

W. H. CAMPBELL.
CIGAR TIP CUTTER.

No. 533,208.

Patented Jan. 29, 1895.

FIG. 1.

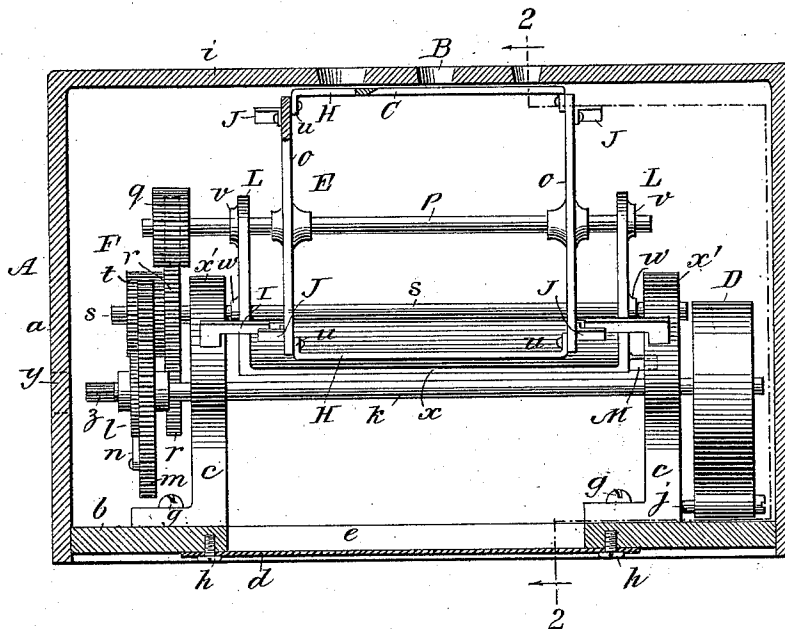
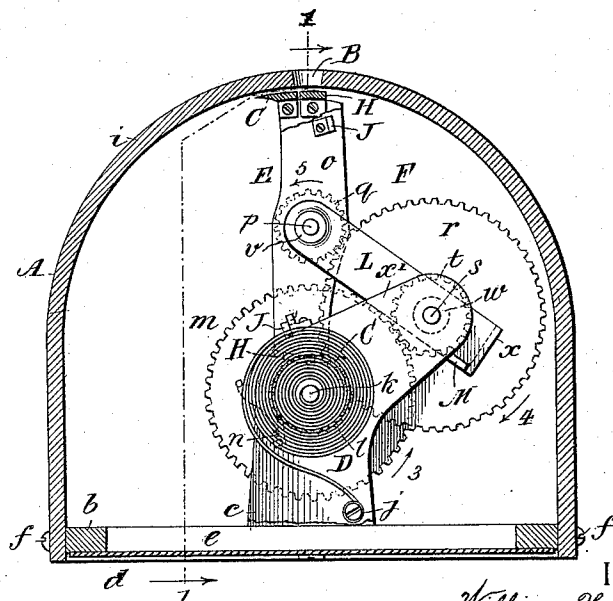


FIG. 2.



WITNESSES:

Fred White
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INVENTOR:

William Henry Campbell,
By his Attorneys,
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FIG. 3.

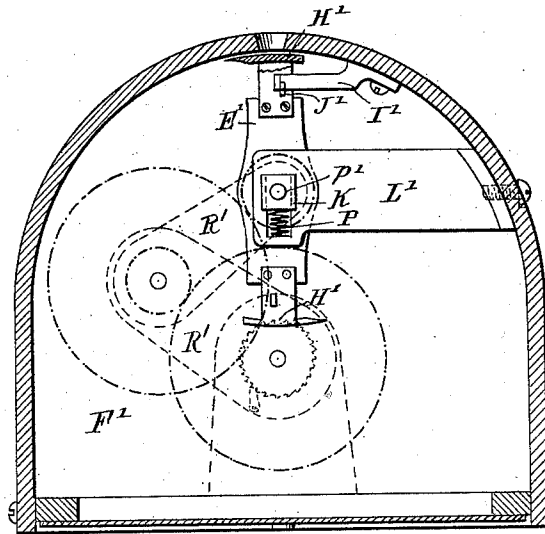
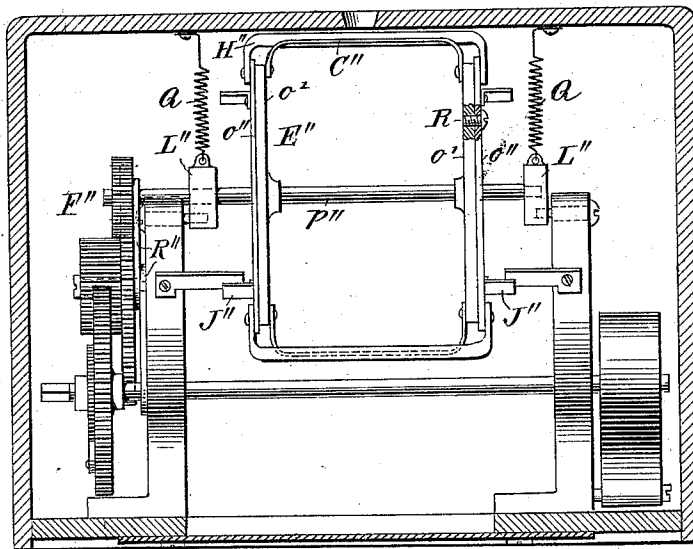


FIG. 4.



WITNESSES:

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UNITED STATES PATENT OFFICE.

WILLIAM HENRY CAMPBELL, OF BROOKLYN, NEW YORK, ASSIGNOR TO HIMSELF, CHARLES B. REDHEAD, EDWARD C. REDHEAD, AND FRANK W. SUYDAM, OF SAME PLACE.

CIGAR-TIP CUTTER.

SPECIFICATION forming part of Letters Patent No. 533,208, dated January 29, 1895.

Application filed June 16, 1894. Serial No. 514,729. (No model.) Patented in Italy June 30, 1894, XXVIII, 36,476, LXXI, 354; in Austria July 24, 1894, 44/3,463, and in Belgium June 1, 1894, No. 110,259.

To all whom it may concern:

Be it known that I, WILLIAM HENRY CAMPBELL, a citizen of the United States, residing in Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Cigar-Tip Cutters, of which the following is a specification.

This invention is patented in Italy, Reg. Gen., Vol. XXVIII, No. 36,476, Reg. Att., Vol. LXXI, No. 354, dated June 30, 1894; in Austria, No. 44/No. 3,463, dated July 24, 1894, and in Belgium, No. 110,259, dated June 1, 1894.

This invention relates to machines for automatically cutting tips from cigars.

Prior to my invention such machines have consisted of a rotating blade having a radial cutting edge and rotating on a fixed axis, and a coiled spring connected to said blade for driving it. To prevent rotation of the cutter blade, it has been constructed with a stop rigidly fixed to a rotating part of the blade, and the main frame or casing of the machine has carried a movable latch pivoted to the frame or casing, and having one end engaging the stop on the cutter, and another part disposed opposite a tip-hole in the casing in such manner that when the end of a cigar was inserted in the hole, this latch would be moved until its nose disengaged from the fixed stop on the blade, thereby permitting the latter to rotate and sever the end of the cigar which in moving against the latch had passed into the path of the knife. With some such devices the latch remains in position opposite the cigar after the insertion of the latter, and is engaged by the cigar during such insertion, and while so engaged permits continued operation of the knife. Thus if a person holds the cigar in engagement with the latch, a complete unwinding of the spring is endangered.

My invention aims to provide an automatic cigar tip cutter, simple and cheap of construction, effective in operation, and which cannot be operated for more than one cut during one insertion of the cigar into the tip hole.

To this end in carrying out the invention, I provide in connection with the rotating cut-

ter, its driving spring, and the interengaging stops for preventing its rotation, a releasing bar arranged opposite the usual tip hole in the casing of the cutter, connected to one of the stops, moved by the insertion of a cigar into the hole, and when so moved moving one of said stops out of engagement with the other to permit rotation of the cutting blade, and also moving itself laterally of and away from the tip hole, whereby as soon as operated it passes out of the path of the cigar, and I provide certain other features of improvement which will be hereinafter fully set forth. In its preferred form the releaser bar is carried by and rotates with a rotating frame carrying the cutting blade, and this frame is preferably a depressible frame carrying one of the stops for arresting, while the other stop engaging with that last mentioned is fixedly connected to the casing of the machine.

In the accompanying drawings, which illustrate the preferred form of my invention, Figure 1 is a longitudinal mid-section of a cigar tip cutter constructed according to this invention, the internal mechanism being shown in elevation, cut on the line 1—1 in Fig. 2. Fig. 2 is a transverse section thereof cut on the line 2—2 in Fig. 1. Fig. 3 is a cross-section showing a modification, and Fig. 4 is a longitudinal section showing another modification.

Referring to the drawings, A is the casing of the machine; B, the tip holes; C, the cutting blades or knives; D, the driving spring; E, a rotating frame carrying the knives, and F gearing between the spring and frame for driving the latter from the former.

The casing A may be of any suitable shape, material or construction, and should constitute those parts of the machine requisite for properly inclosing the apparatus and giving the necessary internal framework for sustaining the parts. In the construction shown the casing consists of an inverted cast metal shell *a*, an internal base plate *b*, inner or upright frames *c*, and a bottom cover *d*.

The shell *a* is shown as a cast metal shell having a rounded top and vertical sides.

The base plate *b* is a flat cast metal plate

having a central opening *e* closed by the cover *d*. The base plate is shown as fixed to the shell by screws *f*.

The uprights *c* are brackets or frames carrying the mechanism within the shell, and those shown consist of cast metal pieces fixed to the base *b* by screws *g*, and having bearings for the internal mechanism of the cutter.

The cover *d* is a thin metal cover closing the hole *e* and secured by screws *h* against the bottom of plate *b*.

The tip holes *B* are formed in any suitable manner in some fixed part connected to or forming part of the casing of the machine. Those shown are formed as beveled holes in the curved top *i* of the shell *a*.

The cutting blade or blades *C* are rotating peripheral blades moving in their rotation past the hole or holes *B*.

The spring *D* is the usual or any suitable coiled spring. That shown is connected at one end to the casing by a stud or pin *j*, and at its other end to a horizontal shaft *k* having bearings in the frame *c*, which shaft traverses the cutter longitudinally, has a key head at its opposite end, and also at that end a fixed ratchet-wheel *l* and a loose spur-gear *m*, the latter driven from the shaft by a pawl *n* on the gear engaging the teeth of the ratchet to transmit the rotation of the shaft to the gear when the spring *D* unwinds. The gear *m* in turn meshes with the gearing *F* for transmitting the driving force to the rotating knives.

The rotating knife frame is shown as constructed as a rectangular skeleton frame carrying two peripheral knives *C* fixed on two end pieces *o*, which pieces at their middle are fixed on a rotating shaft *p*.

The gear *F* consists of a pinion *q* fixed on the shaft *p* and meshing with a spur-gear *r* carried by a shaft *s*, upon which is fixed a pinion *t* which meshes with the spur-gear *m*. As the spur-gear *m* is driven by the spring in the direction of the arrow 3 in Fig. 2, it drives the pinion *t* and its gear *r* in the direction of the arrow 4 in said figure, and the gear *r* in turn drives the pinion *q* and its shaft and the rotating frame and knives in the direction of the arrow 5 in said figure. Thus the motion of the spring is transmitted to the knives.

In such devices, interengaging stops, the one carried by the main frame or casing and the other connected to the knife for preventing rotation of the latter, and a releaser or means for disengaging said stops to permit rotation of the knife during the cutting operation, are required. Heretofore the stops have consisted of a nose fixedly attached to the rotating cutter and rotating therewith, and a swinging latch movably connected to the main frame or casing of the machine and when in one position engaging the fixed stop or shoulder connected to the blade to prevent rotation of the latter, and when moved passing out of engagement with such stop to permit such rotation, and a releaser or means

for operating the movable nose on the casing or frame has been permanently located on a fixed part of the frame opposite the tip hole, in such manner that when a cigar was inserted in the hole, the releaser would be moved to disengage the stops, and held in such disengaging position so long as the cigar was pressed into the hole and against the releaser.

My invention provides improved means for disengaging the stops, in that it provides a releaser which while opposite the hole during the locking position, moves laterally thereof and away therefrom after it has been moved inwardly by the insertion of a cigar and has disengaged the stops, and to accomplish this I connect the releaser with the rotating cutter blade or the rotating frame in such manner that while these parts are inactive it will rest opposite the tip hole and be engaged by a cigar inserted therein, being thereby operated to release the stops, whereupon it will be carried away from the holes by the rotation of the blade or its frame. This may be variously accomplished, but I prefer the construction shown in Figs. 1 and 2, wherein I and *J* represent the interengaging stops, and *H* the releaser.

The stops preferably consist of a fixed stationary nose or projection *I* carried by the inner frame of the casing, in the construction shown by the post *c*, and a reciprocal stop or nose *J* connected to the releaser in any suitable manner, as for example by being connected to the upright *o* of the rotary frame *E*, these stops being disposed when in the normal position to engage and thereby prevent rotation of the frame and blade. The fixed stops *I* are preferably duplicated at opposite sides of the frame, and the rotating stops *J* are likewise duplicated at opposite sides of the frame, and correspond in number, or in number of sets, to the number of knives *C* employed. In the construction shown two knives arranged diametrically opposite each other on the frame *E* are employed, and consequently two sets of stops *J* are used. The releaser *H* in this construction consists of a bar or plate mounted peripherally on and carried by the rotating frame *E* opposite the hole *B*, and connected to one of the stops to move it out of engagement with the other when the releaser is moved. The releaser is preferably in the same peripheral plane as the knife or knife blade, and one releaser plate or bar is provided for each blade. The releaser is disposed opposite the tip hole, and acted on by the tip of a cigar inserted therein, the action being to deflect the releaser until it has freed the stops. Then it moves laterally of the hole with the frame as the latter rotates, thus permitting the maximum insertion of the cigar into the hole as the releaser passes away from the latter, so that before the succeeding knife cuts the tip from the cigar, the latter has finally seated itself in the hole and cannot be further inserted. Any suitable connection between the releaser and the stop it moves

may be employed, but I prefer to construct the releaser as a plate having downturned edges *u* fixedly connected to the pieces *o* of the frame *E*, to which pieces the stops *J* are also connected, whereby the deflection of the releaser will be transmitted through the frame to the stops it is designed to move. This construction involves the necessity of making the releaser movable with the frame *E*, but it requires the construction of the latter as an inwardly movable frame, in addition to its rotative function. The inward movement of the frame corresponds to the necessary movement of the stop *J* in freeing itself from the stop *I*. This movement is best transmitted by mounting the frame in a movable bracket, for example the bracket *L*, which is a U-shaped strap having bearings *v* in its ends carrying the shaft *p* of the frame *E*, bearings *w* carrying the shaft *s* of the gearing *F*, and an intermediate connecting body *x* between its ends. The bracket *L* is itself supported on the shaft *s*, which in turn is supported by an arm *x'* of the post *c* of the main frame, and it has an oscillatory motion on this shaft, being normally pressed upwardly at its outer end to hold the blade *C* and the releaser *H* in close proximity to the tip hole, but capable of inward deflection under the action of a cigar inserted in the hole against the releaser plate. A stop *M* limits upward movement of the bracket.

Any suitable means for giving the upward tendency to the rotating frame *E* or its bracket *L* may be employed, but I prefer to utilize the tension of the spring *D* through the medium of the gearing *F* for performing this function in the manner shown, wherein the rotative tendency transmitted upwardly through the spur-gear *m* to the pinion *t*, and by the latter through the gear *r* to the pinion *q*, serves to lift the bracket *L* and frame *E* toward the hole *B* with a gentle but sufficient force, and permits the inward deflection of the frame necessary to free the stops.

In operation, the spring *D* is wound by any suitable key inserted in the hole *y* to engage the head *z* of the shaft *k*, the ratchet-and-pawl *l n* permitting free rotation of the shaft for this purpose. When wound, the tension of the spring transmitted through the gearing *F* raises the frame *E* and bracket *L* until the stops *J* and *I* engage and lock the frame *E* in position with one of its releaser plates beneath the tip hole *B*. The parts rest in this position until the cigar is inserted against the releaser, which act deflects the latter inwardly and the releaser carries with it the frame *E* and bracket *L*, moving the nose *J* downwardly until it passes beneath the stationary stop *I*. Then the frame immediately rotates in the direction of the arrow 5, moving the releaser out from under the cigar, whereupon the frame and bracket *L* rise again to the normal position, and the rotation continues until the next cutting blade *C* passes the hole *B*, in which operation it severs the tip from the

cigar. When the edge of the blade has passed beyond the hole a sufficient distance, the following nose *J* meets the fixed stop *I*, and these parts by engaging arrest rotation of the blade and its frame. The parts have then executed a half revolution, and the releaser plate diametrically opposite that acted on is then opposite the tip hole for the next operation.

The releaser plate is preferably an imperforate plate covering and closing closely against the tip hole, thereby preventing ingress of dust or insects within the shell *a*.

It will be seen that my invention provides an improved automatic tip cutter which can be easily constructed and will be effective in operation, and in which there is no danger of accidental unwinding of the driving spring.

It will be understood that the invention is not limited to the particular details of construction or arrangement set forth as constituting its preferred form, as the principles involved in the invention can be availed of through the medium of any suitable mechanical equivalents for the parts shown, as circumstances or the judgment of those skilled in the art may dictate, without departing from the essential features of the invention.

The cutting blade or edge may be formed integrally with the releaser plate, as shown in Fig. 3, in which figure the releaser lettered *H'* has a sharp edge serving as the rotary cutter. In this figure the rotary frame lettered *E'* has its shaft *p'* mounted in a movable box *K* working in a slot *P* in a fixed bracket *L'*, and the stop *J'* on the frame engages a fixed stop *I'* at the top of the casing. The gearing lettered *F'* is identical with that before described.

Fig. 4 shows a modification in which swinging brackets *L''*, carrying the shaft *p''* of the frame *E''*, are supported by springs *Q*, the other portions of the cutter being identical with those described with reference to Figs. 1 and 2, except that the rotary frame has a cross piece *o'* carrying the knife *C''* and a separate cross piece *o''* carrying the releaser *H''*, these two pieces being united to rotate together by a screw *R*. The stops *J''* are carried by the pieces *o''*.

In Fig. 3 movable links *R'* retain the wheels and pinions of the gearing *F'* in position. In Fig. 4 like links *R''* perform the same function for the gearing *F''*.

What I claim is—

1. In a cigar tip cutter, a casing provided with a tip hole, a rotary cutter within said casing and moving past said hole, means for driving said cutter, and interengaging stops, the one connected to said casing and the other connected to said rotary cutter for preventing rotation of the latter, in combination with a movable releaser connected to one of said stops for moving it, disposed opposite said hole, moved by the insertion of a cigar therein, and when so moved disengaging said stops, whereby the rotary cutter can rotate,

said releaser movable laterally of and away from said hole, and thereby permitting unimpeded insertion of the cigar in the hole.

2. In a cigar tip cutter, a casing having a tip hole, a rotary cutter in said casing and moving past said hole, means for driving said cutter, and interengaging stops, the one connected to said casing and the other connected to said rotary cutter for preventing rotation of the latter, in combination with an inwardly movable releaser connected to one of said stops for moving it, disposed opposite said hole, moved inwardly by the insertion of a cigar therein, and when so moved disengaging said stops, whereby the rotary cutter can rotate, said releaser movable laterally of and away from said hole, and thereby permitting unimpeded insertion of the cigar in the hole.

3. In a cigar tip cutter, a casing having a tip hole, a rotary cutter within said casing and moving past said hole, means for driving said cutter, and interengaging stops, the one connected to said casing and the other connected to said rotary cutter for preventing rotation of the latter, in combination with a rotary movable releaser connected to one of said stops for moving it, disposed opposite said hole, moved by the insertion of a cigar therein, and when so moved disengaging said stops, whereby the rotary cutter can rotate.

4. In a cigar tip cutter, a casing having a tip hole, a rotary cutter in said casing and moving past said hole, means for rotating said cutter, and interengaging stops, the one connected to said casing and the other connected to said rotary cutter for preventing rotation of the latter, in combination with a rotary releaser connected to said rotary cutter and to one of said stops for moving the latter, said releaser disposed opposite said hole, moved by the insertion of a cigar therein, and when so moved disengaging said stops, whereby the rotary cutter can rotate.

5. In a cigar tip cutter, a casing having a tip hole, a rotary cutter in said casing and moving past said hole, means for driving said cutter, and a rotary frame connected to said rotary cutter, in combination with interengaging stops preventing rotation of said cutter, the one a stationary stop carried by the casing, and the other a stop carried by said rotary frame and movable out of engagement with said stationary stop, and a movable releaser connected to said stop carried by said rotary frame for moving it, disposed opposite said hole, moved by the insertion of a cigar therein, and when so moved moving said stop carried by said rotary frame out of engagement with said stationary stop, whereby the rotary cutter can rotate.

6. In a cigar tip cutter, a casing having a tip hole, a rotary cutting blade movable past

said hole, and a spring driving said blade, in combination with an inwardly movable rotary frame carrying said blade, interengaging stops preventing rotation of said frame, the one carried by the latter and the other carried by said casing, and a releasing plate carried by said frame opposite said hole, said plate moving inwardly when a cigar is inserted in said hole, and when moved moving said frame and thereby disengaging said stops, whereby rotation of said frame is permitted.

7. In a cigar tip cutter, a casing having a tip hole, a rotary cutting blade moving past said hole, and a spring for driving said blade, in combination with a rotary frame carrying said blade and movable away from said hole, a movable bracket carrying said rotary frame, a fixed stop carried by said casing, a rotary stop carried by said rotary frame and engaging said fixed stop, and a plate fixedly connected to and moving with said rotary frame, disposed opposite said hole and moved when a cigar is inserted in the latter, whereby when said plate is moved it moves said frame, and the stop carried thereby is disengaged from said fixed stop and the frame can rotate.

8. In a cigar tip cutter, a casing having a tip hole, in combination with a depressible rotary frame E, a movable bracket L carrying said frame, a cutting blade on said frame movable past said hole, a plate on said frame opposite said hole, a stationary stop I carried by said casing, a stop J fixedly mounted on said frame and engaging said stop I when the frame is in one position and disengaging therefrom when the frame is moved, a spring D rotating said frame, and gearing F between said frame and spring, whereby when a cigar is inserted in said hole, said frame will be moved, said stops disengaged, and the frame can rotate to cut the cigar.

9. In a cigar tip cutter, a casing having a tip hole, in combination with a rotary frame E, a knife blade carried thereby, a movable bracket L carrying said frame, a plate H on said frame opposite said hole, a stop I carried by said casing, a stop J carried by said frame, engaging said stop I and preventing rotation of the frame, and when the frame is moved disengaging from said stop and permitting rotation of the frame, a spring D driving said frame and moving the latter and said bracket toward said hole, and gearing F between said spring and frame for communicating the tension of the spring to the latter.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

WILLIAM HENRY CAMPBELL.

Witnesses:

GEORGE H. FRASER,
THOMAS F. WALLACE.