

Aug. 15, 1950

H. L. WHITLEY
TOBACCO HARVESTER

2,518,965

Filed June 13, 1946

7 Sheets-Sheet 1

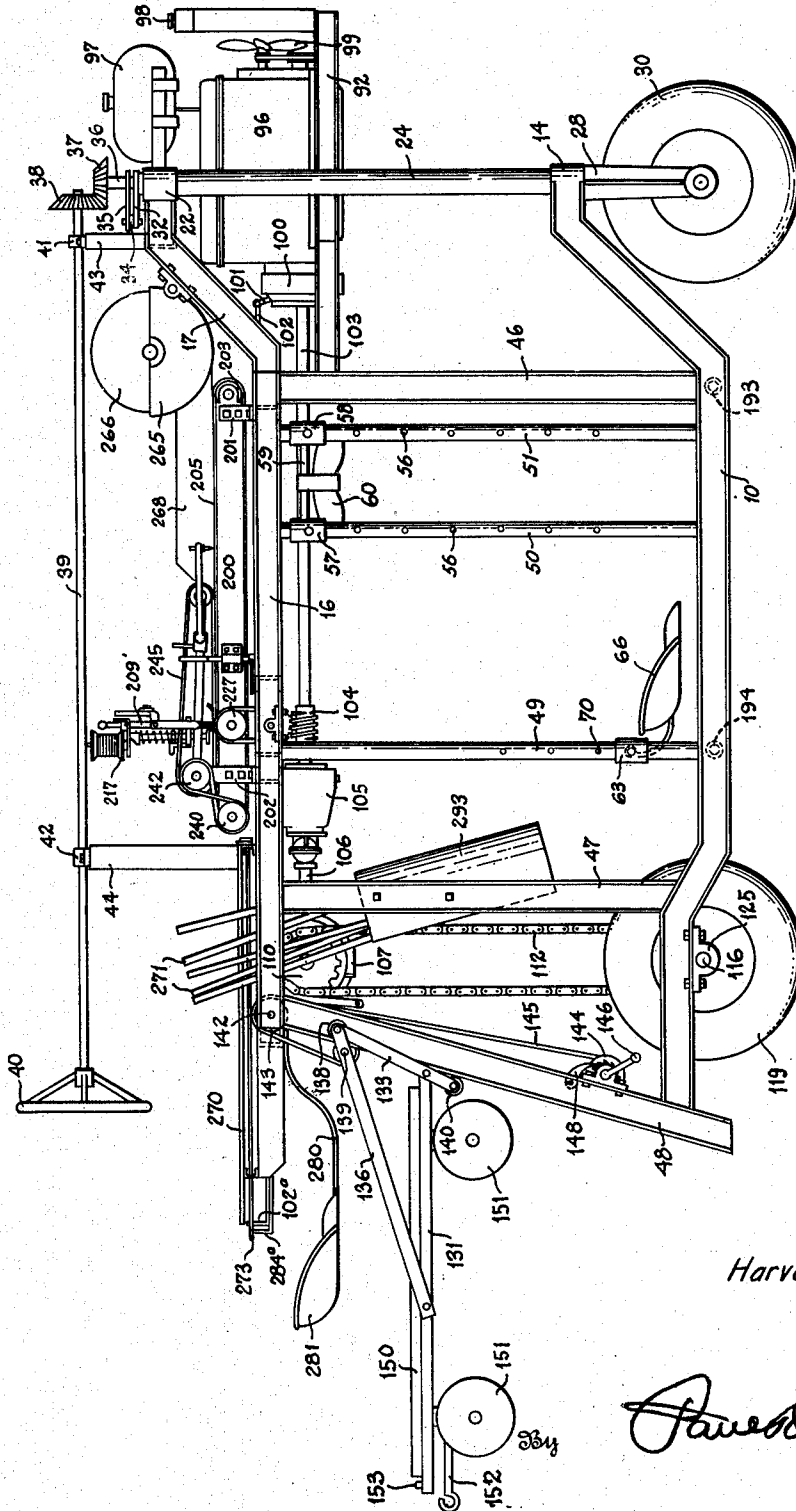


FIG. 1

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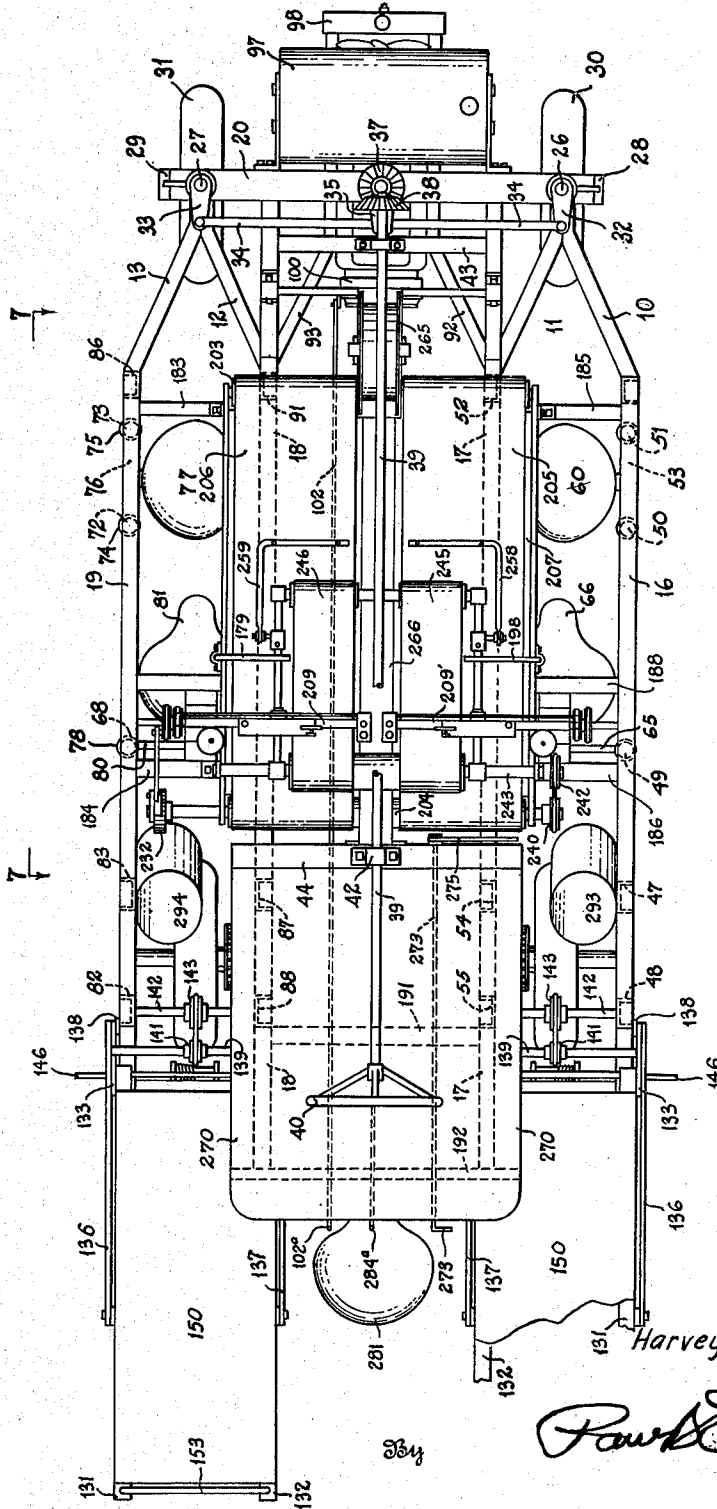


FIG. 2

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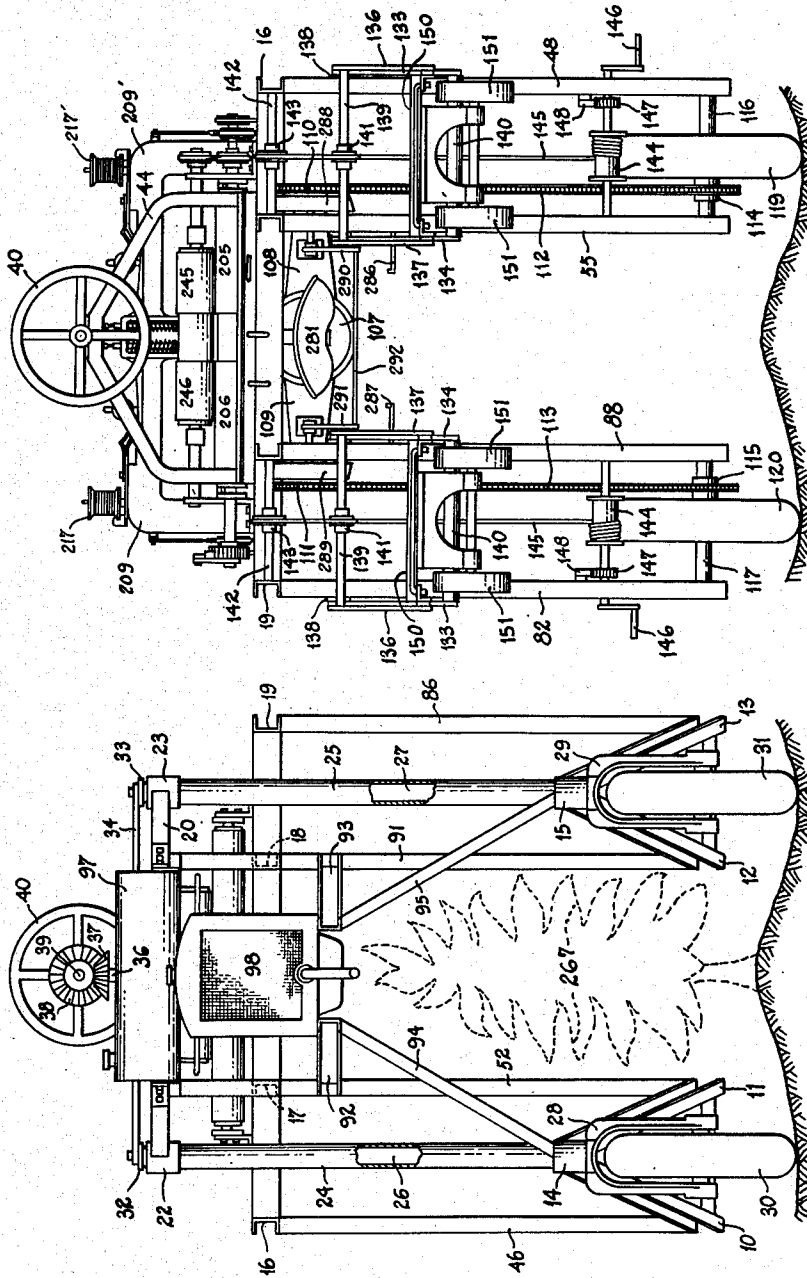


FIG-4

FIG-3

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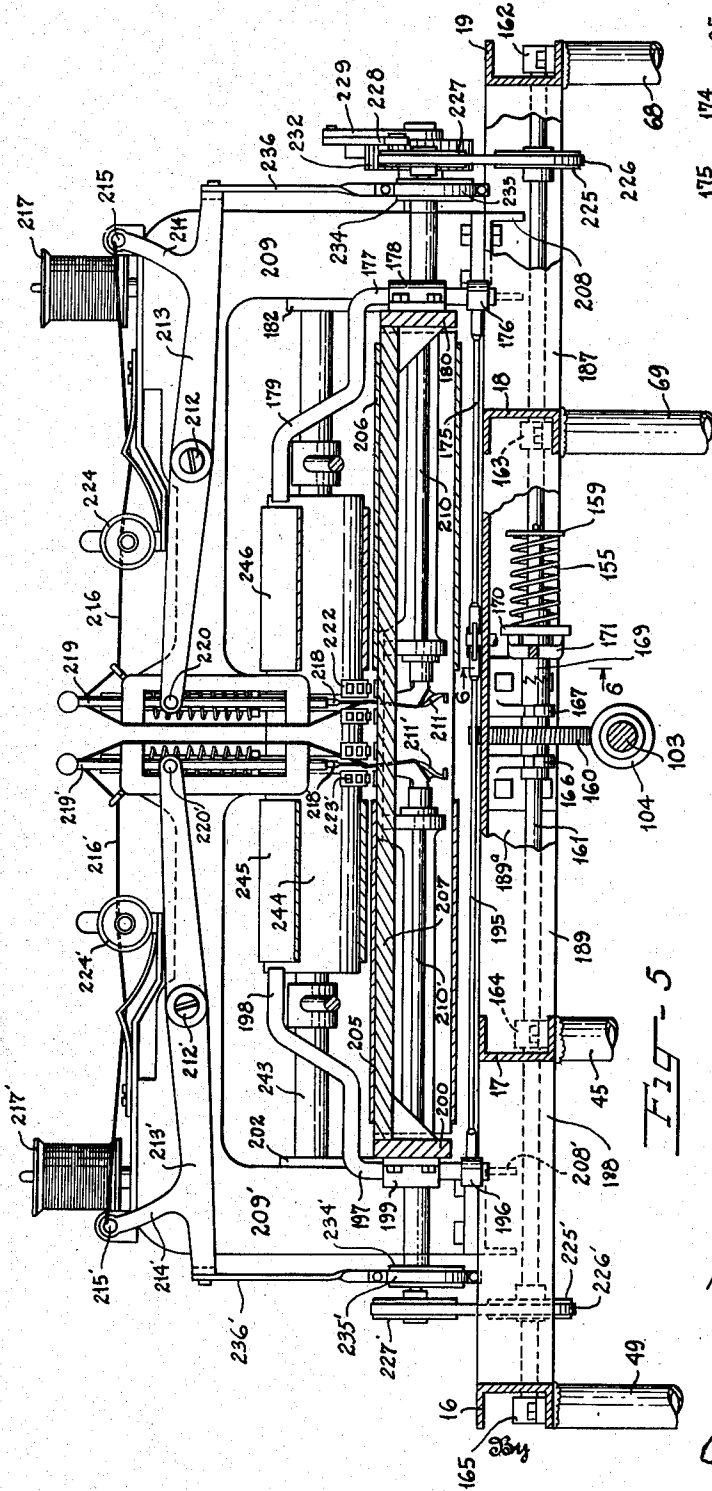


FIG. 5

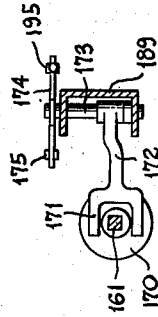


FIG. 6

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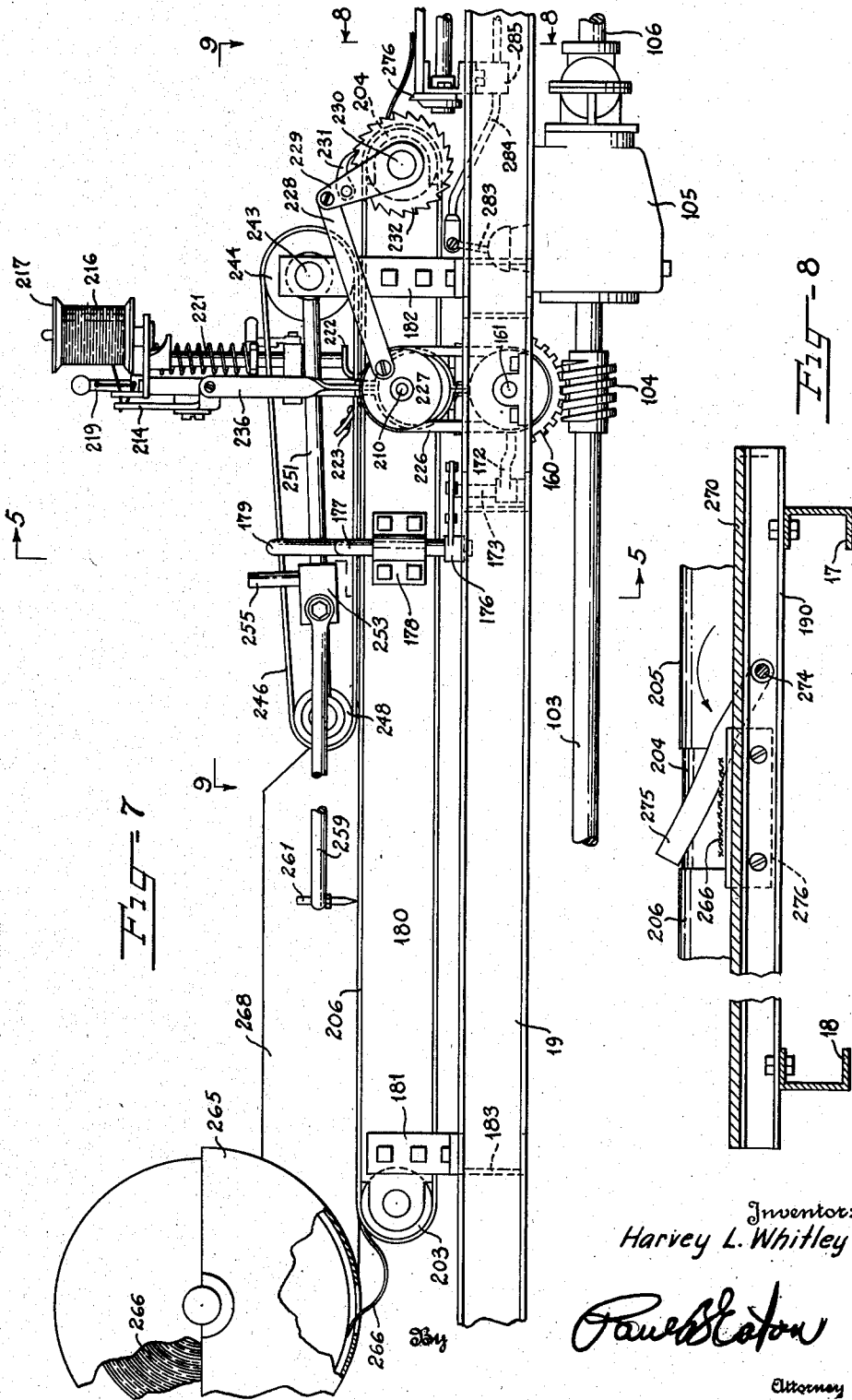
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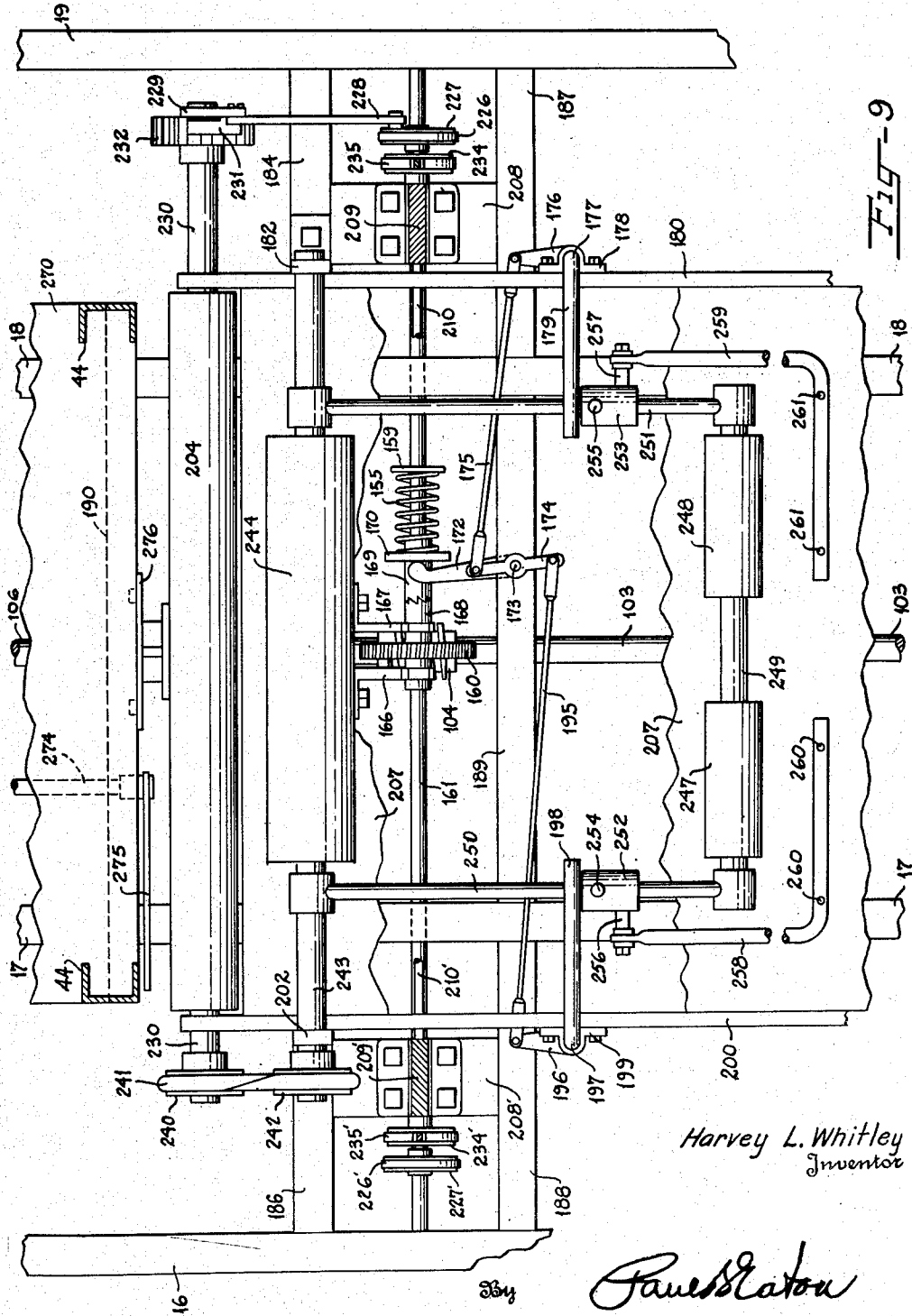
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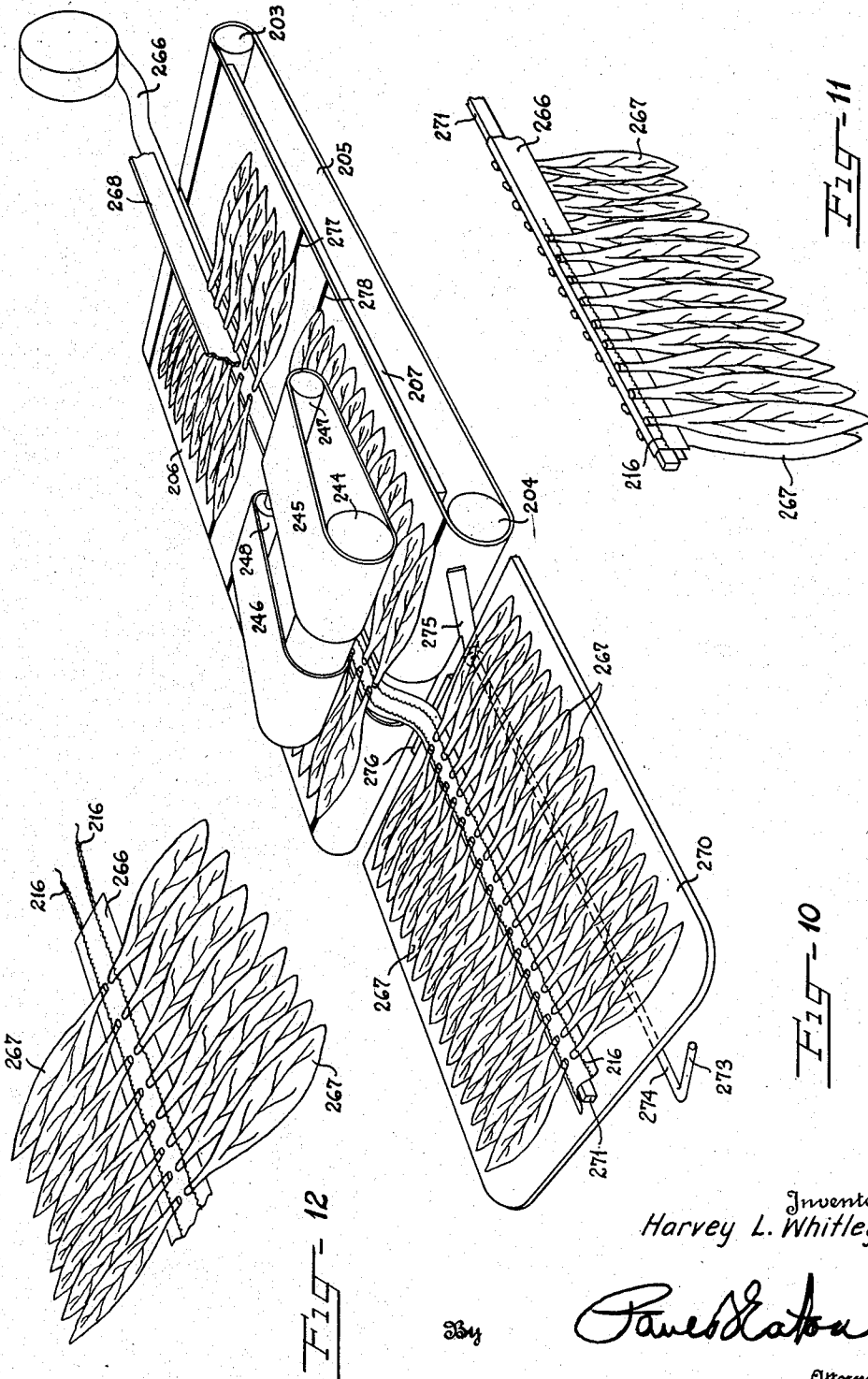
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UNITED STATES PATENT OFFICE

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Application June 13, 1946, Serial No. 676,524

8 Claims. (Cl. 214-5.5)

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This invention relates to a machine for gathering and stringing tobacco leaves in the field and depositing them onto a suitable tobacco stick instead of the conventional means heretofore employed of stripping the leaves from the tobacco stalks and depositing them into suitable baskets, trucks, and the like, which are drawn between the rows of tobacco, these baskets being transported to a suitable place where the bunches of leaves are strung onto the tobacco sticks by hand.

Briefly this invention comprises a wheeled self-propelled framework seating one or more operators on each side of a row of tobacco, which operators will pull the leaves from the tobacco stalks and hand them to other operators, who will deposit them onto a series of moving belts. The butt ends of the stems will be deposited onto a tape which is fed through two sewing machines, and the butts of the tobacco leaves will pass between suitable pressure applying means, while a pair of sewing machines forms a line of stitches passing through the butts of the tobacco leaves, and through the tape on which the butt ends of the stems of the tobacco are deposited. The tape with the butts of the tobacco leaves sewn thereto, passes rearwardly and is deposited onto a suitable tobacco stick, the tape resting on the tobacco stick and the leaves projecting from each side of the tobacco stick on a suitable platform. Then the tape is severed at the proper time and an operator lifts the tobacco stick and deposits it onto suitable trucks carried by the wheeled framework on each side of the operator. These trucks can be lowered to the ground for transporting to the tobacco barn.

It is an object of this invention to provide a tobacco harvesting apparatus, in which means are provided for seating a plurality of operators for gathering the leaves and depositing the same onto suitable conveyer means, and means are provided on the framework for sewing the butts of the tobacco leaves to a suitable tape and depositing the tape onto a suitable tobacco stick, and severing the tape at intervals so that the filled tobacco stick can be removed from position and deposited on suitable trucks carried by the wheeled framework, and another tobacco stick inserted in position for receiving the tape being filled with tobacco leaves sewn thereto.

It is another object of this invention to provide a tobacco harvesting apparatus comprising a self-propelled wheeled framework with a prime mover mounted on the framework for driving the framework over the ground at a very low speed, and also for driving suitable sewing mechanisms for sewing tobacco leaves to a suitable tape. The framework also carries a seat on each side of the row, which is straddled by the framework, and an operator on each side of a row of tobacco picks the leaves from the stalks of tobacco and

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hands them to other operators seated at a higher level on the wheeled framework, the upper operators depositing these leaves in butt to butt relation against a suitable guide strip onto a suitable tape, and the tobacco leaves with butt ends deposited onto the tape are conveyed through a pair of sewing apparatus, which passes a line of removable chain stitches through the tape and through the butts of the tobacco stems. The tape with the tobacco leaves sewed thereto is deposited onto a suitable tobacco stick and severed at intervals so the tobacco stick filled with the tobacco leaves can be removed and deposited on a suitable truck carried by the wheeled framework, and which truck can be removed at intervals and another truck substituted when the trucks become loaded.

Some of the objects of the invention having been stated, other objects will appear as the description proceeds, when taken in connection with the accompanying drawings, in which:

Figure 1 is a side elevation of the apparatus;

Figure 2 is a top plan view of Figure 1;

Figure 3 is a front elevation of the apparatus;

Figure 4 is a rear elevation of the apparatus;

Figure 5 is a vertical sectional view taken substantially along the line 5-5 in Figure 7;

Figure 6 is a sectional view taken along the line 6-6 in Figure 5, and showing some additional structure which projects forwardly of the section line along which Figure 5 is taken;

Figure 7 is an elevation of the front central portion of the machine taken substantially along the line 7-7 in Figure 2;

Figure 8 is a vertical sectional view taken substantially along the line 8-8 in Figure 7;

Figure 9 is a top plan view, with portion omitted, and taken substantially along the line 9-9 in Figure 7;

Figure 10 is a schematic isometric view of the upper central portion of Figure 1 and looking from the left hand side of the machine and towards the front of the machine;

Figure 11 is an isometric view of a portion of a tobacco stick with a section of the leaves sewn to the tape deposited thereon.

Figure 12 is an isometric view of a portion of the tape with the tobacco leaves sewed thereto and showing the lines of looped stitches extending from the tape to illustrate the formation of a continuous string.

Referring more specifically to the drawings, the numerals 10 and 11 indicate the bottom longitudinal frame members on one side of the carriage, while 12 and 13 indicate the longitudinal bottom frame members on the other portion of the wheeled framework, these at their forward ends projecting upwardly and being welded to suitable cuffs 14 and 15. The top frame members are indicated at 16, 17, 18, and 19 respectively.

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The top frame members 17 and 18 project forwardly and upwardly and are welded to a suitable cross member 20.

The ends of the cross member 20 are secured, as by welding, to suitable couplings 22 and 23, which are secured on the upper ends of pipes 24 and 25; and which pipes are secured to the cuffs 14 and 15 at their lower ends.

Rotatably mounted within these pipes 24 and 25 are shafts 26 and 27, which have on their lower end forked members 28 and 29; in which front wheels 30 and 31 are rotatably mounted. The upper ends of shafts 26 and 27 have rearwardly projecting arms 32 and 33 secured thereto, which are connected by a link 34. Link 34 is pivotally connected to an arm 35, which arm is fixedly secured around a stud shaft 36 mounted in cross member 20, and on the upper end of shaft 36 is secured a bevel gear 37. Meshing with bevel gear 37 is another bevel gear 38, which is secured on the front end of a steering rod 39 having a steering wheel 40 on its rear end. The steering wheel is rotatably supported in bearings 41 and 42, secured in uprising strips 43 and 44, the uprising strip 43 being secured to the upper inner frame bars 17 and 18; whereas the strip 44 is secured to the table 210 onto which the tobacco leaves are deposited onto sticks, and which table will be later described.

The lower horizontally extending frame bar 10 and the upper frame bar 16 are secured together by means of suitable channel bars 46, 47 and 48, as well as by pipes 49, 50 and 51.

The upper frame bar 17 and lower frame bar 11 are connected together by vertical member 52, and by a pipe 45, as well as connecting channel members 54 and 55. The vertically disposed pipes 50 and 51 have a plurality of perforations 56 therein and a pair of sliding cuffs 57 and 58 connected together by a cross piece 59 slide on these pipes 50 and 51, and have suitably secured thereto a leaf positioner's seat 60, which can be adjusted vertically by placing pins through any given set of perforations 56 for adjusting the height of seat 60.

Likewise, vertical pipe 49 and vertical pipe 45 have mounted thereon cuffs 63 identical to cuffs 57 and 58 which have secured thereto a cross piece 55 on which a seat 66 is mounted, and pipes 49 and 45 are likewise perforated, as at 70; for adjusting the height of the seat 66; with reference to the bottom frame members 10 and 11.

The upper horizontal and longitudinally extending frame bar 19 and lower horizontally and longitudinally extending frame bar 13 have secured therebetween perforated pipes 72 and 73, which are perforated in the same manner as pipes 50 and 51, and slidably mounted on these pipes 72 and 73 are cuff members 74 and 75, joined together by a cross bar 76 to which is secured a seat 77 for a leaf placing operator.

Also secured between the upper bar 19 and lower bar 13 is a perforated pipe 68, and between upper bar 18 and lower bar 12 is another perforated pipe 69 and mounted on pipes 68 and 69 are cuff members 78 identical to cuffs 74 and 75, which are joined together by a cross piece 80, which is attached to a seat 81 for a leaf stripping operator.

The rear portions of bars 19 and 13 have secured therebetween channel bars 82 and 83; and between upper channel bar 18 and lower inner channel bar 12, there are secured similar channel bars 87 and 88. The front ends of the upper horizontal bar 18, and the lower bar 12 have

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secured between their ends a channel bar 91. The front portions of upper bar 19 and lower bar 13 have secured therebetween an upright bar 86.

Welded to uprights 52 and 91 are a pair of inwardly and forwardly projecting members 92 and 93, which have secured to their intermediate portions brace bars 94 and 95, which project downwardly and have their lower ends welded to cuffs 14 and 15. These members 92 and 93 support a suitable internal combustion engine 96, which is supplied with fuel from a fuel tank 97.

The engine has a suitable radiator 98 and a cooling fan 99, and a clutch mechanism 100 with a clutch lever 101 with an operating rod 102 extending therefrom to within reach of the driver. Extending from the engine is a drive shaft 103, which has a worm 104 thereon, and extends into a suitable transmission 105 from which a drive shaft 106 extends to a suitable differential housing 107, which has axle housing 108 and 109 extending from each side thereof, in which suitable axles are mounted and on the outer ends of these axles are mounted sprocket wheels 110 and 111 on which are disposed sprocket chains 112 and 113, which extend downwardly and are connected to sprockets 114 and 115 disposed on shafts 116 and 117, and on which wheels 119 and 120 are mounted.

The wheel shafts 116 and 117 are mounted in suitable bearings 125 secured on the lower surfaces of longitudinally extending bars 10, 11, 12, and 13.

Mounted on the rear vertically and rearwardly extending frame bars 48 and 55; and 82 and 88 respectively, are suitable truck supporting mechanisms and like reference characters will apply to both sides of the machine. These truck supporting mechanisms comprise horizontal angle bars 131 and 132, which are fixedly secured at their front ends to upwardly and forwardly projecting bars 133 and 134, and secured to bars 131 and 133 is a support bar 136 and between bars 132 and 134 is support bar 137, the front ends of support bars 136 and 137, at their junction point with vertically disposed members 133 and 134, have rollers 138, which ride on the front surface of the rear flanges of the rearwardly and downwardly directed frame members 48 and 55 and 88 and 82 respectively depending upon which carriage is under consideration. Disposed between the lower ends of bars 133 and 134 are roller pipes 140, which ride on the rear surfaces of channel bars 48 and 55 and 88 and 82 respectively.

The support bars 136 and 137 have a transverse shaft 139 disposed therebetween on which a pulley 141 is mounted. On the rear ends of the upper horizontal bars, such as 16 and 17 or 18 and 19, are mounted transverse shafts 142 on which is mounted a pulley 143.

Secured to the lower front surfaces of each pair of the rearwardly directed bars 48 and 55 and 88 and 82 respectively is rotatably mounted a drum 144 to which is secured a cable 145, which is directed upwardly over pulley 143 and then around pulley 141 and has its end secured in a loose manner around shaft 143.

The drum 144 has a crank 146 for rotating the same, and it has a ratchet wheel 147 thereon with a dog 148 for holding it in adjusted position. Adapted to be supported on the angle bars 131 and 132 is a platform 150 of a wheeled truck having four wheels 151 and a tongue 152, by means of which it can be pulled along over the field and to which tongue 152 a draft animal can be at-

tached for rolling the truck to the tobacco barn, or it can be deposited on a larger truck for hauling to the tobacco barn.

The front ends of members 131 and 132 are joined together by having perforations therein, into which the downturned ends of a tie rod 153 may be hooked for holding the free ends of the same together, so as to confine the truck platform 150 in position.

When it is desired to remove the truck, when it is loaded with a plurality of tobacco sticks filled with tobacco, then by means of crank and drum 144 the carriage assemblies can be lowered to the ground and keeper 153 can be removed so that the truck can be pulled up from between the side bars 131 and 132.

Meshing with worm 104 is a worm gear 160 rotatably mounted on shaft 161, which is rotatably mounted in bearings 162, 163, 164, and 165. The worm gear 160 is confined between two brackets 166 and 167 secured to cross bar 189a, which also serve as bearings for the shaft 161. The worm gear 160 has a sleeve 168 extending therefrom, which is serrated to form one-half of a clutch, the other half of the clutch being serrated and indicated at 169. This portion 169 has a flange 170 against which a forked end 171 of a lever 172 is adapted to fit. The portion 169 is slidably keyed on shaft 161 and is normally urged into engagement with portion 168 by means of a compression spring 155 resting against a collar 159 secured on shaft 161. The lever 172 is fixedly mounted on a shaft 173, rotatably mounted in horizontal cross bar 189, and this shaft 173 has a double ended lever 174 secured on its upper end.

Pivotally connected to one end of lever 174 is a link 175, whose other end is connected to an arm 176 disposed on the lower end of a lever 177, which is rotatably mounted in bearing 178, this lever projecting upwardly and inwardly across the machine in the form of a crank 179. The bearing 178 is secured on the exterior of a board 180, supported by brackets 181 and 182, supported on cross bars 183 and 184, which are secured between bars 18 and 19. Bars 185 and 186, which are similar in all respects to bars 183 and 184, are secured between upper horizontal bars 16 and 17, in the same manner as described for 183 and 184.

A bar 187 is also secured between upper horizontal bars 18 and 19, and a bar 188 is secured between upper horizontal bars 16 and 17. Spanning the distance between upper longitudinal bars 17 and 18 is a cross bar 189a which is disposed immediately below roller 244. There is also a similar cross bar 190, which is disposed immediately underneath strap iron member 44, and also a cross bar 191 disposed adjacent, but below the steering wheel 40, and also a cross bar 192 disposed at the rear ends of the upper horizontal frame bars 17 and 18.

Suitable cross bars or pipes 193 and 194 are disposed between the bottom horizontal bars 10 and 11 and 12 and 13 respectively.

Secured to the other end of the lever 174 is a link 195 which extends to an arm 196 secured on the lower end of a shaft 197, which has an in-turned handle portion 198, whereby an operator on each side of the machine has access to a handle 179 or 198 to release the clutch 169, as desired. The shaft 197 is mounted in the bearing 199, secured on the exterior surface of a board 200 supported by means of bracket 201 and 202, mounted on cross bars 185 and 186 in the same manner as bracket 181 and 182, or arms 179 and 198 can be moved by other mechanism to move clutch mem-

ber 169, and which mechanism will be later described.

In the ends of the boards 180 and 200 are rotatably mounted rollers 203 and 204, on which lower conveyer belts 205 and 206 are mounted. Disposed between the side boards 180 and 200 is a top board 207, on which the upper layers of belts 205 and 206 rest. Welded between plate members 184 and 187 and 186 and 188 respectively are plates 208 and 208' on which are mounted the shanks of sewing machines 209 and 209'. A description of one of the sewing machines will now follow and like reference characters will apply to the other sewing machine with the prime notation added.

Mounted in the base portion of the sewing machine frame 209 is a looper shaft 210. This looper shaft 210 has a conventional looper 211 for making a conventional removable chain stitch loop, whereby the thread can be seized and the line of stitches separated by pulling on the thread. The sewing machines are not shown in detail because they are conventional chain stitch sewing machines, as shown in the patent to Dickerson No. 2,327,252 of 17th day of August 1943.

Shank 209 has pivotally secured thereto, as at 212, an oscillating arm 213, having an arm 214 with a suitable eye 215, through which thread 216 passes from a spool 217, arm 214 unwinding from the spool and causing proper feeding of the thread 216. Thread 216 passes to a conventional needle 218 on a needle bar 219, to which the oscillating bar 213 is pivotally connected, as at 220, and needle 218 penetrating a suitable throat plate.

The machine is also equipped with a conventional presser bar 221, having a presser foot 222 on its lower end, said presser foot being provided with rollers 223, so as to prevent the presser foot from injuring the tobacco leaves passing therebeneath. The thread 216 also passes through a conventional tension device 224.

Mounted on shaft 161 is a pulley 225, which has a belt 226 thereon, which is also mounted on a pulley 227 secured on looper shaft 210. This pulley 227 has a link 228 pivotally secured thereto, which projects rearwardly and is connected to an arm 229 fixed on a shaft 230 projecting from one end of roller 204, lever 229 being pivotally secured on shaft 230, and has a dog 231 pivotally secured thereon for engaging a ratchet wheel 232 secured on shaft 230 for imparting step by step movement to the conveyer belts 205 and 206 in timed relation to the movement of the sewing machine.

The looper shaft 210 also has fixedly secured thereon an eccentric cam 234 surrounded by an annular member 235 to which is fixedly secured a link 236, which projects upwardly and is pivotally secured to the outer end of arm 213 for imparting oscillation thereto. Mounted on the other end of shaft 230 from the end on which ratchet wheel 232 is mounted, is a pulley 240 having a belt 241 thereon, which belt is also mounted on a pulley 242 mounted on a shaft 243, which shaft 243 is mounted in brackets 182 and 202.

On shaft 243 is a roller 244 on which the rear ends of conveyer belts 245 and 246 are mounted. The front ends of these conveyer belts 245 and 246 are mounted on rollers 247 and 248, which are in turn rotatably mounted on a shaft 249, which is secured in the front end of members 250 and 251 pivoted at their rear ends around shaft 243. Slidably mounted on links 250 and 251 are cuffs 252 and 253, which have rising upwardly therefrom pins 254 and 255 respectively and project-

ing outwardly from these cuffs 252 and 253 are pins 256 and 257, on which are pivotally secured forwardly projecting members 258 and 259, which are turned inwardly towards each other and have downwardly projecting pins 260 and 261 respectively therein, so that when an operator runs out of tobacco leaves to place on either one of the conveyer belts 205 and 206, he may let the shanks down onto the conveyer belt to where its pins will contact the belt and be moved along by the belt and this will cause a pin 254 or 255 to engage its associated lever 198 or 179 respectively, and move the clutch member 169 away from clutch member 168 to thereby stop operation of all conveyer belts and the sewing machine.

Mounted near the front portion of the machine is a pan 265 in which a roll of tape 266 is mounted for rotation, this type 266 being adapted to be led rearwardly beneath the needle and pressure feet so that the lines of stitches will penetrate side portions of the tape and sew the tobacco leaves 267 to the tape 266.

The tobacco leaves are placed on the conveyer belts 205 and 206 with the butt portions of their stems resting on the tape 266 and extending with their tips in opposite directions, so that their butts will be penetrated by the line of stitches and sewed to the tape 266. The feeding mechanism of the sewing machine will feed the tape 266 with the tobacco leaves sewed thereto rearwardly. The tape and tobacco leaves attached thereto will be deposited onto a platform or table 270; the tape being deposited onto a tobacco stick 271 disposed on the table 270.

Preferably the driver-operator will seize the tape 266 and pull it rearwardly as the tobacco leaves and tape are ejected from the sewing machine until the tobacco leaves and tape occupy the position, as shown in Figure 10; at which time the operator will seize a handle 273 on a shaft 274 rotatably mounted in cross bars 190 and 192. The front end of this shaft 274 has a knife 275 secured thereon, which as it is swung will pass across the tape 266 and sever the same.

It is to be noted that there will be spaces between certain lengths of the tape where there will be no tobacco leaves sewed, so that there will be a projecting end of the tape at each end of a bunch of tobacco leaves on a stick. The reason for this is that the tobacco leaves cannot extend to the ends of the sticks, as the ends of the sticks must be placed on tiers in a tobacco curing barn. In order to prevent the tobacco leaves from being deposited by the operators onto these designated portions, which must be left blank between a batch of leaves for one stick and a batch of leaves for another stick, the endless conveyers have certain markings indicated at 277 and 278; and the space between these markings 277 and 278 must be left devoid of tobacco leaves by the operators depositing the leaves thereon.

The knife 275 is adapted to cooperate with a fixed shearing blade 276 disposed at the front end of the platform 270, and below the tape 266.

Secured to the rear upper cross bar 191 is a spring steel member 286 having a seat 287 on its rear end to be occupied by the driver of the machine.

The rear end of the clutch rod 162 has an up-turned crank portion 192a within reach of the driver whereby he can manipulate the clutch to stop the forward movement of the machine. The differential has projecting upwardly therefrom a conventional gear shift lever 283 to which is connected the upwardly and forwardly directed end

of a link 284, which is suitably mounted in bearings 285 and projects rearwardly and has a crank portion 284a on its rear end, whereby the driver by rotating the crank portion 284a and moving the link 284 forwardly or backwardly can select any one of the three speeds and reverse of a conventional gear shift mechanism.

Suitable foot rests 286 and 287 are provided for the feet of the driver to rest upon, or his feet can hang downwardly, if he desires.

The axle housing 198 and 109 has associated therewith suitable braking mechanism, and mounted on the axles themselves are conventional brake drums 288 and 289. The brake mechanisms have conventional cam operating shafts extending inwardly therefrom, to which are secured downwardly extending levers 290 and 291. These are joined by a link 292, so that the driver can press the link 292 forwardly to apply the brakes, as desired.

In order to carry the plurality of tobacco sticks 271 there are provided on each side of the rear portion of the framework of the machine suitable containers or cans 293 and 294, so that when a tobacco stick is filled on the platform 270, the operator can seize same and deposit it onto the platform 150 on one side of the seat or the other. These tobacco sticks 271 in cans 293 and 294 are within reach of the driver, so that he can place another tobacco stick in the position, shown in Figure 10; and can then reach forward and seize the free end of the tape 266 and pull accumulated leaves and tape rearwardly on the stick until it reaches the position, shown in Figure 10; at which time he can sever the tape by use of knife 275 and deposit the filled stick on one of the platforms. These platforms are usually wide enough so that the butts of the leaves can be placed towards each other, there being two sticks of tobacco in each layer on each platform 150 with butts adjacent each other or slightly overlapped as desired.

In order to properly position the tobacco leaves 267, there is provided immediately above the tape 266 and midway between its side edges a longitudinal extending strip 268 against which the butts of the tobacco leaves 267 can be projected by the operators so as to facilitate the placing of the tobacco leaves with the butt ends of their stems on the tape 266. This dividing member 268 is supported at its front end by being attached to the throat member 265.

In the drawings and specifications, there has been set forth a preferred embodiment of the invention, and although specific terms are employed, they are used in a generic and descriptive sense only, and not for purposes of limitation, the scope of the invention being defined in the claims.

I claim:

1. Tobacco harvesting apparatus comprising a wheeled framework, having two front wheels and two rear wheels and having an unobstructed passageway extending longitudinally thereof and open at the bottom, whereby two wheels on one side can run on one side of a row of tobacco plants; and the wheels on the other side of the frame can run on the other side of the row of tobacco plants; means for seating operators in the framework for removing tobacco leaves from the stalks of tobacco disposed between the two side portions of the framework, a pair of conveyers onto which the tobacco leaves are adapted to be placed with their butt ends adjacent each other but not overlapping each other, a tape onto which the butt ends of the tobacco leaves are adapted to be placed, the conveyers serving to

convey the tobacco leaves with the tape rearwardly, a pair of sewing machine needles for forming a line of looped stitches through the butts of the two rows of tobacco leaves and through the tape on which they rest, means disposed rearwardly of the needles and onto which the tape with the tobacco leaves sewed thereon is adapted to be directed, means for severing the tape into proper lengths to cause a severed length to fit onto a tobacco stick of a given length, supporting means carried by the frame for removably supporting a truck and the like and onto which the sticks of tobacco leaves are adapted to be deposited, and means for lowering the truck supporting means so that the truck and the like can rest on the ground and be pulled therefrom.

2. In a tobacco harvesting machine comprising a pair of spaced frameworks secured together at their top portions and having wheels in their lower portions for traversing a field on both sides of a row of tobacco plants, means within each framework for seating a plurality of operators for stripping tobacco leaves from the row of plants between the two frames, means for propelling the two frames along and astride the row of tobacco plants, a pair of conveyers disposed on the top of the two frames and onto which tobacco leaves are adapted to be deposited with their butt ends contiguous to but not overlapping each other, a tape disposed between the conveyers and onto which the butt ends of the tobacco leaves are adapted to be placed, a pair of sewing machine needles adapted to pierce the butt ends of the tobacco leaves and tape, and looping mechanisms associated with the sewing machine needles for forming a continuous row of loop stitches in the tape and through the butt ends of the tobacco leaves, said tape with the tobacco leaves thereon being adapted to be moved by the sewing machine rearwardly of the harvesting apparatus, means for supporting a tobacco stick and onto which the tape with the tobacco leaves is adapted to be deposited, means carried on each side of the frame for releasably supporting a hand truck, and onto which the sticks of the tobacco with the tobacco leaves and tape thereon are adapted to be deposited, means for lowering the trucks onto the ground and from whence they can be pulled to any desired location.

3. In a tobacco harvesting machine comprising a pair of spaced frameworks secured together at their top portions and having wheels in their lower portions for traversing a field on both sides of a row of tobacco, means within each framework for seating a plurality of operators for stripping tobacco leaves from the row of stalks between the two frames, means for propelling the two frames along and astride the row of tobacco, a pair of conveyers disposed on the top of the two frames and onto which tobacco leaves are adapted to be deposited with their butt ends contiguous to but not overlapping each other, a tape carried between the conveyers and onto which the butt ends of the tobacco leaves are adapted to be placed, a pair of sewing machine needles adapted to pierce the butt ends of the tobacco leaves and the tape and looping mechanisms associated with the sewing machine needles for forming a continuous row of looped stitches in the tape and through the butt end of both rows of the tobacco leaves, said tape with the tobacco leaves thereon being adapted to be moved rearwardly of the harvesting apparatus, means for supporting a tobacco stick and onto which

the tape with the tobacco leaves is adapted to be deposited, means on each side of the frame for releasably supporting a hand truck, and onto which the sticks of tobacco with the tobacco leaves and tape thereon are adapted to be deposited, means for lowering the trucks onto the ground and from whence they can be pulled to any desired location, said conveying means having markings thereon indicating spaces onto which no tobacco leaves are to be deposited, so that the tape can be severed between the spaces to which the tobacco leaves are sewed, and stop motion means adapted to engage the conveying means when no tobacco leaves are present on the conveying means for automatically stopping movement of the conveying means.

4. Tobacco harvesting apparatus comprising a framework having a space extending longitudinally thereof so that it can be directed along and above and on each side of a row of tobacco plants, driving means for propelling the frame along the row of tobacco plants, means on the frame for supporting an operator on each side of the row of tobacco plants for stripping leaves of tobacco from the tobacco plants, a plurality of conveying means and onto which the tobacco leaves are adapted to be placed with their butt ends in proximity to but not overlapping each other, a tape onto which the butt ends of the tobacco leaves are adapted to be placed, a pair of looping mechanisms for forming a line of looped stitches through the tape and through the tobacco leaves as they are conveyed rearwardly by the conveying means, means on the conveying means indicating spaces where no tobacco leaves are to be deposited, so as to provide spaces between continuous lengths of tobacco leaves sewed to the tape, severing means for severing the tape in the spaces where no tobacco leaves are secured thereto, means for supporting a tobacco stick rearwardly of the looping mechanisms and onto which the tape with the tobacco leaves are adapted to be placed, and means carried by the frame and onto which the tobacco sticks full of tobacco leaves are adapted to be stacked as the framework is propelled along the tobacco rows.

5. In a tobacco stringing apparatus, the combination of a pair of flush top conveyer belts for supporting transversely disposed bunches of tobacco leaves with the butt ends of the tobacco leaves being disposed in close proximity to but spaced from each other and not in overlapping relation, a pair of sewing means for forming two straight chain stitch lines of stitches between the conveyer belts, a tape disposed between the conveyer belts and passed through the sewing mechanisms onto which the tobacco leaves are sewn by the two sewing means, means for advancing the belts with the tobacco leaves thereon in timed relation to the operation of the two sewing means, means for supporting a tobacco stick and onto which the tape is adapted to be deposited, and means for severing the tape when a length sufficient to fill a tobacco stick has had the two rows of leaves secured thereto.

6. In a tobacco stringing apparatus, the combination of a power driven wheeled framework constructed for straddling a row of tobacco plants, means on the framework for supporting a plurality of operators for picking tobacco leaves from the tobacco plants as the apparatus advances along a row of tobacco plants, a pair of spaced flush top conveyer belts and onto which the tobacco leaves are adapted to be deposited

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by the operators, after being stripped from the tobacco plants, a tape disposed between the conveyer belts, a pair of laterally spaced sewing mechanisms for forming straight lines of looped stitches in the form of strings through the tape and through the tobacco leaves, means for advancing the conveyer belt in timed relation to the operation of the sewing mechanisms, means for supporting a tobacco stick and onto which the tape with the tobacco leaves sewed thereto is adapted to be deposited, means for severing the tape when a length of tape with tobacco leaves thereon has been formed sufficient to fill the length of the tobacco stick, vertically movable supporting means carried by the rear end of the frame and having trucks thereon and onto which the tobacco sticks with the tobacco and tapes thereon may be deposited, and means for lowering the supporting means so that the trucks onto which the tobacco sticks filled with leaves are deposited, can be removed for transport to other places.

7. In a tobacco stringing apparatus, the combination of means for conveying a tape through two sewing and looping means, conveying means onto which two rows of parallel tobacco leaves are adapted to be placed with the butt portions of the tobacco leaves being adjacent to each other but not in overlapping relation, means for moving the conveying means in timed relation to the sewing and looping means to form two lines of stitches through the two rows of tobacco leaves and through the tape on which the butts of the tobacco leaves rest, and means for severing the tape at intervals so that a length of tape with the tobacco leaves sewed thereto can be deposited on a tobacco stick.

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8. Apparatus for securing two rows of tobacco leaves together and for placing the tobacco leaves astride a tobacco stick, comprising means for supporting two rows of parallel leaves in a horizontal plane with the butts of the leaves of one row being adjacent but spaced from the butts of the leaves in the other row, a tape disposed below the butt ends of the two rows, means for forming two lines of looped stitches, each line passing through the butts of the leaves in one row and the other line of stitches passing through the butts of the leaves in the other row, and through the tape to thereby connect the butts of the tobacco leaves to the tape, means for supporting a tobacco stick and onto which the tape with the tobacco leaves thereto is adapted to be guided, and means for severing the tape when a length of tape has had tobacco leaves stitched thereto sufficient to fill the stick.

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