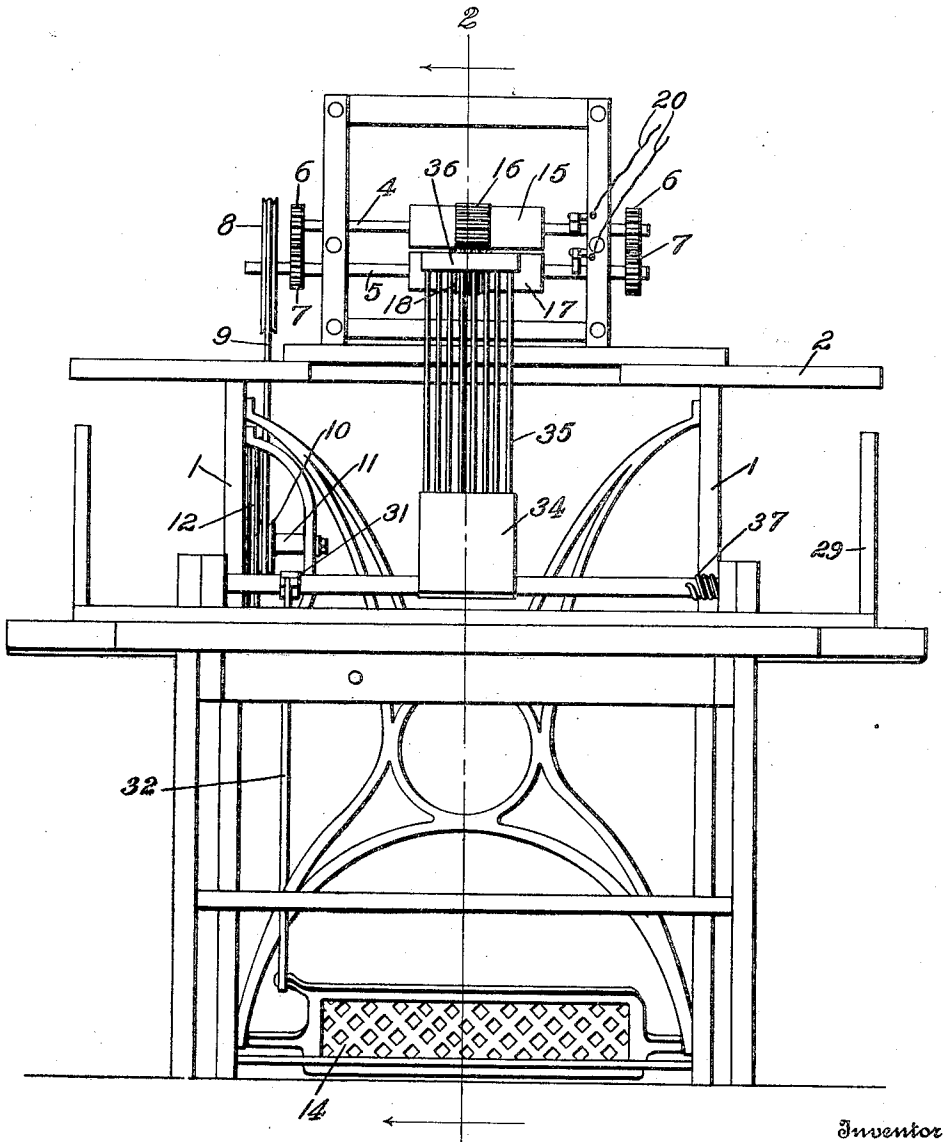
Dec. 16, 1924. 1,519,306

H. L. HENDERSON

TOBACCO MACHINE

Filed March 8, 1921 3 Sheets-Sheet 1

Fig. 1.



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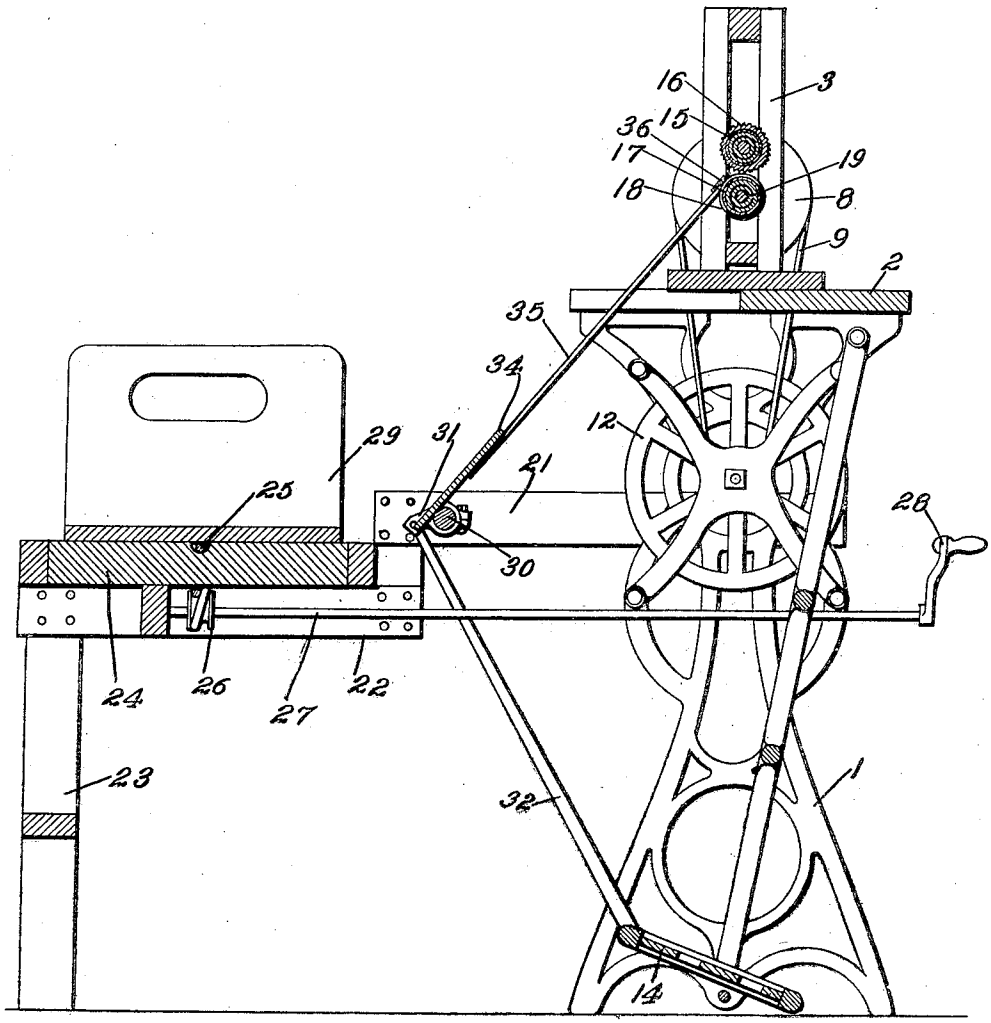
Dec. 16, 1924. 1,519,306

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Filed March 8, 1921 3 Sheets-Sheet 2

Fig. 2.



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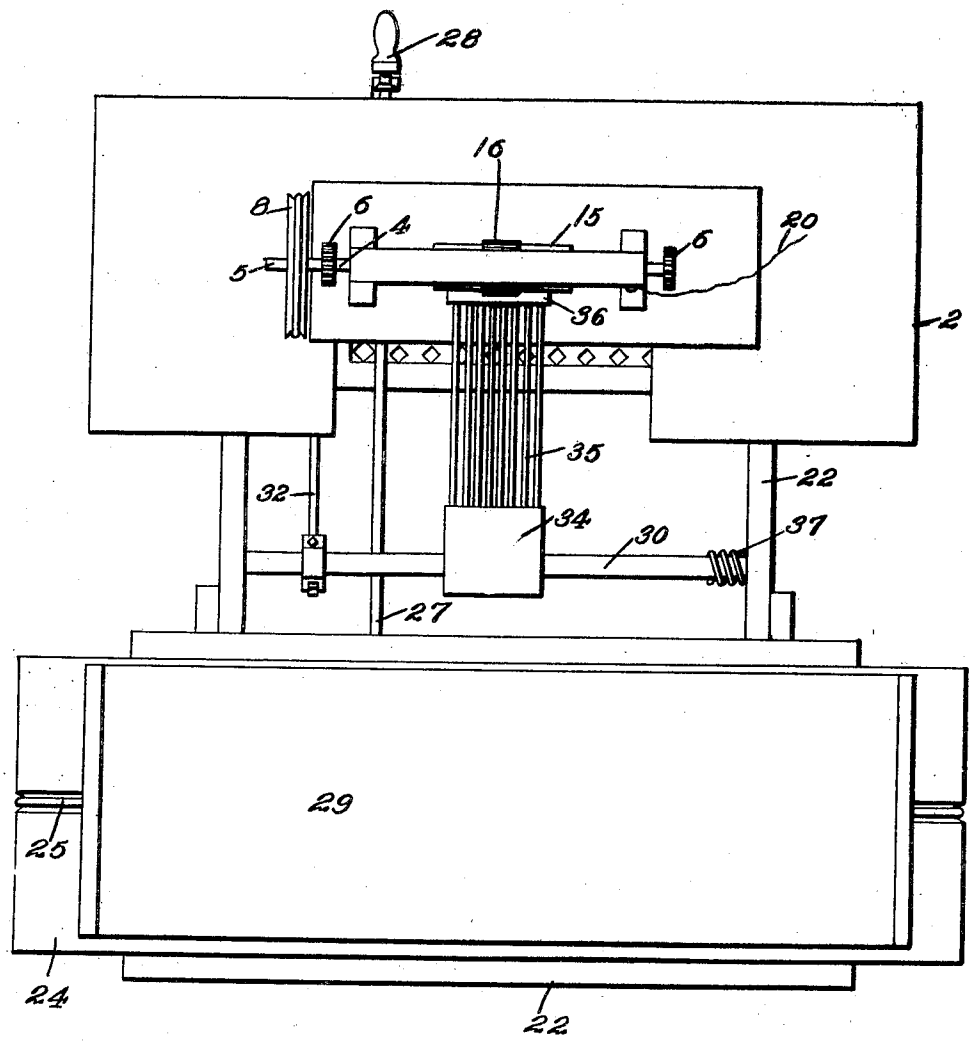
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TOBACCO MACHINE

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Fig. 3.



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Patented Dec. 16, 1924. 1,519,306

UNITED STATES PATENT OFFICE.

HARRY L. HENDERSON, OF CENTERVILLE, IOWA.

TOBACCO MACHINE.

Application filed March 8, 1921. Serial No. 450,570.

To all whom it may concern:

Be it known that I, HARRY L. HENDERSON, a citizen of the United States, residing at Centerville, in the county of Appanoose and State of Iowa, have invented a new and useful Tobacco Machine, of which the following is a specification.

This invention relates to a machine for handling tobacco leaves and so treating them as to dispense with the customary operation of removing the stems of the leaves.

One of the objects of the invention is to provide means for crushing, shredding, perforating and cross-checking the stems thus allowing practically all of the leaf to be used in the formation of cigars, and other tobacco products.

A still further object is to provide means whereby the leaves are prevented from sticking to the crushing means, the crushing and shredding operation serving to reduce the stems of the leaves so that they will be like the veins in the leaves while the perforating will prevent the stem portions of the leaves from sputtering while burning. The cross-checking allows the leaves to be broken at any place, this being necessary in making a bunch for a cigar.

A still further object is to provide booking mechanism cooperating with crushing and shredding mechanism, the same being so constructed that the tobacco thereon will not be disturbed after being deposited on the receiving tray but can be piled in a thick book.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that, within the scope of what is claimed, changes in the precise embodiment of the invention shown can be made without departing from the spirit of the invention.

In the accompanying drawings the preferred form of the invention has been shown.

In said drawings

Figure 1 is a front elevation of the machine.

Figure 2 is a section on line 2—2, Figure 1.

Figure 3 is a plan view.

Referring to the figures by characters of reference 1 designates a supporting structure on which is mounted a table 2 having standards 3 in which are journaled superposed shafts 4 and 5. The shaft 4 is provided at its ends with gears 6 meshing with gears 7 on the shaft 5 so that the two shafts are caused to rotate in opposite directions simultaneously. The shaft 5 has a grooved wheel 8 receiving motion through a belt 9 from a pulley 10 secured to a shaft 11 journaled in the frame 1. This shaft has a wheel 12 adapted to be driven by a motor, not shown.

The shaft 4 is provided with a hollow roll 15 provided, adjacent its center, with outstanding longitudinal V-shaped ribs 16. This roll 15 is arranged above another hollow roll 17 on the central portion of which are provided annular V-shaped ribs 18 the edges of which are adapted to contact with the edges of the adjacent ribs 16 at the pass between the rolls. Both of the rolls are provided with suitable electric heaters indicated generally at 19 in Figure 2, these heaters being arranged inside of the rolls and provided with suitable electrical connections indicated generally at 20.

Extending from the frame 1 is an extension frame 21 having a downwardly offset portion 22 supported by plates 23 or any other suitable means. In this offset portion 22 is guided a slidable carriage 24. Extending longitudinally around this carriage is a rope 25 an intermediate portion of which is wrapped about a pulley 26 which is secured to a shaft 27. This shaft is journaled in the offset portion 22 of the extension frame and also in the frame 1 and has a crank arm 28 whereby it can be rotated readily thus to actuate the rope and cause the carriage 24 to slide longitudinally in either direction. A tray 29 is removably mounted on the carriage and is adapted to travel therewith.

A rock shaft 30 is journaled on the extension frame 21 and has a crank arm 31 extending therefrom connected by a rod 32 to treadle 14. A plate 34 is secured to and moves with the rock shaft and has spaced wire fingers 35 extending upwardly therefrom and connected at their upper ends by a cross strip 36. The plate 34 with its fingers 35 and strip 36 constitute a booking device constantly under the control of the operator, the cross strip 36 of the booking device normally resting upon the lower roll 17.

In using the apparatus herein described the rolls 15 and 17 are set in operation and the leaves to be treated are fed tips first between the rolls so that the stems of the leaves will

pass through the ribbed surfaces of the two rolls. The annular ribs 18 on the roll 17 will tend to shred the stem of each leaf, this shredding action being facilitated by the crushing action which also takes place. During the shredding of the stem of each leaf the longitudinal ribs 16 cut transversely of the stem and as these longitudinal ribs contact with the annular ribs, the ribs 18 and 19 will cooperate to pinch through the stem at the points of crossing of the ribs. Thus numerous perforations will obviously be formed in the stem, this perforating action being in addition to the cross-checking which is produced by the two sets of ribs. By perforating the stem the same will be prevented from sputtering while burning and by cross-checking the stem it can be easily broken at any place in the leaf, this being necessary in making a bunch for a cigar.

As each leaf passes from between the rolls 15 and 17 it will be projected outwardly onto the booking device and as soon as the leaf has entirely cleared the rolls the booking device can be swung outwardly and downwardly by pressing on the treadle 14. Thus the leaf will be carried forwardly and downwardly and deposited on the tray 29 or upon a leaf previously deposited. As soon as the treadle 14 is released a coiled spring or the like indicated generally at 37 in Figure 1 will operate to return the booking device to its normal or raised position where it will receive another leaf acted on by the rolls.

It has been found in practice that by saving the stems of tobacco leaves and treating them so that they can be worked into a bunch, from seventy to ninety-five per cent of the usual waste in filler tobacco can be saved, the only part necessarily thrown away being the butt portion of the stem which can be removed by a suitable cutting device provided for that purpose. As each book is completed on the tray the shaft 27 can be rotated so as to shift the carriage 24 and bring another portion of the tray to position to receive a book. After the tray has been filled it can be removed bodily and another tray placed in position.

By providing the spaced fingers 35 on the booker each leaf, when deposited on the tray will not be disturbed when the booker moves up to its normal position because a suction will not be set up as would be the case should the booker be a solid plate.

By heating the rolls they are prevented from sticking to the leaves as they pass between the rolls, and they tend to make the cross-checking permanent.

What is claimed is:—

1. In a machine of the class described the combination of oppositely rotatable rolls, there being longitudinal ribs upon one of the rolls, and annular ribs upon the other roll, said ribs contacting at the pass therebetween and cooperating to score the stem portions of a leaf fed therebetween, said ribs operating to perforate the stem portions at the points of intersection of the scores.

2. In a machine of the class described the combination of a carriage, a tray removably mounted thereon, means under the control of the operator for shifting the carriage and tray longitudinally, leaf crushing rolls, annular ribs on one of the rolls, longitudinal ribs upon the other roll, said ribs being adapted to contact in the pass between the rolls, means for receiving the treated leaf when delivered from between the rolls, and means under the control of the operator for shifting said receiving means to transfer the leaf to the tray.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

HARRY L. HENDERSON.

Witnesses:
H. E. Fugge,
G. C. Elliott.