

J. D. LACROIX.

CIGAR MACHINE.

APPLICATION FILED JAN. 8, 1906.

1,011,127.

Patented Dec. 5, 1911

2 SHEETS-SHEET 1.

Fig. 1.

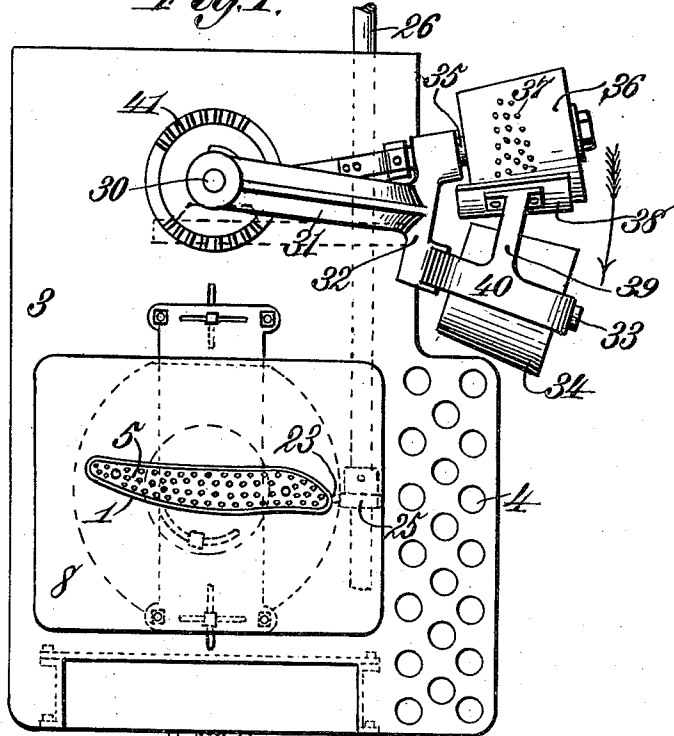
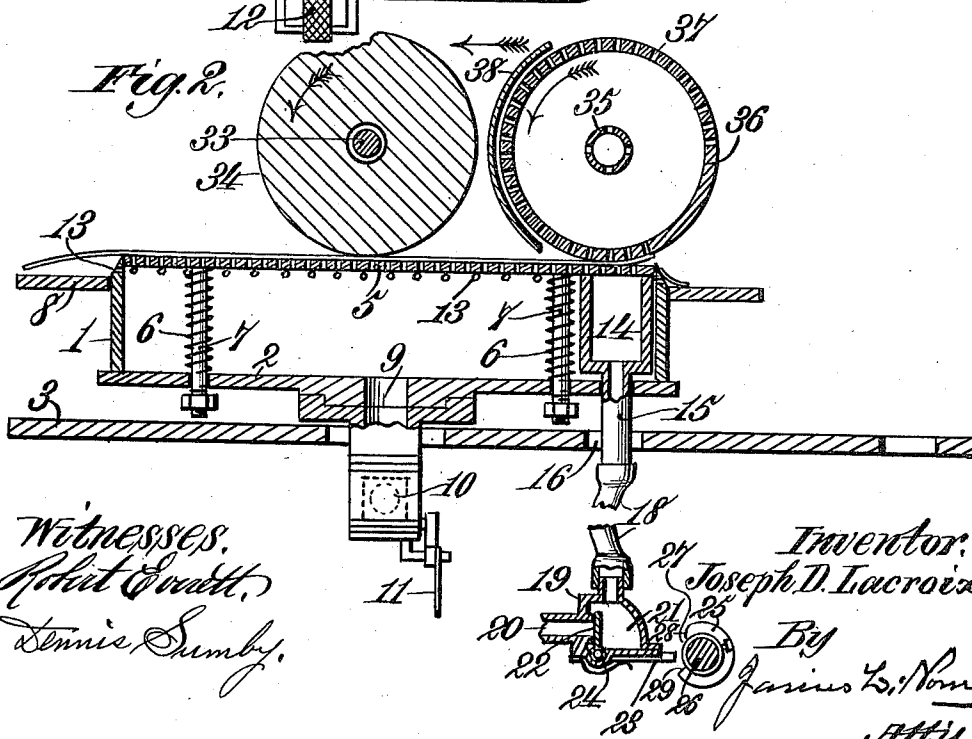


Fig. 2.



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Robert Smith,
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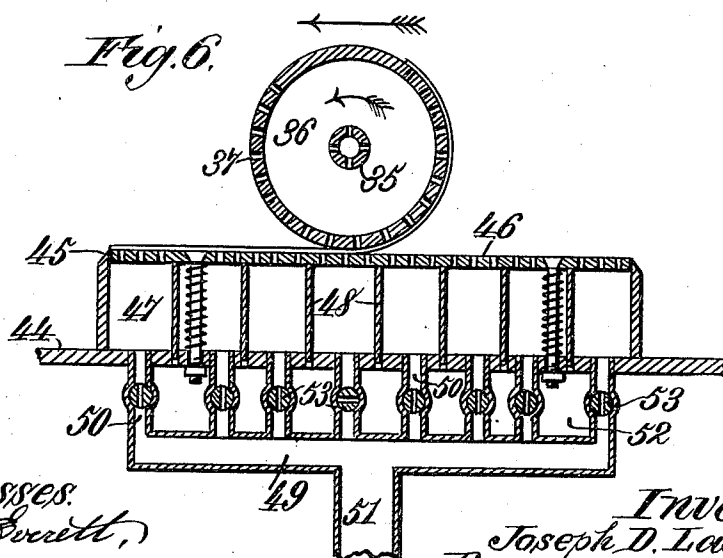
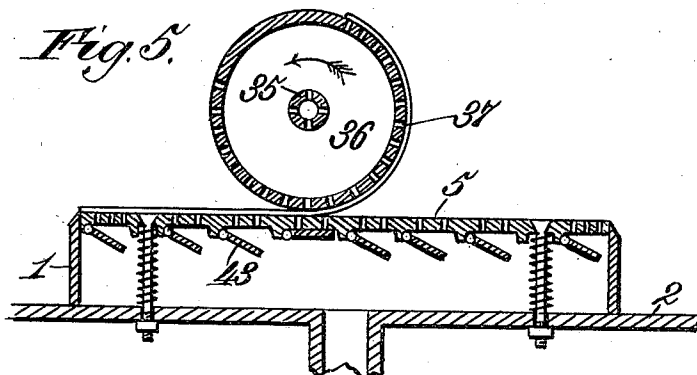
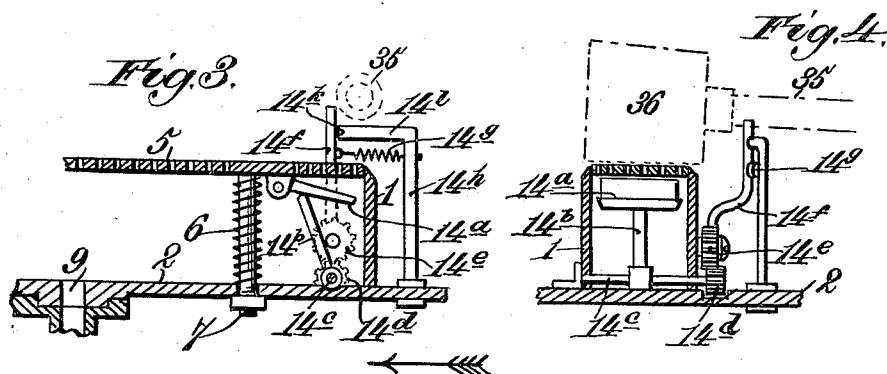
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

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CIGAR-MACHINE.

1,011,127.

Specification of Letters Patent.

Patented Dec. 5, 1911.

Original application filed February 21, 1905, Serial No. 246,729. Divided and this application filed January 8, 1906. Serial No. 295,154.

To all whom it may concern:

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

This invention relates to cigar machines, and particularly to wrapper cutting mechanism, and the purpose of the invention, is, in a comparatively simple manner, to economically and expeditiously cut a wrapper, hold the surplus portion of the leaf, or part of the leaf from which the wrapper is cut, intact with the cutting mechanism, and regularly pick up the cut wrapper while being cut from the latter mechanism and transfer it to a feeder forming part of a wrapper applying mechanism, or to any other supporting means adapted to hold a cut wrapper. The preferred form of the wrapper cutting mechanism, together with parts sufficient to demonstrate the practicability thereof will be more fully hereinafter set forth.

In the drawings, Figure 1 is a top plan view of a wrapper cutting mechanism embodying the features of the invention and showing incidental pick up and transferring devices, the wrapper cutting die being illustrated as clear. Fig. 2 is a transverse vertical section of the wrapper cutting mechanism, and pressure or pick up and transfer rollers coöperating therewith and shown as moving over the die to successively cut and pick up the wrapper. Fig. 3 is a sectional elevation of a portion of the wrapper cutting die and body and part of the support therefor embodying a modification. Fig. 4 is a transverse sectional view of the modified construction shown by Fig. 3. Fig. 5 is a detail sectional elevation of the wrapper cutting die and body and part of the support for the latter embodying a further modification. Fig. 6 is a view similar to Fig. 5, showing a still further modification of the wrapper cutting die and body.

Similar characters of reference are employed to indicate corresponding parts in the several views.

The wrapper cutting and transferring mechanism, shown particularly in Figs. 3 and 4, comprises a die 1, of a shape to conform to that of the wrapper and supported

upon a platform or table 2, which is adjusted in different directions, as in my previous machines, to insure proper coöperation between the die and the pressure means engaging the wrapper disposed over said die to perform the cutting operation and also economically cut wrappers from leaves having different characteristics as to shape or partial injury or breakage. The platform or table 2 is disposed on a bed 3, provided with a perforate ledge 4 for the support of the parts of tobacco leaves after the wrappers are formed. A perforated die-bed 5 is held within the die 1 and normally positioned close to the cutting edge of the die. The die-bed 5 snugly engages the inner surface of the walls of the die, and is held up in its normal position by springs 6 surrounding guide-pins 7 connected to the die-bed and movable through the platform or table 2. The advantage of this movable die-bed is that it will give way or depress sufficiently to compensate for the thickness of the wrapper cut from the leaf placed on the die under the influence of pressure means movable over the latter, and also bring up the cut wrapper at such elevation that it may be readily picked up and transferred, by a mechanism which will be more fully hereinafter set forth. A ledge or flange 8 surrounds the upper part of the die to hold down the leaf or material to be cut, or in other words prevent movement of the latter while the cutting operation is being pursued, in a manner which will be more fully hereinafter set forth, and also to receive the portion of the leaf remaining after the wrapper is cut therefrom to insure a clearance of the cutting edge of the die. The die has a suction pipe or conduit 9 communicating therewith through the center of the platform or table 2 and provided with a valve 10, operative by any suitable means, but in the present instance having a depending connection 11 attached to a foot treadle 12, whereby the valve may be quickly actuated to control the suction medium with respect to the die.

The die 1 has tightly closed ends and sides, with the exception of a series of perforations 13 therein immediately above the flange or ledge 8, but below the plane of the under side of the die bed, the purpose of such openings being to create a suction

on the overhanging portion of the leaf and draw the surplus leaf downwardly close onto the flange or ledge to insure a clean cutting operation to prevent movement of the leaf during cutting of the latter, and also prevent interference with the pick-up and transferring devices, and obviate the removal from the die of any portion of the leaf except the cut wrapper held on the die bed within the cutting edge of the die. The leaf or portion of a leaf is held on the die only long enough to permit the cutting operation just explained to become effective, when the leaf or portion of a leaf is positioned or relaid with respect to the die by an operator. The die or body of the latter has formed, at what may be termed its front extremity or end, an independent suction box or chamber 14, which depends from the die-bed and is movable with the latter. From the bottom of the independent chamber 14, a suction or exhaust connection 15 extends loosely through the platform or table 2 and also through an opening 16 in the bed 17 of this part of the mechanism, and has attached to the lower end thereof a flexible coupling or tube 18, communicating with the upper portion of a valve casing 19, on the terminal of a suction or exhaust pipe 20, which may extend away or connect with a suitable suction creating or an exhausting apparatus or mechanism, and with which also the valve 10 of the tube or pipe 9, having communication with the die through the platform or table, coöperates. The valve casing 19 is formed with a suitably shaped valve chamber 21, and therein a valve 22 is hinged and normally bears, when free, against the end of the pipe 20. The valve 22 has an arm 23 connected to the lower portion thereof and projected outwardly beyond the bottom of the casing 19, said arm being depressible against the resistance of a spring 24. The valve 22, through the medium of the projecting arm 23, is opened by a cam 25 fixed on a shaft 26, operated in regular timed relation through the main actuating mechanism, the said cam having a recess 27 with an inclined terminal wall 28 and an abrupt drop terminal 29. The inclined terminal wall 28 first strikes the end of the arm 23 and the latter is held depressed as long as it is in engagement with the circumference of the cam, which, in the present instance, is concentric with relation to the shaft 26, but as soon as the drop terminal 29 of the recess 27 arrives opposite the end of the arm 23, the latter is free and the spring 24 automatically closes the valve. By this means the suction or exhaust is cut off automatically from the chamber 14 of the die-body at such intervals that the pick-up and transferring device may be free to operate with the cut wrapper resting on the die bed and normally held

against the latter, or the suction or exhaust exerted thereon through the series of perforations in the die-bed, said perforations being continued over the chamber 14.

Coöperating with the die are cutting pressure and pick-up devices held in positive spaced relation, but having an individual rotation, as well as united circular movement around an axis with relation to which they are radially disposed. This axis consists of a tubular post 30, projecting upwardly through the bed 17 at a suitable distance from the position of the die 1 and having a main arm or support 31 projecting therefrom and provided with an outer yoked terminal 32 respectively for the support of the shaft 33 of the cutting pressure device 34, which is in the form of a cylindrical roller which may be conical or of other form free to rotate on said shaft, and for the tubular shaft 35 of a pick-up and transferring device 36, in the form of a hollow similarly shaped roller, and having a series of perforations 37 therein. The hollow shaft 35 of the pick-up and transferring device 36 projects inwardly and communicates with the hollow post 30 and the latter, in turn, will be connected to the suction or exhaust creating means, in all respects similar to the construction and arrangement illustrated in my pending application, Sr. No. 126,739. The mechanism for operating the post 30 and for controlling the intermittent movement of the rollers 34 and 36, together with the arm 31, is also similar to that illustrated in the aforesaid application and forms no part of the present invention, the essential feature, in the present instance, being the contiguous arrangement of the cutting roller 34 and the pick-up and transferring roller 36. The cutting roller 34 is loose on its shaft to reduce grooving thereof, by the cutting edge of the die 1, to a minimum, and to vary the surface of the said roller brought in contact with the die and thus prolong the life of the roller by avoiding the formation of a positive groove in the surface thereof, conforming in contour to the shape of the cutting edge of the die, and which would soon render the roller inefficient as a pressure means, to effect the practical cutting of the wrapper.

The series of openings 37 in the pick-up and transferring roller 36 has a marginal contour corresponding precisely to the outline or shape of the die to cause an accurate registration of the said openings with the die and its bed. As in the application heretofore referred to, a suction or exhaust is exerted through the roller 36, and to prevent such suction or exhaust force from exerting the least influence on the cut wrapper held by the die at an improper time, or of the suction or exhaust of the die on the wrapper on the roller 36, a fender or guard 38 is held in

advance of the said roller 36, by an arm 39 projecting rearwardly from a yoke 40 arranged over the roller 34 and terminally connected to the bearings for the shaft 33 of said latter roller, as shown by Fig. 3. This fender or guard is shown as preferably used with the die having the perforations or openings 13, the latter and the guard both operating to prevent displacement of the overhanging portion of the wrapper or material on the die, and in some instances either one of these structures will be used without the other. In this combination construction also an essential difference resides with respect to my previous machines by reason of the free rotation of the roller 34 and the limited or interval rotation of the roller 36, it being obvious that the said roller 36 should have rotation only at the time it is passing over the die to remove or pick up the cut wrapper simultaneously as the wrapper is cut, and to deliver the wrapper to the wrapper feeding mechanism, including a carrier, which will be more fully hereinafter explained, and for producing this intermittent motion, a mutilated level gear 41 is held on the post 30 and is engaged by a gear carried by the shaft 35, as fully illustrated and described in the application hereinbefore noted. It will be understood, however, that both rollers 34 and 36 swing in a horizontal plane in a circular path and furthermore, that the actuating devices, both in their preliminary and secondary form, will have a proper timed operation with respect to the shaft 26.

The mechanism as thus far described may be used independently of any of the accompanying devices, which will be hereinafter enumerated and the wrappers as removed from the die by the pick-up and transferring device or roller might be delivered to a suitable receptacle or table of any preferred form, adapted for the purpose and further transferred to other mechanism by hand or removed and manually applied to cigar bunches.

The operation of this wrapper-cutting and pick-up and transferring device is as follows: The motive organization, including the shafts 26 and post or shaft 30, is set in motion and a tobacco leaf manually applied to the die, the operator having opened the valve 10 to permit suction to be exerted on the leaf, and at about the same time, or previous to the disposition of the leaf on the die, the shaft 26 will have turned sufficiently to bring the cam 25 into engagement with the arm 23 of the valve 22 to establish a suction influence in the chamber 14 and through the part of the bed 5 extending thereover. At a proper interval the cutting pressure device or roller 34 engages the front end of the die 1 and traverses the latter completely to sever the wrapper from the leaf, the surplus

portion of the leaf being held downwardly by the suction exerted through the openings 13 onto the flange or ledge 8, to insure a free elevation of the cut wrapper from the bed. About the time that the pressure cutting device or roller 34 reaches the center of the die, or approximately the center of the latter, the pick-up and transferring device or roller 36 begins to pass onto the front end of the die over the chamber 14, and at such moment the shaft 26 will have revolved sufficiently to bring the drop terminal 29 of the cam 25 opposite the arm 23 of the valve 22 and the spring 24 will immediately close said valve and shut off the suction from the chamber 14. By this means the roller 36 automatically operates to pick up the wrapper as the latter is cut, an operation essentially different from machines of this class as heretofore arranged. By thus shutting off the suction from the chamber, the suction is exerted on the terminal of the wrapper through the series of openings 37 of the pick-up and transferring roller 36 and a sufficient length of the leaf is caused to be drawn against the roller 36 to overcome any resistance to removal of the cut wrapper within the confines of the die cutting edge, and gradually the wrapper will be wound and held firmly on the roller 36. It will be understood that the suction exerted on the cut wrapper through the die-bed has only such force as to maintain the cut wrapper in positive position until it is practically taken up by the roller 36. In some instances, the operator will actuate the treadle 12 to reduce the suction through the die-body and bed 5 without interfering with the downward holding of the surplus portions of the leaves on the flange or table 8, or loosening, or allowing the leaf, in advance of the roller 34, to have loose assemblage on the cutting edge of the die. Another consideration with respect to the suction exerted through the die-body and the roller 36, is that the suction force may be equal in both devices and the one overcomes the resistance of the other, or in other words, the suction force through the roller 36 will be strong enough to lift the cut wrapper from the die without the least injury thereto. The wrapper may be transferred by the roller 36 to any point or receptacle desired, and in some instances directly to the bunch holding means, but in the present organization, illustrating a preferred arrangement of cooperating mechanisms, the wrapper picked up by the said roller 36 will be preferably transferred to a traveling feeding mechanism, and during such transfer an equal tension is maintained on the entire wrapper area, such tension being uniformly preserved at the time of deposit on the feeding mechanism and after it has been deposited on such mechanism.

In the modification of the die mechanism shown by Figs. 3 and 4, the chamber 14 is dispensed with and in lieu thereof a gate valve 14^a is arranged under and coöperates with the front extremity or end of the die-bed 5. This gate valve is pivotally mounted to move vertically and is attached to an arm 14^b, secured to a rock shaft 14^c, held in suitable bearings in the support for the die-body and beneath the latter. On the rock shaft 14^c is a toothed member or gear 14^d, which is held in continual mesh with a gear 14^e, secured to an actuating element or arm 14^f. This actuating element or arm 14^f is disposed at one side of the die-body and extends high enough to be in the path of movement of the terminal of the tubular shaft of the pick-up roller 36, which will strike and move the said element or arm 14^f at a proper time, or just as the roller 36 begins to move over the die-bed. By striking this element or arm 14^f in the manner just stated, the shaft 14^c is actuated through the gearing or toothed members explained, in such direction as to throw the gate or valve 14^a upwardly and close the openings through the die bed 5, this closure being of such length of time as to permit the roller 36 to pick up the cut wrapper. The actuating element or arm 14^f is thrown over far enough by the shaft of the roller 36 to permit the said shaft to clear the said element or arm, with which it engages, and the movement of the element or arm is in opposition to the resistance of a spring 14^g attached to a post or upright 14^h on the platform or support for the die-body, in proper position relative to the actuating element or arm 14^f. When the actuating element or arm 14^f moves back to normal position, it engages a stop 14^k, having an upper angular end 14^l, which prevents the said element or arm from being thrown over too far and maintains it in position for engagement by the shaft of the roller 36.

Both constructions for temporarily shutting off the suction through the die-bed at the front extremity or end of the latter, as set forth, operate to release one extremity of the cut wrapper in an automatic manner by counteracting the suction effect on such wrapper end, and by illustrating two forms of mechanism for this purpose, it will be understood that the idea intended to be conveyed is the broad principle of releasing the wrapper extremity at a proper time for pick-up by the roller 36 or an analogous device.

In the form of the wrapper cutting mechanism shown by Fig. 5 the perforate die bed 5 is movable in a die body 1, and at regular intervals under the die bed and operating close thereto is a series of gates or valves 43 which are provided with operating mechanism similar to that disclosed by Figs. 3 and 4 and adapted to be actuated by the end

of the shaft or projecting extremity of the pick-up roller or analogous device movable over the die bed, the several operating devices for the gates or valves 43 being so disposed that they will be engaged and actuated by a portion of the pick-up roller or other analogous device at such times as to be close in advance of the movement of the roller to relieve the suction from the wrapper or leaf on the die bed, and after the release of the actuating mechanism for the gates or valves 43, the latter will return to normal open position.

In the form of the wrapper cutting die mechanism shown by Fig. 6 the die bed 44 has an upper cutting edge 45 and a perforate die bed 46. The bed 44 is divided into a series of independent compartments or chambers 47 by partitions or septums 48 in communication with a lower suction chamber 49 through the medium of a series of ducts 50 opening into the bottoms of the compartments or chambers. The suction chamber is connected by means of a pipe or other conduit 51 with suction creating means and the ducts 50 are established by the formation of inclosed division members 52 which insure the suction being exerted through the said ducts 50. In each of the ducts 50 a rotatable valve 53 is disposed and will have an upstanding arm similar to that shown by Figs. 3 and 4, all of these arms projecting high enough to be struck by a portion of the pick-up roller or analogous device movable over the die bed 46 to successively close the valves 53 at proper intervals to relieve the suction from the wrapper or leaf on the die bed, the said valves after release by the pick-up roller or other device returning to normal open position. The valves 53 may be of any preferred form, but, in the present instance, are shown as simple rotatable plug-valves with openings therethrough.

The mechanism for operating the valves shown in the modified constructions illustrated by Figs. 5 and 6 has not been applied as it will be practically similar to that disclosed by Figs. 3 and 4 in one form of the apparatus, but it will be understood that any other suitable means may be employed to arrive at the result sought, and in some instances all the valves might be simultaneously operated, if found necessary.

In the modification of the wrapper cutting mechanism, as shown by Figs. 5 and 6, the suction on the wrapper may be controlled through the operation of the closure of the gates or valves with respect to the wrapper at any point throughout the length of the die body and also by the use of a series of gates or valves suction may or may not be effective on any desired portion of the wrapper without effecting the main suction.

Having thus fully described the invention, what is claimed, is:

1. In a cigar making machine, a fixed die body having valved suction means coöperating therewith, a perforate die bed movable into the die body, means for cutting off the suction from a portion of the die bed while the suction is effective with the remaining portion of said die bed, and means movable over the die body and bed for cutting and picking up the wrapper formed on the die.

2. In a cigar making machine, a die having a body and perforate bed, with suction means coöperating therewith, means for cutting off the suction from a portion of the die bed while a remaining portion of said bed is affected by suction, and a rotary wrapper pick up device movable over the die and also under suction influence.

3. In a cigar machine, a die having a fixed body with a perforate bed and suction means coöperating therewith, means to relieve a portion of the bed of suction while the remaining portion of said bed is affected by suction, and wrapper cutting and pick-up means movable over the die and operating to actuate the said suction means to relieve a portion of the bed of suction, the pick-up means being under suction influence.

4. In a cigar making machine, a wrapper cutting and transferring mechanism consisting of a die having a perforate bed and suction means coöperating therewith, means for shutting off the suction from a portion of the die bed while suction is effected with relation to a remaining portion of said die bed, and wrapper cutting and pick up devices simultaneously movable over the die and perforate bed, the pick up device having suction means communicating therewith.

5. In a cigar making machine, a wrapper cutting die having suction means coöperating therewith, means for shutting off the suction from a part of said die while suction is effective in relation to a remaining part of said die, and rotary pressure applying and pick up devices to cut and transfer a wrapper and also operating to actuate said means for shutting off the suction for controlling the effect of suction on the die, the pick up device having suction means connected thereto.

6. In a cigar making machine, a fixed wrapper cutting die provided with suction means, means for cutting off a portion of the suction from the die, and wrapper cutting and pick-up devices movable over the die and operating said suction cut-off means as the wrapper is cut.

7. In a cigar making machine, a fixed wrapper cutting die under suction influence having means operating to shut off the suction force from a part thereof without affecting the remaining portion of the mechanism,

and wrapper cutting and pick-up devices unitedly movable over the die in succession.

8. In a cigar machine, a fixed wrapper cutting die under suction influence having means operating therewith to cut off the suction force from a portion thereof without affecting the suction on a remaining portion of the same, and wrapper cutting and pick-up devices movable over the die in succession.

9. In a cigar making machine, a wrapper cutting die under suction influence and having automatically operative means for cutting off the suction force from a part thereof at a proper interval without affecting the suction relatively to a remaining portion of the die, and pressure and pick up devices movable over the die, the pick up device being also under suction influence, the suction force in the die being cut off by the said means when the pick up device engages the cut wrapper.

10. In a cigar making machine, a wrapper forming die having suction means connected thereto, automatically operative means for controlling suction relatively to the die to cut off the same from a part of the latter, and pressure and pick up devices movable over the die to successively cut and pick up a wrapper, the pick up device being under suction influence and the suction being shut off from the die as the pick up device engages the portion of the cut wrapper adjacent the point where suction is relieved from the die.

11. In a cigar making machine, a wrapper cutting die having top and side and end perforations, an imperforate ledge around the die below the side and end perforations, and a wrapper cutting roller and a wrapper pick up roller movable together over the die.

12. In a cigar making machine, a wrapper cutting die having a suction connection and means at the side and end portions for drawing down a portion of the tobacco leaf outside of the edge of the die, and a wrapper cutting and pick up means movable together over the die.

13. In a cigar making machine, a wrapper cutting die having a body with a suction connection and perforations in the sides and terminals adjacent to the upper cutting edge a perforate die bed normally held at an elevation in the die body close to the cutting edge, an imperforate ledge surrounding the die body immediately below the side and terminal perforations, and pressure and pick up means movable together over the die edge and bed.

14. In a cigar making machine, a wrapper cutting die having a body with a suction connection and perforations in the sides and terminals adjacent to the upper cutting

- edge, a perforate die bed normally held at an elevation in the die body close to the cutting edge, an imperforate ledge surrounding the die body immediately below the side and terminal perforations, and pressure and pick up devices movable together over the cutting edge and bed of the die, the pick up device having suction means cooperating therewith.
- 15 15. In a cigar making machine, a wrapper cutting die organization having a suction connection and means for automatically drawing down the surplus portion of the leaf below the cutting edge of the die and also provided with means for shutting off the suction from a portion thereof while suction remains effective with another portion of the same, and pressure and pick up devices movable over the die.
- 20 16. In a cigar making machine, a wrapper cutting die including a body having an upper cutting edge with perforations in the sides and terminals immediately below said edge, a perforate die bed movably mounted in the body and held close to the edge above the side and terminal perforations, a ledge surrounding the body below the side and terminal perforations, and suction means connecting with the die body combined with solid and hollow rotatable elements movable over the cutting edge and die bed, the hollow rotatable element operating to pick up a cut wrapper and having perforations therein and a suction connection.
- 25 17. In a cigar making machine, a wrapper cutting die having suction means and a main suction chamber and a separate suction chamber at one end provided with an independent suction connection, a valve for controlling said independent suction connection, a rotary element carrying a cam to operate said valve, and cutting pressure and pick up devices movable over the die, the pick up device being under suction influence.
- 30 18. In a cigar making machine, the combination with a wrapper cutting die under suction influence, of solid and hollow rotary elements movable over the cutting edge of the die in constant spaced relation, the solid rotary element being free to rotate at all times and the hollow element rotating at intervals and provided with perforations and under suction influence.
- 35 19. In a cigar making machine, the combination with a wrapper cutting die having a suction connection, of a pair of rotary elements held in constant spaced relation and unitedly movable in a circular path, the advance rotary element having unretarded rotation on its bearing and solid in structure and the succeeding element formed hollow and perforated and under suction influence, the latter element also being rotated at intervals.
- 40 20. In a cigar making machine, the combination with a wrapper cutting die having suction means cooperating therewith, of a pair of rollers connected for simultaneous movement in a circular path, the advance roller being solid and having unretarded rotation on its axis, and the rear roller hollow and perforated and under suction influence, the perforations in the roller conforming to the shape of a wrapper, the rear roller having an intermittent rotation imparted thereto.
- 45 21. In a cigar making machine, the combination with a wrapper cutting die having suction means cooperating therewith, of a pair of rollers held in constant spaced relation and unitedly movable in a circular path, the forward roller being solid and having an individual unretarded rotation on its axis and the rear roller hollow and perforated and under suction influence, the rear roller being rotated at intervals.
- 50 22. In a cigar making machine, the combination with a wrapper cutting die having suction means cooperating therewith, of a pair of rollers connected for simultaneous movement in a circular path, the advance roller being solid and the rear roller hollow and perforate and under suction influence, the rear roller being rotated at intervals, and a guard interposed between the front and rear rollers.
- 55 23. In a cigar making machine, the combination with a wrapper cutting die having suction means cooperating therewith, of a pair of rollers connected for joint swinging movement in a circular path, the front roller being solid and the rear roller being hollow and perforate and under suction influence, and a guard held by the supporting means for the front roller and projecting over the forward portion of the rear roller.
- 60 24. In a cigar making machine, the combination with a wrapper cutting die having suction means cooperating therewith, of an upright rotary support having an arm projecting outwardly therefrom with a terminal yoke, an advance axis supported by the yoke having a solid roller freely rotatable thereon, a rear tubular shaft supported by the remaining part of the yoke and having a hollow circumferentially perforated roller disposed thereon, the tubular shaft being connected with a suction means, and means for imparting interval rotations to the hollow roller.
- 65 25. In a cigar making machine, the combination of a wrapper cutting die having suction means cooperating therewith, and a pair of rollers connected to establish a constant spaced relation between the same and having a swinging movement in a circular path, the forward roller being solid and the rear roller hollow and circumferentially perforate and under suction influence, the front roller being free to rotate

at all times and the rear roller rotatable at intervals, the rollers being movable over the die organization.

26. In a cigar making machine, the combination with a wrapper cutting die having means coöperating therewith for holding a wrapper or part of a wrapper against movement during a cutting operation, of a pair of rollers connected for simultaneous movement in a circular path, the advance roller operating to sever the wrapper from the leaf on the die and the rear roller having means to pick up the wrapper from the die simultaneously with the cutting operation, the rear roller being rotated at intervals.

27. In a cigar making machine, the combination with a wrapper cutting die, of a pair of rollers connected for simultaneous movement in a circular path, the advance roller being solid and the rear roller hollow and perforate and having means coöperating therewith for rotating it at intervals.

28. In a cigar making machine, the combination with wrapper cutting mechanism having means for causing the wrapper to adhere thereto, of a pair of rollers connected for simultaneous movement in a circular path, the advance roller being solid and the rear roller provided with means for causing the wrapper to adhere thereto, the rear roller being rotated at intervals, a guard interposed between the front and rear rollers.

29. In a cigar making machine, a wrapper cutting die having suction means coöperating therewith for immovably holding a wrapper thereon, and automatically operating means for cutting off the suction means from a part of the die while the said suction means is effective in relation to a remaining portion of the die, and means for picking up the wrapper from the die and conveying said wrapper away from the latter.

30. In a cigar making machine, a wrapper cutting die having means coöperating therewith for holding a wrapper immovably thereon and for effecting a release of a portion of the wrapper while the remaining part of the wrapper is held immovable, and a device for picking up the wrapper and conveying the latter away from the die and provided with means for causing the picked up portion of the wrapper to firmly adhere thereto.

31. In a cigar making machine, a fixed wrapper cutting mechanism having means coöperating therewith for immovably holding the wrapper thereon and also for releasing one extremity of the wrapper while

the remaining portion of the wrapper is held immovable and for gradually releasing the entire wrapper as it is removed, and means for gradually removing the wrapper from the cutting mechanism.

32. A wrapper cutting mechanism for a cigar machine having a body with a cutting edge, a perforate die bed in the body, suction means coöperating with the die body, a suction device for removing the cut wrapper from the said cutting mechanism, and means for cutting off a part of the suction influence through the die bed as the suction device removes the cut wrapper from the said mechanism.

33. A wrapper cutting mechanism for a cigar machine, having a die body with a cutting edge, a perforate die bed in the body, suction means coöperating with the die body, a device for removing a wrapper from the mechanism, and means for cutting off a part of the suction influence through the die bed and operated by the said device.

34. A wrapper cutting mechanism for a cigar machine, having a die body with a cutting edge, a perforate die bed in the body, suction means coöperating with the die body, a suction device for removing a cut wrapper from the mechanism, and automatically operative means for cutting off a part of the suction influence through the die bed as the suction device moves over the latter.

35. In a cigar machine, a wrapper cutting mechanism having suction means coöperating therewith for immovably holding the wrapper thereon, means for releasing the suction means from a portion of the wrapper and permitting the released portion of the wrapper to be affected by suction through the wrapper removing means, the remaining portion of the wrapper being immovably held on the cutting mechanism by the suction means, and suction means for removing the wrapper from the die.

36. In a cigar machine, a wrapper cutting mechanism having means coöperating therewith for holding the wrapper thereon and for releasing one extremity of the wrapper and subsequently gradually releasing the remaining portion of the wrapper, and means having a traveling movement over said cutting mechanism for gradually removing the wrapper therefrom.

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

JOSEPH D. LACROIX.

Witnesses:

CHARLES F. GREENE,
JAMES L. MCGOVERN.