(No Model.) 2 Sheets—Sheet 1.

I. C. C. RINEHART.

CIGAR TIP CUTTER.

No. 558,611. Patented Apr. 21, 1896.

Fig. 1

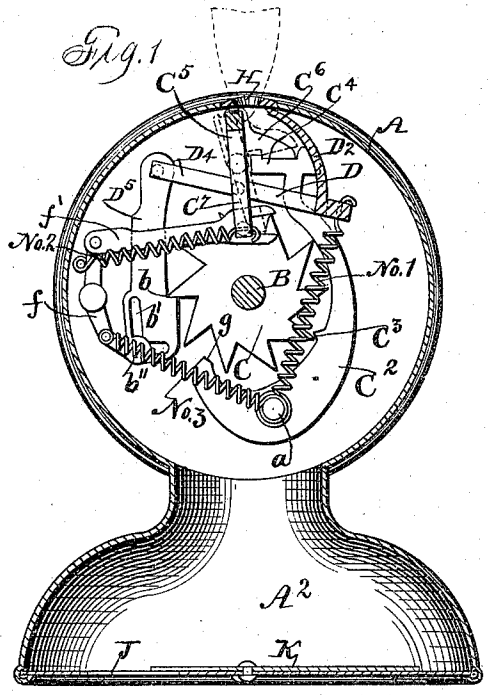


Fig. 2

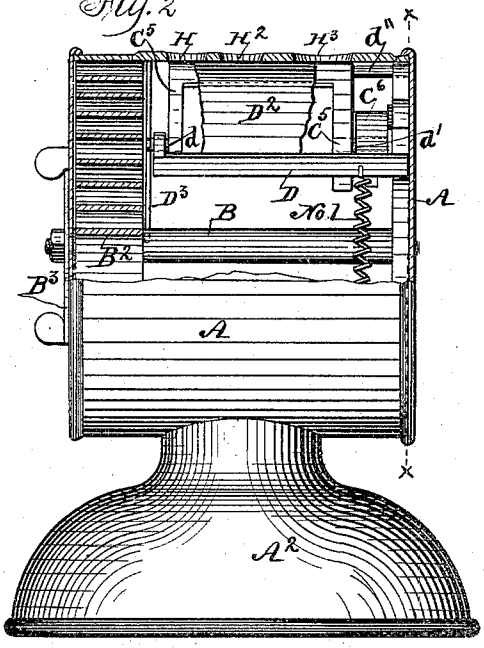


Fig. 3

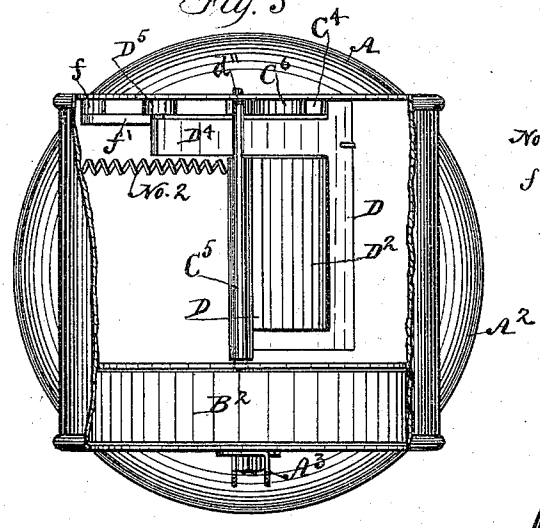
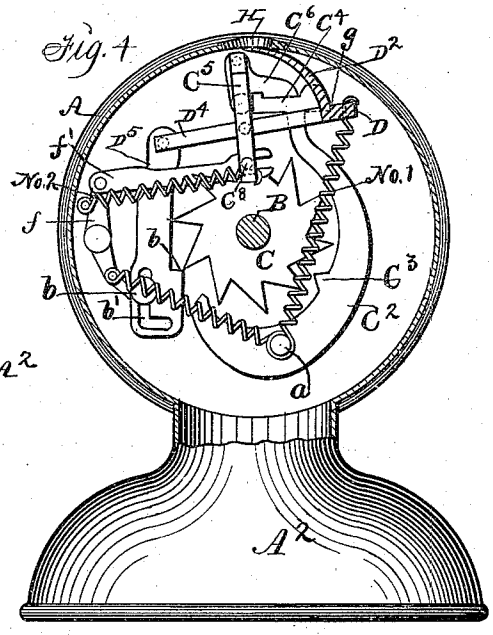


Fig. 4



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By Thomas G. Orwig, Attorney.

(No Model.) 2 Sheets—Sheet 2.

I. C. C. RINEHART.

CIGAR TIP CUTTER.

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Fig. 5

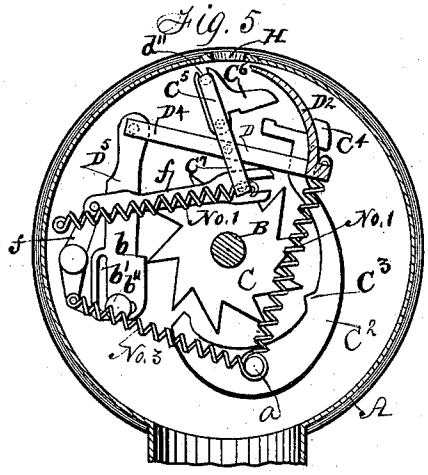


Fig. 6

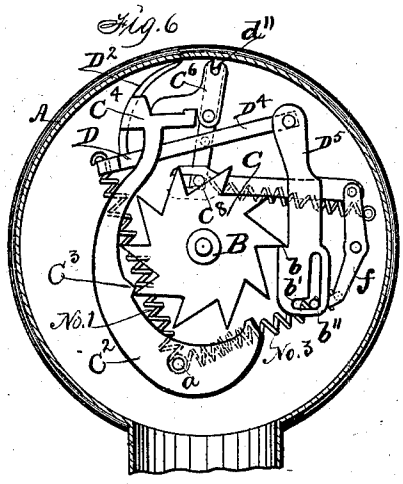


Fig. 7

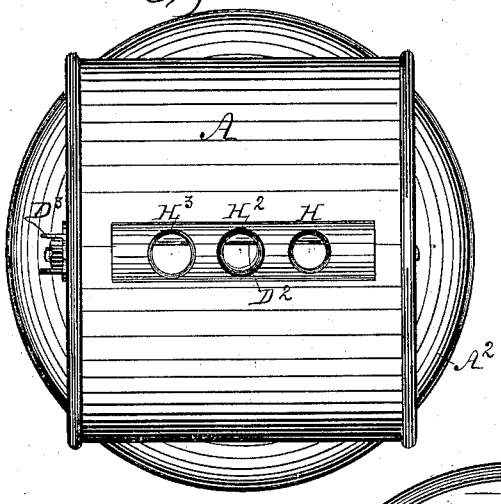


Fig. 8

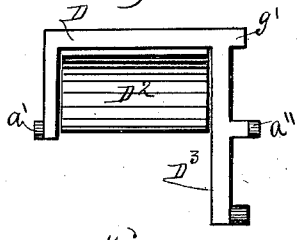


Fig. 9

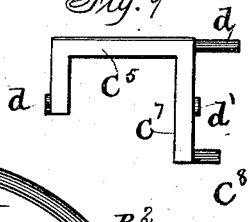
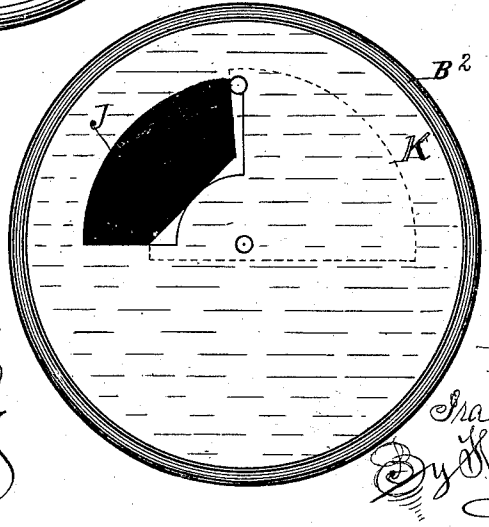


Fig. 10



Witnesses:
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Inventor:
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By Thomas G. Orwig.
Attorney.

UNITED STATES PATENT OFFICE.

IRA C. C. RINEHART, OF DES MOINES, IOWA, ASSIGNOR TO DAVID EVANS, OF POLK COUNTY, IOWA.

CIGAR-TIP CUTTER.

SPECIFICATION forming part of Letters Patent No. 558,611, dated April 21, 1896.

Application filed November 14, 1893. Serial No. 490,967. (No model.)

To all whom it may concern:

Be it known that I, IRA C. C. RINEHART, a citizen of the United States of America, residing at Des Moines, in the county of Polk and State of Iowa, have invented a new and useful Improvement in Cigar-Tip Cutters, of which the following is a specification.

My invention relates to the cigar-tip cutter for which United States Letters Patent were issued to me August 15, 1893, No. 503,496; and my object is to simplify the construction, reduce the cost, and improve the operation and efficiency of the complete device.

In place of the gearing heretofore used to impart intermittent motion to a rotary cutter having a series of fixed blades that operate successively, I substitute a single vibrating blade and automatic mechanism, adapted to actuate the blade whenever the end of a cigar is placed in an opening in the case, as required, to be cut off within the case in which the operative mechanism is concealed.

My invention consists in the construction, arrangement, and combination of a blade, an escapement composed of a ratchet-wheel and spring-actuated levers with a spring-actuated shaft in a case, having an opening in its base for removing matter therefrom, as hereinafter set forth, pointed out in my claims, and illustrated in the accompanying drawings, in which—

Figure 1 is a vertical sectional view showing the relative positions of the cutting-blade and escapement mechanism at one end of the case and in their normal positions. Fig. 2 is a side view of the case, showing a portion broken away and also parts of the spring that actuates the main shaft and operative devices connected therewith and located at the other closed end of the case. Fig. 3 is a top view showing the case broken away to disclose the operative mechanism. Fig. 4 is a view corresponding with Fig. 1 and shows the vibrating cutting-blade and the spring-actuated levers of the escape mechanism in the position they occupy relative to each other, the ratchet-wheel, and the opening in the top of the case through which the ends of the cigars are introduced, when the cutting motion of the blade has been completed and the said operative parts are in abnormal positions. Fig. 5 is a view corresponding with Fig. 1, showing the positions of the levers as required when the spring-actuated shaft to which the ratchet-wheel is fixed is rotated to store power in the spring. Fig. 6 is a view looking inward from the line $x\ x$ in Fig. 2, showing the different parts of the escapement mechanism in their normal positions and ready to be actuated by pressing the end of a cigar upon the trip device that is partially uncovered by the opening through which a cigar end must be introduced, as indicated by dotted lines at the top of Fig. 1. Fig. 7 is a top view showing three openings that are graduated in size and adapted to admit the tip ends of cigars and allow them to come in contact with the trip device. Fig. 8 is a view showing the cutting-blade in an inverted position and the frame to which it is fixed. Fig. 9 is a view of the trip device frame. Fig. 10 is a view of the bottom of the base, showing an opening for the removal of matter therethrough and a pivoted cover for the opening.

The letter A designates a cylindrical case closed at its ends and provided with a hollow base A^2. It is preferably made of sheet metal and the bottom of the base closed and provided with a covered opening, as shown in Fig. 3.

B is a spring-actuated shaft in bearings formed in the center of the ends of the case, and B^2 is a spring coiled within the case and the inner end fixed to the shaft and its outer end to the case in such a manner that when the shaft is rotated, by means of a key, power will be stored in the spring, as required, to operate the cutting-blade whenever desired.

C is a ratchet-wheel fixed to the end portion of the shaft B. C^2 is a curved lever pivoted at the point a to the fixed end of the case A. It has a cam projection C^3 on its inside or concave edge, that engages the ratchet-teeth, as required, to retain the shaft stationary and a cross-head C^4 at the top end adapted in shape to engage a movable trip device fitted thereto and adapted to retain the lever C^2 stationary.

C^5 (shown in Fig. 9) is a frame adapted to carry the trip device fitted thereto and

adapted to retain the lever C^2 stationary. A trip device C^6 is pivotally connected with the top portion of said frame in such a manner that said trip device interlocks with the cross-head C^4 at the top of the lever C^2, as shown in Fig. 1, and has an independent vibratory motion relative to the vibrating frame C^5, upon which it is carried.

d and d' are journals that enter bearings in the blade-carrying frame, that are in concentric position with the journals a' a'', so that the frame C^5 is thereby pivoted within the blade-carrying frame, as shown in Figs. 1, 2, 4, 5, and 6.

d'' is a pin projecting from the corner of the frame C^5 and enters the bifurcated top end of the trip device C^6, as clearly shown in Fig. 6, in such a manner that the said trip device carried by the frame C^5 can move upon its own pivot, as required, to be engaged and disengaged with the cross-head C^4 at the top of the lever C^2.

D (shown in Fig. 8) is a frame adapted to carry the cutting-blade D^2, fixed to the frame to project therefrom, as shown in Figs. 1, 4, and 5, in such a manner that the cutting-blade will traverse the space immediately under the openings in the case, through which the tip ends of cigars are introduced to be cut off by the blade.

The frame D, carrying the blade D^2, has journals a' and a'', that enter bearings in the end of the case A and a parallel partition D^3, fixed in the case, as shown in Figs. 2 and 3, in such a manner that the frame can vibrate, as required, to actuate the cutting-blade thereby.

D^4 is an arm projecting from the frame D, and D^5 is a link pivoted to the end of the arm and provided with a shoulder b, adapted to be engaged by the teeth of the ratchet-wheel C, as shown in Fig. 1. b' is an elbow-shaped slot in the pawl through which a pin b'' is extended into the end of the case to pivotally connect the lower end of the link with the case A, in such a manner that the link will have longitudinal and also vibratory motion, and when the ratchet-wheel rotates forward it will pull down on the link and thereby vibrate the frame D, carrying the blade D^2, and actuate the blade as required to cut off the end of a cigar and to assume a position as shown in Fig. 4.

No. 1 is a coil-spring connected with the frame D and the pivot of the lever C^2 in such a manner that it will reverse the motion of the frame D and blade D^2 and return them to their normal positions, as shown in Fig. 1, when the link D^5 is disengaged from the ratchet-wheel C.

C^7 is an arm extending from the frame C^5, and No. 2 is a coil-spring attached thereto and to the end of the case A in such a manner that it will reverse the motion of the frame C^5 and return the trip device C^6 to its normal position and in engagement with the cross-head C^4 at the top end of the lever C^2.

f is a lever pivoted to the end of the case A in such a manner that its lower bent end will be in contact with the lower end and edge of the link D^5.

f' is a bar pivoted to the top end of the lever f, and is bifurcated at its free end to admit a pin C^8, projecting from the end of the arm C^7 of the frame C^5 in such a manner that when the shaft B is rotated to wind up the spring D^3 the teeth of the ratchet-wheel C will, by means of the hook D^5, press the lower end of the lever f, so that the bar f' will retain the frame C^5 in its abnormal position, and the trip device C^6, carried thereby, disengaged from the cross-head C^4 at the top of the curved lever C^2, and the projection C^3 on the concave edge of that lever disengaged from the ratchet-wheel C, as required, to allow the shaft B and ratchet-wheel C to be rotated backward.

It is obvious that the curved lever C^2 must be returned to its normal position before the trip device C^6 will engage the cross-head C^4 to retain the projection C^3 in engagement with the ratchet-wheel C. To accomplish this purpose, the lower end of the curved lever C^2 extends within the orbit of the points of the teeth of the ratchet-wheel C, so that the forward motion of a tooth will actuate the lever C^2, as required to return the lever to its normal position.

g is a flat surface, about one-sixteenth of an inch in length on the inwardly-curved lower end of the lever C^2, and g' is a projection at the corner of the blade-carrying frame D. The function of the flat surface g is to allow the point of each tooth of the ratchet-wheel C to regulate the return motion of the lever C^2 relative to the frame D, having the projection g'.

It is obvious that when the end of a cigar is pressed and held against the trip device C^6 the said trip device will be moved and thereby retained in its abnormal position, as shown in Fig. 5, and that consequently the motion of the lever C^2 must be detained until the blade D^2 has cut off the end of the cigar and the frame having the projection g' has performed about half of its backward motion, as required to pass below the cross-head C^6 at the top of the lever.

It is also obvious that after the lower end of the lever is disengaged from the tooth of a ratchet-wheel it would by force of gravity resume an abnormal position, so that the trip device C^6 could not engage it, and that therefore the projection g' on the frame D will come in contact with the end of the cross-head C^4, as indicated by dotted lines in Fig. 4, and retain the lever in its normal position until the blade has cut off the end of the cigar and the pressure upon the trip device is relaxed, as required to allow the spring No.

2 to restore the trip device to its normal position simultaneously with the action of the spring No. 1, that returns the frame D and blade D^2 to their normal positions.

H, H^2, and H^3 are circular openings in the top of the case to admit the ends of cigars. They vary in diameter as required to suit the ends of cigars of different size.

J is an opening in the bottom of the base, adapted to allow the end pieces of cigars to be removed therefrom. K is a cover pivoted to the bottom of the case and adapted to close the opening J, as required to retain pieces of cigars in the base as long as desired.

From the foregoing description of the construction and function of each element and subcombination of the complete device the practical operation and utility of my complete invention is obvious and repetition of the coöperative actions of the different parts is deemed unnecessary.

I claim as my invention—

1. In a cigar-tip cutter, a case having an opening to admit a cigar, a frame carrying a cutting-blade and pivoted in the case to vibrate back and forth across the opening in the case, means for vibrating said frame, a frame carrying a trip device, a lever pivoted in the case and adapted to interlock with said trip device and arranged and combined to operate in the manner set forth for the purposes stated.

2. The case A having a base A^2, the vibrating frame D having an arm D^4 and carrying a cutting-blade D^2, the vibrating frame C^5 carrying a trip device C^6, springs 1 and 2, and the lever C^2 having a projection C^3 and a cross-head C^4 adapted to interlock with the said trip device, and means for actuating the said frame and lever in the manner set forth, for the purposes stated.

3. The case A having an opening to admit the end of a cigar, the vibrating frame D carrying the blade D^2 and provided with an arm D^4, the vibrating frame C^5 carrying the trip device C^6, the lever C^2 having a projection C^3 and a cross-head C^4, the springs 1 and 2, and means for actuating the frame D, arranged and combined to operate in the manner set forth for the purposes stated.

4. In a cigar-tip cutter, a case having an opening to admit the end of a cigar, a vibrating frame carrying a cutting-blade, a vibrating frame carrying a trip device, a lever having a cross-head to engage the trip device and provided with a cam to engage the teeth of a ratchet-wheel, a spring-actuated shaft having a fixed ratchet-wheel, and means for transmitting motion from the ratchet-wheel to the frame carrying the cutter, as required, to cut off the end of a cigar, means for reversing the motion of the frame carrying the cutting-blade, and means for reversing the motion of the frame carrying the trip device, arranged and combined to operate in the manner set forth for the purposes stated.

5. In a cigar-tip cutter, having an opening to admit the end of a cigar, the spring-actuated shaft B having a fixed ratchet-wheel C, the lever C^2 having a cam C^3, and a cross-head C^4, the frame D carrying the blade D^2 and having an arm D^4, the frame C^5 carrying a trip device C^6 and provided with an arm C^7, the link D^5 having a shoulder b and an elbow-shaped slot b', and pin b'', means for pressing the lower end of the link toward the ratchet-wheel C, and the springs 1 and 2, arranged and combined to operate in the manner set forth, for the purposes stated.

6. The link D^5 having a shoulder b and an elbow-shaped slot b' and pin b'', in combination with the frame D carrying the blade D^2 and the ratchet-wheel C on the spring-actuated shaft B and means for locking and unlocking said shaft and ratchet-wheel, arranged and combined in a cigar-tip cutter, to operate in the manner set forth, for the purposes stated.

7. In a cigar-tip cutter, the combination of the lever f, the bar f', the pivoted frame D carrying a cutter, the vibrating frame C^5 having an arm C^7, the link D^5, the spring 3, and the ratchet-wheel C on the spring-actuated shaft B, and means for locking and unlocking said ratchet-wheel and shaft, to operate in the manner set forth for the purposes stated.

8. The frame D carrying the cutting-blade D^2, and having the projection g', in combination with the lever C^2 having a flat surface g and a cross-head C^4, a ratchet-wheel on a spring-actuated shaft and a vibrating trip device adapted to interlock with the said cross-head, means for operating the trip device, and means for locking and unlocking the ratchet-wheel for the purposes stated.

9. A cigar-tip cutter comprising a case having an opening to admit the end of a cigar, a spring-actuated shaft journaled in the case, a ratchet-wheel fixed to the shaft, a curved lever having a cross-head at its top, pivoted in the case and provided with a projection on its concave edge and a flat surface at its end said end being adapted to engage the ratchet-wheel, a frame pivoted in the case and a trip device connected therewith and adapted to engage the cross-head of the lever to retain the lever stationary, a frame pivoted in the case and carrying a cutting-blade and provided with an arm, a link pivoted to the arm and provided with a shoulder to engage the ratchet-wheel, coil-springs connected with the two pivoted frames to reverse their motions, and means for retaining the link in contact with the ratchet-wheel, all arranged and combined to operate in the manner set forth.

10. The cigar-tip cutter comprising the case A having a base B^2 and openings H, H^3 and

H^3, the shaft C^2, the spring B^2 and the key B^3, the ratchet-wheel C fixed to the shaft, the lever C^2 having the projection C^3, cross-head C^4 and flat end surface g, the frame D carrying the blade D^2 and provided with the arm D^3, journals a', a'' and the projection g', the frame C^5 carrying the trip device C^6 and provided with the arm C^7, the link D^5 having the shoulder b and an elbow-shaped slot and pin b'', the lever f and the bar f', and the springs 1, 2, and 3, arranged and combined to operate in the manner set forth for the purposes stated.

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