

June 30, 1925.

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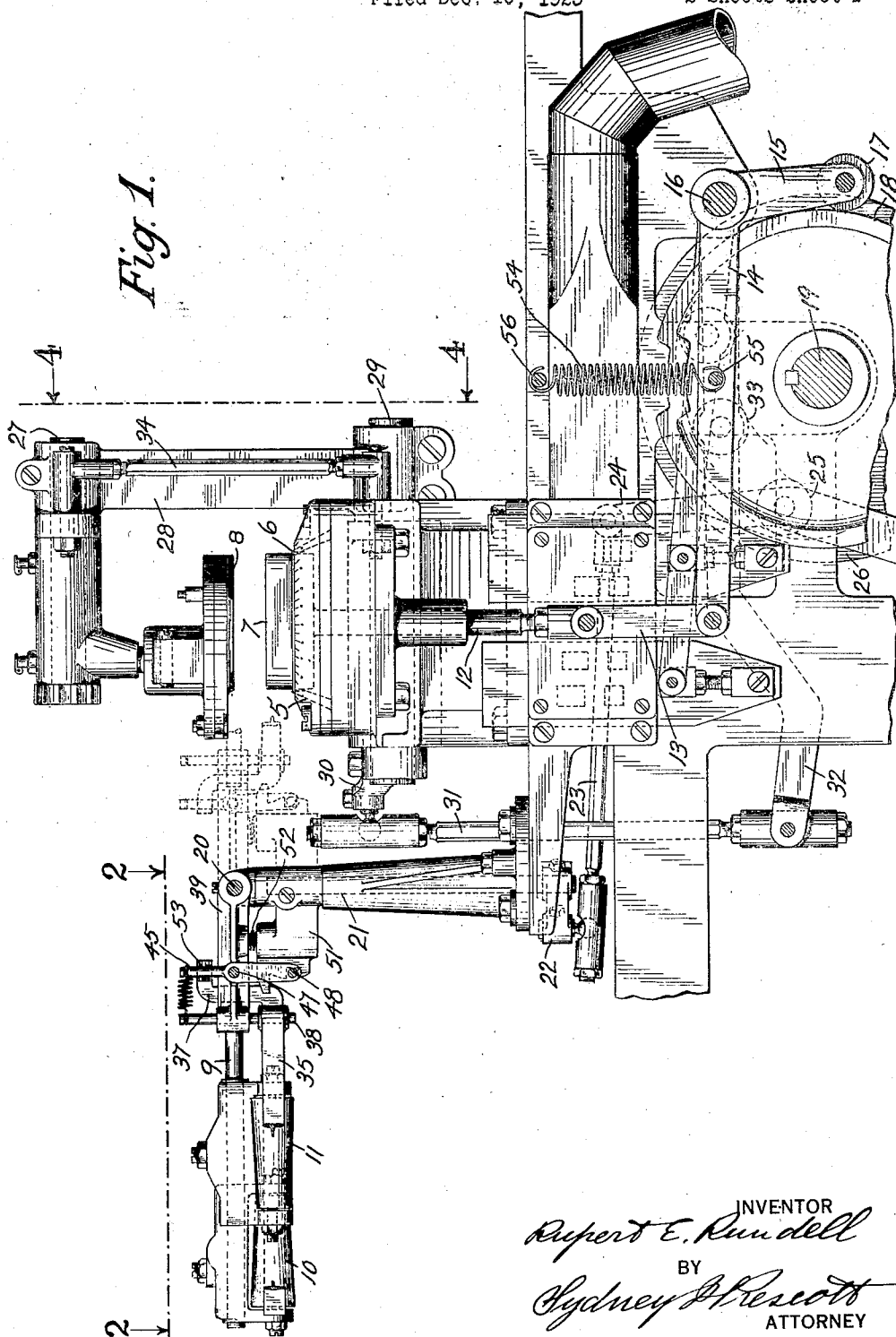
R. E. RUNDELL

SAFETY CIGAR WRAPPER CUTTER

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Fig. 1.



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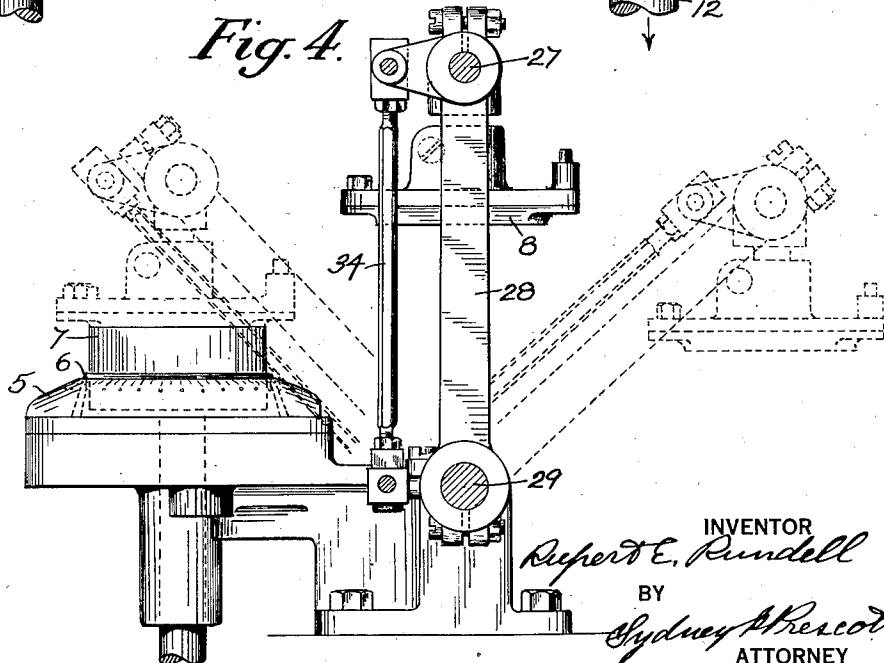
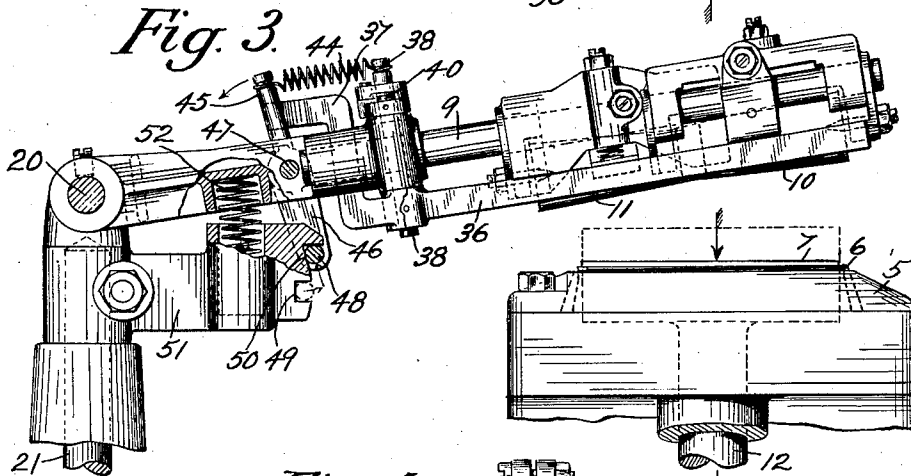
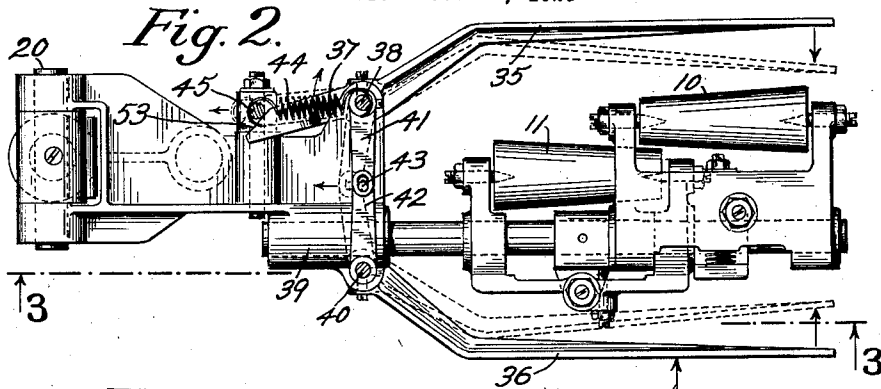
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UNITED STATES PATENT OFFICE.

RUPERT E. RUNDELL, OF ROCKVILLE CENTER, NEW YORK, ASSIGNOR TO INTERNATIONAL CIGAR MACHINERY COMPANY, A CORPORATION OF NEW JERSEY.

SAFETY CIGAR-WRAPPER CUTTER.

Application filed December 10, 1923. Serial No. 879,737.

To all whom it may concern:

Be it known that I, RUPERT E. RUNDELL, a citizen of the United States, residing at Rockville Center, county of Nassau, and State of New York, have invented a new and useful Improvement in Safety Cigar-Wrapper Cutters, of which the following is a specification.

This invention relates to a safety cigar wrapper cutter for cigar machines.

In certain cigar making machines heretofore known, a tobacco leaf is spread by an operator on a cutting bed having a die which the leaf overlies as it is placed in position to be operated upon. Then a coacting device consisting of one or two rollers passes over the die and cuts a leaf-section from the leaf. The leaf-section is then removed from the cutting bed to be applied, either as a binder in the formation of a cigar bunch, or as a wrapper in the formation of a cigar from a cigar bunch. The removal of the leaf-section is accomplished by lifting that part of the cutting bed which lies within the die to a leaf-section carrier which momentarily occupies a position directly over the cutting bed just after the rollers have performed their duty and retreated. At the speed of operation of these machines, the operator has but approximately five seconds of time in which to spread a leaf on the cutting bed, and remove her hands therefrom, before the rollers come into action and retreat, and the lifting of the cut leaf-section is effected. Heretofore, the movement of the cutting rollers and the movement of the bed section which lifts a leaf section to the carrier, have both been positive. In certain machines, however, a safety device has been applied to the machine element carrying the cutting rollers which stopped the machine when the operator failed to remove her hands from the cutting bed at the proper time, and said safety device came into contact therewith. No such device, however, has heretofore been devised which would prevent injury to the operator's hands if caught between the elevating section of the cutting bed and the leaf-section carrier. Nor was the former satisfactory because it did not provide a positive safeguard against injury to the operator's hands, and it reduced the output of the machine by more or less frequent stoppage.

The main object of the present invention

is the production of a safety cigar wrapper cutter or binder cutter which cannot injure the hands of a careless or slow operator and which does not reduce the output of the machine by reason of more or less frequent stoppage. With this and other objects not specifically mentioned in view, the invention consists in certain constructions and combinations which will be hereinafter fully described and then specifically set forth in the claims hereunto appended.

In the accompanying drawings, which form a part of this specification and in which like characters of reference indicate the same or like parts, Fig. 1 is a front elevation of a device constructed in accordance with the invention; Fig. 2 is a plan view of that part of the device shown in Fig. 1, which is indicated by the line 2—2, though the part is reversed; Fig. 3 is a side elevation of the structure shown in Fig. 2; and Fig. 4 is an end elevation of the structure shown in Fig. 1.

In carrying the invention into effect, there is provided the usual cutting bed and the usual means for cutting a leaf-section on said bed and removing it therefrom; and there is further provided mechanism operative without machine stoppage for incapacitating said means when an obstruction—such as one or both of an operator's hands—rests on said bed, and whereby it is rehabilitated when said obstruction is removed. These means and mechanism may be widely varied in construction within the scope of the claims, for the particular device selected to illustrate the invention is but one of many possible concrete embodiments of the same. The invention, therefore, is not to be restricted to the precise details of the structure shown and described.

Referring to the drawings, 5 indicates generally a cutting bed of the usual type provided with a cutting die 6 also of the usual type, and with an elevating section 7 lying within and of the same contour as the die 6. There is further provided a leaf-section carrier 8, of well known construction and operation.

Coacting with the die 6 is a swinging arm 9 carrying two rollers 10—11, which, at the proper time, roll over the die 6 and cut a leaf-section from a tobacco leaf previously spread on the bed 5.

The elevating section 7 is mounted on the

top of a plunger 12 to the lower end of which is pivoted one end of a link 13, the other end of this link being connected to a bell-crank lever 14—15 fulcrumed at 16 to the frame of the machine. The arm 15 carries a cam bowl 17 tracking on the periphery of a cam 18 mounted on the shaft 19, which is one of the main cam shafts of the cigar machine in connection with which the device is used.

The arm 9 is pivoted at 20 to the upper end of a rock shaft 21 and to the lower end of this rock shaft is fixed an arm 22 pivotally connected to a drag link 23 also pivotally connected to a cam lever 24 carrying a cam bowl 25 tracking in the face groove formed in the cam 26 fast on the shaft 19 before referred to. The leaf-section carrier 8 is mounted on a stud 27 carried on the upper end of an arm 28 clamped to one end of a shaft 29 journaled in the frame of the device. The shaft 29 carries at its opposite end an arm 30 pivotally connected to a link 31 which is also pivoted to a cam lever 32 carrying a cam bowl 33 tracking in a suitable groove in a cam fast on the shaft 19 before referred to. Throughout its travel, the operating face of the leaf-section carrier 8 is kept in horizontal position by means of a parallel-motion device indicated generally at 34.

The structure so far described and its operation are both old and well known in the art, and since a more detailed description of the same is not necessary to a full understanding of the present invention, it is omitted in the interest of brevity and clearness.

When the operator spreads a leaf on the cutting bed 5, the arm 9 and the leaf-section carrier 8 are both clear of the same. When the leaf has been spread on the cutting bed, the rollers 10—11 roll over the die 6 to cut out a leaf-section and then retreat. Immediately thereafter the leaf-section carrier 8 swings into position over the elevating section 7, and the latter rises to transfer the cut section from the cutting bed to the carrier.

To prevent injury to the hands of the operator, if she has not removed them from the cutting bed when the above mentioned actions occur, there is provided mechanism, operative without machine stoppage, for incapacitating that part of the means for cutting a leaf-section on the bed and removing it therefrom which effects the cutting of the leaf-section, or for incapacitating that part of said means which effects the removal of the leaf-section, or both. As shown, this mechanism includes a trip device operative when the operator's hands or any other obstruction interferes with the normal cutting action, and a spring yieldingly operative when the operator's hands or other obstruction

interfere with the normal removing action; and the trip device is carried by that part of the general leaf-section cutting and removing means which effects the cutting of the leaf-section, while the spring is carried by that part which effects the removal of the leaf-section. The trip device referred to includes two trip arms 35—36, the trip arm 35 being a part of a lever 35—37 fulcrumed on a short shaft 38 journaled in a bracket 39 which carries the arm 9 before referred to. The trip arm 36 is fulcrumed on a short shaft 40 journaled in the bracket 39. To the upper ends of the short shafts 38 and 40 are respectively secured arms 41 and 42 which have a loose pin and slot connection at 43 whereby movement of either of the trip arms 35—36 will move the other. Around the upper end of the shaft 38 is hooked one end of a tension spring 44, the other end of this spring being hooked around the upper end of a lever 45—46 which is fulcrumed at 47 to the bracket 39. The lower arm 46 carries a latch pin 48 adapted to engage one of two notches 49—50 formed in the bracket 51 located beneath the bracket 39 and clamped to the rock shaft 21. A thrust spring 52 lies between the brackets 39 and 51, its ends being enclosed in recesses in said brackets, as clearly shown in Fig. 3. The tendency of the spring 52 is to throw the arm 9 upwardly. When the devices are in their normal position, however, the latch pin 48 is in engagement with the lower notch 49, and the rollers 10—11 normally engage the die 6 while the latch pin is in engagement with the notch 49. If, however, the operator has not removed her hands from the cutting bed as the rollers approach the same, the trip arm 36 will be stopped by the obstruction and the shaft 38 will be rocked. When this occurs, the cam face 53 of the arm 37 pushes the upper end of the lever 45 rearwardly against the action of the spring 44. This movement disengages the latch pin 48 from the notch 49 and permits the spring 52 to come into action to lift the arm 9 and cause the latch pin 48 to engage the notch 50. The rollers are thus thrown up over the operator's hands, if she neglects to remove them as soon as touched by the trip arms 35 or 36. Thus, the leaf-section cutting means is incapacitated whenever the operator's hands rest upon the cutting bed when the rollers 10—11 begin their movement across the die 6. It will be understood that the trip arm 35 acts when the arm 9 is swinging in one direction, and the trip arm 36 acts when it is swinging in the other direction. Whenever, as the rollers approach the cutting die, the operator's hands are resting on the cutting bed and the latter operate one of the trip arms, the operator immediately removes her hands from the cutting bed and presses the arm 9 downwardly, so that the latch pin 48

will again come into normal engagement with the notch 49. In that event, the cutting of the leaf-section is effected during the reverse or retreating movement of the rollers 10 and 11. Thus, the operator's hands are protected by a temporary incapacitation of this part of the mechanism, immediately followed by rehabilitation of the same, and without machine stoppage.

10 To protect the operator's hand when they are lying on the cutting bed at the time the elevating section 7 moves upward to transfer a cut section from the cutting bed to the carrier 8, there is provided a spring 54
15 one end of which is hooked over a pin 55 fast in the arm 14 of the bell-crank lever 14-15. The other end of this spring is hooked over a pin 56 fast in the frame of the machine. It is this spring which raises
20 the elevating section 7 and while it exerts force enough to raise the section 7 when its movement is unobstructed, it lacks sufficient force to injure the operator's hands if caught between the upper surface of the section 7 and the lower surface of the carrier
25 8. Thus, when an operator's hands are caught between the section 7 and the carrier 8, the leaf-section removing means is temporarily incapacitated by the yielding of the spring 54, while immediately after the
30 withdrawal of her hands the removing means is rehabilitated. It is to be understood that while the invention is illustrated in connection with binder cutting and removing means, it is also applicable to wrap-
35 per cutting and removing means.

In view of the foregoing, a detailed description of the operation of the device is deemed unnecessary and is therefore omitted
40 in the interest of brevity.

What is claimed is:

1. The combination with a cutting bed, of means for cutting a leaf-section on said bed, means for removing it therefrom, and mechanism operative without machine stoppage
45 for incapacitating said cutting bed when an obstruction rests on said bed and whereby it is rehabilitated when said obstruction is removed.

2. The combination with a cutting bed, of means for cutting a leaf-section on said bed, means for removing it therefrom, and mechanism operative without machine stoppage
50 for incapacitating said cutting bed when an obstruction rests on said bed and whereby it is rehabilitated when said obstruction is removed, said mechanism including a trip device operative when said
55 obstruction interferes with the normal cutting action of said means.

3. The combination with a cutting bed,

of means for cutting a leaf-section on said bed, means for removing it therefrom, and mechanism operative without machine stoppage
65 for incapacitating said cutting bed when an obstruction rests on said bed and whereby it is rehabilitated when said obstruction is removed, said mechanism including a spring yieldingly operative when
70 said obstruction interferes with the normal removing action of said means.

4. The combination with a cutting bed, of means for cutting a leaf-section on said bed, means for removing it therefrom, and mechanism operative without machine stoppage
75 for incapacitating said cutting bed when an obstruction rests on said bed and whereby it is rehabilitated when said obstruction is removed, said mechanism including a trip device operative when said obstruction interferes
80 with the normal cutting action of said means, and said mechanism including a spring yieldingly operative when said obstruction interferes with the normal removing action of said means.

5. The combination with a cutting bed, of means for cutting a leaf-section on said bed, means for removing it therefrom, and mechanism operative without machine stoppage for incapacitating said
90 cutting bed when an obstruction rests on said bed and whereby it is rehabilitated when said obstruction is removed, a part of said mechanism being associated with that part of said means which effects the cutting of the leaf-section, and
95 another part of said mechanism being associated with that part of said means which effects the removal of the leaf-section.

6. The combination with a cutting bed, of means for cutting a leaf-section on said bed, means for removing it therefrom, and mechanism operative without machine stoppage
100 for incapacitating said cutting bed when an obstruction rests on said bed and whereby it is rehabilitated when said obstruction is removed, said mechanism including a trip device carried by that part of said means which effects the cutting of the leaf-section.

7. The combination with a cutting bed, of means for cutting a leaf-section on said bed, means for removing it therefrom, and mechanism operative without machine stoppage
110 for incapacitating said cutting bed when an obstruction rests on said bed and whereby it is rehabilitated when said obstruction is removed, said mechanism including a spring carried by that part of said means which effects the removal of the leaf-section.

In testimony whereof, I have signed my name to this specification.

RUPERT E. RUNDELL.