March 15, 1955 A. J. YOUNG 2,704,080

TOBACCO SHAKING AND HANGING MACHINE

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Fig. 1.

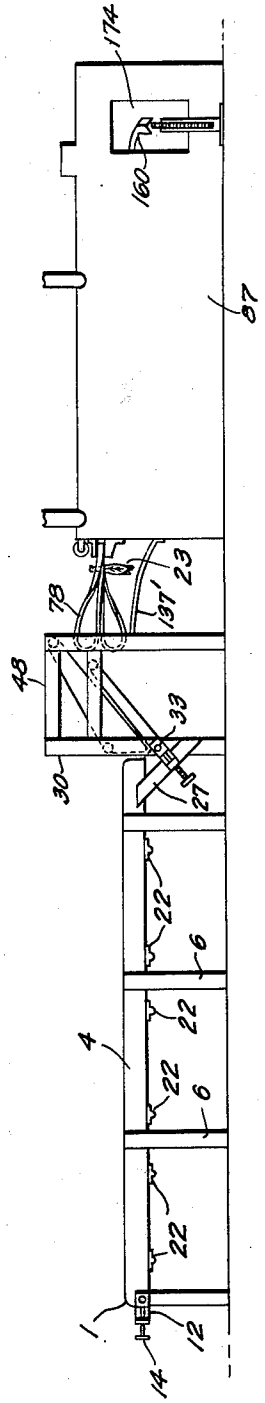
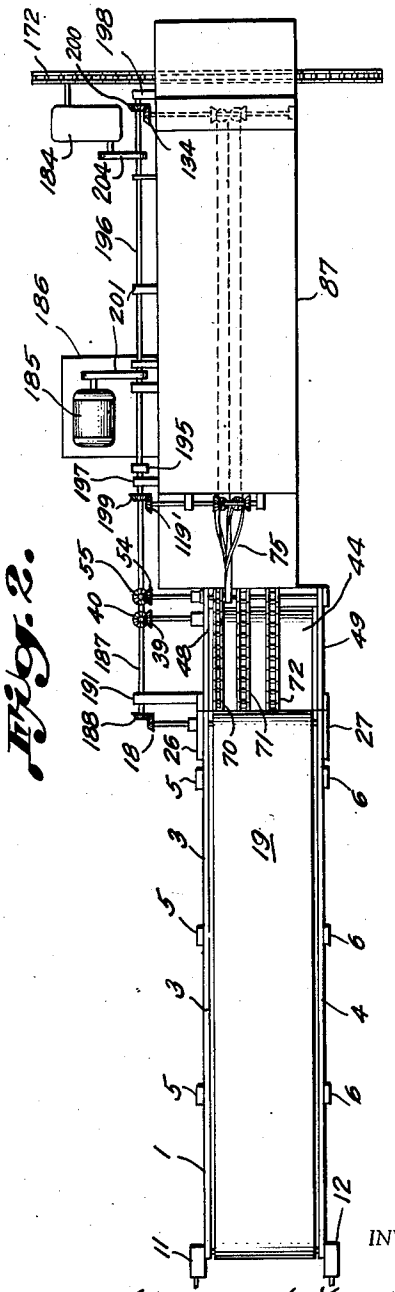


Fig. 2.



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TOBACCO SHAKING AND HANGING MACHINE

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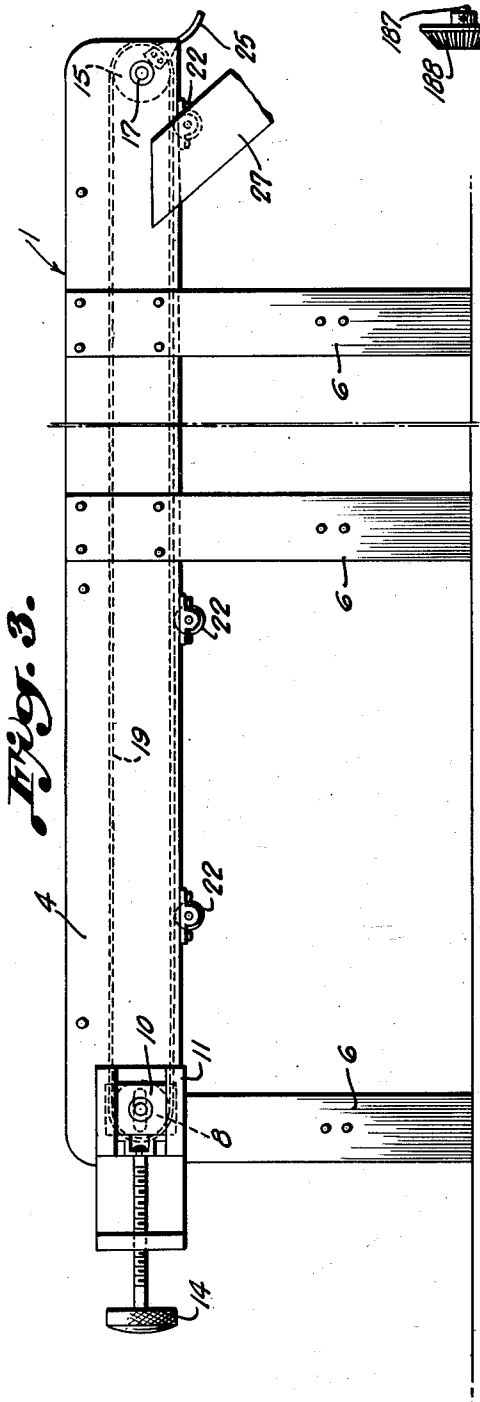

Fig. 3.

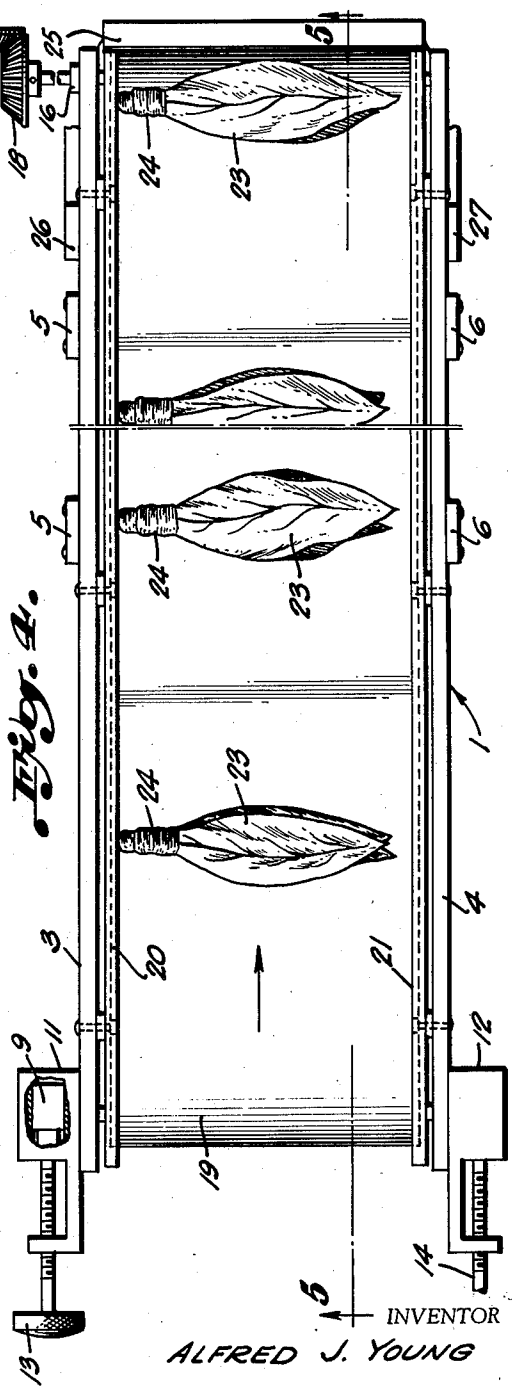

Fig. 4.

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TOBACCO SHAKING AND HANGING MACHINE

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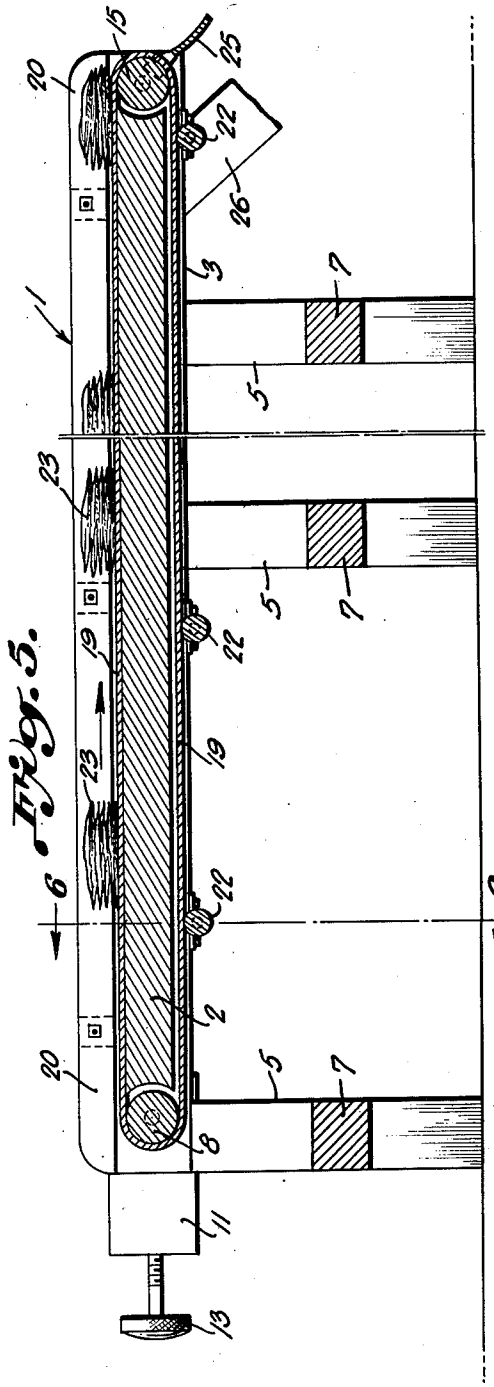

Fig. 5.

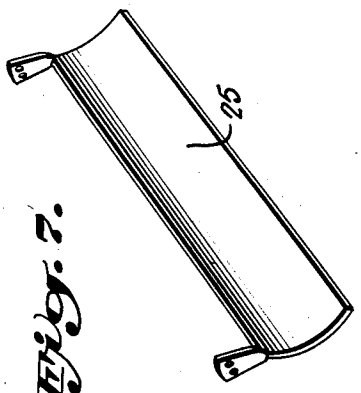

Fig. 7.

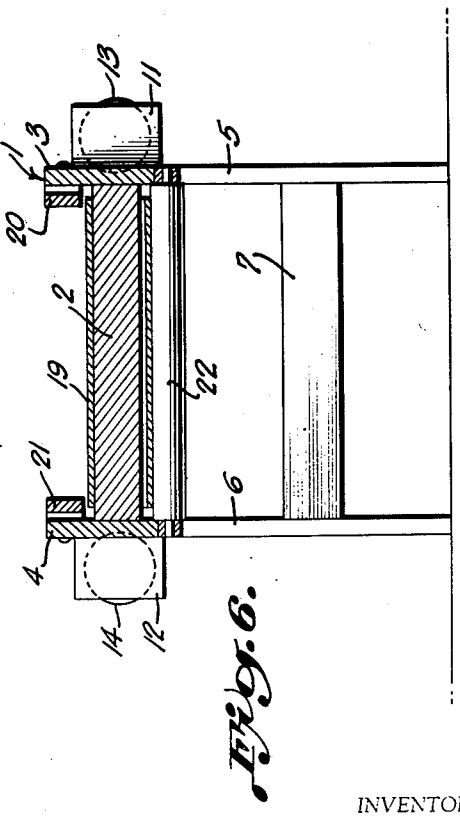

Fig. 6.

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TOBACCO SHAKING AND HANGING MACHINE

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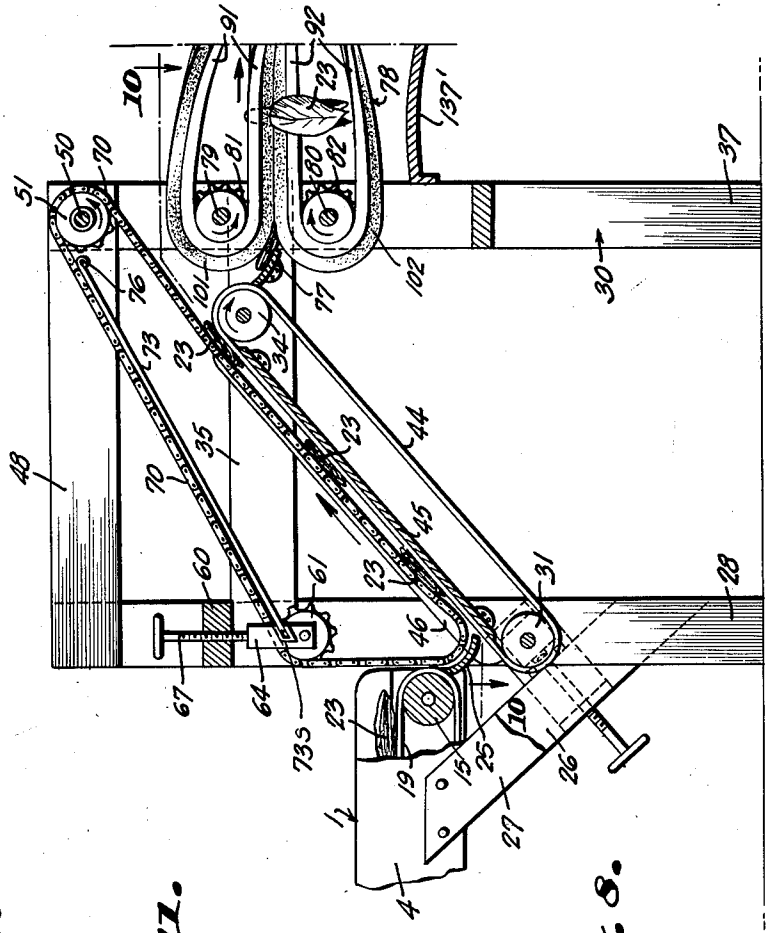

Fig. 8.

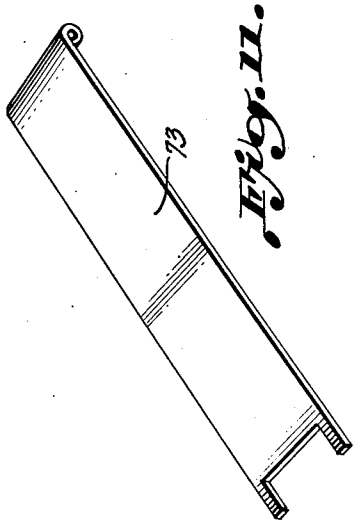

Fig. 11.

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Fig. 9.

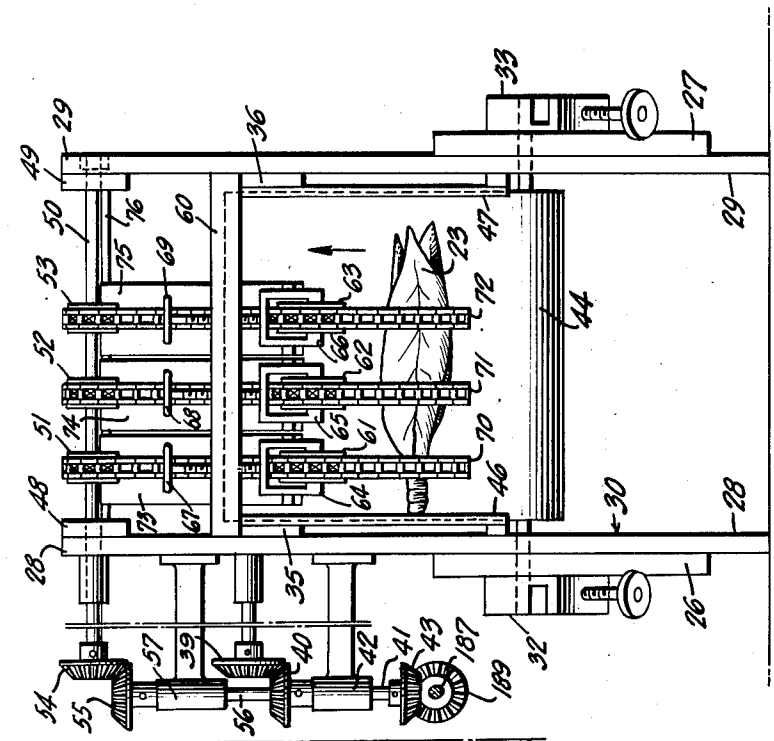
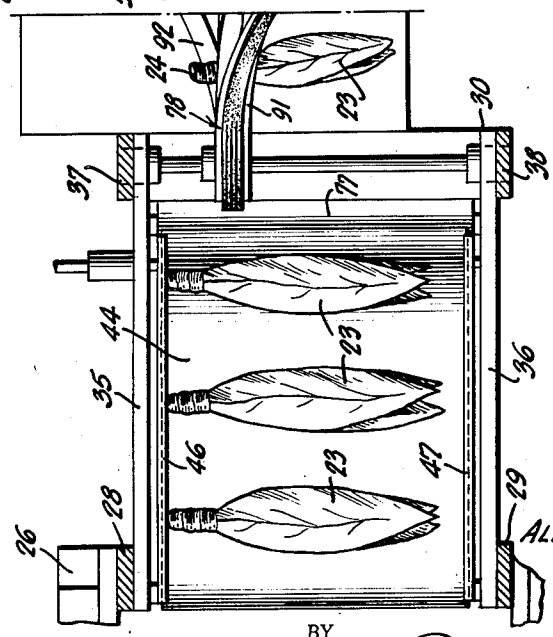


Fig. 10.



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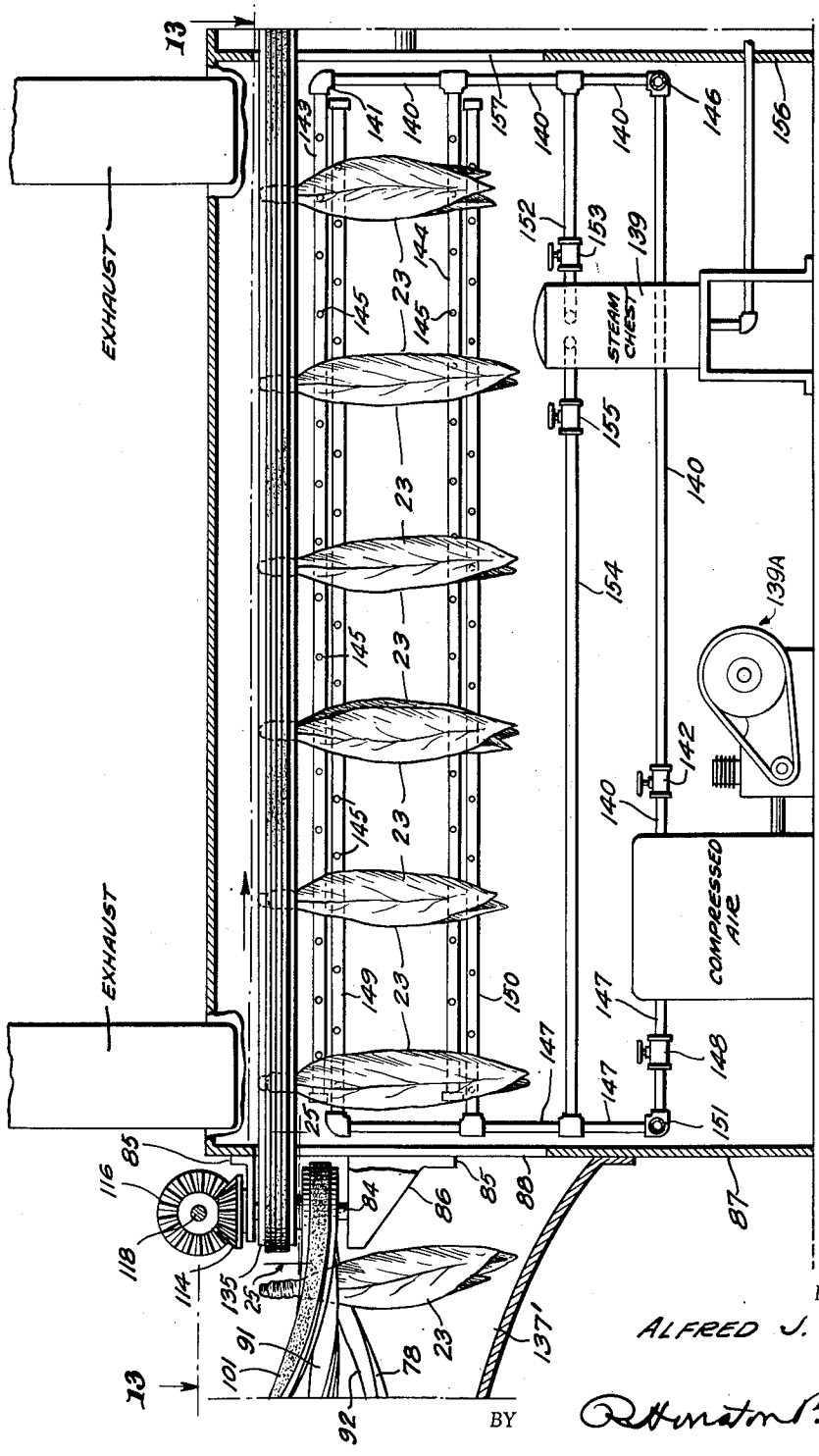

Fig. 12.

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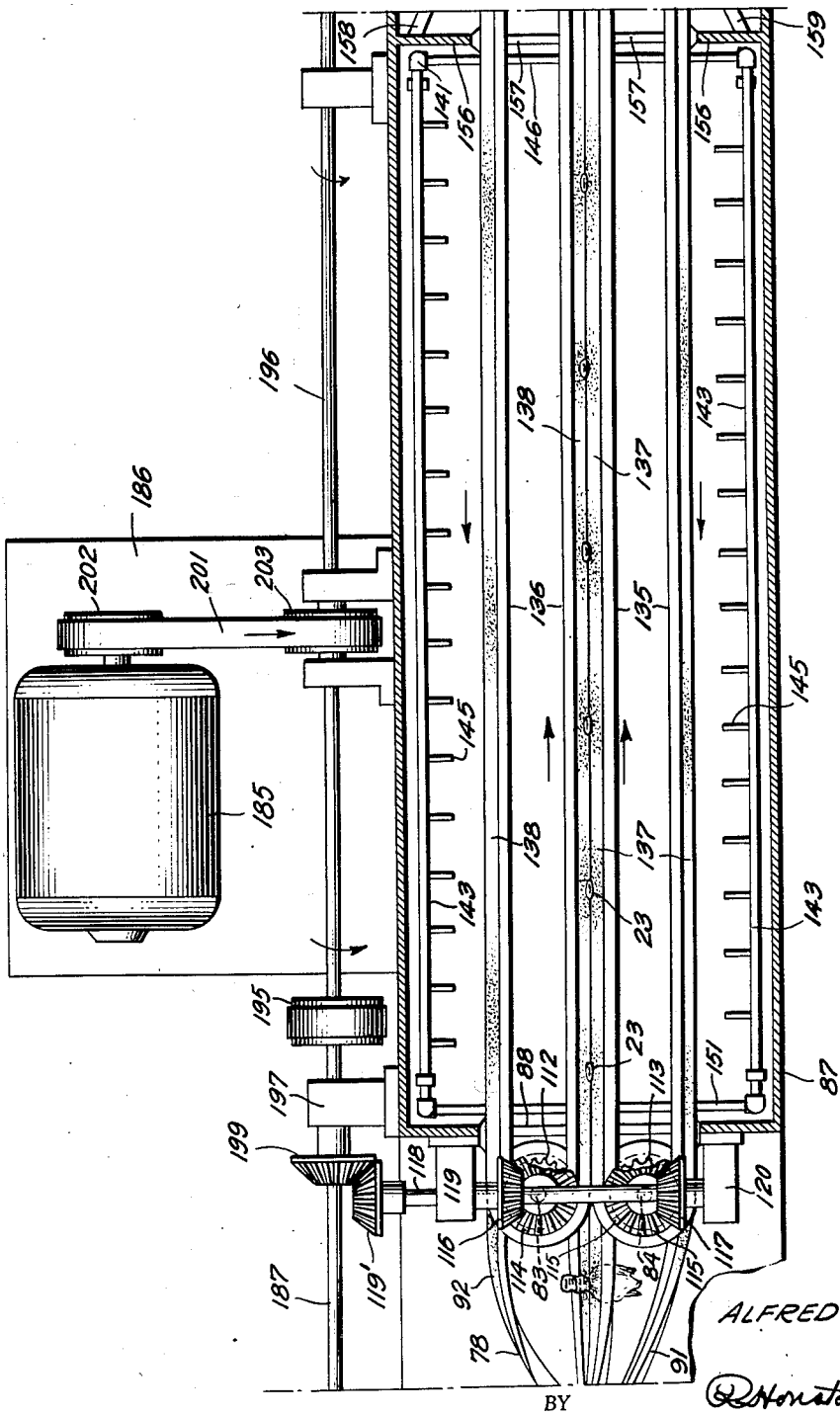

Fig. 13.

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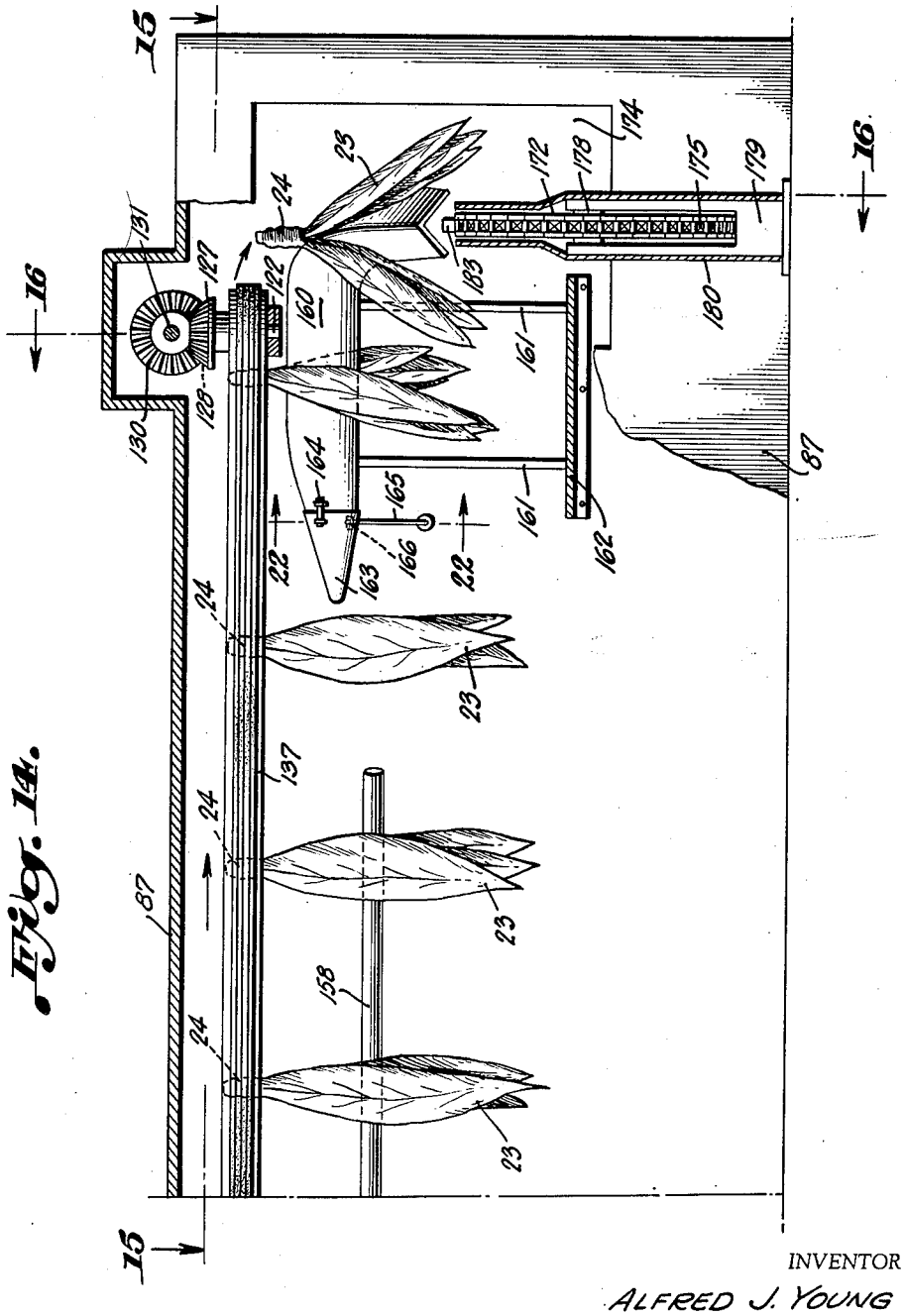

Fig. 14.

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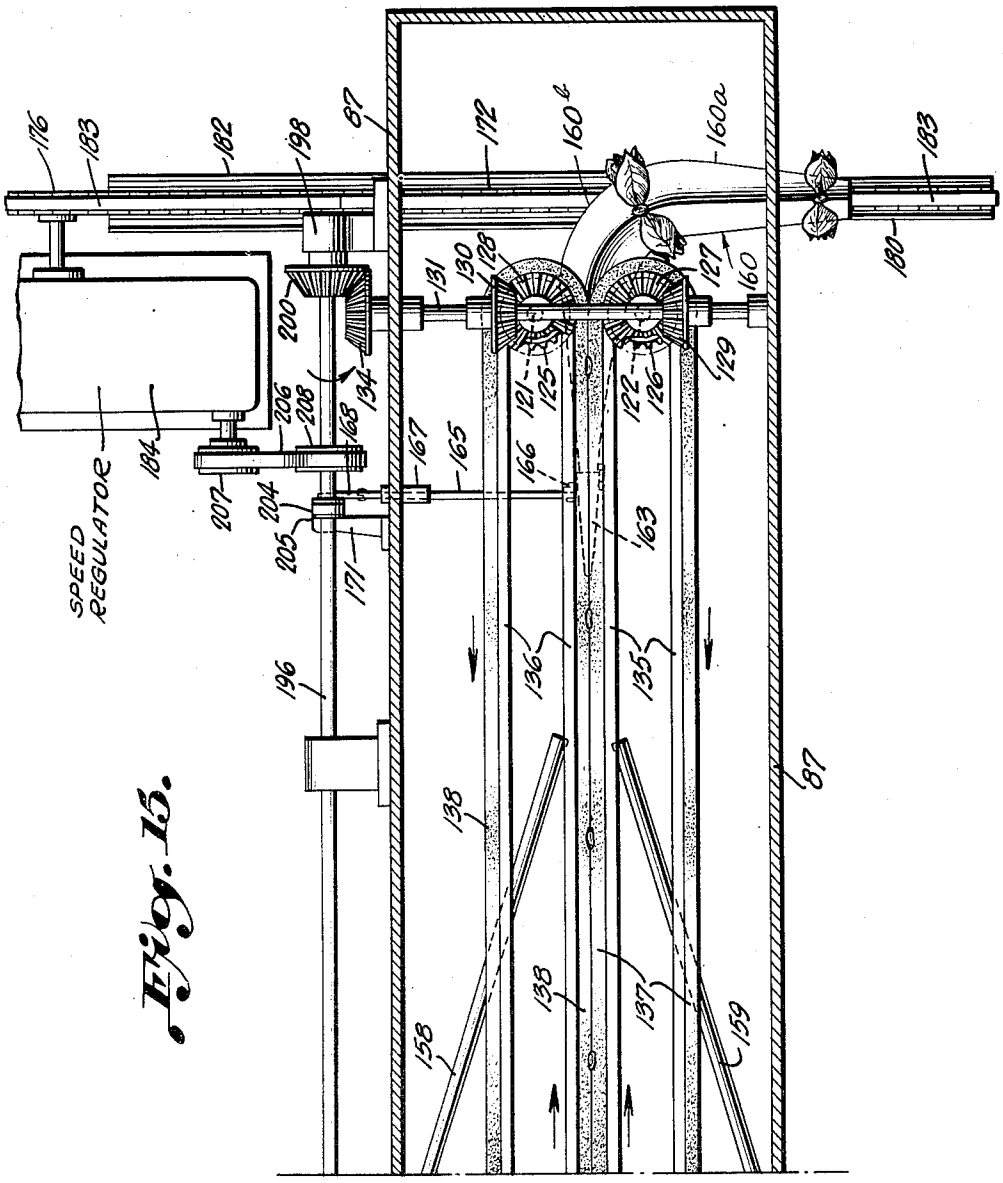

Fig. 15.

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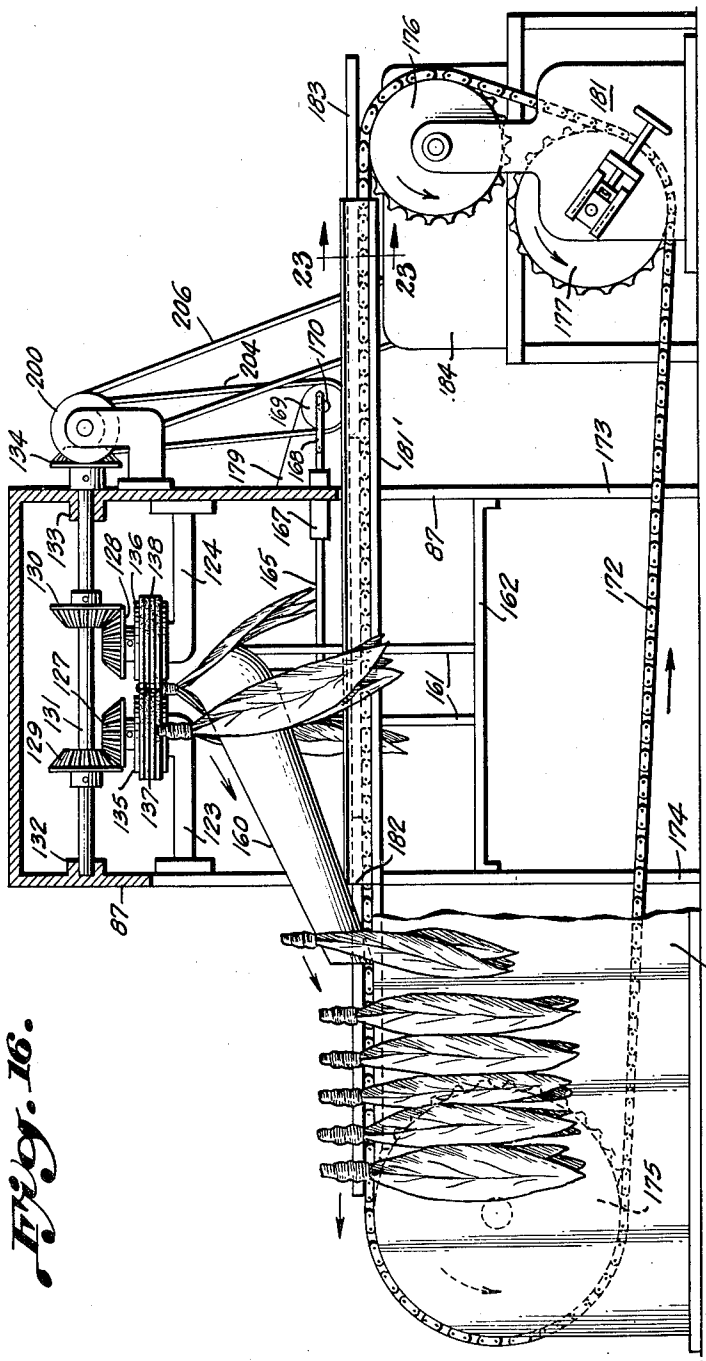

Fig. 16.

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Fig. 17.

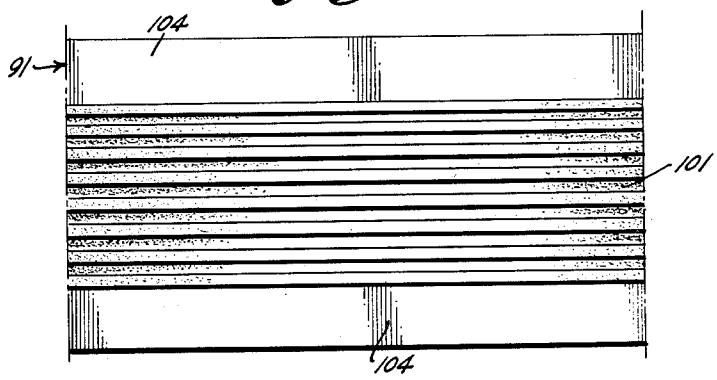

Fig. 18.

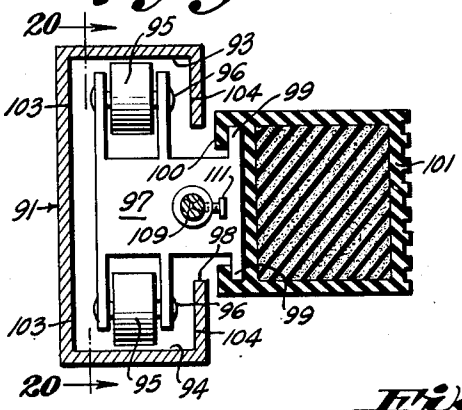

Fig. 19.

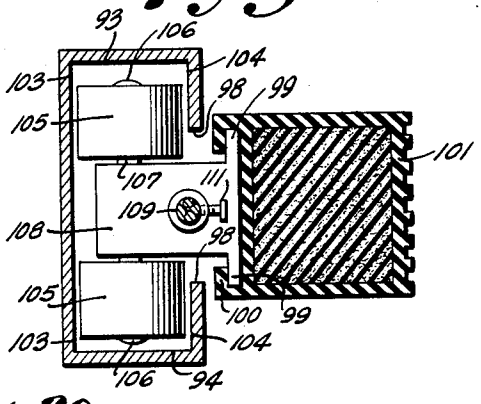

Fig. 20.

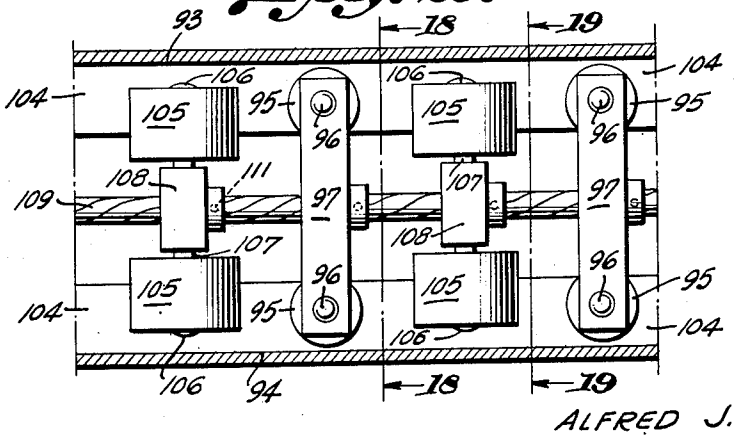

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Fig. 21.

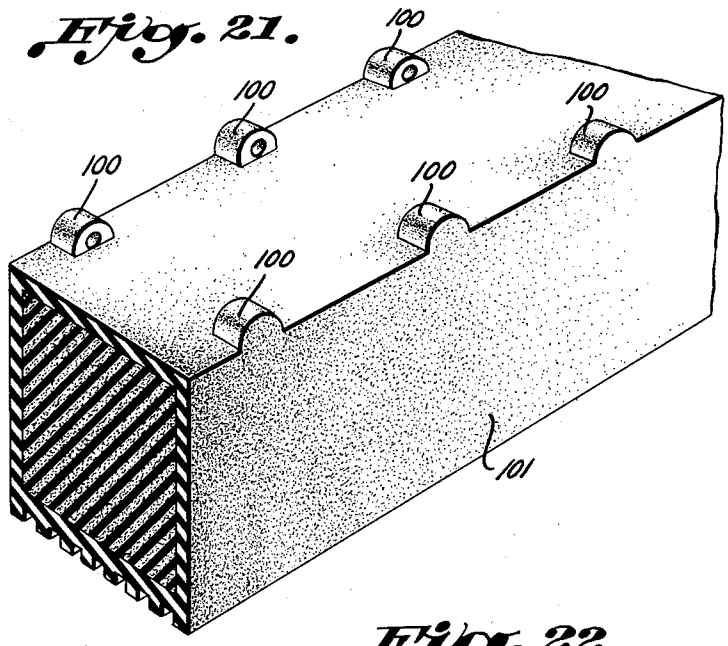


Fig. 22.

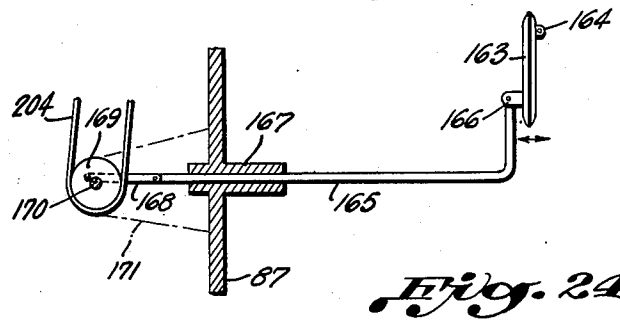


Fig. 24.

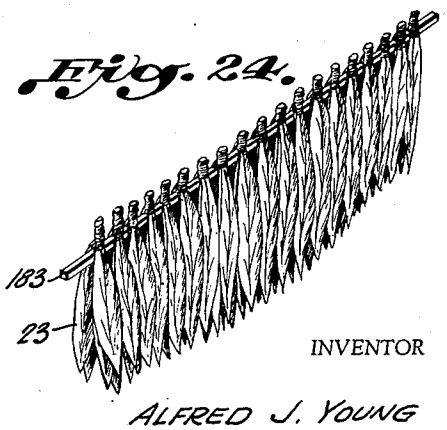
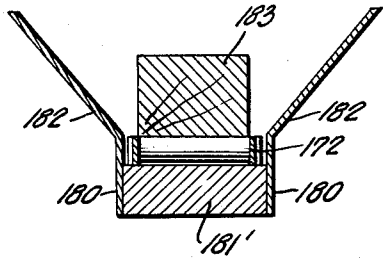


Fig. 23.



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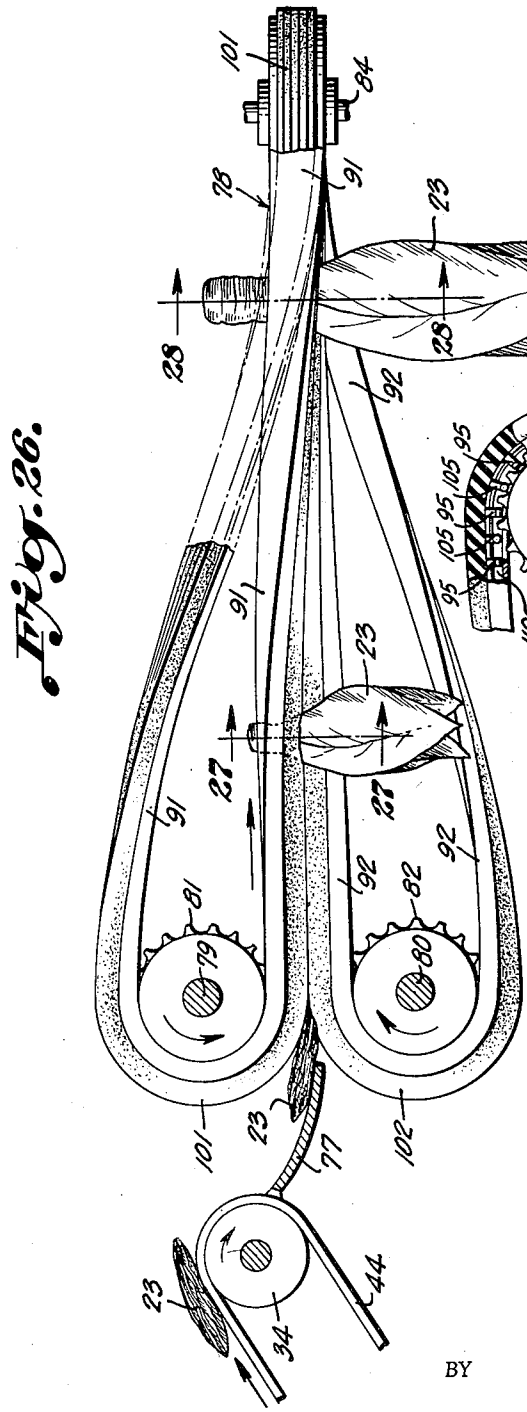

Fig. 26.

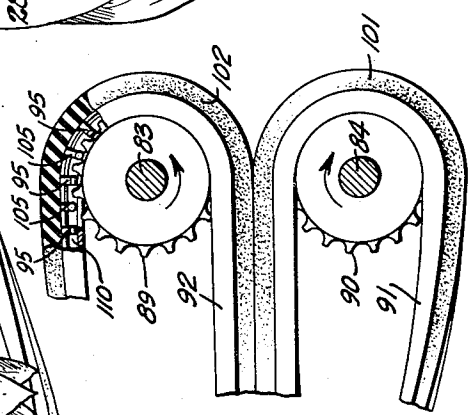

Fig. 25.

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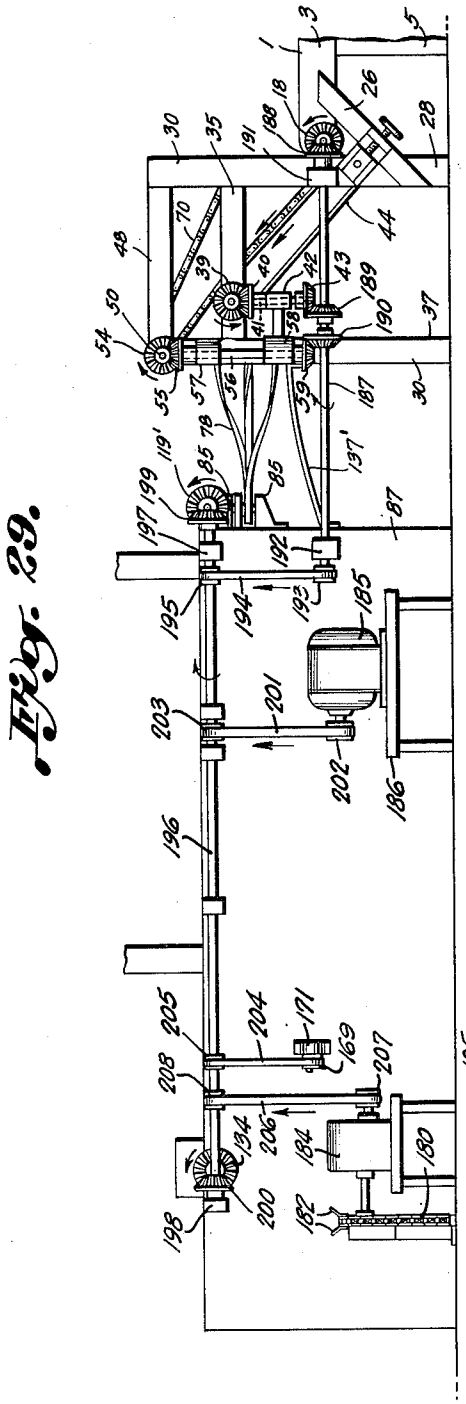

Fig. 29.

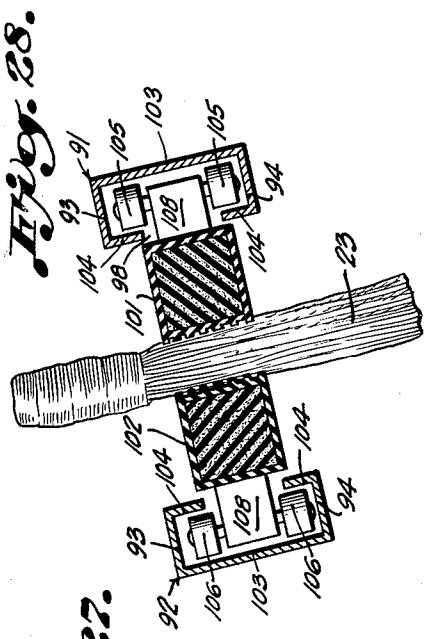

Fig. 28.

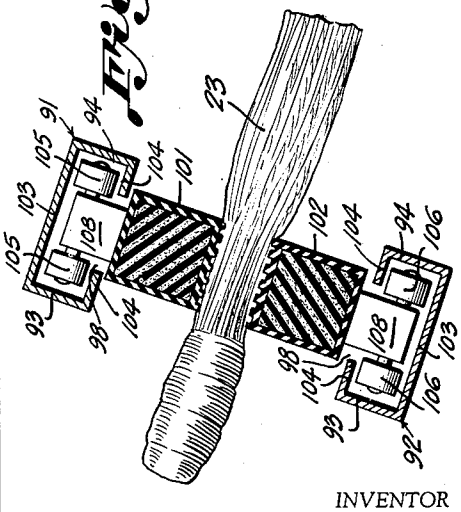

Fig. 27.

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United States Patent Office

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Patented Mar. 15, 1955

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TOBACCO SHAKING AND HANGING MACHINE

Alfred Joshua Young, Petersburg, Va.

Application October 3, 1950, Serial No. 188,135

7 Claims. (Cl. 131—138)

This invention relates to a tobacco shaking and hanging machine, and more particularly to such a machine which is adapted for use with tobacco bunches.

As now practiced in the tobacco art, bunches of tobacco consist of leaves wrapped at their ends to form a head. These bunches are now shaken by employees, placed upon a table and then removed by other employees who hang such bunches on a stick. The foregoing operation, for instance, may require three groups of employees to accomplish the hanging. The first group consisting of shakers who shake the bunches so as to loosen the leaves for hanging, a second group who place the bunches on the sticks and a third group to take the stick, laden with bunches, away. This invention is designed not only to decrease the number of employees required in the above operation, but also to provide the same results with such a machine.

One of the objects of this invention is the provision of a machine for shaking and hanging tobacco bunches.

Another object of this invention is the provision of a machine adapted to shake and hang tobacco bunches at a uniform rate and with less manual operation.

Other objects and features will more fully appear from the following description and accompanying drawings, in which:

Fig. 1 is a side diagrammatic elevational view of the device;

Fig. 2 is a plan view of Fig. 1;

Fig. 3 is an enlarged section of the conveyor table;

Fig. 4 is a plan view of Fig. 3;

Fig. 5 is a sectional view taken along line 5—5 of Fig. 4;

Fig. 6 is a transverse sectional view taken along line 6—6 of Fig. 5;

Fig. 7 is a perspective view of a metal slide;

Fig. 8 is a vertical sectional view of the elevator;

Fig. 9 is a front elevational view of Fig. 8;

Fig. 10 is a sectional view along line 10—10 of Fig. 8;

Fig. 11 is a perspective of one of a group of hinged slides;

Fig. 12 is a vertical sectional view of a combined steam-air chamber;

Fig. 13 is a sectional plan view along line 13—13 of Fig. 12;

Fig. 14 is a vertical sectional view showing exit from said steam and air chamber;

Fig. 15 is a sectional view along line 15—15 of Fig. 14;

Fig. 16 is a transverse sectional view along line 16—16 of Fig. 14;

Fig. 17 is a fragmentary view in side elevation of a belt;

Fig. 18 is a sectional view taken along line 18—18 of Fig. 20;

Fig. 19 is a sectional view along line 19—19 of Fig. 20;

Fig. 20 is a sectional view along line 20—20 of Fig. 18;

Fig. 21 is a fragmentary perspective view of a belt showing rubber lugs;

Fig. 22 is a sectional view along line 22—22 of Fig. 14;

Fig. 23 is a sectional view along line 23—23 of Fig. 16;

Fig. 24 is a perspective view of a stick holding tobacco bunches;

Fig. 25 is a horizontal enlarged sectional view along line 25—25 of Fig. 12;

Fig. 26 is a vertical enlarged sectional view of the convertor;

Fig. 27 is a sectional view along line 27—27 of Fig. 26;

Fig. 28 is a sectional view along lines 28—28 of Fig. 26, and

Fig. 29 is a diagrammatic side elevation of the device showing the gear drive.

Referring to the drawings, a table or initial conveyor 1 comprises a top 2 (Fig. 6) to which are secured sides 3 and 4. A plurality of legs 5 are secured to side 3, while a similar number of legs 6 are secured to side 4; each leg constituting one leg of a pair of legs, and being held firmly by braces 7. A roller 8 (Fig. 5) has its axle journalled in bearings 9 and 10 (Figs. 3 and 4), each being housed in movable fashion in boxes 11 and 12, respectively, secured to sides 3 and 4. Adjusters 13 and 14 are respectively mounted, in threadable fashion, in boxes 11 and 12, and secured to bearings 9 and 10 in a rotatable manner. It is obvious that the adjusters may be actuated to cause bearings 9 and 10 to move roller 8 back and forth in a horizontal plane.

A roller 15 (Fig. 5) has each of the ends of its axle respectively journalled in bearings 16 and 17 (Figs. 3 and 4) respectively disposed in sides 3 and 4 and a gear 18 is secured to one end of said axle. A conveyor belt 19, preferably of heavy canvas, is mounted upon, and rotatable about, rollers 8 and 15, and circumvents over and under top 2 of the table. Guides 20 and 21 (Figs. 4 and 6) are respectively bolted to sides 3 and 4 so as to extend vertically across the edges of belt 19 when it passes over top 2. Rollers 22 (Fig. 5) are journalled in bearings secured to sides 3 and 4 and are adapted to engage belt 19 as it moves along the bottom of top 2, and thereby prevent any substantial flapping of said belt.

The belt is adapted to move over the top of table 1 towards and about roller 15, and tobacco bunches 23 each have a head 24; said bunches adapted to be received or placed upon belt 19 with their head portions adjacent guide 20 (Fig. 4). The tobacco bunches are placed in horizontal position upon the table. It will be observed that the adjusters may actuate roller 8 to tighten or loosen the belt as desired. A metal slide or ramp 25 (Figs. 3–4) has each of its ends respectively secured to sides 3 and 4, and over which the bunches 23 slide after they have left the conveyor belt 19.

A pair of braces 26 and 27 (Figs. 8 and 9) have their highest ends respectively secured to sides 3 and 4 of table or initial conveyor 1, and their lowest ends to legs 28 and 29 of an elevator or conveyor in the frame 30. A roller 31 (Fig. 8) has each of the ends of its axle respectively journalled in bearings (Fig. 9) housed in boxes 32 and 33 secured to braces 26 and 27, and is adjustable in similar fashion as hereinbefore described with respect to roller 8. A roller 34 (Fig. 8) also has each of the ends of its axle respectively mounted, in rotatable fashion, in cross-beams 35 and 36 (Fig. 10) of the elevator or conveyor in the frame. Beams 35 and 36 are respectively secured to legs 28 and 37 and 29 and 38 (Fig. 10) of frame 30.

A gear 39 (Fig. 9) is secured to one end of the axle of roller 34, and meshes with a gear 40 secured to one end of an axle 41 housed in a bearing 42 mounted on leg 37. The other end of axle 41 has fixed thereto a gear 43. A conveyor or elevator belt 44, also preferably of heavy canvas, is mounted upon rollers 31 and 34, in rotatable fashion, and a support or base 45 (Fig. 8) is secured to legs 28 and 29 and beams 35 and 36. The base extends upwardly from roller 31 to roller 34, and forms supporting means for belt 44 which elevates and conveys the tobacco bunches up the incline as said belt is actuated. Guides 46 and 47 (Figs. 9 and 10) are respectively secured to members 28 and 35 and 29 and 36 and project slightly over and transversely of the edges of belt 44. It will be noted that the adjusters (Fig. 9) of boxes 32 and 33 may be moved to cause the belt 44 to be tightened or loosened.

Beams 48 and 49 (Fig. 9) are respectively secured to legs 28 and 37; and 29 and 38 (Fig. 10). An axle 50 (Fig. 9) passes through beams 48 and 49, legs 37 and 38 and is journalled in bearings in said last named members of the elevator frame 30. Secured to axle 50, between beams 48 and 49 are cogwheels 51, 52 and 53. Mounted upon one end of axle 50 is a gear 54 (Fig. 9) that meshes with a gear 55 secured to one end of an axle 56 journalled in bearings 57 and 58 mounted upon

leg 37 (Fig. 29). The other end of said axle has secured thereto a gear 59.

A crossbar 60 is secured to legs 28 and 29, and cogwheels 61, 62 and 63 (Fig. 9) are mounted respectively in frames 64, 65 and 66, which are secured, in movable fashion, to adjusters 67, 68 and 69, housed, in threadable fashion and in spaced relation to each other in crossbar 60. Chains 70, 71 and 72 are respectively mounted upon cogwheels 51 and 61, 52 and 62, and 53 and 63. The chains being under the force of gravity (Fig. 8) hang downwardly from their respective cogwheels 61, 62 and 63 and rest upon belt 44 and move upwardly in unison with said belt. Under the upper stretch of each chain is respectively disposed slides or supports 73, 74 and 75. The slides (Fig. 11) are hinged at their upper ends to a bar 76 (Figs. 8 and 9) secured to beams 48 and 49; their other ends being provided with pairs of legs respectively supported in slots 73S, Fig. 8, of frames 64, 65 and 66. It is obvious that said slides form supports over which the chains ride downwardly. A slide 77 (Fig. 8) is secured to beams 35 and 36 and is tilted at an angle so that the tobacco bunches 23 reecived from belt 44 are conveyed to a convertor conveyor 78.

With particular reference to the convertor conveyor and its structure, this device is adapted to receive the tobacco bunches in horizontal fashion and convert them while conveying to a perpendicular position. The convertor conveyor has a pair of axles 79 and 80 (Figs. 8 and 26) which are respectively journalled in bearings, one over the other, disposed in legs 37 and 38. A pair of cogwheels 81 and 82 are respectively secured to axles 79 in a common vertical plane, and are rotatable with said axles. A pair of axles 83 and 84 (Figs. 13, 25 and 26) are respectively journalled in sets of bearings 85 and 86 (Figs. 12 and 29), in perpendicular fashion, secured to one end of a chamber or chest 87 and disposed in sets on either side of an inlet 88 in said chest.

To each axle 83 and 84 are respectively secured in horizontal fashion cogwheels 89 and 90 (Fig. 25). A pair of guides comprising channel members or slotted casings 91 and 92 (Figs. 18, 25 and 26) are respectively provided with tracks 93 and 94 (Figs. 18 and 19) adapted to accommodate rollers 95 mounted, in rotatable fashion, on axles 96 secured in carriages 97. The end portions of the carriages project through slots 98 of the casings and are provided with nibs 99 (Fig. 18) which are adapted for anchorage in lugs 100 (Fig. 21) formed upon the inner sides of belts 101 and 102. The belts are preferably made from a somewhat hard outer coating with a sponge-like interior or central portion as shown in Fig. 21. The outer facings of the belts are ribbed in longitudinal fashion to form a better gripping surface as shown in Fig. 17. It will be noted from the foregoing that rollers 95 and their companion structure are adapted to support the belts as they move along the track with their ribbed surfaces in a substantial vertical plane.

Tracks 103 and 104 in casings 91 and 92 are respectively adapted to accommodate rollers 105 (Figs. 19 and 20) disposed at ends of 106 of axles 107 upon which carriages 108 are respectively mounted. and which carriages are provided with extensions (Fig. 19) having oppositely disposed nibs adapted for anchorage in lugs 100 of belts 101 and 102 in similar fashion as nibs 99. The carriages and their companion structures are disposed in casings 91 and 92 in alternative fashion (Fig. 20) and cables 109 and 110 (Figs. 18, 20 and 25) pass through apertures in each of said carriages and firmly secure said carriages by set-screws 111 mounted in projections secured to said carriages. It is to be noted that casings 91 and 92 (Fig. 25) are slotted at their turns to permit cogwheels 81 and 82 (Fig. 26) and 89 and 90 (Fig. 25) to engage or mesh with the edges of the carriages so as to impart force to the train of rollers in their respective casings. It is also to be noted that rollers 105 are adapted to support the belts as they travel with their faces in a substantial horizontal plane or position.

It is obvious from the foregoing that casings 91 and 92 and their respective companion structures, house the carriages, whose edges respectively mesh or register with wheels 81 and 82 and 89 and 90. The edges of the carriages (Fig. 25) form teeth which, as aforesaid, mesh with the teeth of their respective cogwheels (Fig. 25). Wheels 81 and 82 maintain the casings and structure in vertical alignment so that the ribbed belt surfaces are in a horizontal plane and receive the similar positioned tobacco bunches; while wheels 89 and 90 maintain the rear portion of the convertor casings in a horizontal plane and belt surfaces in a vertical plane.

It will be observed from the foregoing description that the device so far described receives the tobacco bunches on the conveyor table 1 which are transferred to the incline in the elevator 31, and passed from there, in a horizontal position, to the convertor 78 which gradually converts them from the original horizontal plane to a vertical plane; from whence they are transferred, in a vertical position, to the device hereinafter described.

A pair of cogwheels 112 and 113 (Fig. 13) are respectively mounted on axles 83 and 84 just above wheels 89 and 90 in casings 92 and 91 (Fig. 25). Respectively connected to the upper ends of axles 83 and 84 are gears 114 and 115 which are above the top portions of bearings 85. Gears 116 and 117 are secured to an axle 118 mounted in bearings 119 and 120 secured to one end of chamber 87, and respectively mesh with gears 114 and 115. Secured to one end of axle 118 is a gear 119'. It is to be noted at this point that motion or force imparted to gear 119' actuates axle 118 respectively rotating axles 83 and 84 through gears 114 and 116, and 115 and 117 thereby causing wheels 89 and 90 (Fig. 25) to rotate which propels the mechanism in casings 91 and 92 hereinbefore described.

A pair of axles 121 and 122 (Figs. 15 and 16) are respectively mounted in bearings 123 and 124 secured to the sides of chamber 87. Cogwheels 125 and 126 are respectively secured to axles 121 and 122, and at the upper ends of axles 121 and 122 are respectively secured gears 127 and 128 which latter likewise mesh with gears 129 and 130 secured to an axle 131 journalled in bearings 132 and 133 mounted on each side of chamber 87. To one end of axle 131 is secured a gear 134.

Casings 135 and 136 (Figs. 12, 15 and 16) respectively house rollers, carriages and similar structure such as that described in the convertor and the edges of the carriages in casings 135 and 136 respectively mesh with gears 113 and 126; 112 and 125 (Figs. 13 and 15) at the inside turns of such casings which are slotted at that point in similar fashion as that illustrated in Fig. 25. Belts 137 and 138 travel about said casings and with one another with their ribbed surfaces in perpendicular fashion; said belts being imparted motion through gear 134; axle 131; gears 127 and 129; 128 and 130; axles 121 and 122 and wheels 125 and 126 and the roller structure hereinbefore described.

The belts project slightly over the end of the convertor (Fig. 12) and are adapted to receive from the latter the vertically positioned tobacco bunches and move them into and out of the chamber. It is to be observed that as the bunches travel along the convertor a table 137' (Figs. 1, 12 and 29) supports the lower dangling portions of the bunches, and said table is surfaced so as to coincide with the position or plane the bunches assume from their horizontal to perpendicular positions over their course of travel while in convertor.

The tobacco bunches are sometimes either too dry or moist and accordingly chamber 87 is provided with an air compressor 139A with motor attachment (Fig. 12) well known in the art, and a steam chest 139, also known to the art. A pipe 140 has one of its ends connected to the compressor and the other end to a joint 141, the air flow in said pipe being controlled by a valve 142. Pipes 143 and 144 near one side of chamber 87 are provided with nozzles 145 which register with and project from apertures in said pipes.

A similar set of pipes are on the other side of the chamber and are connected by a pipe 146 (Figs. 12 and 13). A pipe 147 is connected to the compressor and controlled by valve 148. Pipe 147 connects with pipes 149 and 150 constructed in similar fashion as pipes 143 and 144. A similar set of pipes are on the other side of the chamber and are connected by a pipe 151 (Figs. 12 and 13). It will be noted that the nozzles in pipes 143 and 144; 149 and 150 (Fig. 13) are staggered so as the bunches pass through the chamber the air will cause the bunches to wave toward and from each side of the chamber and thus loosen them.

A pipe 152 is connected to the chest and pipe 140, being controlled by a valve 153. A pipe 154 is connected to pipe 147 and is also controlled by a valve 155. If steam is

desired to be uesd valves 142 and 148 are closed and either or both valves 153 and 155 are opened. If air is desired valves 153 and 155 are closed and either or both valves 142 and 148 are opened. Various variations of air and steam may be used at the same time if desired, as is thought obvious from the foregoing. A partition 156 spans the inside of chamber 87 and has an outlet 157 therein through which the bunches pass. Exhaust funnels (Fig. 12) are provided in top of chamber 87 to provide for the clearance of steam.

As the tobacco bunches pass through outlet 157 angular guides 158 and 159 secured to partition 156 smooth and press the loosened tobacco gently together. An angular slide 160 (Figs. 14 and 16) is supported by rods 161 mounted upon a platform 162 secured to the sides of chamber 87.

A vibrator 163 (Figs. 14 and 15) is connected to one side of the forward portion of slide 160 in pivotal fashion at 164 (Fig. 22); while a rod 165 connects the other side in a similar manner at 166. The rod passes through a bearing 167 in one side of chamber 87 and is pivotally connected to one end of a link 168, the other end engaging a wheel 169 mounted on an axle 170 journalled in a bearing 171 (Fig. 29). The vibrator 163 is provided with a nose on its forward end. When the vibrator is actuated it noses or "feels" its way through the center of the tobacco bunches that ride over it and upon slide 160. The main purpose of the vibrator is to probe an opening through the moving bunches so they may be spread upon the angular slide as shown in Fig. 14. The rear end 160*a* of slide 160 curves at a substantial right angle at 160*b* and is inclined downwardly at sufficient angle to cause bunches to move down the slide after they have left belts 137 and 138.

As the bunches move from the slide they next pass to a hanging or stacking machine which consists of a chain 172 that traverses chamber 87 through its inlet 173 and outlet 174 (Fig. 16) and is mounted upon cogwheels 175 and 176, and 177. Wheel 175 has its axle journalled in a bearing 178 housed in a support 179 disposed between casing 180. Wheels 176 and 177 are respectively journalled in bearings housed in support 181 also secured to a base outside chamber 87. Wheel 177 is adjustable so as to loosen or tighten chain 172 as clearly shown in Fig. 16.

The casing 180 (Fig. 14) extends upwardly so that each of its sides extend evenly with chain 172. A platform 181′ (Figs. 16 and 23) is secured between the casing near its flanged edges 182; which edges extend from wheel 176 to below slide 160, and the platform continues to a point just above wheel 175 as indicated in dotted lines in Fig. 16. The flanges over a portion of the platform are provided so that the leaves of the bunches (Fig. 16) will not become entangled in the chain.

As the chain moves about its companion wheels a stick 183 (Fig. 16) is placed thereon and rides upon said chain. The bunches descending slide 160 fall upon the stick, in succession and substantially in uniformly spaced relations. The stick is lifted from the chain when a quantity of bunches are loaded in a fashion as illustrated in Fig. 24. A speed regulator 184 (Fig. 15), well known in the art, is connected to and adapted for actuating wheel 176. The tobacco is moved successively and uniformally throughout the entire device, and if it is desired to pack more tobacco on stick 183 the regulator is adjusted to cause wheels 175, 176 and 181 to move slowly thereby causing more bunches to be loaded upon the stick. By speeding the wheels the sticks move faster thus spacing the bunches further apart.

Force is imparted to the various gears and mechanisms through the medium of an electric motor 185 mounted upon a platform 186, as follows: A shaft 187 has mounted thereon gears 188, 189 and 190 (Figs. 2, 4, 10 and 29) that respectively mesh with gears 18, 43 and 59; said shaft being mounted in bearings 191 and 192 respectively secured to leg 28 of the elevator frame and one side of chamber 87. Connected to one end of shaft 187 is a pulley 193 (Fig. 29) engaging a belt 194 mounted upon a pulley 195 fixed to a shaft 196 journalled in bearings 197 and 198 and other bearings as shown in Fig. 29, and which bearings are secured to one side of chamber 87. Gears 119′ and 134 respectively mesh with gears 199 and 200 on shaft 196; while belt 201 is mounted upon pulleys 202 and 203 respectively fixed to the axle of motor 185 and shaft 196. A belt 204 respectively engages wheel 169 (Fig. 29) and a pulley 205 on shaft 196. A belt 206 is mounted upon pulleys 207 and 208 respectively secured to the axle of the speed regulator and shaft 196.

The general operation of the apparatus or machine as displayed by the drawings appears to be substantially clear and for the most part, at least, obvious. It may suffice to observe that the tobacco hands or bunches 23, Fig. 4, are spaced uniformly on belt 19 of the initial conveyor or table 1. Axle 187, as seen from the front end of the initial conveyor is rotated clockwise by the prime mover or motor 185 thereby causing the hands or bunches to be carried by belt 19 to the downward inclined curved slide 25 to elevator belt 44 and under the gravity influenced chains 70, 71 and 72. As axle 187 turns clockwise it actuates gears 189 and 43 and gear 39 is propelled counterclockwise as seen from the left side of the machine. Axle 41 and gear 40 rotate clockwise propelling gear 39 counterclockwise and the pull on the upper stretch of belt 44 as indicated. Rotation of gear 190, Fig. 29, on shaft 187; gear 59; axle 56, gear 55 and gear 54 rotate axle 50 upon which sprocket wheels 51, 52 and 53 are fixed driving the chains 70, 71 and 72 as contemplated.

As the tobacco hands or bunches 23 pass from the belt and chains and over guide or slide 77 to the conveyor convertor 78, belts 101 and 102 which are attached to the controlling guides or carriages in channels or casings 91 and 92 are propelled by shaft 196, with gear 199 fixed thereon, Fig. 13, and gear 119′; axle 118; gears 116 and 114; 117 and 115 are arranged respectively in operative relation with axles 83 and 84. Wheels 89 and 90, Fig. 25, are mounted on axles or shafts 83 and 84 and mesh with flanges 95, cogs and/or rods 105 and 106 within casings or channels 91 and 92 and move the belts 101 and 102.

When the tobacco hands or bunches 23 leave the conveyor convertor they pass between belts 137 and 138 which belts are propelled by means of rotating shaft 196, gears 200 and 134, axle 131, gears 129 and 127, 130 and 128, respectively in operative relation with axles 122 and 121, Fig. 15, that likewise have wheels 125 and 126 secured thereto and in operative relation with the belts through the carriages and rollers in casings or channels 135 and 136. The tobacco bunches then pass from belts 137 and 138 over slide 160 upon chain 172 and on sticks 183 which are removed from said chain to complete one cycle of the operation.

For the purpose of this application: "bunches of tobacco" is the same as "hands of tobacco"; "vertical" is the same as "upright"; likewise, "vertically" is used in a sense to mean upright not necessarily at a right angle to a horizontal or on a line passing through the center of the earth but on the contrary any line making a major angle (90°+) with a horizontal plane.

The conveying system may include all of the conveyors of the machine and especially the conveyor within the treating chamber. The nose of the vibrator 163 spreads the advancing tobacco leaves and shakes them as they are passed along over and on the divider 160.

Having described this invention, what is claimed is:

1. In a tobacco bunch handling and treating machine, a system of supports and conveyors in combination with a tobacco treating chamber, a conveyor in said chamber to receive the tobacco from said system, a slide having an inclined supporting portion, said slide being located with its major portion within said treating chamber to receive tobacco from said chamber conveyor, said tobacco being in the form of bunches, and adapted to guide individual bunches of tobacco suspended by their heads for discharge from said slide, said slide having a portion thereof located beneath said chamber conveyor and in the path of the bunches of tobacco and adapted to spread their leaves while slidably guiding same onto a tobacco stick, and means for conveying the stick to, through, and from the treating chamber.

2. The construction set forth in claim 1, in which the slide is provided with a terminal portion, said terminal portion being flared outwardly from its top to its lower edges constituting outwardly flared sides whereby the oppositely disposed sides spread the tobacco leaves so as to straddle the hanger stick.

3. The construction set forth in claim 1, in which the slide is provided with a divider nose at its forward end, said slide conveyor being provided with vibrating means connected to the lower portion of the divider nose and

extending downwardly therefrom and then latterly thereof whereby the vibrating means is located substantially out of the path of the advancing tobacco bunches.

4. The construction set forth in claim 1, in which the slide constitutes a divider means for spreading the suspended tobacco leaves into opposed spaced angular relation, said divider having its front and rear portions arranged at a substantial angle to each other and said portions being connected by a guiding arcuate portion.

5. In an apparatus adapted to convey hands of tobacco and treat the same, a conveying system for supporting and conveying hands of tobacco while maintained in a vertical position through a treating chamber, a slide in juxtaposition to one end of said conveying system for receiving the hands therefrom and spreading the same while slidably guiding them onto a tobacco stick, and means for conveying the stick to, through, and from the treating chamber.

6. In a machine adapted to convey hands of tobacco therethrough and treat the same, a conveyor system for supporting and conveying hands of tobacco while maintained in an upright position with their heads uppermost and their leaves suspended from said heads, in combination with a treating chamber having a conveyor therein and extending longitudinally thereof a combined support and convevor for a tobacco stick arranged transversely of said system and of said treating chamber, said combined support and conveyor comprising an endless belt having stretches thereof located in an upright plane, and supporting means for supporting the major portion of the upper stretch of said belt in substantially a horizontal position, said supporting means comprising a channel member open at the top to receive the stick and guide the same as it is advanced by the upper stretch of said endless belt.

7. In a tobacco hand or bunch handling and treating machine, the substructure comprising a combined support and bunch handling and conveyor construction, a tobacco stick conveyor, said stick conveyor being arranged transversely of the machine, said stick conveyor comprising an endless belt having stretches thereof located in an upright plane, and a guide to transfer the bunches from the bunch handling conveyor to the stick conveyor, in combination with a supporting means for supporting the upper stretch of said belt in substantially a horizontal position, said supporting means comprising a channel member open at the top to receive the stick and guide the same as it is advanced by the upper stretch of said endless belt.

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