

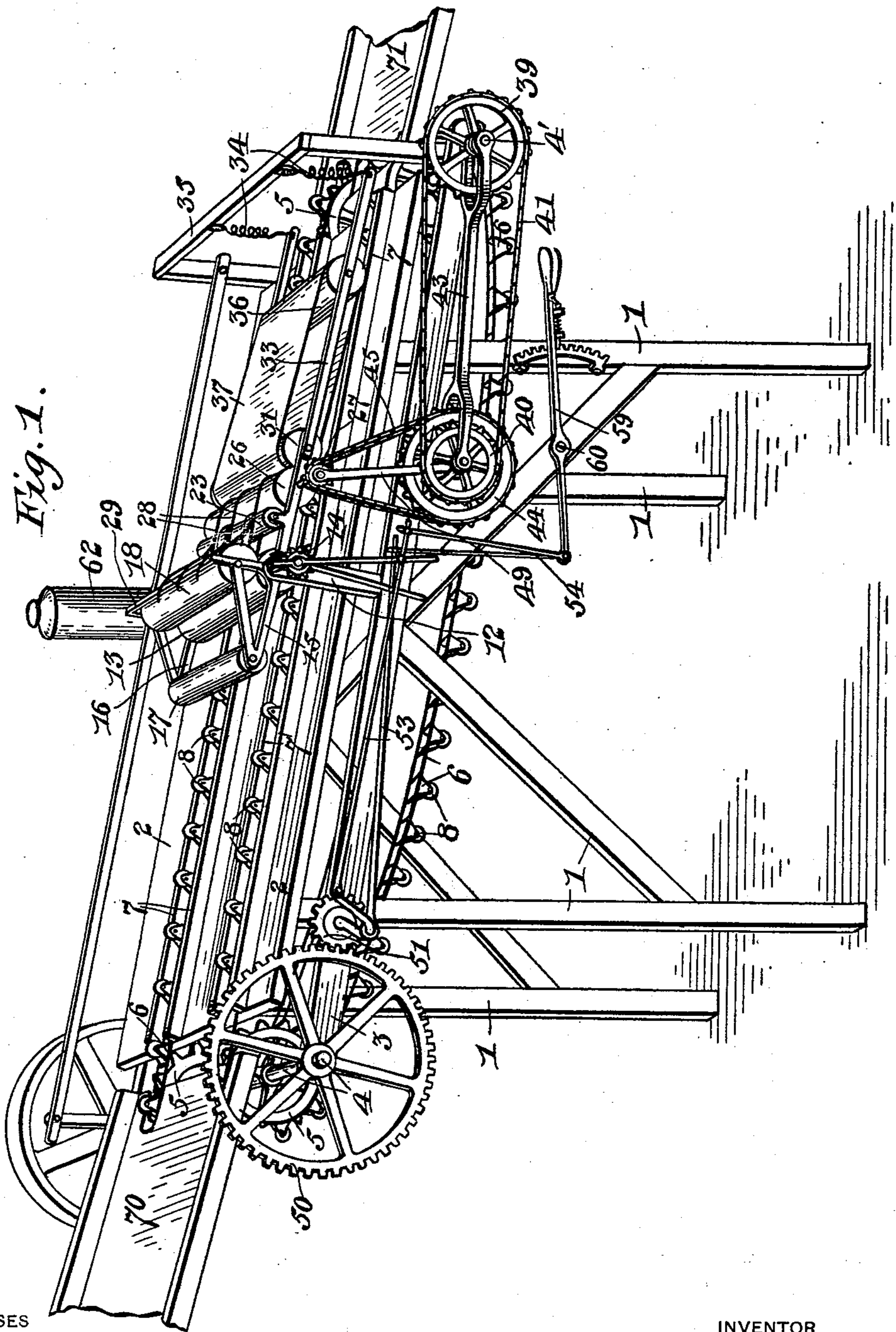
(No Model.)

5 Sheets—Sheet 1.

L. H. ADAMSON.
WRAPPING OR COVERING MACHINE.

No. 539,659.

Patented May 21, 1895.



WITNESSES

INVENTOR

G. Everance.
W. Harry Muzzy.

Lee Harmon Adamson,
By Angeline S. Sawyer
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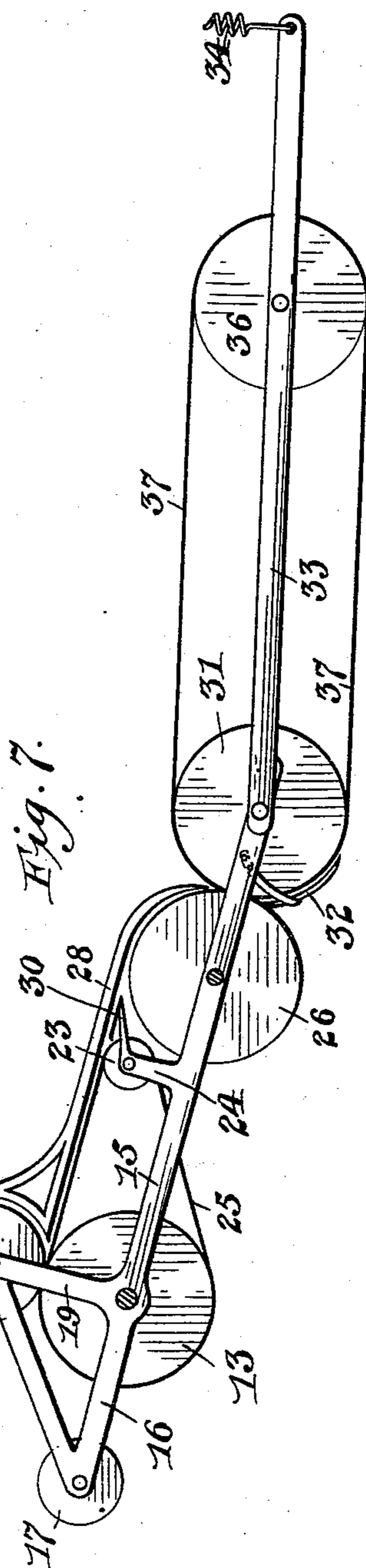
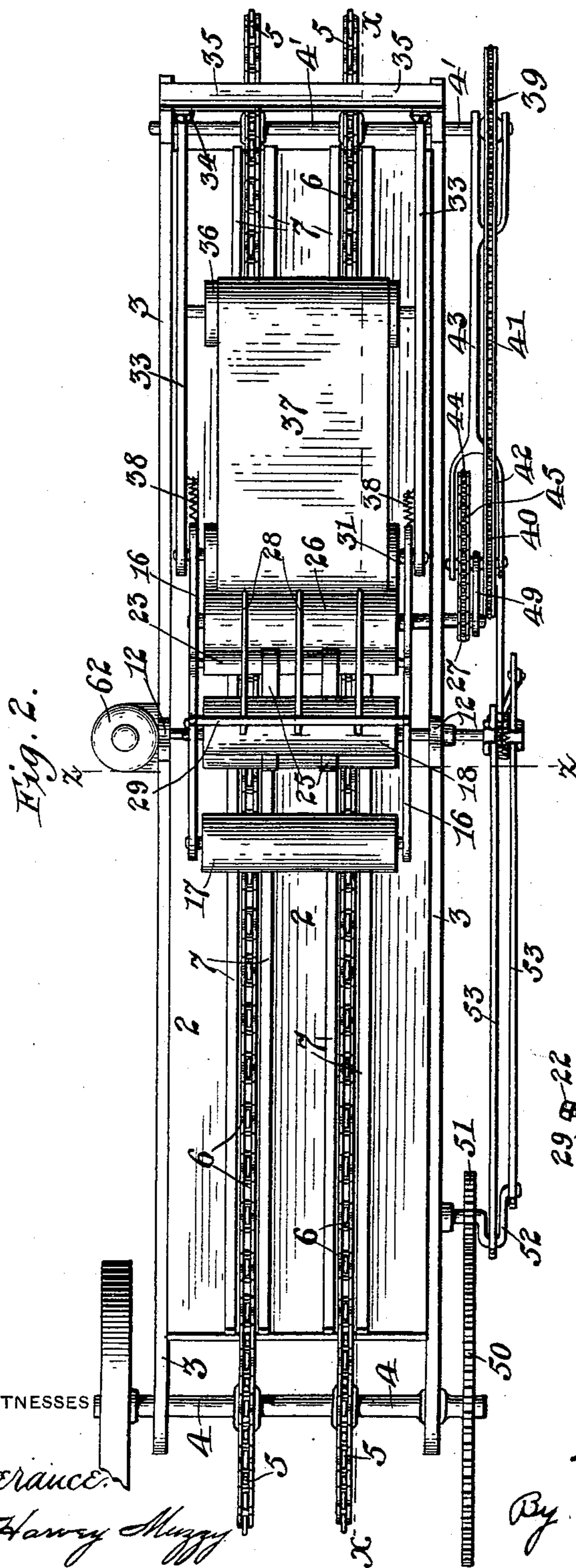
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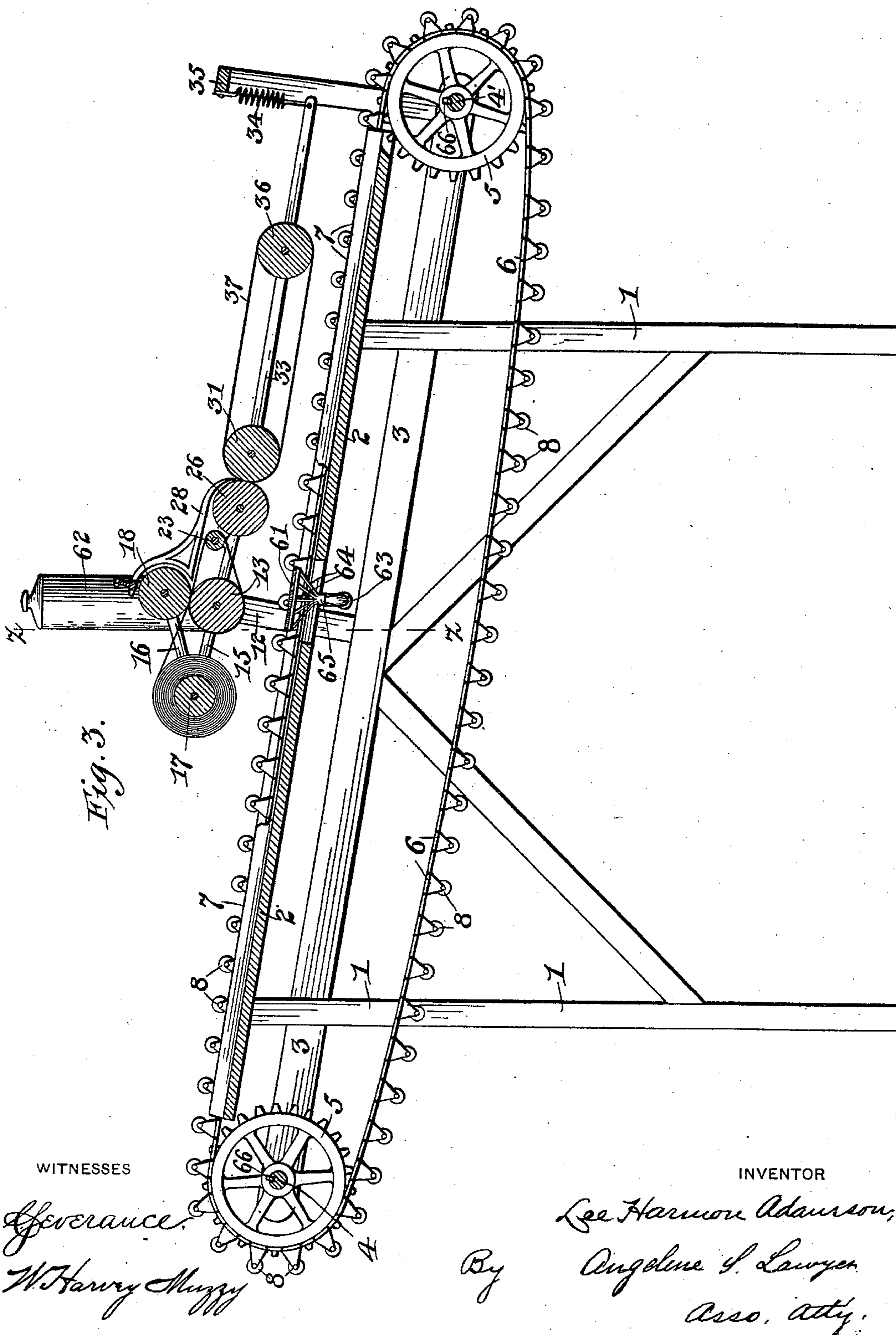
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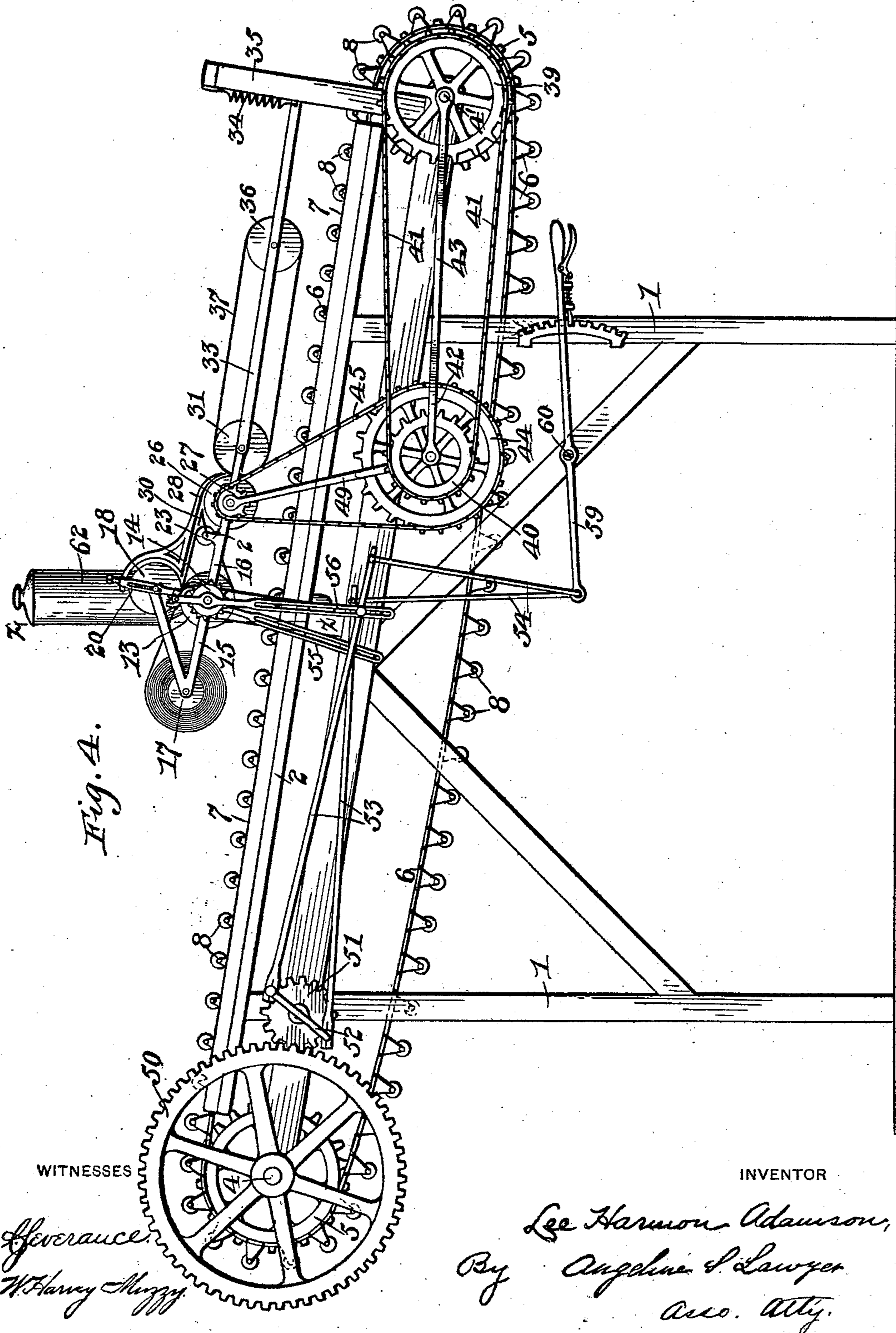
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5 Sheets—Sheet 4.

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5 Sheets—Sheet 5.

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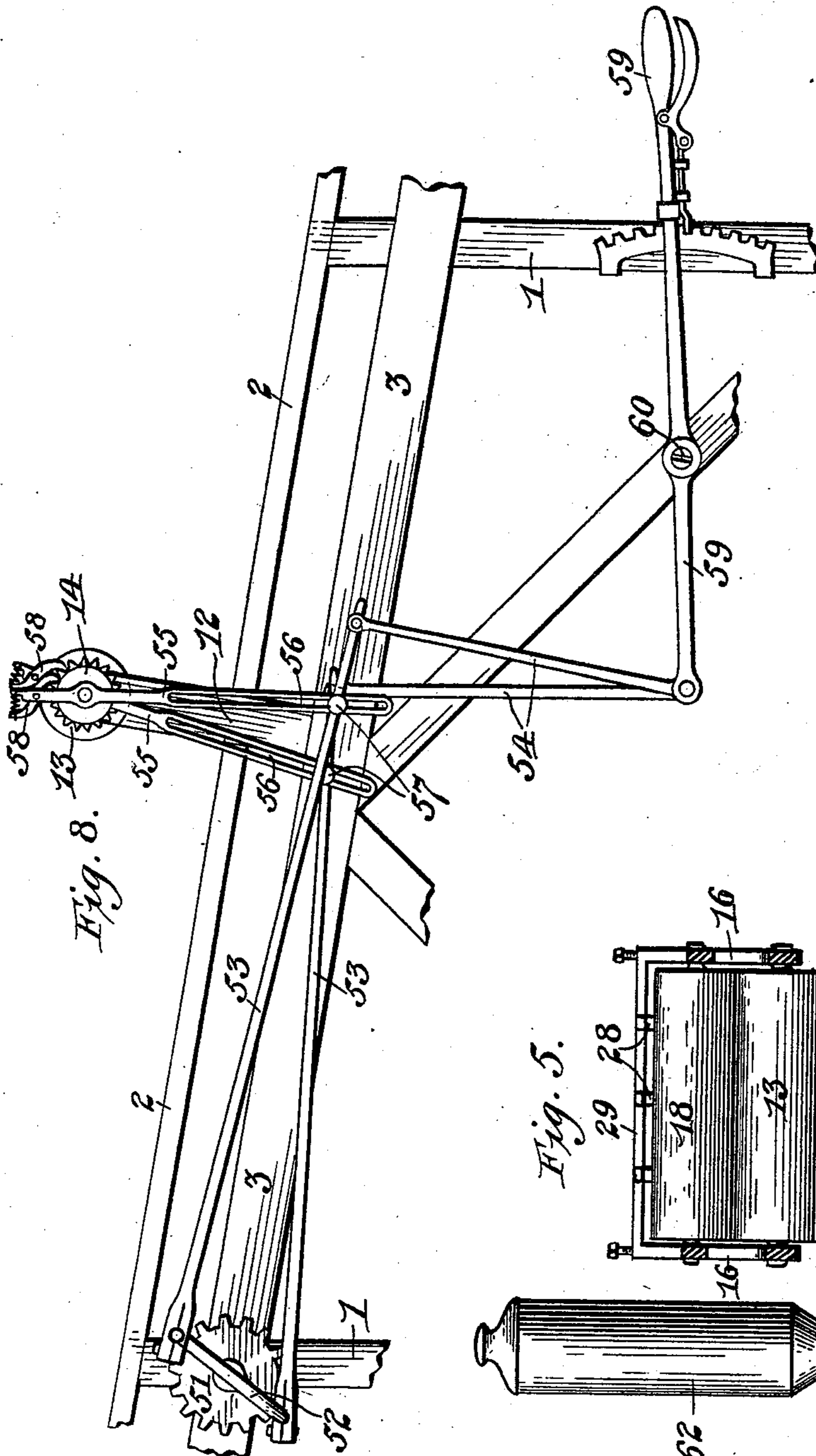


Fig. 8.

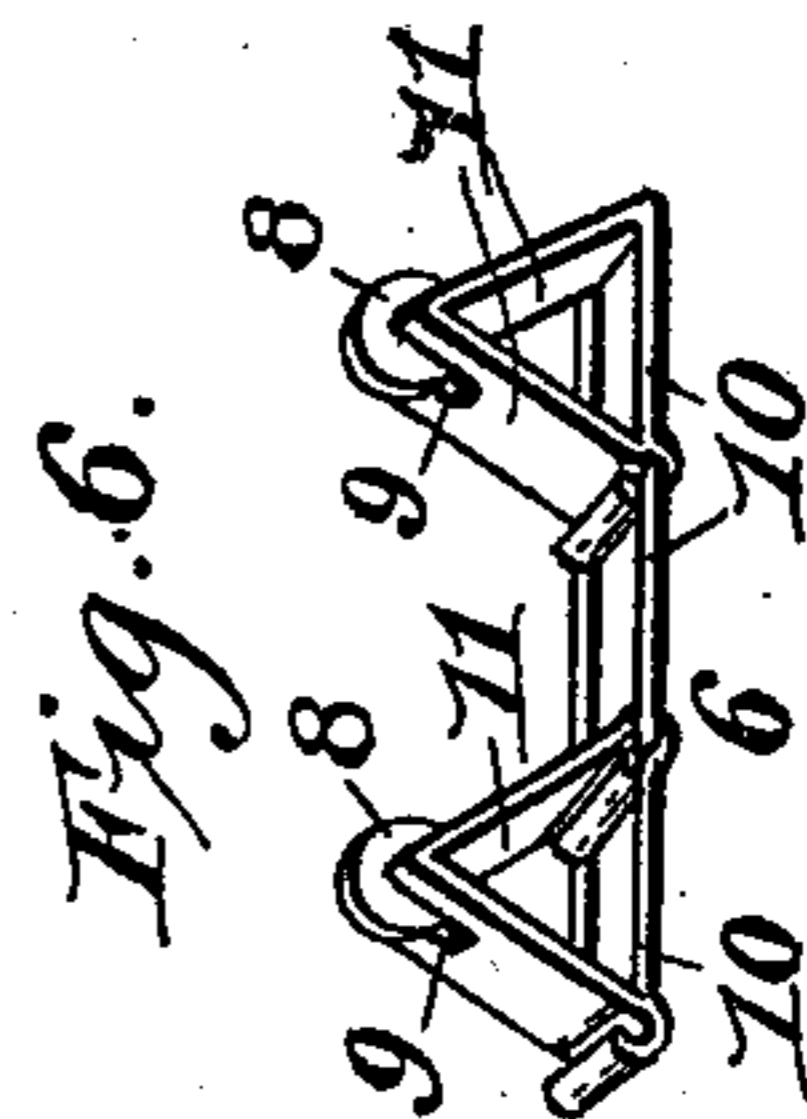


Fig. 6.

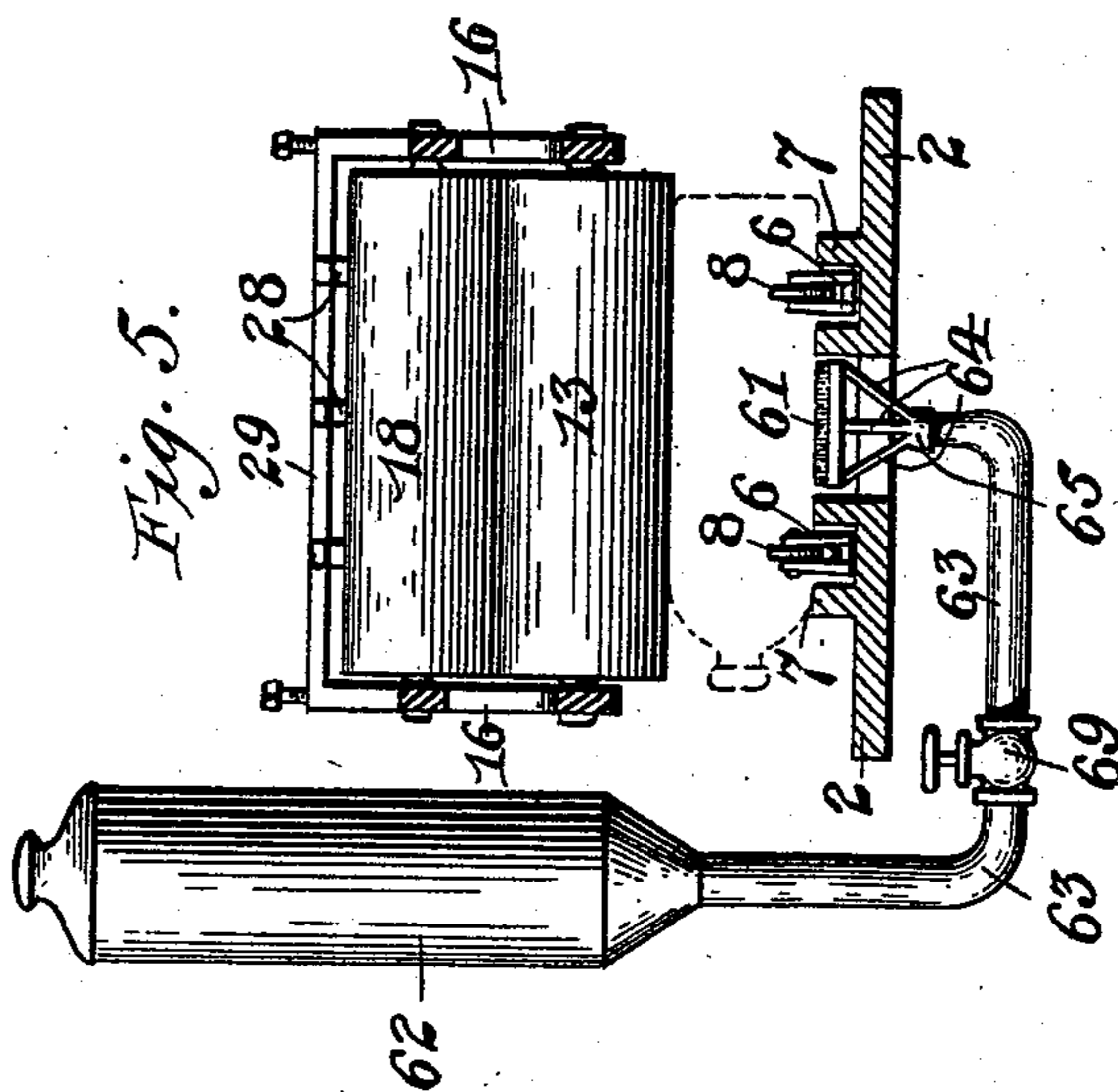


Fig. 5.

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UNITED STATES PATENT OFFICE.

LEE HARMON ADAMSON, OF ROGERS, ARKANSAS.

WRAPPING OR COVERING MACHINE.

SPECIFICATION forming part of Letters Patent No. 539,659, dated May 21, 1895.

Application filed February 21, 1895. Serial No. 539,172. (No model.)

To all whom it may concern:

Be it known that I, LEE HARMON ADAMSON, a citizen of the United States, residing at Rogers, in the county of Benton and State of Arkansas, have invented certain new and useful Improvements in Wrapping or Covering Machines; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention has for its object to provide a covering machine whereby labels, pasters or covers, may be wrapped around and secured to bottles, boxes or other bodies having a curved periphery, with a minimum of manual labor, and in such a manner that as long as the several moving parts of the machine are kept in motion, and the supply of pasters, mucilage and bodies are continuous, and the removal of the wrapped bottles performed, no manual labor is required, and for this purpose my invention consists in the construction, arrangement and combination of the several parts of which it is composed, as will be hereinafter more fully described and claimed.

Referring to the accompanying drawings, in which corresponding parts are designated by similar marks of reference, Figure 1 is a perspective view of a complete machine constructed in accordance with this invention. Fig. 2 is a plan view thereof. Fig. 3 is a central longitudinal section on lines $x x$ of Fig. 2. Fig. 4 is a side elevation. Fig. 5 is a transverse section on lines $z z$ of Figs. 2, 3, and 4. Fig. 6 is a detail of the feeding sprocket-chain. Fig. 7 is a detail of the label-feeding mechanism. Fig. 8 is a detail of the intermittent feeding mechanism of the label-feeding rollers.

The main frame 1 constitutes a suitable support for the mechanism to be hereinafter described, and has on each side thereof, below its flat top 2, the longitudinal stringers 3, which project beyond the ends of the said top and carry in their projecting ends the transverse shafts 4, 4', the former being at the rear end of the table thus formed and be-

ing the principal driving shaft of the machine, while the latter is at the forward end. Each of these shafts has located thereon, between the stringers and at equal distances on each side of its center, sprocket wheels 5, over which sprocket wheels, the sprocket chains 6 pass, the direction of the rotation of the shaft 4 being such that the chains, which have their one part above and resting in the longitudinal grooves formed by the tracks 7 on the top of the table, and their opposite part passing below the table, are fed above the table from the rear to the front thereof, the said chains imparting an equal motion to the shaft 4'. Each of the sprocket chains 6 has formed upon the outer side thereof a series of triangular projections, which are provided at their apex with anti-friction rollers 8, mounted in slots 9 in such projections (as shown). In Fig. 6, I have illustrated the preferred manner in which I construct such a sprocket chain, that is to say, I take a suitable number of links, 10, such as are now commonly used in sprocket chains, and secure thereon strips of metal, by bending the opposite ends of such strips around the adjacent cross bars 10, the said strips 11 being bent at their center to form the triangular projections above referred to.

Upon the central portion of each of the stringers 3 I erect a standard 12, and between the upper portions of such standard mount the feed roller 13, the shaft of the said roller projecting through the standard and being provided with a rigid ratchet wheel 14. The shaft of this roller also passes through the longitudinally inclined members 15 of a frame 16, which is thus pivoted thereby, above the table 2 and the sprocket chains thereon. The rearwardly extending ends of the members 15 have pivoted between them a roller 17, on which may be mounted a roll of the wrappers or labels in a single strip, which is perforated at distances apart, corresponding to the length of the wrapper or label which is desired to be placed upon the article operated upon.

A friction roller 18 is mounted above the feed roller 13 in standards 19, rising from members 15 of the frame 16, the said roller 18 being mounted in slots 20 in the said standards, and being pressed downwardly upon the roller 13 by spiral springs 21, contained in the said slots, the said springs, and therefore the

tension existing between the rollers 13 and 18, being capable of adjustment by means of thumb screws 22.

A roller 23 is mounted in projections 24 upon the upper surface of the members 15 in the frame, and a belt 25 passes around the rollers 13 and 23, while a drawing roller 26 is mounted in the said members 15 in front of the rollers 23, one of the gudgeons of the said drawing roller projecting through the said member 15, and being provided upon its projection with a sprocket wheel 27.

Guides 28 are secured to the cross bar 29, connecting the upper end of the standards 19 and extend along the upper surface of the upper portion of the belt 25 and partially around the roller 26, thereby holding the labels or wrappers upon the said belt and roller, and to prevent any possibility of the said wrappers or labels failing to pass to the drawing roller 26, I mount upon the projections 24 an extension plate 30 extending from the periphery of the roller 23 to near that of the said drawing roller.

The member 15 of the frame 16 extends to some distance in front of the gudgeons of the roller 26, and have mounted in their forwardly extending ends a roller 31 to which motion is imparted by its friction upon the roller 26, the said member 15 having fingers 32 secured thereto, which bear upon the periphery of the roller 26 and follow the contour of the roller 31, thereby removing the pasters or wrappers from the former roller and causing them to pass to the belt upon the roller 31, as will be hereinafter mentioned. The gudgeons of the roller 31 are also mounted in the rear ends of rods 33, the forward ends of the said rods being suspended by spiral springs 34 from a transverse bar 35 above the forward end of the table, while a roller 36 is mounted on the said rods 33 near their forward ends, a belt 37 passing over the rollers 31 and 36.

The ends of the members 15 which project in front of the gudgeons of the rollers 31 are connected with the rods 33 by spiral springs 38, and it will be thus seen that the frame 16 and rods 13 form a system of pivoted parts, connected by the gudgeons of the roller 31 and the springs 38, so that by the movements of these parts upon their common pivot, and upon the gudgeons of the roller 13, the elevation of the belt 37 above the table 2, is varied, and that as the strength of the springs 38 and 34, are not sufficient to lift the said rollers 31 and 36, the latter, with the belt thereon, will normally lie upon the sprocket chain 6, or upon the bottles, boxes or other bodies thereon, and this irrespective of the size of such bodies.

The projecting end of the shaft 4' carries a sprocket wheel 39, over which, and over the sprocket wheel 40 passes the sprocket chain 41, the said wheel 40 being mounted in the forked ends 42 of the rod 43, which is pivoted upon the shaft 4'. A second sprocket

wheel 44 is mounted upon the same shaft as the wheel 40, the two being thus rigidly connected together, and over the wheel 44, and the sprocket wheel 27, mounted upon the gudgeon of the wheel 26, a sprocket chain 45 passes, the relative size of the sprocket wheels 39, 40, 44, and 27 being such that the belt 37, to which motion is imparted by friction from the roller 26, moves with twice the velocity of the carrying sprocket chain 6.

The chain 45 is kept taut by the rod 49 which has its opposite ends mounted upon the gudgeon of the roller 26 and the axle of the sprocket wheels 40 and 44, while the rod 43, above referred to keeps the chain 41 taut, and the shaft of the said wheels 40 and 44 at a constant distance from the shaft 4', the shaft of the said wheels 40 and 41 moving in an arc of limited extent around the shaft 4' as the frame 16 is raised or lowered by the articles operated upon, which pass below it.

A gear wheel 50 is mounted upon a projecting end of the main drivingshaft 4, and gears with a pinion 51, mounted upon the frame 1, the said pinion having thereon the double crank 52, each of the cranks of which is connected with the rear end of arms 53, 53, the forward ends of which are supported by the levers 54.

Upon the shaft of the roller 13 are mounted two levers 55, the one on each side of the ratchet wheel 14, the lower portions of the levers being slotted at 56, and into the slot in each lever a pin 57 on the forward portion of one of the arms 53 projects, the upper ends of the said levers being provided with spring clicks 58, which by their engagement with the ratchet wheel are adapted, when reciprocated by the double crank upon the pinion 51, to impart a continuous rotary motion to the said ratchet wheel.

The lower ends of the levers 54 are connected to the rear end of the hand lever 59, which is pivoted at 60, and which can be locked in any desired position by the quadrant, so that by the medium of the hand lever, the forward ends of the arms 53 may be varied in elevation, thus altering the position of the pins 57 within the slots 56, and the throw of the clicks 58, thus permitting a delicate adjustment of the speed of rotation of the roller 13, which is normally such that its peripheral-velocity is slightly less than the peripheral-velocity of the roller 26.

Between the tracks or grooves 7, in which the carrying sprocket chain moves, and by preference so located as to be below the roller 13, is placed a sheet of sponge or other absorbent material, 61, to which mucilage or paste contained in a reservoir 62 is conveyed by a lead pipe 63, and branch pipes 64, the latter terminating at various points upon the lower surface of the sheet 61. By preference I form the sheet 61 and the branch pipes 64 separate from the lead pipe 63, the connection being made by a cap 65, adapted to be placed upon the end of the said lead or main pipe 63, and

to form a tight joint therewith, so that, sheets 61 of various sizes may be applied, as is desired. It will also be obvious that the shafts 4 and 4' may have splines formed therein into which feathers 66, upon the sprocket wheels 5 engage, thus permitting the wheels to be moved together or apart, and that the tracks 7 may be likewise adjustable upon the table, thus permitting the distance between the two carrying sprocket chains to be varied to suit the length of the vessels or bodies operated upon. The lead or main pipe 63 from the reservoir 62 may be provided with a valve 69, whereby the flow of paste or mucilage to the sheet 61 may be cut off.

A suitable chute 70 to feed the vessels or bodies to the carrying sprocket chains, and another chute 71 to remove such vessels or bodies after their passage through the machine, may be provided.

The operation of a machine constructed in accordance with my invention, as hereinbefore described may be stated as follows: The strip containing the labels or wrappers in the form of a roll is mounted upon the roller 17, and the loose end thereof is passed between the rollers 13 and 18, and motion is imparted to the main driving shaft 4, which being imparted to the roller 13 by the medium of wheel 50, pinion 51, cranks 52, arms 53, levers 55, ratchets 58 and ratchet wheel 14, draws the strip forwardly, it being carried in that direction by the belt, (or belts, if two by preference, be used) 24 to the draw roller 26, and thus between it and its friction roller 31, but these two last mentioned rollers being driven at a greater rate of speed than the feed rollers 13 and 18, the strip is put in tension, and is torn at its line of least resistance, that is to say, at the perforations therein, and thus labels or wrappers are separated from each other before being pasted. The individual wrappers or labels are led from the roller 26 by the fingers 32 to the lower surface of the belt 37, and there come in contact with the vessels or bodies to be wrapped or labeled. These articles having been fed by the chute 70 fall upon the rear end of the table 2, and between the projections 11 of the sprocket chain, their ends resting upon the tracks 7 of the opposite sprocket chains, and will be moved along the table by the movement of the sprocket chain, and will roll along the tracks, the anti-friction rollers decreasing the friction sufficient to permit this. Upon passing over the sheet of sponge 61, the articles will take up paste or mucilage therefrom, and owing to their rotation, the adhesive material will be spread over the periphery thereof. Upon passing under the roller 31, the articles will meet the labels or wrappers, which will be wound therearound by the rotary motion, and will be pressed thereon by the apron or belt 37. The articles thus leave the machine with their labels or wrappers pasted thereon, and are delivered in this state to the eduction chute 71.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. In a covering machine, the combination with a carrying mechanism for the bodies to be covered, of a cover feeding mechanism, and a pressing mechanism, the said pressing mechanism consisting of a belt resting upon the said bodies to be covered, the said belt being driven at a greater speed than the carrying mechanism, substantially as described.

2. In a covering machine, the combination with means for feeding and rotating the bodies to be covered, of a pivoted frame above the said feeding means, wrapper feeding rollers mounted in the said frame, wrapper drawing rollers mounted in the said frame, rods pivoted to the said frame, in alignment with the axle of one of the said drawing rollers, a roller mounted in the free ends of the said rods, and a belt passing over the last named roller and drawing roller, and resting on the rotating bodies, substantially as described.

3. In a covering machine, the combination with a paste fountain and with means for feeding and rotating the bodies to be covered over the fountain, of a frame pivoted above the said means for feeding and rotating the said bodies, wrapper feeding and drawing rollers mounted in the said frame, rods pivoted to the said frame in alignment with the axis of one of the said drawing rollers, a roller mounted on the free ends of the said rods, and a belt passing over the last named roller and drawing roller, and resting on the rotating bodies, substantially as described.

4. In a covering machine, the combination with means for feeding and rotating the bodies to be covered, of a frame pivoted above the said means for feeding and rotating the bodies, wrapper feeding rollers and wrapper drawing rollers mounted in the said frame, the said drawing roller being driven with a greater peripheral velocity than the feeding rollers, rods pivoted to the said frame in alignment with the axis of one of the said drawing rollers, a roller mounted on the free ends of the said rods, and a belt passing over the last named roller and drawing roller and resting on the rotating bodies, substantially as described.

5. In a covering machine, the combination with means for feeding and rotating the bodies to be covered, of a frame pivoted above the said means for feeding and rotating the bodies, means for feeding the wrappers mounted in the said frame, rods pivoted to the said frame, rollers mounted in the said rods, and a belt passing over the said rollers, and resting on the rotating bodies, substantially as described.

6. In a covering machine, the combination with means for imparting a forward and rotary motion to the bodies to be covered, of a frame pivoted above the said means, wrapper feeding and drawing rollers mounted in the said frame, a belt for conveying the wrapper

strip from the feeding to one of the drawing rollers, fingers bearing on the last named drawing roller, and removing the wrapper therefrom to the opposite drawing roller, rods pivoted to the said frame in alignment with the axle of the last named drawing roller, spring supporting the opposite ends of the said rods, a roller mounted in the said ends of the rods, and a belt passing around the last named roller and drawing roller and resting upon the rotating bodies, substantially as described.

7. In a covering machine, the combination with means for imparting a forward and rotary motion to the bodies to be covered, of a frame pivoted above the said means, wrapper feeding and drawing rollers mounted in the said frame, a belt for conveying the wrapper strip from the feeding to one of the drawing rollers, fingers bearing on the last named drawing roller, and removing the wrapper therefrom to the opposite drawing roller, rods pivoted to the said frame in alignment with the axle of the last named drawing roller, spring supporting the opposite ends of the said rods, a roller mounted in the said ends of the rods, and a belt passing around the last named roller and drawing roller, and resting upon the rotating bodies, the peripheral velocity of the drawing rollers being greater than that of the feeding rollers and greater than the speed of the means for feeding the bodies, substantially as described.

8. In a covering machine, the combination with two oppositely placed parallel shafts, 4, 4', each of the said shafts having similarly located sprocket wheels 5 thereon, a sprocket chain passing over each pair of oppositely placed sprocket wheels, and having projections thereon provided with anti-friction wheels, tracks adjacent to a portion of each of the said sprocket chains, a frame pivoted above the said tracks, wrapper feeding and drawing rollers mounted in the said frame, each of the said sets of rollers consisting of a driving roller, and a friction roller bearing thereon, the driving roller of each of the said sets having a wheel secured thereto, means for carrying the wrapper strip from the feeding rollers to the driving rollers of the drawing rollers, a gear wheel on the shaft 4, a pinion engaging therewith and provided with the double cranks 52, arms having their rear ends connected with the said cranks, means for adjusting the position of the forward ends of the said arms, levers having ratchets thereon, engaging the wheel secured to the driving feed

roller, and mounted on the axle thereof, each of the said levers being slidably connected with the forward portion of one of the arms 53, sprocket wheels 40 and 44 suspended from the axle of the driving drawing roller, and the shaft 4', a sprocket wheel upon the shaft 4', a sprocket chain passing over the said wheel and the wheel 40, a sprocket wheel passing over the wheel 44, and the wheel connected with the driving drawing roller, rods pivoted to the said frame in alignment with the axle of the friction drawing roller, spring supporting the opposite ends of the said rods, a roller mounted in the last named ends of the said rods, a belt passing over the last named roller, and the friction drawing roller and resting on the bodies to be covered, fingers bearing upon the driving drawing roller and removing the wrapper therefrom to the last named belt, and a paste fountain located between the tracks, the peripheral velocity of the drawing rollers being greater than that of the feeding rollers and greater than the velocity of the feeding sprocket chain, substantially as described.

9. In a covering machine, the combination with two sprocket chains having projections thereon provided with anti-friction wheels, tracks adjacent to a portion of each of the said sprocket chains, a frame pivoted above the said tracks, wrapper feeding and drawing rollers mounted in the said frame, each of the said sets of rollers consisting of a driving roller and a friction roller bearing thereon, means for carrying the wrapper strip from the feeding rollers to the driving rollers of the drawing rollers, rods pivoted to the said frame in alignment with the axle of the friction drawing roller, springs supporting the opposite ends of the said rods, a roller mounted in the last named ends of the said rods, a belt passing over the last named roller, and the friction drawing roller and resting on the bodies to be covered, fingers bearing upon the driving drawing roller, and removing the wrapper therefrom to the last named belt, and a paste fountain located between the tracks, the peripheral velocity of the drawing roller being greater than that of the feeding rollers and greater than the velocity of the feeding sprocket chain, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

LEE HARMON ADAMSON.

Witnesses:

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WILLIAM A. SMITH.