(No Model.) 4 Sheets—Sheet 1.

A. MOONELIS.

CIGARETTE WRAPPER CUTTING MACHINE.

No. 514,237. Patented Feb. 6, 1894.

Fig. 1.

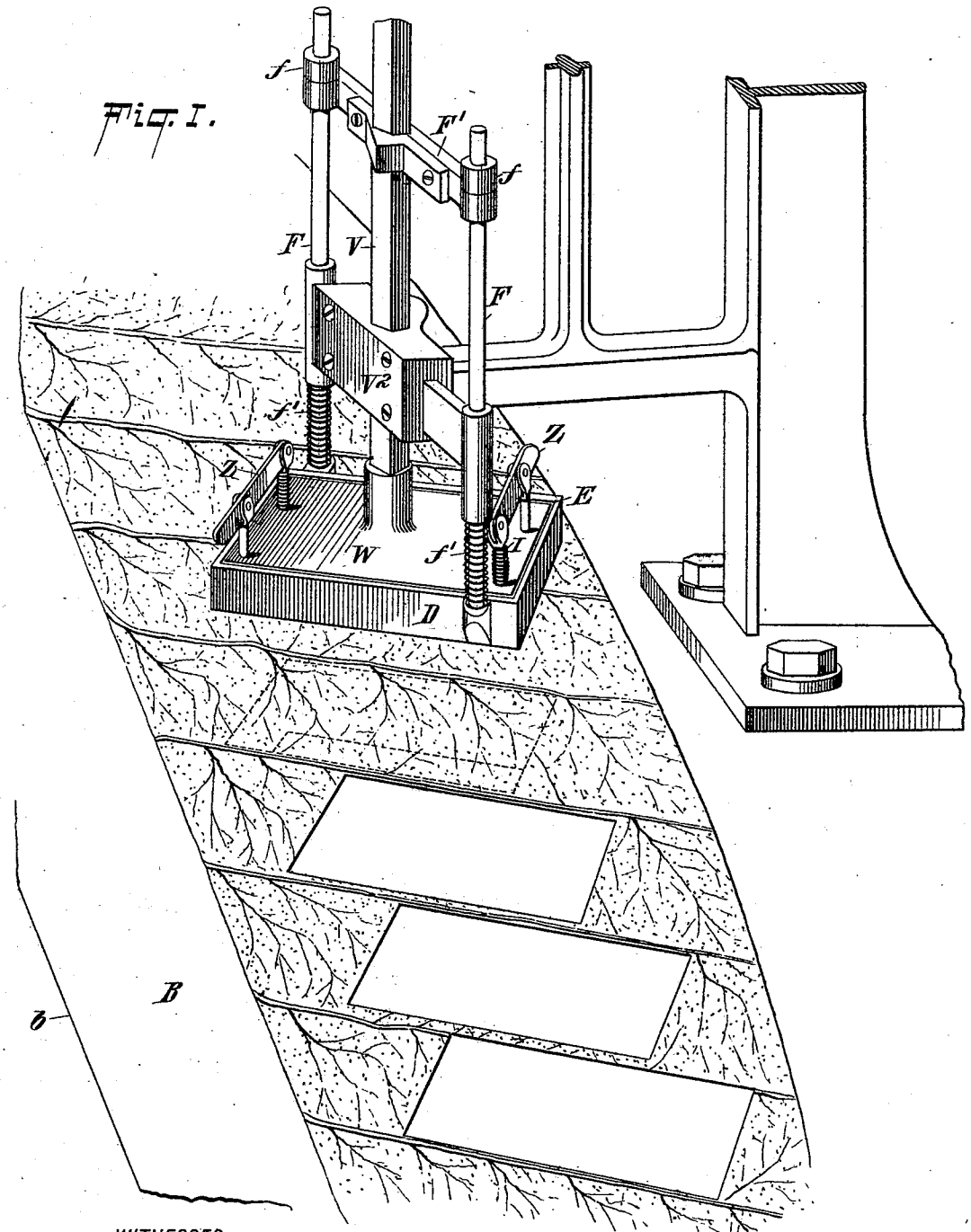

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Fig. II.

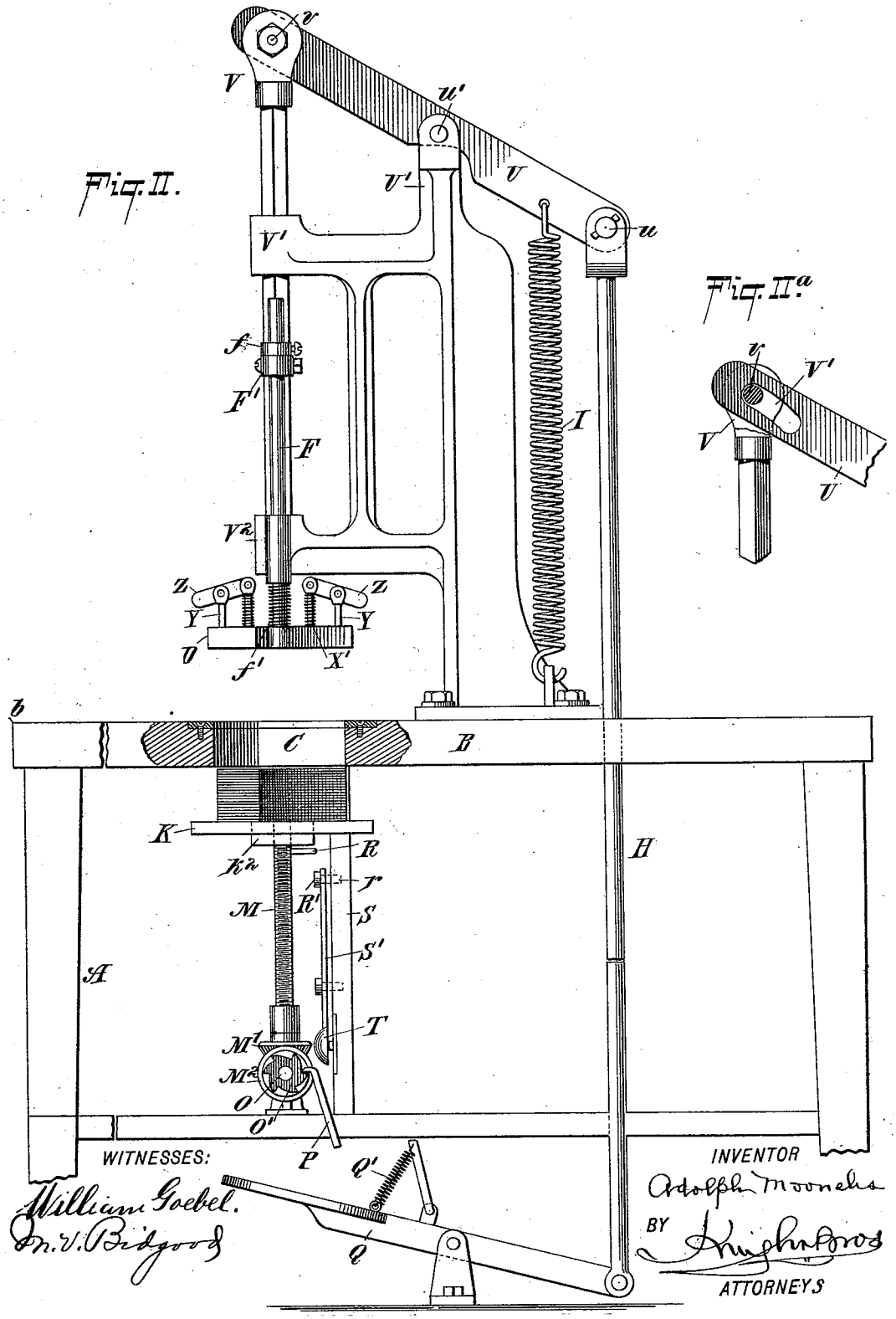

Fig. II^a.

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A. MOONELIS.

CIGARETTE WRAPPER CUTTING MACHINE.

No. 514,237. Patented Feb. 6, 1894.

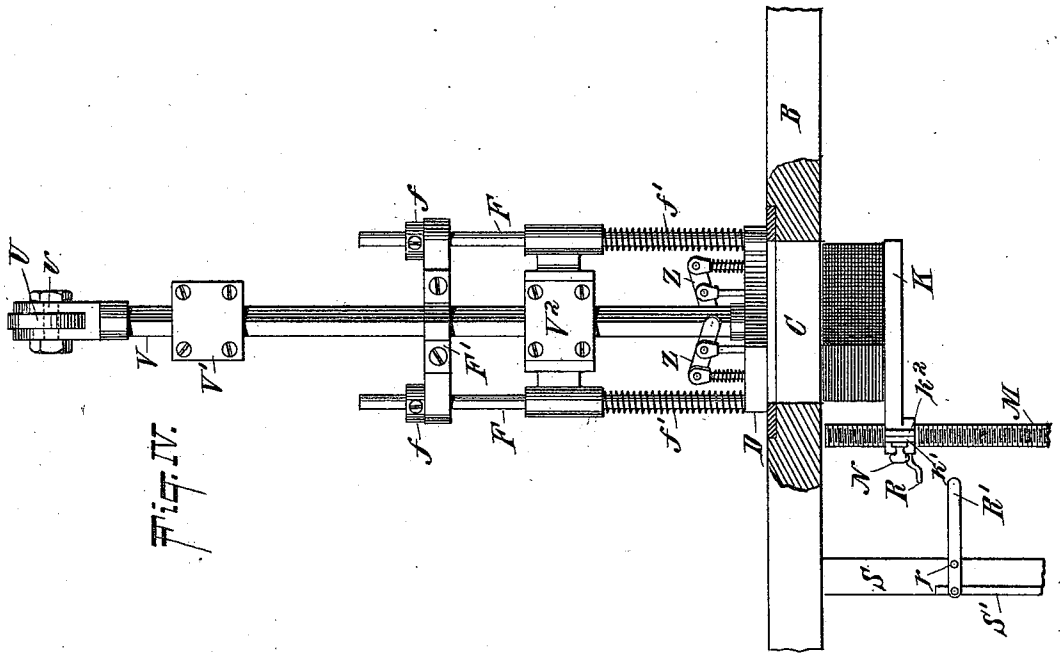

Fig. IV.

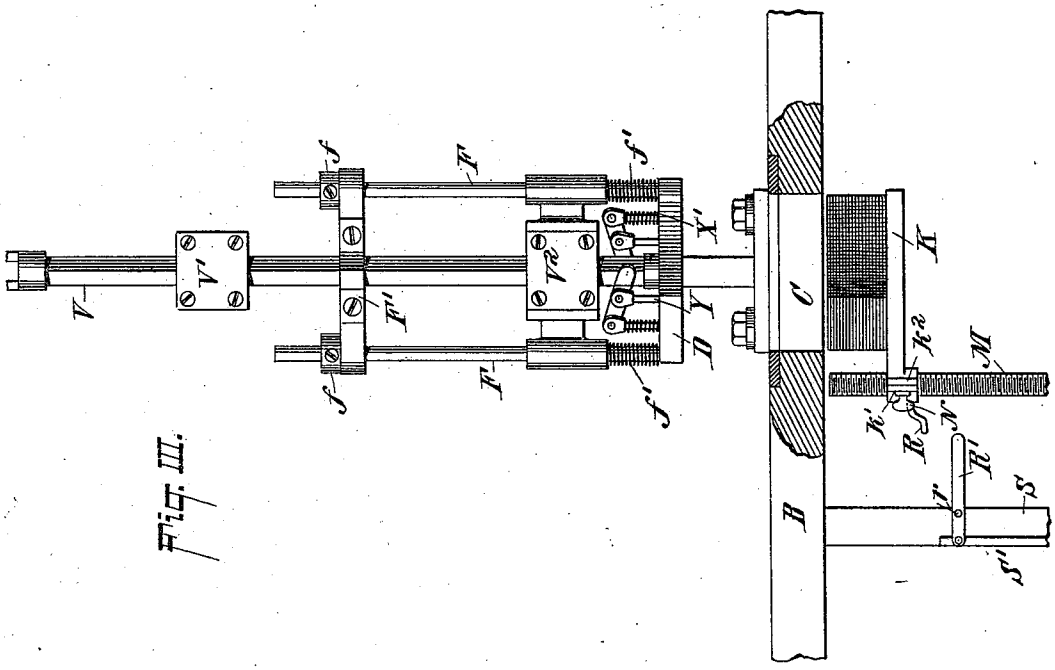

Fig. III.

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CIGARETTE WRAPPER CUTTING MACHINE.

No. 514,237. Patented Feb. 6, 1894.

Fig. V.

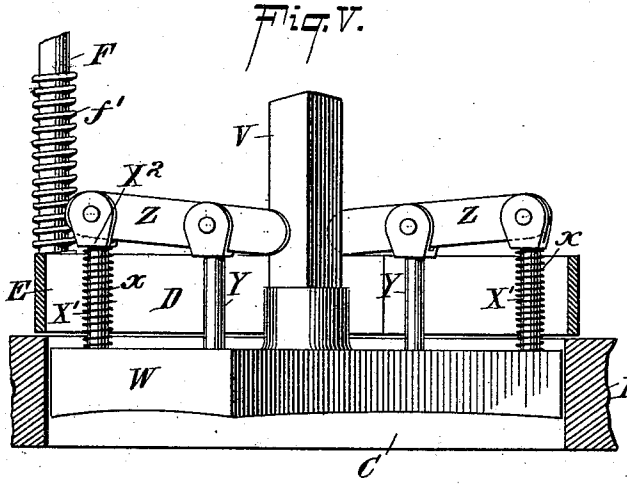


Fig. VII.

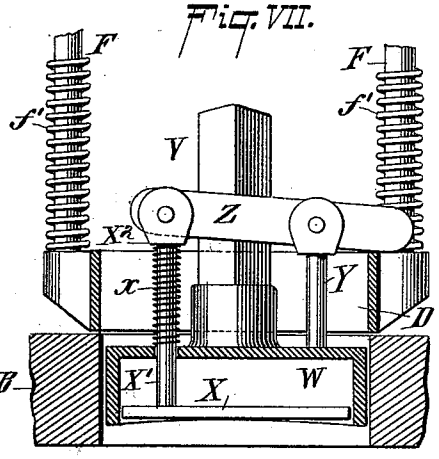


Fig. VI.

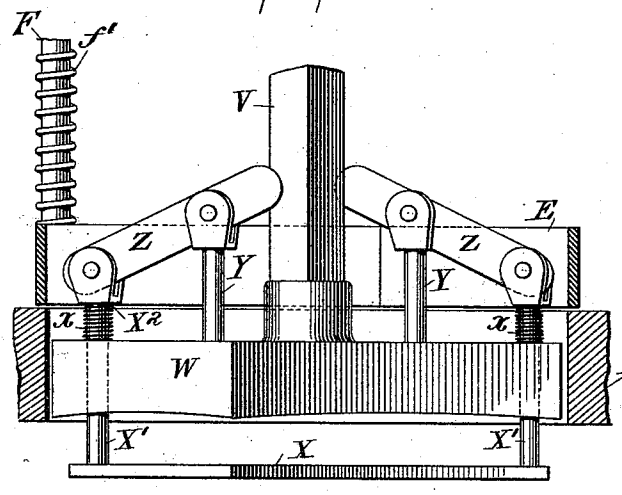


Fig. VIII.

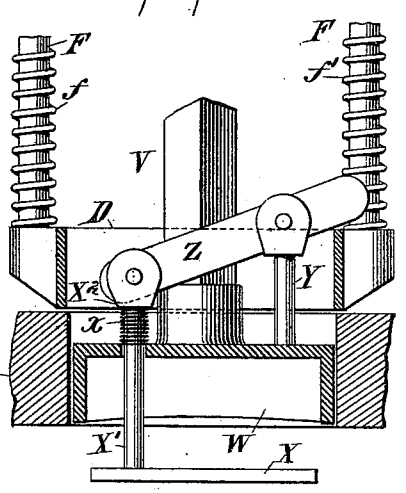
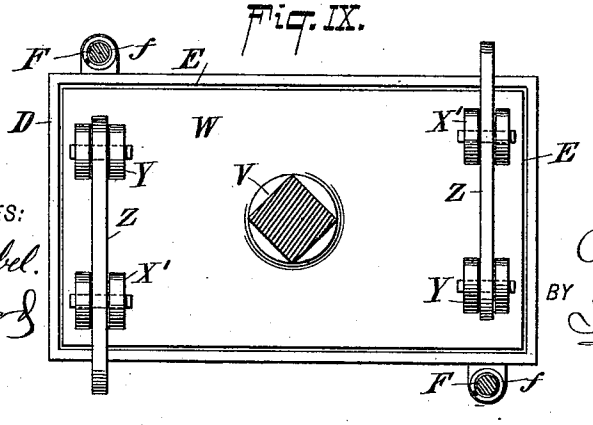


Fig. IX.



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UNITED STATES PATENT OFFICE.

ADOLPH MOONELIS, OF NEW YORK, N. Y., ASSIGNOR TO THE INTERNATIONAL CIGARETTE MACHINERY COMPANY, OF SAME PLACE.

CIGARETTE-WRAPPER-CUTTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 514,237, dated February 6, 1894.

Application filed June 7, 1892. Serial No. 435,841. (No model.)

To all whom it may concern:

Be it known that I, ADOLPH MOONELIS, a citizen of the United States, residing in the city of New York, county and State of New York, have invented certain new and useful Improvements in Cigarette-Wrapper-Cutting Machines, of which the following is a specification.

My invention relates to a machine for cutting wrappers for cigarettes out of tobacco leaves, and it is designed and intended to be used only in connection with what are known as "all tobacco cigarettes;" this class of cigarettes employing tobacco leaf for covers or wrappers instead of paper.

In the utilization of tobacco leaves for cigarette covers, it is necessary to secure an oblong and rectangular section of tobacco, the relative dimensions of the sides and ends of the wrapper depending upon the nature of the cigarette to be covered, and to so cut the wrappers as that the ribs and veins of the leaf will, when the wrappers are cut therefrom as aforesaid, lie parallel to the main or longer edge of the wrapper so that when the filler of the cigarette is rolled and the wrapper is wound around it, the said ribs and veins will lie along the length of the cigarette, and by pressure be embedded therein without danger of distorting the cigarette when finished. It is also essential in the manufacture of fine quality of all tobacco cigarettes, to secure wrappers therefor which will be as free as possible from these disfiguring ribs or veins, and to this end it is essential and in fact necessary that the operator, when cutting the wrappers from the leaf, should keep as near as possible to its outer edge, thus avoiding the heavy central rib or vein, and the thick branching veins nearest to the central rib.

With these ends in view, I designed and perfected a novel cutting device whereby the operator was enabled to feed the tobacco leaf through the cutting machine, and devised a means which permits of an unobstructed view at all times of the tobacco leaf being operated upon, so that an intelligent operator can with great rapidity sever the wrappers from the tobacco leaves, and at the same time so guide and direct the leaf as that the best economical results can be obtained from every leaf, irrespective of its form or dimension. The principal part of this invention consisted of a transparent stripper or holding and guiding plate pivoted upon an arm and having an opening through which the cutter penetrated. This device I showed, described and claimed in my former application, Serial No. 432,270, filed the 9th day of May, 1892, and in my present invention I eliminate the glass or other transparent stripper and substitute in lieu thereof a rectangular frame or skeleton whose central orifice is of a size just sufficient to permit the passage of the cutter hereinafter referred to and which serves the purpose of a stripper and holding or guarding plate. I will refer to it in the present application as "the guard and stripper" or "the stripper frame." In lieu also of the hinged or swinging arm or lever to which the stripper was attached I employ vertically moving rods or carriers and by this means secure a positive vertical action much more satisfactory than the former in many respects.

Another important feature of my previous invention which I utilize in my present case also, consisted in the novel arrangement of the cutting apparatus including an apertured bed or table through which the knife or cutter passed, the aperture or opening being of a size and shape to correspond with the size and shape of the complementary knife or cutter and of the resultant cigarette wrapper. The cutter and the opening of the table are preferably oblong and rectangular and being set at an angle, and preferably at an angle of about forty-five degrees, to the front edge of the table or bed of the machine, permitted the operator, in feeding the tobacco leaves over the bed or table, to effect successive incisions at approximately the angle aforesaid.

As is well known, the veins or seams of a tobacco leaf which radiate from the main central rib lie at an angle of about forty-five degrees relative thereto and approximately parallel with each other, so that in carrying my invention into effect as above described, the operator can, with his eye, so direct each leaf as that the radiating veins or seams will lie, with each successive adjustment, in line practically or approximately

parallel with the longer sides of the rectangular opening of the table. In this manner I so cut the wrappers as to embody these radiating veins or seams so that they will not interfere with the subsequent rolling operation and so that when the cigarette is rolled, the vein or seam in the wrapper can be easily pressed into the filling of the cigarette without danger of disfiguring it or breaking the wrapper. It was necessary of course to arrange the cutter and the stripper upon the same angle as the rectangular opening of the table.

In my former application above referred to I disclosed means for releasing the wrapper from the cutter when the cutting operation was completed and in my present invention I have discarded the pins or fingers therein shown and have greatly increased the efficiency of the discharging device by the introduction of a plate concealed beneath the rectangular cutter and arranged to descend and to discharge the wrapper from the cutter and deliver it on to the receiving table when the cutting operation is finished. My present invention contemplates therefore combining the said cutter with a discharging plate arranged within it and approximately of the same dimensions, and also of locating outside said cutter a guard or stripper which serves to protect the operator from the vertically moving cutter and to hold the tobacco leaf in place when the cutter is descending. I have produced therefore a combined or three part implement which consists of a guard or stripper inside of which is located a knife or cutter and which in turn contains a discharge plate for freeing the rectangular cutter from the wrapper after the latter has been severed from the leaf.

I will now proceed to particularly describe my invention in connection with the accompanying drawings which form a part of this specification and in which—

Figure I represents a perspective view of my improved wrapper cutter. Fig. II represents a side elevation of the principal parts of the machine. Fig. II^a is a detail view. Fig. III is a front elevation of the machine in its normal or position at rest. Fig. IV is a front elevation of the machine in what I will term the second position. Fig. V is a detail view showing the third position. Fig. VI is a detail view showing the fourth position. Fig. VII is a detail sectional view of the third position; the position shown in Fig. V. Fig. VIII is a detail sectional view of the fourth position; the position shown in Fig. VI. Fig. IX is a detail plan view of the stripper and cutter.

In the drawings, A represents the frame of my machine and B the operating table.

C is a rectangular orifice in the table B, preferably oblong in shape to correspond with the dimensions of the wrapper to be cut, and set, as shown, at an angle to the front edge *b* of the table. The sides and ends of this opening are provided with cutting edges, the table being formed of steel or other suitable metal.

At D I show my improved stripper or guard frame secured as shown to two vertically moving rods or carriers F. These rods or carriers extend upwardly and slide in bearings in the cross-bar F′, holders *f* securing them from falling out and springs *f′* compelling their descent when the cross-bar F′ moves down. This guard or stripper is made of brass or any other suitable metal and is provided with an aperture E, rectangular and oblong in shape and made of exactly the same size, and adapted to register with, the orifice C in the table B.

As stated, the aperture B is of the same size and dimensions as the orifice C and one lies exactly over the other when the stripper is pressed down upon the table. When therefore the stripper descends it will close upon the tobacco leaf located between the plate and the table, the opening E of the stripper registering with the orifice C of the table so that when the cutter hereinafter described descends it will penetrate both of said openings and sever the section of leaf carrying it down and depositing it upon a holder or receiver beneath the table. This holder is shown at K and consists of a bracket extending horizontally outward having at one side a pair of jaws *k′*, *k*^{2}, hinged to each other and provided with a central opening L adapted for the reception of the screw spindle M and arranged to be locked on said spindle by means of thumb screw N. The screw spindle M at its lower end is provided with bevel gear M′ which intermeshes with, and is adapted to be operated by, a similar bevel M^2 arranged at right angles thereto, the latter being mounted upon a horizontal shaft O. This horizontal shaft is provided at its farther end with a ratchet wheel O′.

In Fig. II, I show a dog P for operating said ratchet wheel extending downwardly and connected to treadle Q pivoted thereto as shown and held in position against the aforesaid ratchet wheel by means of spring Q′.

At R I show a finger extending outwardly from the vertically traveling holder K and at R′ I provide an arm pivoted at *r* to a standard S and at its outer end hinged as at *s* to a vertically moving rod S′. The rod S′ extends downwardly and the parts are so arranged that when the finger R comes in contact with the arm R′, it will press downwardly upon it and by means of the mechanism just described raise the rod S′ and ring the bell T. When the parts have reached this position and the alarm has been rung, it will indicate that five hundred wrappers have been cut, for, as will be seen, every time the treadle Q is pressed down, it will operate to throw the ratchet O′ through the medium of the dog P which in turn will cause a partial rotation of the spindle M through the medium of shaft O and bevel gears M′, M^2; this action will

cause the holder K to feed downwardly. The indicators which I have shown and described may be changed at pleasure and be made to register any desired number without departing from the spirit of my invention in this respect. The mechanism I have shown and described is simply adapted to carry my idea into effect and may be varied in different ways. The vertically moving rod H is attached at its lower end to the treadle Q and when the treadle Q is pressed down at its front end, the rod H will be raised. The rod H is attached at its upper end to the lever U at *u*. The lever U is centrally pivoted at *u'* in the standard or frame U'. The farther end of the lever U is attached to the vertically sliding rod V by means of the pin *v*. This pin is fixed to the vertically sliding rod V and plays in a curved slot or way V' in the lever U so as to prevent binding of the parts when the rod V descends. This construction is shown in Fig. II[a]. This vertically sliding rod is guided in ways V', V[2] and is adapted to move vertically and in a direction opposite to the rod H. The rod V is provided at its lower end with a rectangular oblong cutter W having knife or cutting edges on its four sides and corresponding in size and shape to the apertures or openings E of the guard or stripper D and C of the table B. A spring I is shown for returning the parts to their normal position.

In side of and beneath the top of the rectangular cutter W is arranged a positively acting discharging plate X similar in shape to the cutter, and necessarily somewhat less in size. This discharge plate is attached to and supported by vertically moving rods X' which are adapted to move up and down in the manner hereinafter described and thrust the plate X downwardly so as to carry forward and project upon the receiving table K the severed and completed wrapper. Between the top of the cutter W and shoulders X[2] of the rods X' I arrange springs *x* which surmount the rods X' and which are adapted to return the discharge plate X to its normal position after the pressure has been withdrawn.

Extending upwardly from the top of the cutter W are pillars or posts Y set rigidly thereon and having at their upper ends bearings in which are hung and hinged horizontal levers Z. These levers connect by swivel joints with the upper ends of the rods X' and they control the position and movements of the said rods and the dependent discharge plate in the following manner: The farther ends of the levers Z are preferably somewhat rounded and they are adapted to impinge upon the upper edges of the stripper frame when the parts have reached the extreme or fourth position as shown in Fig. VIII. When in this position the guard or stripper D has been detained by the table B while the cutter W passing through the stripper by virtue of the continuation of the downward movement carries the discharge plate X with it. Before the cutter W has reached the limit of its downward stroke the levers Z have come in contact with edges of the guard or stripper D which action will cause the said discharge plate to be projected a farther distance downward as shown in Fig. VIII aforesaid.

The operation of my machine is as follows: By referring to Fig. I it will be seen that the tobacco employed is in the form of half leaves, the leaves being cut longitudinally from end to end and along the main or central seam or rib. The tobacco leaf or half leaf is fed preferably from left to right, the operator standing in front of the machine and holding the leaf in both hands. It will be seen also by referring to the drawings that the smaller veins or ribs of the tobacco leaf radiate approximately at angles of forty-five degrees from the main or central rib. The operator feeds the leaf by using the central line of the leaf as a base and feeding it parallel with the edge or front *b* of the table so that the radiating seams or ribs will, as the leaf moves over the table, fall in line parallel with the longer sides or edges of the rectangular orifice C and consequently of the complementary rectangular aperture E and cutter W. When the leaf is placed in the proper position, the operator presses upon the treadle Q effecting the descent of the stripper D and causing it to drop upon the leaf and hold it against the table B. This position is shown in Fig. IV. Upon a further pressure on the treadle the cutter is forced through the leaf and the wrapper severed therefrom. This position is shown in Fig. V. It is what I term the third position. Upon a slight additional movement being made the parts will assume the position shown in Fig. VIII, to wit, the fourth and final position as above explained. The pressure upon the treadle being then withdrawn the machine will return to its normal position.

The frame D which constitutes a guard or stripper as aforesaid shields the edges of the descending knife W until the latter has reached a position of safety and disappeared beneath the cutting edges of the opening C so that the operator's hands are less liable to be exposed to danger.

Although I have described my invention as particularly adapted to the cutting of wrappers of cigarettes, I may employ it with equal efficiency to the cutting of wrappers for cheroots or cigars by modifying the shape or position of the cutter and die.

Having thus described my invention, the following is what I claim as new therein and desire to secure by Letters Patent:

1. In a machine for cutting the wrappers of cigarettes, the combination of a vertically moving cutter, and means for operating the same, a concealed discharge plate placed within the cutter and positively actuating means for moving the discharge plate outwardly and ejecting the wrapper during the

descent of the cutter, substantially as shown and described.

2. In a machine for cutting the wrappers of cigarettes, the combination of the vertically moving cutter, means for operating the same, a discharge plate incased within the cutter, a stripper surrounding and of the same shape as the cutter, and means for moving the discharge plate outwardly by co-action with the stripper, all the parts being adapted to operate, substantially as and for the purposes set forth.

3. In a machine for cutting the wrappers of cigarettes, the combination of a table having an opening as shown, a vertically movable cutter, means for operating same, and a stripper or holding frame having means for moving the said holding frame in a vertical path, the said frame having an opening corresponding with the opening in the table, as and for the purposes set forth.

4. In a machine for cutting the wrappers of cigarettes, the combination of the apertured table, the stripper or holding frame, and the cutter having means for moving it vertically relatively to the holding frame and table, and so as to co-operate with them in the cutting operation, as and for the purposes set forth.

5. In a machine for cutting the wrappers of cigarettes, the combination of a table having an oblong rectangular opening whose longer sides are set at an angle, approximating forty-five degrees to the front edge of the said table, an open stripper or holding frame, and a rectangular cutter within the stripper and corresponding in size to the rectangular opening of the table, and means for operating the cutter all adapted to operate, substantially as and for the purposes set forth.

6. In a machine for cutting the wrappers of cigarettes, the combination of a table having a rectangular opening set at an angle to the front of the table, and provided with cutting edges, a rectangular cutter corresponding in shape, size and position with the aforesaid rectangular opening, and provided with knife edges, an open stripper or holding frame surrounding the cutter, and a rectangular discharge plate within the cutter, and means for operating said cutter and said discharge plate, all arranged substantially as and for the purposes set forth.

7. The combination of an open stripper or holding frame, a hollow cutter, means for operating it, a discharge plate within the cutter, and means connected with said discharge plate and operated by said stripper to eject a wrapper from the cutter, substantially as described.

8. In combination with an open stripper or holding frame, a hollow cutter, means for operating it, a discharge plate within the cutter, and levers carried by the cutter and connected with the discharge plate and extending over the edge of the stripper whereby when the parts descend the levers engage the stripper and eject the discharge plate from the cutter, substantially as described.

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