Dec. 9, 1924. 1,518,349

S. OLSON

COMBINED TOBACCO STRIPPING AND STALK CUTTING MACHINE

Filed June 26, 1920 4 Sheets-Sheet 1

Fig. 1.

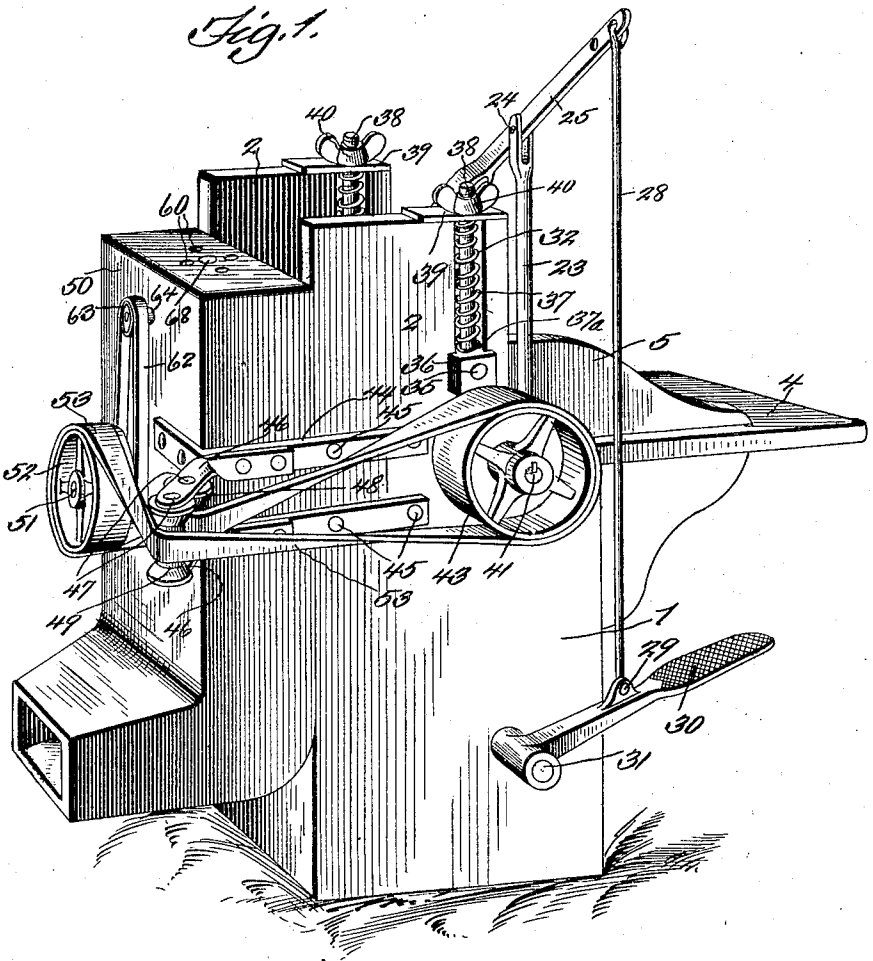
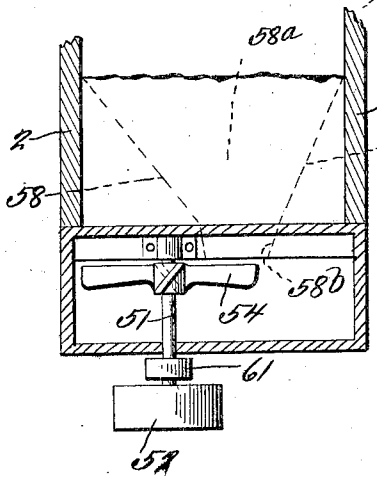


Fig. 6.



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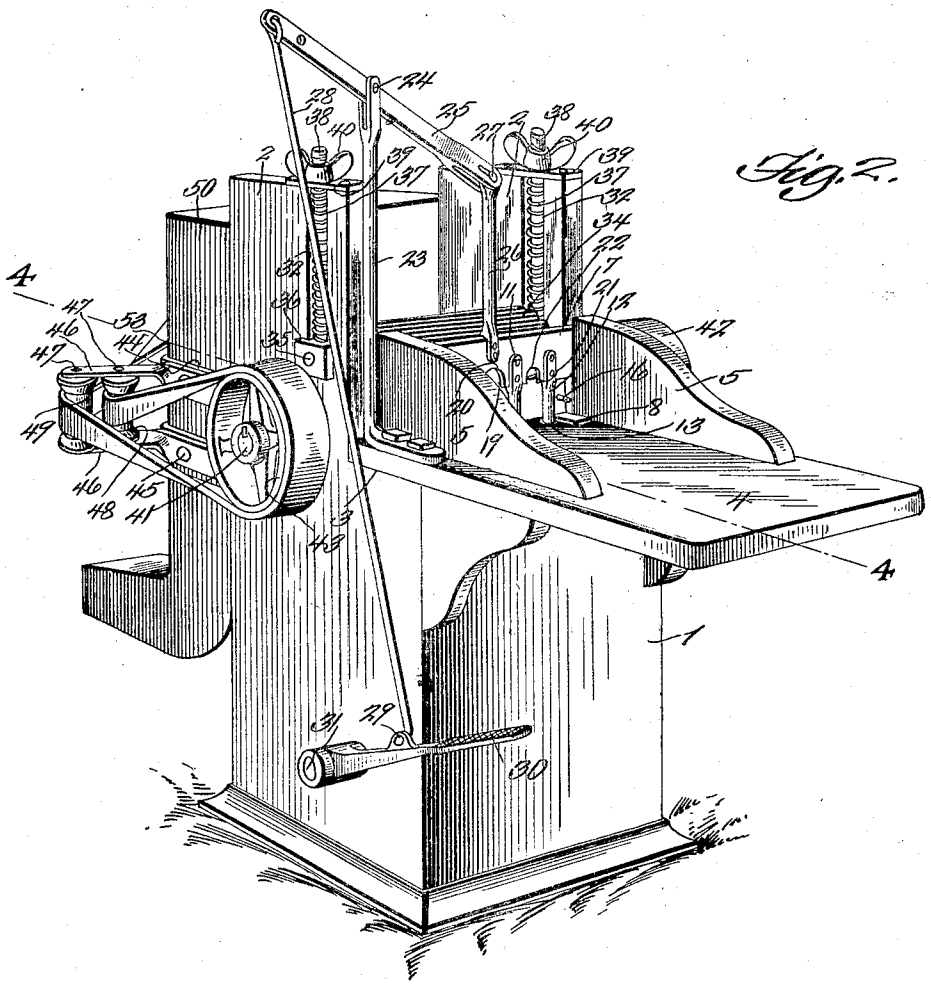


Fig. 2.

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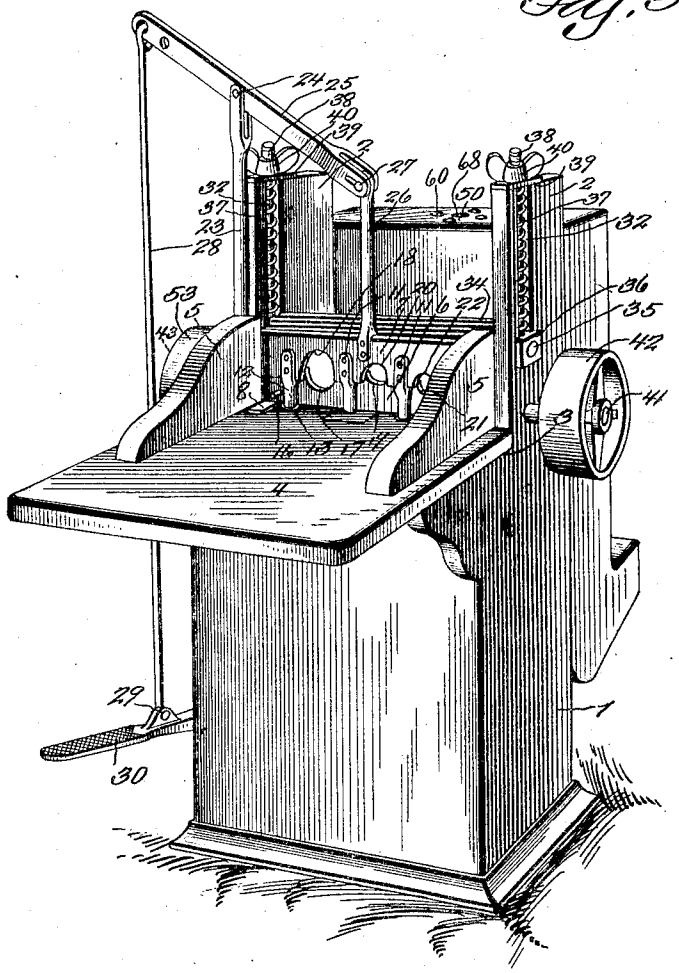
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COMBINED TOBACCO STRIPPING AND STALK CUTTING MACHINE

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Fig. 3.



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COMBINED TOBACCO STRIPPING AND STALK CUTTING MACHINE

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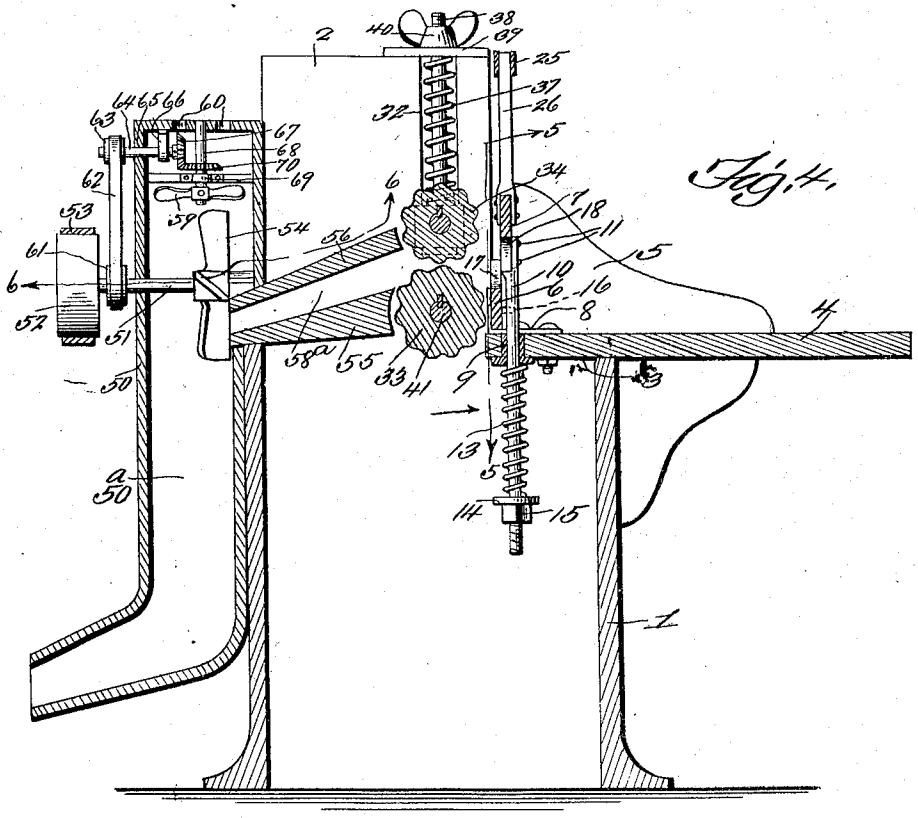


Fig. 4.

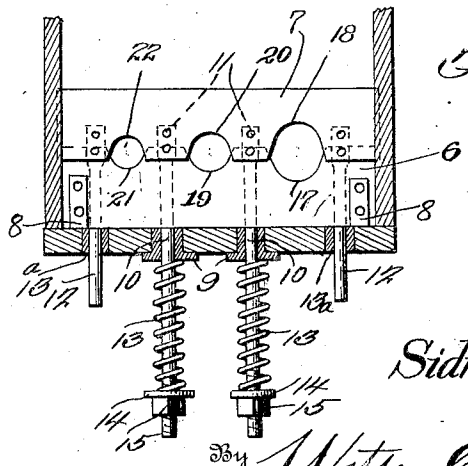


Fig. 5.

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Patented Dec. 9, 1924. 1,518,349.

UNITED STATES PATENT OFFICE.

SIDNEY OLSON, OF COON VALLEY, WISCONSIN.

COMBINED TOBACCO-STRIPPING AND STALK-CUTTING MACHINE.

Application filed June 26, 1920. Serial No. 391,952.

To all whom it may concern:

Be it known that I, SIDNEY OLSON, a citizen of the United States, residing at Coon Valley, in the county of Vernon and State of Wisconsin, have invented certain new and useful Improvements in Combined Tobacco-Stripping and Stalk-Cutting Machines, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to an improved combined tobacco stripping and stalk or stem cutting machine and an object is to provide a machine of this character adapted for stripping tobacco and cutting or chopping the stalks so as to provide material for fertilizer and which may be blown out by means of a blower and used for fertilizing the soil, thereby avoiding the necessity of the very tiresome work of placing the stalks in the furrow while plowing.

Another object is to provide a tobacco stripping machine including a frame having a table or bed plate in combination with stripping jaws mounted on the table or bed plate, and means for raising and lowering one of the jaws to permit of the reception of the tobacco between the jaws, whereby the leaves of the tobacco may be stripped from the stalks.

Still another object embodies the provision of a machine of this design wherein pinching or feeding rollers are placed in advance of the stripping jaws for the purpose of pulling the stalks between the jaws, whereby the tobacco leaves can be stripped therefrom, the stalks being subsequently cut or chopped to provide material for fertilizer and other purposes.

A further object is to provide means for yieldably mounting one of the feeding or pinching rollers so that such roller can yieldably separate from the fixed roller in order to accommodate different quantities of tobacco between the jaws.

A still further object is the provision of means for yieldably mounting the movable jaw in order to afford a tensioning action on such jaw, to keep it in contact with the tobacco, as it is pulled through the jaws and pedally operated means for raising the yieldably mounted jaw.

Additionally the invention aims to provide operative connections between the stripping means of the machine and the chopper or cutting means, whereby as power is transmitted to the stripping machine, the cutter will also automatically and simultaneously operate.

While the design and construction at present illustrated and set forth is deemed preferable, it is obvious that as a result of a reduction of the invention to a more practical form for commercial purposes, the invention may be susceptible to changes, and the right to these changes is claimed, provided they are comprehended within the scope of what is claimed.

The invention comprises further features and combination of parts, as will be hereinafter set forth, shown in the drawings and claimed.

In the drawings:

Figure 1 is a perspective view of the improved tobacco stripping machine and cutter constructed in accordance with the invention,

Figure 2 is a perspective view of the machine showing the opposite side thereof,

Figure 3 is also a perspective view, viewing the same from another side thereof,

Figure 4 is a vertical sectional view on line 4—4 of Figure 2,

Figure 5 is a vertical sectional view on line 5—5 of Figure 4, more clearly showing the yieldably mounted jaw and the yieldably mounted pinching or feeding roller; and

Figure 6 is a sectional view on line 6—6 of Figure 4.

Referring more especially to the drawings, 1 designates a frame, which comprises the opposite sides 2, which have cut away portions, the edges 3 of which act as supporting means for a table or bed plate 4. Mounted upon the bed plate or table are side pieces 5 which act to guide the tobacco toward the stripping jaws.

Also superimposed with relation to the bed plate or table 4 are stationary and movable tobacco stripping jaws 6 and 7. The stationary jaw is held rigid in position by means of the bracket plates 8 which are angular, and are fastened to the bed plate or table. The vertical arms of the bracket plates are fastened to the stationary jaw 6. Mounted in guide bushings 9 (which are extended through the bed plate or table as shown in the sectional views of the drawings) are jaw carrying rods 10, which are secured at 11 to the movable jaw. Additional rods 12 are secured to the movable

jaw, and extend downwardly through the guide openings 13ª of the bed plate or table. The jaw carrying rods 10 have mounted thereon in surrounding relation thereto coil expansion springs 13, which are interposed between the guide bushings, and the washers 14. Nuts 15 are threaded to the lower ends of the jaw carrying rods 10, designed for the purpose of adjustment to regulate the tension of the springs 13, in order to increase or decrease the tension on the movable tobacco stripping jaw. Extending from the stationary jaw above the bed plate or table are suitable devices such as pins 16 to limit the movable jaw in its operation toward the stationary jaw. The stationary and movable jaws are provided with registering U-shaped recesses 17 and 18, 19 and 20, and 21 and 22, arranged in pairs as shown. The U-shaped recesses 17 and 18 register with each other so as to provide a tobacco receiving opening. The recesses 19 and 20 also register to provide a second tobacco receiving opening which is smaller than the first opening, whereas the recesses 21 and 22 register and constitute a third opening which is even still smaller and by these different sets of openings it is obvious that tobacco in different quantities and different proportions may be inserted between the stationary movable jaws and when the stalks are pulled, the leaves are readily stripped or removed from the stalks. The leaves fall upon the table or bed plate and are gathered and manufactured into cigars, cigarettes, chewing, smoking tobacco and the like.

Rising upwardly from one side of the bed plate or table is an upright 23, and pivotally mounted at its upper end in a bifurcation thereof upon a pivot 24 is a lever 25. One end of this lever is bifurcated and is pivotally connected to an arm 26 (which is carried by and rises upwardly from the movable jaw) by means of a slot and pivot pin connection 27. Connected to the other end of the lever is a rod 28 which in turn is pivotally connected at 29 to a foot pedal 30, which is pivoted on one side of the frame of the machine as at 31. It will be noted that by applying foot pressure on the pedal, a pulling action is imparted to the rod 28, tilting the lever 25 so as to raise the movable stripping jaw.

The sides of the frame of the machine are provided with vertical guides 32 and also mounted in the frame are pinching or feeding rollers 33 and 34. These rollers are rotatable, but it is to be noted that the roller 33 remains in fixed relation relatively to the frame and to the bearings of the roller, while the roller 34, though it is rotatable, is capable of being raised and lowered. In order that the roller 34 may raise and lower, its pintles 35 are mounted in bearing elements 36, which are in turn mounted in the guides 32. Also mounted in the guides 32 are expansion coil springs 37 which are in surrounding relation to the rods 38. The rods 38 are mounted in bearings 39 at their upper ends, and have their lower ends in engagement with the bearings 36. Nuts 40 are engaged with the upper ends of the rods 38 in order to adjust the position of the roller by feeding the rods upwardly as soon as their lower ends are connected to the bearings 36. It will be noted that by this construction the rotatable roller 34 is capable of yielding upwardly according to the size or quantity of tobacco passing between the rollers, in other words, in order to accommodate variable quantities of tobacco.

The roller 33 is mounted upon a shaft 41, one end of which is provided with a drive pulley 42, to which power (not shown) may be belted.

Also carried by the shaft, but at its opposite end, is a pulley 43. Mounted upon the frame of the machine are supporting brackets 44, which engage around or with one corner of the frame of the machine, and are secured in place as shown at 45. Carried by and secured to these brackets 44 are the bearing arms 46, which extend angularly laterally. These arms have bearings for the shafts 47 of the guide pulleys 48 and 49. Forming a part of the frame of the machine on one end thereof, is a housing 50, and mounted in bearings of the walls of this housing is a shaft 51 to be driven. The outer end of the shaft 51 carries a pulley 52 about which a belt 53 engages. One side of the belt passes over the guide pulley 49, while the other side of the belt passes over the guide pulley 48. It will be noted that the belt 53 engages around the corner of the frame of the machine and travels about the pulley 43, which is movable with the shaft of the lower feed or pinching roller 33. It is obvious that when power is transmitted to the pulley 42, driving the pinching or feeding roller 33, power may be transmitted through the medium of the belt 53 to the shaft 51. Mounted upon the shaft 51 is a conventional form of stalk cutter 54. Also fixed with relation to the frame of the machine is a second plate or table 55, which is positioned on the opposite side of the lower roller 33. Superimposed with relation to the table or bed plate 55 is a member 56. The member 56 and the table 55 are converged toward each other, and both are inclined downwardly from the upper and lower rollers, in order to provide a passage 58ª for the stalks of tobacco. Arranged between the member 56 and the table 55 are guides 58. The adjacent edges of the guides 58 are converged downwardly toward each other, so that the stalks after leaving the

pinching rollers may discharge at the smaller end of the passage 58ª in the path of the blades of the cutter 54. As the stalks pass through the smaller end of the passage they are chopped by the cutter 54 which revolves with the shaft 51. The blades of the cutter 54 rotate in front of the smaller end of the passage 58ª so as to sweep across the smaller end and chop the stalks which may be blown through the passage 50ª by means of the blower fan 59. The top wall of the passage 50ª is provided with a plurality of openings 60 in order that air may be drawn into the passage by the blower fan 59, whereby the chopped stalks may be blown downward. A pulley 61 is carried upon the shaft 51 and engaged therewith is a belt 62 which operates about the pulley 63 mounted upon the shaft 64. This shaft 64 is mounted in a bearing 65 of the wall of the passage 50ª and in a bearing 66 and is provided with a bevel gear 67. A shaft 68 has its upper end engaged in a bearing of the upper wall of the auxiliary casing 50 and its lower end in a bearing 69. This shaft 60 carries a bevel gear 70 and a blower fan 59. The bevel gear 67 operates the gear 70 and through the medium of the pulley 61 and the belt 62 power is transmitted to the fan which acts to blow the chopped stalks through the passage 50ª.

The leaves are they are stripped from the stalks remain upon the bed plate or table and are subsequently piled or packed for shipment to various places to be manufactured into cigars, cigarettes, chewing and smoking tobacco. The stalks are chopped into small pieces forming a suitable fertilizer which may be distributed over the field and plowed into the ground.

When this machine is in use the tobacco plants are placed upon the bed plate 4 and the ends of the stalks are inserted in the openings between the movable and stationary jaws. Some of the plants have thicker stalks than others and therefore the stationary and movable jaws have been provided with openings of different sizes so that the stalks may be inserted in openings which will be of the proper size to permit the stanks to be drawn through and the leaves detached from the stalks. When the stalks are passed through these openings they are engaged by rollers 33 and 34 and will be pulled through the openings so that the plates or jaws which are held in close scraping engagement with these stalks may engage the stems of the leaves and detach the leaves from the stalks. Therefore, the leaves will drop down upon the bed plate 4 and the stalks will be passed into the passage provided between the table 55 and the member 56. The stalks pass through this passage 58ª, and as they pass out of the passage they will be engaged by the blades of the cutter 54 and cut into small pieces which will, by their own weight, drop downwardly in the passage 50ª or be driven downwardly in the passage by the air blast from the fan 59. The chopped stalks will be delivered into suitable receptacles so that they may be kept and used for fertilizer. The leaves which are stripped from the stalks will be removed from the bed plate 54 and formed into bunches so that they may later on have the stems removed and then be used for making smoking tobacco, cigars, cigarettes and the like.

The invention having been set forth, what is claimed as new and useful is:—

1. In a machine of the character described, a stationary frame including a feed table, a stationary jaw member extending transversely thereof, a vertically slidably mounted jaw member coacting with and overlapping said first named jaw member and spring pressed downwardly, means for moving the slidable jaw member upwardly, coacting rollers journaled behind the jaw members, a chute leading from said rollers, a casing into which said chute discharges, a blower fan journaled in said casing at the top thereof, and a chopper rotatably mounted at the outlet end of the chute, and means for simultaneously driving the rollers, chopper and fan.

2. In a machine of the character described, a stationary frame, a feed table thereon, coacting relatively movable jaw members at the rear end of the feed table, means for moving one jaw member with respect to the other, a pair of horizontally disposed coacting rollers journaled at the rear of the jaw members, a casing at the rear of the frame provided at its lower end with a discharge, a chute receiving from the rollers and leading into said casing, a chopper journaled for rotary movement in a vertical plane within the casing and positionad to traverse the rear end of the chute, a fan at the top of the casing journaled for rotation in a horizontal plane, and means for simultaneously driving said rollers, chopper and fan.

In testimony whereof I hereunto affix my signature.

SIDNEY OLSON.