No. 668,959. Patented Feb. 26, 1901.

J. D. LACROIX.

MACHINE FOR CUTTING CIGAR WRAPPERS.

(No Model.) (Application filed Aug. 5, 1899. Renewed Jan. 28, 1901.)

6 Sheets—Sheet 1.

Fig. 1.

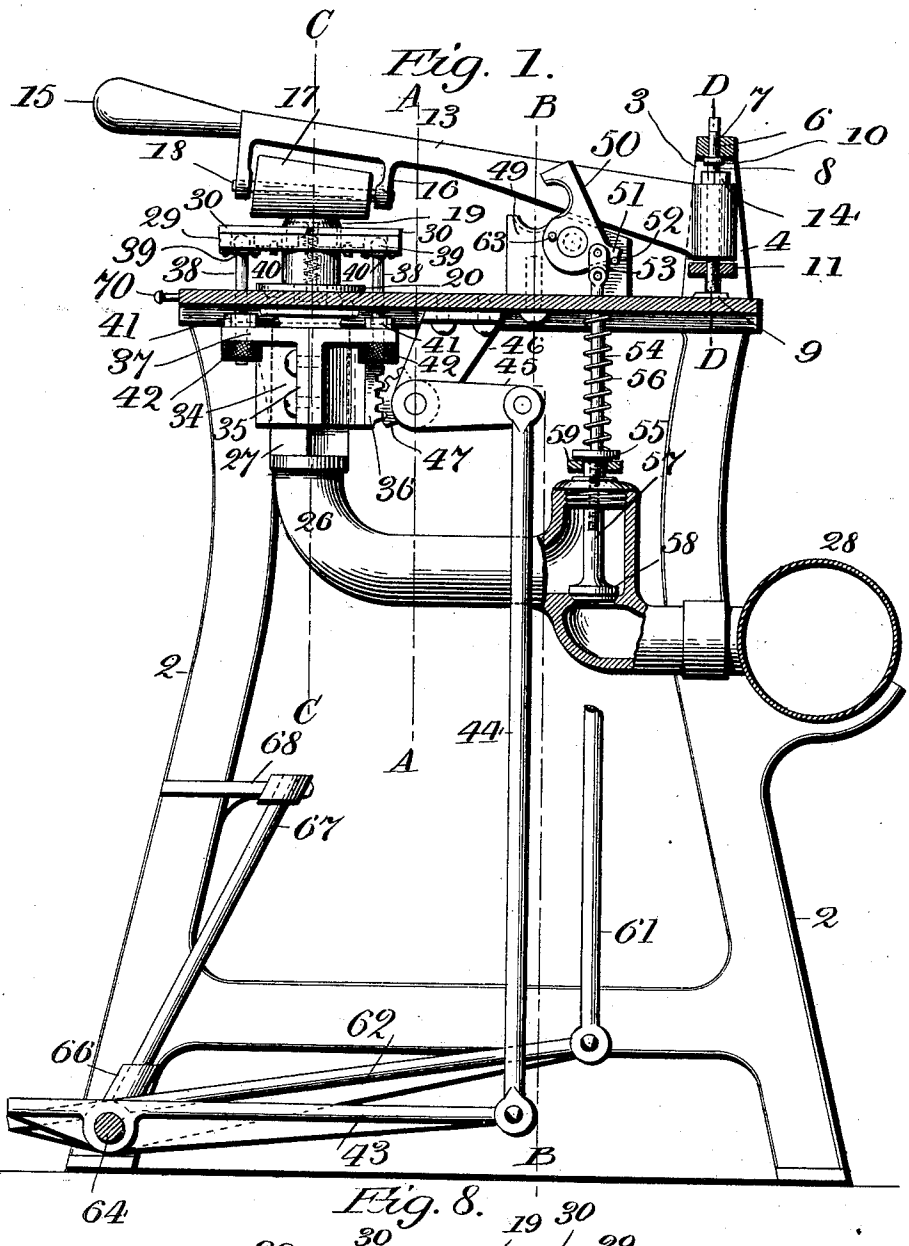
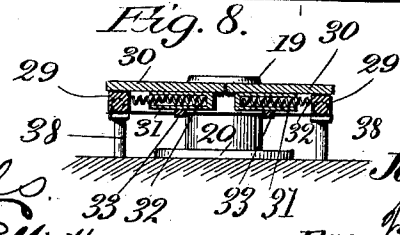


Fig. 8.



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No. 668,959. Patented Feb. 26, 1901.

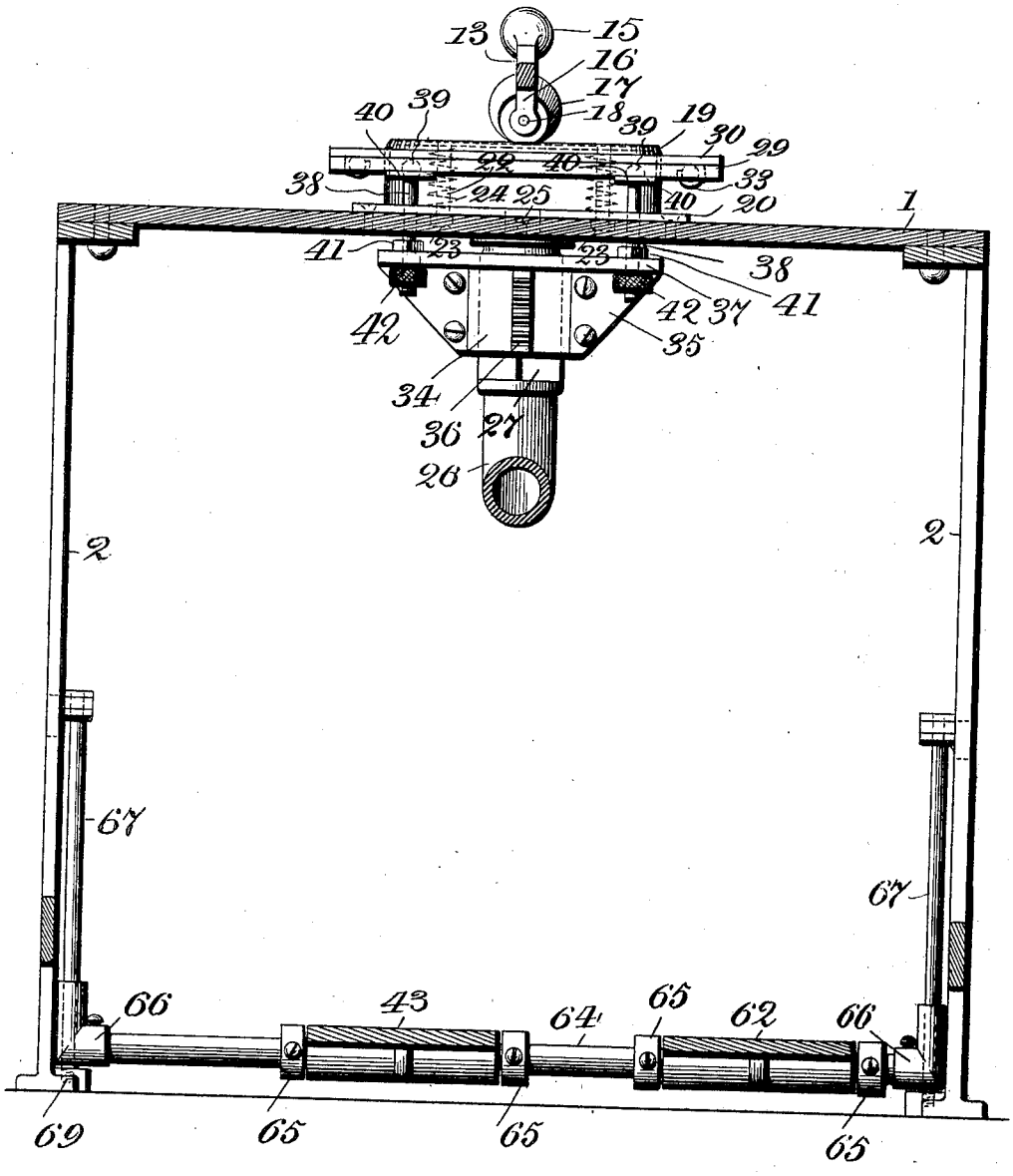
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6 Sheets—Sheet 2.

Fig. 2.



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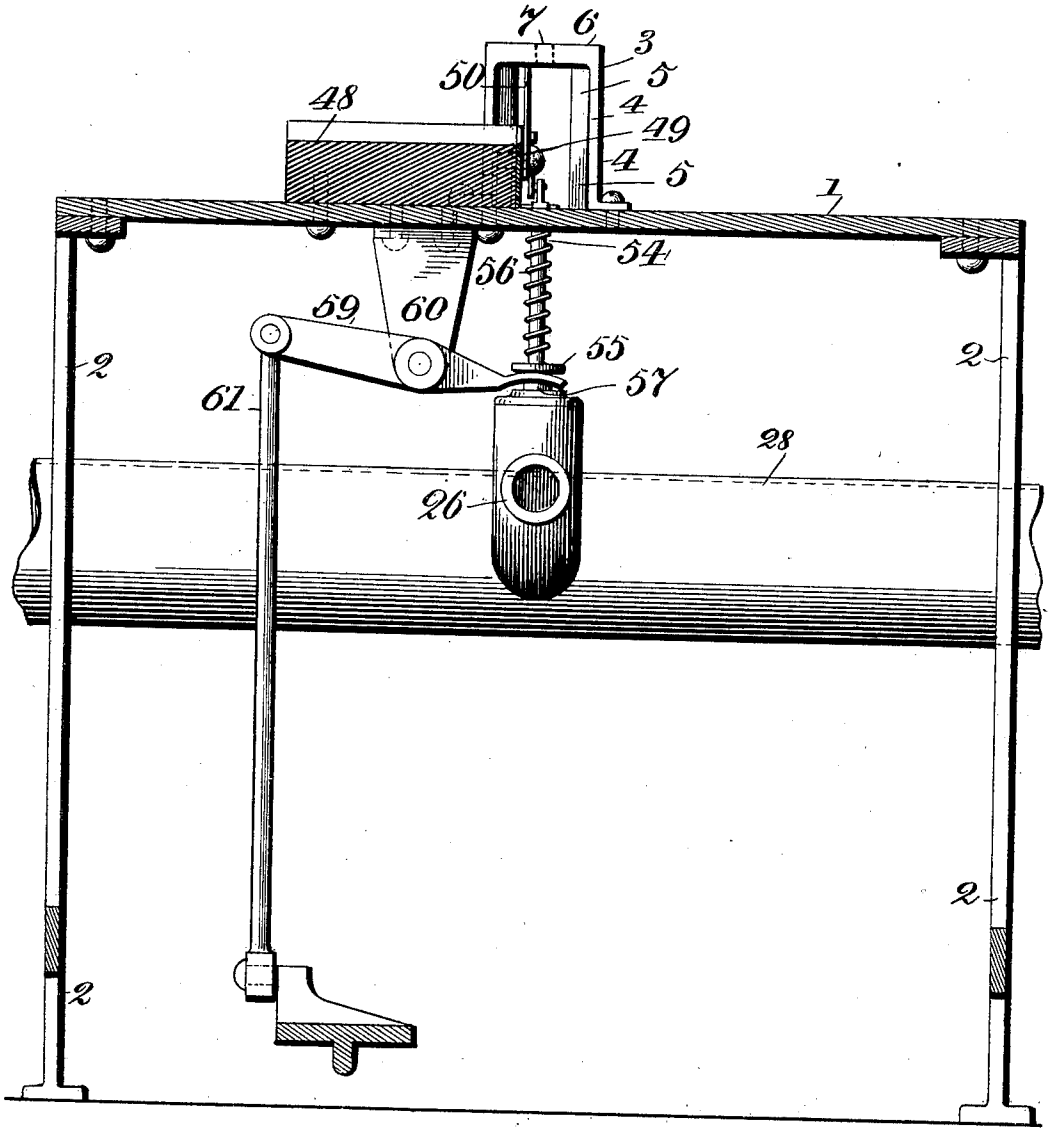
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(No Model.) (Application filed Aug. 5, 1899. Renewed Jan. 28, 1901.)

6 Sheets—Sheet 3.

Fig. 3.



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(No Model.) (Application filed Aug. 5, 1899. Renewed Jan. 28, 1901.)

6 Sheets—Sheet 4.

Fig. 4.

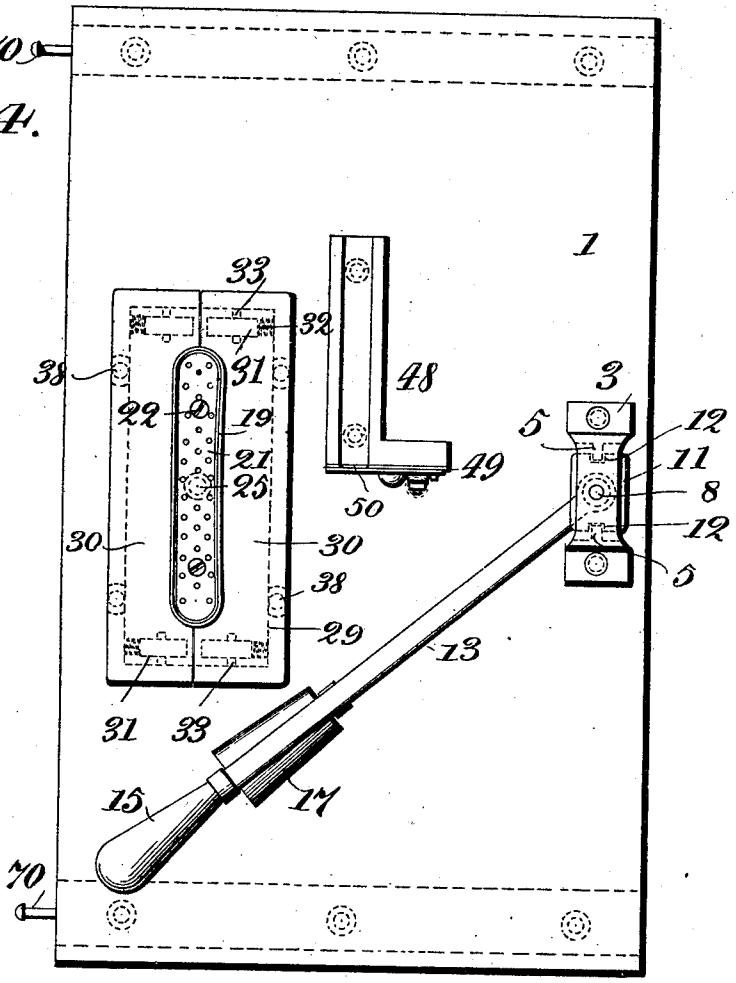
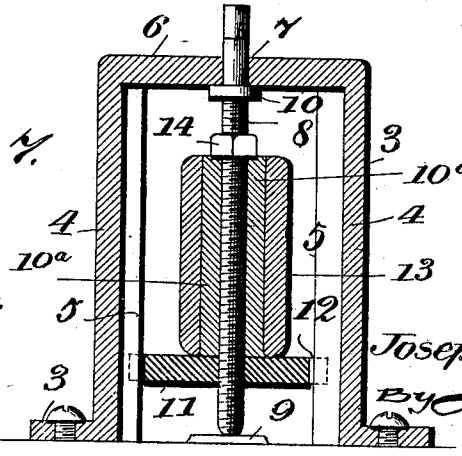


Fig. 7.



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MACHINE FOR CUTTING CIGAR WRAPPERS.

(No Model.)

(Application filed Aug. 5, 1899. Renewed Jan. 28, 1901.)

6 Sheets—Sheet 5.

Fig. 5.

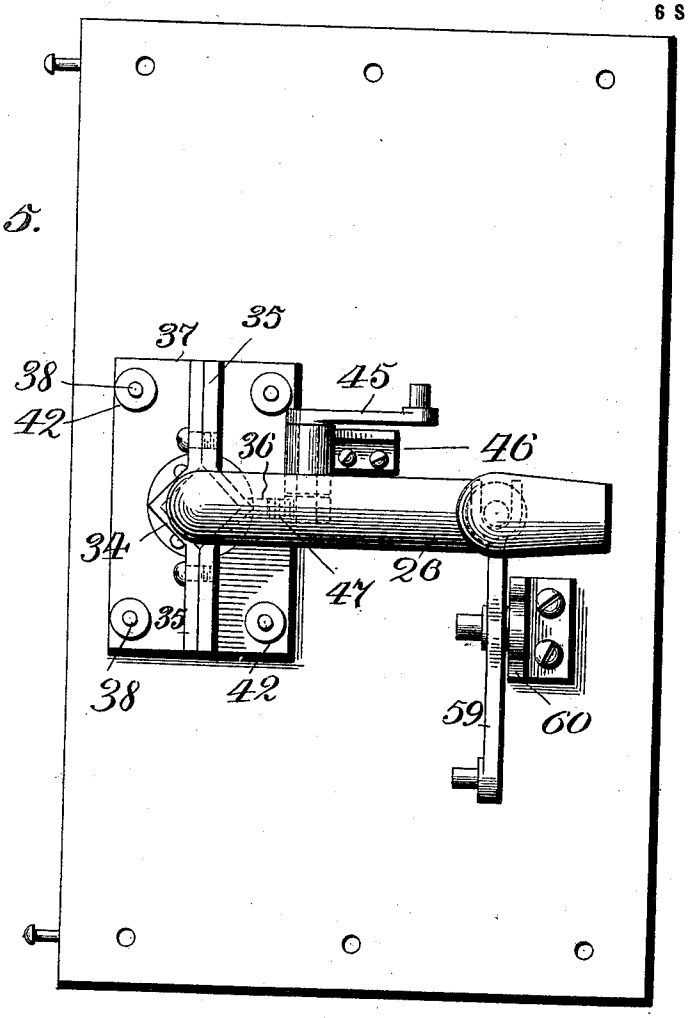
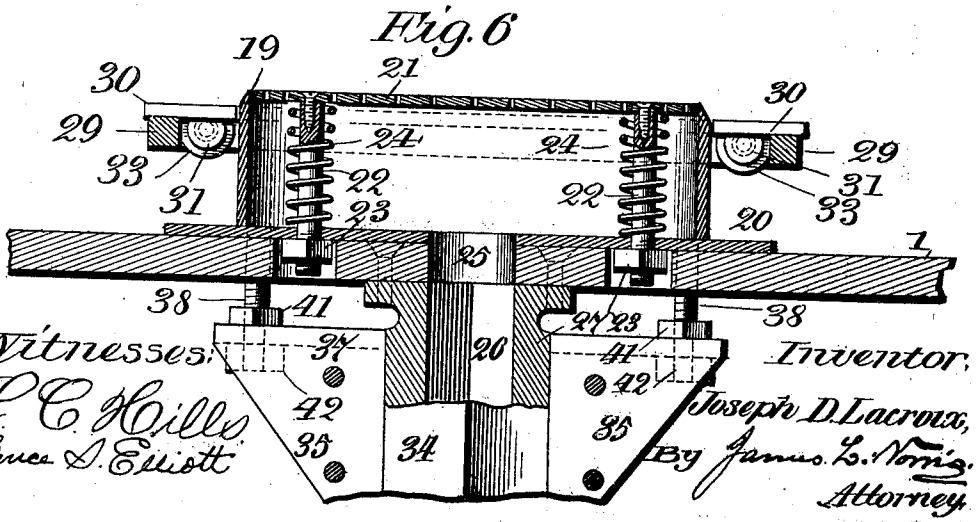


Fig. 6



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MACHINE FOR CUTTING CIGAR WRAPPERS.

(No Model.) (Application filed Aug. 5, 1899. Renewed Jan. 28, 1901.)

6 Sheets—Sheet 6.

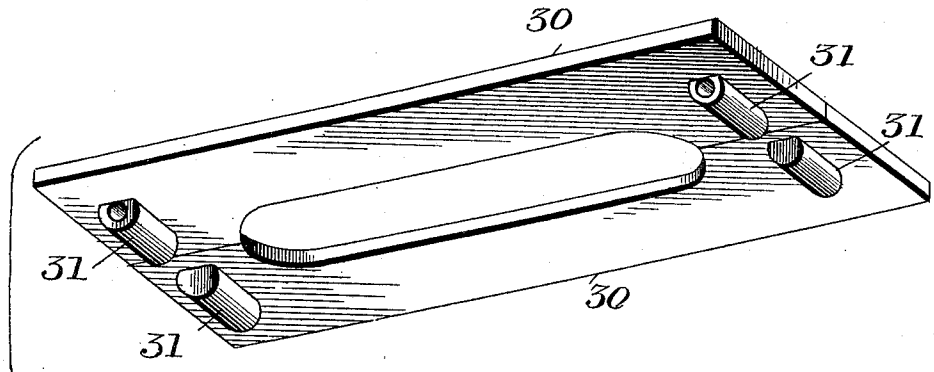


Fig. 9.

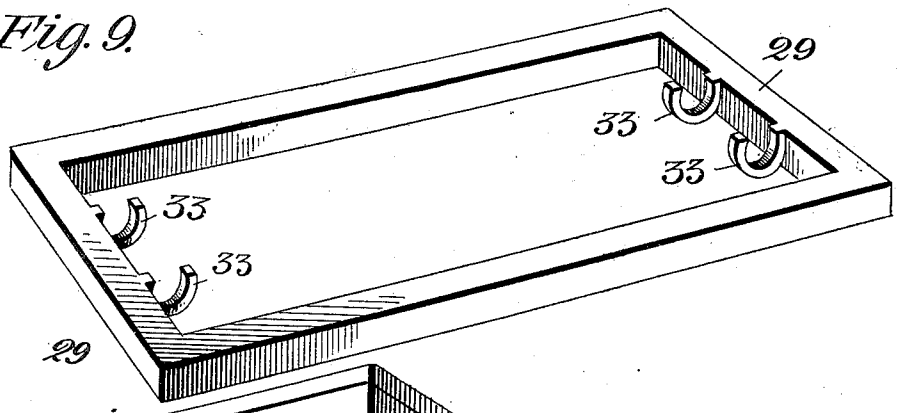
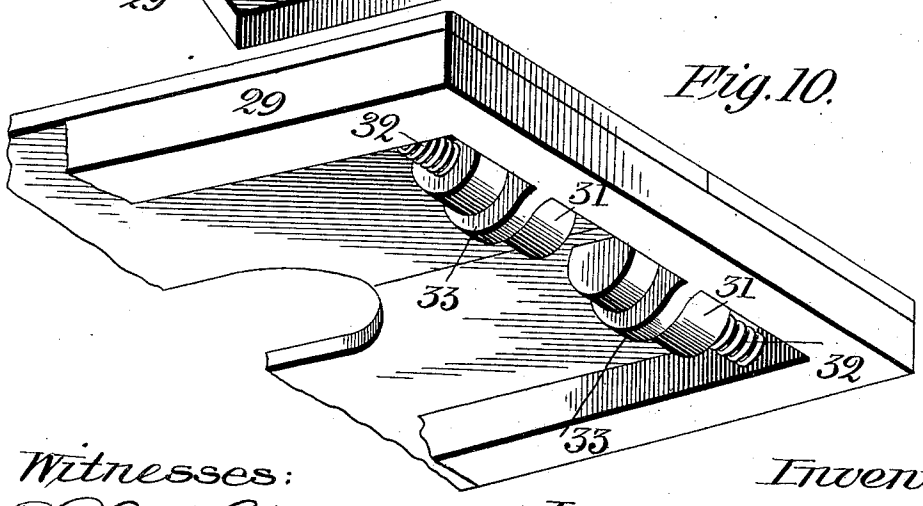


Fig. 10.



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UNITED STATES PATENT OFFICE.

JOSEPH D. LACROIX, OF NEW ORLEANS, LOUISIANA, ASSIGNOR TO EUGENE H. DAVIS, OF SAME PLACE.

MACHINE FOR CUTTING CIGAR-WRAPPERS.

SPECIFICATION forming part of Letters Patent No. 668,959, dated February 26, 1901.

Application filed August 5, 1899. Renewed January 28, 1901. Serial No. 45,107. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH D. LACROIX, a citizen of the United States, residing at New Orleans, in the parish of Orleans and State of Louisiana, have invented new and useful Improvements in Machines for Cutting Cigar-Wrappers, of which the following is a specification.

My invention relates to machines for cutting wrappers or binders for cigars, the object of the same being to provide certain improvements in this class of devices which render the operation thereof more satisfactory, simplify the construction, and provide means whereby accurate adjustments of all the parts may be readily effected.

The machine comprises, in addition to the wrapper-cutting mechanism, means for clipping or trimming the end of the cigar after the wrapper has been applied.

The details of construction of the machine will be fully described hereinafter, and the novel features thereof will be set forth in the claims.

In the drawings forming part of this specification, Figure 1 is a sectional side elevation of the machine. Fig. 2 is a vertical section on the line A A of Fig. 1 looking to the left. Fig. 3 is a similar section on the line B B of Fig. 1 looking to the right. Fig. 4 is a top plan view of the machine. Fig. 5 is a bottom plan view of the bed-plate of the machine and the parts connected thereto. Fig. 6 is a vertical section on the line C C of Fig. 1, and Fig. 7 is a detail sectional view on the line D D of Fig. 1. Fig. 8 is a section on the line E E of Fig. 4. Fig. 9 is a detail perspective view of the vertically-movable frame on the outside of the cutting-die and the transversely-movable plates carried thereby, showing the same slightly separated one from the other. Fig. 10 is a detail perspective view of the same parts assembled, the view being taken from the under side of said frame.

Like reference-numerals indicate like parts in the different views.

The operative parts of the device are mounted on a suitable frame comprising the bed-plate 1 and the legs or supports 2 2, connected therewith. Midway of the ends of the bed-plate 1, adjacent to its longitudinal center, is a bracket or standard 3, comprising parallel uprights 4 4, having inwardly-extending ribs or tongues 5 5 thereon, and a cross-bar 6, connecting the upper ends of the uprights 3 3, having a central orifice 7 therein. Through the orifice 7 extends a vertically-disposed screw-threaded journal 8, having a rectangular upper end for the application of a key or wrench, by means of which it may be turned. The said journal bears at its lower end upon the plate 9 and is prevented from upward movement by the collar or shoulder 10, which engages the under side of the cross-bar 6. The said journal also passes through a bearing-sleeve 10^a and a guide-plate 11, the said plate having a threaded orifice therein which the threads on said journal engage and provided with notches 12 12 in its opposite ends which receive the ribs or tongues 5 5, heretofore referred to. By this construction it will be seen that the guide-plate 11 is incapable of rotary movement, but is adapted to be raised and lowered by the turning of the journal 8. The sleeve 10^a has mounted upon it an arm or lever 13, which rests upon the guide-plate 11, and said sleeve is locked in position by the jam-nut 14. As the plate 11 is raised or lowered by turning the journal 8 the position of the arm or lever 13 may be thereby adjusted. The outer end of the arm 13 is provided with a handle 15, and adjacent to said handle is also provided with hangers 16, in which is mounted a cone-shaped pressing-roller 17, the same being rotatably mounted in said hangers upon the shaft 18. Upon the side of the bed-plate 1 opposite the bracket 3 is secured a die 19, having V-shaped cutting edges, as clearly shown. The configuration of said die may be as shown in the drawings, or it may be varied to suit the character of work which it is to perform. The said die is intended, of course, for the cutting of the binder or wrapper, and the shape of the wrapper desired may change according to the shape or character of the cigar upon which it is to be used. Said die is attached directly to a base-plate 20, which is itself secured to the bed-plate 1 by screws or other analogous devices. Within the die 19 is a perforated platen 21, which when in its normal position lies flush with the upper cutting edge of said

die. The said platen has secured to the under side thereof a plurality of rods 22 22, which extend down through openings in the base-plate 20 and bed-plate 1, the same being provided upon their lower ends with nuts 23, engaging the under side of the base-plate 20 for limiting the upward movement of the platen 21. The said platen is sustained by spiral springs 24, which surround the rods 22 and engage the upper side of the base-plate 20 and the under side of said platen. These springs provide for a depression of the platen under certain conditions, which will be referred to later. Within the walls of the die 19 a passage 25 is formed in the base-plate 20 and the bed-plate 1, and secured to the under side of the bed-plate and communicating with the passage 25 is a pipe or conduit 26, having a rectangular portion 27 thereon. The said pipe 26 communicates with a suction pipe or conduit 28, the exhaust from which acts through the pipe 26, passage 25, and perforations in the platen 21 to retain the leaf of tobacco on the die 19. When the leaf is retained in this manner, a back-and-forth movement of the lever 13 is effected by the operator, which brings the roller 17 in contact with the leaf on the die and effects the cutting of said leaf of the exact shape of said die.

The suction pipe or conduit 28 extends along the rear portion of the machine and is adapted to supply two separate rows of machines which are placed back to back. In this way floor-space is greatly economized, as the ordinary practice with machines of this character is to have suction pipes or conduits for each row of machines. This is an important feature of my invention.

Surrounding the die 19 is a rectangular frame 29, upon which are supported two transversely-movable plates 30 30, whose inner edges are cut out to conform to the contour of the die and which are normally held in contact with the outer surface of the die by spring-pressure. Upon the under side of each of the plates 30 and at opposite ends thereof are barrels 31, whose inner ends are closed and whose outer ends are open. In the barrels 31 are located coil-springs 32, which normally project beyond the open ends of said barrels and engage or abut against the inner closed ends thereof. When the plates 30 are in place upon the frame 29, the barrels 31 fit down within the hollow portion of said frame and the outer ends of the springs 32 engage the inner surfaces of the sides of said frame, the action being to normally hold the plates 30 in contact with the outer surface of the die 19, with a provision of means whereby said plates may be slightly spread. In order to prevent the plates 30 from being disconnected from the frame 29, I form upon the end bars of said frame inwardly-extending U-shaped arms or projections 33 33, in which the barrels 31 31 fit and are adapted to move. The said curved arms 33 extend around the barrels 31 beyond the horizontal diameter thereof, and thereby prevent the upward movement of the plates 30 independently of the frame 29. The plates 30 and the platen 21 constitute a rolling-table for the cigar after the wrapper has been cut, and it is of course essential that these parts be maintained on exactly the same level with a provision of means for depressing the same away from the cutting edge of the die when the operation of cutting a wrapper is being performed. The means by which this is done, so far as the platen 21 is concerned, has already been described. The means whereby the operation and adjustment of the plates 30 may be performed will now be described.

Embracing and mounted to slide upon the rectangular portion 27 of the pipe 26 is a sleeve 34, preferably constructed in two parts secured together by screws passing through the vertical flanges 35 thereon and provided with rack-teeth 36 and with a horizontal flange 37 around the upper end thereof. Through the flange 37 extends a plurality of screw-threaded supporting-rods 38, having a ball-and-socket connection at their upper ends with the frame 29. In the construction shown the upper ends of said rods are provided with balls 39, which fit in corresponding sockets in said frame 29, the same being prevented from disconnection from said sockets by the plates 40. The lower ends of said rods are provided with adjusting-nuts 41 42, the nuts 41 being located above the flange 37 and the nuts 42 below said flange. By means of these nuts the rods 38 38, which support the frame 29 and plates 30, may be raised or lowered, so as to provide for the exact registration of the plates 30 with the platen 21 when the sleeve 34 is elevated. The said sleeve and the parts connected thereto are actuated from a treadle 43, connected through the pitman 44 with a lever 45, fulcrumed upon a bracket 46, secured to the under side of the bed-plate 1 and provided with a segmental rack 47, which coöperates with the rack-teeth 36 on the sleeve 34. By depressing the treadle 43 the sleeve 34 and the parts connected therewith will be elevated until the plates 30 are brought to a level with the platen 21.

Secured to the bed-plate 1, adjacent to the die 19 and between said die and the pivotal point of the arm 13, is a cutter-block 48 for the completed cigar, the same having a stationary knife or blade 49 at one end thereof and having pivoted thereto in operative relation to the knife or blade 49 a movable knife or blade 50. The blade 50 is provided with a toe 51 on one side thereof, which is adapted to engage a stop 52 on the block 48 for limiting the opening movement of said knife. The same is also connected, through a link 53, with a rod or pitman 54, having a collar 55 at its lower end. Surrounding the rod 54, engaging the collar 55 at one end and the under side of the bed-plate 1 at the other end, is a coil-spring 56, whose action is to normally hold the knife or blade 50 in its open

position, as shown in Fig. 1 of the drawings. The rod 54 is adjustably connected to the stem 57 of valve 58, which controls the suction or exhaust through the pipe 26 from the conduit 28. Said rod and said valve are actuated simultaneously by means of a lever 59, fulcrumed upon a bracket 60, secured to the under side of the bed-plate 1, one arm of said lever engaging the under side of the collar 55 on the rod 54, and the other arm of said lever connected, through a pitman 61, with a treadle 62. As shown in the drawings and above described, the depression of the treadle 62 will cause the opening of the valve 58 and the actuation of the knife or blade 50 to bring the cutting edge of the latter into cooperating relation with the cutting edge of the knife 49, the return movement of these parts being effected by the spring 56. It may be desirable, however, that the knife 50 be opened or moved away from the knife 49 when the valve 58 is opened and the cutting operation by the knife 50 performed on its return stroke. In order to effect this, I have formed on the knife 51 a supplemental pin 63, to which the link 53 may be attached for the purpose of reversing the action of the cutter 50 relative to the actuation of the valve 58.

The treadles 43 and 62, as illustrated in Figs. 1 and 2 of the drawings, are mounted to rock upon a horizontal shaft 64, the same being held against lateral movement on said shaft by means of collars 65 65. The outer ends of said shaft 64 are secured to elbow-sleeves 66 66, the upright ends of which embrace and are adapted to slide upon diagonally-arranged guide-rods 67 67, mounted upon the frame of the machine. As shown, the upper ends of said rods are secured to inwardly-extending arms or brackets 68, the lower ends thereof being screwed or otherwise secured to the lower ends of the legs 2, as shown at 69. This means of mounting the treadles provides for the elevation thereof for the purpose of cleaning beneath the treadles, and thereby removing scraps and other particles of waste which machines of this character are apt to collect in such places.

From the foregoing description it is thought that the operation of my device will be readily understood. Briefly stated, it is as follows: Assuming that a cigar has been wrapped and placed in the cutter-block 48 and that the parts are in the positions shown in Figs. 1 and 4 of the drawings, a leaf from which a cigar-wrapper is to be cut is placed upon the upper surface of the die 19 and the treadle 62 is depressed. This action opens the valve 58 and allows the suction or exhaust from the conduit 28 to act through the pipe 26, the passage 25, and the perforations in the platen 21 upon the under side of the leaf to retain the same in close contact with said platen and the die 19. Simultaneously the rod 54, which is connected with the knife or blade 50, is elevated, and said knife or blade is rocked so as to bring the cutting edge thereof into operative relation with the knife or blade 49, thereby severing the end of the cigar which was previously placed in the cutter-block 48. With the leaf retained in place upon the die 19 the arm 13 is grasped by its handle 15 and rocked back and forth, bringing the roller 17, which is carried by the arm 13, over the upper surface of the leaf, forcing the latter down against the cutting edge of the die 19 and cutting said leaf to the shape desired. The pressure upon the treadle 62 is now released, causing a return movement of the parts which were previously actuated thereby, closing the valve 58 and raising the knife 50. The exhaust which acted against the under side of the leaf is now released and the cut wrapper is free to be removed. The treadle 43 is now depressed, which, through the pitman 44, lever 45, gears 47 and 36, raises the sleeve 34 and the frame 29 and plates 30, which are carried thereby, bringing the said plates up to a level with the platen 21 and the cutting edge of the die 19. A continuous flat even surface is formed by these parts, which serves as a table upon which the wrapper may be rolled upon the filler. When the latter has been applied, the plates 30 are lowered by reversing the operation of the treadle 43 and the die 19 is free to receive another leaf, from which another wrapper may be cut in the manner above described. It will be observed that as the roller 17 passes over the leaf on the die 19 the platen 21 will yield slightly, so as to enable the cutting edge of said die to sever the leaf. It will also be observed that in case of wear of the die 19 or in the event that the platen 21 and plates 30 do not register with the cutting edge of said die for any reason the platen 21 may be adjusted to proper position by tightening or loosening the nuts 23 on the ends of the rods 22, and the plates 30 may be adjusted by means of the nuts 41 and 42 in the manner heretofore described. The position which the roller 17 takes with respect to the die 19 may also be controlled by means of the peculiar pivotal connection of the arm 13 with the bracket 3.

The improvement above described renders the construction and operation of machines of this character much more simple and effective than those which are now in use, and the cost of the machine is materially decreased.

The pins 70 on the front edge of the bed-plate 1 serve as supports for a bag or other receptacle in which scraps and other refuse may be collected.

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

1. In a cigar-wrapper-cutting machine, a die, a roller coöperating therewith, an arm or lever carrying said roller and means for adjusting said arm or lever, consisting of a journal, a guide-plate for said journal also serving as a support for said arm, and means ac-

tuated by the turning of said journal for raising and lowering said plate, as and for the purpose set forth.

2. In a cigar-wrapper-cutting machine, a die, a roller therefor, an arm or lever carrying said roller and means for adjusting said arm or lever, consisting of a screw-threaded journal, and a guide-plate therefor serving also as a support for said arm, said plate having a screw-threaded aperture therein, through which said journal passes, whereby upon the turning of said journal in one direction or the other, said arm or lever will be raised or lowered.

3. In a cigar-wrapper-cutting machine, a die, a roller therefor, an arm or lever carrying said roller and means for adjusting said arm or lever, consisting of a fixed bracket or support made up of two uprights having inwardly-extending ribs or tongues thereon, and a cross-bar connecting said uprights, a screw-threaded journal extending through said cross-bar and provided with a shoulder engaging the under side of said cross-bar, a guide-plate for said journal serving also as a support for said arm or lever, the said plate having a threaded aperture therein through which said journal passes and having notches in its opposite ends in which said ribs or tongues fit, a bearing-sleeve surrounding said journal, and a lock-nut adapted to engage the upper end of said sleeve, as and for the purpose set forth.

4. In a cigar-wrapper-cutting machine, the combination with a die and a roller therefor, of an outwardly spring-pressed perforated platen within said die, a vertically-movable frame embracing said die and carrying plates which with said platen constitute a rolling-table, a suction-pipe communicating with the inside of said die, a reciprocating sleeve thereon having a flange around its outer edge provided with openings or perforations, screw-threaded supporting-rods extending through said perforations, each having a ball-and-socket connection with said vertically-movable frame and locking-nuts on said rods located on opposite sides of said flange whereby the position of said plates may be accurately adjusted.

5. In a cigar-wrapper-cutting machine, the combination with a die and a roller therefor, of a platen within said die, a plate or plates embracing said die and constituting with said platen a rolling-table, an exhaust-conduit communicating with said die, a reciprocating sleeve mounted on said conduit connected to said plate or plates and having rack-teeth thereon, a rocking lever having a segmental rack thereon meshing with said teeth, a treadle and a pitman connecting said treadle with said lever, as and for the purpose set forth.

6. In a cigar-wrapper-cutting machine, the combination with the bed-plate having an opening therein, a die secured to said bed-plate around said opening and a roller coöperating with said die, of a perforated platen within said die, a pipe secured to said bed-plate, and communicating with said opening, an exhaust-conduit communicating with said pipe, a valve controlling the exhaust through said pipe, a stem extending upwardly therefrom, a cutter-block for the completed cigar comprising a fixed blade and a pivotally-mounted blade, a rod secured to said valve-stem having a collar or shoulder thereon, a link connection between said rod and said movable blade, a lever, one arm of which engages the shoulder or collar on said rod, a treadle, and a pitman connecting said treadle with the other arm of said lever, whereby upon the depression of said lever said valve and said movable blade are simultaneously actuated, as and for the purpose set forth.

7. The combination with a die and an outwardly spring-pressed platen within said die, of a vertically-movable frame surrounding said die, transversely-movable plates supported upon and carried by said frame, springs on said plates engaging said frame for normally holding said plates inwardly in contact with said die, casings for said springs, and means coöperating with said casings for guiding said plates and preventing the separation thereof from said frame.

8. The combination with a die and an outwardly spring-pressed platen within said die, of a vertically-movable hollow frame surrounding said die, transversely-movable plates supported upon and carried by said frame, said plates being cut away along their adjacent edges to conform to the contour of said die, springs on the under side of said plates engaging the inner surfaces of said hollow frame for maintaining said plates normally in contact with said die, casings for said springs, and means coöperating with said casings for guiding said plates and preventing the separation thereof from said frame.

9. The combination with a die and an outwardly spring-pressed platen within said die, of a vertically-movable hollow frame surrounding said die, transversely-movable plates supported upon and carried by said frame, barrels secured to the under side of said plates having their inner ends closed and their outer ends open, coil-springs in said barrels projecting beyond the open ends thereof and engaging the inner surfaces of said hollow frame for maintaining said plates normally in contact with said die, and means coöperating with said barrels for guiding said plates and preventing the separation thereof from said frame.

10. In a cigar-wrapper-cutting machine, the combination with a die and an outwardly spring-pressed platen within said die, of a vertically-movable hollow frame surrounding said die, transversely-movable plates supported upon and carried by said frame, barrels secured to the under sides of said plates having their inner ends closed and their outer

ends open, coil-springs in said barrels projecting beyond the open ends thereof and engaging the inner surfaces of said hollow frame, and curved arms or projections on said frame partially embracing said barrels, for preventing the separation of said plates from said frame, as and for the purpose set forth.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JOS. D. LACROIX.

Witnesses:
JAMES L. NORRIS,
GEO. W. REA.