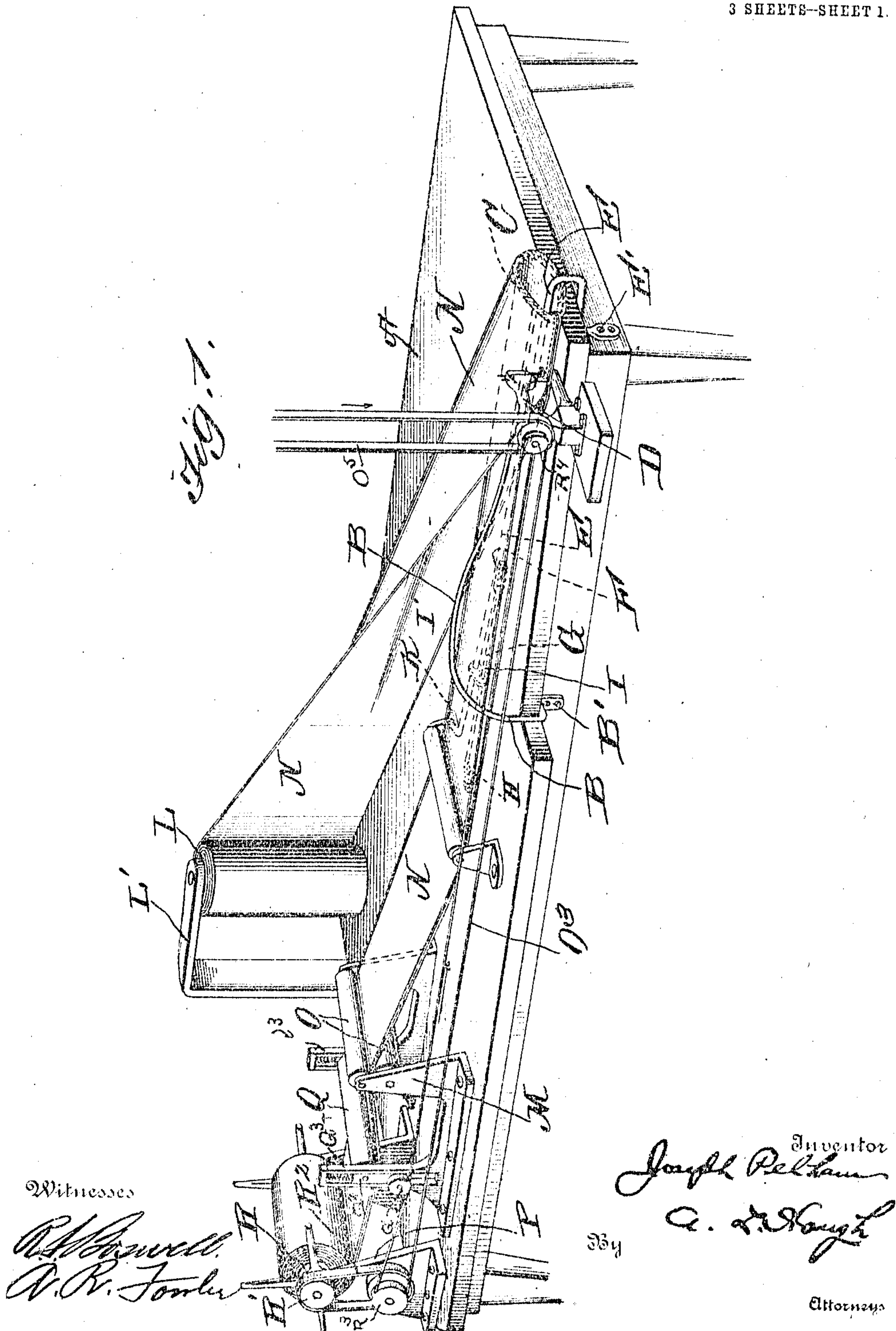


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3 SHEETS—SHEET 1.

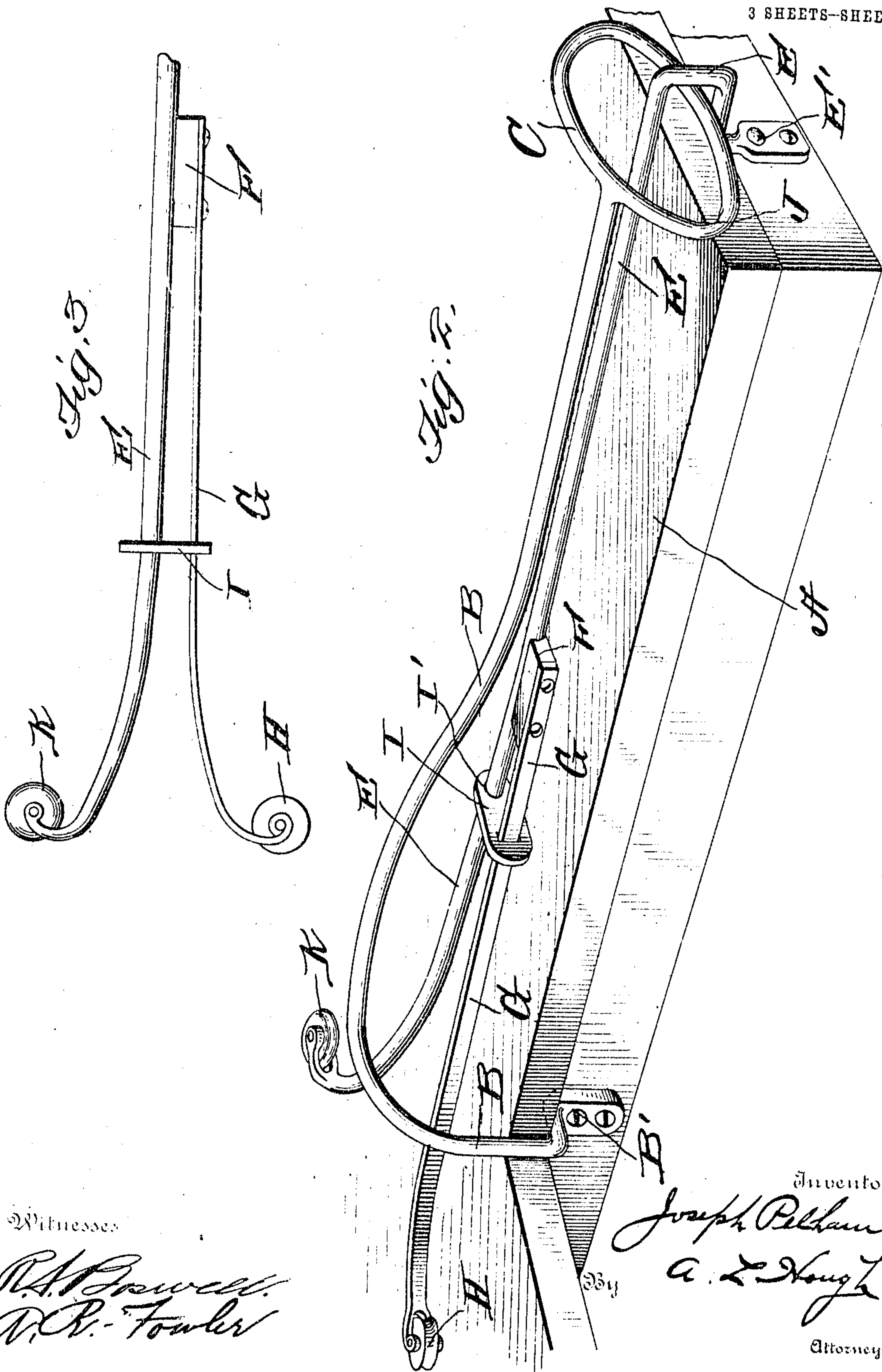


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Witnesses  
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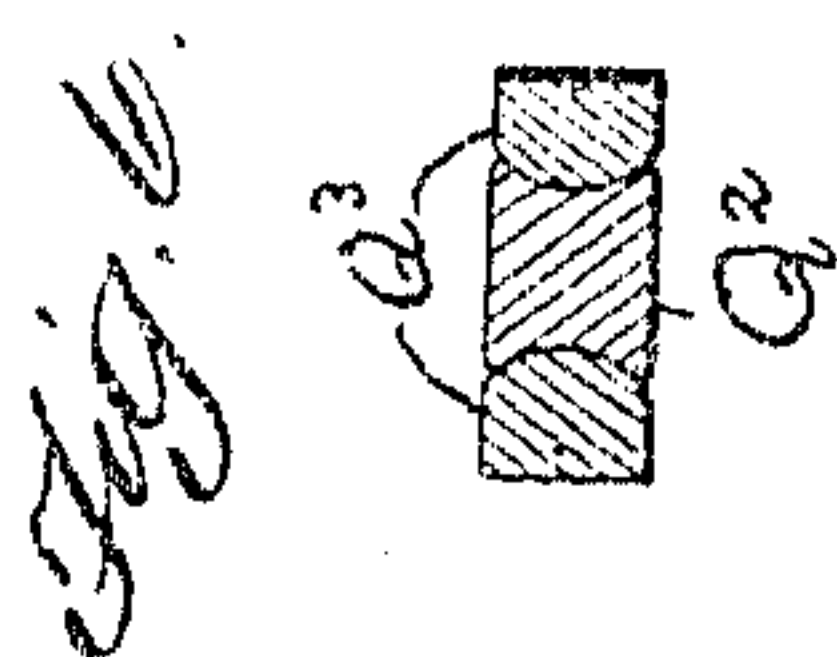
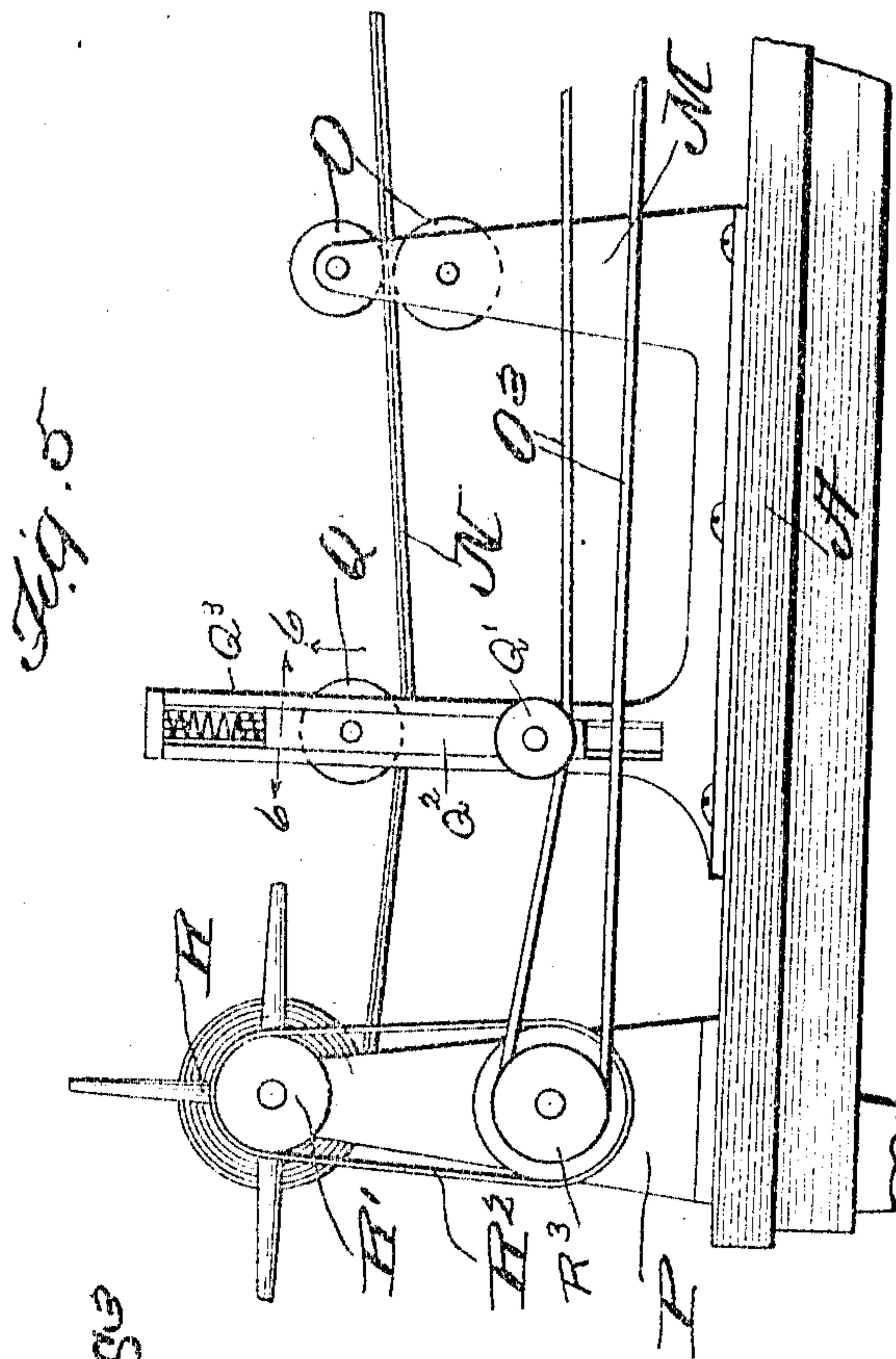
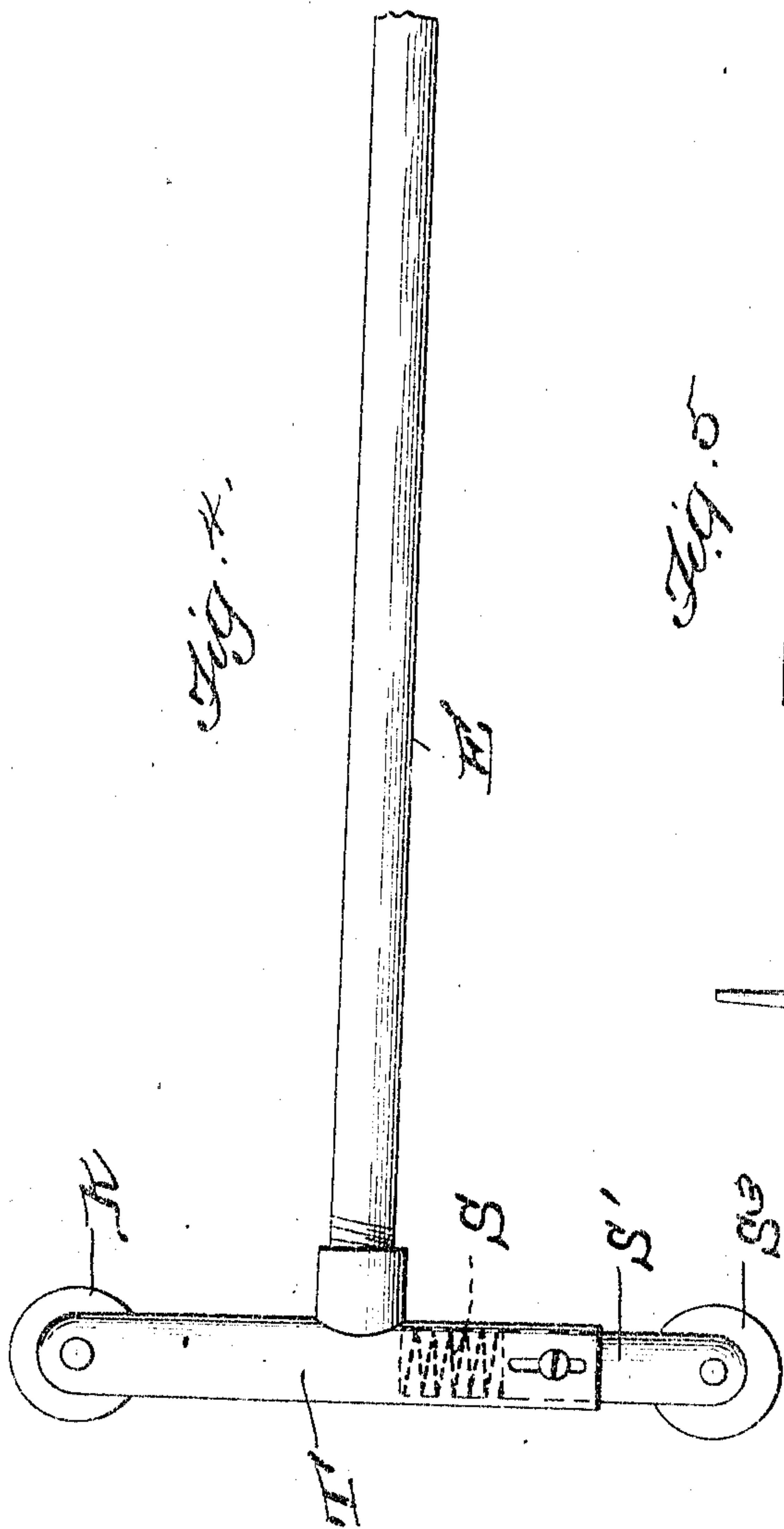
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Witnesses

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# UNITED STATES PATENT OFFICE.

JOSEPH PELHAM, OF VERSAILLES, MISSOURI, ASSIGNOR OF ONE HALF TO JOEL D. HUBBARD, OF VERSAILLES, MISSOURI.

TUBE SEWING AND TURNING MACHINE.

978,481.

Specification of Letters Patent.

Patented Dec. 13, 1910.

Application filed April 19, 1910. Serial No. 556,377.

*To all whom it may concern:*

Be it known that I, JOSEPH PELHAM, a citizen of the United States, residing at Versailles, in the county of Morgan and State of Missouri, have invented new and useful Improvements in Tube Sewing and Turning Machines, of which the following is a specification.

This invention relates to new and useful improvements in apparatus for sewing and turning tubular bagging after the meeting edges are brought together and stitched and affords a simple and efficient automatic means whereby the tubing, the seam of which is stitched by a machine, may be drawn through the ring or ellipse and held by means of a suitable stretcher mechanism; after which it is wound upon a reel.

The invention comprises various details of construction and combinations and arrangements of parts which will be herein-after fully described and then specifically defined in the appended claims.

My invention is illustrated in the accompanying drawings, in which:—

Figure 1 is a perspective view of the apparatus embodying the features of my invention. Fig. 2 is an enlarged detail perspective view of the ring or disk through which the tubular fabric after having been stitched is drawn and the stretcher arm. Fig. 3 is a top plan view of one form of stretcher arm. Fig. 4 is a view in elevation showing a modified form of the stretcher bar in which spiral springs are utilized in connection with the telescoping sleeve carrying a wheel for engaging the seam after having been sewed. Fig. 5 is a detail perspective view of an idler mechanism to cause the belt to draw taut and insure the tubing being wound properly upon the reel, and Fig. 6 is a sectional view on line 6—6 of Fig. 5.

Reference now being had to the details of the drawings by letter, A designates a table to the edge of which is fastened, as at B', a rigid rod B which preferably is curved over the top of the table as shown, and thence extends forward to a location, preferably slightly beyond the end of the table and terminates in a ring or disk C, which ring may be flattened or of any desired shape and preferably rounded upon the bearing edges against which the tubing draws in a manner which will be hereinafter fully described.

Said rod B may be of any suitable length and positioned adjacent to the edge of the table is a sewing machine D adapted to stitch the meeting edges of the fabric to form the tubing. Fastened to one end of the table at E' is a rod E bent at an angle over the projecting top of the table, as shown clearly in Figs. 1 and 2 of the drawings, said bar E thence passing through the ring or disk C and extending longitudinally over the top of the table to a suitable location. Fastened to the bar E is a block F and to which a resilient stretcher arm G is fixed, said arm being spaced apart from the bar E a short distance, preferably one inch for ordinary work, and at the end of said arm G is journaled a wheel H, the circumference of which is grooved and adapted to receive the seam of the tubing after the latter has been turned. A wheel K, preferably with a convexed edge, is journaled in the free curved end of the bar or rod E and provided for the purpose of causing the tubing to be drawn taut as it is wound upon the reel, which will be presently described.

An adjusting member, designated by letter I, is provided with two apertures, one designated by letter L' for the reception of the bar E and the other the resilient arm G, as shown clearly in Fig. 2 and affording means whereby, as said member is moved toward the free end of the rod E, said stretcher arm may be drawn toward the bar or rod E to regulate the tension of the wheel carried thereby against the seam of the tubing. A slight depression, designated by letter J, preferably of a depth sufficient to receive the seam of the tubing, is formed in the ring or ellipse for the purpose of receiving the seam and guiding the tubing therein as the latter is being turned.

Wound upon a reel L which is vertically disposed and journaled at its lower end upon the table and its upper end in a bracket arm L' is the cloth or fabric N from which the tubing is to be formed. Said reel may be positioned at any suitable location, preferably as illustrated, the two edges of the cloth being drawn together, one edge passing over, the other edge passing under the rod B which terminates in a ring or disk, thus folding the latter along its central longitudinal line as it passes by the sewing machine where the edges are stitched together. Journaled in the upright portions of the



bracket plates M upon the table are the rollers O, between which the folded tubing passes, being frictionally drawn or fed forward by said rollers. Said folded tubing passes between the rollers O, thence extends to and winds about the reel R journaled in suitable bearings in the standards P. A pulley R' is fixed to the spindle of the reel and a belt R<sup>2</sup> passes about the pulley R' and also one part of the double pulley R<sup>3</sup> journaled upon the standard P and power is applied to the pulley R<sup>3</sup> through the medium of the belt O<sup>3</sup> which turns about a pulley R<sup>4</sup> upon the sewing machine, as shown clearly in Fig. 1 of the drawings; power being applied to the pulley upon the sewing machine through the medium of the vertically disposed belting O<sup>5</sup>. Interposed between the rollers O and the reel R is an idler Q, the spindle ends of which are journaled in the spring-pressed blocks Q<sup>2</sup> movable within the standards Q<sup>3</sup> rising from the table. A pulley Q' is fixed to and moved with the spring-pressed block Q<sup>2</sup> and bears against the belt O<sup>3</sup>.

In Fig. 4 of the drawings, I have shown a slight modification of the invention in which a spiral spring S is attached to the stretcher bar or rod T and S' designates a sleeve telescoping within the lateral extension of the stretcher bar and having journaled therein the grooved wheel S<sup>2</sup>, thus affording a slightly modified means for holding the wheel securely against the seam. Said spiral spring should be of such a strength as will firmly stretch the fabric to hold the same taut and without its being torn. Where a less tension is required upon delicate fabric, lighter springs may be employed for regulating the pressure bearing against the same.

The operation of my invention will be readily understood and is as follows:—The cloth or other fabric to be converted into tubing is placed upon the reel L, the two longitudinal edges of the cloth brought together, one edge passing over and the other edge passing under the rod B which terminates in a ring or disk C, then under the arm of the sewing machine and stitched together, the two edges being held and guided by the hand or any suitable mechanism. After a portion of the tubing has been stitched, it is drawn over the ring or ellipse C, through the latter and over the ends of the stretcher bar and spring and fed between the rollers O which serve to feed the cloth for stitching and also for reeling up after the tubing has been stitched. As the rollers draw the tubing rearward, the edges of the cloth are brought underneath the sewing machine and stitched and, as the tubing passes over the marginal edge of the ring, it is turned outside in, the seam drawing through the offset formed in the ring and, by the provision of

the stretcher arms, the necessary tension may be applied to the seam and also at a location diametrically opposite to hold the tubing taut, the latter being guided by a grooved pulley in the resilient stretcher arm. In the event of there being slack in the tubing behind the rollers O, the idler Q will serve to hold the same taut and to cause the tubing to wind smoothly upon the reel R.

If desired to sew tubings of different diameters, bars having rings of the desired diameter may be employed and also reels and rollers of corresponding size.

From the foregoing, it will be noted that, by the provision of an apparatus as shown and described, a simple and efficient means is afforded whereby tubing may be formed and automatically reversed and wound upon suitable reels or, if desired, may be fed to printing machines or presses for further operation, after which the tubing may be cut into suitable length and bottoms sewed.

What I claim to be new is:—

1. A tube sewing and turning machine comprising a sewing machine, a rod, a support therefor, a ring fixed to the end of said rod at right angles thereto and through which a tubing is adapted to be drawn, stretcher arms for holding the tubing when turned, a reel about which the tubing is wound affording means for drawing the tubing through the ring.

2. A tube sewing and turning machine comprising a sewing machine, a rod, a support therefor, a ring fixed to the end of said rod at right angles thereto and over the edge and through which the tubing is adapted to be drawn, adjustable stretcher mechanism within the tubing adapted to hold the same taut, and means for drawing the tubing through said ring.

3. A tube sewing and turning machine comprising a sewing machine, a rod, a support therefor, a ring fixed to the end of said rod at right angles thereto and through which a tubing is adapted to be drawn, adjustable stretcher mechanism designed to be positioned within the tubing to hold the same taut, rollers between which the stitched and turned tubing passes, and means for drawing the tubing through said ring.

4. A tube sewing and turning machine comprising a sewing machine, a fixed rod terminating in a ring at right angles to the length of said rod, a stretcher bar extending through said ring, a yielding stretcher arm upon said stretcher bar, means for drawing the tubing through said ring, and wheels journaled upon the ends of said stretcher bar and arm.

5. A tube sewing and turning machine comprising a sewing machine, a reel from which the cloth unwinds, a support for said reel, a rod fixed at one end and terminating in a ring, a stretcher bar fixed at one end



and extending through said ring, feeding rollers between which the tubing passes, affording means for drawing the tubing over the edge of and through said ring, an adjustable stretcher arm upon said stretcher bar, and a grooved wheel carried by said arm adapted to bear against the seam of the tubing.

6. A tube sewing and turning machine comprising a sewing machine, a reel from which the cloth unwinds, a support for said reel, a rod fixed at one end and terminating in a ring, a stretcher bar fixed at one end and extending through said ring, feeding rollers between which the tubing passes, affording means for drawing the tubing over the edge of and through said ring, an adjustable stretcher arm upon said stretcher bar, and means for guiding the tubing as it is drawn through said ring and by said stretcher bar and arm.

7. A tube sewing and turning machine comprising a sewing machine, a reel from which the cloth unwinds, a support for said reel, a rod fixed at one end and terminating in a ring, a stretcher bar fixed at one end and extending through said ring, rollers between which the tubing passes, an adjustable stretcher arm upon said stretcher bar, means for guiding the tubing as it is drawn through said ring and by said stretcher bar and arm, a reel upon which the tubing is wound and affording means for drawing the latter through said ring, and an idler mounted intermediate the winding reel and rollers.

8. A tube sewing and turning machine comprising a table, a sewing machine, a bar fixed to said table and terminating in a ring at right angles to the length of the bar, a stretcher bar fixed at one end to the table and extending through said ring, a resilient stretcher arm fastened to said stretcher bar, a member having a slight movement upon the stretcher bar and apertured to receive

said arm and forming means whereby the tension of said arm may be regulated, and means for drawing the tubing through said ring.

9. A tube sewing and turning machine comprising a table, a sewing machine, a bar fixed to said table and terminating in a ring at right angles to the length of the bar, a stretcher bar fixed at one end to the table and extending through said ring and having its free end curved and adapted to engage the tubing at a position diametrically opposite the seam, a resilient arm fixed to said stretcher bar, a grooved wheel journaled in its free end and adapted to receive and bear against the seam, means for regulating the tension of said arm, and mechanism for drawing the tubing through said ring.

10. A tube sewing and turning machine comprising a table, a sewing machine, a bar fixed to said table and terminating in a ring at right angles to the length of the bar, a stretcher bar fixed at one end to the table and extending through said ring and having its free end curved and adapted to engage the tubing at a position diametrically opposite the seam, a block fastened to said stretcher bar, a resilient arm fastened to said block and spaced apart from said stretcher bar, a grooved wheel journaled in the free end of said arm, an apertured member movable upon said stretcher bar and adapted to receive said arm to regulate the tension of the wheel thereof against the seam of the tubing, and a reel upon which the tubing winds and affording means for drawing the tubing through said ring.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JOSEPH PELHAM.

Witnesses:

DAVID C. HARDY, Jr.,  
HERSCHELL H. MASON.