No. 819,710. PATENTED MAY 8, 1906.

W. M. BARNES.

DEVICE FOR ADJUSTING THE TENSION OF TRAVELING CONVEYING BELTS.

APPLICATION FILED APR. 14, 1902.

2 SHEETS—SHEET 1.

FIG. 1.

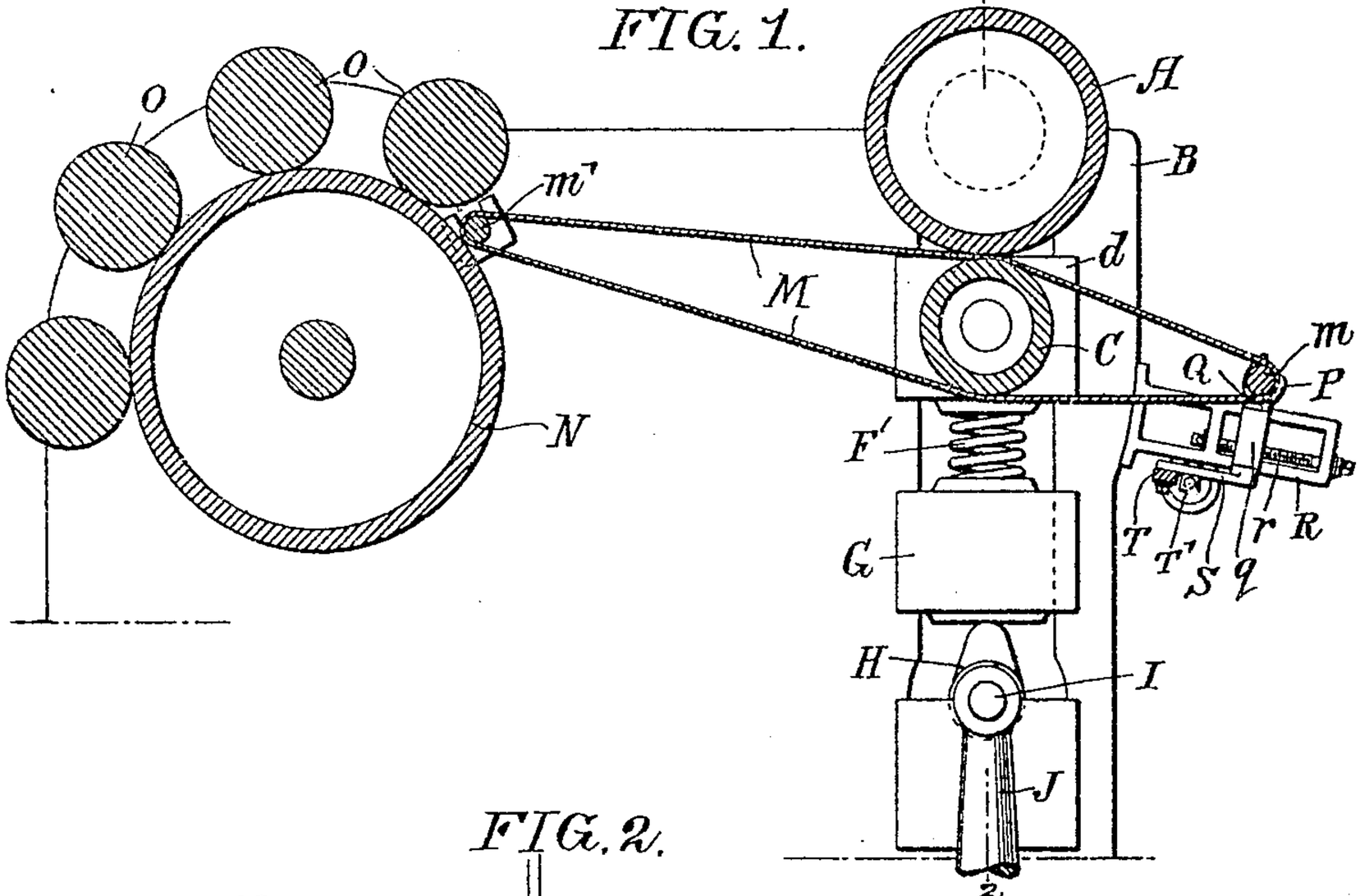
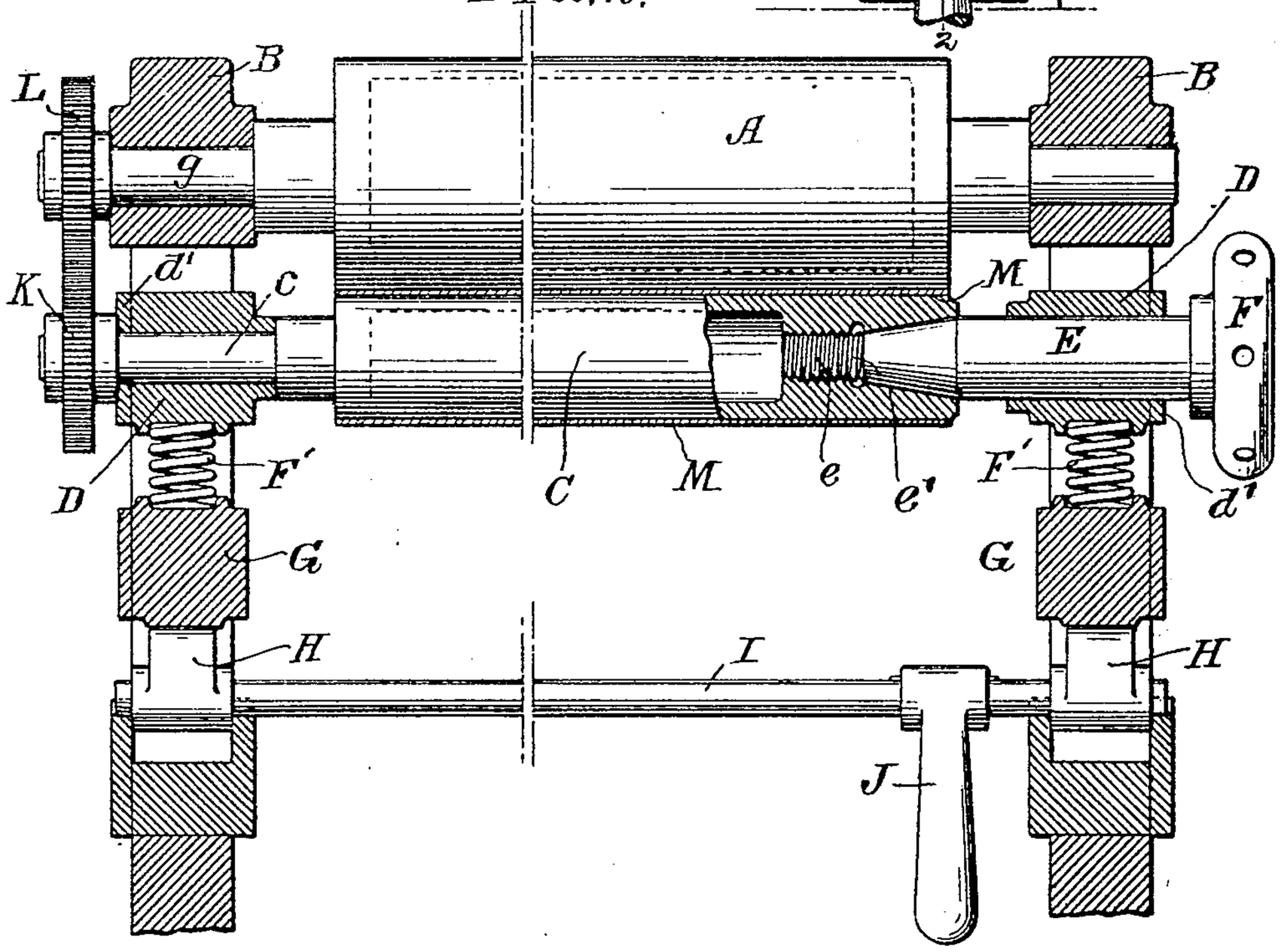


FIG. 2.



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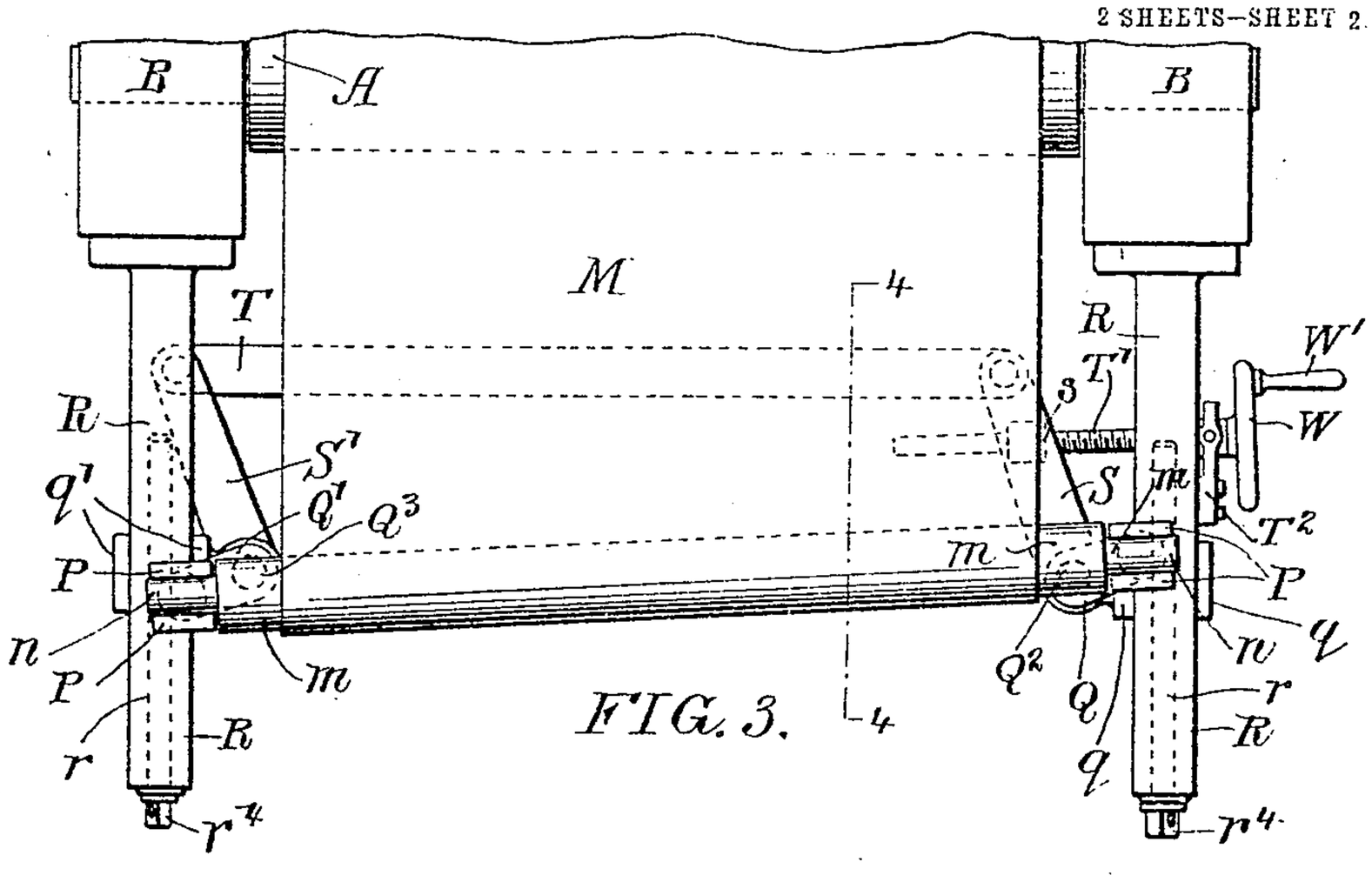

FIG. 3.

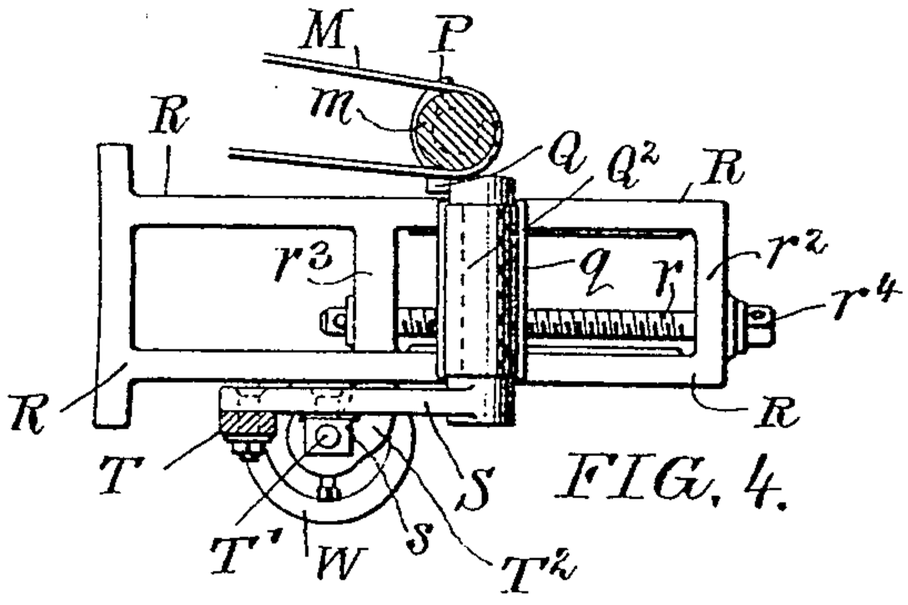

FIG. 4.

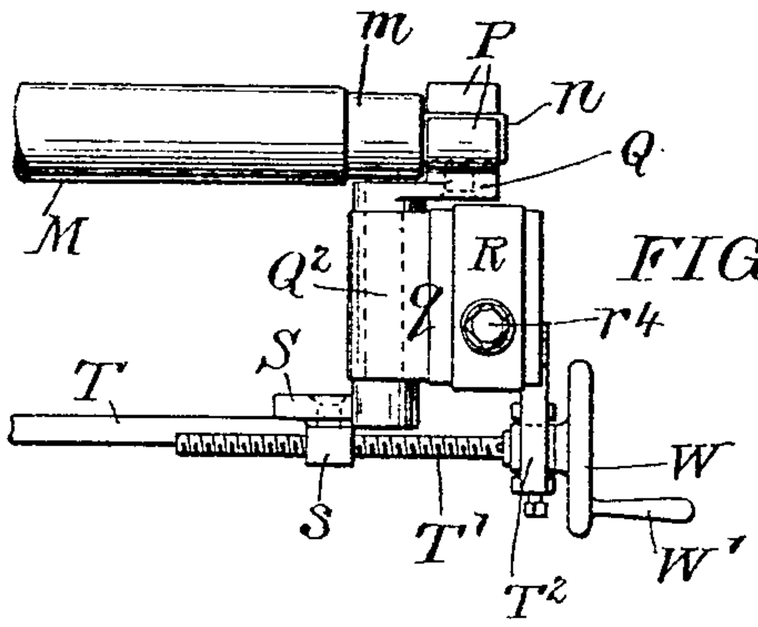

FIG. 5

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UNITED STATES PATENT OFFICE.

WILLIAM M. BARNES, OF PHILADELPHIA, PENNSYLVANIA.

DEVICE FOR ADJUSTING THE TENSION OF TRAVELING CONVEYING-BELTS.

No. 819,710. Specification of Letters Patent. Patented May 8, 1906.

Application filed April 14, 1902. Serial No. 102,697.

To all whom it may concern:

Be it known that I, WILLIAM M. BARNES, a citizen of the United States, residing at Philadelphia, county of Philadelphia, and State of Pennsylvania, have invented a new and useful Improvement in Devices for Adjusting the Tension of Traveling Conveying-Belts, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, which form a part of this specification.

My improvements are illustrated in the accompanying drawings applied to a collar and cuff ironing machine in which the collars and cuffs to be ironed are passed between two heated rollers and then conveyed to a point where they pass around the periphery of a roller between the periphery and a series of rollers.

I will first describe my invention as embodied in the accompanying drawings and then point out the invention in the claims.

In the drawings, Figure 1 is a central section through a portion of the machine. Fig. 2 is a section on the line 2 2, Fig. 1. Fig. 3 is a plan view of the tension device for belt on enlarged scale. Fig. 4 is a section on line 4 4, Fig. 3. Fig. 5 is an end view of Fig. 4.

A is the upper front roll, heated in the ordinary manner and supported in bearings in the frame B of the machine. The lower roll C has at one end the shaft *c*, which fits and rotates in the bearing-block D. The block D is movable vertically in ways in the frame B, but is prevented from lateral movement by the flange portion *d*, Fig. 1, and a plate *d'* on the outside of the block projecting at the sides of the block similar to the flange *d*. The opposite end of the roll C has an internally-threaded portion *e*, in which works the threaded end *e'* of the supporting member or shaft E. This supporting member passes through a corresponding bearing-block D, in which it can move vertically, but is prevented from lateral movement by a corresponding flange portion *d* and plate *d'*. At the outer end of this supporting member E is the wheel F. The bearing-blocks D are supported upon springs F', secured to the blocks G, which blocks are supported by the eccentrics H, connected together by the rock-shaft I, to which is also connected the crank J. The shafts *c* and *g* of the rolls A and C, respectively, are connected together by the gears K and L. Surrounding the roll C is the endless belt or conveyer M, which passes around the guide-roller *m* in front of the rolls A and C and around the guide-roller *m'* in the rear of the rolls A and C and contiguous to the roll N, which is the ordinary roll of this class of machines and which is heated in the well-known manner of this class of machines. Around the periphery of this roll N and contacting therewith are the rolls O.

The tension and adjusting device for the conveyer to adjust the tension and position of conveyer (shown in detail, Figs. 3, 4, and 5) is as follows: The roller *m* has at each end the shaft *n*, which rests between the jaws P. These jaws P are pivotally connected, respectively, to cranks Q Q'. These cranks are connected, respectively, to shafts Q^2 Q^3. Said shafts are respectively mounted in bearings *q q'*, resting between the upper and lower portions of the frames R, secured to the machine. In each bearing *q* and *q'* is an internally-threaded aperture through which passes, respectively, threaded rods *r r*, secured at each end to cross-piece r^2 and provided with a squared end r^4. By turning these threaded rods by means of the squared ends thereof the position of the roller *m* may be varied to vary the tension of the belt. On the opposite end of the shafts Q^2 Q^3 to that of the crank Q Q' are cranks S S'. The two last-mentioned cranks S and S' are connected together by the connecting-rod T. Pivoted to the crank S is the nut *s*, through which passes a screw T', held from lateral movement by the bearing T^2 on the frame R. A hand-wheel W and crank W' on the end of the screw enables the screw to be rotated. By rotating the screw in one direction the roller is moved angularly, as shown in Fig. 3. A movement of the screw in the other direction will produce a reverse movement of the roller, and thus the angular position of the roller may be adjusted. To insert or receive an endless conveyer around the roll C, the screws *r* are turned to force the roller *m* inwardly. The crank J is turned so that the blocks G will rest upon the low portion of the eccentrics H, and thus bring the roller C out of contact with the upper roll A, and thus move it below and relieve it from the strain of the upper roll. The wheel F is then turned to unscrew the supporting member E from the roll C, which roll when free will be supported from the opposite end, and the endless conveyer may be readily passed around or removed from the roll C at this free end and the member E replaced. When it is de-

sired to again put the machine into action, the crank J is again operated to move the eccentric to the high portion, and thus lift the lower roll C and force the conveyer into contact with the upper roll. The operation of the machine may be readily understood from the drawings. The articles—say collars and cuffs—to be ironed are placed upon the conveyer M and pass between the rolls A and C and are then carried by the conveyer to the rolls N and O, between which they pass.

Having now fully described my invention, what I claim, and desire to protect by Letters Patent, is—

1. In a device for adjusting the tension of a traveling conveying-belt, the combination, with a roller and a conveying-belt engaging the same, of a bearing for each end of said roller, a crank carrying each bearing, a crank-shaft for each crank, a bearing for each shaft, a second crank on each shaft, a connecting-rod connecting the last-named crank of one crank-shaft with the corresponding crank of the other crank-shaft, a threaded nut on one of the last-named cranks, a frame, and an adjusting-screw supported on said frame and engaging said nut.

2. In a device for adjusting the tension of a traveling conveying-belt, the combination, with a roller and conveying-belt engaging the same, of a bearing for each end of said roller, a crank carrying each bearing, a crank-shaft for each crank, a bearing for each crank-shaft having a threaded orifice, a frame for each crank-shaft bearing, an adjusting-screw on each frame that engages the threaded orifice of its corresponding bearing, a second crank on each shaft, a connecting-rod connecting the last-named crank of one crank-shaft with the corresponding crank of the other crank-shaft, a threaded nut pivoted on one of the last-named cranks, and an adjusting-screw engaging said nut and supported on the corresponding frame.

3. In a device for adjusting the tension of a traveling conveying-belt, the combination, with a roller and a conveying-belt engaging the same, of a bearing for each end of said roller, a crank carrying each bearing, a crank-shaft for each crank, a bearing for each crank-shaft, a frame for each crank-shaft bearing, adjusting mechanism on each frame engaging the corresponding crank-shaft bearing, a second crank on each shaft, a connecting-rod connecting the last-named crank of one crank-shaft with the corresponding crank of the other crank-shaft, and adjusting mechanism engaging the connections between the two crank-shafts.

In testimony of which invention I have hereunto set my hand, at Philadelphia, on this 11th day of April, 1902.

WILLIAM M. BARNES.

Witnesses:
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M. M. HAMILTON.