

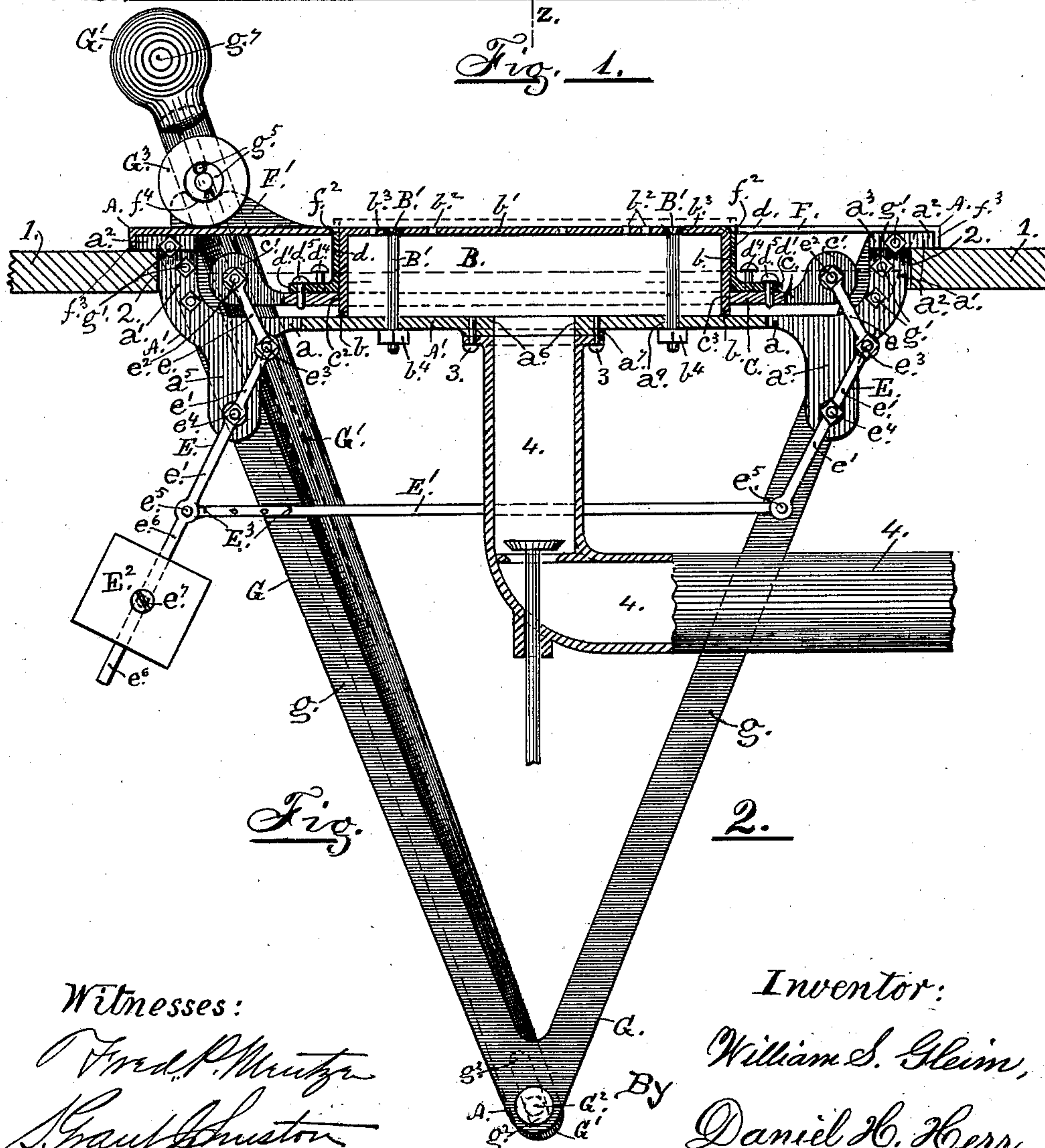
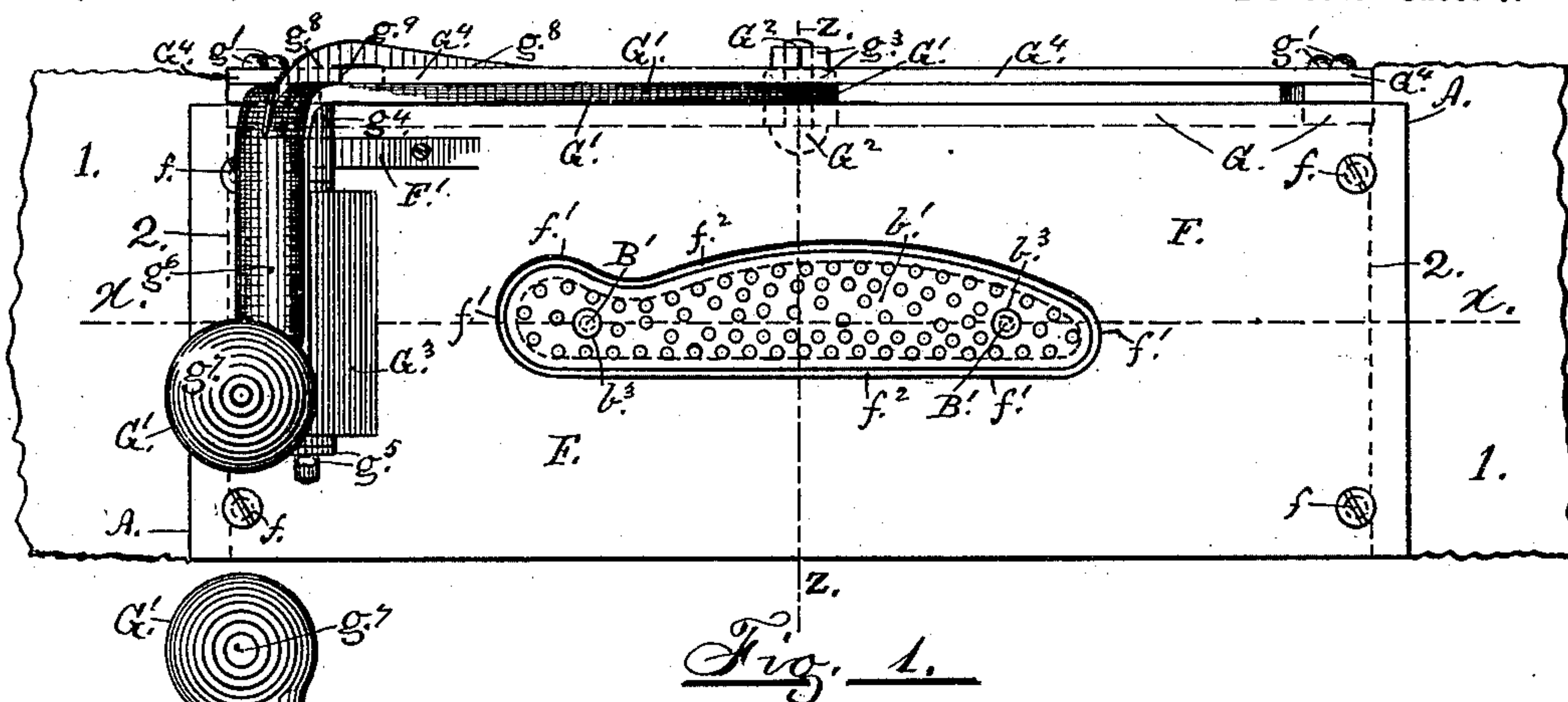
**W. S. GLEIM.**

## CIGAR WRAPPER CUTTING MACHINE.

(Application filed Oct. 29, 1900.)

(No Model.)

**2 Sheets—Sheet 1.**



*Witnesses:*

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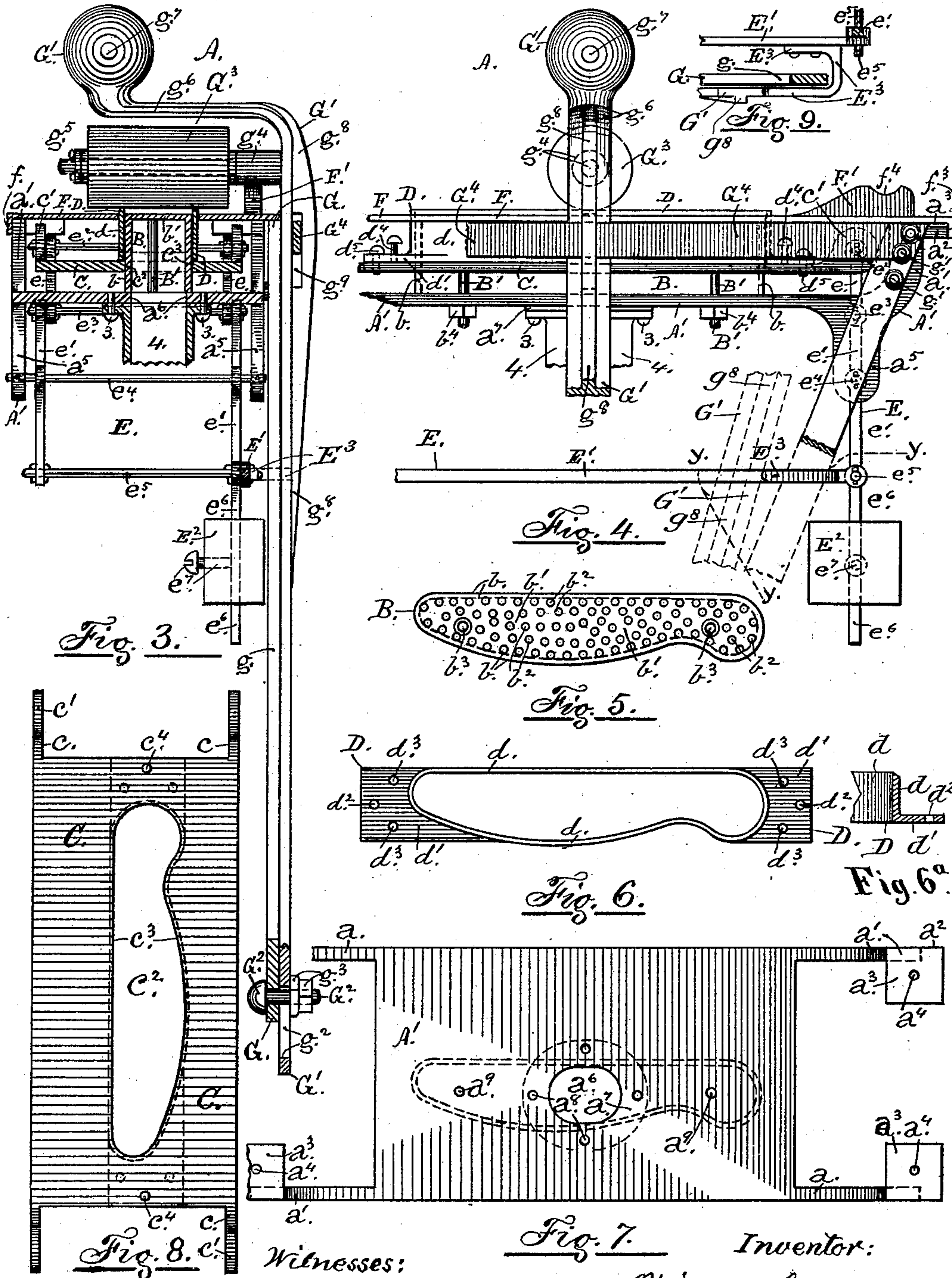
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CIGAR WRAPPER CUTTING MACHINE.

(Application filed Oct. 29, 1900.)

(No Model.)

2 Sheets—Sheet 2.



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# UNITED STATES PATENT OFFICE.

WILLIAM S. GLEIM, OF LANCASTER, PENNSYLVANIA.

## CIGAR-WRAPPER-CUTTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 673,252, dated April 30, 1901.

Application filed October 29, 1900. Serial No. 34,792. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM S. GLEIM, a citizen of the United States, residing at Lancaster, in the county of Lancaster and State of Pennsylvania, (whose post-office address is No. 23 East Orange street, Lancaster, Pennsylvania,) have invented certain new and useful Improvements in Cigar-Wrapper-Cutting Machines Having an Automatically Appearing and Disappearing Knife or Die; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in a cigar-wrapper-cutting machine of that class in which the leaf is held in place on the bunch-rolling plate by suction and in which a roller in passing over a die cuts the required wrapper from said leaf.

The object of the invention is the construction of a machine simple in mechanism that will automatically raise the cutting-die above the surface of the rolling-plate and when the wrapper is cut again automatically drop said die below said surface, leaving it smooth or even to prevent injury to the bunch and without the special attention of the operator.

The elements of the invention will severally and at large appear in the following description, and they will be separately and combinedly set forth or pointed out in the appended claims.

The purposes of the invention are attained by the mechanism and devices and means illustrated in the accompanying drawings, with similar reference characters to designate like parts throughout the several views, in which—

Figure 1 is a plan of a wrapper-cutting machine embodying the elements of the invention, showing the parts in the positions they appear when the leaf is applied and the bunch rolled; Fig. 2, a vertical longitudinal section taken on the line *x x* in Fig. 1, with a dotted line showing the position of the upper end of the die when the wrapper is being cut; Fig. 3, a vertical transverse section taken on the line *z z* in Fig. 1, with the die in its raised position and the roller at the center thereof; Fig. 4, a view from the right of Fig. 3, with

portions removed for want of room in the drawings and the cutting-die appearing in full length; Fig. 5, a plan of the exhaust-chamber with a perforated platen and detached from Fig. 4; Fig. 6, a plan of the wrapper-cutting die also detached from Fig. 4; Fig. 6<sup>a</sup>, a sectional elevation of a portion of said die, showing the upper cutting edge thereof; Fig. 7, a plan of the main supporting-plate, likewise detached from Fig. 4, with dotted lines showing the position of the exhaust-chamber thereon; Fig. 8, a plan of the die supporting or carrying plate as it appears when completed and detached from Fig. 3, with dotted lines showing the position of the wrapper-cutting die thereon, and Fig. 9 a plan of the portion comprehended by the line *y y y* in Fig. 4.

In the drawings, A designates the entire machine, appearing in position through an opening in the top 1, a part only being shown, of a cigar-maker's table or work-bench of any well-known construction. The supporting-base of the machine is a main or bed plate A', having horizontally-extending end arms *a*, with their outer ends turned up into ears or hangers *a'*, having at their upper ends outwardly-projecting lips *a*<sup>2</sup>, extending inwardly toward each other to form flange-plates *a*<sup>3</sup>, with screw-threaded orifices *a*<sup>4</sup> in their tops, and on the under sides of these arms *a*, being practically in continuation of the ears *a'*, are downwardly-projecting lugs or hangers *a*<sup>5</sup>, while therethrough in the body of the plate, somewhat centrally located, is formed a prescribed aperture *a*<sup>6</sup>, surrounded on the under side of the plate by a boss *a*<sup>7</sup>, having at prescribed points through its body screw-threaded orifices *a*<sup>8</sup>, and at equal distances from the aperture *a*<sup>6</sup>, on the longitudinal center line thereof, the plate is also provided with orifices *a*<sup>9</sup>. (See Fig. 7.) When this plate is placed in position on the work-bench, its body is passed through the opening therein, with the outer edges of the hangers *a'* engaging against the vertical walls 2 of said bench-top and the lips *a*<sup>2</sup> engaging or resting on its top, and to the under side of this plate, against the boss *a*<sup>7</sup>, is rigidly secured, as by screws 3, the adjacent end of a line 4 of exhaust-tubing well known to the trade, whereby the required suction through



the perforated platen is produced in the ordinary way. (See Figs. 2, 3, and 4.)

The exhaust-chamber of this invention is practically an inverted cup or vessel B, having a vertical wall  $b$ , of the required height, with its outer surface, in horizontal contour, formed in the shape of the desired wrapper, and the top  $b'$  of this cup or vessel, corresponding in contour with the contour of said wall, constitutes the required platen, containing the required or desired number of air apertures or vents  $b^2$  and at prescribed points the countersunk orifices or holes  $b^3$ . This chamber being placed over the aperture  $a^6$  in the plate  $A'$  and in the oblong position indicated by the dotted lines surrounding said aperture is rigidly secured in place to said plate by taper-headed bolts  $B'$ , passed through the holes  $b^3$  of the platen and through the orifices  $a^9$  of the plate, with nuts  $b^4$  screwed home against the bottom of the plate. (See Figs. 1 to 5 and 7.) Above this plate  $A'$  is arranged a wrapper-cutting-die-carrying plate C, having arms  $c$ , with upwardly-rounding ears  $c'$  and an oblong aperture  $c^2$  through its body, said aperture admitting the exhaust-chamber B, with its edge  $c^3$  freely engaging against the outer surface of the wall  $b$  of said chamber, and the plate is provided at prescribed points with screw-threaded orifices  $c^4$ . (See Fig. 8, also Figs. 2 and 3.) On this carrying-plate is arranged the wrapper-cutting die D, consisting of a vertical wall  $d$ , having the required height and surrounding the vertical wall  $b$  of the exhaust-chamber B, against the outer surface of which its inner surface engages, and having its upper edge sharpened, from the inner surface downwardly and outwardly sloping. (Best shown in the sectional elevation in Fig. 6.) At the foot of this wall  $d$ , projecting from the ends thereof, are flange plates or lugs  $d'$ , having at approved points therethrough orifices  $d^2$  and screw-threaded orifices  $d^3$ , arranged in pairs in each lug. This die is placed in position on the carrying-plate C, as indicated by the dotted lines in Fig. 8, and in the orifices  $d^3$  of its lugs  $d'$  are set-screws  $d^4$ , which screws by engaging on said carrying-plate serve to adjust said die as to height, bringing its cutting edge to the required point, while screws  $d^5$  through its orifices  $d^2$  and in the orifices  $c^4$  serve to rigidly secure said die and carrying-plate together. It will here be observed that the exhaust-chamber B serves to guide the wrapper-cutting die D and its carrying-plate C in their up-and-down motions.

The carrying-plate C, carrying the wrapper-cutting die D, is given the required up-and-down motion by a toggle-joint rack E, comprising two members, one being arranged at each end of the machine. These members have each a pair of lever-arms  $e$  and a pair of lever-arms  $e'$ . The arms  $e$  have their upper ends pivoted to the respective end ears  $c'$  of said plate by means of rods  $e^2$ , passing through said ears and ends, and their lower ends piv-

oted to the upper ends of the respective lever-arms  $e'$  by means of rods  $e^3$ , passing through said ends, placed side by side for the purpose. The latter arms  $e'$  are somewhat centrally pivoted to the lower ends of the hangers  $a^5$  of the bed-plate  $A'$  by rods  $e^4$ , passing therethrough and through said hangers, and they have their lower ends in the respective end pairs joined by rods  $e^5$ , passing through said lower ends, while the rearward arms of the respective end pairs have their lower ends joined by a connecting-rod  $E'$ , said connecting-rod having its ends adjacent to said rearward arms also pivoted on said rods  $e^5$ , with pins through the respective rods or nuts thereon completing the pivot-joints. One of the rear arms  $e'$ , preferably the one at the left-hand end of the machine, is downwardly extended into an arm  $e^6$ , on which a weight-block  $E^2$ , provided with a set-screw  $e^7$ , is sleeved, said weight serving to hold the arms  $e$  and  $e'$  in vertical prolongation and the set-screw  $e^7$  serving to hold the weight in any adjusted position, and the connecting-rod  $E'$  at a prescribed point is provided with a lug or sidewise-extending finger  $E^3$ , adapted to be engaged by a lever, yet to be described, whereby the toggle-joint rack E is tripped and the weight  $E^2$  adjusted. (See Figs. 2, 3, and 4.) It will here be remarked that the joints formed by the rods  $e^3$ , pivoting the adjacent ends of the arms  $e$  and  $e'$  together, constitute the toggle-joints proper of the invention and that the distances from said joints to where said arms  $e$  and  $e'$  are pivoted, respectively, to the carrier and bed plates are preferably equal in length.

On top of the flange-plates  $a^3$  of the bed-plate  $A'$ , which project above the work-bench, Fig. 2, is placed a flat or level plate F and secured in place by screws  $f$ , passing therethrough and into the orifices  $a^4$  of said flange-plates  $a^3$ , and it is somewhat centrally provided with an oblong aperture  $f'$ , corresponding in contour with the horizontal contour of the perforated platen  $b'$ , around which it leaves an open space or slot  $f^2$  for the free passage of the wrapper-cutting die in its appearing and disappearing motions. This plate F and platen  $b'$  having their top surfaces in the same horizontal plane constitute the level or even rolling board or table of the invention. The plate F may also have a downwardly-projecting flange or lip  $f^3$  to meet the top of the work-bench, closing any opening that may otherwise occur therebetween. At a prescribed point near the left-hand end of the machine and rigidly secured to the top of the plate F is an approved block  $F'$  with a top recess  $f^4$ . (See Figs. 1, 2, 3, and 4.)

On the rearward side of the machine is a bracket G of approved dimensions and preferably V-shaped in form, with its arms  $g$  joined at the apex of the V and their free ends rigidly secured against the rearward sides of the ears  $a'$  of the bed-plate  $A'$ , as by bolts and nuts  $g'$ . Swinging back and forth



or from left to right of the machine and returning is a lever  $G'$ , also of approved dimensions, being the actuating-lever before mentioned. This lever is provided near its lower end with an oblong slot  $g^2$ , through which a bolt  $G^2$ , after passing through the apex of the  $V$ , with a washer and nut  $g^3$  on its threaded end, serves to pivot or fulcrum said lever in place, said slot allowing freedom of up-and-down motion to the lever on said fulcrum or pivot-bolt. At the prescribed point above the table-top the lever is provided with a forwardly-projecting shaft  $g^4$ , having journaled on its spindle end a roller  $G^3$ , while a washer and pin  $g^5$  serve to secure the roller in place, said roller being adapted to roll over the wrapper-cutting die, thereby cutting the required wrapper. Above this roller the upper end of the lever is provided with a forwardly-projecting arm  $g^6$ , having at its forward end an upwardly-projecting bulb or ball  $g^7$ , constituting a hand-grip, whereby said lever is moved from left to right over the table-top and returned, the shaft  $g^4$  by engaging in the top recess  $f^4$  securing the lever in the left-hand position, and the body of the lever by engaging against the finger  $E^3$  of the connecting-rod  $E'$  trips the toggle-joint rack  $E$ , thereby raising the weight  $E^2$  and dropping the cutting-die  $D$  below the rolling-surface. Lengthwise of the lever on its rearward face is a projecting rib  $g^8$ , having therethrough at the required point an oblong slot  $g^9$ , through which an approved strip or bar  $G^4$ , with its ends secured to the machine by the topmost bolts  $g'$ , before mentioned, serves to guide or steady said lever in its forward and return motions, the slot allowing it freedom of up-and-down motion on said bar. (See Figs. 1, 2, 3, and 4.)

It will here be remarked that this machine may be built to be operated left-handed as readily as the right-handed one here shown and described by changing the weight  $E^2$  and the stop-block  $F'$  from the left to the right hand end of the machine and by turning the connecting-rod  $E'$  with the finger  $E^3$  over end for end on the pivot-rods  $e^5$ ; but the cutting-die and the exhaust-chamber will have to be constructed accordingly, making the right-hand end of the machine the resting and starting point of the actuating-lever  $G'$ , all without involving any new features or departing from the spirit of the invention.

Now the several parts hereinbefore described and occupying the respective position indicated in the drawings, their operation clearly shows the following results: First, a leaf of tobacco having been laid on or over the perforated platen  $b'$  will be held in place thereon by atmospheric pressure induced by the usual means through the line of tubing 4; second, the handle  $g^7$  on the arm  $g^6$  of the lever  $G'$ , carrying the roller  $G^3$ , being moved forward removes the pressure against the finger  $E^3$  on the connecting-rod  $E'$  from said finger, releasing the toggle-joint rack with

the arm  $e^6$ , carrying the weight  $E^2$ , being held in raised position with the carrying-plate  $C$  and the cutting-die  $D$  lowered; third, on the instant said pressure is removed said weight will drop and throw the toggle-joint lever-arms  $e e'$  in vertical lines, raising said carrying-plate, and with it said die, to the desired point, and this before said roller in its forward course reaches the die, over the entire length of which the roller is passed and returned to the starting-point; fourth, the passage of the roller to and fro over the die cuts the wrapper from said leaf, and on the return trip the lever  $G'$ , engaging against the finger  $E^3$ , throws said lever-arms  $e e'$  out of said vertical lines, raising the weight  $E^2$ , dropping the carrying-plate  $C$ , and drawing the die  $D$  below the surface, leaving said surface smooth or even for the rolling of the bunch, which is then rolled, and, fifth, this alternate raising and dropping of the die, its appearing and disappearing during the forward and return motions of said lever  $G'$ , and induced by its separating from and contacting with said finger  $E^3$  proving said appearing and disappearing of said die to be automatically resultant.

It is admitted to be old to form the upper part of a cigar-wrapper cutter into a table upon which cigars are rolled. No claim is therefore made, broadly, to the table; but

What is considered new, and desired to be secured by Letters Patent, is—

1. In a wrapper-cutting machine, a supporting bed-plate with end extending arms having upwardly-projecting ears and downwardly-projecting lugs or ears, with an exhaust-aperture practically at its center, and an orifice longitudinally on each side of said aperture, with flange-plates at the upper ends of said former ears, and end projecting lips at the outer edges of said flange-plates, substantially as described and for the purpose hereinbefore set forth.

2. In a wrapper-cutting machine having a supporting bed-plate with an exhaust-aperture in its body, an exhaust-chamber arranged over said aperture, with means provided to exhaust the air therefrom, said chamber having a vertical wall surrounding the air-aperture and a perforated platen integral with the upper edge of the wall, with bolts passing through the platen and bed-plate and nuts screwed home on the threaded ends of the bolts securing the chamber in place, with the outer surface of said wall and the peripheral edge of said platen conforming to the shape of the wrapper to be cut, substantially as described and for the purpose hereinbefore set forth.

3. In a wrapper-cutting machine having a supporting bed-plate with an exhaust-chamber mounted thereon, a die-carrying plate arranged above said bed-plate, said carrying-plate having an aperture corresponding in contour with the contour of the outer surface of the wall of said chamber, and having end extending arms with upwardly-projecting



pivoting-ears at the outer ends of said arms, with means provided, such as the toggle-joint rack E with the weight E<sup>2</sup> and the roller-carrying vibratory lever-arm G', to automatically  
 5 raise and lower said carrying-plate, substantially as described and for the purpose hereinbefore set forth.

4. In a wrapper-cutting machine having a supporting bed-plate, an exhaust-chamber  
 10 mounted thereon, with means provided to exhaust air from the chamber, and a die-carrying plate arranged above the bed-plate with automatic means provided to raise and lower  
 15 the carrying-plate, a wrapper-cutting die mounted thereon, said die having a vertical wall of the required height and corresponding in horizontal contour with the outer peripheral surface of the exhaust-chamber, said wall  
 20 therethrough to adjust the cutting edge, and with tap-screws therethrough and through the carrying-plate to secure the die in place, substantially as described and for the purpose hereinbefore set forth.

25 5. In a wrapper-cutting machine having a supporting bed-plate with an exhaust-chamber mounted thereon and means provided for exhausting air therefrom, and a die-carrying  
 30 plate arranged above said bed-plate and around said exhaust-chamber with a wrapper-cutting die surrounding the exhaust-chamber and adjustably secured to said carrying-plate, said bed-plate having at each end thereof a  
 35 pair of depending pivot-hangers and the carrying-plate at each end thereof a pair of upwardly-projecting pivoting-ears, a toggle-joint rack comprising two members, each member  
 40 having a pair of arms with their upper ends pivoted to the ears of the carrying-plate, and a pair of arms having their upper ends pivoted to the lower ends of said former arms, said latter arms being somewhat centrally  
 45 pivoted to the hangers of the bed-plate, with rods joining their lower ends in the end members of said rack, and a connecting-rod with its extremities pivoted onto said joining rods to pivotally join said end members, and a  
 50 prolongation of one of said latter arms with a weight adjustably sleeved thereon to hold the arms of said members normally in vertical alinement, and a finger or lug projecting

from said connecting-rod with means provided, such as a swinging lever, to engage against said finger or lug, and thereby raise  
 55 said weight and break said alinement, all substantially as described and for the purpose hereinbefore set forth.

6. In a wrapper-cutting machine having a supporting bed-plate, an exhaust-chamber  
 60 mounted thereon with means provided to exhaust air therefrom, a die-carrying plate arranged above the bed-plate and around the exhaust-chamber with a wrapper-cutting die surrounding said exhaust-chamber and adjustably secured to the carrying-plate, said  
 65 bed-plate having at each end a pair of depending hangers and upwardly-extending arms and said carrying-plate at each end a pair of upwardly-projecting ears, a toggle-joint rack with end members respectively pivoted to said hangers and ears, with a connecting-rod pivotally joining the end members and an adjustable weight carried by one  
 70 of said members, and a finger projecting from a side of said connecting-rod adjacent to one end thereof, a depending preferably V-shaped bracket with the free ends of its side bars rigidly secured to the rearward side of the bed-plate and a rearwardly-projecting pivot-stud adjacent to the apex thereof, and an oscillatory lever-arm with its lower end loosely  
 75 pivoted onto said stud and having limited freedom of motion up and down thereon, and having at its upper end a forwardly-projecting arm with a hand-grip to oscillate or vibrate the same, said lever-arm having a forwardly-projecting stud with a journal-spindle extending over said wrapper-cutting die, with a roller journaled on said spindle to engage  
 80 on the cutting edge of the die, and said lever-arm in its vibrations to engage against said projecting finger, with a bar provided to guide the lever-arm in its sidewise to-and-fro or vibratory motions, all substantially as described and for the purpose hereinbefore set forth. 95

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM S. GLEIM.

Witnesses:

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 HARVEY B. LUTZ.