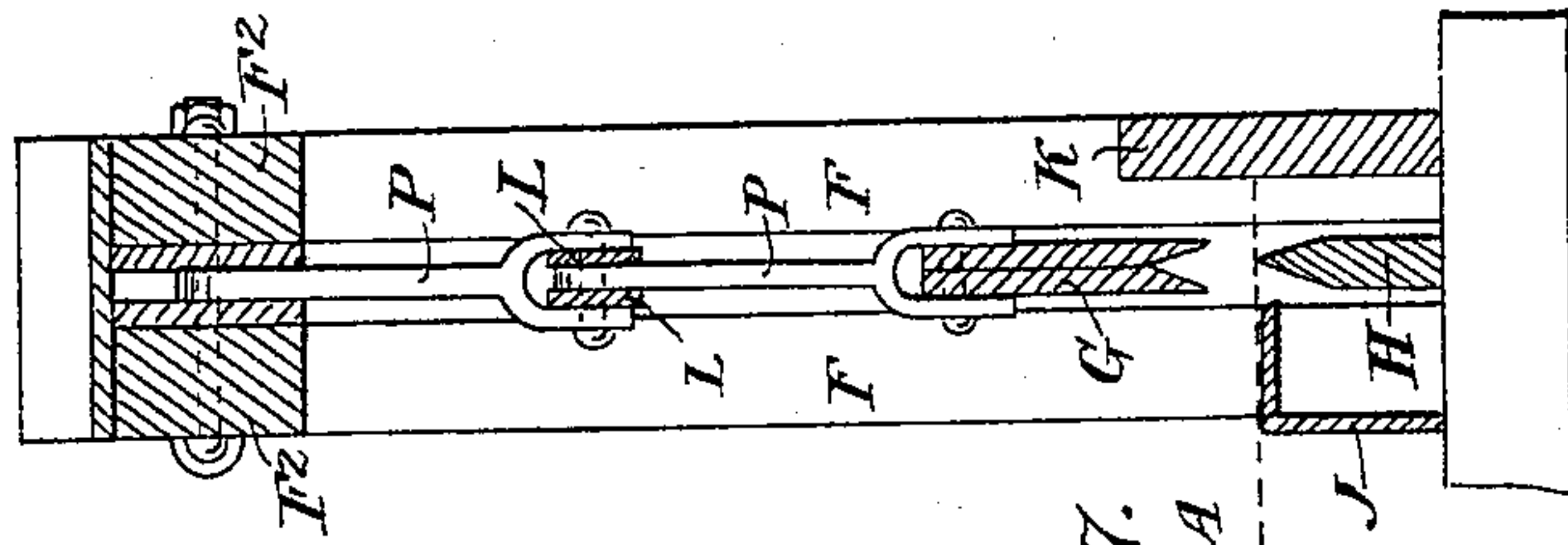


Fig. 7.

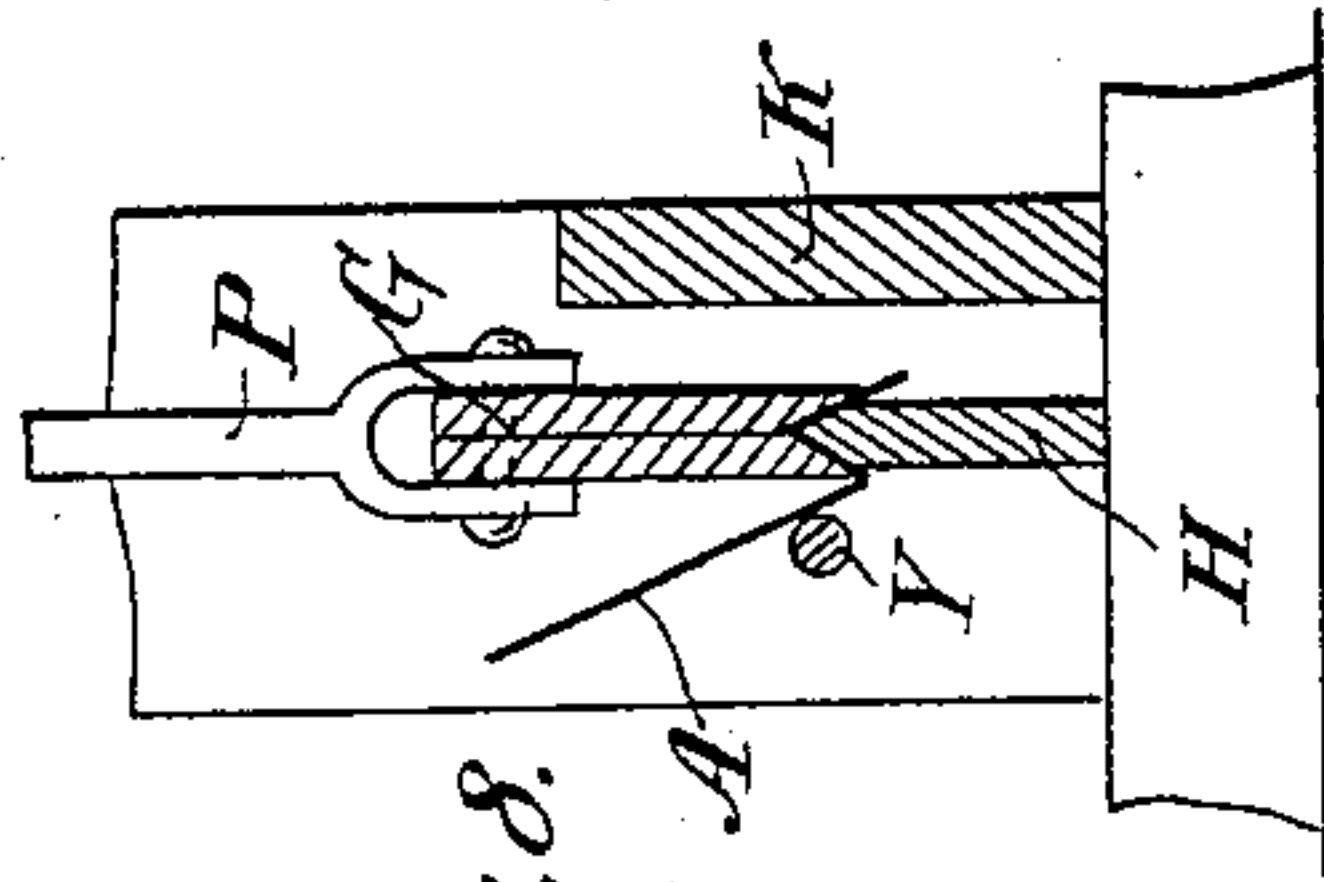


Fig. 8.

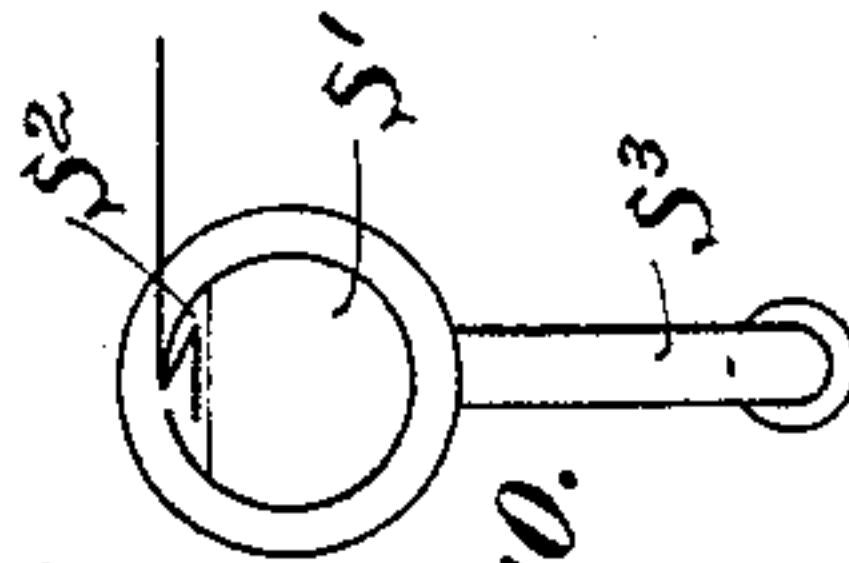


Fig. 10.

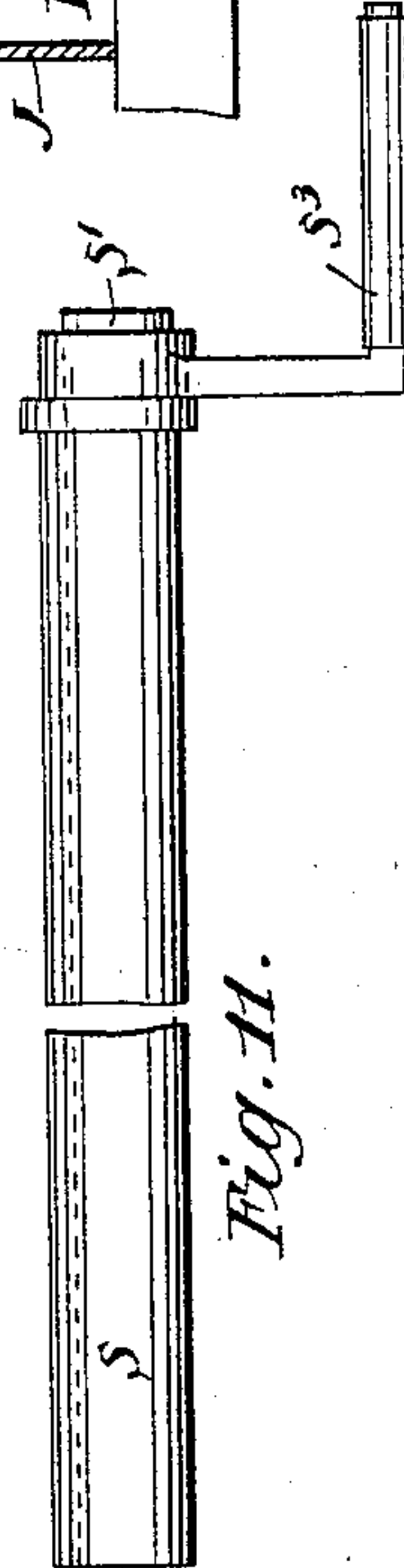


Fig. 11.

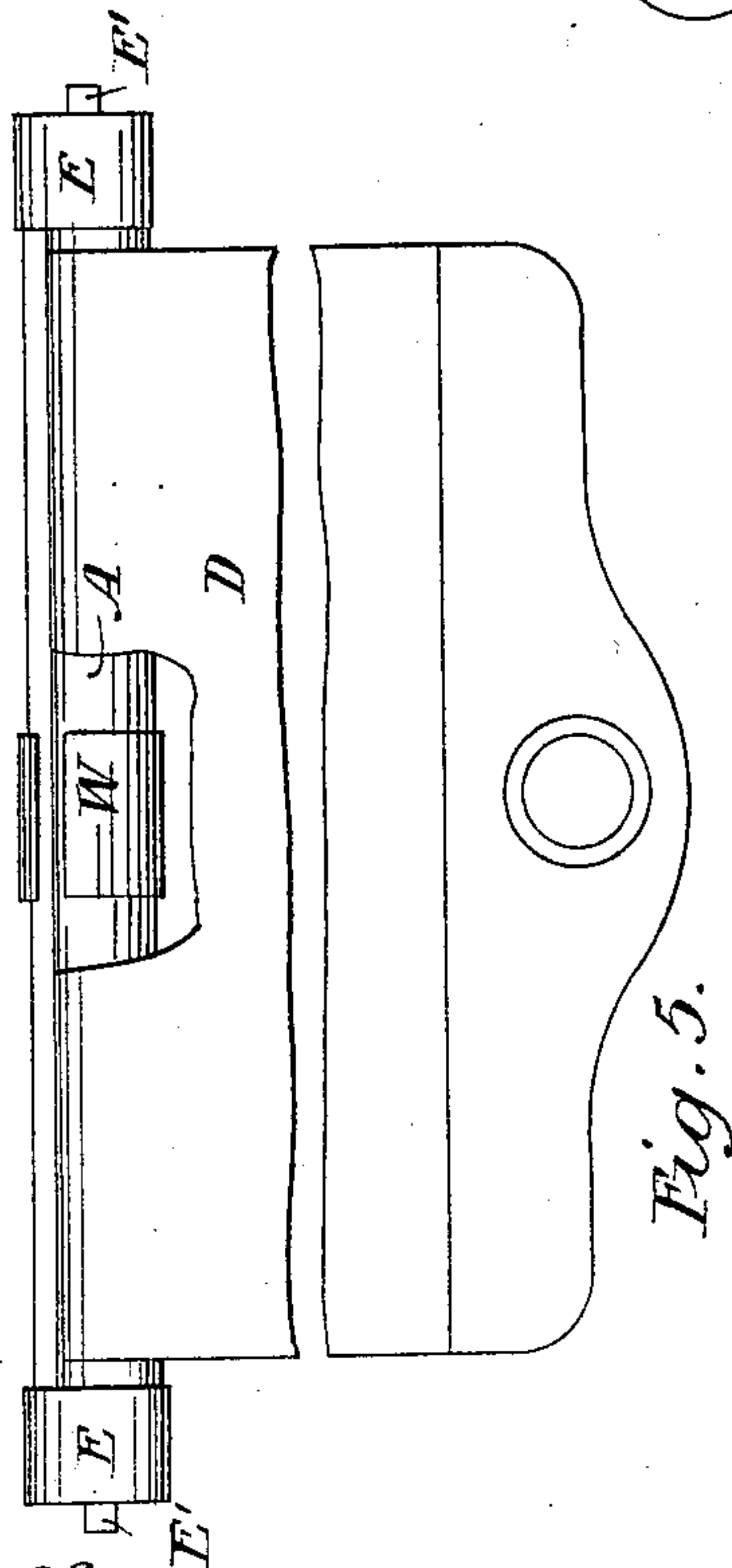


Fig. 5.

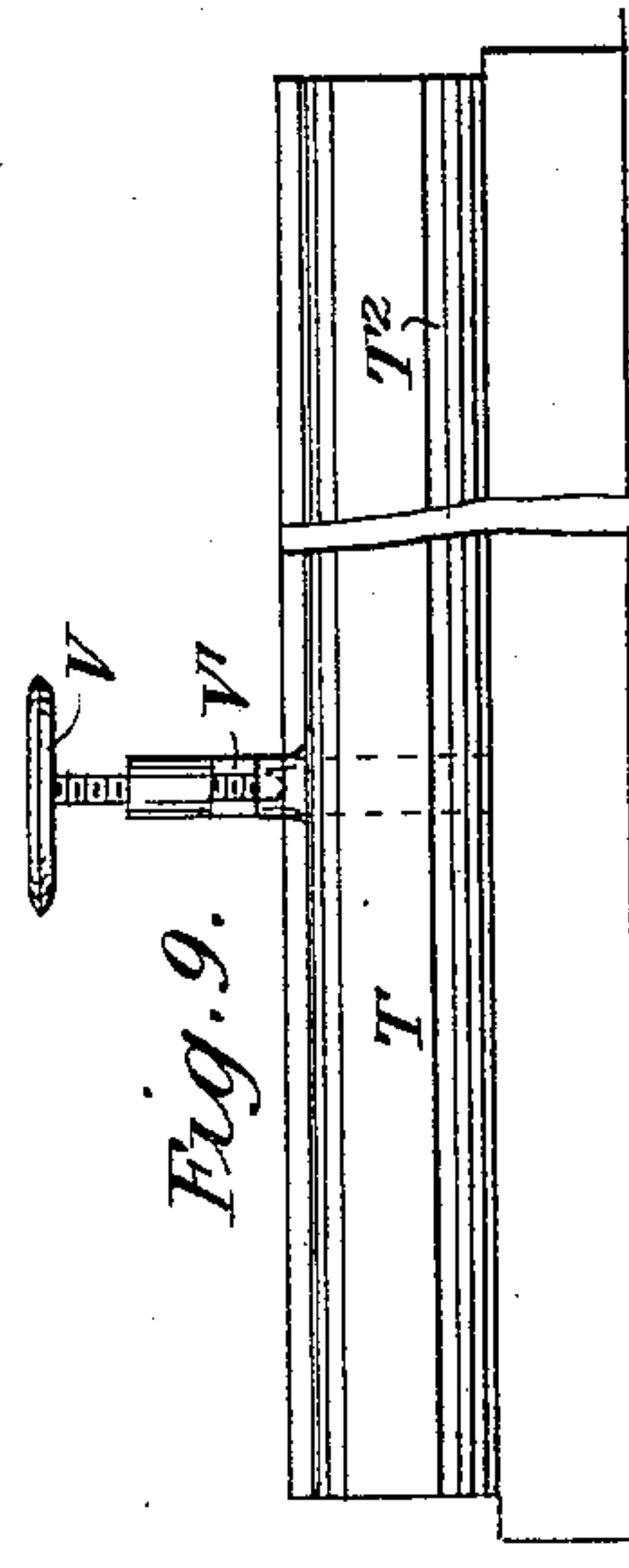


Fig. 9.

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UNITED STATES PATENT OFFICE.

EDWIN ARTHUR POWELL, OF MELBOURNE, VICTORIA.

APPARATUS FOR FORMING BLIND-ROLLERS.

SPECIFICATION forming part of Letters Patent No. 587,490, dated August 3, 1897.

Application filed August 8, 1896. Serial No. 602,140. (No model.)

To all whom it may concern:

Be it known that I, EDWIN ARTHUR POWELL, a subject of the Queen of Great Britain, and a resident of corner of Collins and William Streets, Melbourne, in the Colony of Victoria, have invented a certain new and useful Improved Apparatus for Forming Blind-Rollers, of which the following is a specification.

This invention has been devised to provide an improved apparatus for forming a roller for blinds which is constructed of metal or other material in such a manner that the blind may be secured to it by simply inserting its end in a recess formed in the roller, thus obviating the employment of stitching, which is troublesome and forms at best an insecure fastening.

In order to make my invention clear, I shall now refer to the accompanying drawings, in which—

Figure 1 shows a section of a roller constructed by apparatus formed according to my invention. Fig. 2 is a similar view with blind secured to same. Fig. 3 is an elevation of the roller. Fig. 4 shows a metal plate of which the roller is constructed with one end turned into the required form. Fig. 5 is a view to a reduced scale of the roller and blind with metal caps and an additional metal clip attached. Fig. 6 shows elevation of part of the apparatus for forming the roller. Fig. 7 is a section taken through Fig. 6. Fig. 8 is a similar section, but showing the altered position of the female-die plate and also an alternate form of a part of the apparatus. Fig. 9 is the side view of the part of the apparatus shown in Fig. 6 for turning the plate into tubular form. Figs. 10 and 11 are end and side views, respectively, of the mandrel employed in turning the plate into tubular form.

In the drawings, A, Fig. 4, shows a metal plate which has one of its edges B turned so as to form a groove or recess—that is to say, the edge is turned over at an angle, a part of the turned-over portion being then turned back somewhat in the form of a Z. This plate is turned into tubular form (see Fig. 1) and has its end C inserted into the groove or recess formed at the end B.

The material or blind D is secured to the roller by sliding its turned-over edge longitudinally into the recess, being thus arranged

to clasp the end C of the roller, which forms a bite with the recess to hold the material in place.

Caps E E, Fig. 5, are provided and fitted upon the ends of a roller to prevent same from opening. The head of each cap may have a pin E' to revolve in the ordinary brackets when raising or lowering the blind. When long lengths of roller are employed, it is preferable to provide spring-clips W. These consist of bands of spring metal which are arranged to almost encircle the roller, but leaving free the recess. By the employment of these bands any sag of the roller and tendency of the groove to open is prevented.

The roller may be used with cords in ordinary brackets or can be fitted with springs so as to be used as spring-rollers.

Referring now to Fig. 6, which shows one form of apparatus for forming the rollers, F F are uprights arranged in pairs. These are connected together by cross-beams F². G shows a plate which forms the female die, which may be made in two pieces (see Fig. 7) and the bottom of which is of an inverted-V form. This plate is arranged to be pressed upon the male-die plate H, the top of which is of inverted-V form to correspond with the bottom of the plate G. J is a horizontal guide-plate which is secured to the standards F F and is for the purpose of assisting to form the groove at the end of the plate A. K is a stop-plate secured to the standards F F to limit the position of the plate A when placed in position to be pressed. The plate G may be operated in any suitable manner to give it the required motion. In the drawings I have shown one form of mechanism for producing the motion.

L L are beams which are connected by a link L' to a lever M. This lever has its fulcrum at N, which said fulcrum consists of a through-pin set in brackets N'. The opposite ends of the beams L are connected by a rod L² to a spring Q, which is set in the box R, attached to the frame F. The beams L are connected by links P on the one side to the female-die plate G and on the other between the cross-beams F², so that a pull of the lever will draw the beam L forward in a somewhat radial manner, so acting upon the inclined links P in such a manner as to bring them

into line, at the same time forcing down the plate G. The spring R will thus be drawn into tension and will act to draw the plate G up on releasing the lever.

5 The plate A to be formed into a roller is brought into position upon the plate J and over the die-plate H, as shown in Fig. 7, the cross-plate K forming a stop. The lever is then operated to press the plate G upon the metal plate A and turn it into the required form. (See Fig. 8.)

10 As an alternative I may employ a roller in place of the plate J. Fig. 8 illustrates this, Y being the roller. In this figure the upper die-plate G is shown in its position upon the lower die-plate H, with a plate A pressed into the grooved form.

15 By means of the above-described apparatus the required form is given to the end of the plate which is to be next turned into tubular form. For this latter purpose the apparatus shown in Figs. 10 and 11 is employed.

20 S is a hollow mandrel consisting of a metal plate turned into tubular form, but with its edges apart. A block S', preferably of metal, is inserted in this tube, leaving a space S² between the block and the tube. This mandrel is provided with a handle S³, or other means may be employed for rotating it when in position in the bore, as hereinafter described. The plate A, which, as aforesaid, has had its end turned into grooved form, is now placed with such end in the recess S² of the mandrel. (See Fig. 10.) The plate A may now be turned into tubular form. This is effected by inserting the mandrel into the bore T. This bore consists of a metal plate which is turned into tubular form with its edges apart, forming a slot T², and may, if desired, be hinged at T'. This bore is slightly larger in diameter than the mandrel.

V is a screw which works in the frame V'

and is arranged to produce a pressure on the tube T. The mandrel, as aforesaid, is inserted in this bore with the projecting portion 45 of the plate passing outside same through the slot formed by the adjacent edges of the bore. A turn is then given to the mandrel and the required pressure applied, so as to turn the plate A into the tubular form. The pressure 50 upon the bore may be applied in any convenient manner other than that shown. The mandrel having been turned is now withdrawn from the bore (the pressure having been first released) with the now tubular plate 55 A around it. The tubular plate or roller is withdrawn from the mandrel and its plain end, which will lie outside of the end B, is placed into the groove, as shown in Fig. 1, thus forming the complete roller. 60

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is—

1. In an apparatus for forming blind-roll- 65 ers, the combination with a mandrel having a slot for the reception of the edge of the sheet-metal plate, of a bore consisting of a tubular plate formed in two sections hinged together, said plate having its edges apart, and a screw 70 threaded into a stationary nut and bearing against one of the hinged sections of the bore.

2. In an apparatus for forming blind-roll- 75 ers, the combination with the tubular bore, of a mandrel consisting of a tubular plate having its adjacent edges forming a slot, a core inserted in said mandrel and cut away so as to leave a recess S², substantially as set forth.

Signed this 30th day of June, 1896.

EDWIN ARTHUR POWELL.

Witnesses:

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A. SICK.