

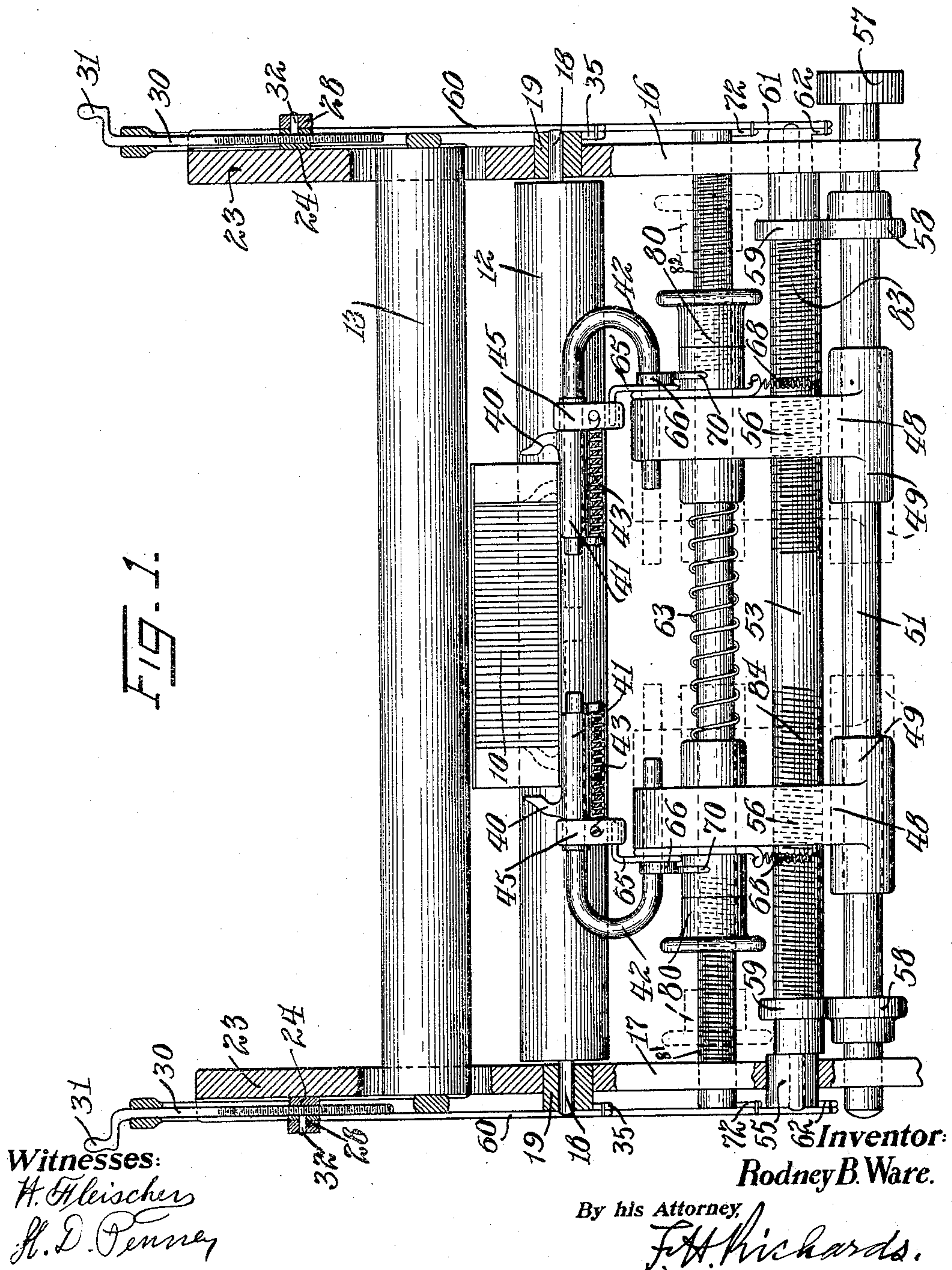
No. 860,950.

PATENTED JULY 23, 1907.

R. B. WARE.
CRIMPING MECHANISM.

APPLICATION FILED MAY 18, 1906.

3 SHEETS—SHEET 1.



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3 SHEETS—SHEET 2.

FIG. 4.

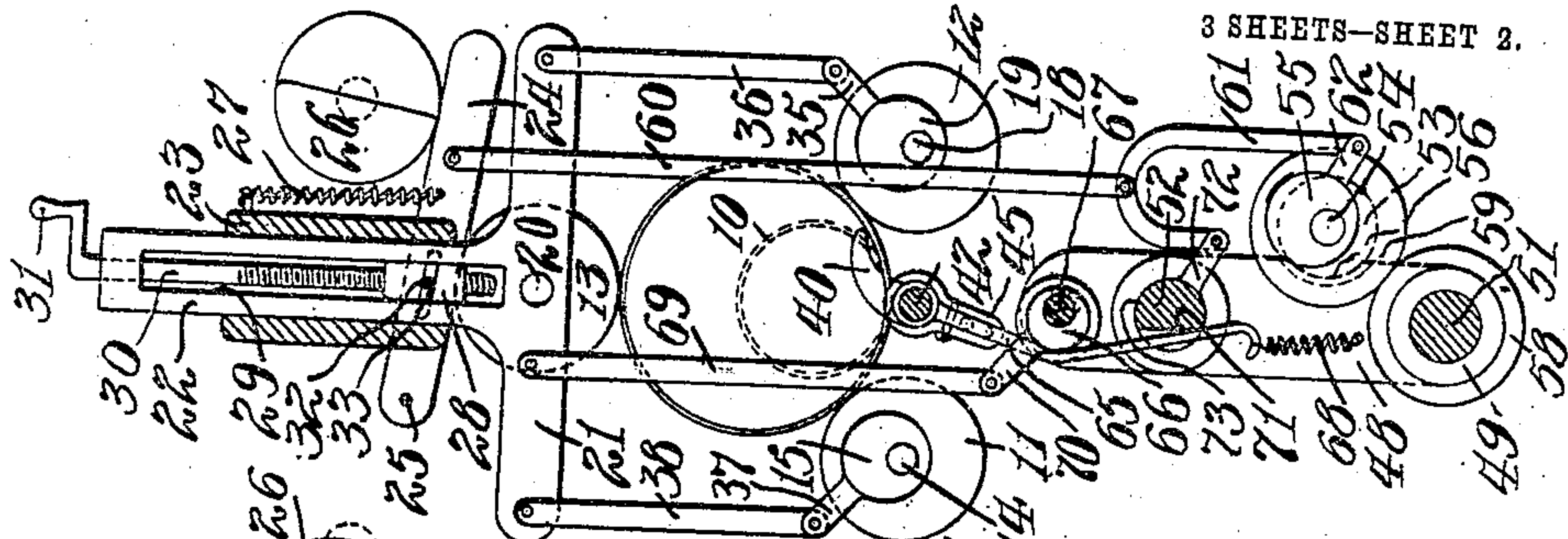


FIG. 3.

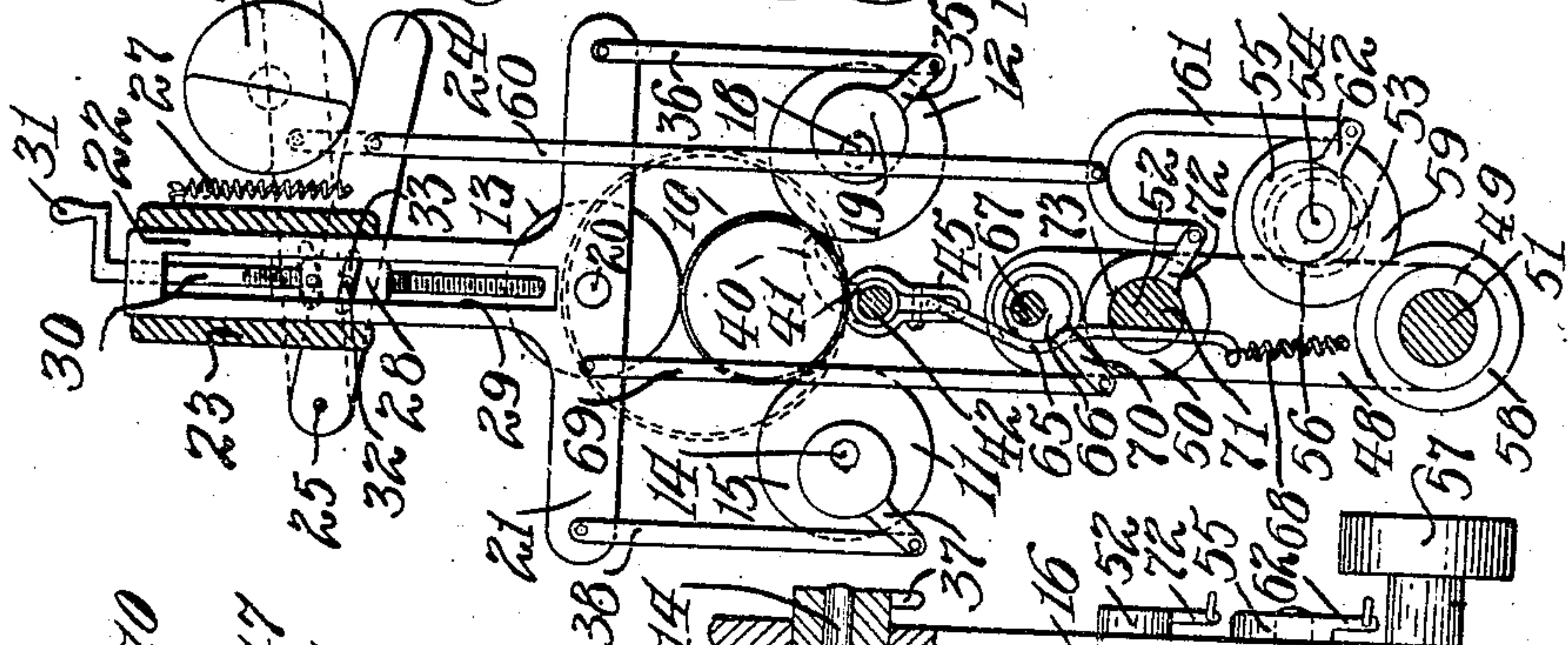


FIG. 7.

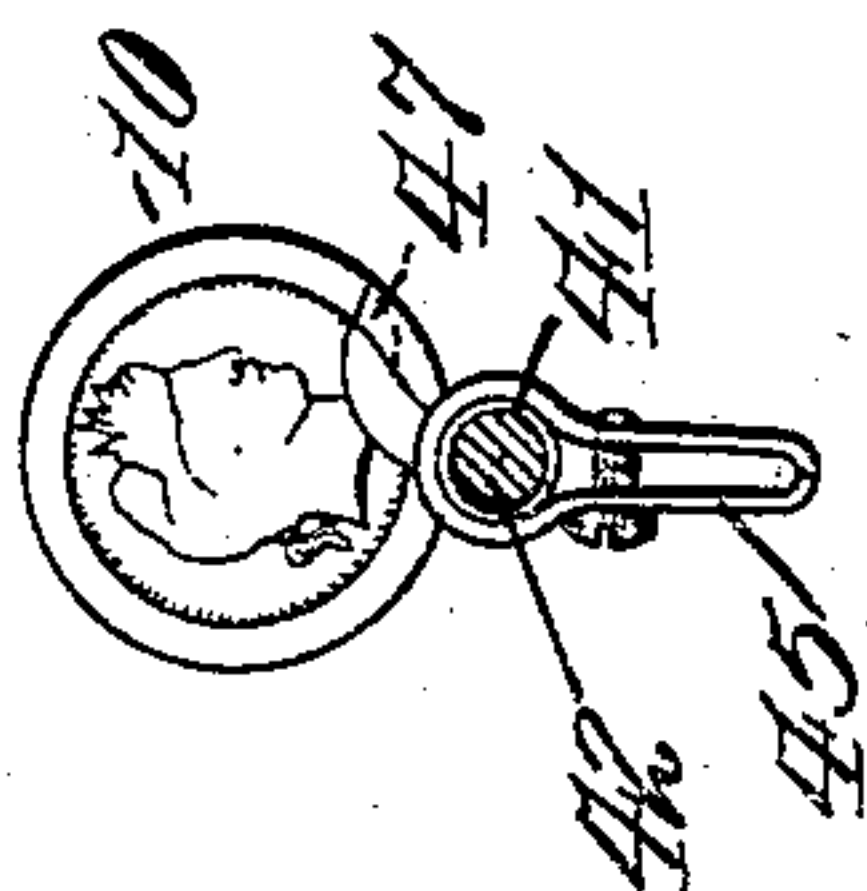


FIG. 6.

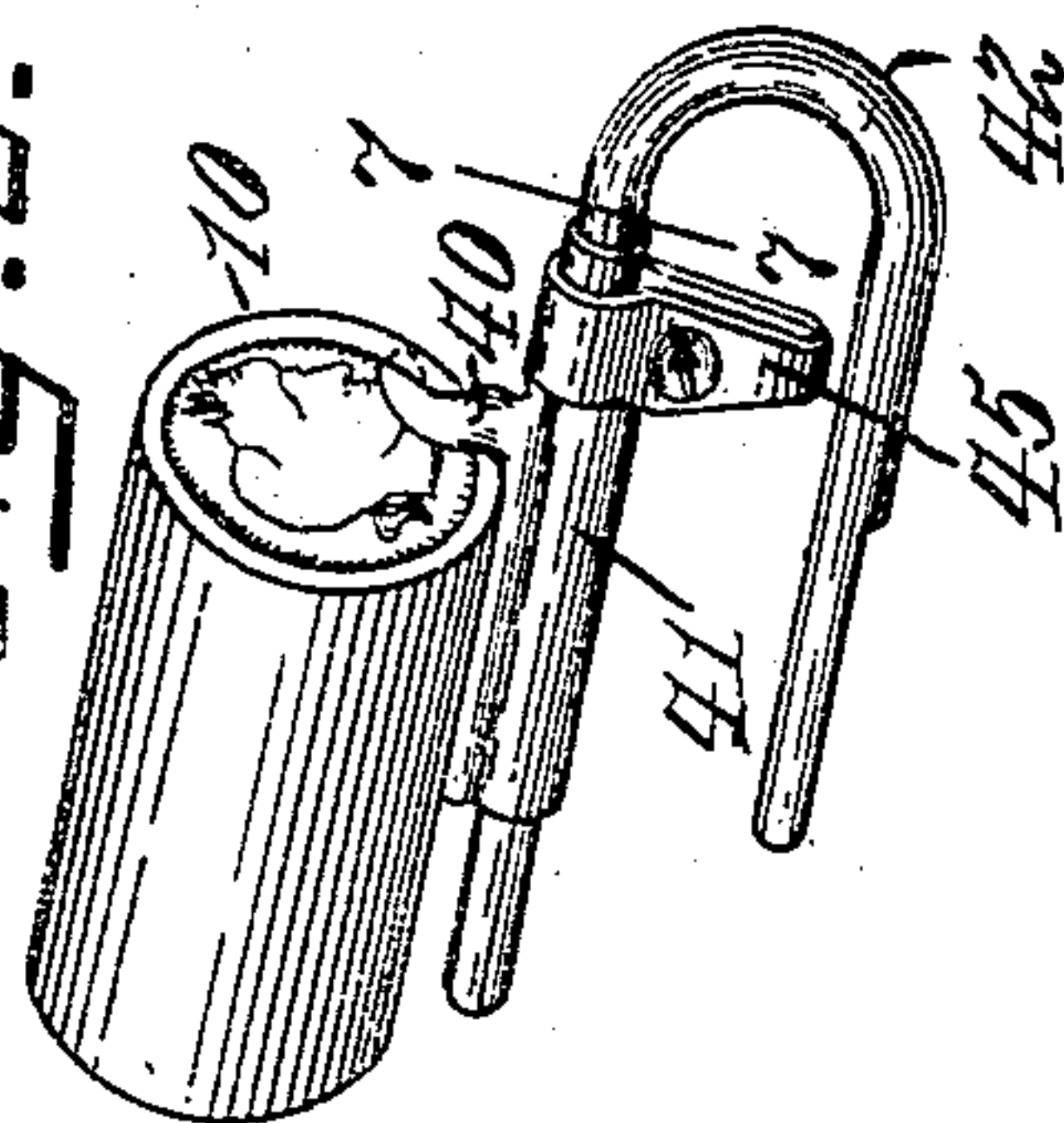
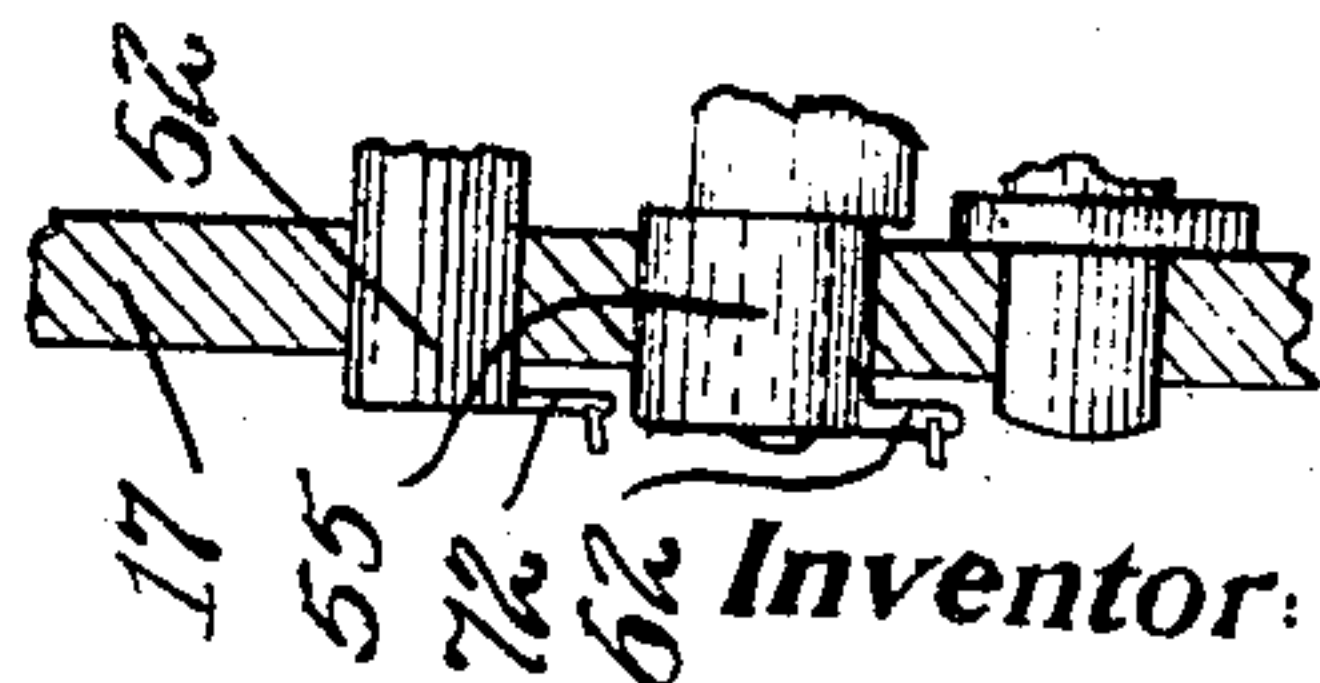
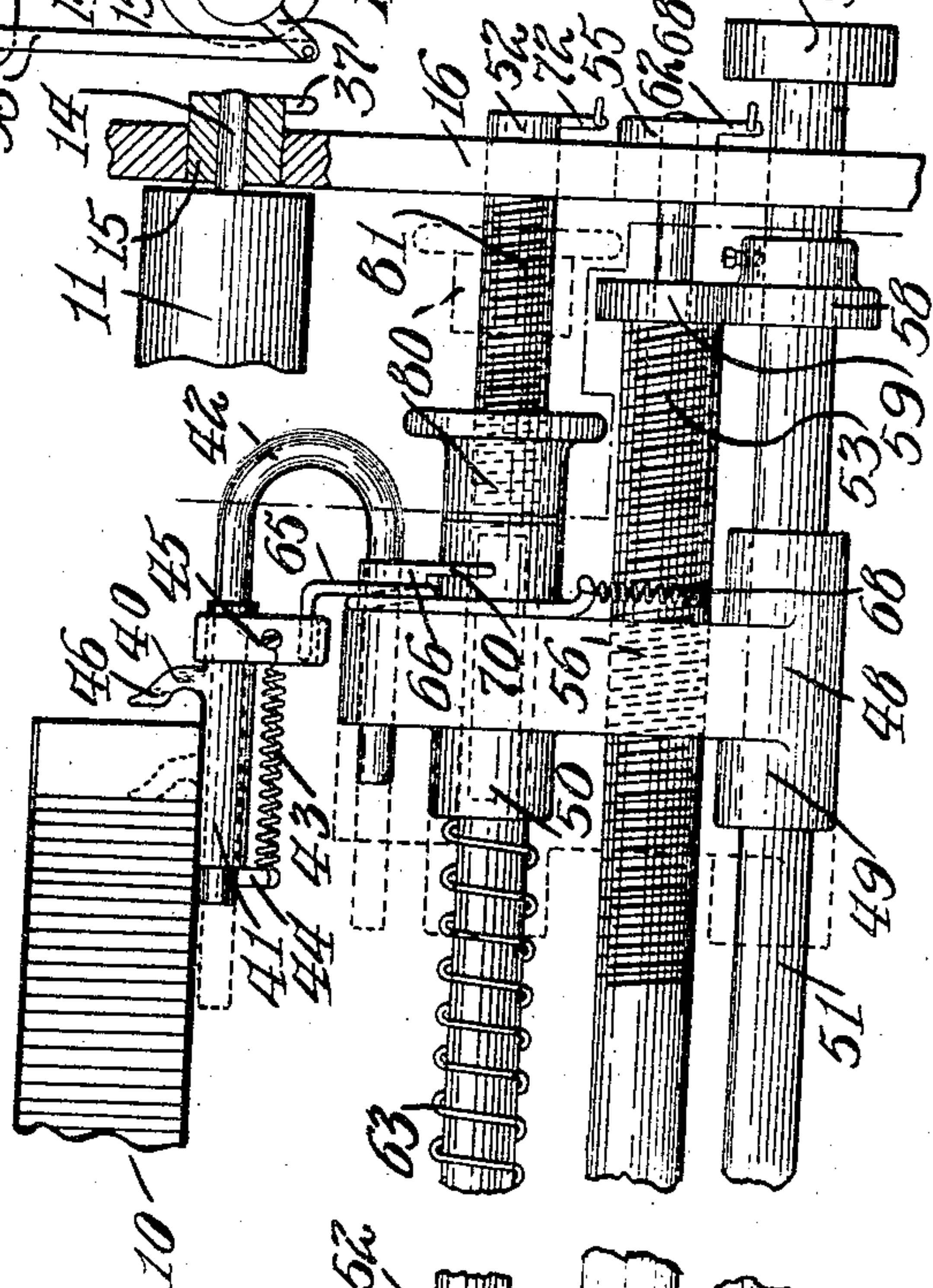


FIG. 2.



Witnesses:
H. D. Penney
H. Fleischer

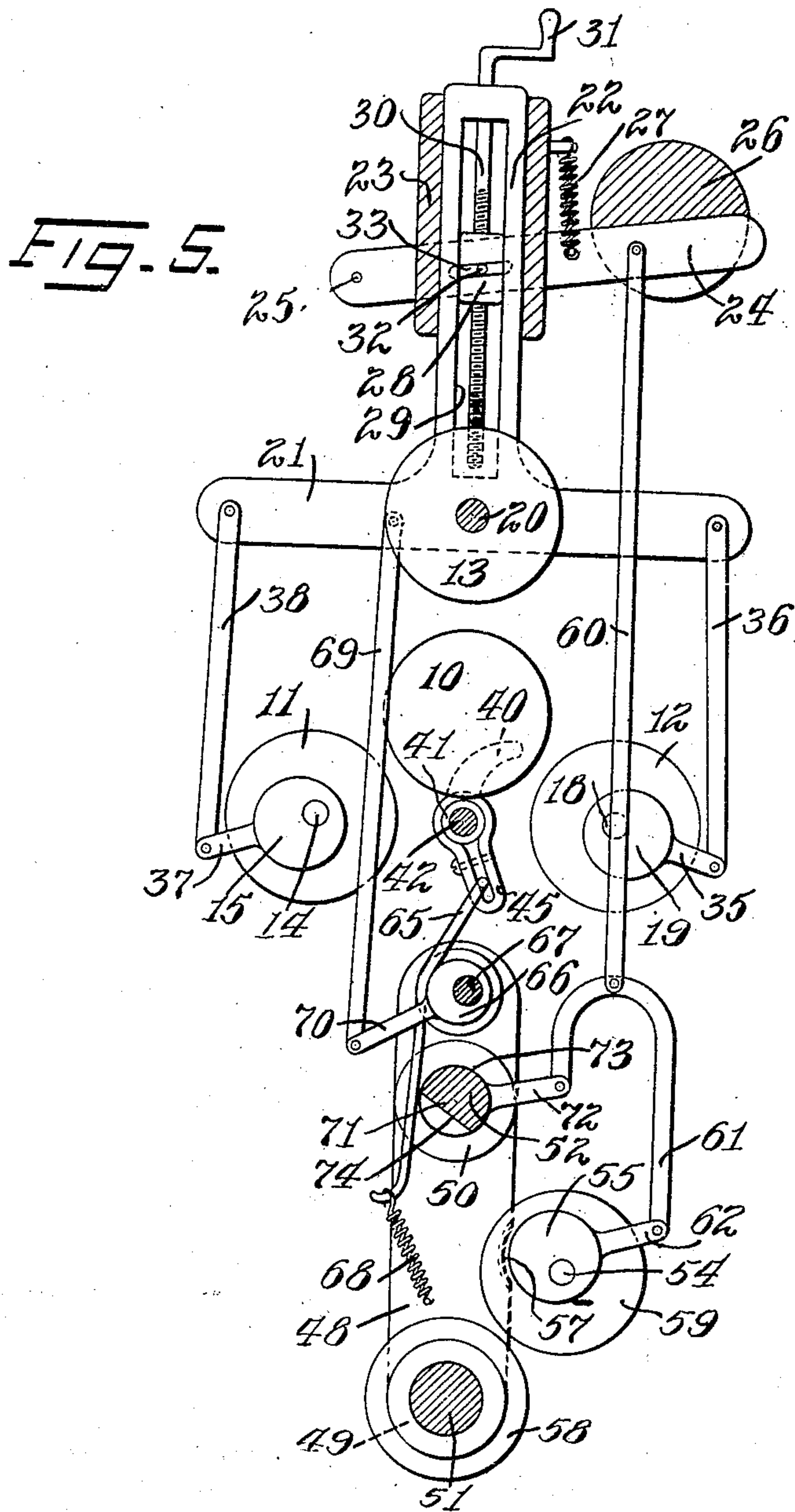
Inventor:
Rodney B. Ware.
By his Attorney:
F. H. Richards.

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3 SHEETS—SHEET 3.



Witnesses:

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F. A. Richards.

UNITED STATES PATENT OFFICE.

RODNEY B. WARE, OF BROOKLYN, NEW YORK.

CRIMPING MECHANISM.

No. 860,950.

Specification of Letters Patent.

Patented July 23, 1907.

Application filed May 18, 1906. Serial No. 317,560.

To all whom it may concern:

Be it known that I, RODNEY B. WARE, a citizen of the United States, residing in Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Crimping Mechanism, of which the following is a specification.

This invention relates to mechanism for wrapping or inclosing a cylindrical package in a flexible wrapper and securing the wrapper by crimping or bending the ends of the wrapper inward upon themselves whereby the end portions of the article or package, except at the extreme edges, are exposed to view.

The invention is especially applicable to what are termed coin packages in which a pile of coin are secured in a package by suitably crimping the projecting ends of the wrapper; which facilitates the handling of the coin, the contents being visible at each end of the package.

One of the objects of the invention is to provide in a machine of this character, an improved form of bending finger or crimper; and also to provide an improved form of means for controlling the operation of the crimper whereby it will automatically accommodate its operation to the different diameters of coins.

In the accompanying drawings Figure 1 is a plan view of a portion of a machine embodying my invention. Fig. 2 is a similar view showing a part only of the mechanism shown in Fig. 1. Fig. 3 shows in end elevation, parts shown in Fig. 1. Fig. 4 is a similar view with the parts in different positions. Fig. 5 is a view similar to Fig. 4 but enlarged, with the parts in still another position. Fig. 6 shows in perspective the crimping finger in the operation of crimping a wrapper on a coin package, and Fig. 7 is a section taken on the line 7—7 of Fig. 6.

The coin package denoted generally by 10 is supported between three parallel rollers 11, 12 and 13; and the distance apart of these rollers is made variable to accommodate different sized coin, that is different diameters of the coin packages. The roller 11 has a journal 14 at each end by which it is rotatably supported in hubs 15 but eccentric therewith. The hubs are arranged to oscillate in bearing portions of upright supports 16 and 17, whereby such rotation of the hubs will cause a movement bodily of the roller 11. The roller 12 is similarly mounted, having journals 18 at each end that are rotatable in hubs 19 in eccentric positions. The hubs 19 are supported to oscillate in the side members 16 and 17, whereby such movement of the hubs will cause a movement bodily of the roller 12.

The third roller 13 is movable to and from the rollers 11 and 12 by means of journals 20 at each end that are each rotatably carried by a T-shaped frame 21. The T members are in duplicate at each end of the mechanism as shown in Fig. 1, and a description of one will answer for both. This frame 21 has its portion 22 slid-

able in a guide box 23. The frame 21 is caused to oscillate by means of a lever 24 pivoted at 25 on the frame member, (16 and 17,) which lever is swung in one direction from a cam member 26, the lever being held against the cam by a spring 27 which serves to swing the lever in the other direction. The frame 21 is adjustably connected with this lever 24 by means of a nut 28 slidable in a slot 29 of the member 22; and adjusted therein by means of a screw 30 rotated by handle 31. A pin 32 on the nut 28 operates in a slot 33 in the lever 24. By this means the oscillation of the lever by the cam will serve to reciprocate the frame member 21, (at each end) and thereby the roller 13, moving it forward and from the rollers 11 and 12. The rollers 11 and 12 may also be given a movement toward and from each other, as the roller 13 is adjusted, to accommodate for various diameters of coin packages, as indicated in Figs 3 and 4.

The hub 19 has an arm 35 projecting therefrom, between which and one end of the frame 21 is pivoted a link 36. The hub 15 has an arm 37 connected with the opposite portion of the frame 21 by a pivoted link 38. By this means the sliding of the frame 21 will rock the hubs 15, and 19, and thereby cause the movement bodily of the rollers 11 and 12 moving them toward and from the roller 13. This will produce a mutual approaching movement of the three rollers when the frame moves in one direction, and a mutual receding movement of the rollers when the frame moves in the opposite direction. It will be observed that during one half the revolution of the cam 26 its concentric portion will engage the lever 24 and retain the rollers in the closed position permitting the operation of the crimping mechanism.

The crimping operation is effected at each end of the package by duplicate means; each comprising a finger or crimper 40 carried by a sleeve 41 that is rotatable on a bent rod 42 and given a slight yieldable movement thereon, by means of a spring 43 connected between a pin 44 fast on the rod 42, and an arm 45 secured to the sleeve 41. The finger or crimper 40 extending from the sleeve 41 is first bent downward at 46, and then bent transversely or sidewise at 47. In the operation of the finger, it is first swung on the axis of the sleeve so that the extremity will entirely clear the projecting edge of the wrapper, as indicated in Fig. 5. The crimper is given an endwise movement, as indicated in Figs. 1 and 2, whereby its bent portion 46 will turn down the projecting edge of the wrapper; the coin package at this time being revolved by the rotation of the rollers, through any suitable means, not shown. As the crimping operation proceeds and the crimper reaches the limit of its advancing movement, it is swung outwardly on the axis of the sleeve away from the axis of the package, to the position indicated in Figs. 3 and 4. This will cause the end portion of the crimper to engage the inner face of the wrapper and complete the operation of doubling the wrapper upon

itself. The next operation is to cause a reverse swing of the crimper on the axis of the sleeve, to withdraw the extremity of the crimper from engagement with the wrapper; and thereupon the crimper is bodily moved to its former position, to permit the removal of the package and another package to be placed in position for operation. One means for automatically effecting such operation is shown in the drawing, wherein each rod 42 is secured to a nut member 48 that is supported to reciprocate by means of sleeve portions 49 and 50, slidable on shafts 51 and 52 respectively. These shafts are rotatable in the side members 16 and 17. Between the shafts 51 and 52 is located a screw member 53 having journals 54 at each end eccentrically supported in hubs 55, that are rotatable in the side members 16 and 17 respectively. The swinging of these hubs will shift the screw shaft 53 into and out of engagement with thread portions 56 on the nut members 48; whereby the rotation of the screw will cause the nut members to travel from the positions shown in full to the position indicated in broken lines.

The shaft 51 is rotated by any suitable means, such as a pulley 57, and serves to drive the screw shaft 53 by means of friction wheels 58 fast on the shaft 51 that will engage friction wheels 59 fast on the screw 53, when the latter shaft is shifted on its eccentric support to cause its screw portions 83 and 84 to engage the nut portions 56. But upon movement of the shaft out of position of engagement with the nut member, the friction wheels will disengage. This shifting of the screw shaft into and out of engaging position is effected at each end of the machine from the operation of the lever 24 by means of connecting links 60 and 61, the latter being pivoted to an arm 62 fast on the hub member 55.

The rod 42 carrying the crimper 40 is secured to the nut member 48, and when the lever 24 is in the position shown in Fig. 3, in which the three rolls 11, 12 and 13 have been caused to approach and engage the coin package, the nut members being brought into engagement with the screw, will cause the crimpers to be advanced as indicated in Fig. 1 to the broken line position. But by the time the crimpers have traveled a sufficient distance to crimp the wrapper, the lever 24 is released by the cam and moved upward by the spring, which will throw the screw 53 out of engagement with the nut members. At this stage a coil spring 63 on the shaft 52 between the sleeve 50, that has been compressed during the travel of the sleeves, will react and return the nut members and crimpers to their former positions. This movement is limited by adjustable stops 80 whose threaded bore engages threaded portions 81 and 82 of the shaft 52.

Means are provided for swinging the crimper on the axis of the supporting sleeve, upon being advanced by the nut member and cause the wrapper to be doubled inward, and also for swinging the finger inward or away from the wrapper at the end of the crimping operation before the crimper is returned to its former position to prevent the point engaging the crimped portion on the return stroke. In Fig. 4 it will be observed that a rod 65 has one end pivotally secured to the arm 45, fast on the sleeve 41 of the crimper. This rod is looped and passes around a hub 66 that is eccentrically pivoted on a journal 67, projecting from the nut member 48. The extending portion of the rod projects

along the nut member and has its extremity secured to a coil spring 68 fast on the member 48. A link 69 is pivoted between the frame 21 and an arm 70 fast on the hub 66; whereby the swinging of the frame will rotate the collar on its eccentric bearing moving the rod outward from the member 48. This latter motion will swing the crimper on the axis of its sleeve and move its transverse arm toward or from the periphery of the projecting portion of the wrapper, as indicated in the positions of these members shown in Figs. 3 and 4. By this arrangement, the adjustment of the nut connection between the lever 24 and the frame 21, varying the path of movement of the frame 21, will, through the link 69, vary the position of the transverse arms of the crimpers.

Additional means are provided for swinging each crimper on its axis upon the crimper being advanced to engage the paper, and which means will swing the crimper inward or away from the wrapper at the conclusion of its operation before returning it to its former position. A cam member 71 is pivoted on the member 48, at each end and has an arm 72 pivotally connected with a portion of the link member 61, that is made somewhat U-shape. The round portion 73 of the cam member normally engages the rod 65, swinging the rod on its loop axis on the hub 66, retains the crimper with its extremity offset from the wrapper, as shown in Fig. 5. But as the lever 24 moves downward, it first brings the rollers into engagement with the package and also causes the screw member to engage the nut member and rotate the latter through the friction driving wheels. During this operation, the flat portion 74 of the eccentric 71 permits the spring 68 to swing the rod 65 to the positions shown in Figs. 3 and 4 thereby swinging the crimper to bring its extremity into engagement with the inner face of the crimping portion of the wrapper, to complete the crimping operation. But upon the return stroke of the lever 24, the cam 71 will first swing and rock the rod 65 to move the crimper arms away from the paper, before the screw member is disengaged from the nut members 48 permitting the spring 63 to return the nut members to their former position.

Adjustment for different lengths of packages is provided for by means of the shiftable stops 80. At each release of the nut members 48 from the screw portions 83 and 84 of the member 53, the spring 63 will move the nut members in opposite directions, until they engage the stops 80. At each engagement of the nut members with the said screw portion they will advance a certain distance that is constant, that is for a certain number of threads. This distance will be from the adjusted position of the stops toward each other, and therefore this adjustment of the stops will determine the range of operative positions of the crimpers. Moving the stops toward the adjacent frames will obviously provide for a longer coin package and while movement in the opposite direction of the stops will adjust for shorter packages.

Having thus described my invention, I claim:

1. The combination with means for supporting and rotating a coin package, of a crimping finger having an arm arranged to extend over the edge of the package and then extend downward and outward, and an operating mechanism organized and timed to move the finger bodily toward the end of the package and swing the end portion of the

arm outward to crimp the wrapper, to next swing the arm in the reverse direction bringing its end away from the crimped portion, and to next cause a return movement of the finger to its former position.

2. The combination with means for supporting and rotating a coin package, of a crimping finger having an arm arranged to extend over the edge of the package and then downward and outward, an operating mechanism organized and timed to move the arm bodily toward the end of the package and swing the end portion of the arm outward to crimp the wrapper, to thereupon swing the arm in the reverse direction bringing its free end away from the crimped portion, and to thereupon cause a return movement of the arm to its former position, means for adjusting the supporting and rotating means to accommodate different diameters of coin packages, and means connected with said adjusted means for varying the swinging movement of the crimper arm.

3. In a crimping mechanism, the combination of parallel rollers rotatably mounted and arranged to support a coin package therebetween, means for adjusting the rotative position of one of said rollers toward and from the other rollers to accommodate different diameters of coin packages, a crimper operated by the machine to crimp a projecting edge of a wrapper on the package, and mechanism connecting said roller adjustment with said crimper to vary the operation of the crimper according to the diameter of the package.

4. In a crimping mechanism, the combination of a pair of parallel rollers rotatably supported, a third roller rotatably supported and adjustable to have its support move to and from the said rollers, said pair of rollers having their bearings adjustably supported for mutual movement bodily toward and from each other.

5. In a crimping mechanism, the combination of a pair of parallel rollers rotatably supported, a third roller rotatably supported and adjustable to have its support move to and from the said rollers, said pair of rollers having their bearings adjustably supported to be moved bodily toward and from each other, and at the same time toward and from the third roller.

6. In a crimping mechanism the combination of three parallel rollers rotatably mounted, an operating member arranged to cause an approach and recession of all said rollers, a crimping member located adjacent a package supported between said rollers, mechanism operably connected with said member for shifting the rollers to actuate the crimper to fold down the projecting edge of a wrapper surrounding a package between the rolls, means for varying the path of movement of all said rollers whereby to engage different diameters of packages between the rollers, and mechanism controlled by said latter means for varying the operation of the crimper.

7. In a crimping mechanism, the combination of three parallel rollers rotatably mounted, an operating member arranged to cause an approach and recession of said rollers, a crimping member located adjacent a package supported between said rollers, mechanism operably connected with said mechanism for shifting the rollers to actuate the crimper to fold down the projecting edge of a wrapper surrounding a package between the rolls, means for varying the path of movement of one roller whereby to engage different diameters of packages between the rollers, means for swinging the crimper transversely to and from the wrapper, and means for varying said latter movement according to the adjustment of the said rollers to accommodate different diameters of packages.

8. The combination with means for supporting and rotating a coin package having a surrounding wrapper projecting at both ends, of crimping fingers one arranged at each end of the package, each finger being provided with an arm extending over the edge of the package and thence extending downward and outward, and operating mechanism connected with the fingers and organized to move the said arms bodily toward the adjacent end of the package and to swing each arm moving its transverse end portion outwardly to crimp the wrapper, to next swing the arms in the reverse direction away from the crimped portion, and to next cause a return movement of the fingers to its normal position.

9. The combination with means for supporting and ro-

tating a coin package having a surrounding wrapper projecting at both ends, of crimping fingers one arranged at each end of the package, each finger being provided with an arm extending over the edge of the package and thence extending downward and outward, and operating mechanism connected with the fingers and organized to move the said arms bodily toward the adjacent end of the package and to swing each arm moving its transverse end portion outwardly to crimp the wrapper, to next swing the arms in the reverse direction away from the crimped portion, and to next cause a return movement of the fingers to its normal position, means for adjusting the supporting and rotating means to accommodate different diameters of coin packages, and means connected with said adjusting means for varying the swinging movement of the crimper arms.

10. In a crimping mechanism, the combination of three parallel rollers rotatably supported, mechanism for shifting said rollers to engage and release a coin package therebetween, means for adjusting one of said rollers in its path of movement to accommodate different diameters of coin packages, a driving shaft, a friction wheel on the driving shaft, a screw shaft, a friction wheel on the screw shaft, adjustable bearings for the screw shaft permitting it to be shifted to engage and disengage said friction wheels, a nut member supported for longitudinal movement and provided with a threaded portion arranged to engage said screw at one position of its shaft, a crimping arm carried by the nut member and arranged to fold down the projecting end of a wrapper on a package between the rolls, means arranged to shift the screw shaft to cause its engagement with the nut member and also engage the friction wheels, whereby the nut member is advanced from the driving shaft, said latter mechanism being controlled by the mechanism causing the approach and recession of the supporting rollers, and means for returning the nut member to its former position when released from the screw shaft.

11. In a crimping mechanism, the combination of three parallel rollers rotatably supported, mechanism for shifting said rollers to engage and release a coin package therebetween, means for adjusting one of said rollers in its path of movement to accommodate different diameters of coin packages, a driving shaft, a friction wheel on the driving shaft, a screw shaft, a friction wheel on the screw shaft, adjustable bearings for the screw shaft permitting it to be shifted to engage and disengage said friction wheels, a nut member supported for longitudinal movement and provided with a threaded portion arranged to engage said screw at one position of its shaft, a crimping arm carried by the nut member and arranged to fold down the projecting end of a wrapper on a package between the rolls, means arranged to shift the screw shaft to cause its engagement with the nut member and also engage the friction wheels, whereby the nut member is advanced from the driving shaft, said latter mechanism being controlled by the mechanism causing the approach and recession of the supporting rollers, means for returning the nut member to its former position when released from the screw shaft, and means for giving a lateral reciprocation to the crimping finger after its initial movement.

12. In a crimping mechanism, the combination of three parallel rollers rotatably supported, mechanism for shifting said rollers to engage and release a coin package therebetween, means for adjusting one of said rollers in its path of movement to accommodate different diameters of coin packages, a driving shaft, a friction wheel on the driving shaft, a screw shaft, a friction wheel on the screw shaft, adjustable bearings for the screw shaft permitting it to be shifted to engage and disengage said friction wheels, a nut member supported for longitudinal movement and provided with a threaded portion arranged to engage said screw at one position of its shaft, a crimping arm carried by the nut member and arranged to fold down the projecting end of a wrapper on a package between the rolls, means arranged to shift the screw shaft to cause its engagement with the nut member and also engage the friction wheels, whereby the nut member is advanced from the driving shaft, said latter mechanism being controlled by the mechanism causing the approach and recession of the supporting rollers, means for returning the nut member to its former position when released from the screw shaft,

means for giving a lateral reciprocation to the crimping finger during its advance movement, and means for varying said lateral reciprocation according to the adjustment of said roller to accommodate different diameters of coin packages.

13. The combination of three parallel rollers rotatably supported, an operating member arranged to cause approach and recession of said rollers, crimping fingers one arranged at each end of a package supported between said rollers, each finger being provided with an arm extending over the edge of the package and thence extending downward and outward, operating mechanism connected with mechanism for shifting the rollers to advance the crimpers to fold down the ends of a wrapper surrounding the package between the rolls, means for varying the path of movement of one roller whereby to engage different diameters of packages between the rollers, and mechanism controlled by said latter means for varying the operation of the crimpers.

14. In a crimping mechanism, the combination of three parallel rollers rotatably mounted to support and rotate a coin package, an operating member arranged to cause approach and recession of said rollers, crimping fingers one arranged adjacent each end of the package, each finger being provided with an arm extending over the edge of the package and thence extending downward and outward, mechanism operably connected with said mechanism for shifting the rollers to advance the crimpers to fold down the projecting ends of a wrapper surrounding a package between the rolls, means for varying the path of movement of one roller whereby to engage different diameters of packages between the rollers, means for swinging the crimper arms toward and from the wrapper, and means for varying said latter movement according to the adjustment of said roller.

15. In a crimping mechanism, the combination of three parallel rollers rotatably supported, mechanism for shifting said rollers to engage and release a coin package therebetween, means for adjusting one of said rollers in its path of movement to accommodate different diameters of coin packages, a driving shaft, a friction wheel on the driving shaft, a screw shaft, a friction wheel on the screw shaft, adjustable bearings for the screw shaft permitting it to be shifted to engage and disengage said friction wheels, a pair of nut members supported for longitudinal

movement and provided with a threaded portion arranged to engage said screw at one position of its shaft, means arranged to shift the screw shaft to cause its engagement with the nut member and also engage the friction wheels, whereby the nut members are caused to mutually approach and recede from the driving shaft, a crimping arm carried by each nut member and arranged to fold down the opposite projecting ends of a wrapper on a package between the rolls, said latter mechanism being controlled by the mechanism causing the approach and recession of the supporting rollers, and means for returning the nut member to its former position when released from the screw shaft.

16. In a crimping mechanism, the combination of three parallel rollers rotatably supported, mechanism for shifting said rollers to engage and release a coin package therebetween, means for adjusting one of said rollers in its path of movement to accommodate different diameters of coin packages, a driving shaft, a friction wheel on the driving shaft, a screw shaft, a friction wheel on the screw shaft, adjustable bearings for the screw shaft permitting it to be shifted to engage and disengage said friction wheels, a pair of nut members supported for longitudinal movement and provided with a threaded portion arranged to engage said screw at one position of its shaft, means arranged to shift the screw shaft to cause its engagement with the nut member and also engage the friction wheels, whereby the nut members are caused to mutually approach and recede from the driving shaft, a crimping arm carried by each nut member and arranged to fold down the opposite projecting ends of a wrapper on a package between the rolls, said latter mechanism being controlled by the mechanism causing the approach and recession of the supporting rollers, and means for returning the nut member to its former position when released from the screw shaft, means for giving a lateral reciprocation to the crimping finger after its inward movement, and means for varying said lateral reciprocation according to the adjustment of said roller to accommodate different diameters of coin packages.

Signed at Nos. 9 to 15 Murray street, New York, N. Y., this 16 day of May, 1906.

RODNEY B. WARE.

Witnesses:

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FRED. J. DOLE.