No. 697,617. Patented Apr. 15, 1902.

G. L. GAY.

WRAPPING MACHINE.

(Application filed Apr. 24, 1901.)

(No Model.) 4 Sheets—Sheet 1.

Fig. 1

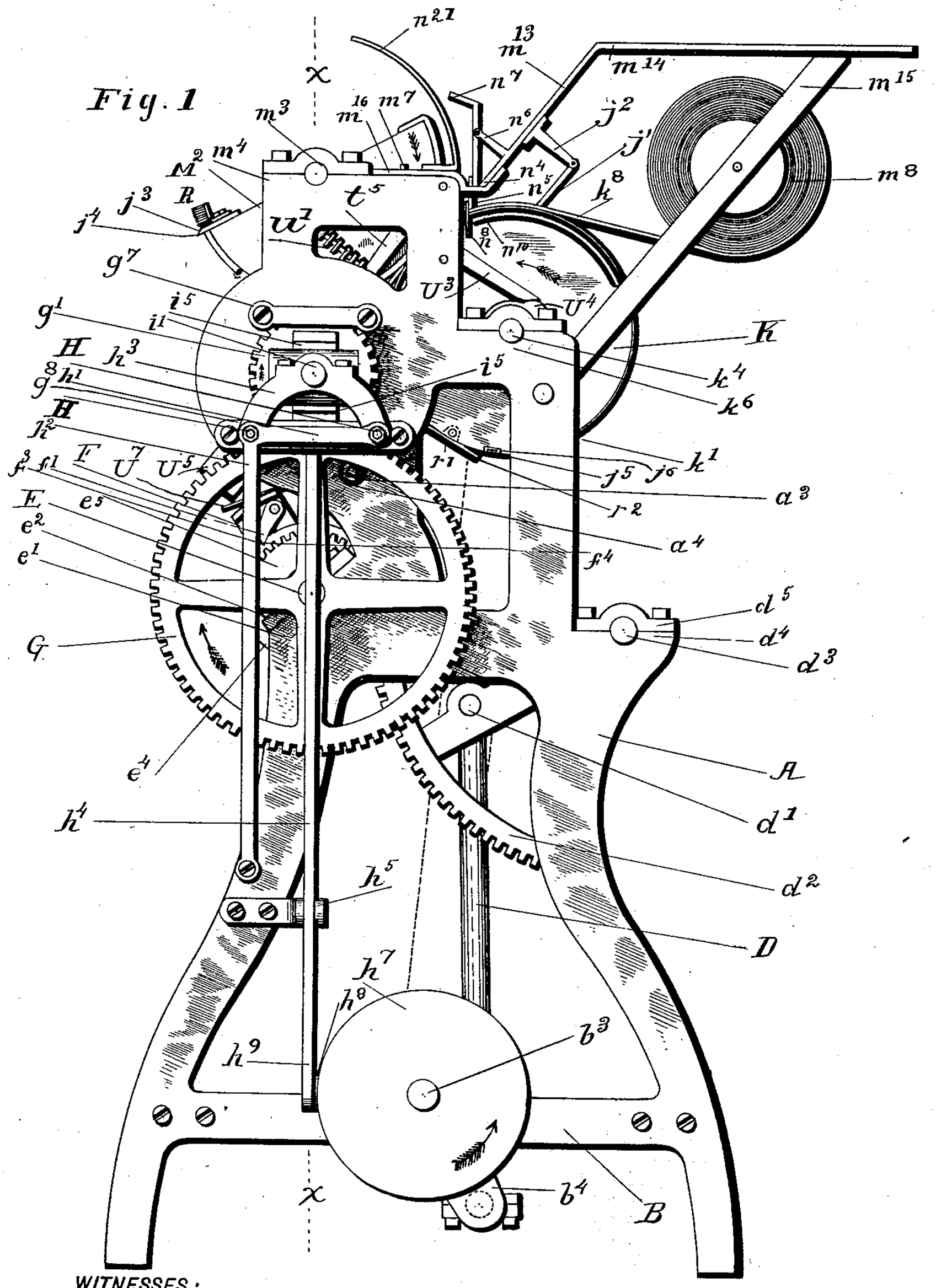

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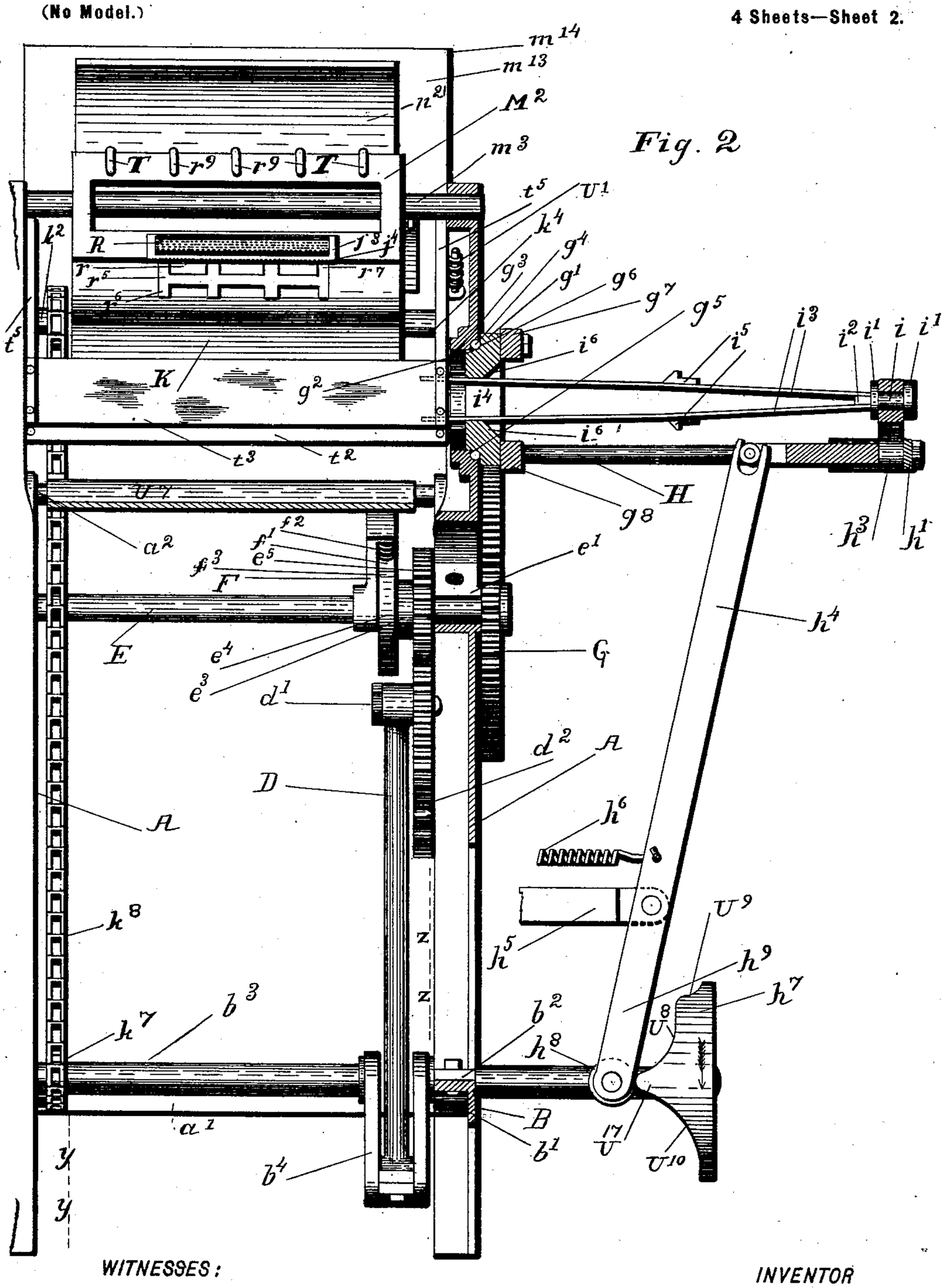
Fig. 2



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(No Model.) 4 Sheets—Sheet 3.

Fig. 3

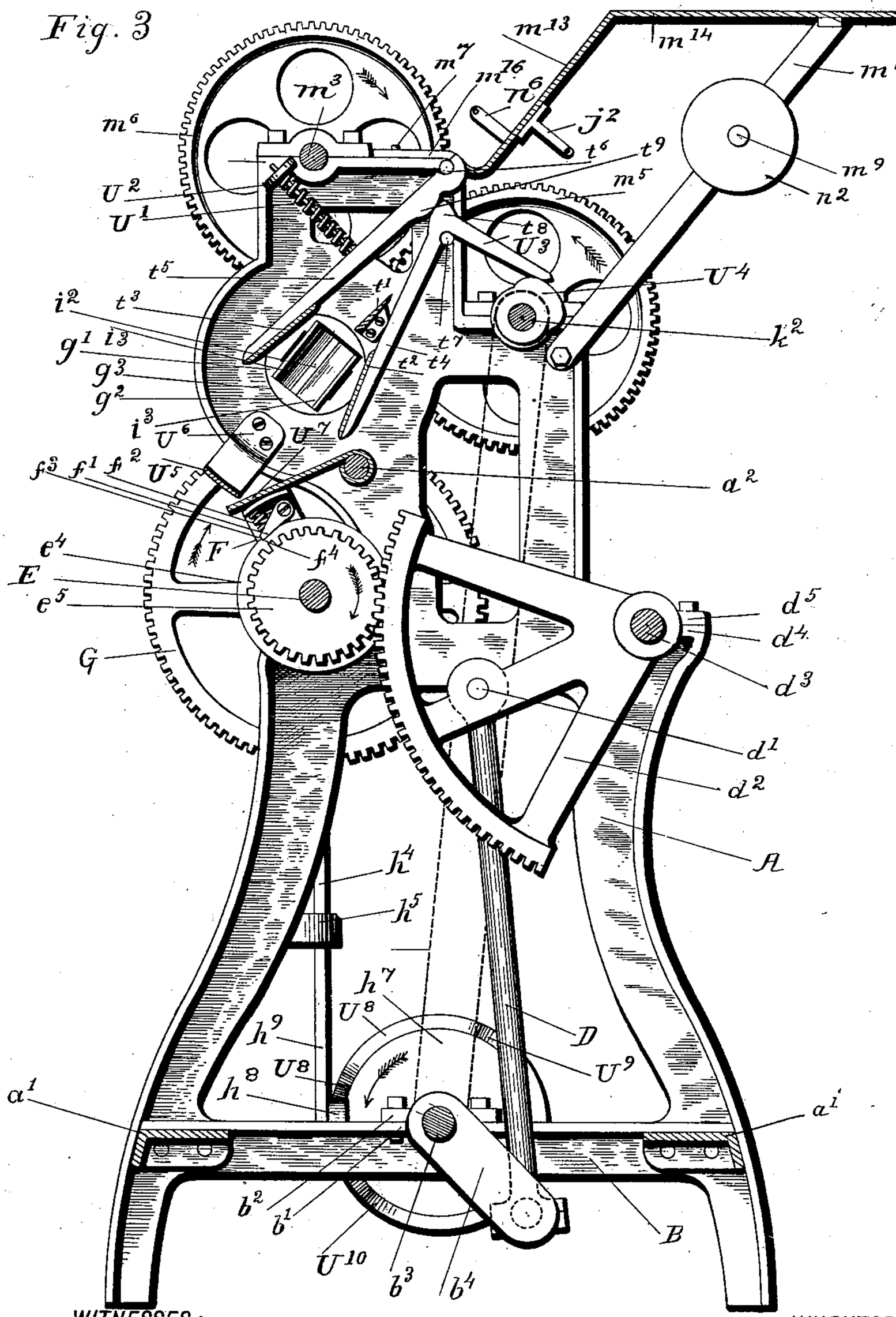

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Fig. 4

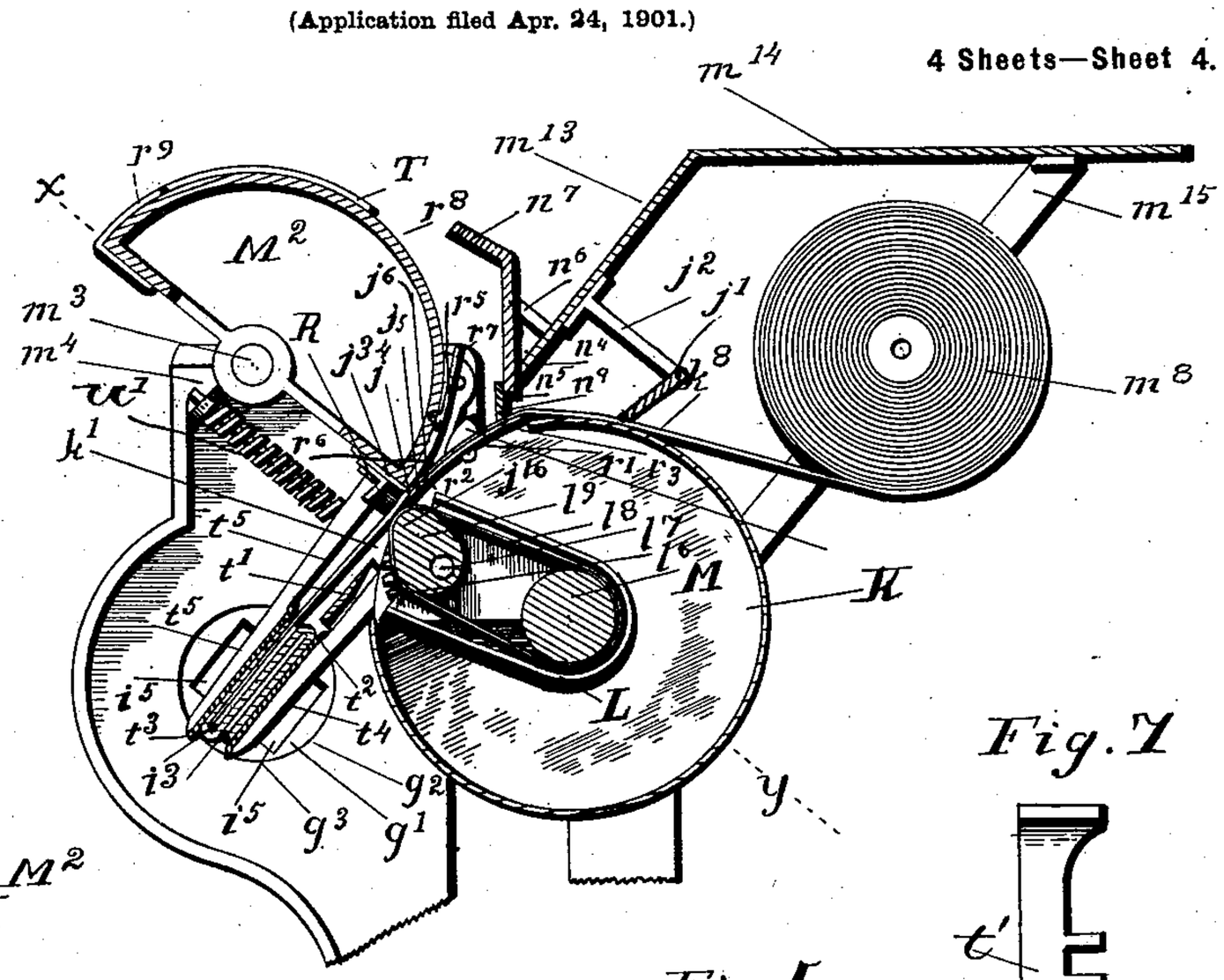


Fig 8

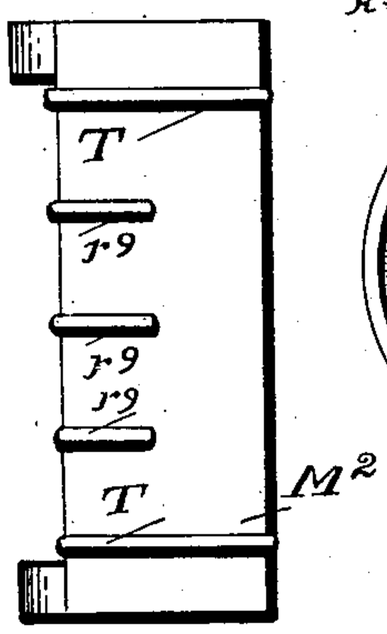


Fig. 7

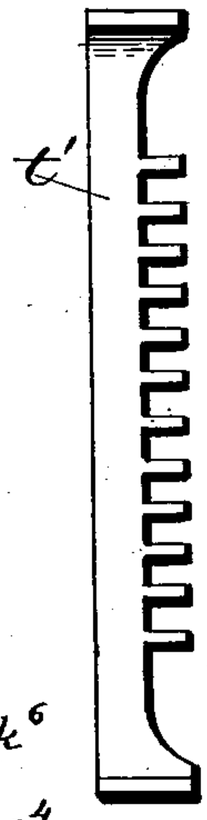


Fig. 5

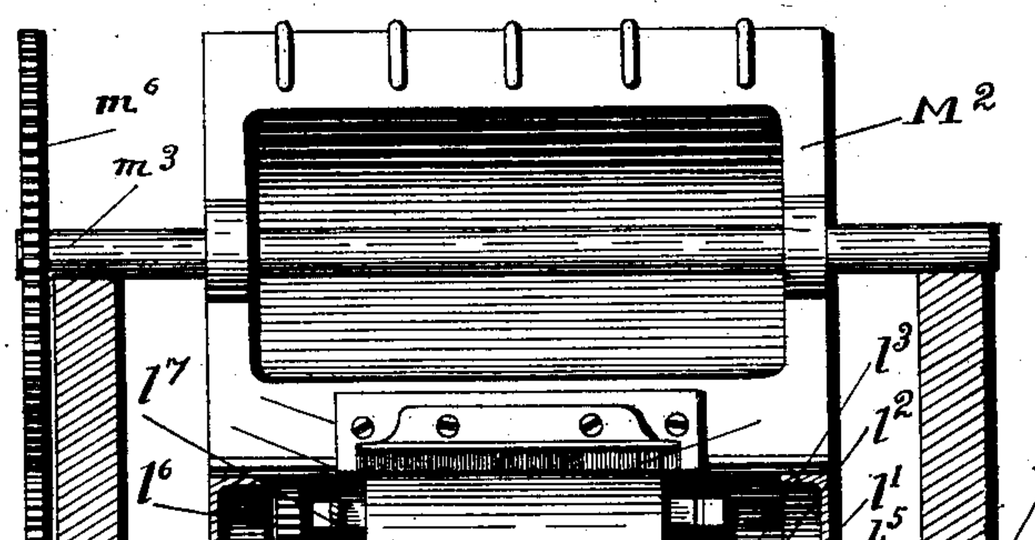


Fig. 10

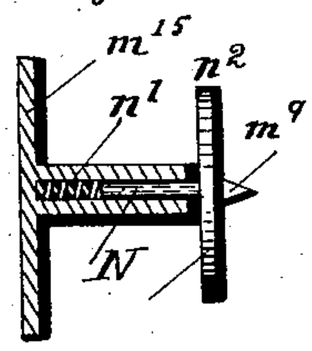


Fig. 9

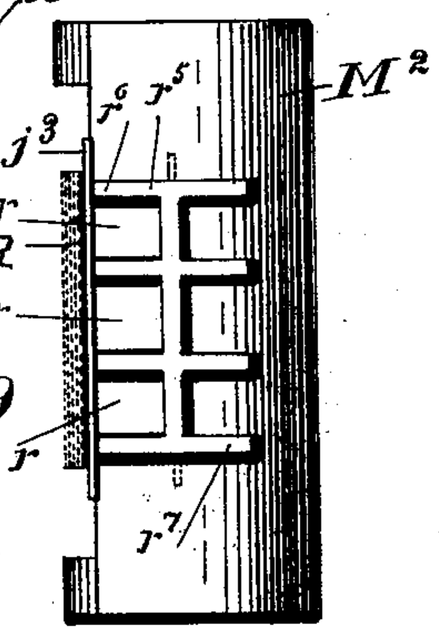
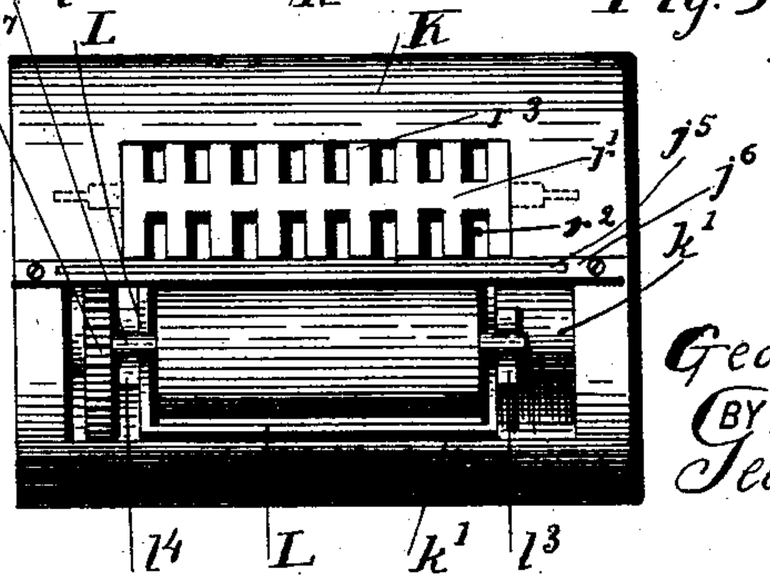


Fig. 6



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UNITED STATES PATENT OFFICE.

GEORGE LEWIS GAY, OF SPOKANE, WASHINGTON.

WRAPPING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 697,617, dated April 15, 1902.

Application filed April 24, 1901. Serial No. 57,199. (No model.)

To all whom it may concern:

Be it known that I, GEORGE LEWIS GAY, a citizen of the United States, residing at Spokane, in the county of Spokane, in the State of Washington, have invented certain new and useful Improvements in Wrapping-Machines, of which the following is a specification.

My invention relates to a machine for folding and wrapping newspapers and analogous packages—such as pamphlets, periodicals, and other printed matter requiring the application of a wrapper or band for transmission through the mails.

It has for its object to provide mechanism for neatly and snugly folding the paper or pamphlet with the wrapper properly wound in and around it and its outer end secured by adhesive paste. In the present invention certain improvements over a former patent granted to me October 3, 1899, and numbered 634,333, are contemplated, particularly in the intermittent motive mechanism for operating the folders and in the clamping-formers between which the paper is folded and wrapped.

Further improvements are comprised in the pasting and sealing mechanism and in the novel construction, arrangement, and combination of the parts of the machine, as hereinafter more fully described and claimed.

In the accompanying drawings, forming a part of this application, Figure 1 is an end elevation of my improved wrapping-machine. Fig. 2 is a vertical lengthwise section on the line X X of Fig. 1, showing the mechanism partly in front elevation, but with one end only represented, the other being a reversed duplicate thereof. Fig. 3 is a vertical cross-section on the line *y y* of Fig. 2, but showing the shafting of the lower part of the machine in section on the line Z Z of said figure. Fig. 4 is a central vertical cross-section of the upper part of the machine through the wrapping and pasting mechanism. Fig. 5 is a lengthwise section through Fig. 4 on the line X Y. Fig. 6 is a plan of the pasting-cylinder viewed in the direction from X to Y in Fig. 4. Fig. 7 is a plan view of the comb or guide for conducting the wrapping-paper from the feed-rolls to the wrapping devices. Figs. 8 and 9 are respectively upper and lower plan views of the segmental roll. Fig. 10 is a view of the paper-roll bracket and support.

Referring to the drawings, A designates the uprights comprising the frame of my improved wrapping-machine and which are secured together by the cross-bars a', bolted to their lower portions, and the tie a^2, connecting the upper parts thereof and having its ends reduced and shouldered where they pass through the uprights and fitted with nuts a^3, received in countersunk pockets a^4 on the outside of the frames. The lower transverse girder portions B of the uprights are provided with boxes b' and caps b^2, which form the bearings for the driving-shaft b^3, supported therein and having a crank b^4 preferably adjacent to one of said bearings. The crank carries a connecting-rod D, having its upper end pivotally connected by a wrist-pin d' to a segmental rack d^2, fixed upon a shaft d^3, which is supported in the bearings d^4 and caps d^5 on the rear edges of the frames. By means of the said connecting-rod the rotary motion of the driving-shaft and crank is adapted to impart a vertical reciprocation or oscillating movement to the segmental rack d^2.

On the side of the machine opposite the shaft d^3 is journaled a shaft E in the bearings e' and caps e^2. Loosely mounted on said shaft E is a sleeve e^3, provided with a ratchet-disk e^4 and a pinion e^5, intermeshing with the segmental rack d^2. An arm F is rigidly fastened on the shaft E, carrying a pawl f', actuated by a spring f^2 and adapted to engage a single ratchet-tooth or driving-shoulder f^3, forming one side of a notch f^4, cut in the periphery of the said ratchet-disk. By means of this construction the pinion e^5 is caused to rotate idly and independently of the shaft E during the upward throw of the crank b^4 and segmental rack; but with the downward stroke of the said parts and consequent reversed motion of the pinion in the direction of the arrow marked thereon in Fig. 3 the pawl f' will be engaged by the driving-shoulder f^3 of the ratchet-disk and revolved in the direction indicated by said arrow. A single ratchet-tooth on the disk is sufficient when, as shown in the drawings, the pinion is proportioned to make exactly one revolution with one stroke of the segmental rack.

On each end of the shaft E, adjacent the outside of the uprights A, a gear-wheel G is secured, which gears are adapted, by means of the crank motion and pawl-and-ratchet mechanism aforesaid, to rotate in the direction of the arrow thereon one half of the time and to remain motionless and idle the other half of the time, starting and stopping, respectively, with the gradual acceleration and retardation peculiar to pitman movements. Intermeshing with the gears G are the pinions g', having the journals g^2 loosely fitting in the circular bearings g^3 in the frame and adapted to turn upon antifriction-balls g^4, placed around said journals in circular grooves g^5 in the uprights and bearing also against the back or inner surface g^6 of the pinions. The pinions are held from the opposite direction by caps g^7 g^8, set over their upper and lower edges and bolted to the uprights. The proportions of these gears are such that the single revolution of the gear-wheel G produces several revolutions of the pinion g', being in the construction shown exactly two and a half in number.

At each end of the machine, secured in each cap g^8, are two horizontal rods H, connected at their outer ends by a yoke h', which also extends downward to form a brace h^2, having its lower ends bolted to the frame. Said rods form guides on which heads h^3 are adapted to slide, operated by the vertical levers h^4, pivoted to the brackets h^5, extending from the uprights. The levers are connected by a spring h^6 above the brackets, the tension of which normally acts to draw the upper ends of the lever and the heads h^3 toward the frame. Said heads are operated in the reverse direction by disk-cams h^7 on the outer ends of the driving-shaft b^3, outside of the lever and adapted to bear upon a friction-roller h^8 at the lower end h^9 of the lever.

Journaled in each head h^3 in the axial line of the pinions g' is a short shaft i, having shoulders i' on each side of its bearing in the head and provided with a lug i^2 on its inner end, to which the folders or plates i^3 are riveted. Said folders are of about the width corresponding to the desired width of the fold of the newspaper when wrapped, and they are passed through a rectangular aperture i^4 in the pinion g', by means of which they are revolved with the shaft i by the rotation of the said pinions. The folders are of spring-steel and are set with such an amount of flare that they are under considerable tension when inserted through the rectangular aperture of the pinion. They are of such length that when carried inwardly to the extent of their throw their ends reach nearly to the central plane of the machine. Hence they almost meet at that point. At the outer limit of their throw the said inner ends project slightly interiorly to the inner faces of the uprights, as shown in Fig. 2. Wedge-shaped cams i^5 are riveted to the outer sides of the folders and adapted by engaging corresponding inclined abutments i^6 on the pinions g' to cam the folders together at the inner limit of their throw.

In the upper part of the frame is journaled a hollow cylindrical roll K, having an opening k' in its periphery, as shown in Fig. 4. In one end of the said roll is rigidly secured a short shaft k^2, which is journaled in the box k^3 in the frame, and at the opposite end a similarly-proportioned shaft k^4 is loosely fitted in the hub k^5 and firmly secured in the box k^6 of the upright. The roll therefore is adapted to rotate upon the shaft k^4 as a center, while the shaft k^2 rotates with the roll in its bearing k^3 in unison with and driven from the driving-shaft b^3 by means of a sprocket-gear k^7 thereon and chain k^8, connecting the same with a similar gear on the shaft k^2.

The ends of both the fixed and movable roll-shafts project within the cylinder, as shown in Fig. 5, and support a tank L, which is held in a stationary position by a pin l' in the immovable shaft k^4 engaging a corresponding recess l^2 in the bearing l^3 of the tank upon said shaft. The opposite or movable shaft k^2 turns in its bearing l^4 on the tank, and a gear l^5 is fixed upon it and intermeshed with a pinion l^6 on a shaft l^7, journaled in the upper edge of the tank L. Said shaft is rotated by the movement of the gear l^5 as the cylinder turns, and a belt l^8 is carried by an elliptical drum l^9 on said shaft, which belt tracks upon a weighted pulley M, rotating at the bottom of the tank. The pulley is of the length of the interior of the tank and is provided with flanges m' at its ends, which serve to hold the belt in place thereon and on the drum above. The tank is inserted into the roll K through the opening k' in its periphery, and its function is to hold the paste for sealing the wrappers, to which the paste is conveyed by the belt l^8, as hereinafter described. The tank may extend quite across to the opposite side of the cylinder and may hang to one side of the center thereof, if desired.

A segmental roll or semicylinder M^2 of the same diameter of the roll K is fixed upon a shaft m^3, journaled in the boxes m^4 in the extreme upper part of the machine, and the two rolls are geared together and driven in unison by the gears m^5 and m^6, of equal diameter, respectively keyed upon the shafts k^2 and m^3, which are set equidistant from the axis of the folders. These rolls are thus adapted to feed the newspapers to be folded and also the wrapping material k^8 between the folders, along the plane passing through the axis thereof and the points of contact of the feed-rolls. An incline m^{13}, set on this plane above the rolls, acts as a guide to direct the papers between the rolls, and a table m^{14}, supported on arms m^{15}, hinged to the frame, is provided, in connection with the incline, as a repository for the papers previous to being fed into the machine. The table and incline are held in their working position by the lugs m^{16} setting upon the upper surface of the uprights and

engaging the studs m^7, inserted in said surface, but from which the lugs may be readily lifted and disengaged to swing the table-frame down from over the rolls for access thereto. The roll of wrapping material m^8 is mounted on centers m^9, projecting inwardly from said brackets, and one of which is movable lengthwise in its socket for the purpose of inserting and removing the roll therefrom. Said movable center N is held to the roll by a spring n', and the centers are fitted with disks n^2, which by their pressure against the ends of the roll due to the pressure of the spring n' retard the roll and insure the proper tension of the wrapping material. To the lugs m^{16} is preferably secured a guard n^{21}, partly overhanging and shielding the feed-roll M^2.

The wrapping material k^8 passes to the feed-rolls under the lower edge n^4 of the incline, and a gate n^5, pivoted upon brackets n^6 on the incline, is hung against said edge n^4, held by the counterweight n^7 on the upper end thereof. Said gate retains the newspaper on the incline until the feed-rolls reach the position when the paper should be entered between them, at which time the gate is tripped by a projecting segmental rim n^{10} on the end of roll K engaging an arm n^8, depending from the gate in the path of the arm. The arc through which the rim extends determines the length of the interval through which the gate remains open. The gate projects downward below the edge of the incline and is armed at its lower edge with a rubber or elastic lip n^9, which impinges upon the roll and serves as a check against backward slip of the wrapping material. A similar check j' is hung on a bracket j^2 below the incline, bearing upon the wrapping material on the roll at a distance from the lip n^9 somewhat greater than the width of the opening k' in the periphery of the roll, the purpose of said check being to retain a hold upon the wrapping material during the time when the lip n^9 is rendered idle and non-resisting by the passing beneath it of the opening k' in the periphery of the roll, thus releasable by the movement of the wrapping material in the direction of the feed, but clamping by the backward pull thereof, whereby the two checks combined insure uninterrupted hold upon the wrapping material.

Upon the leading edge of the segmental roll M^2 is secured a paper-cutting knife j^3, adapted through its serrated edge j^4 to perforate and sever the wrapping material at each revolution of the roll by impingement upon an elastic bed j^5, of rubber or other suitable material, set in a bar j^6 on the roll K at the following edge of the opening k', whereby the wrapper is cut off just back of the point where the paste is applied by the belt l^8 as the high part j^{16} of the drum l^9 sweeps under the wrapper. To bring the drum to this position coincidently with the arrival of the opening k' at that point, the gears l^5 l^6 require to be of equal size or some other equal ratio whereby one or more complete revolutions of the drum will be made to each revolution of the feed-rolls. A brush R is carried by the roll M^2 just in advance of the knife j^3, which is adapted to pass the wrapper down upon the paste-belt at the moment of pasting and somewhat after the same is severed from the roll, thereby insuring pasting out to the detached end of the wrapper as the end of the paper is drawn through between the brush and drum l^9 by continued rotation of the folder.

Just back of the bar j^6 and practically forming part of the periphery of the roll K is a segmental rocker r' of somewhat greater curvature than the roll and hinged thereto at the ends to rock slightly from a point near its central longitudinal plane as an axis. Its leading and following edges, which project slightly above the periphery, respectively comprise a series of tongues r^2 r^3, and in the rotation of the feed-rolls, when the leading edge r^2 passes under the roll M^2, the following edge r^3 will be correspondingly lifted, as shown in Fig. 4. Later, when the axial plane of the rocker reaches the plane of contact of the rolls, the strain of the wrapping material thereon will depress the rear edge of the rocker and lift the leading edge, thus relieving the forward edge of the wrapper from the roll and deflecting it toward the folders. A similar rocker r^5 is carried at the leading edge of the roll M^2 back of the knife j^3, which, as its following edge r^6 bears upon the roll K, is lifted at the front edge r^7 and insures clearing the paper from the serrated edge of the knife. The tongues of the rocker r^5 are preferably few in number to reduce the number of the elastic strips r necessarily placed between them to provide an elastic frictional surface for bearing upon the roll K. The said strip occupies only a small arc of the periphery of the roll, just sufficient to feed the free end of the wrapping material so far between the rolls that it will not become displaced during the following non-feeding interval while the wrapping of the preceding paper is being completed, an interval corresponding to the clearance-space r^8 following the strip. On the opposite side of said clearance and extending to the following edge of the roll M^2 is a series of elastic strips r^9, which are adapted to complete the feeding in of the wrapper to where it is grasped by the folders, and outside of said strips and the path of the wrapper are the similarly elastic strips T, extending through a longer arc, for feeding the newspapers between the rolls.

Between the axis of the folders and the point of contact of the feed-rolls secured to and extending across between the uprights is a comb t', set with its upper edge in juxtaposition to the periphery of the roll K. The teeth of the said comb are proportioned to permit the passage between them of the tongues of the rocker r', whereby the comb is adapted to receive the forward end of the wrapping-paper from off the rocker as the

tongues r^2 thereof pass through the comb. The comb is set at the proper angle to guide the wrapper between the folders i^3.

Arranged on each side of the folders are the clamping-formers t^2 t^3, which are flat plates fastened upon arms t^4 t^5, which are hung on studs t^6 t^7, just inside the frames on each side of the machine and adapted to close together on the folders at substantially right angles to the plane through the axis of the folders and the contact-line of the feed-rolls. Said arms are of unequal length, the shorter arms t^4 having spurs t^8 extending on the opposite side of their fulcrums and impinging upon bearings t^9 on the longer arms t^5 about midway between the pivotal centers of the arms. The effect of this construction is that the pressure of a single spring U′, bearing between the arm t^5 and a lug U^2 on the frame will clamp both formers together equally. Levers U^3, extending from the arm t^4 over the axis of the roll K, are lifted by cams U^4, carried by the roll K, to open the formers to discharge the folded paper from between them and retain them apart until the next paper to be wrapped is fed into the machine, the movement of the arm t^4 also correspondingly opening the arm t^5 by means of the construction aforesaid.

Arranged below the formers in the plane of the axis of the folders and point of contact of the feed-rolls is a strip U^5, (shown in cross-section in Fig. 3,) extending from one upright A to the other, bolted at the ends U^6 thereto. Said strip forms a stop to locate and right the newspapers when they are dropped between the folders preparatory to being folded. Beneath the stop is an apron U^7, hinged to the tie-rod a^2, which is alternately held up to the stop as the arm F passes under it and then dropped to the periphery of the ratchet-disk e^4. Its purpose is to receive the folded and wrapped papers when discharged from the formers and retain them at rest for an interval to permit the paste of the sealed edge of the wrapper to set prior to the paper being dropped into a receiving-receptacle on the floor.

Constructed as above described and shown, the operation of the machine is as follows: The folders being turned intermittently and the feed-rolls rotated continuously, the paper to be folded is first laid upon the incline m^{13}, where it remains held by the gate n^5 until the same is engaged by the cam n^{10}, as shown in Fig. 1, after which the lifting of the gate will permit the paper to drop and be fed down between the rolls through a distance corresponding to the length of the friction-strips T on the roll M^2. During this operation the wrapper k^8, previously having been entered between the feed-rolls to an extent corresponding to the length of the arc comprised by the strips r, remains at rest until seized and fed in by the short strips r^9, intermediate of the strips T. This movement carries the end of the wrapper, which is of less width than the newspaper, and consequently not affected by the strips T, in between the folders, which meanwhile have been let in toward the central plane of the machine by the rotation of the high points U^{17} of the disk-cams h^7 from under the cam-rolls h^8 at the lower end h^9 of the levers h^4 and retraction of the levers by the spring h^6, the rolls h^8 at this time riding along the level surfaces U^8 on the cams. Then when the edge of the segmental roll M^2 passes out of contact with the roll K the newspaper will drop to and aline its edge against the stop U^5 in position to be seized by the folders, which then by the travel of the rolls h^8 down the secondary incline U^9 of the cams will be thrust inward to their innermost position and tightly clamped upon the central horizontal section of the newspaper and the end of the wrapping material by the engagement of the wedge-shaped cam l^5 with the inclined abutments i^6 on the pinions g'. The end of the wrapper thus laps upon the newspaper through practically the upper half of the vertical length thereof in position to be wound into the folds of the newspaper in the subsequent folding and wrapping process. At this stage the driving-crank b^4 will have reached its uppermost position and on its downward stroke will rotate the folders, as hereinbefore set forth, and fold the paper around them, together with the wrapper, between the spring-actuated formers t^2 t^3, which will yield to conform to the successive edgewise and flatwise cross-sectional dimensions of the folders and their enveloping package relatively to the plane of oscillation of the formers, but will maintain a constant pressure thereon. During this action the wrapper is drawn from the roll m^8 by being wrapped around the folders, slipping easily over the surface of the roll K until it is caught between the knife j^8 and the elastic bed j^5 of the roll K and severed. Just preceding this operation the paste will have been applied to the lower surface of the wrapper by the drum l^9 and belt l^8 and the pressure of the brush upon the wrapper when over the drum. Successive turns of the folders wind the said end of the wrapper upon the paper and seal the pasted edge by the pressure of the formers, after which the folders are withdrawn by the incline U^{10} of the disk cam and the formers are then opened by the cam U^4 engaging the levers U^3 of the arms t^4 t^5, and the folded, wrapped, and sealed package is dropped and deposited upon the apron U^7. At the instant of being cut the part of the wrapper back of the knife is held by the strip r, bearing on the roll K, and it is fed down by said strip r sufficiently to remain in place between the rolls, while it stands at rest with the forward end lying upon the comb t' during the completion of the wrapping and sealing of the detached wrapper and until the wrapper paper or pamphlet is discharged from the machine.

I claim and desire to secure by Letters Patent—

1. A wrapping-machine comprising a driving-crank, a reciprocating part operated by the crank, mechanism engageable with and rotated by the stroke of the reciprocating part in one direction but idle during the reverse stroke thereof, rotating folders operated by said intermittently-acting mechanism, spring-pressed formers spanning and yieldingly clamped against the folders, mechanism for withdrawing the folders longitudinally of the formers, feeding-cylinders for conveying a paper sheet or pamphlet and the wrapping material therefor between the folders, and pasting mechanism mounted within one of the feed-cylinders and adapted to apply an adhesive to the detached end of the wrapper through an opening in the periphery of the cylinder, substantially as and for the purpose specified.

2. In a wrapping-machine the combination of a driving-crank and pitman, a rack vibrated by the pitman, pawl-and-ratchet mechanism operated by the rack by its movement in one direction but disconnected on the reverse movement thereof, lengthwise-movable, rotatable folders intermittently revolved by said ratchet mechanism, pressure-plates or formers spanning and yieldingly clamped against the folders, mechanism for retracting the formers by the rotation of the driving-shaft, a continuously-rotating feed-cylinder driven in unison with the driving-crank and having an opening in its periphery, pasting mechanism carried within the cylinder and adapted to deliver an adhesive to the wrapping material through the said opening, a continuously-rotating segment driven in unison with the pasting feed-cylinder and provided with differential friction-pads for unequally conveying the paper to be folded and the wrapping material and feeding the paper ahead of the wrapper, and a cutter for severing the wrapping material back of its pasted surface, substantially in the manner and for the purpose specified.

3. In a wrapping-machine the combination of a driving-crank and pitman, a rack vibrated by the pitman, a pinion rotated alternately in reverse directions by the vibration of the rack, ratchet mechanism rotated by the pinion in one direction and releasable in the reverse direction, gears intermittently rotated by the ratchet mechanism, wrapping plates or folders mounted to slide in said gears lengthwise of their axial line and driven by the rotation of the gears, spring-actuated formers spanning and yieldingly clamped against the folders, cams carried by the crank-shaft, lever connections operated by the cams to withdraw the folders from between the formers, and feeding mechanism for conveying a paper or pamphlet and wrapping material between the folders, substantially as and for the purpose specified.

4. In a wrapping-machine the combination of a driving-crank and pitman, a rack vibrated by the pitman, a pinion rotated alternately in reverse directions by the vibration of the rack, ratchet mechanism rotated by the pinion in one direction and releasable in the reverse direction, gears intermittently-rotated by said reciprocating mechanism, ball-bearings supporting said intermittently rotating gears and adapted to sustain the inward axial thrust thereof, wrapping-plates or folders mounted to slide in said gears lengthwise of their axial lines, and driven by the rotation of the gears, yielding formers spanning and clamped against the folders, mechanism for withdrawing the folders from between the formers and feed mechanism for conveying a paper or pamphlet between the folders, substantially in the manner and for the purpose specified.

5. In a wrapping-machine the combination of the intermittently-rotating folders movable longitudinally of their axis of revolution, the yielding pressure-plates or formers spanning the same, mechanism for withdrawing the folders from the plane of the formers, a continuously-rotating feed-cylinder having an opening in its periphery, pasting mechanism carried within the cylinder and adapted to deliver an adhesive to the wrapper through said opening, a continuously-rotating segment revolving in unison with the pasting-cylinder provided with differential friction-pads for unequally conveying the paper to be folded and the wrapping material, a knife or cutter carried by the segment, an incline or chute for conveying the paper or pamphlet between the rolls, a gate for holding the paper upon the incline, tripping mechanism for lifting the gate to drop the paper to the feed-rolls, and checking mechanism for preventing the backward slip of the wrapper over the pasting-cylinder.

6. In a wrapping-machine the combination of the intermittently-rotating folders movable longitudinally of their axis of revolution, the yielding pressure-plates or formers spanning the same, mechanism for withdrawing the folders from the plane of the formers, a feed-cylinder having an opening in its periphery, pasting mechanism carried within the cylinder and adapted to deliver an adhesive to the wrapper through said opening, a segmental feed-roll revolving in unison with the pasting-roll, a knife or cutter carried by the segmental roll, mechanism provided with a series of teeth carried by the pasting-roll adapted to lift the wrapping material from the surface of the cylinder after feeding through the rolls, and a stationary comb fixed in the revolving path of the said clearing mechanism with its spaces adapted to permit the rotation of the teeth of the clearing mechanism through the same, to deposit the leading end of the wrapping material on the comb, substantially in the manner and for the purpose specified.

7. In a wrapping-machine the combination of the intermittently-rotating folders movable longitudinally of their axis of revolution,

the yielding pressure-plates or formers spanning the same, a feed-cylinder having an opening in its periphery and journaled at one end upon a stationary shaft, a paste-receptacle supported within the cylinder and held stationary by said fixed shaft, a pasting-roll journaled in said receptacle and provided with a gear, a gear carried by the cylinder intermeshing with said roll-gear, a pasting-belt carried by the pasting-roll and a roll hung within the receptacle and the paste-belt to maintain the tension of the belt, substantially as and for the purpose specified.

8. In a wrapping-machine the combination of the intermittently-rotating folders movable longitudinally of their axis of revolution, the yielding pressure-plates or formers spanning the same, a feed-cylinder having an opening in its periphery and journaled at one end upon a stationary shaft, a paste-receptacle supported within the cylinder and held stationary by the said fixed shaft, an elliptical pasting-roll journaled in the upper edge of the said receptacle adapted to revolve past the opening in the cylinder, a weighted roll received in the bottom of the receptacle, a pasting-belt carried upon the said rolls, a gear concentrically mounted and carried within the cylinder, and a gear intermeshed therewith mounted on the elliptical-roll shaft, substantially in the manner and for the purpose specified.

9. In a wrapping-machine the combination of the intermittently-rotating folders, the yielding formers spanning the same, a pasting-cylinder journaled at one end upon a stationary shaft and mounted upon a revolving shaft at the opposite end, a paste-receptacle held within the cylinder and supported by the stationary shaft, pasting mechanism supported by the receptacle and rotated by the cylinder, a gear carried with the cylinder, a segmental roll geared therewith to feed with the paste-cylinder, and a knife or cutter carried by the segmental roll and adapted to sever the wrapping material fed between the rolls, substantially in the manner and for the purpose specified.

10. In a wrapping-machine the combination of a continuously-revolving feed-cylinder having an opening in its periphery, pasting mechanism supported within the cylinder, a segmental feed-roll geared therewith, a knife or cutter carried by the segmental roll and an elastic pressure-pad carried by the segmental roll in advance of and in juxtaposition to the knife and adapted to press the detached end of the wrapping material upon the pasting-belt after severance from the roll, substantially as and for the purpose specified.

11. In a wrapping-machine the combination of intermittently-rotating folders movable longitudinally of their axis of revolution, a pair of vibrating formers spanning the folders and connected at points intermediate of their centers of suspension, whereby the movements of the formers are reciprocal and opposite, and a spring for compressing the plates, substantially as and for the purpose specified.

12. In a wrapping-machine the combination of a pair of wrapping-plates or formers suspended and adapted to swing upon radii of different lengths, the plate of shorter radius having a spur bearing upon the arms of the plate of longer radius intermediate of the centers of suspension of the said plates, and means for automatically compressing the plates, substantially in the manner and for the purpose specified.

13. In a wrapping-machine the combination of the intermittently-rotating folders, the yielding formers spanning the same, a pasting-cylinder having a pasting-opening in its periphery and journaled at one end upon a stationary shaft, and mounted upon a revolving shaft at the opposite end, a paste-receptacle held within the cylinder and supported by said stationary shaft, pasting mechanism supported by the receptacle and adapted to convey the adhesive to the peripheral opening of the cylinder and a segmental feed-roll adapted to feed contact with the cylinder, and driven in unison therewith, substantially in the manner and for the purpose specified.

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Witnesses:
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