

Aug. 17, 1943.

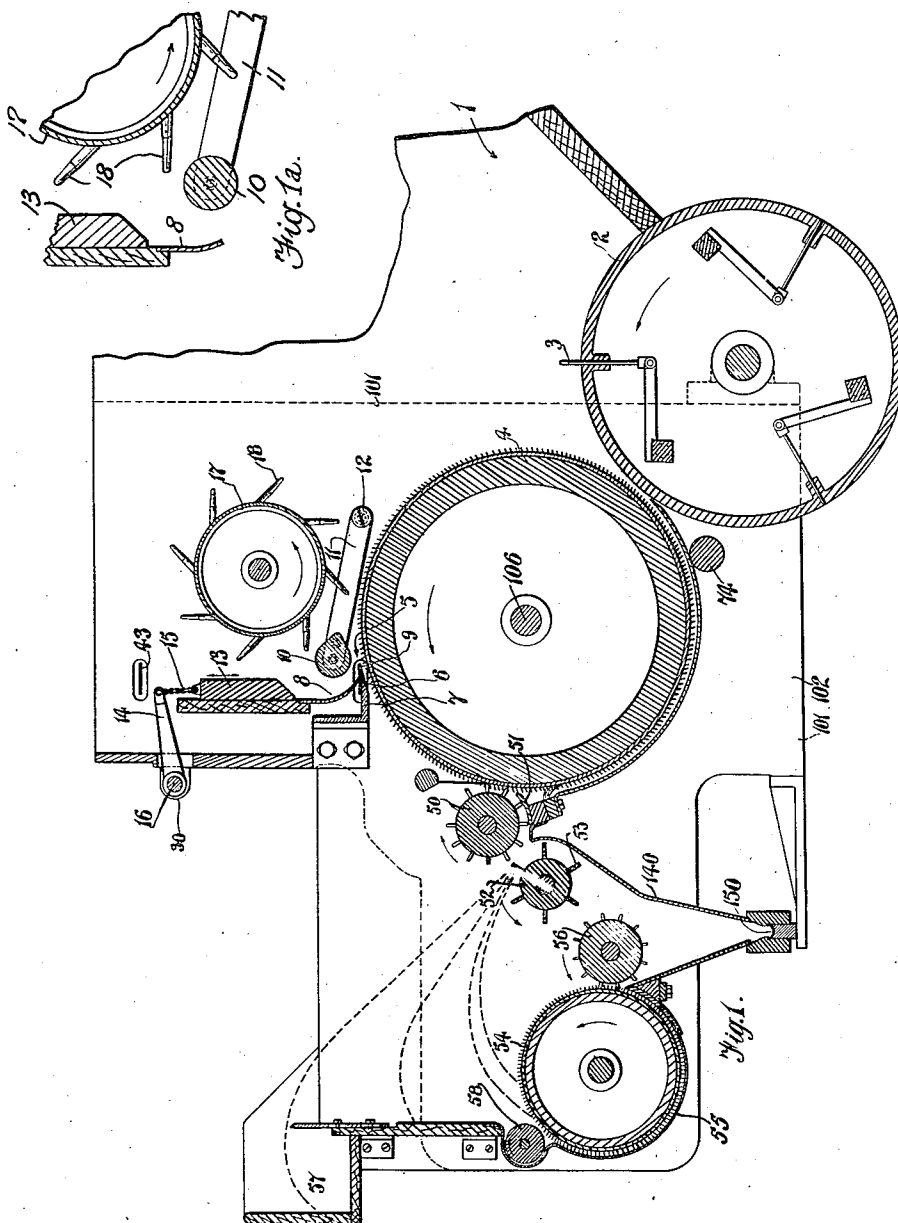
D. W. MOLINS ET AL

2,326,793

METHOD AND APPARATUS FOR FEEDING CUT TOBACCO

Filed July 1, 1939

5 Sheets-Sheet 1



Inventors
Diamond H. Molins
Felix F. Kusan
By
Nelson, Cole, Grindle & Watson
ATTY.

Aug. 17, 1943.

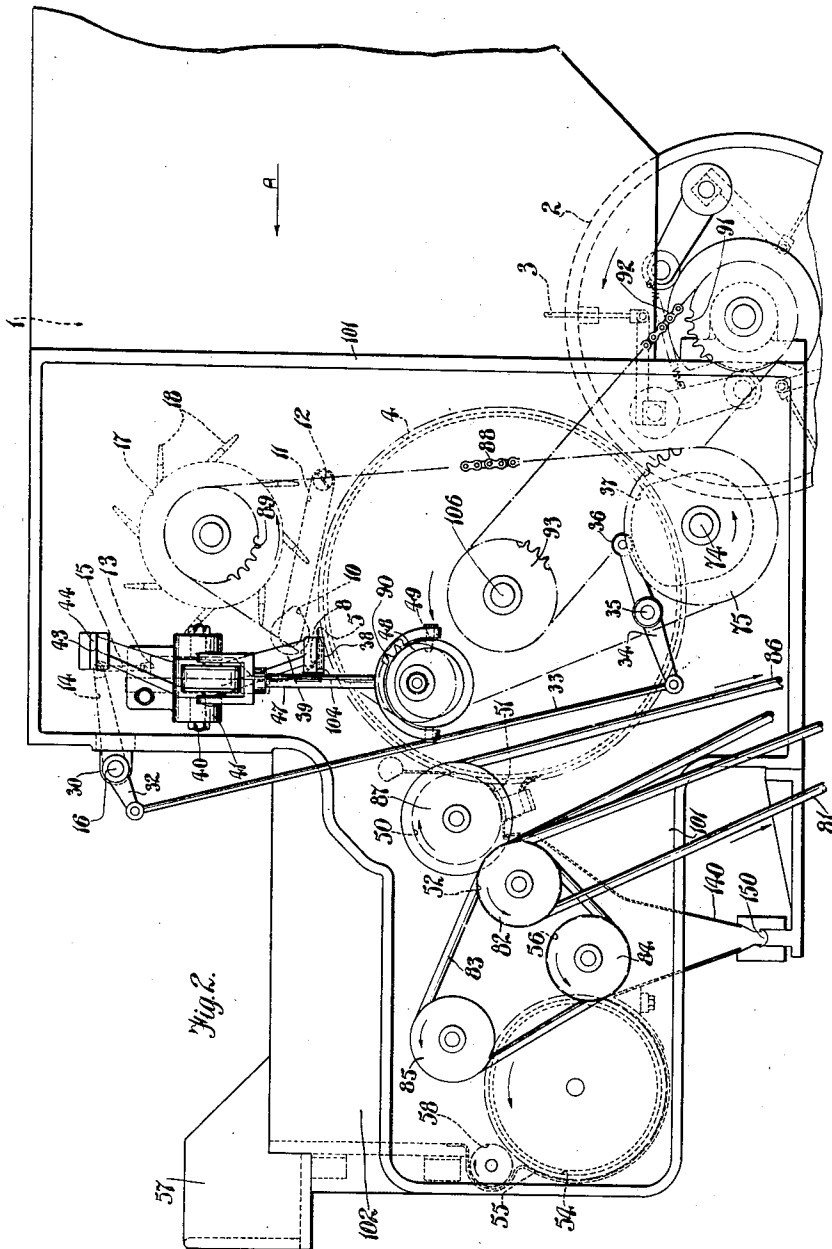
D. W. MOLINS ET AL

2,326,793

METHOD AND APPARATUS FOR FEEDING CUT TOBACCO

Filed July 1, 1939

5 Sheets-Sheet 2



Inventors
Diamond H. Molins
Felip F. Ruan
By
Norton, Cole, Grindle & Norton

Aug. 17, 1943.

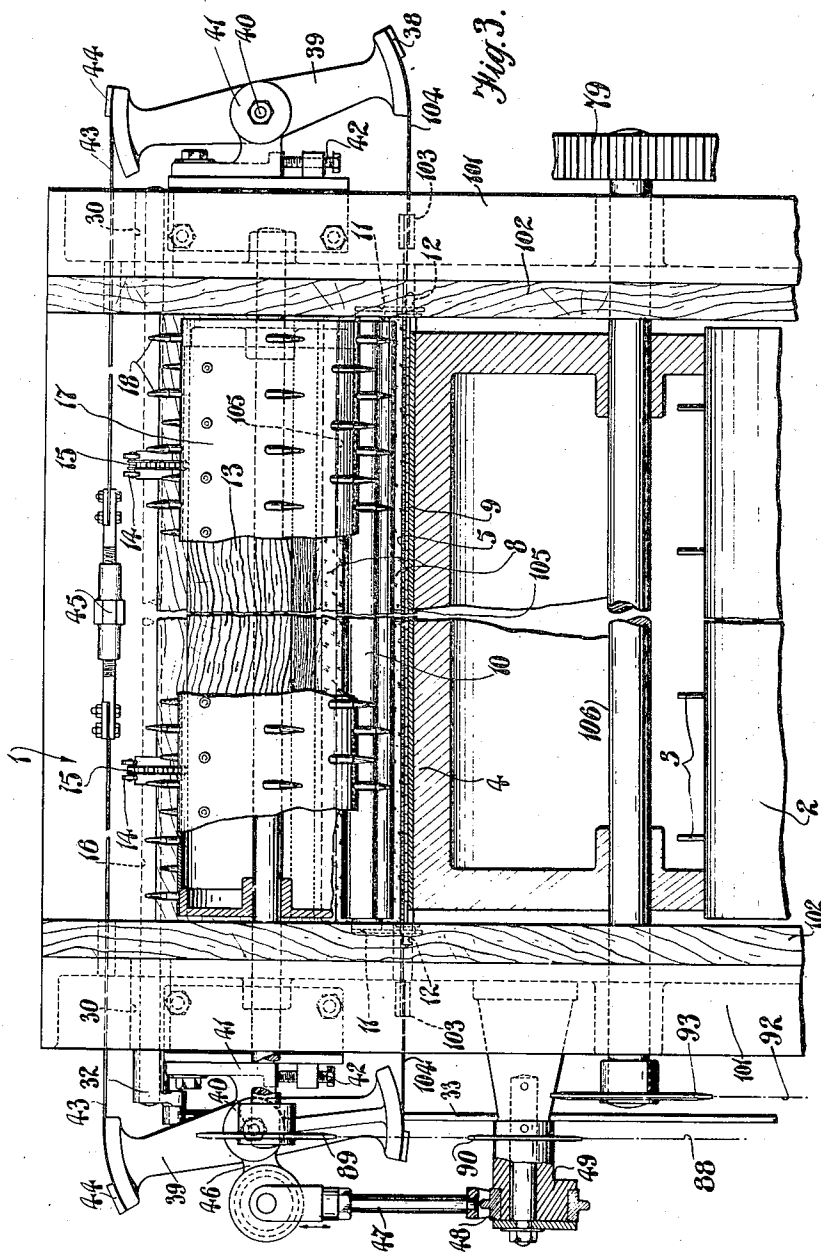
D. W. MOLINS ET AL

2,326,793

METHOD AND APPARATUS FOR FEEDING CUT TOBACCO

Filed July 1, 1939

5 Sheets-Sheet 3



Inventors
 Diamond W. Molins
 Philip T. Ryan
 By
 Hatten, Cole, Grindle & Hatten

Aug. 17, 1943.

D. W. MOLINS ET AL

2,326,793

METHOD AND APPARATUS FOR FEEDING CUT TOBACCO

Filed July 1, 1939

5 Sheets-Sheet 4

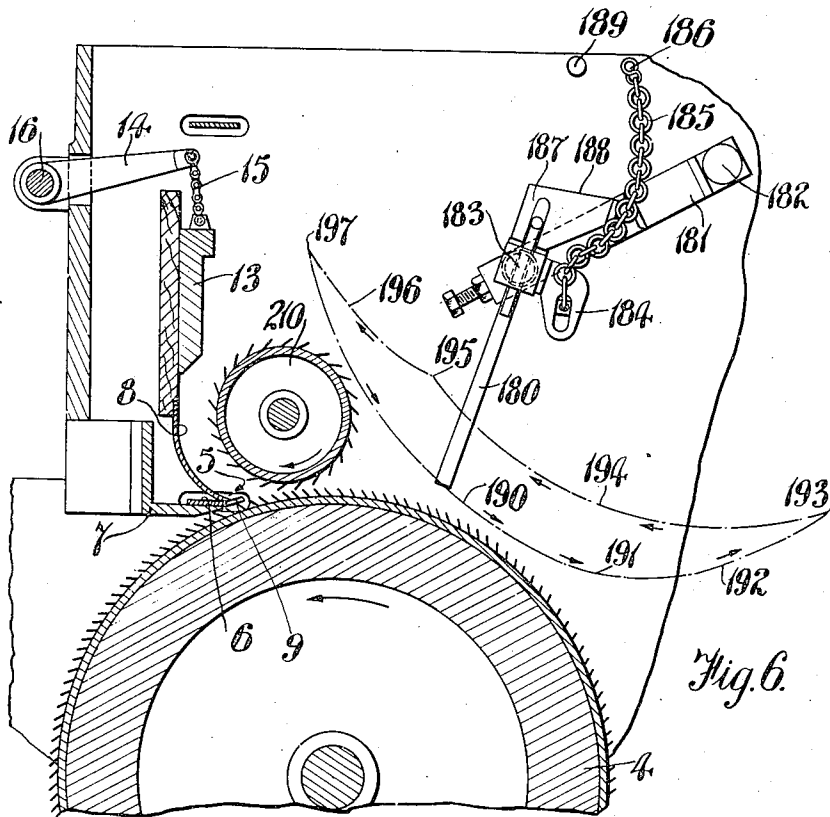


Fig. 6.

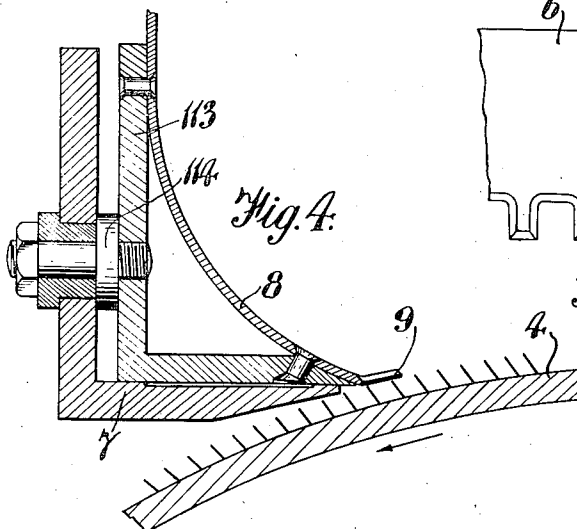


Fig. 4.

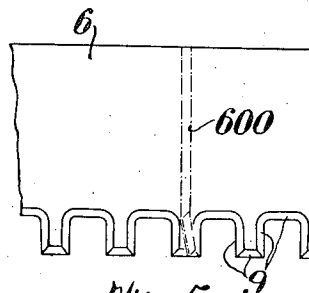


Fig. 5.

Inventors
 Diamond H. Molins
 Philip F. Rusan
 By
 Watson, Cole, Grinnell & Watson
 Attorneys

Aug. 17, 1943.

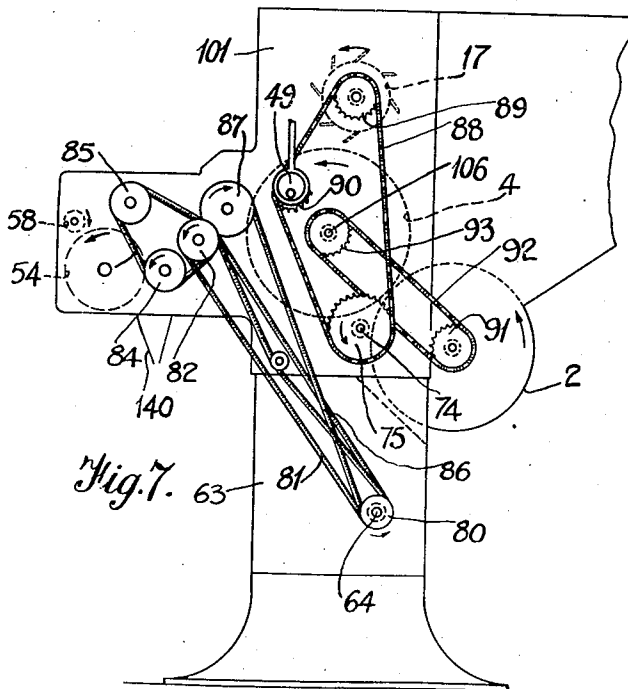
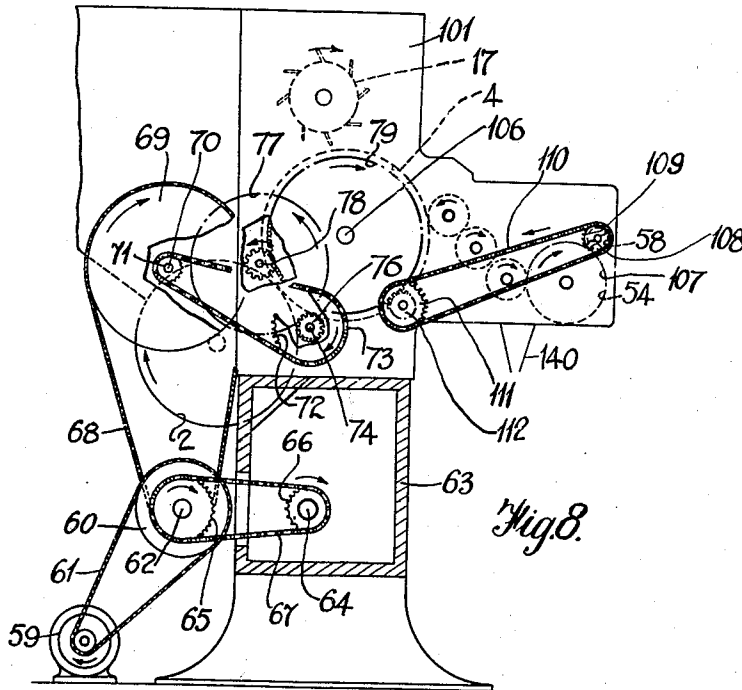
D. W. MOLINS ET AL

2,326,793

METHOD AND APPARATUS FOR FEEDING CUT TOBACCO

Filed July 1, 1939

5 Sheets-Sheet 5



Inventors
 Diamond H. Molins
 Felix F. Kusan
 By
 Watson, Cole, Grindle & Watson
 ATTORNEYS

UNITED STATES PATENT OFFICE

2,326,793

METHOD AND APPARATUS FOR FEEDING
OUT TOBACCODesmond Walter Molins and Felix Frederic Ruau,
London, England, assignors to Molins Machine
Company Limited, London EnglandApplication July 1, 1939, Serial No. 282,532
In Great Britain July 14, 1938

42 Claims. (Cl. 131-109)

This invention is for improvements in or relating to apparatus for feeding cut tobacco, and refers to apparatus of the kind in which the cut tobacco is carried by an endless conveyor having tobacco-engaging teeth thereon.

In machines of the kind described it is usual for the conveyor (e. g., a carded conveyor) initially to feed more tobacco than is required and for this reason means are employed for removing the surplus tobacco and for forming a substantially even carpet of tobacco on the conveyor. The most common method adopted in practice for removing this surplus tobacco is to employ a carded refuser roller or brushing roller.

According to one form of the present invention there is provided a method of removing surplus tobacco from the endless conveyor by a separating device having a tobacco-engaging edge, comprising moving the conveyor forwardly, arranging the separating device so that the edge is opposed to the direction of movement of the conveyor at a position adjacent the teeth thereof to separate surplus tobacco from the conveyor and removing the separated tobacco from the conveyor by deflecting it away from the conveyor whilst guiding it in its same general direction of movement in a path which diverges from that of the conveyor.

Further according to the present invention there is provided a method of removing surplus tobacco from the endless conveyor by a separating device having an uneven tobacco-engaging edge, comprising moving the conveyor forwardly whilst having tobacco thereon, arranging the separating device so that the edge is opposed to the direction of movement of the conveyor at a position adjacent the teeth thereof and causing the edge to give a lateral movement to the forwardly moving tobacco engaged by the edge to separate surplus tobacco from the conveyor. Pressure may be applied to the tobacco on the conveyor in the region close to the tobacco-engaging edge for the purpose of packing tobacco into the conveyor teeth and for holding the tobacco against the conveyor during separation of surplus tobacco, thus assisting the separation of surplus tobacco. Preferably the separated tobacco is returned on to the conveyor at a position in advance of that where the said pressure is applied.

The invention also provides apparatus of the kind referred to, wherein there is provided a separating device having a tobacco-engaging edge so located that the edge is opposed to the direction of movement of the conveyor and adjacent

the teeth thereof to separate surplus tobacco from the conveyor and means to deflect and guide separated tobacco away from the conveyor in its same general direction of movement in a path which diverges from that of the conveyor. Means may be provided for positively feeding separated tobacco in the said diverging path.

Again, according to the present invention there is provided apparatus of the kind referred to comprising in combination means to move the conveyor forwardly while carrying tobacco which has been abstracted from a supply, a separating device to separate surplus tobacco from the conveyor, said separating device having tobacco-engaging teeth which are opposed to the direction of movement of the conveyor and adjacent the teeth of the conveyor, and means to cause during operation of the apparatus relative movement (e. g., relative reciprocatory movement) between the conveyor and the teeth of the separating device in a direction transverse to the forward movement of the conveyor.

In apparatus according to the present invention there may be provided presser means for pressing tobacco into the teeth of the conveyor in the region of the tobacco-engaging edge. The presser means may comprise a presser element which has, considered in the direction of movement of the conveyor, a convex tobacco-engaging surface which is freely mounted to ride on the tobacco fed by the conveyor. The means to deflect the separated tobacco away from the conveyor may comprise a passage having opposed walls and a raking device may be arranged to move tobacco away from the outlet of the passage and to deposit tobacco removed from the passage upon the surface of the conveyor at a position in advance of the said separating device. A guide surface may be interposed between the remover means, the raking device and the inlet into the passage to guide the tobacco to be deposited by the raking device to a position in advance of the passage. The said guide surface may be provided on the upper surface of the presser element which may be of ovate or like shape in section taken along a plane lying in the direction of movement of the conveyor. The presser element preferably comprises one of the opposed walls of the passage and means may be provided for compacting the separated tobacco in the passage.

Preferably the separating device has teeth which are of generally rectangular shape, the tobacco-engaging edge being constituted in such a case by the free edges of the teeth and the

edges connecting the bases of adjacent teeth so as to provide an uneven tobacco-engaging edge.

Some examples of apparatus made in accordance with the present invention will now be described by way of example with reference to the accompanying drawings, in which:

Figure 1 is a section through tobacco-feeding apparatus embodying a tobacco-separating device made in accordance with the invention.

Figure 1a is a fragmentary view corresponding to a portion of Figure 1 but illustrating a slight modification.

Figure 2 is a side view of the apparatus shown in Figure 1.

Figure 3 is an end view of the apparatus, partly in section, and looking in the direction of the arrow A in Figure 2.

Figure 4 is a detail in section of the tobacco-separating device shown in Figure 1, but slightly modified.

Figure 5 is a plan showing a part of the tobacco-separating device and showing the shape of the tobacco-engaging edge.

Figure 6 is a sectional view of a modified construction embodying the invention.

Figures 7 and 8 are views taken from each end of the tobacco feeding apparatus shown in Figure 1 and show the driving arrangements.

Like reference numerals refer to like parts throughout the several figures of the drawings.

Referring to Figure 1, the apparatus comprises a hopper 1 at the bottom of which there is a smooth roller 2 having retractable pins 3 operating in known manner. The conveyor roller 4 has tobacco-engaging teeth formed by cards, the teeth being forwardly inclined to provide a positive feed to the tobacco. A wedge-shaped tobacco-separating device 5, comprises a blade element 6, a support 7 and a guide 8 located above the blade and having a curved guide surface. The separating device is located adjacent the teeth of the conveyor 4 and has a tobacco-engaging edge 9 which is opposed to the direction of movement of the conveyor and which is adjacent the teeth of the conveyor 4 and arranged to separate surplus tobacco from the conveyor.

As can be seen more clearly from Figure 5, the tobacco-engaging edge 9 of the tobacco-separating device is uneven and saw-like in profile, the blade element 6 being provided with teeth which are of generally rectangular shape and the tobacco-engaging edge is constituted by the free edges of the teeth (that is to say, the tops and sides of the teeth), as well as the edges connecting the bases of adjacent teeth. The free edges of the teeth are chamfered as are also the edges connecting the bases of adjacent teeth. Thus in effect the whole of the uneven edge 9 of the blade 6 constitutes a tobacco-engaging edge which as can be seen from the drawings is of substantial width considered transversely of the forward movement of the conveyor and comprises a barrier extending across the effective tobacco-carrying surface of the conveyor.

The edge may be formed by arranging several blades 6 arranged end to end so that their aggregate length extends across the effective tobacco-carrying surface of the conveyor 4, so that the edge affords a barrier extending across the conveyor 4.

The edge itself although thin is not sharp, since a sharp edge would have the tendency to cut the tobacco unduly. An edge of about 0.4 millimetre to 0.8 millimetre is, however, suffi-

ciently thin to effect separation in a satisfactory manner.

The edge 9 is placed as close as possible to the tops of the teeth on the conveyor 4, although in practice a slight space is allowed between the edge 9 and the conveyor teeth to prevent fouling between the edge and the conveyor teeth due to possible irregularities of the latter.

In the example described and shown in Figure 1, the teeth of the blade 6 are bent upwardly (as also shown by the chain line 600 in Figure 5), so that all parts of the tobacco-engaging edge 9 are at the same distance above the teeth of the conveyor 4.

The blade element 6 is reciprocated as described later, in a direction transverse to the direction of movement of the surface of the conveyor. This lateral reciprocation of the saw edge assists in separating the surplus tobacco from tobacco between the conveyor teeth and also tends to cause an even distribution of the tobacco. This will be so, since surplus tobacco removed from one part of the conveyor can in this way be brushed by the teeth of the blade 6 to fill the conveyor teeth at portions which may have a shortage of tobacco. The extent of this transverse movement will be a question of individual choice, but it will be obvious that the longer the stroke, within reason, the better will be the distributing effect. In order to prevent tobacco being carried sideways off the conveyor, the back portion of the hopper 1 above the roller 2 and to the right of the conveyor 4 (as seen in Figure 1) is made narrower than the roller 2 and the conveyor 4 so that the width of the conveyor is greater than the width of the tobacco stream carried by it to the edge 9. After passing the edge, the tobacco stream is wider and in the form of a carpet.

Surplus tobacco which is not spread or distributed as aforesaid passes over the edge 9 so that it is removed from the conveyor 4 by being deflected by the edge and the guide surface 8 away from the conveyor whilst being guided in its same general direction of movement in a path which diverges from that of the conveyor and is prevented from being fed past the edge.

Located above the tobacco-engaging edge 9 and slightly to the right of it as shown in Figure 1 there is provided a presser element of light construction so as to apply a relatively light pressure to the tobacco on the conveyor 4 in the region of the tobacco-engaging edge 9. The presser element 10 tends to pack the tobacco into the teeth of the conveyor 4 and holds the tobacco during the separation of surplus tobacco from the surface of the conveyor, thus assisting the separation.

The presser element as can be seen in Figure 1 has, considered in the direction of movement of the conveyor, a convex tobacco-engaging surface, and is freely mounted to ride on the tobacco fed by the conveyor 4. This is effected by mounting the presser element 10 on arms 11 which are pivoted at 12, thus permitting the presser element 10 to oscillate about the centre 12. The presser element is of ovate section taken along a plane lying in the direction of movement of the conveyor. The presser element 10 constitutes one of the opposed walls of a passage, the other wall being constituted by the guide element 8. This presser element 10 and the guide 8 form a diverging passage through which surplus tobacco is caused to pass after it has separated from the conveyor 4. The passage, in the example shown,

is made diverging in order to reduce any tendency for the tobacco to form a choke in the passage. The sides 102 of the hopper form the other walls of the passage. The frame 101 carries the sides 102.

Located above the passage there is provided a tamper element 13 which is arranged to be reciprocated vertically. The tamper 13 is suspended from an end of the lever 14 by a chain 15. The lever 14 is mounted on a shaft 16 which is operated mechanically to raise and lower the tamper 13. Above the presser element and to the right of it there is provided a roller 17 having rearwardly inclined pins 18 to constitute a returner means for removing tobacco away from the outlet of the passage, that is, tobacco emerging from between the bottom of the tamper 13 and the presser member 10 and for depository tobacco so removed upon the surface of the conveyor 4 at a position in advance of the tobacco-engaging edge 9. As can be seen in Figure 1 the direction of rotation of the roller 17 is anti-clockwise.

The function of the raking pins 18 is not only to return tobacco to the surface of the conveyor, but also to act as a rough trimming device for the tobacco on the conveyor 4 itself for the tobacco which has been abstracted from the supply in the hopper. The raking teeth 18 remove large masses of tobacco which may be brought up by the conveyor 4. The finer control is, however, effected by the separating device 5.

In the example depicted in Figure 1 in the drawings the returner means comprises a raking device. The upper and outer surface of the presser element 10 comprises a guiding surface which is interposed between the raking device and the inlet end of the passage and guides the tobacco to be deposited by the pins 18 to a position in advance of the passage. It will be appreciated that the inlet end of the passage is defined by the area lying between the tobacco-engaging edge 9 of the separating device and the lower surface of the presser element 10.

Instead of providing a presser element of ovate section such as the presser element 10, the presser element may be of circular section and may be arranged to be freely mounted about its centre, as illustrated in Figure 1a. The roller presser element could be arranged to be pivoted in a similar manner to the presser element 10. A roller is, however, not so good as the ovate section, since with a roller an accumulation of tobacco tends to form in front of the roller, whereas the narrow end of the ovate fills the area in which tobacco would otherwise accumulate in front of a roller.

The mechanism for reciprocating the blade 6 is shown in Figures 2 and 3. The blade 6 is connected by clamps 103 to flexible straps 104 fixed at 38 to curved faces of double armed levers 39 which are pivoted at 40 to brackets 41 fixed to the hopper frames.

The brackets may be adjusted by screws 42 so that the position of the blade 6 with respect to the conveyor 4 may be accurately adjusted. The levers 39 are also connected together by straps 43 fixed thereto at 44 and the straps are connected together by a straining device 45 whereby the member 43 may be suitably tensioned.

A lever 46 is fixed to one of the double armed levers 39 and is pivotally attached to an eccentric rod 47. The pivot comprises a self-aligning ball race so that the attachment consists of a universal joint.

The rod 47 is fixed at its lower end to an eccentric strap 48 mounted on an eccentric 49 driven as described later. Thus as the eccentric rotates the blade 6 is reciprocated, being guided on an angle support 7.

In the modified construction shown in Figure 4, the tobacco-engaging edge 9 is constituted by teeth similar to those shown in Figure 5, but formed in one piece with the guide 8, which in this construction is reciprocated in a similar manner to that for reciprocating the blade 6. In Figure 4, the guide 8 is secured to an angle piece 113, which is slidably mounted on the angle support 7 and is guided by studs 114 working in slots in the support 7. In this construction the angle piece 113 is connected to the flexible straps 104.

It will be appreciated that the tobacco after passing the separating device can be dealt with in innumerable ways. The apparatus shown in Figure 1 is only an example and illustrates one complete tobacco-feeding apparatus provided with a tobacco-separating device made in accordance with the present invention.

The tobacco on the conveyor 4 after passing the tobacco-separating device is picked by a picker roller 50 and guided over a concave guide 51 and discharged on to the surface of a roller 52 having vanes 53 which throw the tobacco in an upwardly directed stream. The shower falls on a carded roller 54 and is conveyed thereby through a curved passage formed by a shroud 55. After passing through the passage the tobacco is picked from the carded roller 54 by a picker roller 56 and discharged down a chute 149 on to a web of cigarette paper or a band 150. This method of removing tobacco from the conveyor roller 4 permits of a winnowing operation because stalks or heavy particles are thrown by the vanes 53 to such a height as indicated by the dotted paths in Figure 1 that they fall into a box 57. A small roller 58 is provided at the entrance to the passage formed by the shroud 55 to assist in regulating the entrance of tobacco into the passage.

The driving arrangements may best be seen on Figures 7 and 8, certain parts of which are repeated on Figure 2. For clearness all jockeys or guide pulleys have as far as possible been omitted.

A motor 59, Figure 8, drives a pulley 60 by a belt 61, the pulley being fixed on a countershaft 62 mounted in bearings (not shown) attached to the side of the bed 63 of the cigarette making machine. In the interior of the bed is mounted a main shaft 64 which is driven by a sprocket 65 on the countershaft 62 connected to a sprocket 66 on the mainshaft by a chain 67. At the other end of the mainshaft 64 are fixed two pulleys referred to later, see Figure 7.

The countershaft 62 also carries a pulley which in the drawings is hidden by the sprocket 65. A belt 68 on this pulley drives an upper pulley 69 fixed on a shaft 70. A sprocket 71 on shaft 70 drives another sprocket 72 by a chain 73. The sprocket 72 is fixed to a shaft 74 mounted in bearings in the hopper frames 101 and termed for clearness the hopper drive shaft. The other end of the shaft, see Figure 7, carries a sprocket 75 and as will be seen from Figure 2, the cam 37. A gear 75, Figure 8, on the hopper drive shaft, engages with a larger gear 77 to the back of which is fixed a small gear 78 which engages with a large gear 79 fixed to the spindle 105 of the conveyor 4.

The mainshaft 64 has, as previously mentioned, two pulleys on its end. These are of the same diameter and the one in front, 89, has a belt 81 on it which drives a pulley 82 which is fixed to the shaft of the vaned roller 52. Another pulley on the same shaft and of the same diameter and behind the pulley 82, is connected by a belt 83 which passes around a pulley 84 on the spindle of the picker roller 56 and round an idler 85. The pulley behind the pulley 80 is connected by a crossed belt 86 to a pulley 87 on the spindle of the picker roller 59.

The sprocket 75 drives the raking drum 17 by a chain 88 which passes around a sprocket 89 on the spindle of said drum. The chain also passes around a sprocket 90 to which is fixed the eccentric 49.

The feed roller 2 has a sprocket 91 fixed to its spindle which is driven by a chain 92 which passes around a sprocket 93 on the spindle 106 of the conveyor roller 4.

The roller 54 has a gear 107 on its spindle which engages with another gear 108 on the spindle of roller 53. A sprocket 109 fixed to gear 108 is driven by a chain 110 from a sprocket 111. The latter has a gear 112 fixed to it which engages with the large gear 79.

In this manner all the rollers are driven in the directions shown at the appropriate speeds.

Figure 6 shows a modified construction in accordance with the present invention. The separating device as can be seen from Figure 6 is the same as that shown in Figure 1. The tamping device 13 is similarly arranged to that shown in Figure 1. In Figure 6, however, there is provided in front of the tobacco-engaging edge 9 a roller 210 which rotates in a clockwise direction so that the co-operating portions of the roller 4 and the roller 210 move in the same direction. The teeth on the roller 210 are not so close together as on the conveyor 4 and the roller 210 goes at a slower peripheral speed than the conveyor 4. As in the case of the presser element 10 in Figure 1, the roller 210 helps to pack the tobacco into the teeth of the conveyor 4 and holds the tobacco during the separation of surplus tobacco, thereby assisting the separating action of the tobacco-engaging edge 9.

Surplus tobacco is positively removed from the conveyor 4 by the roller 210 and is taken upwardly through the passage between the surface of the guide 8 and the roller 210, so that it is guided away from the conveyor in its same general direction of movement in a path which diverges from that of the conveyor 4 whilst being positively fed by the roller 210. Tobacco carried by the roller 210 is removed from the teeth of the latter by a raking device having rakes 180 carried on an arm 181 which is pivoted at a point 182. The rakes 180 are pivotally mounted on the arm 181 at a point 183, but are frictionally held against angular movement on the arm 181.

A lever 184 is provided on the mounting for the rakes 180 and a chain 185 anchored to the frame of the machine at 186 is connected as shown in Figure 6 to the lever 184. Also connected to the rakes 180 there is a cam 187 having a surface 188 which is adapted to engage a fixed stop 189 when the lever arm 181, which is positively driven, is in its uppermost position. The construction is such that as the lever 181 moves in an anti-clockwise direction the ends of the rakes will be in the path 193 shown in dotted lines in Figure 6.

After reaching the point 191 the chain 185 will

cause the lever 184 to turn in an anti-clockwise direction and thus further movement of the lever 181 will cause the ends of the rakes 180 to move through the path 192. At the end of the anti-clockwise stroke the ends of the rakes 180 will be at point 193, and thus on the clockwise stroke the ends of the rakes will follow a path 194 shown in dotted lines, that path being an arc struck from the centre 182. When, however, the lever 181 has moved sufficiently far in its clockwise stroke that the ends of the rakes 180 reach the point 195, the cam surface 188 will have engaged the fixed stop 189. Continued movement of the lever 181 in the clockwise direction will cause the cam 187 and the rakes 180 to turn in a clockwise direction about the centre 183, and thus the ends of the rakes will follow the path 196 so that at the end of the clockwise stroke, the ends of the rakes will be in the position 197. They then move through the aforesaid path 190 which is an arc struck from the point 182. In the anti-clockwise stroke the rakes remove tobacco from the teeth of the roller 210. Some of this removed tobacco will be returned to the surface of the conveyor 4 and other tobacco will be taken by the rakes and returned into the hopper.

The rakes 180 moving along the path 190 are arranged to provide a rough trimming action for the tobacco on the conveyor 4, the fine trimming as is also the case in Figure 1 being effected by the separating device 5.

The tobacco after passing the separating device 5 may be fed in the manner shown in Figure 1 or in any other convenient or desired manner.

Instead of using the raking device shown in Figure 6, a raking device such as is described in British Patent specification No. 441,433 could be provided. The advantage, however, of the construction shown in Figure 6 is that on the clockwise stroke of the rake the ends of the rakes are removed to a distance from the surface of the conveyor 4 so that they have no action whatsoever on the tobacco on the clockwise stroke.

What we claim as our invention and desire to secure by Letters Patent is:

1. Apparatus for removing surplus tobacco from an endless conveyor having tobacco-engaging teeth thereon comprising a separating device having tobacco-engaging teeth for separating surplus tobacco from the conveyor, means for reciprocating said teeth in a direction transverse to the direction of movement of the conveyor, means to press the tobacco on the conveyor in the region of the reciprocating tobacco-engaging teeth to facilitate separation of the tobacco, a passage for deflecting and guiding separated tobacco away from the surface of the conveyor and means to return separated tobacco to the surface of the conveyor at a position in advance of the pressure means.

2. A method of feeding cut tobacco, comprising the steps of abstracting tobacco from a source of supply, moving the tobacco so abstracted forwardly on an endless conveyor having tobacco-engaging teeth thereon and removing surplus tobacco from the conveyor by directing a separating device having an uneven tobacco-engaging edge so that the edge is opposed to the direction of movement of the conveyor at a position adjacent the teeth thereof, and by causing relative movement between the tobacco-engaging edge and the conveyor in a single direction substantially parallel to the surface of the conveyor and transverse to the direction of the forward movement of the conveyor while arranging that all

points of the edge are always adjacent to and in substantially the same spaced relation to the surface containing the free points of the teeth of the conveyor.

3. A method of feeding cut tobacco, comprising the steps of abstracting tobacco from a source of supply, moving the tobacco so abstracted forwardly on an endless conveyor having tobacco-engaging teeth thereon, removing surplus tobacco from the conveyor by directing a separating device having an uneven tobacco-engaging edge so that the edge is opposed to the direction of movement of the conveyor at a position adjacent the teeth thereof and by causing relative movement between the tobacco-engaging edge and the conveyor in a direction transverse to the direction of the forward movement of the conveyor, while arranging that all points of the edge are always adjacent to and in substantially the same spaced relation to the surface containing the free points of the teeth of the conveyor, and deflecting and guiding the tobacco so separated in a manner such that the separated tobacco is guided in its same general direction of movement in a path which diverges from that of the conveyor.

4. A method of feeding cut tobacco, comprising the steps of abstracting tobacco from a source of supply, moving the tobacco so abstracted forwardly on an endless conveyor having tobacco-engaging teeth thereon, removing surplus tobacco from the conveyor by directing a separating device having an uneven tobacco-engaging edge so that the edge is opposed to the direction of movement of the conveyor at a position adjacent the teeth thereof and by causing relative movement between the tobacco-engaging edge and the conveyor in a direction transverse to the direction of the forward movement of the conveyor, while arranging that all points of the edge are always adjacent to and in substantially the same spaced relation to the surface containing the free points of the teeth of the conveyor, and applying pressure to the tobacco on the conveyor in a region close to the tobacco-engaging edge to pack tobacco into the conveyor teeth and to hold the tobacco during the separation of surplus tobacco for the purpose of assisting in separating surplus tobacco.

5. A method of feeding cut tobacco, comprising the steps of abstracting tobacco from a source of supply, moving the tobacco so abstracted forwardly on an endless conveyor having tobacco-engaging teeth thereon, removing surplus tobacco from the conveyor by directing a separating device having an uneven tobacco-engaging edge so that the edge is opposed to the direction of movement of the conveyor at a position adjacent the teeth thereof and by causing relative movement between the tobacco-engaging edge and the conveyor in a direction transverse to the direction of the forward movement of the conveyor, while arranging that all points of the edge are always adjacent to and in substantially the same spaced relation to the surface containing the free points of the teeth of the conveyor, deflecting and guiding the tobacco so separated in a manner such that the separated tobacco is guided in its same general direction of movement in a path which diverges from that of the conveyor, and applying pressure to the tobacco on the conveyor in a region close to the tobacco-engaging edge to pack tobacco into the conveyor teeth and to hold the tobacco during the separation of surplus tobacco for the purpose of assisting in separating surplus tobacco.

6. A method of feeding cut tobacco, compris-

ing the steps of abstracting tobacco from a source of supply, moving the tobacco so abstracted forwardly on an endless conveyor having tobacco-engaging teeth thereon, removing surplus tobacco from the conveyor by directing a separating device having an uneven tobacco-engaging edge so that the edge is opposed to the direction of movement of the conveyor at a position adjacent the teeth thereof and by causing relative movement between the tobacco-engaging edge and the conveyor in a direction transverse to the direction of the forward movement of the conveyor, while keeping the tobacco-engaging edge adjacent the teeth of the conveyor, applying pressure to the tobacco on the conveyor in a region close to the tobacco-engaging edge to pack tobacco into the conveyor teeth and to hold the tobacco during the separation of surplus tobacco for the purpose of assisting in separating surplus tobacco, and returning separated tobacco onto the conveyor at a position in advance of that where the said pressure is applied.

7. A method of feeding cut tobacco, comprising the steps of abstracting tobacco from a source of supply, moving the tobacco so abstracted forwardly on an endless conveyor having tobacco-engaging teeth thereon, removing surplus tobacco from the conveyor by directing a separating device having an uneven tobacco-engaging edge so that the edge is opposed to the direction of movement of the conveyor at a position adjacent the teeth thereof and by causing relative movement between the tobacco-engaging edge and the conveyor in a direction transverse to the direction of the forward movement of the conveyor, while keeping the tobacco-engaging edge adjacent the teeth of the conveyor, deflecting and guiding the tobacco so separated in a manner such that the separated tobacco is guided in its same general direction of movement in a path which diverges from that of the conveyor, applying pressure to the tobacco on the conveyor in a region close to the tobacco-engaging edge to pack tobacco into the conveyor teeth and to hold the tobacco during the separation of surplus tobacco for the purpose of assisting in separating surplus tobacco, and returning separated tobacco onto the conveyor at a position in advance of that where the said pressure is applied.

8. In apparatus for feeding cut tobacco, a source of supply from which tobacco is abstracted, a conveyor having tobacco-engaging teeth thereon to convey abstracted tobacco forwardly, means to move the conveyor forwardly, a separating device to remove surplus tobacco from the conveyor, said separating device having an uneven tobacco-engaging edge adjacent the teeth of the conveyor and opposed to the direction of movement of the conveyor, and means to cause during operation of the apparatus relative movement between the conveyor and said tobacco-engaging edge in a direction transverse to the direction of forward movement of the conveyor while keeping the tobacco-engaging edge always in substantially the same spaced relation to the surface containing the free points of the teeth of the conveyor.

9. In apparatus for feeding cut tobacco, a source of supply from which tobacco is abstracted, a conveyor having tobacco-engaging teeth thereon to convey abstracted tobacco forwardly, means to move the conveyor forwardly, a separating device to remove surplus tobacco from the conveyor, said separating device having an uneven tobacco-engaging edge adjacent the teeth of the conveyor and opposed to the direction of movement of the conveyor, and means to cause

during operation of the apparatus relative reciprocal movement between the conveyor and said tobacco-engaging edge in a direction transverse to the direction of forward movement of the conveyor while keeping the tobacco-engaging edge always in substantially the same spaced relation to the surface containing the free points of the teeth of the conveyor.

10. In apparatus for feeding cut tobacco, a source of supply from which tobacco is abstracted, a conveyor having tobacco-engaging teeth thereon to convey abstracted tobacco forwardly, means to move the conveyor forwardly, a separating device to remove surplus tobacco from the conveyor, said separating device having an uneven tobacco-engaging edge adjacent the teeth of the conveyor and opposed to the direction of movement of the conveyor, means to cause during operation of the apparatus relative movement between the conveyor and said tobacco-engaging edge in a direction transverse to the direction of forward movement of the conveyor while keeping the tobacco-engaging edge always in substantially the same spaced relation to the surface containing the free points of the teeth of the conveyor, and means to deflect and guide separated tobacco away from the conveyor in its same general direction of movement in a path which diverges from that of the conveyor.

11. In apparatus for feeding cut tobacco, a source of supply from which tobacco is abstracted, a conveyor having tobacco-engaging teeth thereon to convey abstracted tobacco forwardly, means to move the conveyor forwardly, a separating device to remove surplus tobacco from the conveyor, said separating device having an uneven tobacco-engaging edge adjacent the teeth of the conveyor and opposed to the direction of movement of the conveyor, means to cause during operation of the apparatus relative movement between the conveyor and said tobacco-engaging edge in a direction transverse to the direction of forward movement of the conveyor while keeping the tobacco-engaging edge always in substantially the same spaced relation to the surface containing the free points of the teeth of the conveyor, and presser-means located in the region of the position at which the tobacco is engaged by the tobacco-engaging edge to press the tobacco into the teeth of the conveyor.

12. In apparatus for feeding cut tobacco, a source of supply from which tobacco is abstracted, a conveyor having tobacco-engaging teeth thereon to convey abstracted tobacco forwardly, means to move the conveyor forwardly, a separating device to remove surplus tobacco from the conveyor, said separating device having an uneven tobacco-engaging edge adjacent the teeth of the conveyor and opposed to the direction of movement of the conveyor, means to cause during operation of the apparatus relative movement between the conveyor and said tobacco-engaging edge in a direction transverse to the direction of forward movement of the conveyor while keeping the tobacco-engaging edge always in substantially the same spaced relation to the surface containing the free points of the teeth of the conveyor, means to deflect and guide separated tobacco away from the conveyor in its same general direction of movement in a path which diverges from that of the conveyor, and presser-means located in the region of the position at which the tobacco is engaged by the tobacco-engaging edge to press the tobacco into the teeth of the conveyor.

13. In apparatus for feeding cut tobacco, a

source of supply from which tobacco is abstracted, a conveyor having tobacco-engaging teeth thereon to convey abstracted tobacco forwardly, means to move the conveyor forwardly, a separating device to remove surplus tobacco from the conveyor, said separating device having an uneven tobacco-engaging edge adjacent the teeth of the conveyor and opposed to the direction of movement of the conveyor, means to cause during operation of the apparatus relative movement between the conveyor and said tobacco-engaging edge in a direction transverse to the direction of forward movement of the conveyor, and freely mounted presser-means having, in the direction of movement of the conveyor, a convex tobacco-engaging surface located in the region of the position at which the tobacco is engaged by the tobacco-engaging edge to press the tobacco into the teeth of the conveyor.

14. In apparatus for feeding cut tobacco, a source of supply from which tobacco is abstracted, a conveyor having tobacco-engaging teeth thereon to convey abstracted tobacco forwardly, means to move the conveyor forwardly, a separating device having a tobacco-engaging edge arranged adjacent the teeth of the conveyor at a position removed from the source of supply and opposed to the direction of movement of the conveyor to separate surplus quantities of tobacco brought forward by the conveyor, the edge being so arranged that all points of the edge are always adjacent to and in substantially the same spaced relation to the surface containing the free points of the teeth of the conveyor, and means to deflect and guide the tobacco so removed away from the conveyor in its same general direction of movement in a path that diverges from that of the conveyor and prevent the feeding of the tobacco so removed by the separating device.

15. In apparatus for feeding cut tobacco, a source of supply from which tobacco is abstracted, a conveyor having tobacco-engaging teeth thereon to convey abstracted tobacco forwardly, means to move the conveyor forwardly, a separating device having a tobacco-engaging edge arranged adjacent the teeth of the conveyor at a position removed from the source of supply and opposed to the direction of movement of the conveyor to separate surplus quantities of tobacco brought forward by the conveyor, means to deflect and guide the tobacco so removed away from the conveyor in its same general direction of movement in a path that diverges from that of the conveyor and prevent the feeding of the tobacco so removed by the separating device, and returner means to return to the surface of the conveyor at a position in advance of the tobacco-engaging edge and between the latter and the source of supply, tobacco which has been removed by the separating device.

16. In apparatus for feeding cut tobacco, a source of supply from which tobacco is abstracted, a conveyor having tobacco-engaging teeth thereon to convey abstracted tobacco forwardly, means to move the conveyor forwardly, a separating device having a tobacco-engaging edge arranged adjacent the teeth of the conveyor at a position removed from the source of supply and opposed to the direction of movement of the conveyor to separate surplus quantities of tobacco brought forward by the conveyor, means to deflect and guide the tobacco so removed away from the conveyor in its same general direction of movement in a path that diverges from that of

the conveyor and prevent the feeding of the tobacco so removed by the separating device, and a raking device to return to the surface of the conveyor, at a position in advance of the tobacco-engaging edge, tobacco which has been removed by the separating device.

17. In apparatus for feeding cut tobacco, a source of supply from which tobacco is abstracted, a conveyor having tobacco-engaging teeth thereon to convey abstracted tobacco forwardly, means to move the conveyor forwardly, a separating device having a tobacco-engaging edge arranged adjacent the teeth of the conveyor and opposed to the direction of movement of the conveyor to separate surplus quantities of tobacco brought forward by the conveyor, means to deflect and guide the tobacco so removed away from the conveyor in its same general direction of movement in a path that diverges from that of the conveyor and prevent the feeding of the tobacco so removed by the separating device, returner means to return to the surface of the conveyor, at a position in advance of the tobacco-engaging edge, tobacco which has been removed by the separating device, and a presser-element located in the region of the position at which the tobacco is engaged by the tobacco-engaging edge to press the tobacco into the teeth of the conveyor.

18. In apparatus for feeding cut tobacco, a source of supply from which tobacco is abstracted, a conveyor having tobacco-engaging teeth thereon to convey abstracted tobacco forwardly, means to move the conveyor forwardly, a separating device having a tobacco-engaging edge arranged adjacent the teeth of the conveyor and opposed to the direction of movement of the conveyor to separate surplus quantities of tobacco brought forward by the conveyor, means to deflect and guide the tobacco so removed away from the conveyor in its same general direction of movement in a path that diverges from that of the conveyor and prevent the feeding of the tobacco so removed by the separating device, returner means to return to the surface of the conveyor, at a position in advance of the tobacco-engaging edge, tobacco which has been removed by the separating device, and a freely mounted presser-element having in the direction of movement of the conveyor a convex tobacco-engaging surface located in the region of the position at which the tobacco is engaged by the tobacco-engaging edge to press the tobacco into the teeth of the conveyor.

19. In apparatus for feeding cut tobacco, a source of supply from which tobacco is abstracted, a conveyor having tobacco-engaging teeth thereon to convey abstracted tobacco forwardly, means to move the conveyor forwardly, a separating device having a tobacco-engaging edge arranged adjacent the teeth of the conveyor and opposed to the direction of movement of the conveyor to separate surplus quantities of tobacco brought forward by the conveyor, means to deflect and guide the tobacco so removed away from the conveyor in its same general direction of movement in a path that diverges from that of the conveyor and prevent the feeding of the tobacco so removed by the separating device, returner means to return to the surface of the conveyor, at a position in advance of the tobacco-engaging edge, tobacco which has been removed by the separating device, a presser-element located in the region of the position at which the tobacco is engaged by the tobacco-engaging edge to press

the tobacco into the teeth of the conveyor, and a guiding surface interposed between the returner means and the tobacco-engaging surface of the presser-element to guide the tobacco to a position in advance of the presser-element, the tobacco to be deposited by the returner means.

20. In apparatus for feeding cut tobacco, a source of supply from which tobacco is abstracted, a conveyor having tobacco-engaging teeth thereon to convey abstracted tobacco forwardly, means to move the conveyor forwardly, a separating device having a tobacco-engaging edge arranged adjacent the teeth of the conveyor and opposed to the direction of movement of the conveyor to separate surplus quantities of tobacco brought forward by the conveyor, means to deflect and guide the tobacco so removed away from the conveyor in its same general direction of movement in a path that diverges from that of the conveyor and prevent the feeding of the tobacco so removed by the separating device, returner means to return to the surface of the conveyor, at a position in advance of the tobacco-engaging edge, tobacco which has been removed by the separating device, a freely mounted presser-element having in the direction of movement of the conveyor a convex tobacco-engaging surface located in the region of the position at which the tobacco is engaged by the tobacco-engaging edge to press the tobacco into the teeth of the conveyor, and a guiding surface interposed between the returner means and the tobacco-engaging surface of the presser-element to guide the tobacco to a position in advance of the presser-element, the tobacco to be deposited by the returner means.

21. In apparatus for feeding cut tobacco, a source of supply from which tobacco is abstracted, a conveyor having tobacco-engaging teeth thereon to convey abstracted tobacco forwardly, means to move the conveyor forwardly, a separating device having a tobacco-engaging edge arranged adjacent the teeth of the conveyor and opposed to the direction of movement of the conveyor to separate surplus quantities of tobacco brought forward by the conveyor means to deflect and guide the tobacco so removed away from the conveyor in its same general direction of movement in a path that diverges from that of the conveyor and prevent the feeding of the tobacco so removed by the separating device, returner means to return to the surface of the conveyor, at a position in advance of the tobacco-engaging edge, tobacco which has been removed by the separating device, and a presser-element located in the region of the position at which the tobacco is engaged by the tobacco-engaging edge to press the tobacco into the teeth of the conveyor, said presser-element being of substantially ovate shape in section taken on a substantially vertical plane lying in the direction of movement of the conveyor.

22. In apparatus for feeding cut tobacco, a source of supply from which tobacco is abstracted, a conveyor having tobacco-engaging teeth thereon to convey abstracted tobacco forwardly, means to move the conveyor forwardly, a separating device having a tobacco engaging edge arranged adjacent the teeth of the conveyor and opposed to the direction of movement of the conveyor to separate surplus quantities of tobacco brought forward by the conveyor means to deflect and guide the tobacco so removed away from the conveyor in its same general direction of movement in a path that diverges from that of

the conveyor and prevent the feeding of the tobacco so removed by the separating-device, returner means to return to the surface of the conveyor, at a position in advance of the tobacco-engaging edge, tobacco which has been removed by the separating-device, and a freely mounted presser-element located in the region of the position at which the tobacco is engaged by the tobacco-engaging edge to press the tobacco into the teeth of the conveyor, said presser-element being of substantially ovate shape in section taken on a substantially vertical plane lying in the direction of movement of the conveyor.

23. In apparatus for feeding cut tobacco, a conveyor having tobacco-engaging teeth thereon, means to move the conveyor forwardly, a separating device to remove surplus tobacco from the conveyor, said device comprising a member having a tobacco-engaging edge adjacent the teeth of the conveyor and opposed to the direction of movement of the conveyor, the edge being arranged to cause separation of surplus tobacco from that brought by the conveyor, means to cause during operation of the apparatus relative movement between the conveyor and said tobacco-engaging edge in a direction transverse to the direction of forward movement of the conveyor while arranging that all points of the edge are always adjacent to and in substantially the same spaced relation to the surface containing the free points of the teeth of the conveyor, and means to deflect and guide continuously the separated tobacco away from the conveyor in its same general direction of movement in a path which diverges from that of the conveyor.

24. In apparatus for feeding cut tobacco, a conveyor having tobacco-engaging teeth thereon, means to move the conveyor forwardly, a separating device to remove surplus tobacco from the conveyor, said device having a tobacco-engaging edge adjacent the teeth of the conveyor and opposed to the direction of movement of the conveyor, means to cause during operation of the apparatus relative movement between the conveyor and said tobacco-engaging edge in a direction transverse to the direction of forward movement of the conveyor, means to deflect and guide separated tobacco away from the conveyor in its same general direction of movement in a path which diverges from that of the conveyor, and means for positively feeding separated tobacco in the said diverging path.

25. In apparatus for feeding cut tobacco, a conveyor having tobacco-engaging teeth thereon, means to move the conveyor forwardly, a separating-device to remove surplus tobacco from the conveyor, said device having a tobacco-engaging edge adjacent the teeth of the conveyor and opposed to the direction of movement of the conveyor, means to cause during operation of the apparatus relative movement between the conveyor and said tobacco-engaging edge in a direction transverse to the direction of forward movement of the conveyor, means to deflect and guide separated tobacco away from the conveyor in its same general direction of movement in a path which diverges from that of the conveyor, said last named means including a passage having opposed walls and remover means to move tobacco away from the outlet of the passage and to deposit tobacco removed from the passage upon the surface of the conveyor at a position in advance of the tobacco separating device.

26. In apparatus for feeding cut tobacco, a conveyor having tobacco-engaging teeth thereon,

means to move the conveyor forwardly, a separating device to remove surplus tobacco from the conveyor, said device having a tobacco-engaging edge adjacent the teeth of the conveyor and opposed to the direction of movement of the conveyor, means to cause during operation of the apparatus relative movement between the conveyor and said tobacco-engaging edge in a direction transverse to the direction of forward movement of the conveyor, means to deflect and guide separated tobacco away from the conveyor in its same general direction of movement in a path which diverges from that of the conveyor, said last named means including a passage having opposed walls and a raking device to move tobacco away from the outlet of the passage and to deposit tobacco removed from the passage upon the surface of the conveyor at a position in advance of the tobacco separating device.

27. In apparatus for feeding cut tobacco, a conveyor having tobacco engaging teeth thereon, means to move the conveyor forwardly, a separating device to remove surplus tobacco from the conveyor, said device having a tobacco-engaging edge adjacent the teeth of the conveyor and opposed to the direction of movement of the conveyor, means to cause during operation of the apparatus relative movement between the conveyor and said tobacco-engaging edge in a direction transverse to the direction of forward movement of the conveyor, means to deflect and guide separated tobacco away from the conveyor in its same general direction of movement in a path which diverges from that of the conveyor, said last named means including a passage having opposed walls, remover means to move tobacco away from the outlet of the passage and to deposit tobacco removed from the passage upon the surface of the conveyor, and a guiding surface interposed between the remover means and the inlet end of the passage to guide the tobacco to be deposited by the remover means to a position in advance of the passage.

28. In apparatus for feeding cut tobacco, a conveyor having tobacco-engaging teeth thereon, means to move the conveyor forwardly, a separating device to remove surplus tobacco from the conveyor, said device having a tobacco-engaging edge adjacent the teeth of the conveyor and opposed to the direction of movement of the conveyor, means to deflect and guide separated tobacco away from the conveyor in its same general direction of movement in a path which diverges from that of the conveyor, said last named means including a passage having opposed walls, remover means to move tobacco away from the outlet of the passage and to deposit the tobacco removed from the passage upon the surface of the conveyor, and a guiding surface interposed between the remover means and the inlet end of the passage to guide the tobacco to be deposited by the remover means to a position in advance of the passage.

29. In apparatus for feeding cut tobacco, a conveyor having tobacco-engaging teeth thereon, means to move the conveyor forwardly, a separating device to remove surplus tobacco from the conveyor, said device having a tobacco-engaging edge adjacent the teeth of the conveyor and opposed to the direction of movement of the conveyor, means to deflect and guide separated tobacco away from the conveyor in its same general direction of movement in a path which diverges from that of the conveyor, said

last named means including a passage having opposed walls, remover means to move tobacco away from the outlet of the passage and to deposit the tobacco removed from the passage upon the surface of the conveyor, and a presser-element including two tobacco-engaging surfaces one of which presses the tobacco on the conveyor in the region of the position at which the tobacco is engaged by the separating device, the other of said surfaces constituting a guiding surface to guide the tobacco to be deposited by the remover means to a position in advance of the passage.

30. In apparatus for feeding cut tobacco, a conveyor having tobacco-engaging teeth thereon, means to move the conveyor forwardly, a separating device to remove surplus tobacco from the conveyor, said device having a tobacco-engaging edge adjacent the teeth of the conveyor and opposed to the direction of movement of the conveyor, means to deflect and guide separated tobacco away from the conveyor in its same general direction of movement in a path which diverges from that of the conveyor, said last named means including a passage having opposed walls, remover means to move tobacco away from the outlet of the passage and to deposit the tobacco removed from the passage upon the surface of the conveyor, and a presser-element of substantially ovate shape in section taken along a substantially vertical plane lying in the direction of movement of the conveyor and including two tobacco-engaging surfaces one of which presses the tobacco on the conveyor in the region of the position at which the tobacco is engaged by the separating device, the other of said surfaces constituting a guiding surface to guide the tobacco to be deposited by the remover means to a position in advance of the passage.

31. In apparatus for feeding cut tobacco, a conveyor having tobacco engaging teeth thereon, means to move the conveyor forwardly, a separating device to remove surplus tobacco from the conveyor, said device having a tobacco-engaging edge adjacent the teeth of the conveyor and opposed to the direction of movement of the conveyor, means to deflect and guide separated tobacco away from the conveyor in its same general direction of movement in a path which diverges from that of the conveyor, said last named means including a passage having opposed walls, remover means to move tobacco away from the outlet of the passage and to deposit the tobacco removed from the passage upon the surface of the conveyor, and a presser-element including two tobacco-engaging surfaces one of which presses the tobacco on the conveyor in the region of the position at which the tobacco is engaged by the separating device, the other of said surfaces constituting a guiding surface to guide the tobacco to be deposited by the remover means to a position in advance of the passage, said presser-element comprising one of the opposed walls of said passage.

32. In apparatus for feeding cut tobacco, a conveyor having tobacco-engaging teeth thereon, means to move the conveyor forwardly, a separating device to remove surplus tobacco from the conveyor, said device having a tobacco-engaging edge adjacent the teeth of the conveyor and opposed to the direction of movement of the conveyor, means to deflect and guide separated tobacco away from the conveyor in its same general direction of movement in a path

which diverges from that of the conveyor, said last named means including a passage having opposed walls, means to compact the separated tobacco in the passage, remover means to move tobacco away from the outlet of the passage and to deposit the tobacco removed from the passage upon the surface of the conveyor, and a guiding surface interposed between the remover means and the inlet end of the passage to guide the tobacco to be deposited by the remover means to a position in advance of the passage.

33. In apparatus for feeding cut tobacco, a conveyor having tobacco-engaging teeth thereon, means to move the conveyor forwardly, a separating device to remove surplus tobacco from the conveyor, said device having a tobacco-engaging edge adjacent the teeth of the conveyor and opposed to the direction of movement of the conveyor, means to deflect and guide separated tobacco away from the conveyor in its same general direction of movement in a path which diverges from that of the conveyor, said last named means including a passage having opposed walls, means to compact the separated tobacco in the passage, remover means to move tobacco away from the outlet of the passage and to deposit the tobacco removed from the passage upon the surface of the conveyor, and a presser-element including two tobacco-engaging surfaces one of which presses the tobacco on the conveyor in the region of the position at which the tobacco is engaged by the separating device, the other of said surfaces constituting a guiding surface to guide the tobacco to be deposited by the remover means to a position in advance of the passage.

34. In apparatus for feeding cut tobacco, a source of supply from which tobacco is abstracted, a conveyor having tobacco-engaging teeth thereon, to convey abstracted tobacco forwardly, means to move the conveyor forwardly, a separating device located outside the said source of supply to remove surplus tobacco from the conveyor, said separating device having tobacco-engaging teeth adjacent the teeth of the conveyor and opposed to the direction of movement of the conveyor, and means to cause during operation of the apparatus relative movement between the conveyor and said tobacco-engaging teeth in a direction transverse to the direction of forward movement of the conveyor while keeping the tobacco-engaging edge always in substantially the same spaced relation to the surface containing the free points of the teeth of the conveyor.

35. In apparatus for feeding cut tobacco, a source of supply from which tobacco is abstracted, a conveyor having tobacco-engaging teeth thereon, to convey abstracted tobacco forwardly, means to move the conveyor forwardly, a separating device located outside the said source of supply to remove surplus tobacco from the conveyor, said separating device having tobacco-engaging teeth adjacent the teeth of the conveyor and opposed to the direction of movement of the conveyor, and means to cause during operation of the apparatus relative reciprocatory movement between the conveyor and said tobacco-engaging teeth in a direction transverse to the direction of forward movement of the conveyor while keeping the tobacco-engaging edge always in substantially the same spaced relation to the surface containing the free points of the teeth of the conveyor.

36. In apparatus for feeding cut tobacco, a source of supply from which tobacco is abstracted, a conveyor having tobacco-engaging teeth

thereon, to convey abstracted tobacco forwardly, means to move the conveyor forwardly, a separating device located outside the said source of supply to remove surplus tobacco from the conveyor, said separating device having tobacco-engaging teeth adjacent the teeth of the conveyor and opposed to the direction of movement of the conveyor, means to cause during operation of the apparatus relative movement between the conveyor and said tobacco-engaging teeth in a direction transverse to the direction of forward movement of the conveyor while keeping the tobacco-engaging edge always in substantially the same spaced relation to the surface containing the free points of the teeth of the conveyor, and means to deflect and guide separated tobacco away from the conveyor in its same general direction of movement in a path which diverges from that of the conveyor.

37. In apparatus for feeding cut tobacco, a source of supply from which tobacco is abstracted, a conveyor having tobacco-engaging teeth thereon to convey abstracted tobacco forwardly, means to move the conveyor forwardly, a separating device to remove surplus tobacco from the conveyor, said separating device having tobacco-engaging teeth adjacent the teeth of the conveyor and opposed to the direction of movement of the conveyor, means to cause during operation of the apparatus relative movement between the conveyor and said tobacco-engaging teeth in a direction transverse to the direction of forward movement of the conveyor while keeping the tobacco-engaging edge always in substantially the same spaced relation to the surface containing the free points of the teeth of the conveyor, and presser-means located in the region of the position at which the tobacco is engaged by the tobacco-engaging teeth to press the tobacco into the teeth of the conveyor.

38. In apparatus for feeding cut tobacco, a source of supply from which tobacco is abstracted, a conveyor having tobacco-engaging teeth thereon to convey abstracted tobacco forwardly, means to move the conveyor forwardly, a separating device to remove surplus tobacco from the conveyor, said separating device having tobacco-engaging teeth adjacent the teeth of the conveyor and opposed to the direction of movement of the conveyor, means to cause during operation of the apparatus relative movement between the conveyor and said tobacco-engaging teeth in a direction transverse to the direction of forward movement of the conveyor while keeping the tobacco-engaging edge always in substantially the same spaced relation to the surface containing the free points of the teeth of the conveyor, and means to deflect and guide separated tobacco away from the conveyor in its same general direction of movement in a path which diverges from that of the conveyor, and presser-means located in the region of the position at which the tobacco is engaged by the tobacco-engaging teeth to press the tobacco into the teeth of the conveyor.

39. In apparatus for feeding cut tobacco, a source of supply from which tobacco is abstracted, a conveyor having tobacco-engaging teeth thereon to convey abstracted tobacco forwardly, means to move the conveyor forwardly, a separating device to remove surplus tobacco from the conveyor, said separating device having tobacco-engaging teeth adjacent the teeth of the

conveyor and opposed to the direction of movement of the conveyor, means to cause during operation of the apparatus relative movement between the conveyor and said tobacco-engaging teeth in a direction transverse to the direction of forward movement of the conveyor, and freely mounted presser-means having, in the direction of movement of the conveyor a convex tobacco-engaging surface located in the region of the position at which the tobacco is engaged by the tobacco-engaging teeth to press the tobacco into the teeth of the conveyor.

40. In apparatus for feeding cut tobacco, a conveyor having tobacco-engaging teeth thereon, means to move the conveyor forwardly, and a separating device including a member comprising teeth of generally rectangular shape whereby the free edges of the teeth and the edges connecting the bases of adjacent teeth together form a tobacco-engaging edge which extends across the conveyor and which is arranged adjacent the conveyor and opposed to the direction of movement of the conveyor to form a barrier extending across the conveyor to remove surplus tobacco from the conveyor, the edge being so arranged that all points thereof are substantially equidistant from and always remain at substantially the same distance from the surface containing the free points of the teeth of the conveyor.

41. In apparatus for feeding cut tobacco, a conveyor having tobacco-engaging teeth thereon, means to move the conveyor forwardly, a separating device including a member comprising teeth of generally rectangular shape, whereby the free edges of the teeth and the edges connecting the bases of adjacent teeth together form a tobacco-engaging edge which extends across the conveyor and which is arranged adjacent the conveyor and opposed to the direction of movement of the conveyor to form a barrier extending across the conveyor to remove surplus tobacco from the conveyor, and means to effect relative movement between said tobacco-engaging edge and the conveyor in a direction transverse to the direction of forward movement of the conveyor, the edge being so arranged that all points thereof are substantially equidistant from and always remain at substantially the same distance from the surface containing the free points of the teeth of the conveyor.

42. In apparatus for feeding cut tobacco, a conveyor having tobacco-engaging teeth thereon, means to move the conveyor forwardly, and a separating device including a member comprising teeth of generally rectangular shape, whereby the free edges of the teeth and the edges connecting the bases of adjacent teeth together form a tobacco-engaging edge which extends across the conveyor and which is arranged adjacent the conveyor and opposed to the direction of movement of the conveyor to form a barrier extending across the conveyor to remove surplus tobacco from the conveyor, and means to effect relative reciprocatory movement between said tobacco-engaging edge and the conveyor in a direction transverse to the direction of forward movement of the conveyor, the edge being so arranged that all points thereof are substantially equidistant from and always remain at substantially the same distance from the surface containing the free points of the teeth of the conveyor.

DESMOND WALTER MOLINS.
FELIX FREDERIC RUAU.