

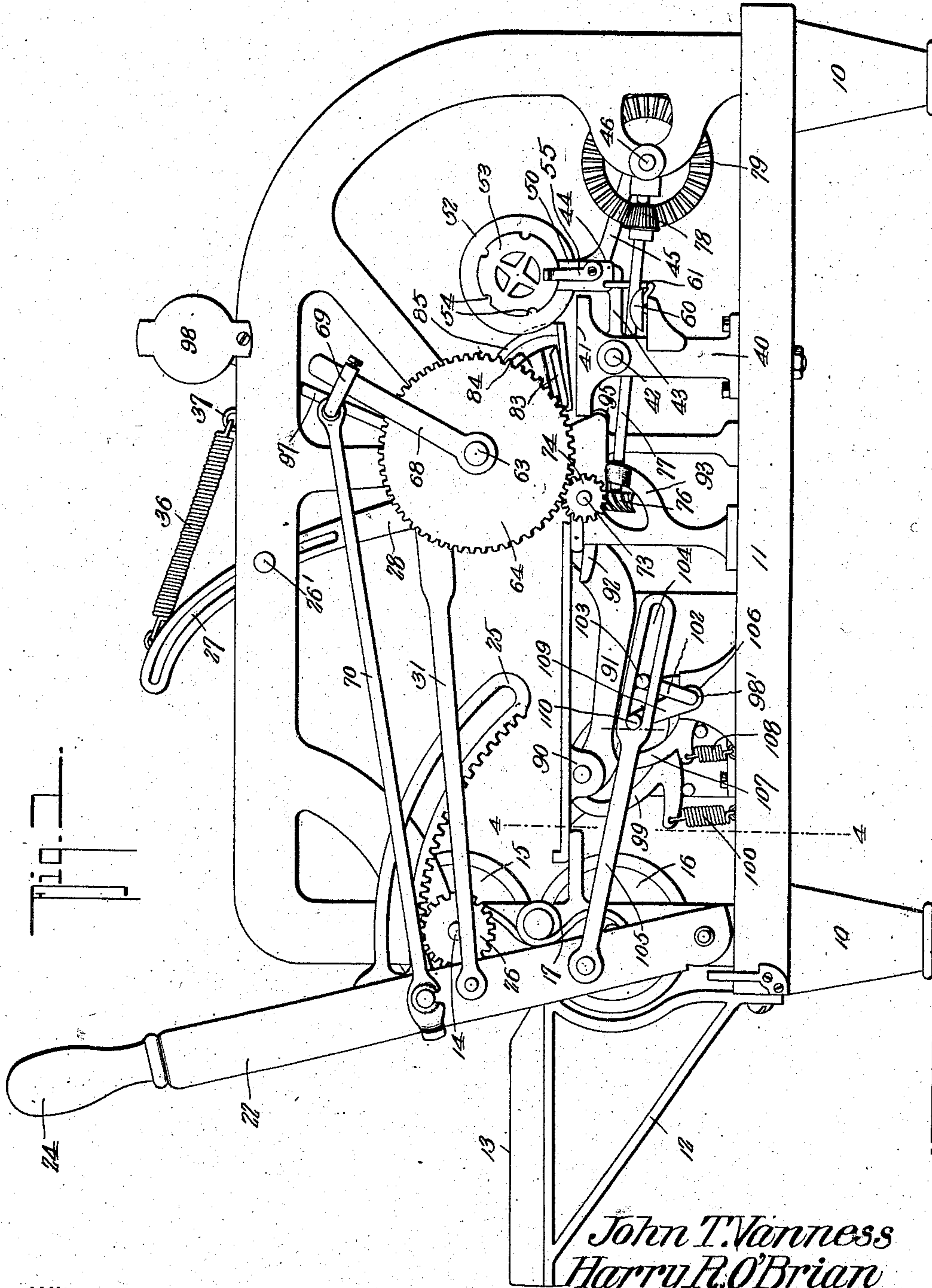
No. 815,494.

PATENTED MAR. 20, 1906.

J. T. VANNESS & H. R. O'BRIAN.  
ENVELOP SEALING AND STAMPING MACHINE.

APPLICATION FILED JULY 31, 1905.

3 SHEETS—SHEET 1.



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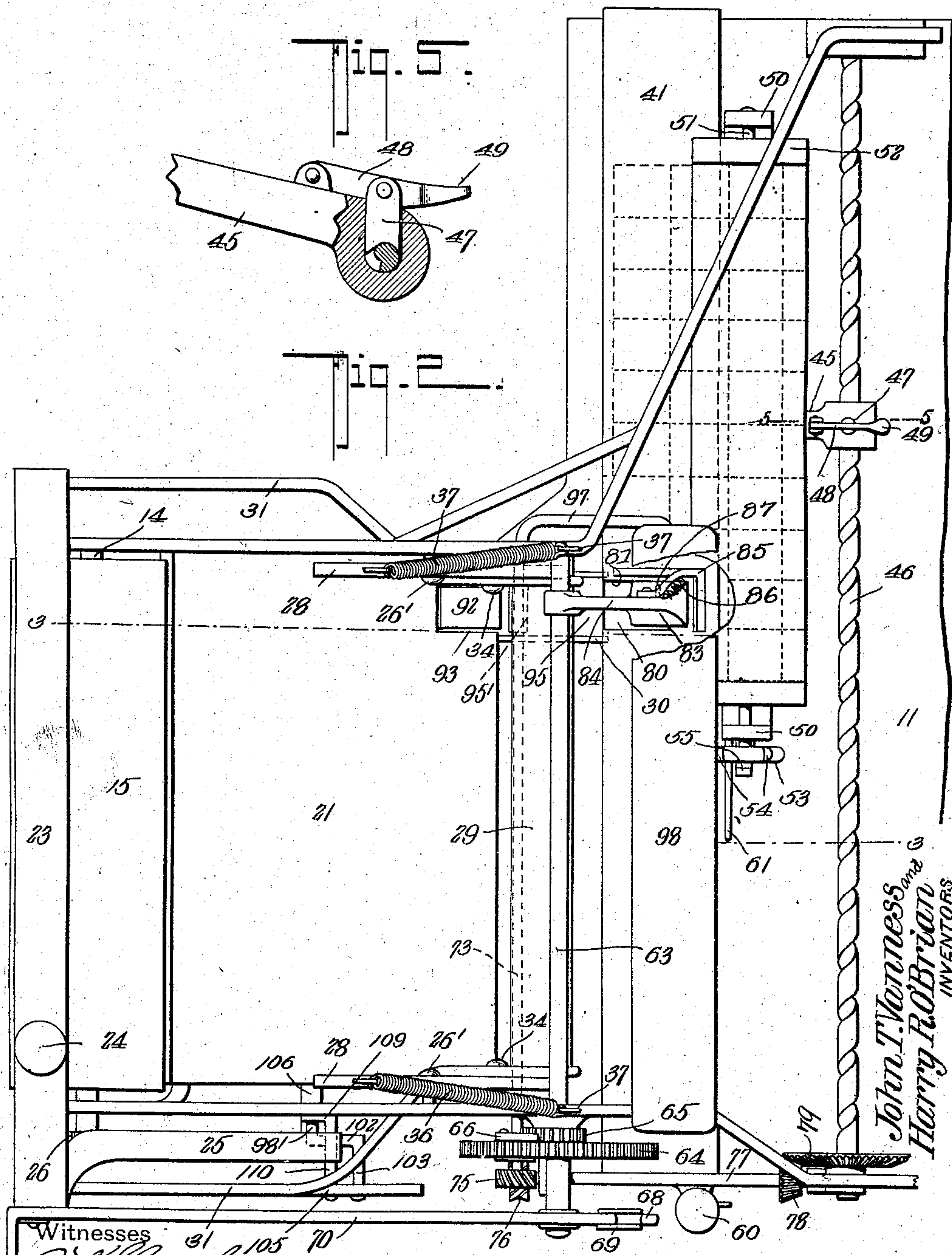
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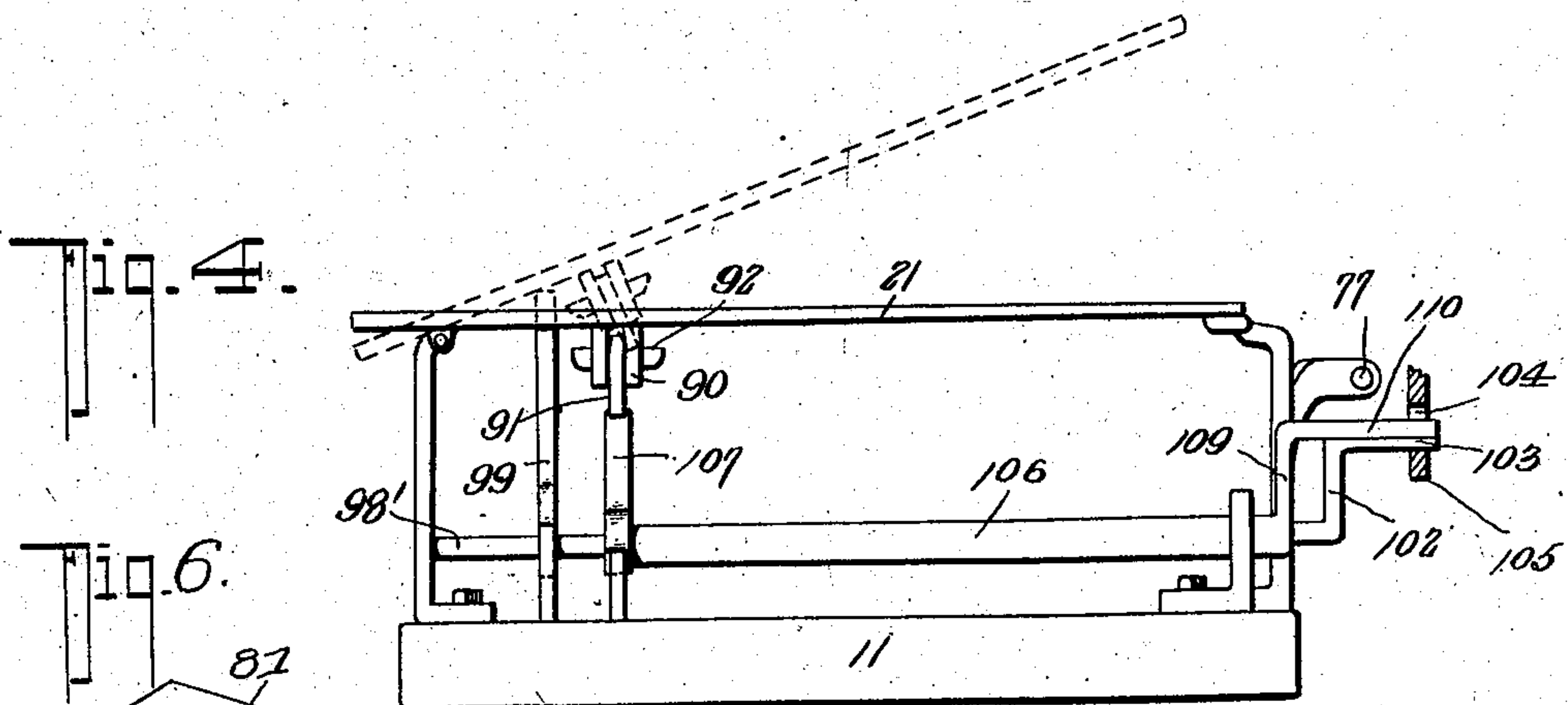
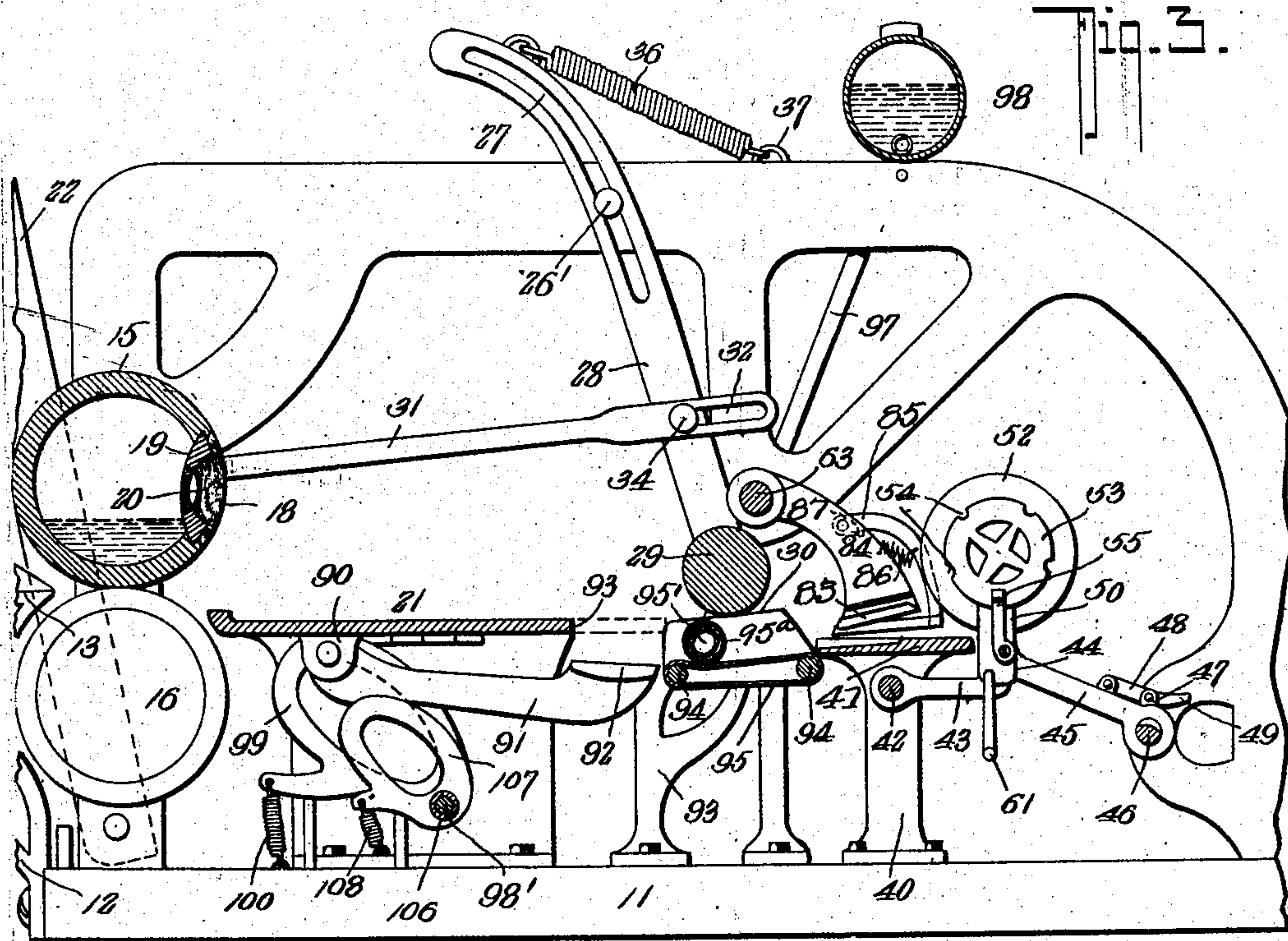
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3 SHEETS—SHEET 3.



## Witnesses

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# UNITED STATES PATENT OFFICE.

JOHN T. VANNESS AND HARRY R. O'BRIAN, OF OXFORD, OHIO.

## ENVELOP SEALING AND STAMPING MACHINE.

No. 815,494.

Specification of Letters Patent.

Patented March 20, 1906.

Application filed July 31, 1905. Serial No. 271,994.

*To all whom it may concern:*

Be it known that we, JOHN T. VANNESS and HARRY R. O'BRIAN, citizens of the United States, residing at Oxford, in the county of Butler and State of Ohio, have invented a new and useful Envelop Sealing and Stamping Machine, of which the following is a specification.

This invention relates to machines of that class employed for applying stamps or labels to envelopes and other articles, and has for its principal object to provide a mechanism of simple construction by which envelopes may be rapidly sealed and stamped.

A further object of the invention is to provide a machine in which the same pressing mechanism serves to force a moistened flap in place and to apply the previously-moistened stamp.

A still further object of the invention is to provide a machine that will operate on both sides of the envelop at the same time—that is to say, to seal the rear flap and to simultaneously apply a stamp to the front of the envelop.

A still further object of the invention is to provide a novel form of envelop-moistening means whereby the gummed flap may be moistened as it is fed toward the folding and pressing mechanism.

A still further object of the invention is to provide an improved means for automatically ejecting the stamped and sealed envelopes from the machine.

A still further object of the invention is to provide a novel form of stamp feeding and severing mechanism by which stamps may be detached from a sheet without the necessity of separating the sheet into strips each containing a single row of stamps.

A still further object of the invention is to improve and simplify the mechanism for moistening the stamps prior to pressing the same into contact with the envelop or other article.

With these and other objects in view, as will more fully hereinafter appear, the invention consists in certain novel features of construction and arrangement of parts herein-after fully described, illustrated in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that various changes in the form, proportions, size, and minor details of the structure may be made without departing from the

spirit or sacrificing any of the advantages of the invention.

In the accompanying drawings, Figure 1 is a side elevation of an envelop-sealing and stamp-affixing machine constructed in accordance with the invention. Fig. 2 is a plan view of the same. Fig. 3 is a longitudinal sectional view of the machine on the line 3 3 of Fig. 2. Fig. 4 is a similar view on the line 4 4 of Fig. 1, showing the parts in a slightly different position. Fig. 5 is a detail sectional view on the line 5 5 of Fig. 2, illustrating the connection between the stamp-carrying frame and the helically-grooved shaft. Fig. 6 is a detail perspective view of a portion of the stamp-supporting table, showing the stamp-receiving recess. Fig. 7 is a sectional view, on an enlarged scale, of the stamp-moistening roller.

Similar numerals of reference are employed to indicate corresponding parts throughout the several figures of the drawings.

The working parts of the machine are supported on a suitable framework, including in the present instance standards 10 and a bed-plate 11, and at the front of the machine is arranged a pair of brackets 12, supporting a platform or table 13, on which the envelopes or similar articles are placed in readiness to be fed to the machine.

The front portion of the frame is provided with bearings for the reception of the opposite ends of a shaft 14, on which is secured a combined feeding and moistening roller 15, and below this roller is a second feeding-roller 16, that is normally held elevated by a suitable spring 17, the peripheries of the two rollers being drawn tightly together in order that they may act effectively in feeding the envelop into the machine.

The upper roller 15 is hollow, and a portion of its periphery is formed by an arcuate strip 18, formed of an absorbent material, such as felt or wicking, said strip being partly confined in place by a metallic plate 19, that is secured to the spaced edges of the roller proper and is provided with suitable perforations for the passage of water, with which the roller is filled. This absorbent material is held outward by a small spring or springs 20, so that it may properly engage with and moisten the gummed flap of the envelop. These two rollers 15 and 16 are suitably operated in such manner as to discharge an envelop onto a tiltable table 21 at each opera-



tion of the machine, the gummed flap of the envelop being moistened in readiness to be pressed down on the rear face of the envelop.

At the front of the machine is a frame 22, the lower side arms of which are pivotally connected to the frame proper, and these side arms are connected together by a cross-bar 23, having a suitable operating-handle 24. One of the arms of the frame is provided with a rearwardly-projecting arcuate rack 25, which intermeshes with a pinion 26 on one end of the shaft 14, the length of the rack being such that the two rollers receive one complete revolution at each movement of the frame.

Projecting inwardly from the upper portions of the side frames are headed pins 26', that extend through curved slots 27, formed in the upper ends of a pair of bars 28, the pins forming guides for the movement of said bars. The lower ends of the bars are provided with bearing-openings for the reception of the pintles of a pressing-roller 29, that is adapted to move over the table and fold the previously-moistened flap over onto the envelop, this roller moving first in the direction of the front of the machine and then rearward, so that it passes over the flap twice at each operation. The opposite ends of the roller are supported on suitable inclined guides 30, carried by the inner faces of the frame members, and the two bars 28 are connected by links 31 to the frame 22, the forward ends of the links being pivotally connected to the frame and the rear ends thereof being provided with suitable slots 32, that receive pins 34, secured to the bars 28, these slots permitting the necessary lost motion of the roller during the operation of the machine. The upper ends of the bars 28 are connected by tension-springs 36 to fixed eyes 37, formed on the frame at a point to the rear of the bars, and said springs tend normally to throw the lower roller-carrying ends of the bars forward, and at the same time the springs serve to force the roller downward in order that it may exercise the necessary pressure on the flap of the envelop.

Near the rear portion of the frame of the machine are arranged standards 40, carrying a horizontally-disposed table 41, that extends transversely of the machine. These standards also serve as supports for a horizontally-disposed rod 42, that serves as a guide for a pair of arms 43, forming a part of a frame 44, that is movable transversely of the machine. The rear end of this frame is supported by an arm 45, that encircles a shaft 46, connected to suitable bearings formed in the frame members. This shaft 46 is provided with a helical groove throughout its entire length, the groove being arranged for the reception of a pin 47, that is carried by a lever 48, pivoted to the rearwardly-extending bar 45, and the rear end of said lever is

extended to form a finger-piece 49, by which the pin may be raised from the groove when necessary. The frame 44 is provided with suitable standards 50, forming bearings for the reception of a shaft 51, on which is mounted a stamp-carrying roller 52, the latter being arranged for the reception of one or more sheets of stamps, these being applied to the machine in the condition at which they are sold at the post-office—that is to say, one hundred stamps in each sheet—and it is unnecessary to sever the sheet into strips, as usually practiced in stamp-affixing machines. The stamps carried by this roller are so arranged that the outermost or edge row will rest on the horizontally-disposed table 41 gummed side uppermost, and the frame and roller are traversed transversely of the machine to the extent of the width of a single stamp at each operation of the machine, this movement being imparted by means of the helically-grooved shaft 46. To one end of the roller is secured a flanged disk 53, that is provided with a plurality of equidistant notches 54, spaced from each other for a distance equal to the height of the stamp, and these notches are arranged to receive a spring 55, that is carried by the frame, the flanged disk and the roller being turned to the extent of one notch each time the roller is traversed completely across the machine and a row of ten stamps is consumed. At the same time the lever 49 is raised and pin 47 is moved from the helical groove, so that the frame and stamp-carrying roller may be shifted to the left and a fresh row of stamps moved over the table 41 in readiness to be applied to the envelops.

At the right-hand end of the machine is arranged a suitable alarm in the form of a gong 60, having an operating member that is engaged by a pin 61, carried by the frame 44 at the end of each movement of the frame in order that the operator may be warned of the completion of movement of the roller and the fact that a row of stamps has been consumed.

The frame of the machine is provided with bearings for a transversely-disposed shaft 63, that is provided at one end with a loose gear-wheel 64 and a fixed ratchet-wheel 65. The gear-wheel carries a pawl 66, that engages with the teeth of the ratchet-wheel, so that on movement of the shaft and gear in one direction movement will be imparted to the gear-wheel, and on movement in the opposite direction the ratchet-wheel will click idly past the pawl without rotating the gear. Rigidly secured to one end of the shaft is a rocker-arm 68, to the upper end of which is adjustably secured a sleeve 69, that is connected by a rod 70 to the pivoted operating-frame 22, and each time the frame 22 is moved forward movement will be imparted, through the ratchet-wheel, to the gear 64, while on movement of the frame in the rear-



ward or opposite direction the gear will remain stationary.

Arranged below the shaft 63 is a shaft 73, carrying a small pinion 74 in mesh with the gear, and said shaft is also provided with a worm 75, intermeshing with a worm-wheel 76 on a shaft 77, that extends rearward under one side of the frame and is provided near its rear end with a bevel-pinion 78, intermeshing with a gear 79 on the helically-grooved shaft 46, so that at each forward movement of the operating-frame 22 the shaft 46 will be turned and the frame 44 and the stamp-carrying roller will be moved to the right for a distance equal to the width of a single stamp, and the extent of this movement may be adjusted with the utmost accuracy by sliding the collar 69 and locking the same at any desired distance from the shaft 63.

At a suitable point in the length of the stamp-supporting table 41 is a recess 80 of a width equal at least to the width of a stamp, and two of its edges 81 are sharpened in order to form a cutter which coacts with a corresponding cutting edge formed at one side of a curved stamp-detaching block 83, that is carried at the lower rear end of an arm 84, secured to the shaft 63. This shaft 63 when turned by the forward movement of the operating-frame 42 will raise the stamp-detaching block above the row of stamps, while the latter, together with the stamp-carrying roller, is fed transversely of the machine to the extent of a single stamp; but on the reverse movement of the operating-frame the stamp-detaching block will be forced down and a stamp will be severed from the row, and at the same time the block will exercise a pulling strain on the stamp which will move the same from the edge of the next row, a single stamp being thus detached at each operation.

Two of the edges of the block 83 are sharpened to coact with the cutting edges of the recess 80, and in order to prevent the detaching of more than a single stamp a clamping-arm 85 is pivoted to the arm 84, the upper portion of the clamping-arm being connected to the arm by a spring 86 and its outward movement being limited by a stop-pin 87. This clamp is arranged to engage with the stamps in the row next to the row being cut and in operation will be pressed against the second row of stamps before the block engages the stamp to be detached from the first row.

The envelop-receiving table 21, previously referred to, is hinged at its left-hand edge to the upper portion of a left-hand frame, as shown in Fig. 4, while the right-hand end of the table is suitably supported by members of the frame in order that the table may be maintained normally in a horizontal position. Pivoted to the brackets 90 on the under side of the table is a stamp-applying lever 91, hav-

ing a head 92 of sufficient area to receive and support a single stamp or of proper size for the reception of a label when the machine is employed for attaching labels. This head 92 is arranged immediately under a recess 93, formed at the rear left-hand corner of the table, and when the envelop is placed in position on the table its upper right-hand corner will rest over said recess in position to remove the stamp carried by the head 92.

At a point between the head 92 and the stamp-supporting table 41 are arranged standards 93, having bearings for the reception of a pair of rollers 94, over which passes an endless belt 95, that preferably is formed of rubber or similar material to which the moistened stamp will not readily adhere, this belt, however, being designed to come into contact with the outer or printed face of the stamp. The belt is so arranged with respect to the stamp-detaching block 83 that each time a stamp is detached by the latter it will be drawn forward and fed to the belt and will afterward be moved by said belt up to the head 92. Immediately over the belt is arranged a combined feeding and moistening roller 95', that is secured to the shaft 73. This roller is hollow for its entire length and is connected by a tube 97 to a suitable water-reservoir 98, arranged at the upper portion of the machine. The circumference of the roller is such that during a single complete rotation it will feed a single stamp which has previously been supplied to the belt 95 by the stamp-detaching block 83, and as the stamp passes under the roller 95' its upper gummed surface will be moistened before the stamp passes on to the head 92.

The moistening-roller 95' is provided with an outer facing of perforated rubber 95<sup>a</sup>, and between this outer facing and the inner perforated wall of the roller is a lining 95<sup>b</sup>, formed of any absorbent material which would prevent the free passage of the water from the interior of the roller. It is found in practice that a moistened stamp will not adhere readily to a rubber surface, and as the rubber facing 95<sup>a</sup> is constantly supplied with water it will smooth the gummed surface of the stamps as the latter are fed downward, and the stamps will be retained on the belt 95 and will be forced to travel to the head 92.

At a point under the table 21 the frame is provided with bearings for the reception of a transversely-disposed shaft 98', carrying a cam 99, that normally is held in depressed position by a helical tension-spring 100. The upper surface of the cam bears against the under face of the table at a point near the pivoted edge of the latter, and when the shaft is turned this cam riding against the under side of the table will tilt the latter forward to the position shown in dotted lines in Fig. 4 and allow the stamp and sealed envelop to slide off by gravity. The outer end of the



shaft 98' is provided with a rocker-arm 102, having a laterally-projecting pin 103, that enters a slot 104, formed by a link 105, that is connected to the operating-frame 22, the parts being so arranged that near the completion of the rearward movement of the operating-frame the shaft will be turned and the table will be tilted to discharge the envelops.

Mounted on the shaft 98' is a hollow shaft 106, having at one end a cam 107, that normally is held in depressed position by a helical tension-spring 108. This cam is arranged to operate the stamp-attaching lever 91. At the outer end of the shaft 106 is a rocker-arm 109, having a pin 110, which enters a slot 104 at a point in advance of the pin 103, so that on the rearward movement of the frame the forward wall of the slot will first engage the pin 110 and rock the hollow shaft 106, thereby moving the cam 107 upward and forcing the stamp-applying lever upward until the previously-moistened stamp is applied to the lower face of the envelop. On continued movement the pin 110 engages the pin 103, and then the table is tilted to discharge the envelop.

In the operation of the machine, stamps having been previously placed on the carrying-roller 52 and the parts properly adjusted, an envelop is placed on the table 13 with the flap open and the pointed edge of the flap entered between the two rollers 15 and 16. The frame 22 is then pulled forward, and rack 25 imparts movement to the roller 15 to the extent of a single rotation of the latter, so that the moistened surface of the absorbent 18 engages and moistens the gummed flap of the envelop and deposits the envelop on the table 21, the flap standing upward at an oblique angle to the table, owing to the fold-line between the flap and the front of the envelop made during the course of manufacture of the latter. During a portion of this movement the slots 32 of the links or rods 31 have been moved over the pins 34 until the rear end walls of the slots engage said pins, whereupon the bars 28 are moved forward, carrying with them the roller 29, and the latter moves over the table 21, folding over and pressing down the moistened flap of the envelop. This movement also results in the feeding of a stamp from the belt 95 to the stamp-applying head 92, and at the same time movement is imparted, through the rods 70 and connected mechanism, to the helically-grooved shaft 46, so that the stamp-carrying roller is advanced laterally of the machine to the extent of the width of a single stamp, the feed stopping when a stamp has been fed to an extent sufficient to present the perforations between the end stamp and the next succeeding stamp in alinement with the edge 81. On rearward movement of the operating-frame, there is at first some considerable

lost motion due to the slots 32, and the roller 29 is not moved at the beginning of the operation. The shaft 63, however, is rocked and the stamp-detaching block moved down to sever and pull away the stamp previously fed on the forward movement of the operating-frame, said stamp being delivered onto the endless belt 95 in readiness to be moistened by passing under the roller 95' at the next operation. As the rearward movement of the operating-frame continues the end wall of the slot 104 will engage the pin 110, thus rocking the shaft 106 and causing cam 107 to move the stamp-operating lever upward and forcing the stamp against the then lower face of the envelop. About this time the roller 29 starts its rearward movement and passes over the top of the envelop, again pressing on the sealed flap, and at the same time the roller passes over the top of the envelop in such manner as to tightly press the latter against the stamp raised to position by the attaching-head 92.

Near the completion of the movement of the frame 22 the pin 103 will engage the slot 104 and shaft 98' will be rocked, thus moving the cam 99 against the under side of the table and tilting the latter to an extent sufficient to allow the envelops, now ready for mailing, to slide from said table.

The operation may be carried on indefinitely, and the machine may be readily adjusted in order to suit envelops or stamps or labels of different size.

After the machine has been out of use for a comparatively long period of time the forward end of the connecting-rod 70 is detached from the frame 22, there being a slip connection for the purpose, and then the roller is moved backward and forward once or twice in order to get the parts properly working and to effect the moistening of the strip 18 should the latter have stopped above the water-line of the roller. The rod 70 may then be attached to the frame and the operation of sealing and stamping envelops carried on with great rapidity and exactitude.

Having thus described the invention, what is claimed is—

1. In mechanism of the class described, the combination with a pair of feed-rollers, one of which is hollow and is provided with an absorbent section for moistening the flap of an envelop passing between the rollers, a table or support for the reception of the envelop, and a roller movable over the table to fold and seal a moistened flap.

2. In mechanism of the class described, a pair of feed-rollers, one of which is hollow and is arranged to contain a liquid, a portion of the periphery of the roller being formed of absorbent material, a perforated plate for holding the absorbent material in position, a support on which the moistened envelop is



delivered, and means for folding and pressing the moistened flap against the body of the envelop.

3. In mechanism of the class described, the combination with a tiltable table, of means for feeding an envelop to the table, and for moistening the flap thereof during its passage, means coacting with the table for folding and sealing the flap, and means for tilting said table to effect the discharge of the envelop by gravity.

4. In mechanism of the class described, the combination with an envelop-support, of a stamp-applying member, a stamp-carrier, means for detaching single stamps from a sheet, means for feeding the detached stamps to the stamp-applying member, and means for moistening the gummed surface of the detached stamps during such feeding movement.

5. In mechanism of the class described, a stamp-applying member, means for severing single stamps from a sheet, means for feeding single detached stamps from the severing-point to the stamp-applying member, and means for moistening such detached stamps during the feeding movement.

6. In mechanism of the class described, the combination with a stamp-carrier, of a table over which the stamps are fed, said table having a recess provided with a cutting edge, a stamp-detacher movable into said recess to detach single stamps, a belt onto which the stamps are fed, a stamp-applying device to which the stamps are fed by the belt, and means for moistening said stamps during the feeding movement.

7. In mechanism of the class described, the combination with a stamp-carrier, of a table over which the stamps are fed, said table having a recess provided with a cutting edge, a stamp-detacher movable into the recess to detach single stamps, a belt onto which the stamps are fed, a hollow moistening-roller arranged above the belt and serving to engage the stamps, and a stamp-applying device to which the stamps are fed from the belt.

8. In mechanism of the class described, a table having a recess, means for feeding an unsealed envelop to the table, means for moistening the flap of the envelop, a stamp-applying member movable through the recess of the table to apply a stamp to the

lower front face of the envelop, means for feeding a stamp to the stamp-applying member, and a pressure member coacting with the stamp-applying member, and the table, to affix the stamp and to seal the flap.

9. In an envelop-sealing and stamp-applying machine, a supporting-table, means for feeding envelops to the table and for moistening the same, means for detaching single stamps, means for moistening the detached stamps, means for conveying the stamps to a position under the envelop, and simultaneously-acting means for presenting the stamps against the lower face of the envelop, and pressing down the moistened flap of the upper face of the envelop.

10. In an envelop-sealing and stamp-applying machine, a recessed table, means for feeding envelops onto the table, and for moistening the envelop-flap, a pressure-roller movable over the envelop to press down the moistened flap, a stamp-applying member arranged under the table in alinement with the recess, means for detaching single stamps, means for conveying the detached stamps to the stamp-applying member, means for moistening the detached stamps, and means for actuating the applying member during the movement of the envelop-pressing roller.

11. In a machine of the class described, a stamp-carrier, means for moving the same, a pivotally-mounted stamp-detacher for cutting single stamps from the sheet, a yieldably-mounted clamping member carried by the stamp-detacher and arranged to engage with the sheet of stamps around the edge of the stamp to be detached.

12. In a machine of the class described, a stamp-carrying roller, and a helically-grooved shaft for moving said roller in the direction of its length, a stamp-detaching device for severing successive stamps of a row, and means for releasing the roller from the shaft to permit its readjustment to initial position after all of the stamps of a row have been used.

In testimony that we claim the foregoing as our own we have hereto affixed our signatures in the presence of two witnesses.

JOHN T. VANNESS.

HARRY R. O'BRIAN.

Witnesses:

NORMAN L. ARMISTEAD,  
J. S. MUDDLE.