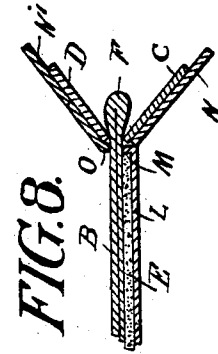
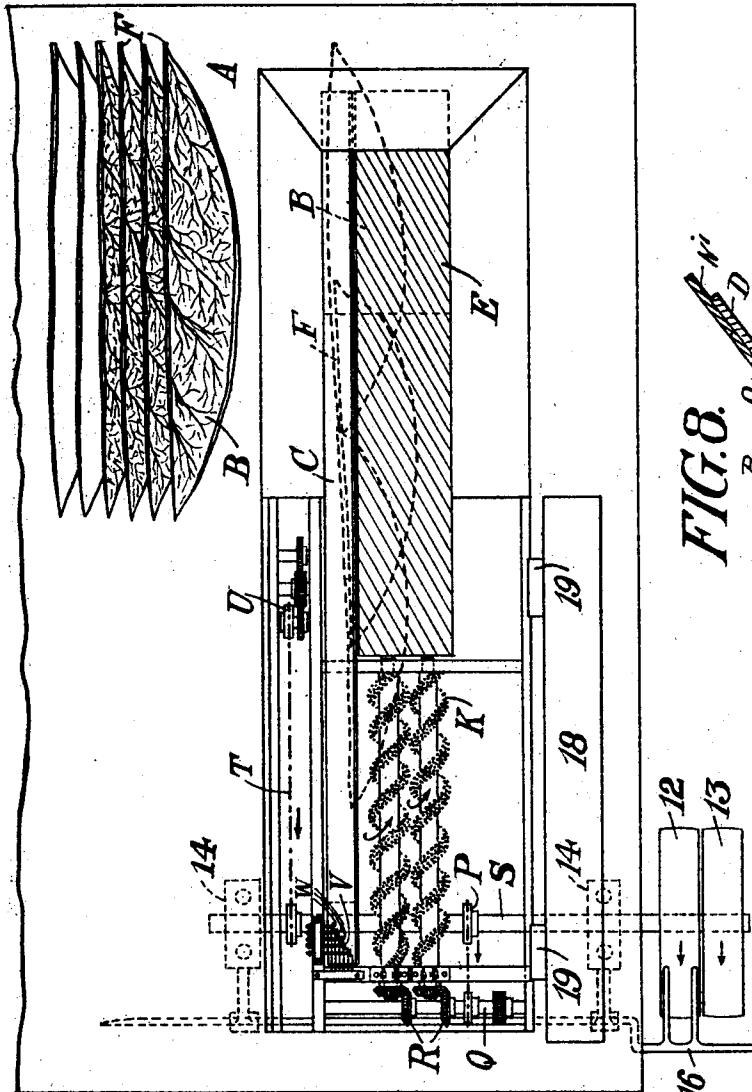


919,297.

Patented Apr. 20, 1909.

2 SHEETS—SHEET 1.

FIG. 1.



Witnesses

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*W. C. Isel.*

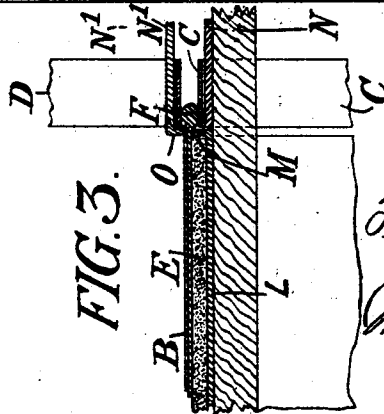


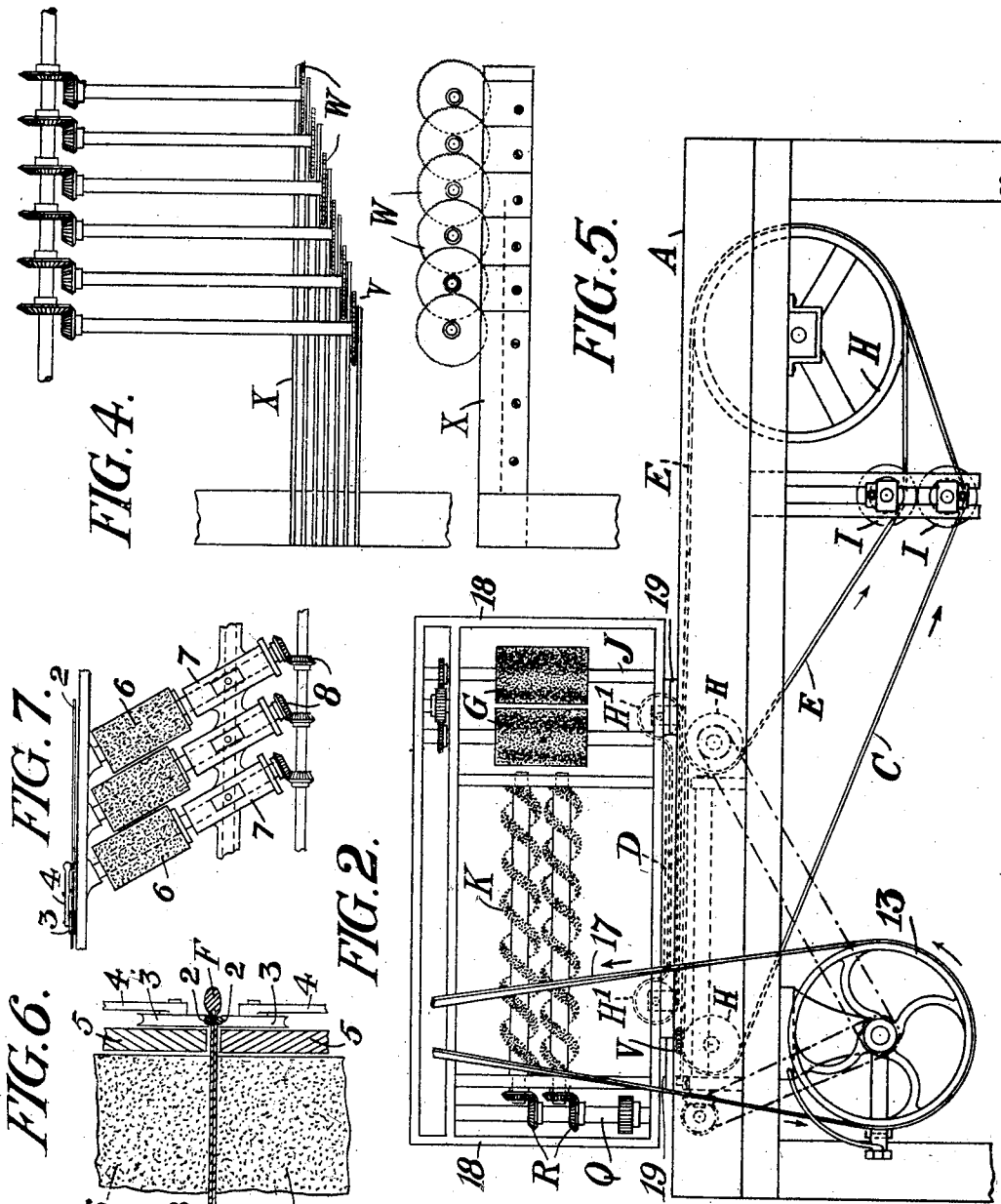
FIG. 3.

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919,297.

Patented Apr. 20, 1909.  
2 SHEETS—SHEET 2.



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# UNITED STATES PATENT OFFICE.

FREDERICK SALOMON, OF LIVERPOOL, ENGLAND, ASSIGNOR TO CRYPTO PATENTS LIMITED,  
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## TOBACCO-STRIPPER.

No. 919,297.

Specification of Letters Patent.

Patented April 20, 1909.

Application filed December 28, 1906. Serial No. 349,914.

*To all whom it may concern:*

Be it known that I, FREDERICK SALOMON, a subject of the King of Great Britain, residing at Liverpool, in the county of Lancaster, in the Kingdom of England, tobacco broker, have invented certain new and useful Improvements in Tobacco-Strippers, for which application has been made in Great Britain, No. 13,834, dated June 16, 1906.

10 This invention relates to certain improvements in tobacco strippers and embodies the several elemental parts hereinafter described, each possessing new or improved features, and all being combined to form a complete organization.

15 The principal elemental parts of this machine are the leaf-transporting devices, the leaf-flattening cleaning and straightening appliances, and the stemming and shredding mechanism, and to these are added the actuating mechanism by which the several devices are made to operate in unison and at proper intervals to constitute an automatic machine for preparing the leaf.

25 The devices for removing and shredding the stem introduce new features in their mode of operation from prior structures, and instead of forcing or tearing the stem from the leaf portion which is so liable to leave small portions of the leaf attached to and be carried off with the stem, the machine separates the stem from the leaf with a clean straight cut.

35 The invention will be understood from the following description, reference being had to the accompanying drawings, in which—

Figure 1 is a plan view of my apparatus with frame containing the upper brushes and rolls raised on its hinge so as to show the parts below; Fig. 2 a side elevation; Fig. 3 a cross section through the conveyor bands and straight edge on an enlarged scale; Figs. 4 and 5 a plan view and elevation of cutting or shredding device on an enlarged scale. Fig. 6 is a cross section showing the arrangement of moving straight edge or templet; Fig. 7 a plan view of circular brushes arranged diagonally. Fig. 8 is a detail fragmentary sectional view of a slightly modified form of the

structure shown in Fig. 3. Fig. 9 is a top 50 plan view of Fig. 8.

I carry the invention into effect as follows:—

At one end of the machine is a stationary table A, on which a supply of leaves B after being damped is laid. At one side of this table A, there is a conveyor C of some suitable flexible material, such as a smooth tape of steel, brass or the like, and this conveyor is rather wider than the stem F of the leaf. Its action is to feed forward longitudinally the stem of the leaf but not to impale it or in any way prevent a lateral movement being imparted to it. There are two of these conveyers C and D above and below, with the stem clamped between, but the one above D extends for a part of the length of the lower one C. Adjacent to this smooth surfaced conveyor and parallel thereto, is a moving table or conveyor E of fairly rough material so as to provide the necessary grip, and made wide enough to receive the web B of the leaf when folded. This conveyor E is longer than the leaf B and is adapted to feed the leaf forward to revolving brushes G placed above the conveyor. The leaves B are not superimposed but they preferably overlap each other at the ends so as to form a continuous feed of leaves, see dotted lines, Fig. 1. The leaves are folded longitudinally so that the stem F is at the fold.

H—H indicate the pulleys around which the conveyers C and E are passed, and I—I indicate guide rolls for adjusting the tightness of the conveyers. The folded web B of the leaf is laid on the wide conveyor E and the stem F on the smooth surface of the conveyor C. The leaves are carried forward by conveyers C and E and by the revolving brushes G positioned above the conveyers which are mounted on the transverse axes J, journaled in the frame 18 which is hinged at 19 so as to be capable of being raised to a vertical position as shown in Fig. 2. The webs of the leaves B are next fed between spiral revolving brushes K placed longitudinally of said frame, the conveyers C and D holding the stem in grip. The conveyor E

which is comparatively wide is guided on a bed L and the conveyers C and D are also guided on beds N or N', the rib M being formed at the edge of the bed L. Immediately above this is a stationary rib O formed on the guide N' parallel with the rib M below, with a narrow space between just wide enough for the folded leaf B to pass, but too narrow to permit of the stem F passing through. The two ribs M and O in conjunction, constitute a straight edge or templet.

The brushes K are spiral ones, placed above and below the leaf, and they act to flatten and straighten out the leaf transversely; and also remove sand and dust therefrom without however tearing the leaf or in any way injuring it. They further act to draw the leaf laterally so as to cause the stem to abut against the straight edge O M and thus bring the stem of each leaf, successively into line with each other. The brushes rotate so as to discharge the sand and dust away from the machine, and are driven by any suitable form of gearing, such for example as by a chain P driving the countershaft Q which drives the lower brushes by the bevel gear R and the upper brushes get their rotation from the main shaft S in a similar manner. The conveyers C D E derive their motion from the shaft S in any suitable manner, *e. g.* by chain T and gears U. Just before the spiral brushes are reached, the broad endless band E passes around a pulley and returns to the end of the machine.

A feature of my invention is the removal of the leaves from the stems with a clean straight cut along the full length of the stems, as distinct from the usual wiping or stripping motion. The stem of tobacco leaves is taper, being considerably larger at one end than the other, and consequently there has always hitherto been a difficulty in removing the stem from the leaves without any part of the leaf being left adhering to the stem. This difficulty I have now completely overcome, as I fold the leaf longitudinally at the stem F and pass it into the machine, and then the folded leaf as soon as it is acted upon by the spiral brushes, is drawn laterally, with the stems, drawn tight against the straight edges M and O, so that all the stems at that edge are in line and thus when they reach the cutting mechanism they are severed from the web with a clean straight cut.

If desired I can arrange above the upper metallic tape D, a stationary guide N', about the same width as the tape, and the upper guide N' and tape D as well as the lower guide N and tape C are arranged to converge transversely toward the opening between the ribs M O so as to form a V-shaped channel between the upper and lower tapes, as shown in Fig. 8.

In order to reduce friction to a minimum,

I replace the ribs M and O of the straight edge or templet, by guts or wires 2 (Figs. 6 and 7) superimposed one above the other, with a small space between, and mounted so as to travel around the grooved pulleys 3 in the same direction and at the same speed as the leaves are being fed along. In such cases the conveyer D can be dispensed with, but the conveyer C can remain, or it can stop just about the point where the templet begins. The wires 2 in such case constitute the templet and take the place of the ribs M O. By this arrangement a moving straight edge is provided traveling at the same speed as the leaf. The space between the wires is such as to admit of the web B of the leaf passing between them, but not wide enough to allow the stem F to pass through. In order to allow for inequalities in the leaf, the grooved pulleys 3 are mounted on arms 4 arranged so as to be resilient, and allow the pulleys to give a little. 5 is the framework supporting the said arms.

Instead of using spiral brushes, I can use ordinary circular brushes 6 (Figs. 6 and 7) mounted in bearings 7 the centers of which are placed at an angle to the straight edge or templet. Strong leaves can have the angle of the brushes arranged very abrupt, the angle at which the brushes operate being simply one of degree. Delicate leaves require to have a much less abrupt angle so as to help the forward motion of the leaves without undue lateral pulling or brushing but brush them more in the line of their vein. 8 are gears for driving the brushes at suitable speed.

The stemming or shredding mechanism is as follows:—There is a circular knife blade V with serrated edges or teeth located close to the end of the brushes K and at a point where the straight edge M O terminates, and this blade revolves at an accelerated speed. This knife is bound to sever the stem F from the leaf B with a straight cut along the full length of the stems because all the stems by means of the straight edge or templet are presented to it in line. There is no tearing of the stem from the leaf but a clean straight cut, and there are no small sections of leaf remaining or carried off by the stem and consequently no subsequent stem-cleaning attachment is necessary. During the cutting off of the stem, the cut-off stem portion falls down at one side of the blade and is discharged thence to a receiver. I can however if desired shred the stem simultaneously to cutting it off the web of the leaf by providing additional revolving blades W placed one behind the other and a little distance apart sidewise. Between each blade is a longitudinal strip X bifurcated to permit the blades to enter, and these strips act in conjunction with the blades to shred the

stem. The stems rest on these strips X while being shredded.

All the moving parts of the machine are connected through a series of gearing so as to be driven from a single prime mover, such as a driving pulley 12 which together with a loose pulley 13 is mounted on the driving shaft S supported in bearings 14 on the frame 15, and there is a belt fork 16 for shifting the driving belt 17 by means of a handle. All the elements whose movements have to be timed and proportioned one to the other are connected together and caused to act in harmony, as they have one prime mover in common. The brushes G, and the upper brushes K, are mounted in a frame 18, which is hinged to the frame 15 at 19. This frame is shown raised in the figures, so as to display the parts below, but in its working position it is of course turned down.

There may be a clutch mechanism provided to enable the operator to vary the speed of the brushes.

The general operation of the machine may be briefly summarized as follows:—A quantity of damped tobacco leaves B is placed upon the table A. The machine having been started the operator places the leaves one by one on the conveyers C and E, the stems resting on the metallic conveyer C and the web or lamina, on the other one E. These conveyers together with the conveyer D carry them to the spiral or other brushes which straighten out the web of the leaf transversely and remove such sand and dust as may adhere to the same, also, as already explained, draw the leaf laterally so that the stems are pulled against the straight edge M O. The leaf is next carried through the cutting and shredding mechanism W by which the stem is cut off from the web of the leaf with a clean straight cut throughout its length, and the leaves are delivered of substantially uniform width and can be dealt with as desired.

I declare that what I claim is:—

1. In a tobacco stripper, means to engage and advance a folded leaf having its blades engaging, and means to exert simultaneous forward and lateral tension upon the blades of the leaf.

2. In a tobacco stripper, means to engage and advance a folded leaf having its blades engaging, means to exert simultaneous forward and lateral tension upon the blades of the leaf, and means for severing the blades of the leaf from the stem while under such tension.

3. In a tobacco stripper, traveling means adapted to engage and advance a folded tobacco leaf having its blades engaging, and brushes arranged to engage and exert simultaneous forward and lateral tension upon the blades of the leaf.

4. In a tobacco stripper, traveling means adapted to engage and advance a folded tobacco leaf at the juncture of the stem and lamina, and rotating brushes adapted to engage and exert simultaneous forward and lateral tension upon the blades of the leaf.

5. In a tobacco stripper, traveling means adapted to engage and advance the stem of a folded tobacco leaf having its blades in engagement, means to exert simultaneous forward and lateral tension upon the blades of the leaf, and means to sever the blades and stem.

6. In a tobacco stripper, traveling means adapted to engage and advance a folded leaf with its blades in engagement, means to exert simultaneous forward and lateral tension upon the blades of the leaf, and a rotating knife disposed adjacent the traveling means, and positioned to sever the stem and leaf while under such tension.

7. In a tobacco stripper, traveling means adapted to engage and advance a folded leaf, brushes arranged to exert simultaneous forward and lateral tension upon the blades of the leaf, and a knife disposed adjacent the traveling means and adapted to sever the leaf and stem.

8. In a tobacco stripper, means adapted to engage and advance a folded leaf, having its blades in engagement, brushes arranged to exert simultaneous forward and lateral tension upon the blades of the leaf, and a rotating knife disposed adjacent the traveling means, and positioned to sever the leaf from the stem while under such tension.

9. In a tobacco stripper, traveling means adapted to engage and advance a folded leaf having its blades in engagement, rotating brushes adapted to engage and exert simultaneous forward and lateral tension upon the blades of the leaf, and a rotating knife disposed adjacent the traveling means and positioned to sever the blades from the stem while under such tension.

10. In a tobacco stripper, traveling means adapted to engage and advance a folded leaf having its blades in engagement, and rotating brushes adapted to engage the upper and under side of and exert simultaneous forward and lateral tension upon the blades of the leaf.

11. In a tobacco stripper, traveling means adapted to engage and advance a folded leaf having its blades in contact, rotating brushes disposed to engage the upper and under side of and exert simultaneous forward and lateral tension upon the blades of the leaf, and a knife adjacent the traveling means and positioned to sever the stem and blades while under such tension.

12. In a tobacco stripper, traveling means adapted to engage and advance a folded leaf having its blades in contact, and spiral

brushes mounted to rotate and engage the upper and under side of and exert simultaneous forward and lateral tension upon the blades of the leaf.

5 13. In a tobacco stripper, traveling means adapted to engage and advance a folded leaf having its blades in contact, spiral brushes mounted to rotate upon and engage the upper and under side of and exert simultaneous  
10 forward and lateral tension upon the blades

of the leaf, while folded, and a rotating knife disposed adjacent the traveling means and positioned to sever the leaf and the stem.

In witness whereof, I have hereunto signed my name this 14th day of December 1906, in the presence of two subscribing witnesses. 15

FREDERICK SALOMON.

Witnesses:

G. C. DYMOND,  
WM. PIERCE.