March 3, 1953 W. E. SAXE 2,630,202

MATERIAL TRANSFER MECHANISM

Filed Feb. 14, 1949 2 SHEETS—SHEET 1

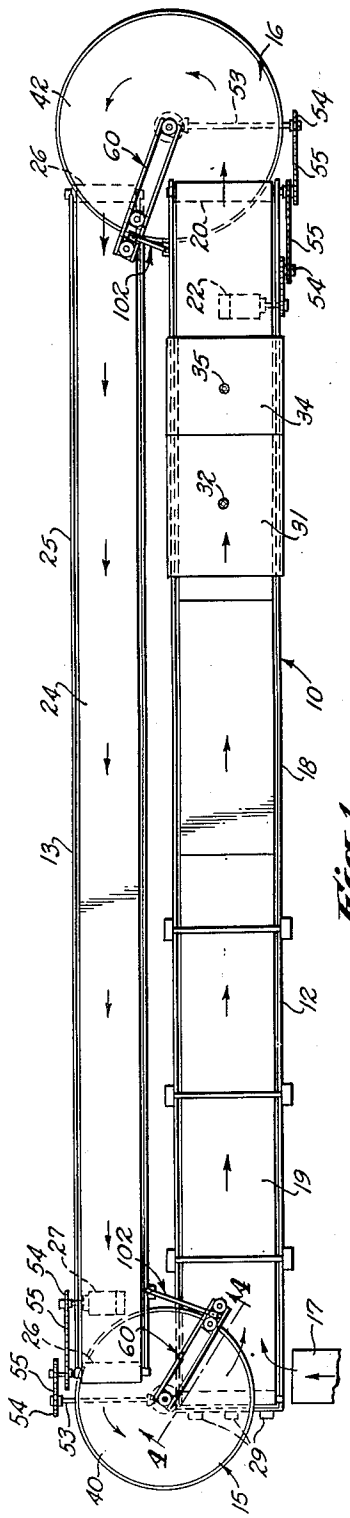


Fig. 1

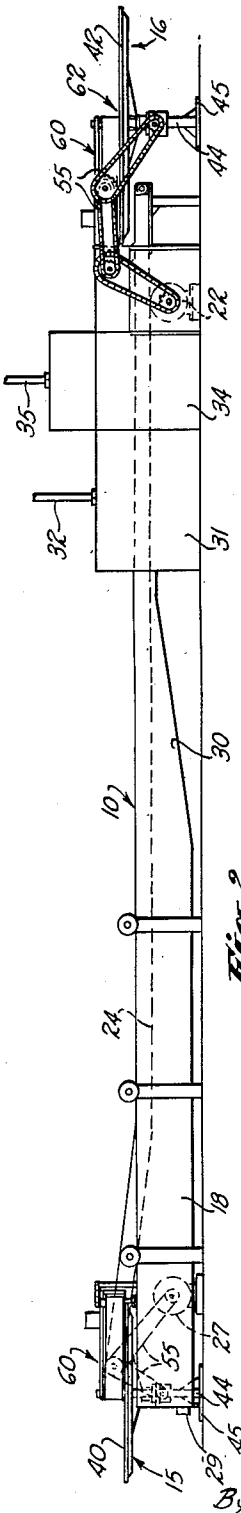


Fig. 2

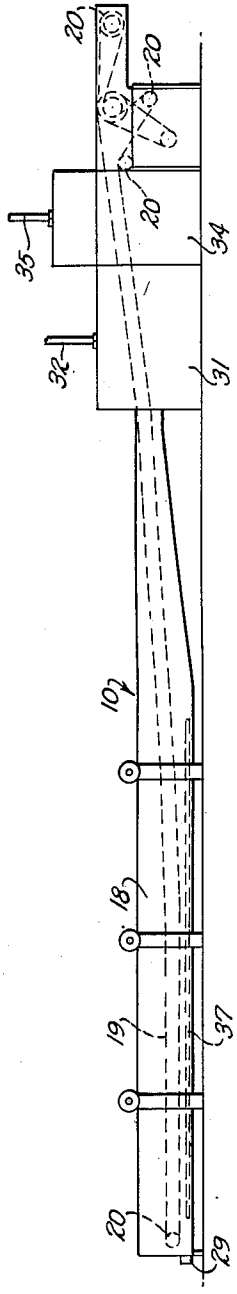


Fig. 3

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MATERIAL TRANSFER MECHANISM

Filed Feb. 14, 1949 2 SHEETS—SHEET 2

Fig. 4

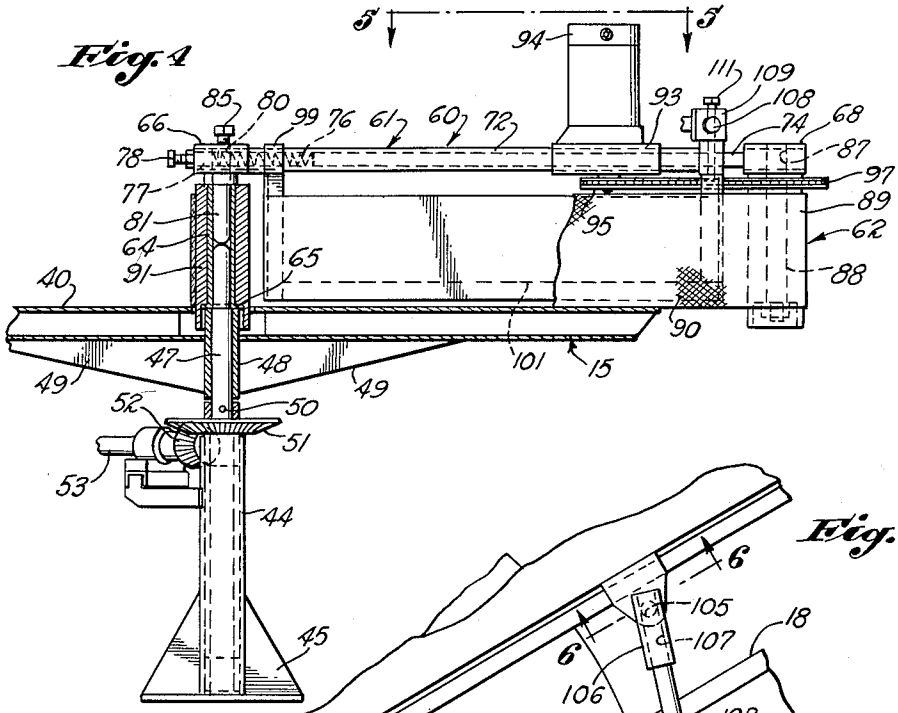


Fig. 5

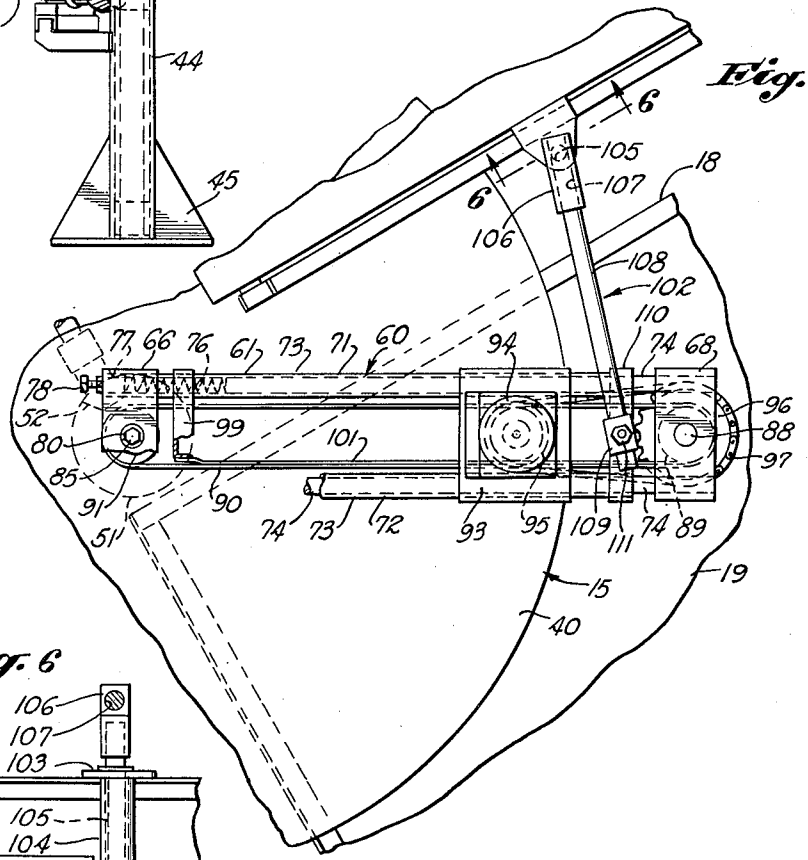
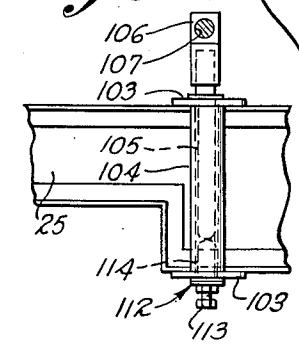


Fig. 6



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UNITED STATES PATENT OFFICE

2,630,202

MATERIAL TRANSFER MECHANISM

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8 Claims. (Cl. 198—20)

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This invention relates to conveyors and more particularly to a conveyor assembly of the type which is adapted to convey a plurality of articles through a treating zone and then to a packing zone in a continuous cycle.

In order to clearly illustrate its manner of construction and mode of operation I describe my invention as being embodied in a carrot washing and packing machine but it is, of course, obvious that my invention may be applied to other devices adapted to be utilized to treat a wide variety of other articles.

When carrots are brought to the packing sheds from the field their surfaces are usually covered with earth and muck so that it is necessary to wash the carrots in order that they may be sufficiently clean to be packed in the shipping crates in which they are shipped to market. It is conventional practice to dump the carrots in one end of a washing trough through which they are conveyed by different expedients and from which they are subsequently removed and placed upon a packing conveyor. Packers who stand along the length of the conveyor subsequently take the carrots therefrom and pack them in crates for shipment. Usually, the trough for washing the carrots and the packing conveyor are arranged in end-to-end relationship and it is thus necessary to provide a packing shed of sufficient length to accommodate the washing trough and the packing conveyor when conventional arrangements are utilized.

It is, therefore, a primary object of my invention to provide an apparatus adapted for the washing and subsequent packing of carrots which is designed to be accommodated in a packing shed of much less length than is customarily possible. I achieve this desired end by placing the washing conveyor of my invention in side-by-side relationship with the packing conveyor and thus permit the length of the packing shed to be reduced by an amount equivalent to the length of the washing conveyor.

When carrots are cleaned and packed by the use of conventional apparatus it frequently happens that a substantial portion of the carrots issuing from the washing tank and deposited upon the packing conveyor are not sufficiently clean and it is thus necessary to remove such insufficiently clean carrots from the packing conveyor and deposit them in a pile for subsequent rewashing in the washing tank. Naturally, such practices result in the excessive and sometimes careless handling of the vegetables and a large number of culls must be discarded.

It is another object of my invention to provide

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a washing and packing conveyor apparatus for carrots or similar vegetables which is adapted to handle the produce in a continuous cycle. In other words, when carrots which have not been sufficiently clean are deposited on the packing conveyor they may be left thereon by the packers and automatically refed into the washing conveyor at the end of the packing operation. In this manner, the excessive handling of the carrots and the careless dumping and throwing of the carrots into bins or on the floor of the packing shed are eliminated and the cull percentage is substantially reduced.

Occasionally, when conventional washing and packing conveyors are utilized, the packers are not able to keep up with the flow of vegetables issuing from the washing conveyor and it is necessary to let the produce remain on the conveyor to the end thereof and be deposited upon the floor of the packing shed. When a slack period occurs a packer is assigned to pack this superfluous product.

It is an additional object of my invention to provide a washing and packing apparatus of the aforementioned type which is adapted to recycle by-passed produce in order that the produce may be packed from the packing conveyor when an overload condition ceases to exist.

Of course, by placing both the washing and packing conveyors in side-by-side relationship it is possible to deliver the produce from the field to the same end of the shed from which the packed produce is removed. In other words, the necessity for providing loading gates at both ends of the packing shed or for excessive handling of the produce is eliminated.

The placing of the washing conveyor adjacent the packing conveyor of my invention necessitates the provision of means adapted to transfer the produce from one conveyor to the other.

A further object of my invention is the provision of transfer means adapted to be positioned at either or both ends of the apparatus above described and to carry the produce from the discharging end of one conveyor to the receiving end of the other conveyor.

An additional object of my invention is the provision of transfer means adapted tto transfer produce from the discharging end of one conveyor and to deposit it upon the receiving end of an oppositely moving conveyor.

A further object of my invention is the provision of transfer means adapted to transfer produce between the ends of oppositely moving conveyors which is constituted by a rotating table, a portion of whose periphery is adapted to inter-

sect the longitudinal path of the conveyors with which it is associated to permit articles conveyed upon one conveyor to be deposited upon said table and to permit such deposited articles to be discharged therefrom onto the adjacent conveyor.

An additional object of my invention is the provision of transfer means of the aforementioned type which has associated therewith discharging means adapted to facilitate the discharge therefrom of articles deposited thereupon.

Another object of my invention is the provision of discharging means adapted to be associated with said table which is mounted upon an elongated wiper arm adapted to support said discharging means in close proximity to the surface of said table. An associated object of my invention is the provision of discharging means mounted upon said wiper which is designed to move radially of said table to cause the outward movement of articles deposited thereupon.

An additional object of my invention is the provision of an apparatus of the aforementioned character which is simple in construction and arrangement and which may be manufactured and operated at moderate cost.

Further objects and advantages of my invention will be made apparent by the following specification and the accompanying drawings, which are for the purpose of illustration only, and in which:

Fig. 1 is a top plan view of a washing and packing apparatus constructed in accordance with my invention;

Fig. 2 is a side elevational view of the apparatus of Fig. 1;

Fig. 3 is an additional side elevational view of the washing conveyor of my invention;

Fig. 4 is an enlarged fragmentary sectional view taken on the broken line 4—4 of Fig. 1;

Fig. 5 is a fragmentary, top plan view taken on the line 5—5 of Fig. 4; and

Fig. 6 is a fragmentary elevational view taken on the broken line 6—6 of Fig. 5.

Referring to the drawings, and especially to Fig. 1 thereof, I show a carrot washing and packing apparatus 10 which includes a washing conveyor 12 and a packing conveyor 13 arranged in side-by-side relationship with said washing conveyor. Disposed at opposite ends of the washing conveyor 12 and packing conveyor 13 are transfer means 15 and 16 which are adapted to convey, respectively, material from the discharging end of the packing conveyor 13 to the receiving end of the washing conveyor 12 and from the discharging end of the washing conveyor 12 to the receiving end of the packing conveyor 13. It should be noted that the receiving end of the washing conveyor 12 is positioned adjacent the discharging end of the packing conveyor 13 while the discharging end of the washing conveyor 12 is positioned adjacent the receiving end of the packing conveyor 13. A supply chute 17 positioned adjacent the receiving end of the washing conveyor 12 is adapted to supply produce thereto for washing.

The washing conveyor 12 includes an elongated tank 18 which is adapted to be supplied with a continuous flow of a washing fluid, such as water, and which is equipped with an elongated, endless conveyor belt 19 supported upon and moved over guide rollers 20 which are adapted to be actuated by a source of power, such as an electric motor 22. The belt 19, as viewed in Figs. 1 and 3 of the drawings, moves to the right from the receiving end of the washing conveyor 12 to the discharging end thereof and is preferably formed of a wire mesh.

The packing conveyor includes an elongated endless belt 24 which is mounted in a frame 25 and is rotated upon rollers 26 by means of an electric motor 27. The belt 24 of the packing conveyor 13 moves to the left, as viewed in Fig. 1 of the drawings, and it is thus evident that the directions of movement of the belts 19 and 24 are opposite to each other while the longitudinal axes of said movement are parallel to each other.

The elongated tank 18 of the washing conveyor 12 is provided at its receiving end with discharge openings 29 which are adapted to permit washing fluid from the tank 18 to be discharged from the interior thereof. The tank 18 is provided with an upwardly inclined bottom 30 in the region of its discharging end and a spray booth 31 adapted to wash the washing fluid from the surface of the carrots is positioned adjacent said discharging end. A conduit 32 provides a supply of water sufficient to supply spray nozzles, not shown, within the interior of the spray booth 31. Disposed adjacent the spray booth 31 is a super-cooler booth 34 in which carrots carried upon the belt 19 may be cooled by means of chilled water from a conduit 35 which is sprayed by means of spray nozzles, not shown, within the interior of the super-cooler booth 34 upon the surface of the carrots as they pass therethrough in order to lower the temperature of the carrots prior to their being packed in the refrigerated cars in which they are shipped to market.

The flow of water through the conduits 32 and 35 which are associated respectively with the spray booth 31 and the super-cooler booth 34 is usually sufficient to provide the washing fluid necessary in the washing portion of the tank 18. It should be noted here that the flow of fluid in the washing tank 18 is to the left, as viewed in Fig. 3 of the drawings and is contrary to the direction of movement of the belt 19. Thus, as the carrots are carried through the tank 18 by means of the belt 19 they encounter progressively cleaner and cleaner washing fluid. In order to facilitate the flow of washing fluid through the bunches of carrots which are carried upon the surface of the belt 19 it is desirable that the belt 19 be made in the form of a mesh in order that the fluid flow therethrough may be materially increased and in order that the drainage therefrom in the discharging end of the washing conveyor will be as great as possible. It is also desirable that the belt 24 of the packing conveyor 13 be formed of a mesh similar to that of the belt 19 of the washing conveyor 13 in order that the drainage process initiated in the discharging end of the washing conveyor 12 be continued through the packing process.

As the carrots are carried to the right in the tank 18 by means of the belt 19 the earth and other foreign matter with which they are encrusted is washed away by the flowing action of the washing fluid and settles to the bottom of the tank 18. To prevent the accumulation of excessive amounts of foreign matter and muck in the bottom of the tank 18 the washing conveyor 12 is provided with mud rakes 37 which are adapted to be reciprocated adjacent the bottom of the tank 18 to urge the mud deposited therein to move with the flow of fluid being discharged from the discharge openings 29.

The transfer means 15 of my invention includes a circular table 40 which is positioned ad-

jacent the discharging end of the packing conveyor 13 and the receiving end of the washing conveyor 12 and rotates in a counterclockwise direction as seen in Fig. 1, and the transfer means 16 includes a circular table 42 which also rotates in a counterclockwise direction and is positioned adjacent the discharging end of the washing conveyor 12 and the receiving end of the packing conveyor 13. Since the details of construction and the manner of actuation of the transfer means 15 and 16 are essentially similar, it will be sufficient to describe the construction and mode of operation of the transfer means 15 and similar reference characters to those utilized to describe the elements of the transfer means 15 will be applied to similar elements utilized in the transfer means 16. However, it should be noted that the table 40 of the transfer means 15 rotates below the discharging end of the packing conveyor 13 and above the receiving end of the washing conveyor 12 while the table 42 of the transfer means 16 rotates below the discharging end of the washing conveyor 12 and above the receiving end of the packing conveyor 13.

The rotating table 40, as best shown in Fig. 4, of the transfer means 15 is mounted upon a tubular, vertical standard 44 which is disposed adjacent the receiving end of the washing conveyor 12 and the discharging end of the packing conveyor 13 and which is provided with a base 45 adapted to serve as adequate floating therefor. Housed within the interior of the tubular, vertical standard 44 is an upwardly extending vertical shaft 47 upon the upper end of which the table 40 is mounted by means of a tubular collar 48 which is secured to the center of the table 40 through the intermediary of gussets 49 on the under side thereof. The tubular collar 48 in the center of the table 40 is keyed or otherwise affixed to the shaft 47 in order that the rotation of the shaft 47 will cause the concomitant rotation of the table 40. Keyed to an intermediate portion of the shaft 47, as by means of a pin 50, is a bevel gear 51 which is adapted to be driven by means of a pinion 52 mounted on the inner end of a drive shaft 53, the rotation of which is induced by means of sprockets 54 and chains 55 which provide a power transmission means from the electric motor 27 which also serves to move the belt 24 of the packing conveyor 13.

Thus, when the electric motor 27 is actuated it causes the movement of the sprockets 54 and the chains 55 and the rotation of the drive shaft, pinion combination 53—52 and the concomitant movement of the bevel gear 51 and the shaft 47 to cause the rotary movement in a horizontal plane of the table 40 of the transfer means 15. It should be noted that as the table 40 is rotated by the aforementioned driving means its path of rotation in a horizontal plane intersects the longitudinal axes of movement of both the belt 19 of the washing conveyor 12 and the belt 24 of the packing conveyor 13. Thus, carrots which are left upon the surface of the belt 24 of the packing conveyor 13 because they have not been sufficiently cleansed or because they have been bypassed due to an overload condition upon the conveyor, may be deposited from the discharging end of the packing conveyor 13 upon the surface of the rotating table 40 and carried thereby to a point overhanging the surface of the conveyor belt 19 of the washing conveyor 12, whence they may be deposited upon said belt 19. The rotary table 42 of the transfer means 16 is actuated in the same manner by substantially identical mechanism and in its rotary, counterclockwise path the rotary table 42 passes under the discharging and of the washing conveyor 12 to receive from the conveyor belt 19 thereof a continuous flow of cleansed carrots which it is adapted to carry to a point above the receiving end of the conveyor belt 24 of the packing conveyor 13 to deposit said carrots thereupon. Of course, as the rotary table 40 of the transfer means 15 rotates, additional amounts of carrots to be cleansed are deposited from the chute 17 onto the belt 19. By juxtaposing the receiving end of the washing conveyor 12 and the discharging end of the packing conveyor 13 it is possible both to discharge unwashed carrots and to receive packed carrots at the same end of the apparatus, thus eliminating the necessity for providing truck loading means at both ends of the apparatus.

It will also be evident that the provision of a constant cycle of movement between the washing and packing conveyors permits improperly or insufficiently cleansed carrots to be readily returned to the washing bath and also permits excessive amounts of carrots which cannot be coped with by the packers to be passed through the cycle once again and thus eliminates the piling up of carrots at the end of the packing conveyor.

In order to properly deposit the carrots carried on the surface of the rotating table 40 upon the surface of the conveyor belt 19 the table 40 has associated therewith an elongated wiper arm 60 which includes a frame 61 adapted to support discharging means 62 which is designed to discharge the carrots, onto the surface of the table 40 at a point above the surface of the conveyor belt 19 of the washing conveyor 12.

The upper end of the shaft 47 protrudes beyond the upper end of the collar 48 and has mounted thereupon another tubular collar 64 which is provided with an annular flange 65 at its lower end adapted to seat upon the upper end of the tubular collar 48. The upper, tubular collar 64 serves as a mounting means for the inner end of the elongated wiper arm 60 in a manner which will be described in greater detail below.

The elongated wiper arm 60 and the frame 61 thereof include inner and outer end plates 66 and 68 which are joined to each other by means of telescoping arms 71 and 72. The telescoping arms 71 and 72 include outer tubular members 73, the ends of which are mounted in the inner end plates 66 and inner rods 74, the outer ends of which are mounted in the outer end plate 68 and the inner ends of which are adapted to be moved within the tubular members 73 to adjust the spatial relationship of the outer end plate 68 with respect to the inner end plate 66 for a purpose which will be described in greater detail below. Provided within the bores of the tubular members 73 and abutting on the inner ends of the rod members 74 are compression springs 76 the other ends of which are seated upon adjusting blocks 77 mounted in the ends of the tubular members 73 which blocks are adapted to be moved inwardly in respect to the bores of the tubular members 73 by means of adjusting screws 78 to adjust the force exerted by the ends of the springs 76 against the ends of the rods 74. In this manner, the outer end plate 68 may be adjusted in respect to the inner end plate 66 of the frame 61 for a purpose which will be described in greater detail below.

A vertical bore 80 is formed in the inner end plate 66 intermediate its ends and is adapted to

receive the upper end of a mounting spindle 81, the lower end of which is received in the upper end of the upper collar 64 and which is adapted to contact the upper end of the shaft 47. An adjusting screw 85 threadedly engaging the upper end of the vertical bore 80 in the inner end plate 66 is adapted to contact the upper end of the mounting spindle 81. Thus, when the adjusting screw 85 is threaded into the bore 80 of the end plate 66 the end plate 66 is vertically raised in reference to the upper end of the mounting spindle 81 and when the adjusting screw 85 is threaded out of the bore 80 of the end plate 66, the end plate 66 is vertically lowered in respect to the end of the mounting spindle 81. In this manner, vertical adjustment means adapted to raise or lower the inner end of the frame 61 of the wiper arm 60 is provided for a purpose which will be described in greater detail below.

The outer end plate 68 is provided with a vertical bore 87 which is adapted to receive the upper end of a depending spindle 88 which, in turn, has mounted thereupon a depending pulley 89 upon which is trained a flexible, endless belt 90 which constitutes the discharging means 62 of my invention. Mounted upon the upper sleeve 64 is an inner pulley 91 upon which the endless belt 90 is trained. Supported upon the outer tubular members 73 adjacent the outer end of the frame 61 is a bed plate 93 which is adapted to support an electric motor 94 which constitutes the power source for the actuation of the endless belt 90. A sprocket 95 is mounted on the shaft of the motor 94 and is adapted to cause the rotation of a sprocket 96 on the pulley 89 through the intermediary of a chain 97 trained thereupon.

Thus it can be seen that the discharging means 62 of the wiper arm 60, as constituted by the endless belt 90, is rotated by means of the electric motor 94 and the transmission means constituted by the sprockets 95 and 96 and the chain 97 in a path which is substantially radial of the axis of rotation of the table 40. It is also clear that the wiper arm 60 is mounted concentrically with the table 40 and extends radially in respect to the axis of rotation thereof. However, to insure the complete discharge of carrots borne upon the surface of the table 40 the wiper arm and the belt 90 extend beyond the circumference of the table and overhang the surface of the conveyor belt 19 of the washing conveyor 12. When the belt is trained upon the surface of the pulleys 89 and 91 the tension of the belt may be adjusted by means of the adjusting screws 78 which will serve to adjust the tension of the compression springs 76 inside the tubular members 73 and thus determine the force with which the rod members 74 will be extended outwardly from the bores of the tubular members 73. When the belt has been properly tensioned it is then possible to adjust the inner end thereof in respect to the surface of the table by adjusting the adjusting screw 85 in reference to the end of the mounting spindle 81 in the manner described above. Additional adjusting means adapted to adjust the outer end of the belt 90 in reference to the surface of the table 40 are also provided and will be described below.

Secured to the end of a horizontal bracket 99 which is mounted on the tubular member 73 of one of the telescoping arms 71 is an elongated belt guide 101 which is disposed inwardly of the belt 90 where the belt 90 is brought into contact with the carrots as they are carried by the table 40. The belt guide 101 prevents the inward deflection of the belt 90 and thus eliminates the possibility that the belt 90 may be bowed inwardly and the edge thereof raised a sufficient distance to permit carrots to be wedged between the lower edge of the belt 90 and the surface of the table 40. Thus, when the carrots are carried into contact with the surface of the belt 90 by the table 40 the frictional contact of the surface of the belt 90 therewith causes them to be carried across the surface of the table radially and to be dropped upon the surface of the conveyor belt 19 of the washing conveyor 12. In this manner the piling up of carrots adjacent the wiper arm is eliminated and the discharging means of the wiper arm permits the piling up to be substantially controlled. This is an important feature of my invention.

From the foregoing it is obvious that the wiper arm 60 and its associated discharging means 62 are rotatably mounted upon the mounting spindle 81 in the upper collar 64 so that the radial position of the wiper arm 60 in reference to the surface of the table 40 may be adjusted to cause the ends of the wiper arm 60 and the discharging means 62 to adopt a variety of positions with respect to the surface of the conveyor belt 19 which runs thereunder. To permit such radial adjustment and to serve to maintain the wiper arm 60 in a predetermined adjusted position there is provided radial adjusting means 102 which includes upper and lower brackets 103 mounted on the side of the frame 25 of the packing conveyor 13 and adapted to support a tubular standard 104 which is designed to receive a support rod 105 upon the upper end of which is mounted a rectangular block 106. The rectangular block 106 has a horizontal bore 107 formed therein which is adapted to receive the end of a positioning arm 108, the other end of which is received in a block 109 mounted adjacent the outer end of the wiper arm 60 upon a cross piece 110. The block 109 is provided with an adjusting screw 111 which contacts the periphery of the positioning arm 108 which passes through the block 109 and which is adapted to secure the end of the positioning arm 108 in a predetermined position. Therefore, by releasing the adjusting screw 111 in the block 109 and by moving the wiper arm 60 in reference to the end of the positioning arm 108 the end of the wiper arm 60 may be radially moved in reference to the surface of the table 40 and the conveyor belt 19 into a variety of different positions. When a position of adjustment has been chosen the adjusting screw 111 may be driven into contact with the surface of the positioning arm 108 to rigidly lock the wiper arm 60 against movement in reference to the surface of the table 40.

The adjusting means 102 is provided with height adjustment means 112 for the outer end of the wiper arm 60 which is adapted to cooperate with the adjusting screw 85 on the inner end of the wiper arm 60 to vertically adjust the lower edge of the belt 90 in reference to the surface of the table 40. The height adjusting means 112 includes an adjusting screw 113 threaded into the lower end of the tubular standard 104 and connected to an adjusting block 114 which is adapted to contact the lower end of the support rod 105 which bears upon the upper end of the rectangular block 106. When the adjusting screw 113 is screwed upwardly into the end of the tubular standard 104 it carries the adjusting block 114 upwardly with it against the lower end of the support rod 105 thus vertically lifting the

rectangular block 106 and simultaneously carrying upward the positioning arm 108, which, in turn, carries upward the block 109 mounted on its outer end and thus raises the outer end of the wiper arm 60. Therefore, inner and outer vertical adjusting means are provided for both the inner and outer ends of the wiper arm 60 to properly adjust the lower edge of the belt 90 with reference to the surface of the table 40.

The radial adjusting means 102 provided at the discharging end of the washing conveyor 12 and the receiving end of the packing conveyor and associated with the wiper 60 of the table 42 is essentially similar in construction to that associated with the table 40 and the wiper 60 with the exception that the adjusting means is oppositely mounted with the brackets 103 secured to the discharging end of the washing conveyor 12 instead of being secured to the discharging end of the packing conveyor 13. In other words, the adjusting means 102 for the wiper arm 60 of the transfer means 16 is mounted upon the tank of the washing conveyor 12.

I thus provide by my invention a carrot washing, conveying and packing apparatus which consists of a washing conveyor disposed in side-by-side relationship with a packing conveyor and which includes transfer means disposed between the opposite ends of said conveyors adapted to transfer produce from one conveyor to the other. By providing such transfer means between said conveyors I permit the recycling of carrots which have not been properly washed or which have not been packed due to overload conditions upon the packing conveyor. The transfer means utilized in my invention includes a rotary table which rotates in a horizontal plane and whose path of rotation intersects the longitudinal paths of movement of both the washing and packing conveyors. To facilitate the removal from the surface of said table of articles deposited thereupon I provide a radially mounted wiper arm provided with radially moving discharging means adapted to urge articles from the surface of said table onto the surfaces of said conveyors.

Although I have shown and described a preferred embodiment of my invention for the purpose of illustrating the manner of construction and mode of operation thereof it is obvious that changes, alterations and modifications may be made in the details of construction of said embodiment and I, therefore, do not desire to be limited to said details but prefer, rather, that my invention be afforded the full scope of the following claims.

I claim as my invention:

1. In a device adapted to convey and discharge a plurality of discrete articles deposited thereupon, the combination of: a circular, rotatable table mounted on and driven by a drive shaft located in the center of said table and projecting upwardly therethrough; a sleeve positioned on said drive shaft and projecting beyond the upper end thereof, the upper portion of said sleeve constituting a socket; and a wiper arm having means receivable and rotatably adjustable in said socket secured to one end thereof, said wiper arm extending radially from the center to the peripheral edge of said table.

2. A device as defined in claim 1 in which said means receivable in said socket is constituted by an elongated spindle depending from said wiper arm.

3. In a conveyor assembly for conveying a plurality of articles through a U-shaped path, the combination of: a first elongated conveyor having a receiving end and a discharging end; a second elongated conveyor parallelly disposed and spaced from said first conveyor and having a receiving end adjacent the discharging end of said first conveyor; and means for transferring the articles from the discharging end of said first conveyor to the receiving end of said second conveyor, comprising a circular rotatable table disposed adjacent the discharging end of said first conveyor and adapted to receive articles therefrom, a wiper extending radially from the center of said table toward the second conveyor, and movable discharging means carried by said wiper adapted to urge said articles radially of said table and discharge them onto said second conveyor.

4. A conveyor system as defined in claim 3 in which said table is rotatable in a horizontal plane below said first conveyor and above said second conveyor, the path of rotation of said table intersecting the longitudinal axes of both conveyors.

5. A conveyor system as defined in claim 3 in which said wiper is rotatably mounted concentrically with said table and provided with positioning means adapted to maintain said wiper in a set position after rotation thereof with respect to said table.

6. A conveyor system as defined in claim 3 in which said discharging means includes an endless belt extending substantially coextensively with said wiper and movable radially of said table.

7. A conveyor system as defined in claim 6 in which said wiper includes tensioning means adapted to maintain said endless belt in a state of optimum adjustment.

8. In an apparatus of the character described, the combination of: an elongated conveyor having a receiving end and a discharging end; a circular, article-receiving table mounted on a drive shaft adjacent the receiving end of said conveyor; a wiper having an end rotatably mounted concentrically with and on the drive shaft of said table, said wiper including an endless belt extending radially of said table adapted to discharge therefrom articles deposited thereupon onto said conveyor, said wiper having automatic tensioning means adapted to maintain said belt in optimum tension during the operation of said wiper; and positioning means carried by said wiper adapted to maintain said wiper in a chosen position after said wiper has been rotated in respect to the surface of said table.

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