

No. 707,005.

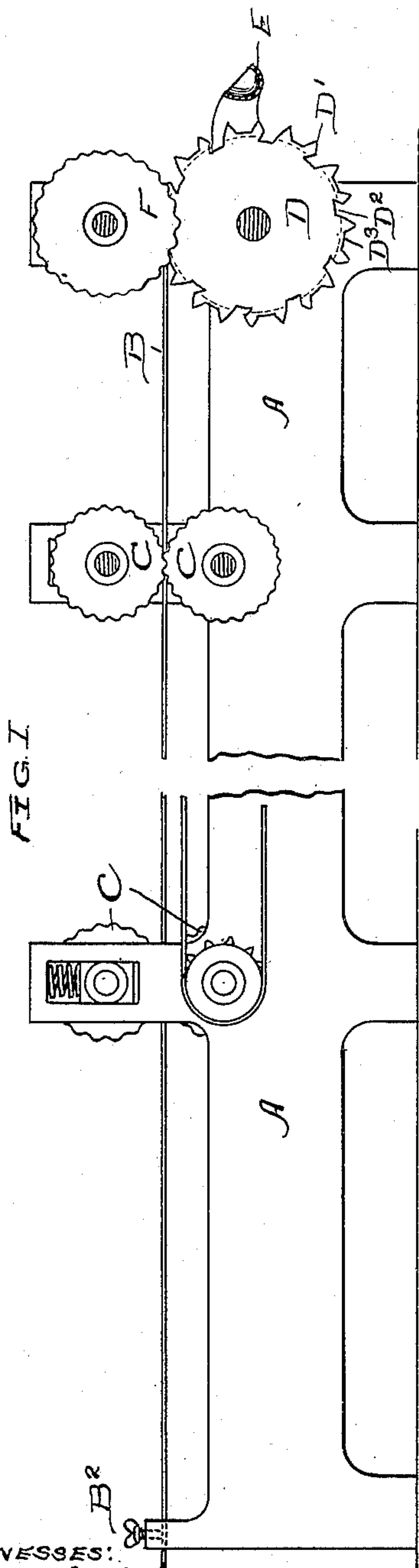
Patented Aug. 12, 1902.

M. H. POWELL.

MACHINE FOR INSERTING TAPE INTO EDGING.

(Application filed Aug. 17, 1896. Renewed June 12, 1902.)

(No Model.)



WITNESSES:

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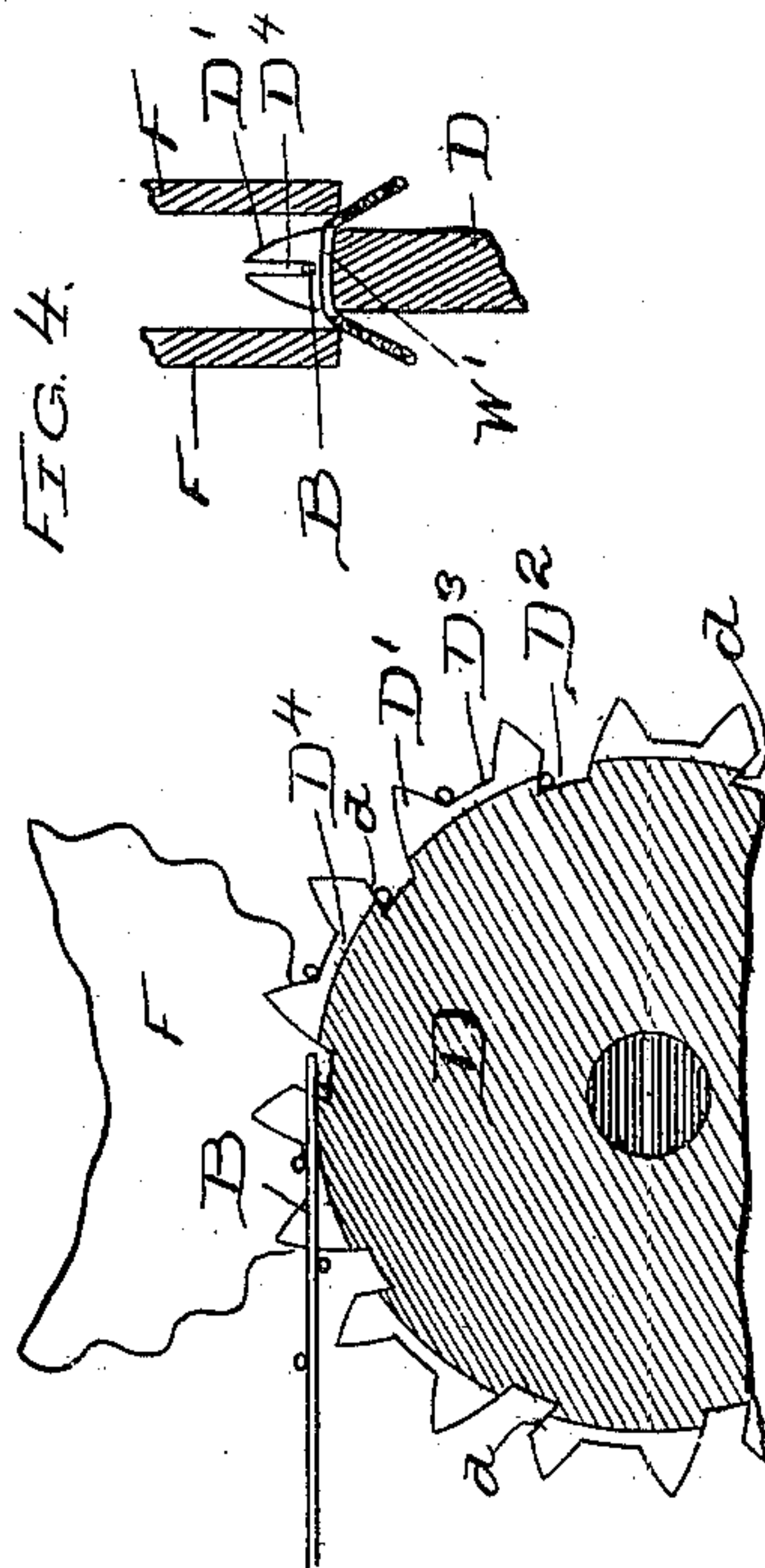
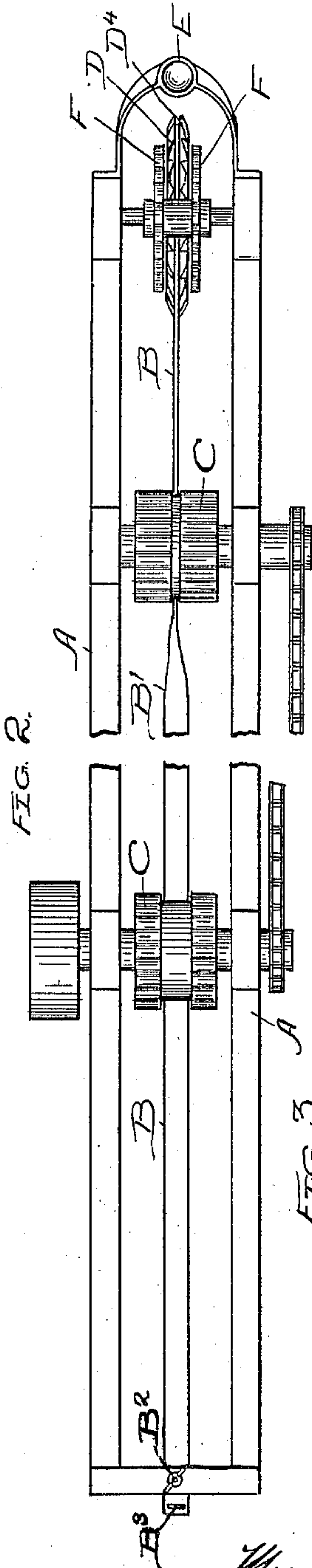
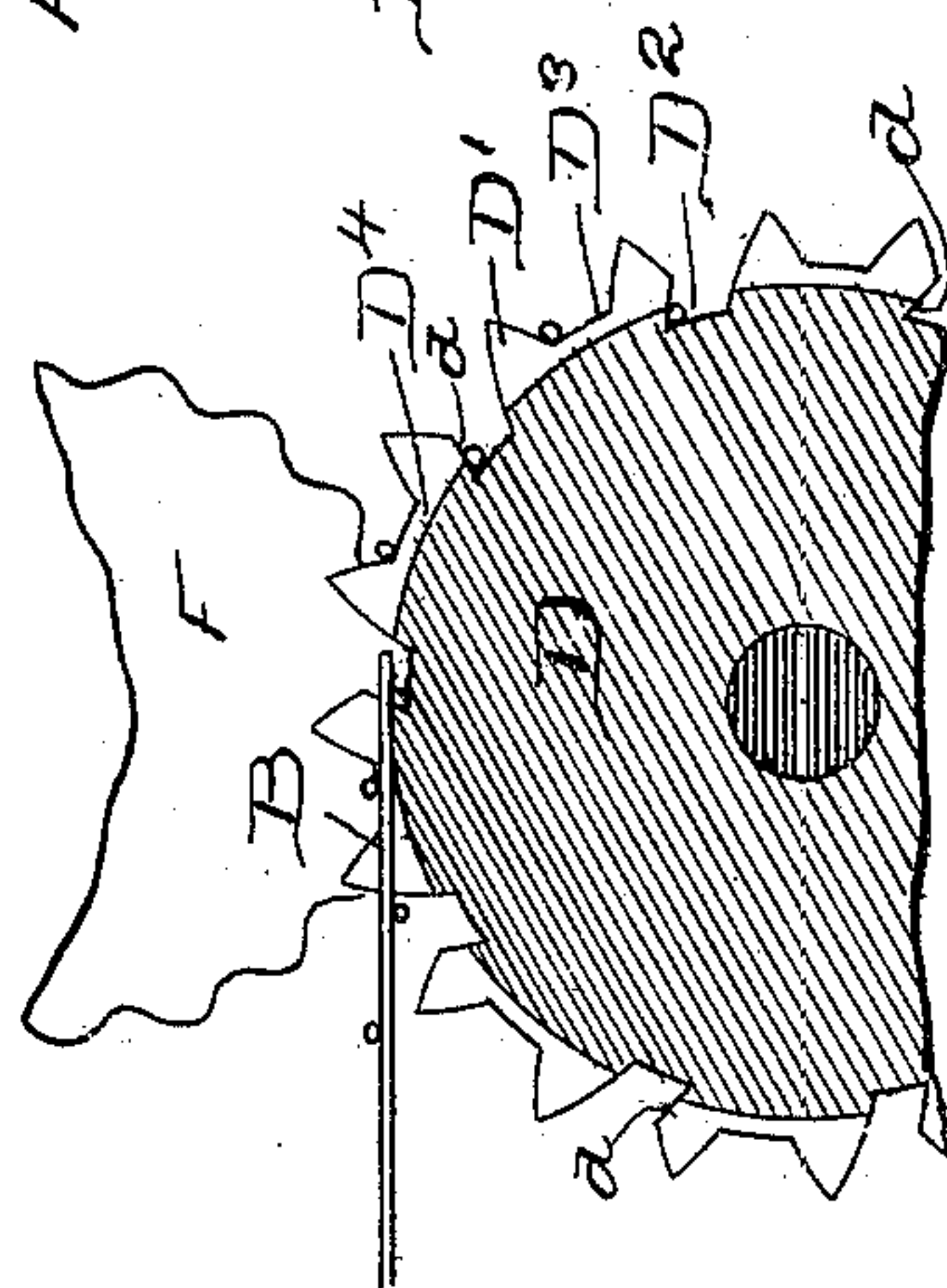


FIG. 4.



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UNITED STATES PATENT OFFICE.

MYRON H. POWELL, OF CHICAGO, ILLINOIS, ASSIGNOR, BY MESNE ASSIGNMENTS, TO HIMSELF, UNION SPECIAL SEWING MACHINE COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS, AND EDWARD P. HATCH, OF LAGRANGE, ILLINOIS.

MACHINE FOR INSERTING TAPE INTO EDGING.

SPECIFICATION forming part of Letters Patent No. 707,005, dated August 12, 1902.

Application filed August 17, 1896. Renewed June 12, 1902. Serial No. 111,371. (No model.)

To all whom it may concern:

Be it known that I, MYRON H. POWELL, a citizen of the United States, residing in Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Machines for Preparing Edging for Reception of Tape, of which the following is a specification.

My invention relates to a machine for automatically inserting tape into edging—such, for instance, as that used upon the neck and shoulders of women's underwear. This edging is of two kinds, "cross-bar" and "pillar-bar," and the tape is woven in and out alternately above and below the cross or pillar bars for purposes of ornamentation and also to provide, by leaving a bow at the ends, for drawing up the neck or armholes of the garment when they become stretched. This work of taping meshed edging has generally heretofore been done by hand, the operator using a bodkin; but even with a most skilled operator the work is necessarily slow, and as so much handwork is necessary it adds to the cost of the garment. Prior to my invention, so far as I am aware, a machine for automatically inserting tape in meshed edging has been devised; but in the practical working of said machine I have found certain improvements desirable, and the present invention is a development of said machine, and consists in certain improvements whereby a simpler and more effective machine is produced for automatically inserting tape in meshed edging.

To carry out the object above referred to, the present invention consists primarily in a certain improved construction whereby the cross-bars or pillars of the edging are automatically positioned alternately upon opposite sides of the forward end of the needle-point. Again, the invention comprises certain improvements in construction of the machine as a whole, and finally in various details of construction hereinafter described, and referred to in the appended claims.

In the accompanying drawings, which illustrate my invention, Figure 1 is a side elevation, partly in section, of my improved machine. Fig. 2 is a plan view thereof. Fig. 3

is a vertical section, enlarged, of the regulating or supporting wheel; and Fig. 4 is a partial cross-section of said wheel.

In said drawings, A represents a suitable framework constructed to support the several parts of my improved tape-inserting machine.

B is the edging-holder or bodkin upon which the edging is threaded. It is preferably stationarily supported and should be either attached to the end of the tape or be otherwise adapted to conduct the tape through the meshes of the edging in the manner in which it is threaded through them. This edging-holder or bodkin should have considerable length to enable it to hold a large quantity of edging, and back of its point is preferably widened so as just about to fit the meshes of the edging between the sides thereof, as shown at B'. It should also be held against longitudinal movement in the machine while being threaded in some suitable way—as, for instance, by a set-screw B²—and may be provided with an eye B³ for the tape. The edging is fed along the holder or bodkin by a number of fluted rollers C, grooved to allow of the passage of the edging-holder B and constructed to bear upon the edges of the material rather than upon the central plane thereof.

D represents the regulating or supporting wheel for the meshed edging, journaled in the machine-frame and preferably rotated by the forward movement of the edging. It is provided with beveled teeth D', which are adapted to open or spread the meshes, and the teeth are spaced around the wheel to correspond to the spacing of the meshes in the fabric, and the latter is drawn to the same tension as is put upon it in passing through the machine—that is to say, the distance from center to center of two adjacent teeth should about correspond to the distance from center to center of two adjacent meshes, so that the teeth will be sure to enter the meshes in regular order and distend them, if that be necessary. This wheel also regulates the positions of the cross bars or threads uniting the two sides of the edging, which is done by cutting the spaces between the teeth alternately to different depths, one half the spaces

D² being cut deep and the other half D³ being left shallow, the deep and shallow spaces being arranged relatively in alternate order, as shown. As the edging passes onto the wheel
 5 the connecting bars or threads W' drop to the bottom of the interspaces D² D³, so that their relative positions will be regulated by the depth of the spaces. As herein shown, rollers or guide-wheels F, one at each side of the
 10 regulating or supporting wheel, may be used to force the outer edges of the material down, as seen in Fig. 4, thereby insuring the descent of the connecting-bars W' to correct positions at the bottoms of the wheel-spaces.
 15 These guide-wheels F are not in any sense essential, however, for the tension ordinarily put upon the edging is ample to carry the cross-bars to the bottom of the interspaces in the regulating or supporting wheel. Said
 20 wheel is grooved peripherally, as at D⁴, the bottom of the groove being located midway between the planes of the deep and shallow toothed interspaces, as seen at Fig. 3. The point or forward end of the edging-holder
 25 rides in this groove, and consequently, by reason of the construction of the regulating-wheel, the cross-bars of the edging are automatically positioned alternately upon opposite sides of the plane of the forward end of
 30 the edging-holder. The deep spaces D² in the wheel are preferably undercut, as shown at d, so that the tension upon the edging will draw the cross-bars or pillars into such undercut, and thus insure greater certainty in
 35 carrying these cross-bars below the point of the edging-holder.

E represents a stationary spreading device located in front of the regulating or supporting wheel. As herein shown, it is a round
 40 knob, against which the edging is held by the operator as it is fed to the wheel and which acts to open or spread the edging and bring it into proper condition to engage the teeth of the wheel.

45 Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination with an edging-holder, of the supporting-wheel and means located on
 50 the supporting-wheel for positioning the cross or connecting bars forming the meshes of the edging alternately at opposite sides of the forward end of the edging-holder, and means for threading the edging onto the holder, substantially as described.
 55

2. In a machine of the kind described, the combination with the holder upon which the edging is to be strung, of a wheel having teeth

adapted to enter the meshes of the edging, said teeth being constructed to position the
 60 cross-bars of said edging alternately at opposite sides of the forward end of the holder, substantially as described.

3. In a machine of the character described, the combination with the edging-holder, a rotatable supporting device for the edging arranged adjacent the forward end of the holder, said device being provided with means for
 65 positioning the cross-bars of the edging upon opposite sides of the forward end of the holder; substantially as described. 70

4. In a machine of the character described, the combination with the edging-holder, of a supporting-wheel for the meshed edging provided with teeth and having a series of alternately deep and shallow spaces between the
 75 teeth whereby the cross or connecting bars of the edging are alternately positioned upon opposite sides of the forward end of the edging-holder and means for threading the edging
 80 onto the holder; substantially as described.

5. In a machine of the character described, the combination with the edging-holder of a regulating-wheel having a peripheral groove in which the point of the holder may ride, a
 85 series of teeth spaced to conform to the meshes or openings in the edging, and a series of alternately deep and shallow spaces between the teeth whereby the cross or connecting bars of the edging are alternately positioned
 90 upon opposite sides of the forward end of the edging-holder, substantially as described.

6. In a machine of the character described, the combination with the edging-holder, of a supporting-wheel having a series of teeth
 95 spaced to conform to the meshes or openings in the edging, and a series of alternately deep and shallow spaces between the teeth whereby the cross or connecting bars of the edging are alternately positioned upon opposite sides
 100 of the forward end of the edging-holder, the deep spaces being provided with an undercut; substantially as described.

7. In a machine for threading edging, a bodkin or holder, a supporting device for the
 105 meshed edging, means for positioning the edging upon opposite sides of the plane of the bodkin, and a spreading device adapted to engage the meshes of the edging and exert the proper tension upon said edging; substantially as described. 110

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Witnesses:

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