

Aug. 30, 1932.

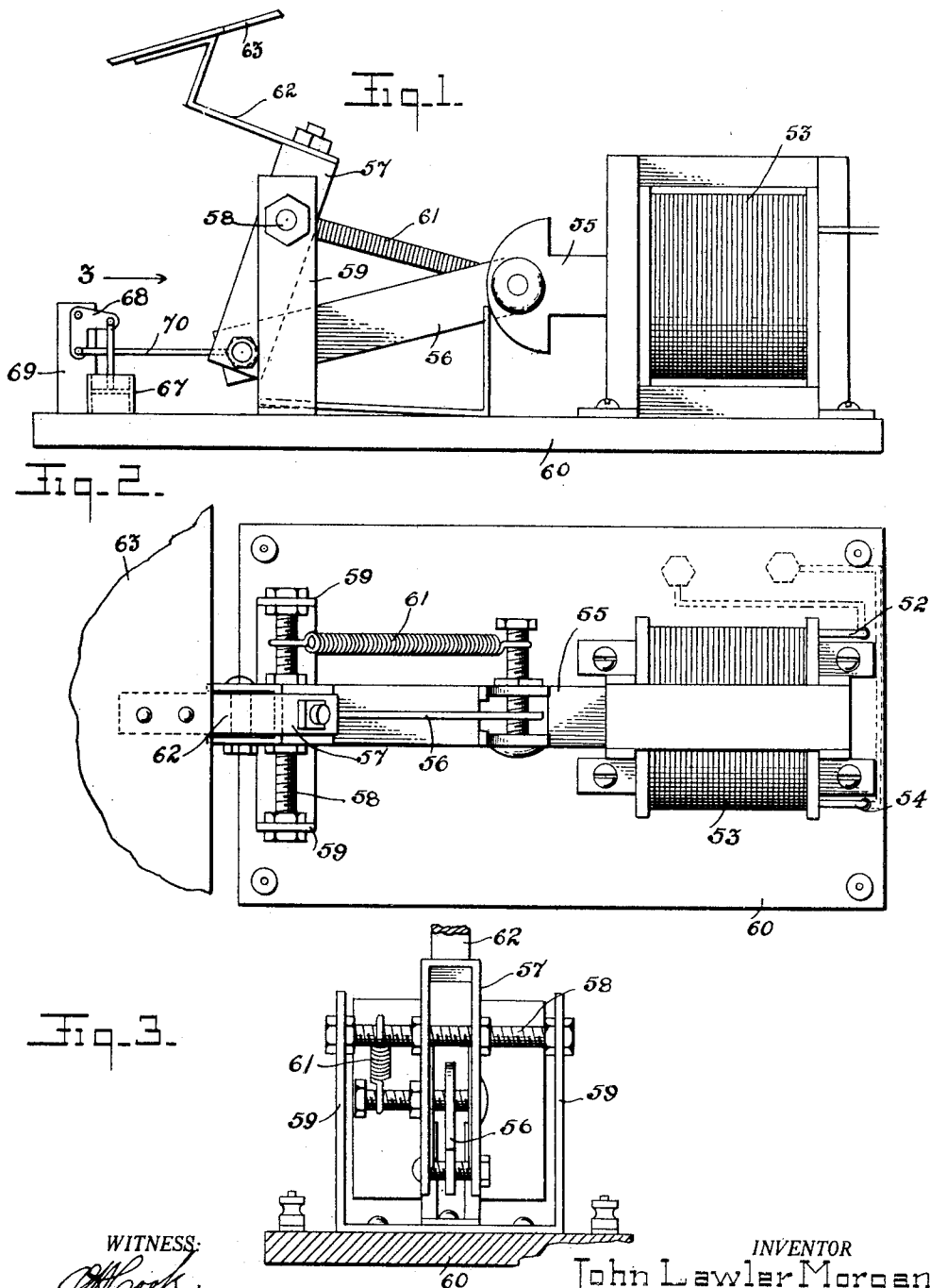
J. L. MORGAN

1,874,113

CIGAR GRADING MACHINE

Filed May 1, 1931

3 Sheets-Sheet 1



WITNESS:

W. Cook
James D. Brown

INVENTOR

John Lawler Morgan

BY

Joshua H. Foster
His ATTORNEY

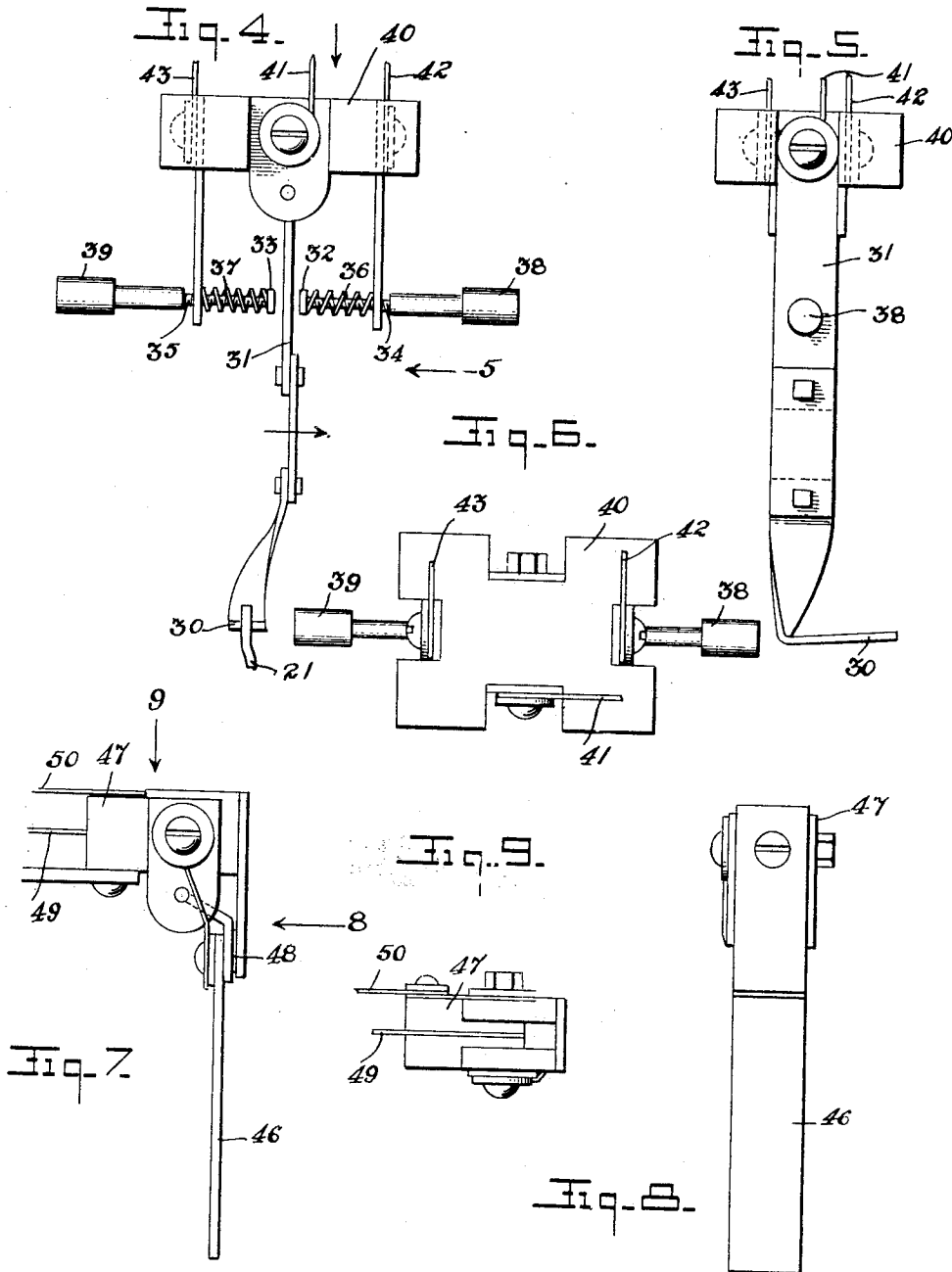
Aug. 30, 1932.

J. L. MORGAN
CIGAR GRADING MACHINE

1,874,113

Filed May 1, 1931

3 Sheets-Sheet 2



WITNESS:

W. Cook
Erma C. Brown

INVENTOR
John Lawler Morgan

BY
Joshua H. H. H. H.
ATTORNEY

Aug. 30, 1932.

J. L. MORGAN

1,874,113

CIGAR GRADING MACHINE

Filed May 1, 1931

3 Sheets-Sheet 3

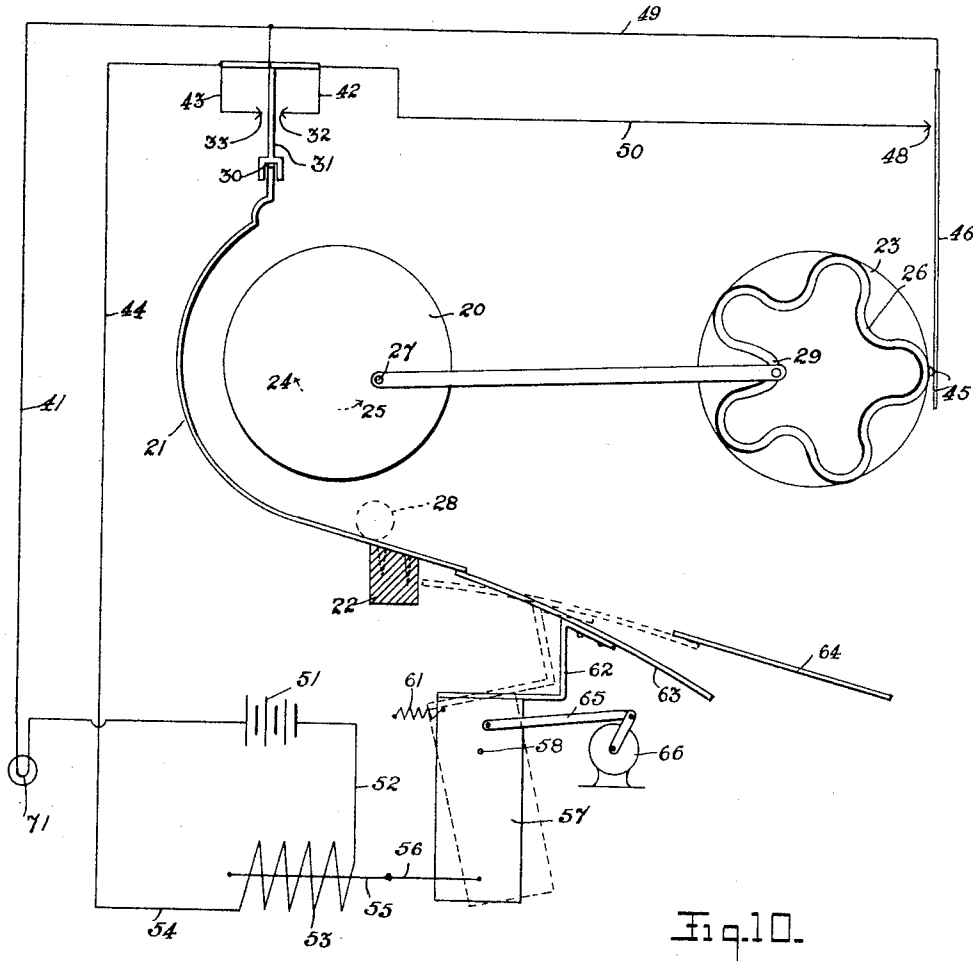


Fig. 10.

WITNESS:

W. Hook
James D. Brown

INVENTOR

John Lawler Morgan

BY

Joshua H. H. H.
Hie ATTORNEY

UNITED STATES PATENT OFFICE

JOHN LAWLER MORGAN, OF GLENDORA, NEW JERSEY, ASSIGNOR TO JESSE SATENSTEIN, OF NEW YORK, N. Y.

CIGAR GRADING MACHINE

Application filed May 1, 1931. Serial No. 534,401.

This invention relates to cigar grading machines and has for an object to provide improved means for calibrating cigars as they are being mechanically rolled and for discharging and counting the cigars, coupling with the required calibration the discharging without counting, to another receptacle, cigars either over- or under-running the elected calibration.

10 A further object of the invention is to provide, in combination with a cigar rolling organization, a chute leading away from the cigar rolling organization with a gate therein with electro-magnetic means for main-
15 taining the gate in open position to discharge unacceptably calibrated cigars to one receptacle and to close, when cigars of the acceptable calibration have been rolled, and in the closing to actuate a counter.

20 A further object of the invention is to provide in combination with a cigar rolling machine, a plurality of electric switches, some of which are mechanically operated by the mechanism of the rolling motion, and others,
25 which are actuated by the size of the cigar being rolled, to close a circuit when the cigar being rolled either over- or under-runs the required size, the effect being such that each defective cigar is discharged, through mechanism controlled by said circuit to a discard
30 receptacle and that cigars of acceptable size are discharged to a different receptacle and counted.

35 A further object of the invention is to provide the necessary mechanical and electrical parts and organizations for carrying into effect the previously stated objects.

40 The invention therefore comprises a chute in combination with a cigar rolling machine with a gateway in said chute operated by said electromagnetic means to open and close according to the passage of a perfect or imperfect cigar with a counter attached operated by the opening and closing of the gate.

45 My invention is directed to other objects and possesses other features of novelty and advantage, some of which, together with the foregoing, will be hereinafter set forth.

In the drawings:—

50 Figure 1 is a view in side elevation of the

electro-magnetic means for actuating the gate,

Figure 2 is a top plan view of the device,

Figure 3 is a view of the device in end elevation as indicated by arrow 3 at Figure 1,

Figure 4 is a view in side elevation of the switches actuated by the calibrating mechanism,

Figure 5 is a view of the switch mechanism in edge elevation as indicated by arrow 5 at Figure 4,

Figure 6 is a top plan view of the switch mechanism as indicated by arrow 6 of Figure 4,

Figure 7 is a view in side elevation of the switch actuated by the cigar rolling mechanism.

Figure 8 is a view of the last mentioned switch in edge elevation as indicated by arrow 8 at Figure 7,

Figure 9 is a top plan view of said last mentioned switch mechanism as indicated by arrow 9 at Figure 7, and

Figure 10 is a schematic view of the organization.

Like characters of reference indicate corresponding parts throughout the several views.

The present invention is adapted for cooperation with a cigar rolling machine, of a well known type, wherein a roller 20 is employed oscillating in spaced relation to the cigar softening concave 21. No attempt has been made to show the exact construction of either this roller 20 or the concave 21 or the supporting means 22 which is merely illustrative of some fixed support for the concave. This roller 21 is ordinarily oscillated by a cam structure and a cam is shown carried by the wheel 23, there being no attempt to make this cam correspond to the identical type of cam usually employed. This roller 20 oscillates a predetermined number of times through a pre-determined arc which arc may be represented by the arrows 24 and 25 and this oscillation is provided by the cam grooves 26. After a pre-determined number of oscillations, within this arc, the roller overruns this oscillation moving as to the point 27 to discharge the cigar indicated in dotted lines

at 28. This overrun is provided, in the structure shown, by a deeper curve 29 of the cam slot 26. Again it is to be understood that this particular formation is not in accord with the actual construction, but is only illustrative.

The concave 21 is yieldingly mounted, either being resilient in itself or supported by a spring and at its upper end makes sliding engagement with the fork 30 of the switch lever 31. The concave 21 is so positioned that it will exert exactly the amount of yielding pressure required to roll acceptable sizes between said concave and the roller 20.

If the cigar being rolled is under size, then the concave will resiliently move toward the roller to lesser amplitude than normal whereas, if the cigar is over size, the concave will move away from the roller to a greater amplitude than normal. In the former movement, the switch lever 31 will move in the direction indicated by the arrow (see Fig. 4) and will engage the contact 32. If the cigar being rolled overruns the size required, the switch lever 31 will move in the direction opposite to the arrow and will engage the contact 33. These contacts 32 and 33 are respectively carried by threaded bars 34 and 35 with interposed springs 36 and 37 and controlled, adjustably, by knurled heads 38 and 39. The structure of these switch mechanisms is carried upon an insulated block 40 and the switch lever 31 is electrically connected with the line 41 while the contacts 32 and 33, through the conductors 42 and 43, are connected with the line 44.

Some part of the calibrating mechanism, as for instance the lug 45 upon the cam wheel 23 is positioned to contact with the switch lever 46. This switch lever 46 is mounted upon an insulating block 47 (see Figs. 7, 8, and 9) and is adapted to engage the contact 48. Through the line 49, the switch lever 46 is in connection with the line 41 and through the line 50, the contact 48 is in connection with the line 44.

The line 41 leads to one side of the source of electrical energy (see Fig. 10) from the other side of which a line 52 leads to one side of the solenoid coil 53, the opposite side of the solenoid coil being connected by the line 54 with the line 44.

The solenoid coil is provided with a core 55 connected by the link 56, with a lever 57. The lever 57 is fulcrumed at 58 upon the standards 59, which said standards, together with the solenoid are carried upon the base 60. A spring 61 serves to draw the core 58 outwardly from the coil 53, the inward movement being in response to the energization of the coil 53 in the usual well known manner.

The lever 57 carries an arm 62 upon which is mounted a plate 63. This plate 63 is properly positioned and proportioned to serve as a bridge between the lower end of the con-

cave 21 and the section 64 of the chute which leads to any receptacle which may be provided for the receipt of acceptably calibrated cigars. To the lever 58 is also connected a link 65 which extends to a counting mechanism 66 of any usual and ordinary type which may be actuated to register one unit at each oscillation of the lever. The oscillation of the lever will be explained more fully hereinafter.

Also mounted at any convenient point, as upon the base 60, is a dash pot 67. A bell crank lever 68 is fulcrumed upon an upright 69 with a link 70 connecting the bell crank lever with the lever 57 so that at each oscillation of the lever 57, the dash pot will be actuated. No particular type of dash pot is to be understood of the illustration shown at Figure 1 and the illustrated dash pot is merely shown for the purpose of indicating a dash pot organization which may be located anywhere about the structure as necessity and engineering may dictate.

As a resistance in the electrical line, also for the purpose of indicating the action of the mechanism, a lamp 71 is in series in the line 41. This lamp could be located elsewhere and introducing into the line 41 is merely by way of illustration.

In operation with the parts arranged as at Fig. 10, a cigar of the approved calibration being rolled between the roller 20, and the concave 21, will have no effect upon that concave other than the ordinary effect and will maintain such concave in normally spaced relation to the roller. If however, the cigar being rolled is over-size, then the concave 21 will be moved away from the roller which will have the effect of causing the switch lever 31 to make contact with the contact 33. If the cigar being rolled is under size, then the concave will move the switch lever 31 into engagement with the contact 32.

At all times during the actual rolling of the cigar, the switch lever 46 closes the circuit at 48 so that the position of the lever 57 and the bridge piece 63 will be as shown with the bridge depressed below the section 64 of the chute. When the cigar has been completely rolled and to be discharged, as indicated at 28, then the lug 45 will engage the switch lever 46 and break the circuit at this point. If the cigar is of the required calibration so that the switch 31 is in engagement with neither the contacts 32 or 33, then the whole circuit will be opened and the solenoid coil will be deenergized whereupon the spring 61 will throw the lever 57 to the dotted line position and the bridge 63 will bridge the gap and the discharged cigar will roll over this bridge to the chute 64 and be discharged to the receptacle provided for the acceptable cigars. The bridge piece will remain in this position until the wheel 23 is rotated sufficiently to again release the

switch lever 46 into closing contact with the contact 48, whereupon the circuit will again be closed, the solenoid core attracted and the lever 57 and bridge piece 63 thrown to full line position. The oscillation of this lever and bridge piece will actuate the counter to register one. When however, the cigar being rolled is either over or under size, then the switch lever 61 will make contact with the contacts 32 and 33 so that the opening of the switch 46 will not open the circuit and therefore, when the cigar 28 is discharged, the bridge piece will not be oscillated into the bridging position, but the cigar will roll down the bridge piece and under the chute portion 64 to such other receptacle as may be provided for receiving the unacceptable cigars.

During these operations, the lever 57 is not oscillated, consequently the counter 66 is not actuated and the unacceptable cigars are therefore not counted. The light 71, being in circuit with the line 41 will be lighted at all times while the circuit is closed, but at the discharge of each acceptable cigar when the circuit is opened, the light 71 will be extinguished and the twinkling of this light will indicate to the operator the operation of the machine.

So that the bridge piece may remain in either closed or open position for sufficient length of time to insure the passage thereover of the cigar, the dash pot 67 is employed and will be regulated to move freely in either direction and with resistance in the opposite direction or resistance in both directions as the operating requirements may make desirable.

Of course, the cigar grading mechanism may be modified in various ways without departing from the invention herein set forth and hereinafter claimed.

The invention is hereby claimed as follows:—

1. The combination with a cigar rolling machine embodying a resiliently mounted concave and spaced roller, means for oscillating the roller, a chute leading away from the concave and provided with a movable bridge, electro-magnetic means for moving the bridge, means actuated in timed relation with the roller for controlling the electro-magnetic means, and means associated with the concave for independently controlling the magnetic means.

2. The combination with a cigar rolling machine embodying a roller and spaced concave, means to oscillate the roller, a chute leading away from the concave and provided with a gap, a bridge piece for the gap, a lever associated with and adapted to move the bridge piece, electro-magnetic means for actuating the lever, means associated with the concave for controlling the electro-magnetic means, and means controlled by the

roller actuating mechanism having independent control of the electro-magnetic means.

3. The combination with a cigar rolling machine embodying a roller and a spaced concave, a switch actuated by the concave, an electric circuit adapted to be closed by the switch at opposite limits of movement, electro-magnetic mechanism in the circuit, a lever fulcrumed adjacent the electro-magnetic means and actuated thereby, means carried by the lever adjacent the concave to direct a cigar discharged from the concave in accordance with the position of the lever, and independent means mechanically operated in step with the roller for controlling the electro-magnetic means.

4. The combination with a cigar rolling machine embodying a roller and spaced concave, said concave being yieldingly mounted, a switch mechanism actuated by the movement of the concave in either direction from normal, an electric circuit adapted to be closed by the movement of the switch at either limit of this movement, a solenoid having a movable core, a lever actuated by the movable core, a cigar receiving device carried by the lever and positioned to direct the cigar variously according to the position of the lever, and a switch positively operated by the roller actuating mechanism adapted to exert controlling influence upon the solenoid.

5. The combination with a cigar rolling machine embodying a roller and a spaced concave, a bridge piece positioned to receive a cigar discharged from the concave, a lever connected with the bridge piece and when oscillated move the bridge piece to vary the path of movement of the cigar, a solenoid connected with and adapted to control the oscillation of the lever, an electric circuit including a plurality of switches, one of said switches being mechanically operated by the roller operating mechanism and adapted when open to deenergize the solenoid, and switches, short circuiting said circuit between the first mentioned switch and the solenoid, and associated with the concave, and adapted when moved by the concave to maintain the circuit in closed condition.

6. The combination with a cigar rolling mechanism embodying a roller and spaced concave, a chute leading away from said concave and interrupted by a gap, a bridge piece adapted to close the gap, electro-magnetic means for moving the bridge piece from open to closed position, electric switches actuated in timed relation with the movement of the roller and in accordance with the position of the concave for controlling the electro-magnetic means and a counter connected with the electro-magnetic mechanism adapted to register at each impulse thereof.

7. The combination with a cigar rolling machine embodying a roller and a spaced concave, a chute positioned to receive cigars

from the concave and having a gap therein, a
bridge piece for the gap, a lever supporting
the bridge piece and adapted when oscillat-
ed to vary the path of movement of the cigar,
5 an electro-magnetic mechanism for oscillat-
ing the lever, a counter connected with the
lever, a source of electric energy, a circuit in-
cluding the electro-magnetic means and the
source of energy, and a plurality of switches
10 introduced into the circuit, some of said
switches being positively actuated by the
movement of the machine and others of said
switches being actuated by the position of
the concave determined by the size of the
15 cigar intervening between the concave and
the roller.

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

JOHN LAWLER MORGAN.

20

25

30

35

40

45

50

55

60

65