

964,076.

Patented July 12, 1910.

3 SHEETS--SHEET 1.

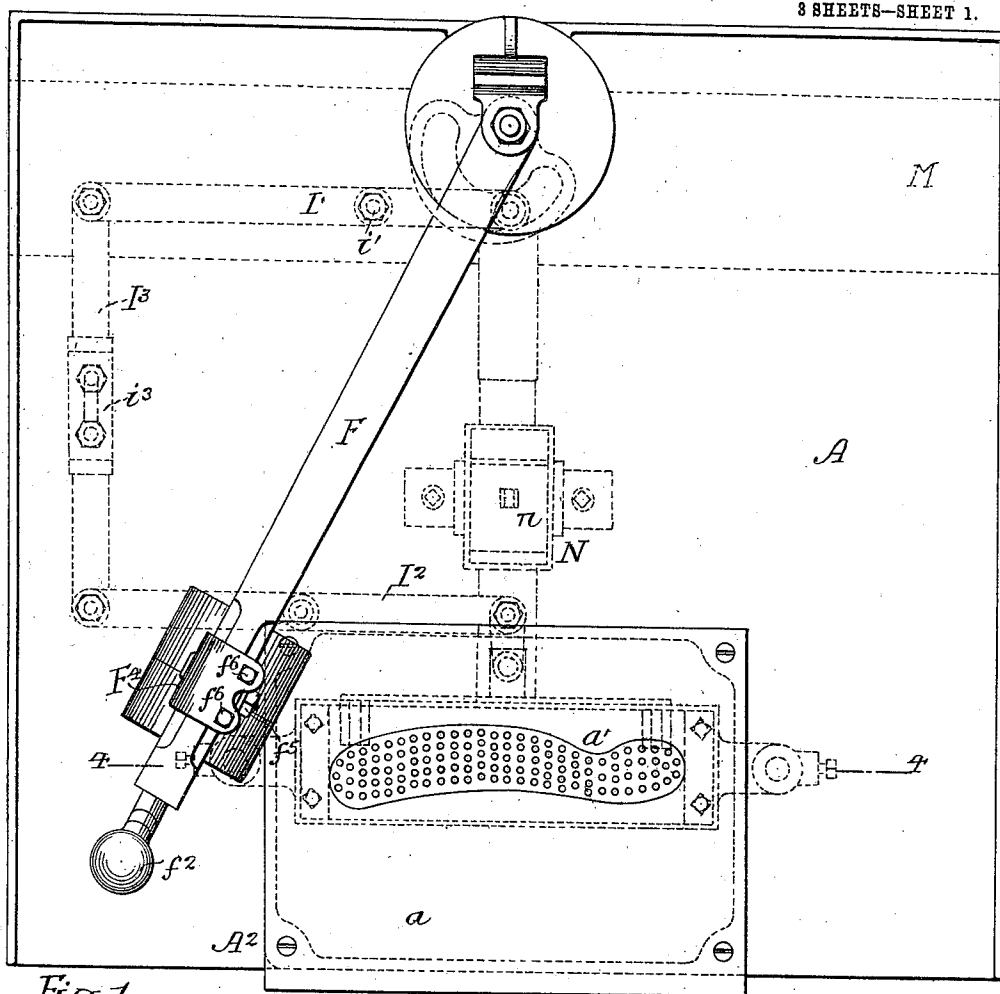
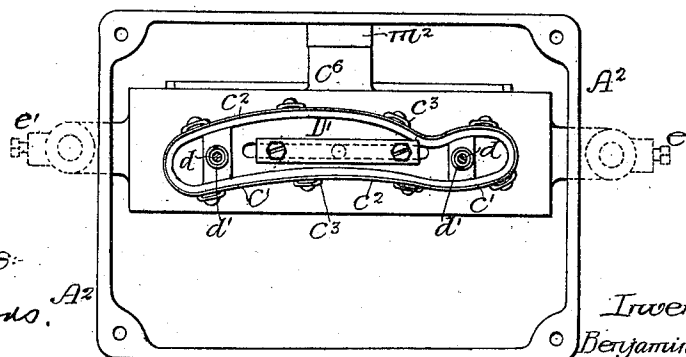


Fig. 1.

Fig. 5.



Witnesses:-

Titus H. Jones. A²

Augustus Boppes

Inventor.

Benjamin A. Williams.

by his Attorneys,

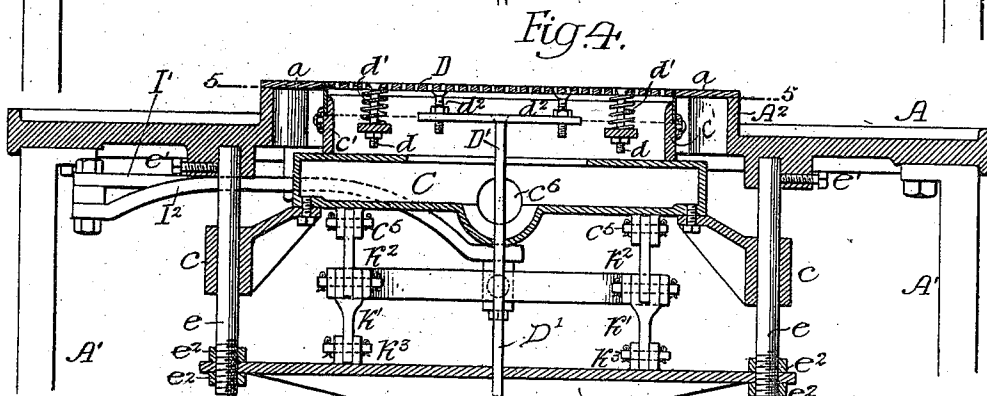
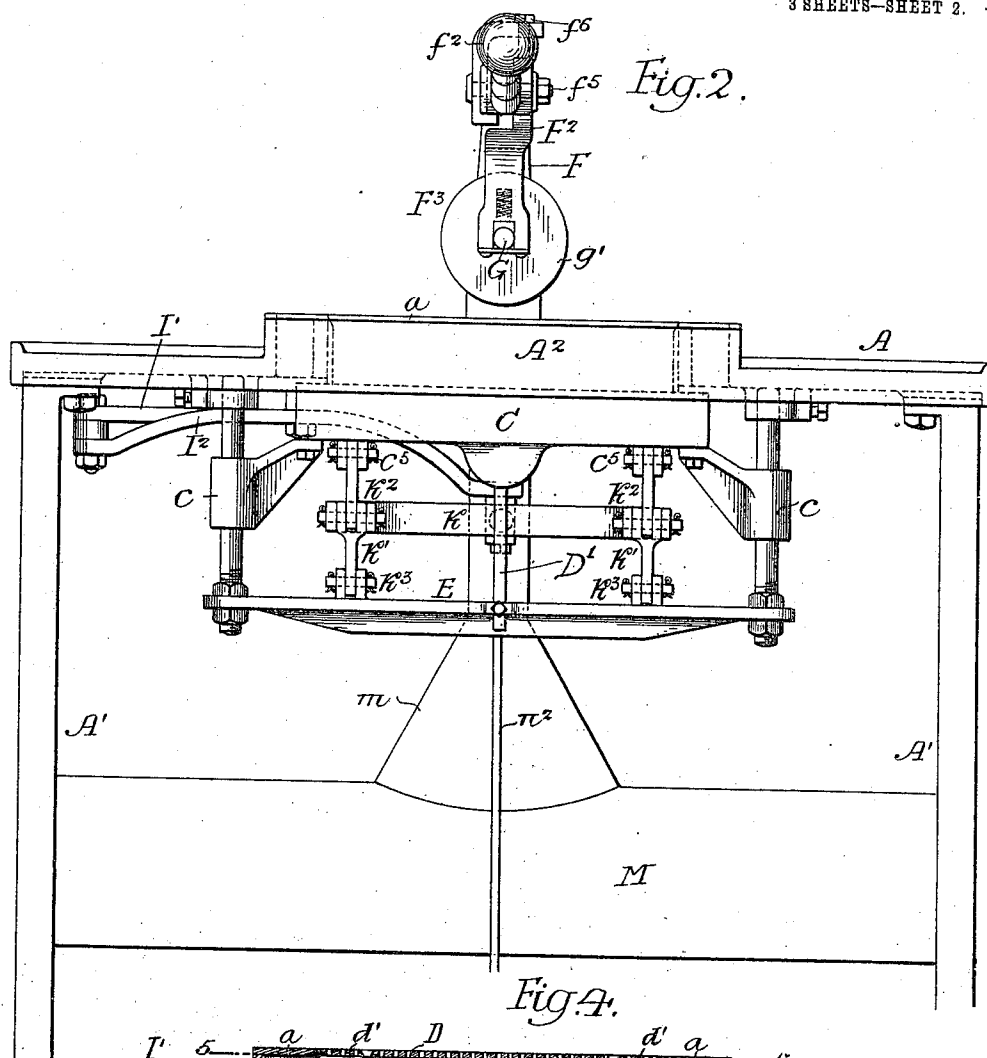
Howard Thurman

B. A. WILLIAMS.
CIGAR WRAPPER CUTTING AND ROLLING MACHINE.
APPLICATION FILED MAY 23, 1906.

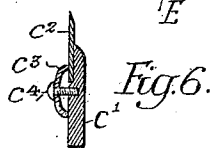
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3 SHEETS—SHEET 2.



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3 SHEETS—SHEET 3.

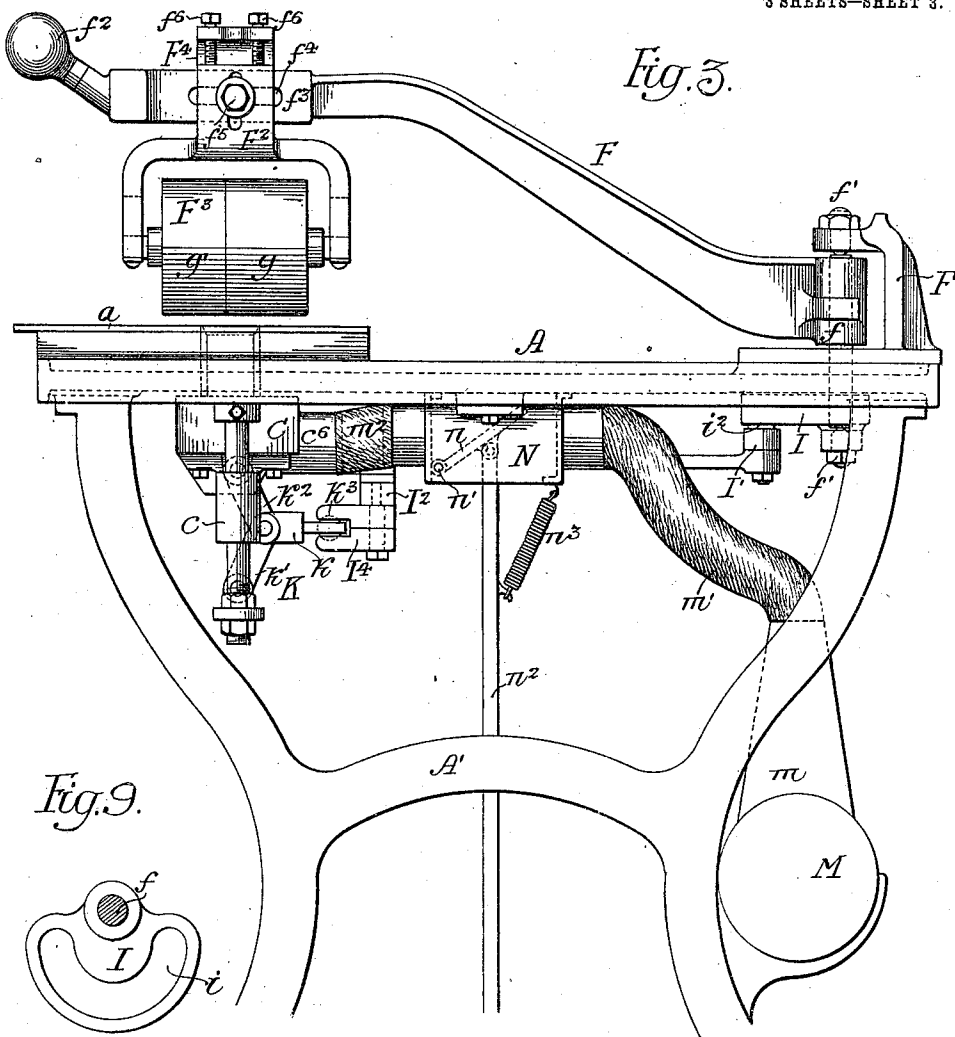
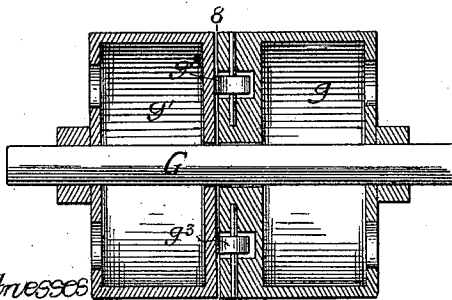


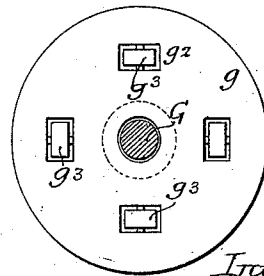
Fig. 9.

Fig. 7.



Witnesses
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Fig. 8.



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UNITED STATES PATENT OFFICE.

BENJAMIN A. WILLIAMS, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO WILLIAM F. RUWELL, OF PHILADELPHIA, PENNSYLVANIA.

CIGAR-WRAPPER CUTTING AND ROLLING MACHINE.

964,076.

Specification of Letters Patent.

Patented July 12, 1910.

Application filed May 23, 1906. Serial No. 318,376.

To all whom it may concern:

Be it known that I, BENJAMIN A. WILLIAMS, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain Improvements in Cigar-Wrapper Cutting and Rolling Machines, of which the following is a specification.

The object of my invention is to simplify the construction and operation of a machine for cutting cigar wrappers, whereby one motion will only be necessary to cut the leaf.

My invention relates to other details described hereafter.

In the accompanying drawings:—Figure 1, is a plan view of my improved cigar wrapper cutting machine; Fig. 2, is a front elevation; Fig. 3, is a side elevation; Fig. 4, is a sectional view on the line 4—4, Fig. 1; Fig. 5, is a sectional plan view on the line 5—5, Fig. 4; Fig. 6, is a detail view of Fig. 4; Fig. 7, is a sectional view of the roller; Fig. 8, is a sectional view on the line 8—8, Fig. 7; Fig. 9, is a detached view of the cam.

A is the table, supported by suitable legs A' in the present instance, and at the front of this table is an elevation A² on which is secured a platform *a*. This platform is of sufficient size to allow for the cutting of the leaf and the wrapping of the cigar. In the platform is an opening *a'* shaped to conform to the wrapper to be cut; these shapes may be modified according to different forms of cigars.

C is a cutter frame having extensions *c* at each end arranged to slide on vertical rods *e*, *e* secured to the table A by screws *e'* in the present instance. Extending from one rod to another is a cross bar E vertically adjustable by means of nuts *e*² adapted to the screw threaded portions of the rods *e*. The cutter frame C has resting upon it a frame *c'*, conforming to the shape of the opening *a*, and a knife *c*² is secured to this frame by clamps *c*³ which are held in place by screws *c*⁴ shown clearly in Fig. 6. The blade is simply a flexible flat blade of metal, which can be bent to conform to the shape of the projection *c'* and is preferably beveled to a sharp edge, the bevel being on the inside as indicated in the drawings. The blade, therefore, makes a neat fit against the platform *a*.

Within the opening *a'* in the platform is a perforated plate D and projecting from

the plate are bolts *d*, *d*; these bolts pass through cross bars on the extension *c'* of the cutter frame C and on these bolts are nuts which limit the upward movement of the plate. Springs *d'* mounted between the plate and the cross bars tend to force the plate up so that it will be level with the platform when the knife is depressed, as in Fig. 4. Adjustable stops *d*² carried by a T-bar D' extending through the frame C and secured to the cross bar E by a set screw as shown in Fig. 2, limit the downward movement of the plate D.

The cutter frame C is made hollow to form a suction box, to which is connected a suction pump so that when the leaf is placed on the platform above the perforated plate D it will be held down onto the plate by suction, and on the upward movement of the cutting knife when the roll passes over the plate the leaf will be cut, that portion outside the knife being readily removed but the portion inside the knife being held until the suction pump is cut off.

F is an arm pivoted to a bracket F' at the rear of the table A.

f is a shaft carrying the arm and this shaft is held between two center points *f*, *f'* adjustably secured to the bracket F'.

On the outer end of the arm F is a handle *f*² by which it is operated, and near the outer end of the arm is a slideway *f*³ in which is a slot *f*⁴, and mounted on the slideway is a frame F² carrying a roller F³.

F⁴ is an overhanging bracket secured to the arm F, back of the frame F² and a bolt *f*⁵ passes through a slot in the frame, the slot in the arm and a hole in the bracket F⁴ confining the three parts. Set screws *f*⁶ on the overhanging portion of the bracket F⁴ bear upon the end of the frame F² and by these set screws the frame can be set so that its roller F³ will properly aline with the plate. The roller is made in two parts *g*, *g'*, as shown, so as to prevent the tearing of the leaf by the roller when it travels over the platform. I preferably mount the two parts of the roller F³, as clearly shown in Figs. 7 and 8, on a shaft G adapted to bearings in the frame F² and carried by the part *g* are antifriction rollers *g*² which bear against the surface *g*³ of the section *g'*, so that one roller will freely travel independently of the other.

Carried by the shaft *f* is a cam I having a

cam slot i , clearly illustrated in Fig. 9. Pivoted at i' on the underside of the table is a lever I^1 having a pin or roller i^2 which enters the cam slot i in the cam I . This lever I^1 is connected to a lever I^2 , also under the table, by a rod I^3 made in two parts, the two parts being coupled by a union i^3 so that the connecting rod can be readily adjusted. The lever I^2 is connected by a two-part link I^4 to a bar k of the toggle lever K , one link k^1 of which is pivoted to the plate E at k^3 and the other link k^2 being pivoted to the underside of the cutter frame at c^5 . There are two of these toggle levers, one at each side of the center, as illustrated in Fig. 2, and a single bar k extends from one joint to the other. The connection between the bar k and the link I^4 is in the form of a ball and socket joint k^3 , but another form of joint may be used without departing from my invention. It will be seen that any movement of the cam I will cause the toggle lever to raise or lower the cutter frame C . The movement is very limited but it is sufficient for the purpose. The cam I is so mounted in respect to the arm F carrying the roll that the first movement of the roller across the platform will cause the cam to move the knife up in position so that when the roller is directly above the opening a' in the platform the knife will be in position so that the roller will force the tobacco leaf down upon the knife, cutting it in the desired shape. As soon as the roller passes the opening in the platform the knife is depressed clear of the surface of the platform and the operator can roll the wrapper upon the filler.

M is a suction pipe leading to a suction pump or other suction device and this pipe has a series of nozzles m , one at each machine, where a series of machines are used. The nozzle is connected to a valve box N by a flexible pipe m' . The valve box N is secured to the underside of the table A , as clearly shown in Fig. 3, and the outlet from this valve box is connected to an extension c^6 of the hollow cutter frame C by a flexible connection m^2 . In the valve box is a valve n pivoted at n' and connected to this valve n is a rod n^2 extending to a foot lever at the base of the machine. A spring n^3 extends from the valve box to the rod, as clearly illustrated in Fig. 3, tending to normally maintain the valve in the closed position shown by dotted lines, so that when it is wished to hold the leaf down by suction on the perforated plate the rod n^2 is depressed by a foot lever, thereby opening the valve n with the result that the suction immediately draws the leaf down onto the plate.

The operation of the machine is as follows:—The roller arm is moved to one side of the machine, in which position the knife is depressed. The wrapper is then placed over

the perforated plate, the foot lever is depressed operating the suction valve so that the suction will tend to draw the leaf down upon the plate and hold it in this position. The roller is then moved over the platform and before the roller reaches the opening in the platform the cam has elevated the knife to the cutting position and the roller is moved across the platform in contact with the wrapper, pressing the wrapper against the edge of the knife and thus severing the wrapper on the lines of the knife. The movement of the arm is continued until it is clear of the platform and the knife has been depressed by the cam; then the parts of the leaf outside the knife can be readily removed while the suction still holds the part cut by the knife until the operator is ready to apply the wrapper to the formed filler, when the valve is released and the connection with the suction device is cut off. There is sufficient space between the opening in the platform and the operator for the proper rolling of the wrapper onto the filler, after which another wrapper is placed in position and the above operation repeated.

I claim:

1. The combination in a cigar wrapper cutting machine, of a platform having an opening; a knife arranged to be raised and lowered; an arm having a roller mounted to travel over the platform; with means consisting of a cam; a lever actuated therefrom and toggle mechanism positively connected to said lever and also to said knife; the parts being assembled to raise said knife to its cutting position when the roller is moved over the platform.

2. The combination in a cigar wrapper cutting machine, of a platform having an opening; a knife mounted in the opening and provided with supporting toggles; a perforated plate within the opening; a suction box under the plate; an arm having a roller arranged to pass over the plate; with means connected to be positively operated by the roller arm for straightening the toggles and causing the knife to be brought into cutting position; said means including a cam connected to be turned by the arm; a lever having a roller operative on said cam; and means for connecting the lever with the toggles.

3. The combination in a cigar wrapper cutting machine, of a platform formed with an opening, a knife mounted in the opening, said knife having supporting toggles whereby it may be raised and lowered, a roller arranged to travel over the platform, and means including a cam and a lever operated thereby connecting the roller with the knife supporting toggles, the cam being constructed so that on the first movement of the roller at either side of the platform, the knife will be lifted and held in the lifted

position until the tobacco leaf is cut and then on the completion of the movement of the roller, the knife will be lowered, substantially as described.

5 4. The combination of a platform formed with an opening, and having vertical guide rods, a knife mounted in the opening, a suction box supporting said knife and sliding on said guide-rods, a pivoted arm, a roller
10 carried by said arm, and arranged to swing over the platform, a cam for raising and lowering the knife, said cam being connected to the arm carrying the roller so that on the movement of the arm the suction box and
15 the knife will be operated, substantially as described.

5. The combination of a table, a platform thereon formed with an opening, a chambered knife carrier forming a suction box
20 and mounted under the platform, a flexible knife blade clamped to a projection on the knife carrier, rods upon which the knife carrier slides, a perforated plate within the knife carrier, a toggle lever for moving the
25 knife carrier, a shaft, a cam on said shaft, levers connecting the cam with the toggle, and an arm mounted on the shaft having a roller arranged to travel over the platform, substantially as described.

30 6. The combination in a cigar wrapper cutting machine, of a table formed with an opening, a knife mounted in the opening, an arm pivoted to the table, a bracket carried by the arm, a shaft mounted in the bracket,
35 and a roller mounted on the shaft, both the arm and the bracket having slots, with a single holding bolt arranged to permit said

bracket being moved in either of two directions at right angles to each other, substantially as described.

7. The combination of a table; a platform
40 thereon having an opening; a chambered knife carrier forming a suction box and mounted under the platform; a flexible knife blade clamped to a projection on the knife
45 carrier; rods upon which the knife carrier slides; a perforated plate connected with the knife carrier but normally free to move in one direction independently thereof; a toggle
50 for moving the knife carrier; a shaft; a cam on said shaft; levers connecting the cam with the toggle; and an arm mounted on the shaft having a roller arranged to travel over the platform.

8. The combination in a cigar wrapper
55 cutting machine formed with a platform having an opening, of a vertically movable exhaust box connected to a suction device, guides for said exhaust box, with a knife
60 loosely placed upon the top of said exhaust box and communicating with the interior of the same through an opening in the top thereof, said knife fitting the opening in the platform, with means for vertically moving
65 the exhaust box and with it the knife, substantially as described.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

BENJAMIN A. WILLIAMS.

Witnesses:

WILL. A. BARR,
JOS. H. KLEIN.