

(No Model.)

5 Sheets—Sheet 1.

G. P. SALISBURY.
TRIMMING MACHINE FOR PAPER BOXES.

No. 466,374.

Patented Jan. 5, 1892.

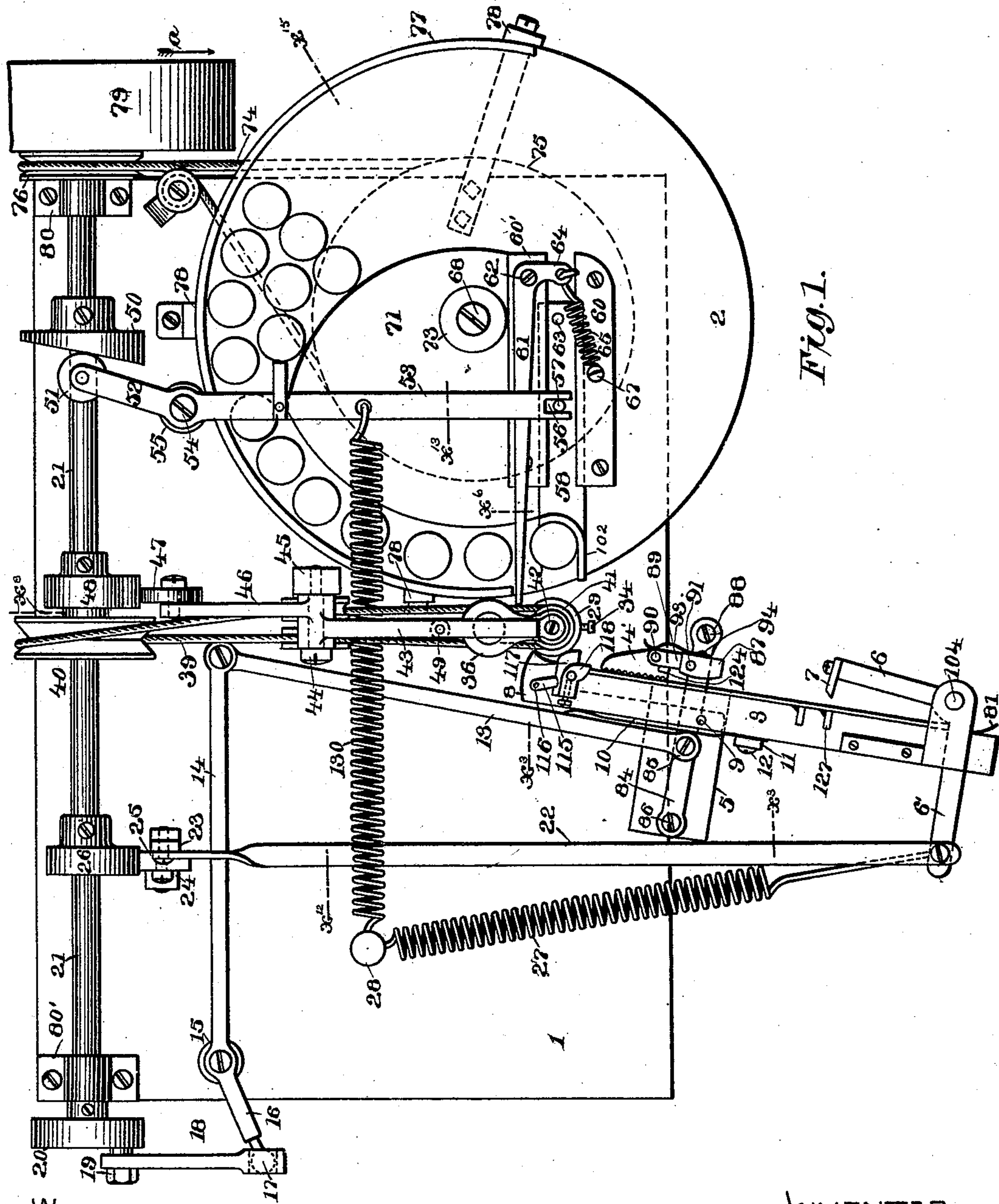


Fig. 1.

WITNESSES

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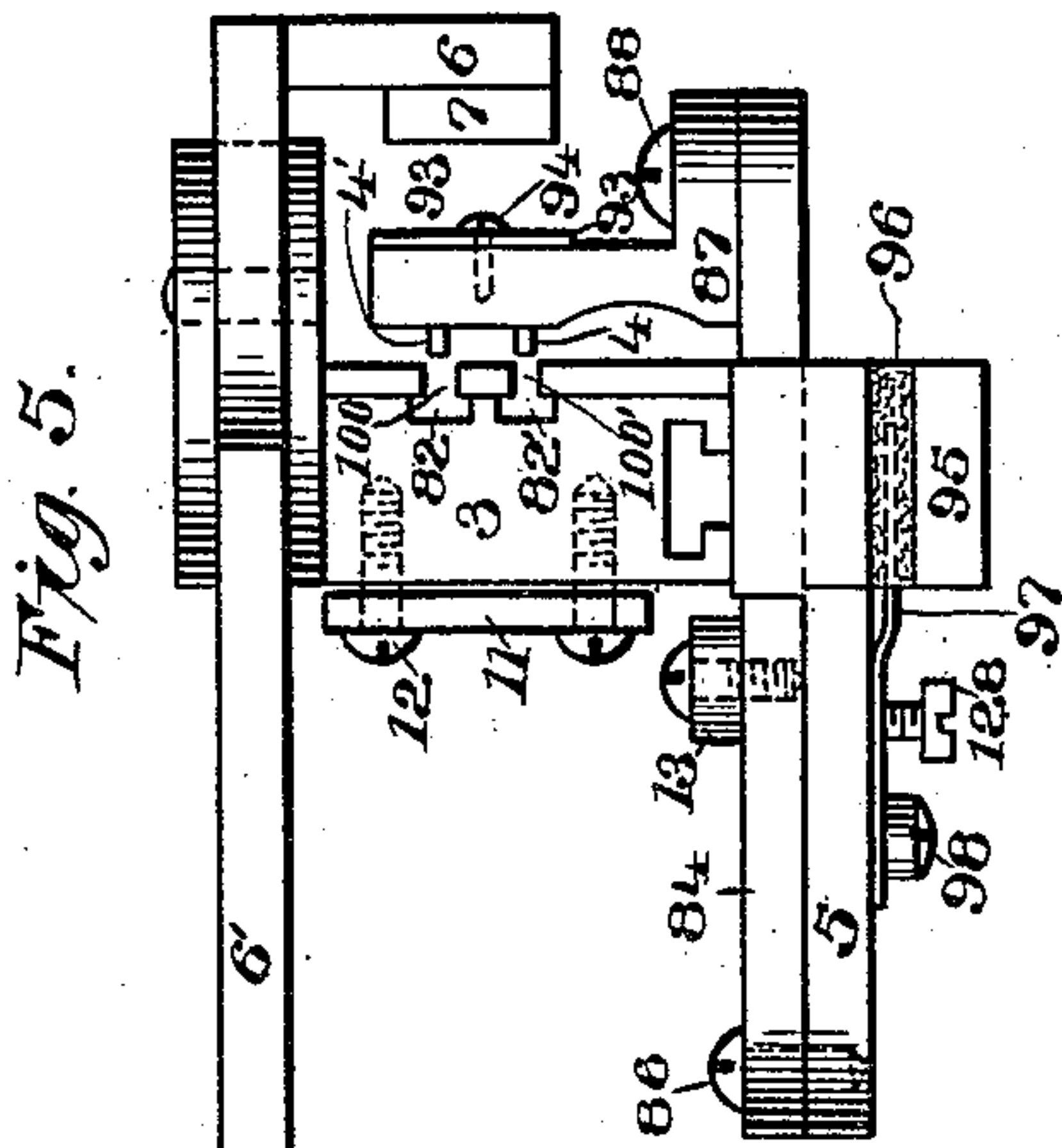


Fig. 5.

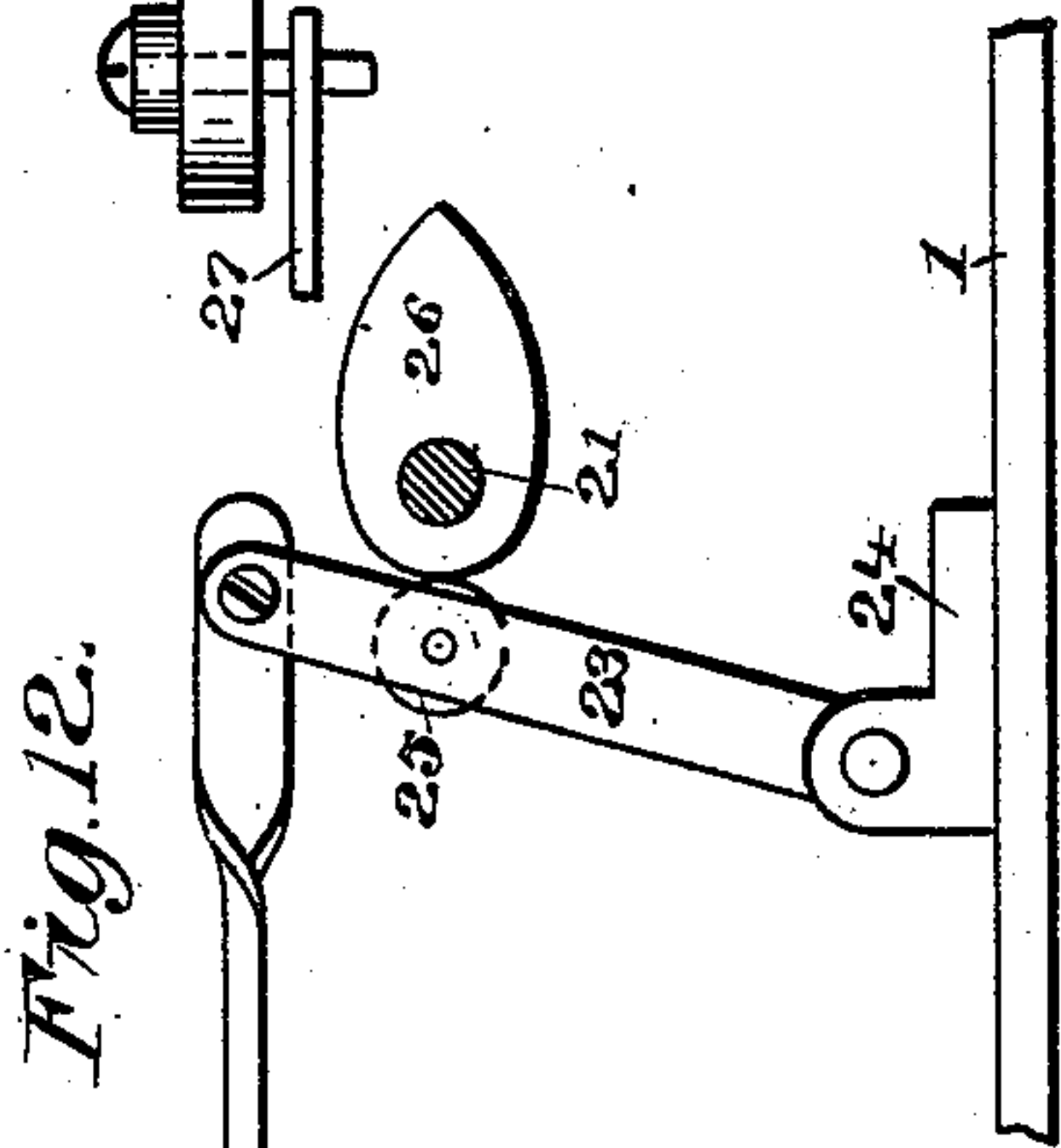


Fig. 12.

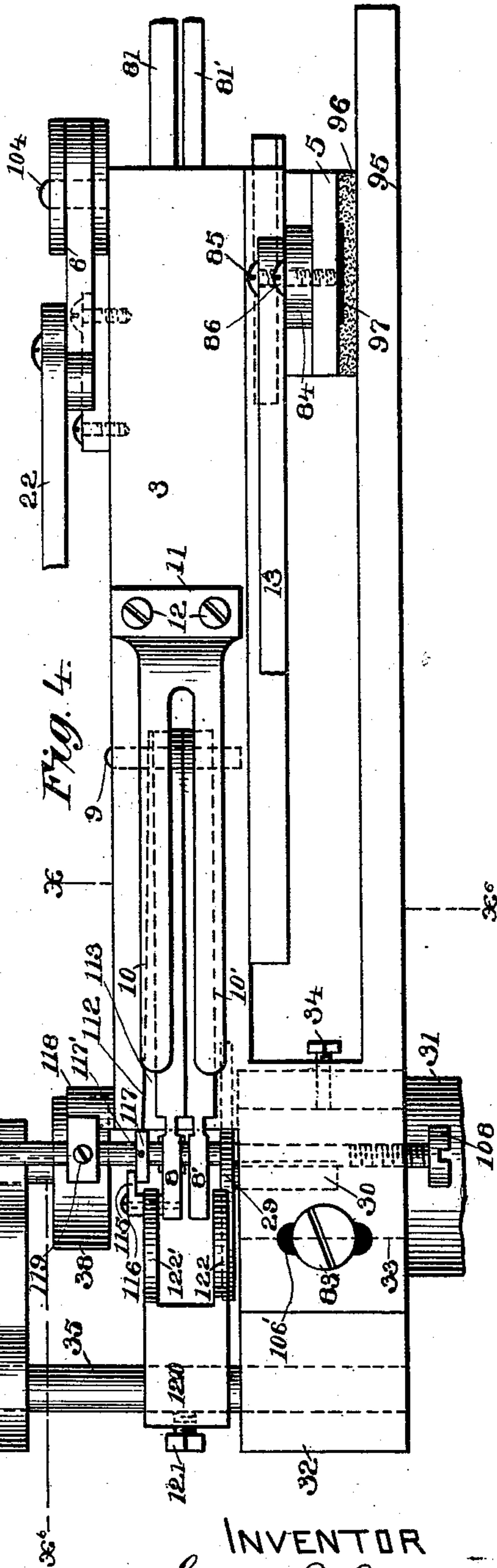


Fig. 4.

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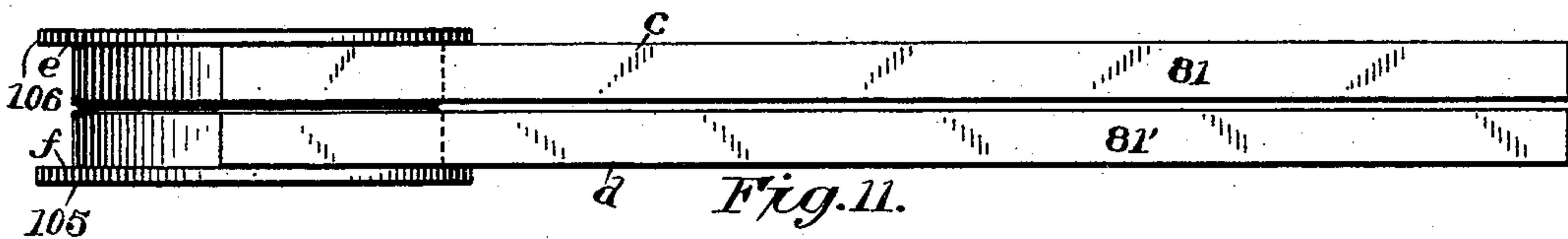


Fig. 10.

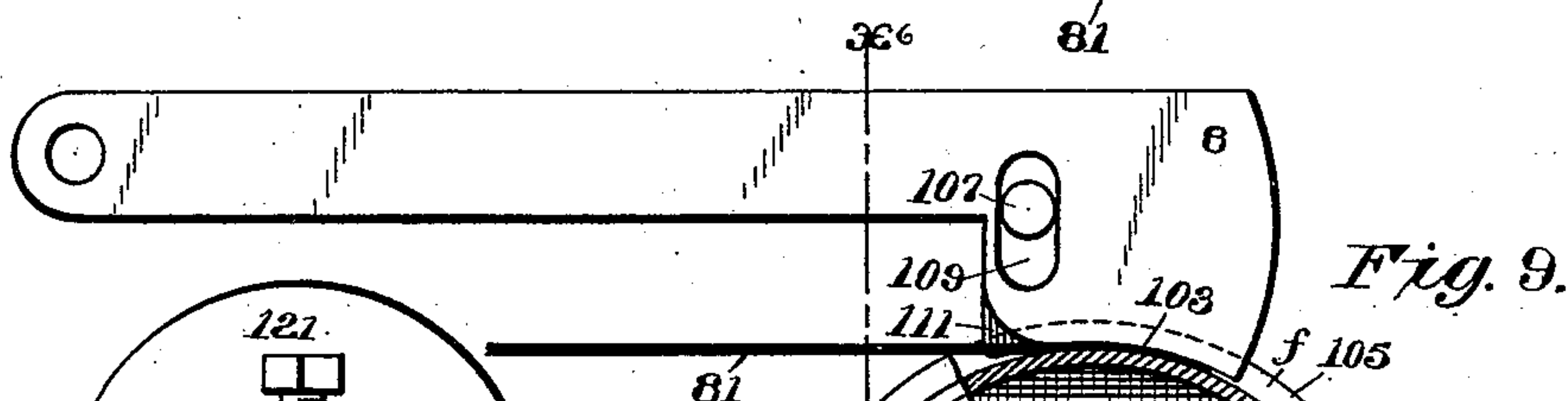
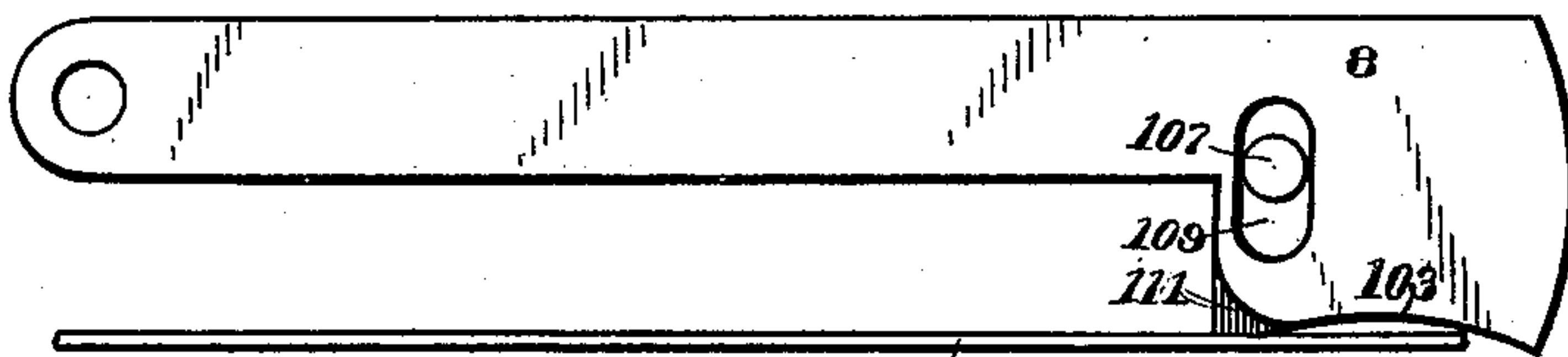


Fig. 6.

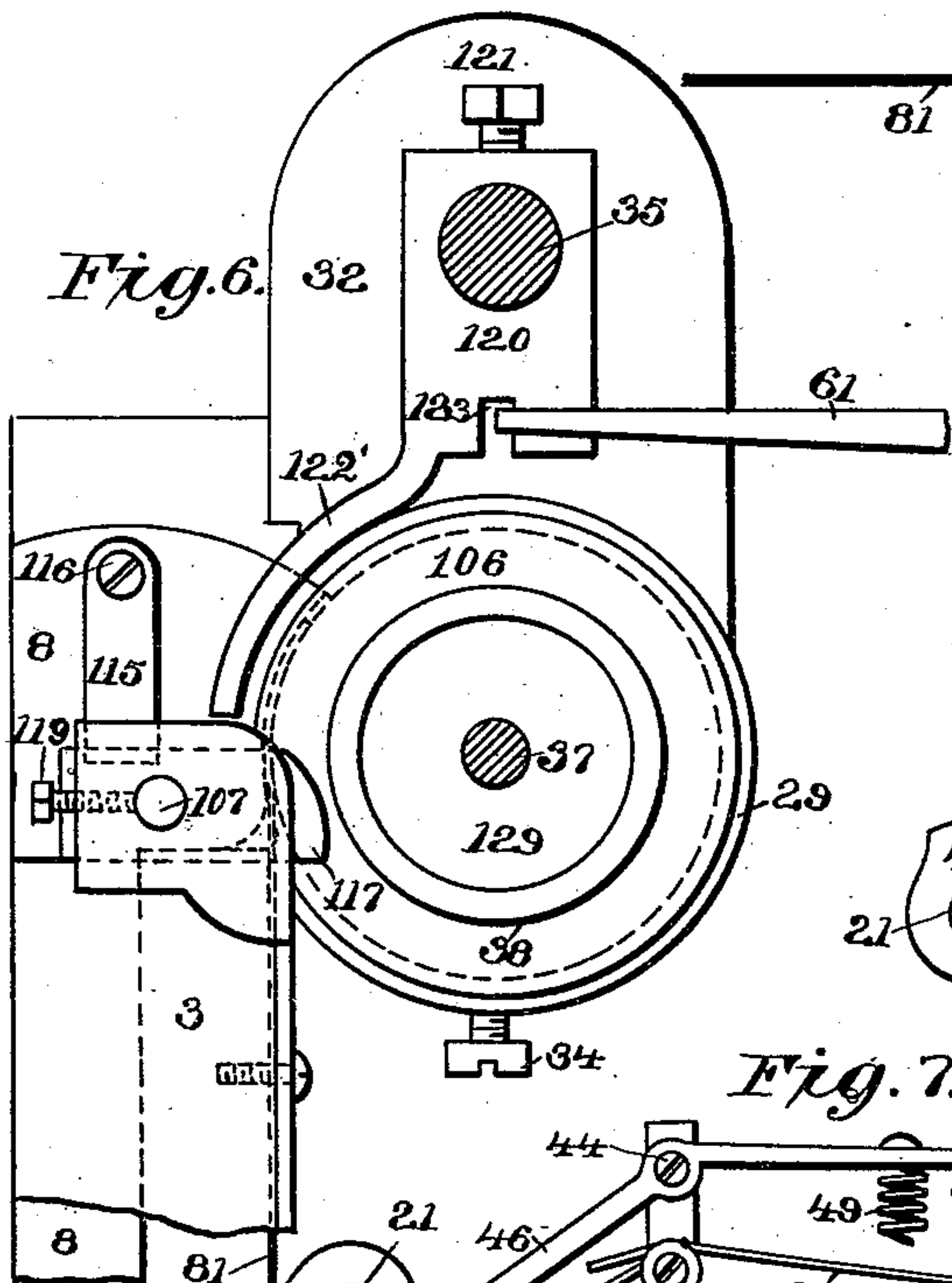


Fig. 7.

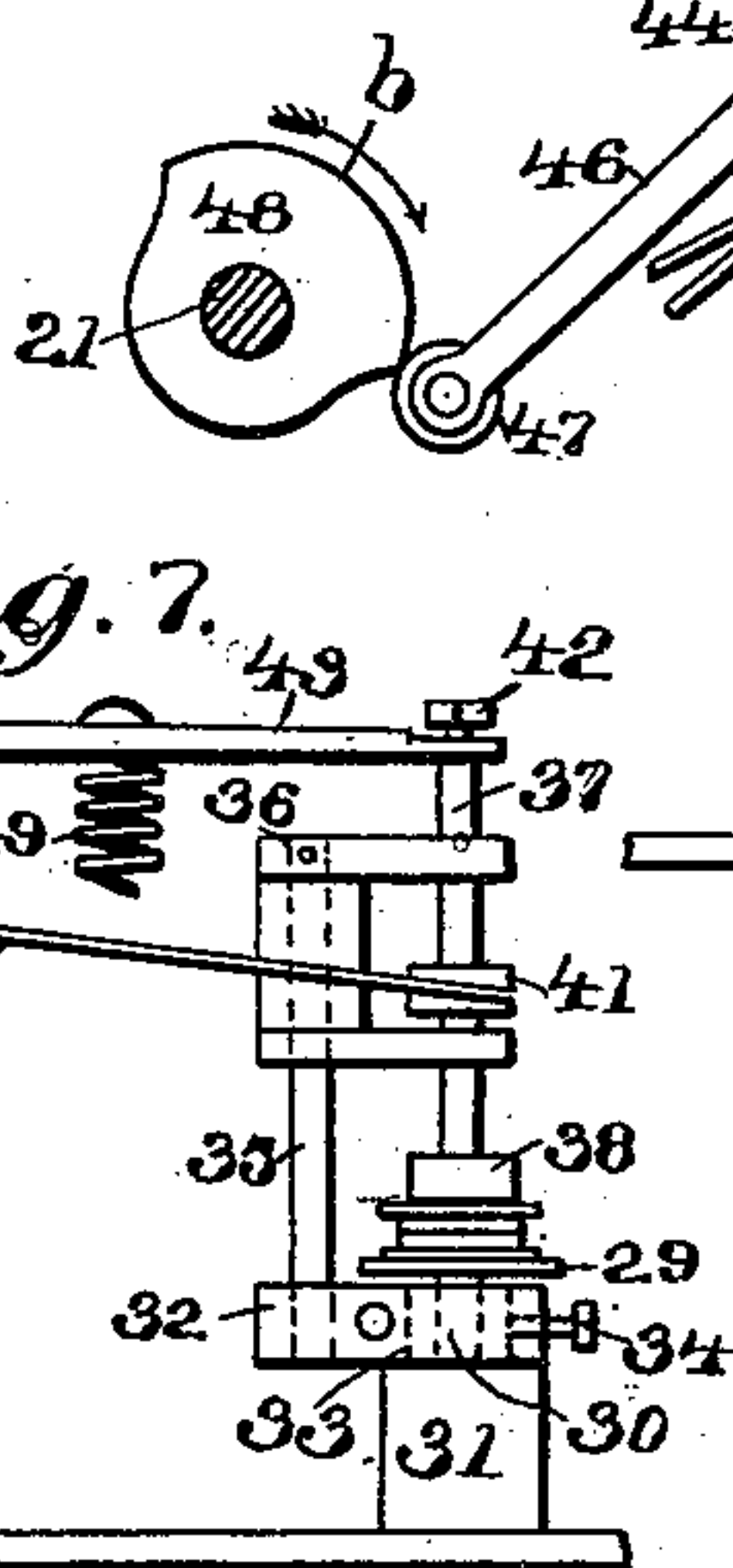
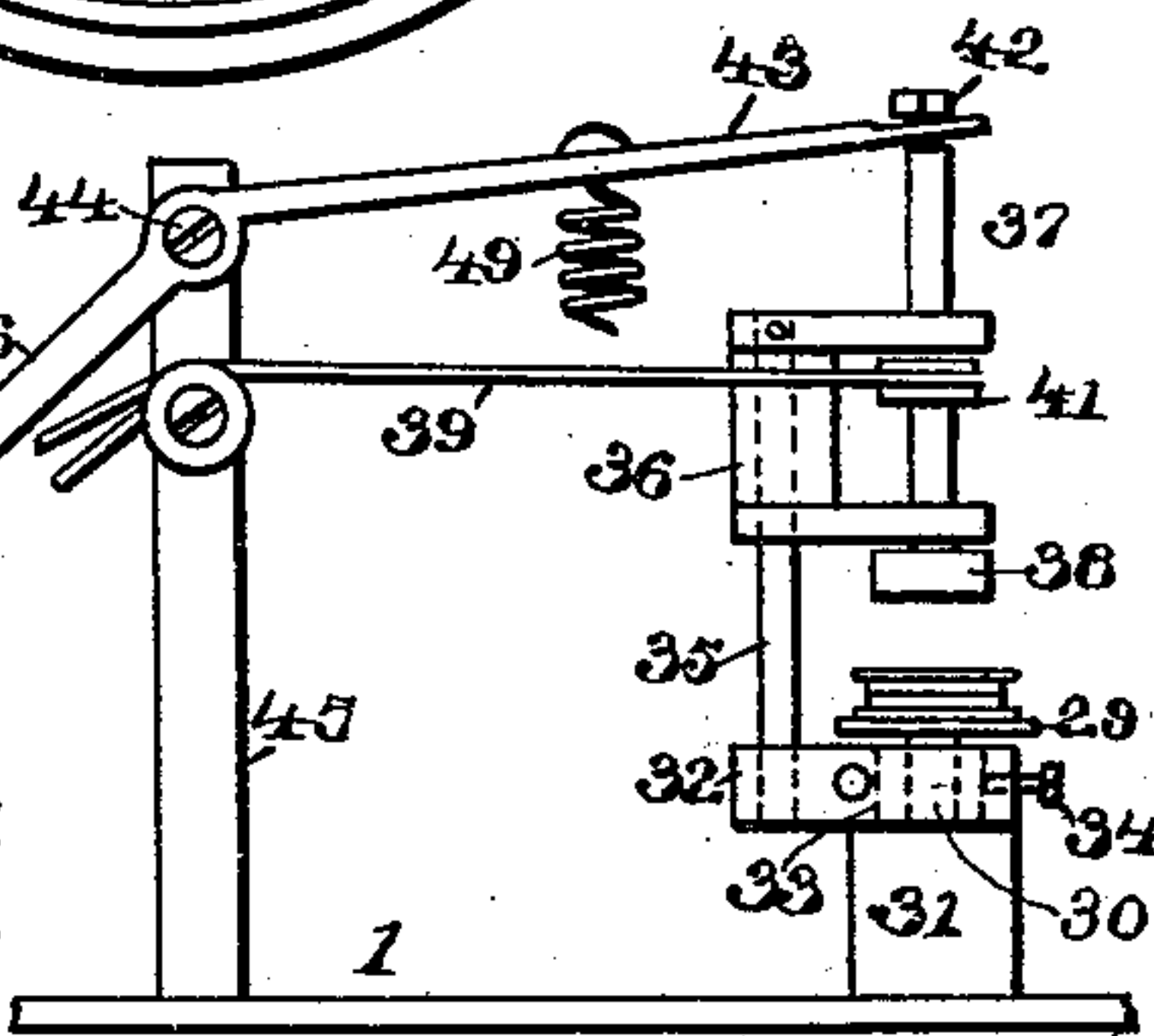


Fig. 8.



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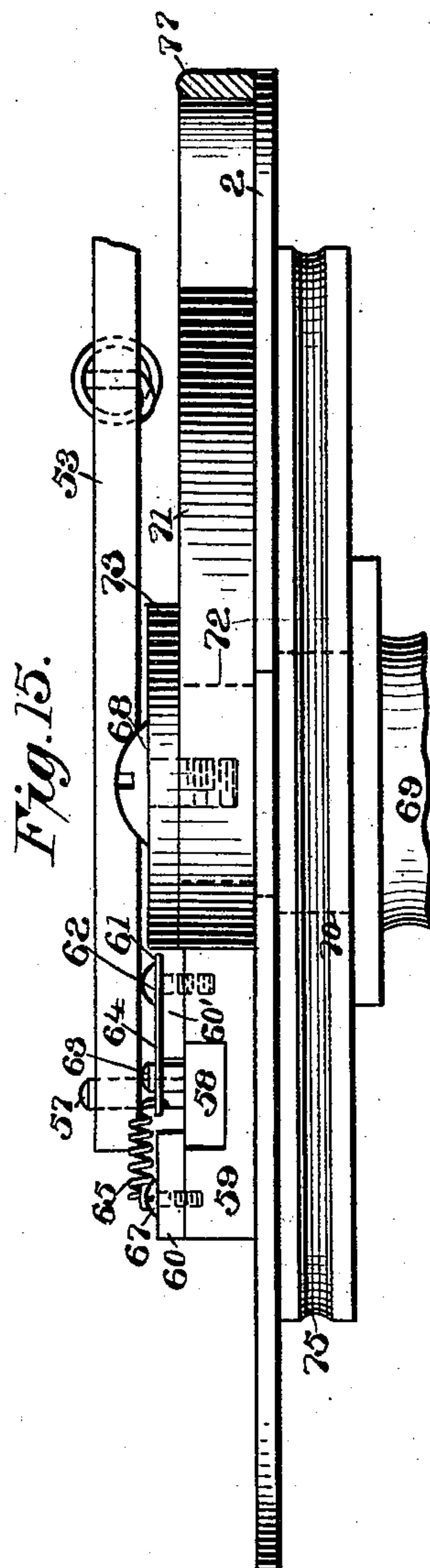
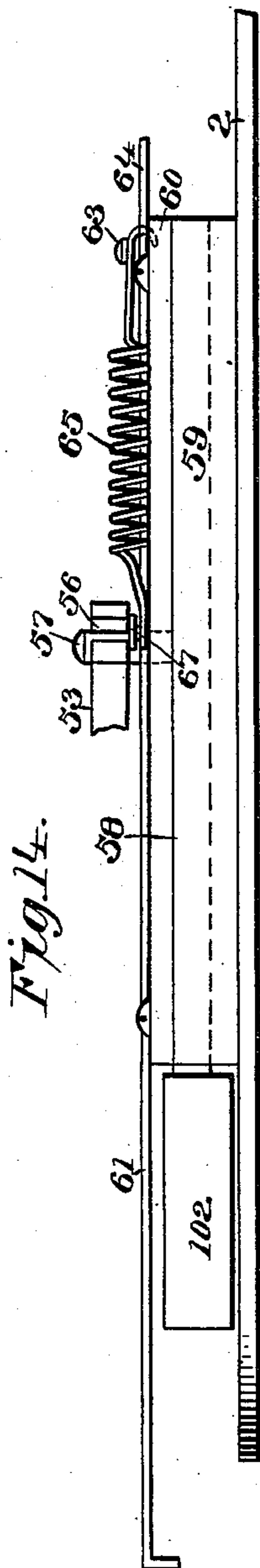
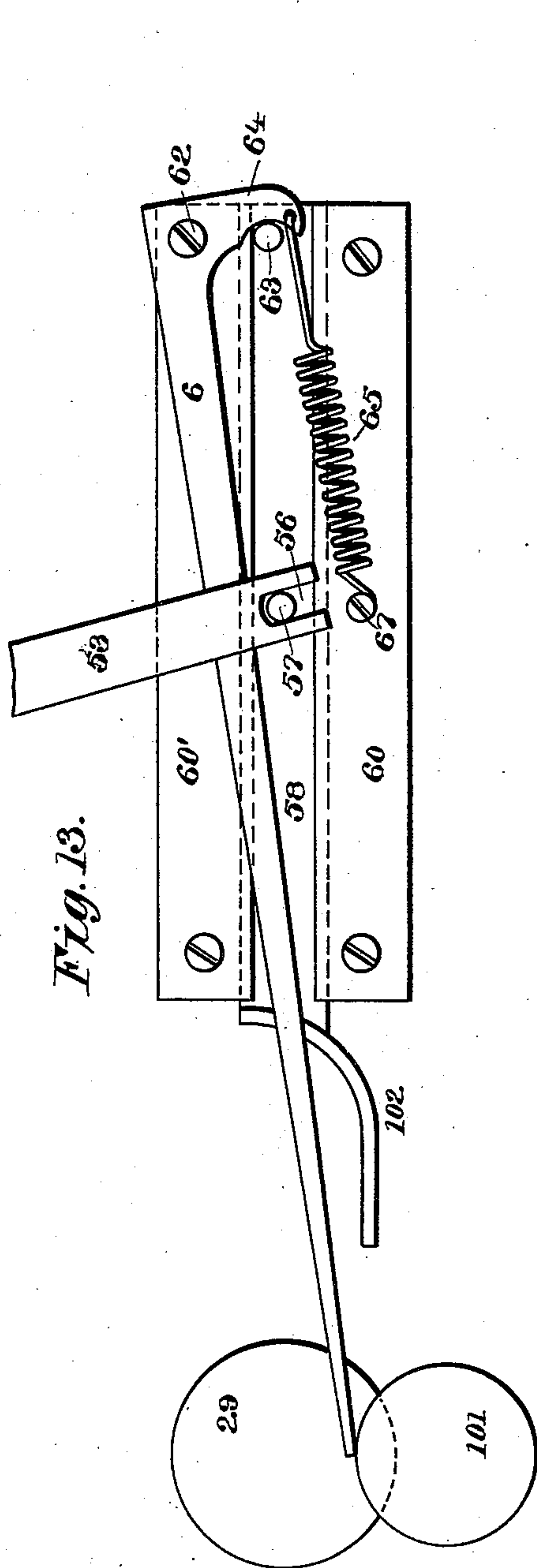
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UNITED STATES PATENT OFFICE.

GEORGE P. SALISBURY, OF NEW HAVEN, CONNECTICUT.

TRIMMING-MACHINE FOR PAPER BOXES.

SPECIFICATION forming part of Letters Patent No. 466,374, dated January 5, 1892.

Application filed June 8, 1891. Serial No. 395,472. (No model.)

To all whom it may concern:

Be it known that I, GEORGE P. SALISBURY, a citizen of the United States, and a resident of New Haven, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Trimming-Machines for Paper Boxes, of which the following is a specification.

My invention relates to paper-box machines, and it is employed in the manufacture of pill-boxes or other like boxes of circular form. Its object is to automatically wind around the box what is known in the trade as the "trimming-strip," which strip is of colored paper and is wound around the body of both the cap and box.

With my improved machine after the box is put together—i. e., the cap is placed on the box—the trimming-strip is wound automatically on the cap and box in one operation.

To more fully understand my invention, reference is had to the accompanying drawings, and to the figures and letters of reference marked thereon, forming a part of this specification.

Figure 1 represents a plan of the completed machine, showing the revolving feeding-table, upon which the boxes are placed and carried by the feeding-finger at the proper time to the box-table to receive the trimming-strips, showing also the feeding-arm through which the trimming-strips are carried to the box. Fig. 2 is a front side elevation of the feeding-arm detached from the machine, having mounted thereon and in operative position the trimming-strip cutter, carrier, friction-fingers, showing also a section of the trimming-strips projecting outward therefrom. Fig. 3 is a plan view of the feeding-arm, feed-dogs, their carrier, upper friction-finger, trimming-strip cutter in an open position, section of the trimming-strips projecting from the arm, section of the connecting-levers of the feed-dog carrier, and trimming-strip cutter through X³ of Fig. 1. Fig. 4 is a detached side elevation of the frame supporting the box-driving mechanism, consisting of an upright spindle, driving-pulley thereon, broken section of the vertically-operating arm connected to the upper end of the driver-spindle, and broken view of its spring, box-driving pad on the lower end of said spindle, box-

guide, also rear side elevation of the feeding-arm attached to said frame, said arm equipped with all the parts, as shown in Figs. 1, 2, and 3. Fig. 5 is an end elevation of the feeding-arm and side elevation of the carrier and trimming-strip cutter mounted thereon. Fig. 6 is an enlarged plan view of the feeding-arm supporting-block, broken section of the feeding-arm through vertical line X⁶ of Fig. 4, broken section of the upper friction-finger, broken section of the box-ejector through lines X⁶ of Fig. 1, plan view of the box-guide, box-driver, the upper portion of the box-driver frame removed through horizontal line X⁶ of the driver-spindle, and frame-supporting stud of Fig. 4. Fig. 7 is a reduced side elevation of the mechanism for rotating the box on its support, consisting of the box-driving spindle, driving-pulley, broken section of driving-belt, vertically-operating spindle or bell-crank arm, its supporting-standard, broken view of the spring which exerts a downward force on the spindle-arm, broken view of the driving-shaft through line X⁸ of Fig. 1, cam operating the box-driver through the medium of the bell-crank lever mounted on said shaft, box-table, a box thereon, the box-driver engaging therewith, box-table support, and broken section of the machine-table. Fig. 8 is a view similar to Fig. 7, except the box-driver is shown in an elevated position. Fig. 9 is a detached plan view of one of the friction-fingers, showing the manner of its engagement with a box whose upper portion is broken away, thus bringing to view the trimming-strip interposed between the finger and box. Fig. 10 is a detached plan view of one of the friction-fingers with the trimming-strip in position against such finger in readiness to receive the box. Fig. 11 is a side elevation of a box with the trimming-strips in position to be wound thereon. Fig. 12 is a side elevation of the cutter-arm cam mounted on a section of the driving-shaft, rocker-arm controlled by said cam, block supported on a broken section of the bed to which the rocker-arm is pivoted; also, broken section of the rod connecting the rocker-arm with the trimming-strip cutter through line X¹² of Fig. 12. Fig. 13 is a detached plan view of the box-carrier, its frame, box-ejector mounted thereon, detached plan view of the box-table, showing a box ejected

therefrom; also, broken section of the box-carrier lever through X¹³ of Fig. 1. Fig. 14 is a side elevation of the box-carrier, and its frame, box-ejector, broken view of the box-feeding table; also, broken view of the box-carrier lever. Fig. 15 is a side elevation of the box-feeding table, section of the guard for such table through line X¹⁵ of Fig. 1, broken section of the table-supporting stud, stationary guide-block mounted on said stud above the table, rear end view of the box-carrier frame and box-carrier, broken view of the box-carrier lever.

Its construction and operation are as follows:

1 represents the bed supporting the mechanism; 2, revolving box-feeding table; 3, feeding-arm for the paper-trimming strip; 4 4', feed-dogs for the trimming-strips; 5, feed-dog carrier; 6, paper bell-crank cutter-arm; 7, cutter attached thereto; 8 8', friction-fingers pivotally supported on pin 9 in the feeding-arm 3. Said fingers holding the paper-trimming strips to the surface of the box and its lid or cover, on which such strips are to be wound; 10 10', springs controlling fingers 8 8', such springs held to the rear face of feeding-arm 3 by means of the plate 11 and screws 12; 13 and 14, connecting-rods operating the feed-dog carrier; 15, stud projecting from bed 1 to support the rod 14, the short arm 16 of such rod having ball 17 on its end, which ball enters a hole in the link 18, which link is connected to stud 19 of face-plate 20 on the end of shaft 21. Thus by means of the eccentric motion of the face-plate 20 through the medium of the link 18 and connecting-rods 13 and 14 will cause the feed-dog carrier 5 to reciprocate back and forth in the feeding-arm 3.

22 represents a connecting-rod attached to arm 6' of the bell-crank cutter-arm 6. The other end of rod 22 is attached to the rocker-arm 23, which arm is pivoted to the block 24 of bed 1. Roll 25, which roll is loosely pivoted to rocker-arm 23, engages the face of cam 26, which cam is mounted on shaft 21. Spring 27, one end of which is attached to arm 6' of the cutter-arm 6, the other end of such spring being attached to the post 28, projecting from bed 1, operates to keep roll 25 in contact with cam 26.

29 is a plate arranged to be revolved, on which plate the box is placed during the operation of winding on the trimming-strips, said plate having the downward pin or stud 30 attached thereto, which pin loosely fits a hole provided for the same in the support 31, which support is attached to and projects upward from bed 1; 32, block mounted on the reduced portion 33 of the support 31. Such block is arranged to turn on such reduced portion 33, and is held in any position required by means of set-screw 34. Block 31 also supports feeding-arm 3.

35 is an upright stud projecting from block 32, which stud supports frame 36, shaft 37 being journaled in such frame and having

attached to its lower end the box-driving pad 38, said pad and shaft 37 being revolved through the medium of the belt 39, connecting pulley 40 on driving-shaft 21 with pulley 41 on upright shaft 37. Such upright shaft 37 is connected by screw 42 at its upper end to arm 43 of a bell-crank lever, which lever is journaled to stud 44 on the upright 45, which upright projects from bed 1. The other arm 46 of the bell-crank lever 43 carries at its end the roll 47, which roll engages with the face of the cam 48, mounted on driving-shaft 21. Through the medium of such cam, roll, and bell-crank lever, arms 43, and 46, a reciprocating vertical movement is given to upright shaft 37. Coiled spring 49, one end of which is attached to arm 43, the other end of such spring being secured to the bed or other fixed part of the machine, (not shown,) serves to keep roll 47 in engagement with cam 48. Cam 50, also mounted on driving-shaft 21, engages with roll 51 of the short end 52 of lever 53. Such lever is journaled to screw 54 of the upright 55, projecting upward from bed 1. The forked end 56 of lever 53 engages with pin 57, projecting from box-carrier 58, which carrier is mounted in the frame or bed-piece 59 and held therein by gibs 60 60'.

61 is the box-ejector journaled on screw 62, which screw is secured to gib 60'.

63 is a pin projecting from box-carrier 58, which pin engages with short arm 64 of box-ejector 58. The engagement of such pin with the short arm 64 causes such arm to swing in one direction on its pivoted support and be returned to its normal position by means of the retractile spring 65, connected by one end to the short arm 64 of the ejector 58 and the other end of such spring attached to gib-screw 67.

68 is a screw whose threaded end enters pillar or upright 69, which pillar or upright is supported from the bed 1. Such pillar also supports the table 2. Such table is loosely mounted on the reduced portion 70 of pillar 69.

71 is an immovable block rigidly mounted on the tenon 72 of pillar 69 and held there by screw 68 and washer 73. The box-carrier bed-piece 59 is also part of such block, so that the box-feeding table 2 may revolve under both the said block and bed-piece.

74 is a belt-connecting pulley 75, (which pulley is attached to the under side of box-table 2,) with pulley 76 mounted on the driving-shaft 21, and by means of such belt and pulley the table 2 is revolved.

77 is a guard surrounding a portion of table 2. Such guard is supported from bed 1 by means of legs 78.

79 is a driving-pulley mounted on the end of shaft 21; 80 80', standards supported from bed 1 for the shaft 21.

The narrow paper-trimming strips 81 81' are fed from a reel, (not shown,) and by a process (not shown) the side of such strip to engage with the surface of the box is covered with the requisite amount of paste to cause

the same to adhere thereto. The ends of such strips are each inserted into the grooves 82 82'. (See end elevation of feeding-arm, Fig. 5.) The feed dog-carrier 5 in the meantime being at its extreme outward stroke back of the cutter 7, as shown also in Fig. 4, which is a rear elevation of the feeding-arm attached to block 32 by screw 83, this view showing also broken section of the upright 31 supporting block 32.

The connecting-rod 13, which operates carrier 5, is not attached directly to such carrier, but to the arm 84 by means of screw 85. Such arm is pivoted to screw 86 of the carrier 5, swinging freely on such pivoted support. On the opposite end of arm 84 is mounted the feed-dog support 87, (see Figs. 3 and 5, Fig. 3 being a plan view of the feeding-arm,) which support is attached to such arm 84 by screw 88. The feed-dogs 4 4' (see also Fig. 2, which is a detached front elevation of the feeding-arm) are each loosely inserted in the forked openings of the two independent arms 89 89' and pivoted to the pins 90 90', which pins are fixed transversely in such arms, which arms in turn are loosely pivoted to the pin 91 and within the forked opening 92 of the support 87.

93 93' are springs engaging the feed-dogs 4 4', such springs being attached to support 87. On the under side of feed-dog carrier 5, between such carrier and the arm 95, is the friction-pad 96. A downward tension on such arm and against such pad is exerted by means of the spring 97, which spring is attached to the under side of the carrier 5 by means of screw 98. (See Fig. 5.) The friction thus exerted on such carrier will enable the arm 84, carrying the feed-dog support 87, to be moved on its pivoted support independent of the carrier. To feed the trimming-strips forward, the shaft 21, which revolves in the direction of arrow *a*, (see also Fig. 1,) will, through the medium of cam-plate 20 and connecting-rods 13 and 14, as before mentioned, carry the arm 84 forward until it meets or very nearly meets the projection 99 (see also Fig. 2) of the carrier 5. This radial movement of arm 84 will carry the feed-dogs 4 4' into the slots 100 100' of the arm 3, causing the serrated edges of the feed-dogs to engage the paper strips 81 81', (when the friction on the carrier 5 will be overcome,) when said carrier will be moved forward with the feed-dogs carrying the paper strip. In the meantime when the feed-dogs have begun their forward movement with the paper-trimming strips the box-carrier 58, under control of its cam 50, will have nearly completed its backward stroke, and when such point is reached the pin 63 (see Fig. 13, which is a plan view of the box-carrier and its frame, box-ejector, section of lever 53 through line X¹³ of Fig. 1, also plan of the box-plate) on such carrier will strike the short arm 64 of the ejector 61 and by a rapid movement throw box 101 from box-plate 29. When the box-carrier 58 starts on

its forward movement, the ejector will return to its former position. In the meantime the revolving box-table 2 will have brought a box into position (see Fig. 1) against finger 102 of carrier 58. While the feed-dogs and box-carrier are thus moving forward, the box-driving pad 38 will be in an elevated position, as shown in Fig. 8, which represents a section and side elevation of bed 1, support 31, block 32 thereon, to which the feeding-arm 3 is attached, and all the mechanism heretofore described for operating the shaft 37, also section of driving-shaft through line X³ of Fig. 1, and elevation of cam 48 thereon, also section of spring 49, feeding-arm 3 being removed from this view. The box-driving pad 38 will remain in this elevated position while the cam 48 is moving on the standstill portion *b*. In the meantime the feed-dogs 4 4' have carried paper strips 81 81' forward until the ends of such strips (which ends project beyond the feed-dogs) are deposited within the circle 103 of the friction-fingers 8 8', (see Fig. 10, which is a detached plan view of the upper friction-finger,) when the feed-dogs are instantly disengaged from such paper strip by means of the reverse action of cam-plate 20. (See also Fig. 1.) The first to feel this reverse movement, as before mentioned, is the arm 84, which, under the slightest influence of cam-plate 20, is moved back on its pivoted support, and this action withdraws the feed-dogs, as shown in Figs. 1 and 3, (Fig. 3 showing a plan of the feeding-arm 3, feed-dog carrier 5, and section of connecting-levers operating such carrier and cutter-arm through lines X³ of Fig. 1.) Instantly the feed-dogs are released, as before mentioned, the cutter-arm will swing on its pivoted support 104 and sever the trimming-strips the proper length required for the box. Immediately following such action a box is deposited by carrier 58 upon the box-plate 29 and forced by such carrier against the circle of the flexible friction-fingers 8 8'. (See also Fig. 9, which represents a view similar to Fig. 10, besides showing a box engaging the fingers and paper strip, with a portion of its cover broken away, exposing to view a portion of the body of such cover and box.) The moment the box is so placed the revolving friction-pad 38 will descend (when the cam 48 has reached the position as seen at Fig. 7) and engage the box, causing the same to revolve together with the plate 29. When the box is brought against the trimming-strips, as before mentioned, such strips will project just beyond the center of the box. (See also Fig. 11, which represents a side elevation of the box, its lid, and the trimming-strips.) The paste side of the trimming-strip being in contact with the box will cause such strips to adhere thereto during the operation of winding. When the box begins to rotate, it will draw forward the strips against the flexible pressure of the finger 8 8', acting under the influence of their springs 10 10', and the pressure thus exerted

will be just sufficient to cause the strips 81 to be laid on smooth and free from wrinkles.

One important feature in winding on the trimming-strips (see Fig. 11) is to keep them close against the inside surface *e f* of the disks 105 and 106 of the lid and box. To accomplish this the machine is first adjusted to the depth of the box on which the trimming-strip is to be wound. This is done by loosening the screw 83, (see Fig. 4,) which screw, as before mentioned, holds the feeding-arm 3 to the block 32, and by means of the elongated hole 106' in arm 3 (see also Fig. 2) such arm is raised or lowered, as the case may be, so that the lower finger 8' and the guide-slot 82' (see also Fig. 5) for the lower paper strip 81' will stand in proper relation with the surface *f* of the disk of the box. It will thus be seen after the feeding-arm is adjusted that the lower strip 81' will be wound on true and even with such disk. To wind the upper trimming-strip 81, also true with the edge *e* of disk 106, against the varying thickness of the boxes and the undulating motion of the disk 106, caused by the lid not being put on true, the upper friction-finger 8 is arranged to have a vertical movement to accommodate the various inequalities of the boxes. The lift-rod 107 (see Figs. 2 and 4) enters a hole provided for it in the feeding-arm 3, its lower end resting on the point of the screw 108, which screw vertically adjusts said lift-rod, such rod passing through the elongated holes 109, provided in the fingers 8 8', thus permitting such fingers to have a lateral movement independent of the lift-rod. (One of such elongated holes 109 is seen in Figs. 9 and 10.) On the inner corners of finger 8 are the upper and lower projections of lips 110 and 111. (See Fig. 2.) Such projections extend beyond the circle 103 of the friction-finger. (Figs. 9 and 10 show the upper projection 110 removed.) The trimming-strip 81 is placed between projections 110 and 111, thus placing such strip under the control of the finger in its vertical movement. The upper edge 112 of the longitudinal groove 113 in the feeding-arm 3, (see Fig. 4,) into which the fingers 8 8' are placed, is beveled to permit an upward movement to the finger 8. The longitudinal slot 100 for the upper trimming-strip 81 (see Fig. 2) is also beveled at the point 114 of the feeding-arm 3, to permit a vertical movement of such trimming-strip. The automatic vertical adjustment of the finger 8 is brought about by means of the arm 115, which arm is secured to the upper side of finger 8 by means of screw 116. Such arm rests upon the guide 117, one end of which guide projects over the edge of the upper surface of the disk 106 of the box-lid. (See Fig. 6, which is an enlarged plan and section of the feeding-arm 3 through the vertical line X⁶ of Fig. 4, and also through the horizontal line X⁶ of the supporting-stud 35, and the box-driving spindle 37 of the same figure.) The other end of guide 117 is secured to lift-rod 107 by screw 117'. By this

arrangement the upper edge of the trimming-strip 81 is kept close against the under side of the upper disk 106 of the lid. The guide 117, as before mentioned, resting on the lid of the box, will, by means of its connection with finger 8, cause such finger to conform to the undulating motion of the box-lid and also to the varying thickness of the boxes. By this arrangement of the guide 117 with the box-lid and its rigid connection with the finger, together with the projections 110 and 111 of such finger, the upper edge of the trimming-strip 81 is kept close to the under side of the disk 106 of the lid or cover of the box, winding the strip on true with such under surface regardless of the irregularities of the box. 118 is a guide projecting downward over the face of the feeding-arm and in front of the trimming-strip 81, Fig. 2, and is secured to lift-rod 107 by screw 119. This guide is placed directly over the beveled portion 114 of the slot 100, thus keeping the upper edge of the upper trimming-strip within its slot, which strip would otherwise be unsupported by reason of the cut-away or beveled portion 114.

The guard 120 (see Figs. 4 and 6) is adjustably mounted on the stud 35 by means of set-screw 121, and operates as a check to prevent the box being carried too far upon the plate 29. The disks 105 and 106 of the box and lid engaging the forks 122 122' of such guard will leave the box in position on plate 29 for the winding operation.

The springs 10 10', (see Fig. 4,) which actuate the fingers 8 8', do not follow such fingers farther than the face of the feeding-arm 3, on which such springs rest; otherwise if their full force was exerted on such fingers during the operation of winding on the thin and delicate paper strips they would be liable to stretch or tear such strips, the amount of tension required on the strips through the medium of the fingers being just sufficient to place such strips on the box and lid smooth and even. The notch 123 is provided in the guard 120 as a retreating place for the end of the box-ejector 61, a section of which ejector is shown in Fig. 6 through X⁶ of Fig. 1.

The serrated faces of the feed-dogs 4 4' are kept parallel with the face of the feeding-arm 3 and not allowed to turn too far on their pivoted supports by means of a part of such feed-dogs engaging with such supports. (See Fig. 3, showing a view of the upper feed-dog 4.) The projection 124 will engage the support 89 and check the movement of the dog in one direction, while the corner 125, engaging with the bottom 126 of the slot in support 89 89', (in which slot the feed-dogs are placed,) will limit their movement in the opposite direction; otherwise such dogs would turn too far on their supports and not engage the trimming-strip. A certain amount of tilting movement must be allowed such dogs, as they are mounted at the end of the radial arm 84 and move by means of such arm through the arc of a circle. If held rigid, they

would not engage the paper-trimming strips parallel.

The forward edge of the steel block 127, Fig. 3, which block is set into the feeding-arm 3, forms the cutting-edge for the cutter 7 in arm 6. Any number of such blocks may be set into arm 3 in different places along such arm for the various lengths of trimming-strips required for boxes of different diameters, in which case the arm 6 will either be extended or replaced by another, so as to engage with the several cutting-blocks. Fig. 1 shows two of such cutting-blocks.

The friction on the carrier (see Fig. 5) is regulated by means of the screw 128, which screw engages a threaded hole in spring 97, while its point rests against the under side of carrier 5.

The friction-pad proper, which engages with the boxes, causing them to revolve together with plate 29, on which such boxes rest while the paper strips are being wound thereon, as before mentioned, consists of the rubber band or ring 38, placed (see Fig. 6) on the head 129. The rubber band will project just below such head, so as to engage with the box, thus making the grip or tension on such box more secure.

In my invention I do not wish to be confined to the exact details of construction herein shown and described, since many changes not involving mechanical skill may be made therein without departing from the spirit of my invention as set forth in the claims. For instance, it may be desirable in some kind of boxes to wind on but one strip at a time, and thus dispense with the use of one of the friction-fingers.

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

1. The combination, in a box-trimming machine, of a box-support on which the box is placed to be wound, and means, substantially as shown, to rotate such box and its support, with independent flexible friction-fingers arranged one above the other, a support for the same, such fingers engaging the trimming-strip, holding the adhesive side of such strip in close contact with the box during the operation of winding on such strips, a lift-rod, a guide rigidly attached thereto and projecting outwardly therefrom to engage with a box, an arm on the friction-finger connecting such finger with the guide, and means, substantially as shown, on such upper finger whereby the upper trimming-strip is placed under the control of such finger and such finger controlled in its vertical movements through the medium of the guide with the box, so that such strip may be wound on the box true and even under the irregular or uneven surface of such box, substantially as described.

2. In a box-trimming machine of the character described, the combination, with a box-support on which the box is placed, and means, substantially as shown, whereby such box and

its support is caused to rotate, of two independent flexible friction-fingers to hold the trimming-strip in close contact with the box, substantially as shown, the lower finger having a lateral or horizontal movement, the upper finger arranged to have both a lateral and vertical movement, means, substantially as shown, on such upper finger whereby the upper trimming-strip is brought under the control of such finger, a lift-rod, a guide attached to such rod, an arm connecting such guide with the upper friction-finger in the manner substantially as shown, such guide projecting over the upper surface of the box, so that by means of such engagement of the guide with the box the vertical movement of the upper friction-finger is brought under the control of such box and the upper trimming-strip wound on true and even with the upper surface of the box, and means, substantially as shown, whereby a vertical adjustment is given to the lift-rod, substantially as set forth.

3. The combination, in a box-trimming machine of the character described, of a box-support on which the box is placed, and means, substantially as shown, to rotate such support and box together, a feeding-arm for supporting and guiding the trimming-strips, feeding mechanism, substantially as shown, to advance the ends of said trimming-strips into the box-winding field, a cutter for severing the strips the proper length for the box, with flexible friction-fingers to exert an elastic pressure or tension on such strips, keeping the same firmly against the body of the box, and means, substantially as shown, whereby a vertical movement is given to such upper finger by means of the box, in the manner substantially as shown, and means, substantially as shown, provided on said upper finger, whereby the upper trimming is brought under the control of such finger, substantially as set forth.

4. The combination, in a box-trimming machine of the character described, of the feeding-arm for supporting and guiding the trimming-strips, feeding mechanism, substantially as shown and described, to advance the ends of the trimming-strips into the box-winding field, a cutter arranged substantially as shown for severing the strips the required length for the box, flexible friction-fingers placed in the box-winding field, a support for such fingers, a box-support, and means, substantially as shown, whereby a box is placed on such support at the proper moment, a box-driver, and means, substantially as shown, for supporting and operating such driver, such driver engaging the box, substantially as shown, and rotating both box and its support, the adhesive side of the trimming-strips engaging the box, such strips wound thereon under the rotative movement, as described, and against the flexible pressure of the friction-fingers, substantially as set forth.

5. The combination, in a box-trimming machine of the character described, of the feed-

ing-arm for supporting and guiding the trimming-strips, a cutter on said arm to sever the strip, the trimming-strip carrier, the radial arm pivoted thereto, feed-dogs mounted on the
5 free end of such arm, substantially as shown, to engage the trimming-strips back of such cutter, and means, substantially as shown, to advance the ends of the trimming-strips into the box-winding field, flexible friction-fingers,
10 substantially as shown, a support for such fingers, with a box-support, and means, substantially as shown, to place a box on such support at the proper time, a rotating and vertically-operating box-driver, and means,
15 substantially as shown, whereby such motions are given to said box-driver, said driver operated, substantially as shown, until the

trimming-strip ends are advanced into the winding-field and such strips severed by the cutter, and said box is placed on its support, 20 when said box-driver will descend and engage the box, rotating the same and its support together, and thus draw or wind the trimming-strips around the body of such box and cover against the flexible pressure or tension of the 25 fingers, as set forth.

Signed at Bridgeport, in the county of Fairfield and State of Connecticut, this 11th day of March, A. D. 1891.

GEORGE P. SALISBURY.

Witnesses:

GEO. D. PHILLIPS,
JAMES A. WILSON.