R. SCHMITT.

CIGAR ROLLING MACHINE.

APPLICATION FILED MAR. 28, 1911.

1,003,298. Patented Sept. 12, 1911.

2 SHEETS—SHEET 1.

Fig. 1.

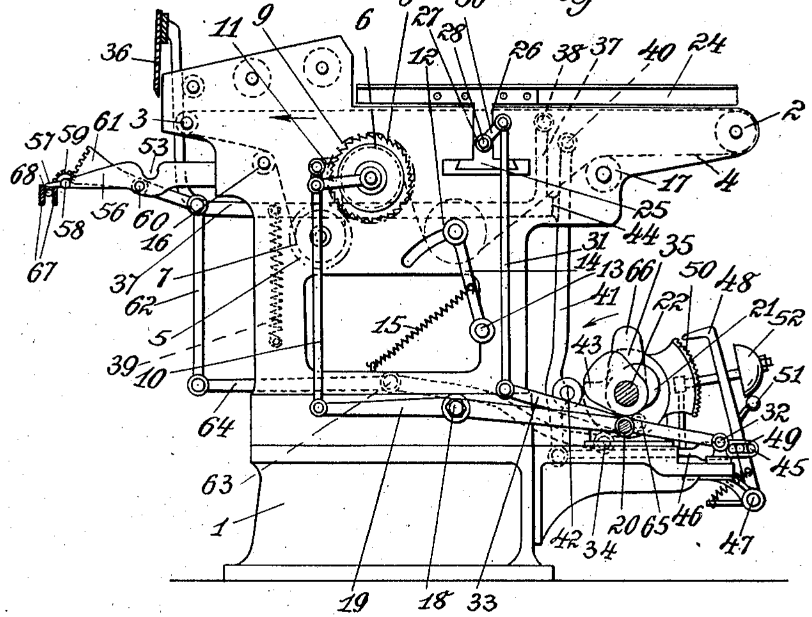
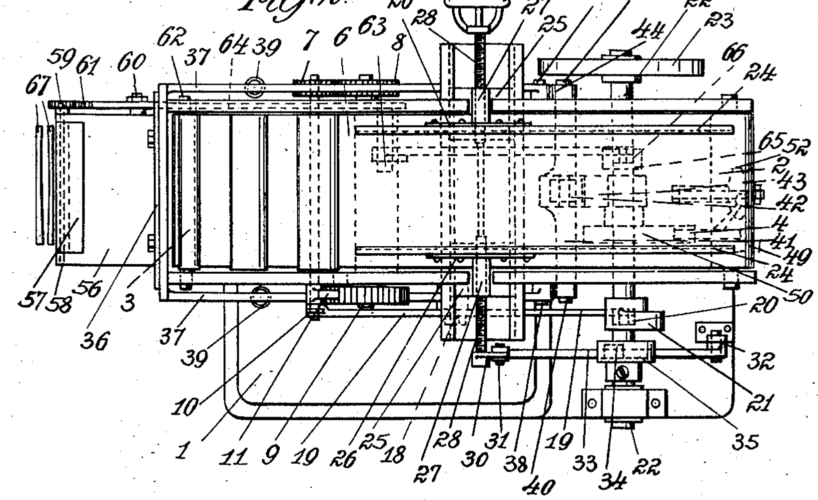


Fig. 2.



Witnesses.

W. Mac Duvall

J. S. Minster

Inventor

R. Schmitt,

by Wilkinson, Fisher & Witherspoon

his Attorneys.

COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

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2 SHEETS—SHEET 2.

Fig. 3.

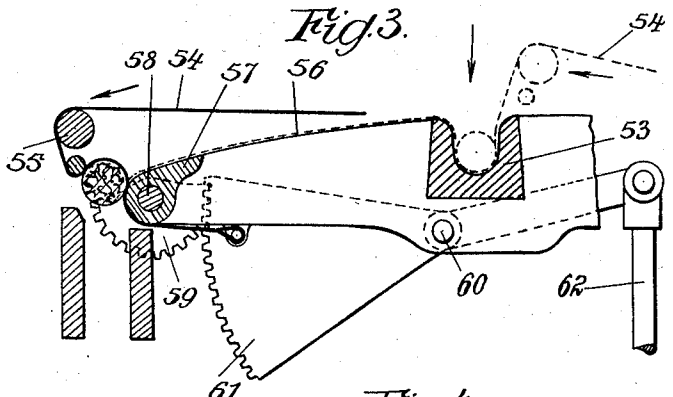


Fig. 4.

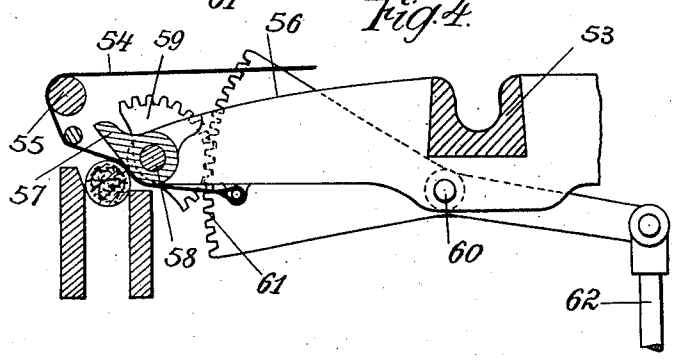
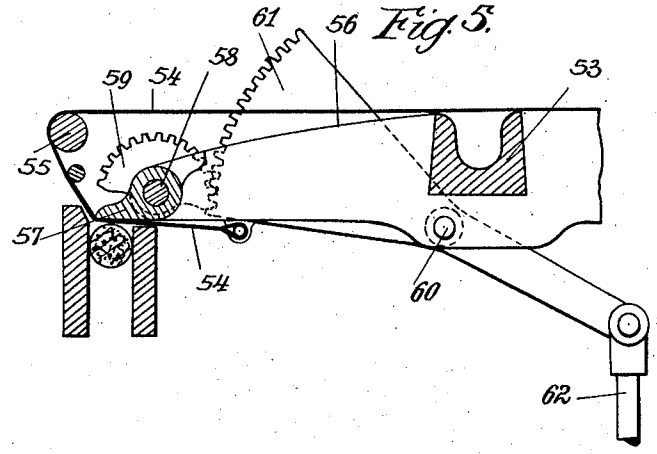


Fig. 5.



Witnesses

M. Max. Durell.

J. S. Sinsta

Inventor

R. Schmitt,

by

Dickinson Dike & Whittemore

his Attorneys.

UNITED STATES PATENT OFFICE.

RUDOLF SCHMITT, OF FRANKFORT-ON-THE-MAIN, GERMANY, ASSIGNOR TO THE FIRM OF MASCHINENFABRIK SCHNARR & SCHMITT, OF FRANKFORT-ON-THE-MAIN, GERMANY.

CIGAR-ROLLING MACHINE.

1,003,298. Specification of Letters Patent. **Patented Sept. 12, 1911.**

Application filed March 28, 1911. Serial No. 617,425.

To all whom it may concern:

Be it known that I, RUDOLF SCHMITT, engineer, a subject of the German Emperor, and resident of Frankfort-on-the-Main, Germany, with the post-office address Rotlintstrasse 45, have invented new and useful Improvements in Cigar-Rolling Machines, of which the following is a specification.

The subject of the present invention is a machine for rolling cigars which constitutes an essential improvement on the machine of this kind hitherto in use.

It has been found in connection with cigar rolling machines that the tobacco during its forward movement on the conveyer band, rubs laterally against the guide strips which determine the length of the roll to be produced, and consequently remains behind at the edge, thus lessening the amount of tobacco provided for each roll. To prevent this, according to the invention, the arrangement is provided that the lateral guide strips give way a little in the transverse direction at the moment the conveyer band begins its intermittent motion, so that the tobacco lies quite free on the band and cannot rub against and be retained by the guide strips. Moreover, in the present invention the device for cutting the tobacco is modified in so far that the actual cutting movement of the blade is not effected compulsorily as heretofore, but is brought into operation by the application of force, *i. e.* by means of a spring or weight. This has the advantage that in the event of any foreign bodies being present in the tobacco and getting jammed under the blade, neither the blade nor its operating mechanism is injured, the foreign body merely holding the blade fast, while the members of the corresponding operating mechanism can keep on running. Arrangement is also made for a signal device to be operated in the event of the blade being stopped, so that the operator's attention is called to the stoppage. Finally, a very serious defect in the known machines is also obviated in the present machine. Hitherto the finished roll has been ejected from the rolling cloth and allowed to fall down freely for further treatment. During ejection, however, it often happens that the roll reopens owing to the elasticity of the tobacco leaves. This reopening is prevented in the present invention by the roll, on being released from the rolling cloth, being pressed by a special device into a guide which prevents the roll from reopening. From this guide the roll is then pressed into the mold in the usual manner. The device for pressing the roll into the guide preferably consists in making use of the front edge of the rolling table, which is pivotally mounted for that purpose and is operated by suitable mechanism.

The accompanying drawings illustrate one form of a cigar rolling machine of this kind, Figure 1 being a lateral elevation of same, and Fig. 2 the corresponding plan. Figs. 3, 4 and 5 show the rolling table on a larger scale, with the movable front edge of same in successive positions.

Two guide rollers 2 and 3, at the rear and front ends of the machine, are mounted on the top of the machine frame 1, over which rollers runs the endless conveyer band 4. Under the upper length of the band lie two rollers 5 and 6 of larger diameter, which are connected together by pinions 7 and 8. The roller 6 carries a ratchet wheel 9 in which engages a pawl 11 mounted on the rocking lever 10. The conveyer band 4 also runs over a roller 12, the axis of which is mounted in a lever 14 pivoting at the point 13. This lever 14 is under the influence of a spring 15, which is adjustably mounted and thus keeps the conveyer band 4 in tension. The band is also guided by two other rollers 16 and 17. The intermittent movement of the conveyer band 4 is effected by means of the pawl 11, the lever 10 of which is connected with the lever 19 pivoting on the fixed point 18. On the free end of this lever is mounted a bowl 20 which runs on the cam 21, which cam is mounted on the main driving shaft 22 of the machine, which shaft carries the belt pulley 23. This pulley may be of the fast-and-loose type, or a coupling clutch can be interposed in the shaft 22.

The guide strips for the tobacco lying on the upper length of the conveyer band 4 are indicated by 24. They rest on flange pieces 26 which are guided transversely in slots 25 and are provided with female-thread sleeves 27. These sleeves 27 are traversed by a threaded spindle 28, the one end of which carries a hand wheel 29 while the other end is secured to a crank 30. One of the sleeves 27 has a left-handed thread

and the other a right-handed thread, and the corresponding parts of the spindle 28 are provided with left-and-right handed threads respectively. A draw-bar 31 engaging with the crank, is connected with a lever 33 adapted to pivot on a fixed point 32. This lever carries at 34, a bowl which runs on the cam 35 mounted on the main shaft 22. In a single revolution of the shaft 22 and therefore of the cam 35, the crank swings up and down once, whereby the sleeves 27, and with them the guide strips 24, are moved apart in a transverse direction and then toward one another again once. The cams are adjusted in such a manner that the outward movement of the two guide strips 24 occurs when the conveyer band 4 executes its movement. The crank 30 can be released from the shaft 28 while for the purpose of setting the machine, the two guide strips 24 are being set at their desired distance apart—corresponding to the length of a roll—by turning the handwheel 29.

The tobacco carried forward by the conveyer band 4 comes under the blade 36 and is cut off by the latter in definite quantities. The blade 36 is mounted on a bent lever 37 pivotally mounted on the frame of the machine at 38. It is under the influence of a spring 39 which endeavors to pull it downward. The spring 39 is adjustable and may, if desired, be replaced by a weight or the like. The movement of the lever 37 carrying the blade 36 is effected by a lever 41 mounted at 40. This carries a bowl 42 which runs on a cam 43, also mounted on the main shaft 22. The lever 41 applies itself, by a pressure surface 44, against a corresponding surface of the bent lever 37, and in consequence of the rocking motion it receives from the cam 43, raises the blade 36. When the bowl 42 sinks on to the deeper portion of the cam 43, the lever 37 rocks under the influence of the spring 39, so that the blade 36 descends and executes its cutting movement. To the lever 41 is also attached a signaling device, which in the present instance consists of a rod 46 with a slotted end 45. In this slot engages a pin 49 mounted on the lever 48 that is adapted to pivot at 47. The lever 48 is bent to the shape of a hook at the top, this hooked end engaging on a toothed quadrant 50 which is also mounted on the main shaft 22. The lever 48 also carries a hammer 51 adapted to strike against a fixed bell 52.

In the event of the blade 36 being prevented from executing its cutting movement, say by the presence of a foreign body in the tobacco, the lever 37 is also arrested and the lever 41, which hangs down vertically, cannot bring its bowl 42 into contact with the deeper portion of the cam 43. Consequently the rod 46 also remains in the position shown in Fig. 1, and during the further movement of the main shaft 22, the toothed quadrant 50 comes in contact with the hooked end of the lever 48 and sets this in vibratory motion, so that the bell 52 rings. If, however, the blade 36 works in the normal manner during its down stroke, the lever 41 is forced by the lever 37 toward the right, with the result that the rod 46 also causes the lever 48 to rock toward the right and thus moves the hooked end 48 of same out of reach of the toothed quadrant 50. In this case the bell remains silent.

The tobacco cut off by the blade 36 drops in the known manner into a mold 53 which is lined with the rolling cloth 54. The roll is then lifted out of the mold by the device 55 in the known manner, rolled on the table 56 and finally released in front by the cloth. The front edge of the rolling table 56 is now pivotally mounted, as can be seen at 57, more particularly from Figs. 3 to 5. It rests on a shaft 58 which carries a toothed quadrant 59 engaging in a larger toothed quadrant 61 adapted to pivot at 60. The quadrant 61 is operated by the drawbar 62 on which engages a lever 64, pivoting at 63, and carrying on its free end a bowl 65 which runs on a cam 66 also mounted on the shaft 22. At each revolution of the shaft 22 the lever 64 rocks up and down once, and thereby causes the quadrant 61 to swing up and down once and swing the movable edge 57 to and fro. Under this edge are two guides 67 for the roll 68, in between which the latter is pressed by the edge 57.

The *modus operandi* of the machine is briefly as follows: The tobacco, spread in the known manner on the conveyer band 4, lies between the two guide strips 24. The conveyer band 4 is moved intermittently by means of the ratchet-wheel 9, and moves the tobacco forward against the blade 36. At the beginning of each period of movement of the band 4, the two guides 24 are moved outward, in consequence of the rotation of the right-and-left spindle 28, and release the tobacco, so that no friction can occur. The blade 36 then cuts off the desired quantity of tobacco, the cutting movement being effected by the spring 39. At each cut the lever 48 is also swung out toward the right and thus sets the signaling device out of action. If, however, the descent of the blade 36 be prevented, say by a foreign body, the lever 48 retains its position as shown, and the quadrant 50 causes the bell to ring. The severed quantity of tobacco is then rolled in the known manner by the rolling cloth 54, and shortly before the roll 68 is released by the cloth 54, the pivotable edge 57 of the rolling table begins to move (Figs. 3 to 5) and presses the roll into the guide

67—before the roll can re-open in consequence of the elasticity of the tobacco—from whence it is delivered into the trough for further treatment.

Although the elements set forth and described are fully adapted to accomplish the purposes for which they are intended, it is to be understood that various changes in the form, proportion, and minor details of construction may be resorted to without sacrificing any of the advantages or departing from the spirit of the invention.

Having fully described my invention, what I claim is:—

1. In a cigar rolling machine, the combination of a roll guide, a roller table having a pivoted forward end, and means to operate the forward end of the roller table for pressing the roll before it can reopen into the roll guide, substantially as described.

2. In a cigar rolling machine, the combination of a roll guide, a roller table having a pivoted forward end, a toothed sector fixed to the pivoted forward end of the table, a quadrant in engagement with the sector, and means for actuating the quadrant to operate the forward end of the roller table for pressing the roll before it can unwrap into the roll guide, substantially as described.

3. In a cigar rolling machine, the combination of a conveyer band, means for intermittently moving the conveyer band, strips for guiding the tobacco on the conveyer band, and means for moving the strips outwardly at the beginning of the movement of the conveyer band, substantially as described.

4. In a cigar rolling machine, the combination of a conveyer band, means for intermittently moving the conveyer band, a spindle having a right and a left hand threaded portion and a strip carried on each portion for guiding the tobacco on the conveyer band, and means for rotating the spindle at the beginning of the movement of the conveyer band to move said strips outwardly, substantially as described.

5. In a cigar rolling machine, the combination of a conveyer band, means for intermittently moving the conveyer band, strips for guiding the tobacco on the conveyer band, means for moving the strips outwardly at the beginning of each movement of the conveyer band, a knife, and means for causing the knife to cut at the end of each movement of the conveyer band, substantially as described.

6. In a cigar rolling machine, the combination of a conveyer band, means for intermittently moving the conveyer band, strips for guiding the tobacco on the conveyer band, means for moving the strips outwardly at the beginning of each movement of the conveyer band, a knife, means for causing the knife to cut at the end of each movement of the conveyer band, and signaling means operative when the knife fails to cut, substantially as described.

7. In a cigar rolling machine, the combination of a conveyer band, means for intermittently moving the conveyer band, strips for guiding the tobacco on the conveyer band, means for moving the strips outwardly at the beginning of each movement of the conveyer band, a knife, means for causing the knife to cut at the end of each movement of the conveyer band, a bell, a lever carrying a hammer for striking the bell, and connections between the knife and the lever whereby the lever is operated to cause the hammer to strike the bell when the knife fails to cut, substantially as described.

8. In a cigar rolling machine, the combination of a conveyer band, strips for guiding tobacco on the conveyer band, a shaft, means for moving said strips outwardly at the beginning of the movement of the conveyer band from said shaft, a knife, connections between the knife and said shaft for causing the knife to cut at the end of the movement of the conveyer band, a roll guide, a roller table having a pivoted forward end, a toothed sector fixed to said pivoted forward end of the table, a quadrant in engagement with the sector, and connections between the quadrant and said shaft to operate the forward end of the roller table for pressing the roll before it can reopen into the roll guide, substantially as described.

9. In a cigar rolling machine, the combination of a conveyer band, means for intermittently moving the conveyer band, a spindle having a right and a left hand threaded portion and a strip carried on each portion for guiding the tobacco on the conveyer band, a shaft, a lever actuated from the shaft, connections between the spindle and the lever for rotating the spindle at the beginning of the movement of the conveyer band, a knife, a second lever actuated from said shaft for causing the knife to cut at the end of the movement of the conveyer band, a bell, a toothed member carried by the shaft, a third lever adapted to be vibrated by the toothed member for ringing the bell, and means connecting the first and second levers to the other lever whereby the third lever is held out of engagement with the toothed member when the knife cuts and is allowed to engage same when the knife fails to cut, substantially as described.

10. In a cigar rolling machine, the combination of a conveyer band, means for intermittently moving the conveyer band, a spindle having a right and a left hand threaded portion and a strip carried on each portion for guiding the tobacco on the conveyer band, a shaft, a lever actuated from the shaft, connections between the spindle and

the lever for rotating the spindle at the beginning of the movement of the conveyer band, a knife, a second lever actuated from said shaft for causing the knife to cut at the end of the movement of the conveyer band, a bell, a toothed member carried by the shaft, a third lever adapted to be vibrated by the toothed member for ringing the bell, a slotted bar slidably connected to the third lever and reciprocated by the second lever, the bar having a cam groove, and a roller carried by the first lever engaging the cam groove whereby the third lever is held out of engagement with said toothed member when the knife cuts and is allowed to engage the same when the knife fails to cut, substantially as described.

In testimony, that I claim the foregoing as my invention, I have signed my name in presence of two witnesses, this sixteenth day of March 1911.

RUDOLF SCHMITT.

Witnesses:
CARL WEIHE,
EVA SATTLER.