United States Patent

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[54] **ARTICLE PICKUP MACHINE**
5 Claims, 8 Drawing Figs.

[52] **U.S. Cl.** **198/7BL**
[51] **Int. Cl.** **B65g 65/02,**
B65g 65/06
[50] **Field of Search** ..... 198/7 (BL),
8—11, 9; 56/364; 171/120, 117

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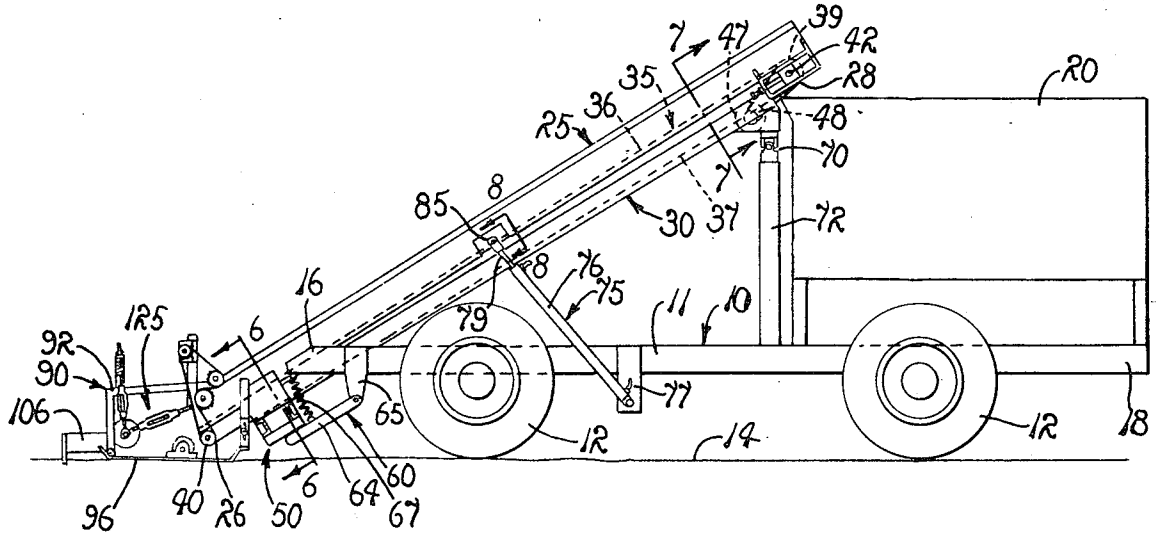
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ABSTRACT: An article pickup machine having a mobile chassis adapted for ground traversing movement in a predetermined forward direction along rows of spaced articles lying on the ground providing an upwardly inclined article elevating conveyor which has a ground engaging article pickup mechanism forwardly extended therefrom and an article lifting device rotatably mounted in ground skimming relation on the pickup mechanism for rotation about a substantially horizontal axis in a direction to elevate articles and to propel them rearwardly onto the elevating conveyor incident to said ground traversing movement of the chassis with the conveyor and article pickup mechanism being mounted in free floating relation upon the chassis so as precisely to conform to elevations and depressions encountered in the rows as well as lateral inclinations in the rows toward either side of the machine.



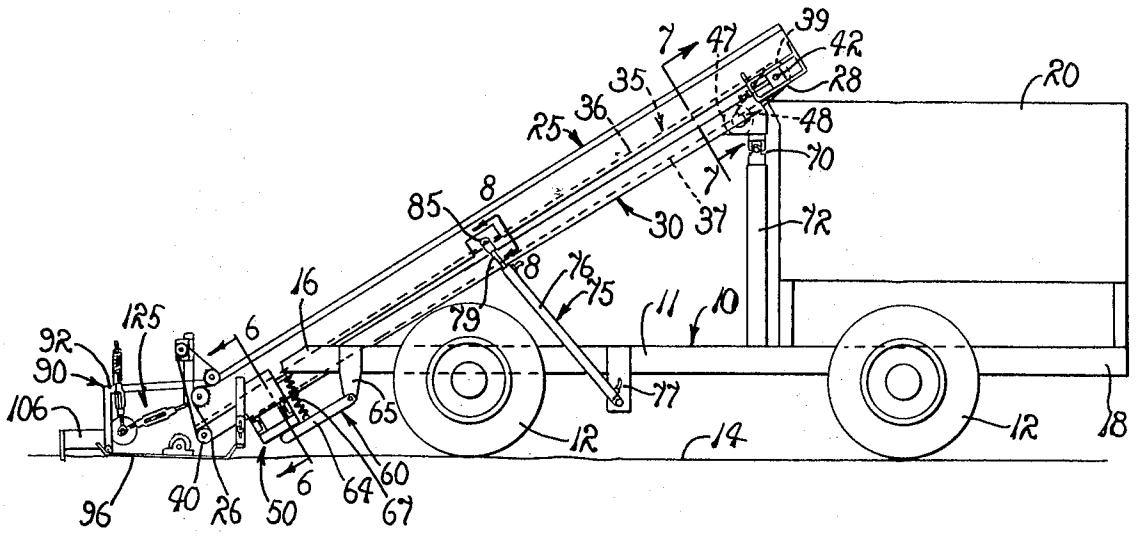


FIG. 1.

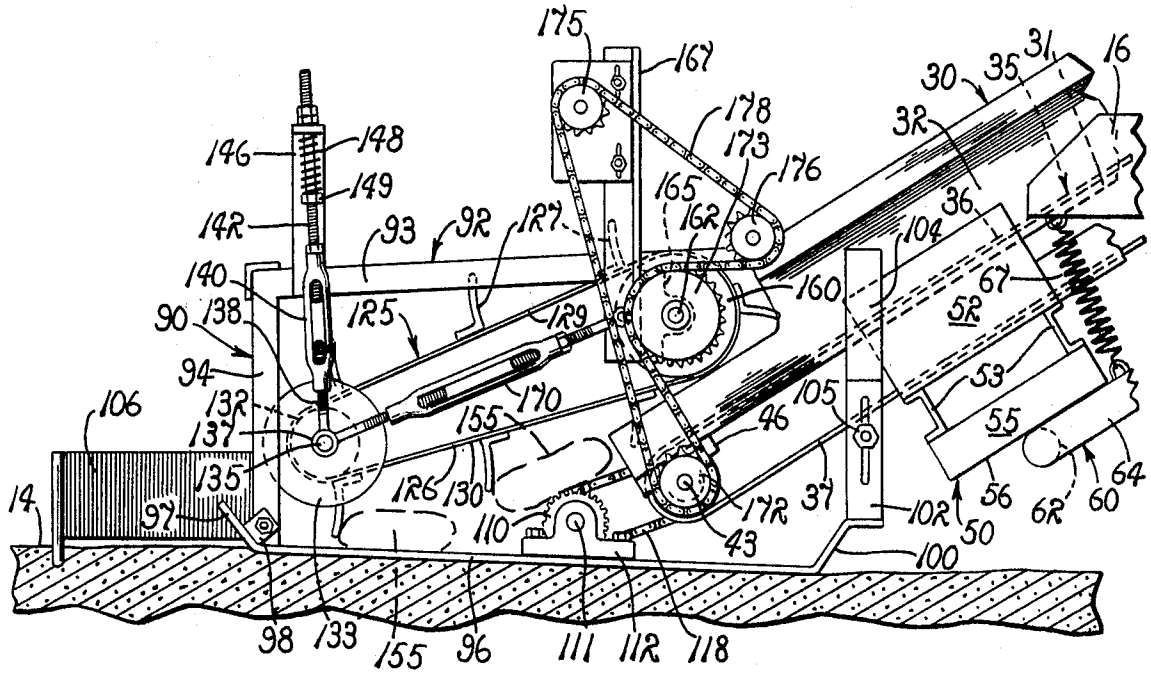


FIG. 2.

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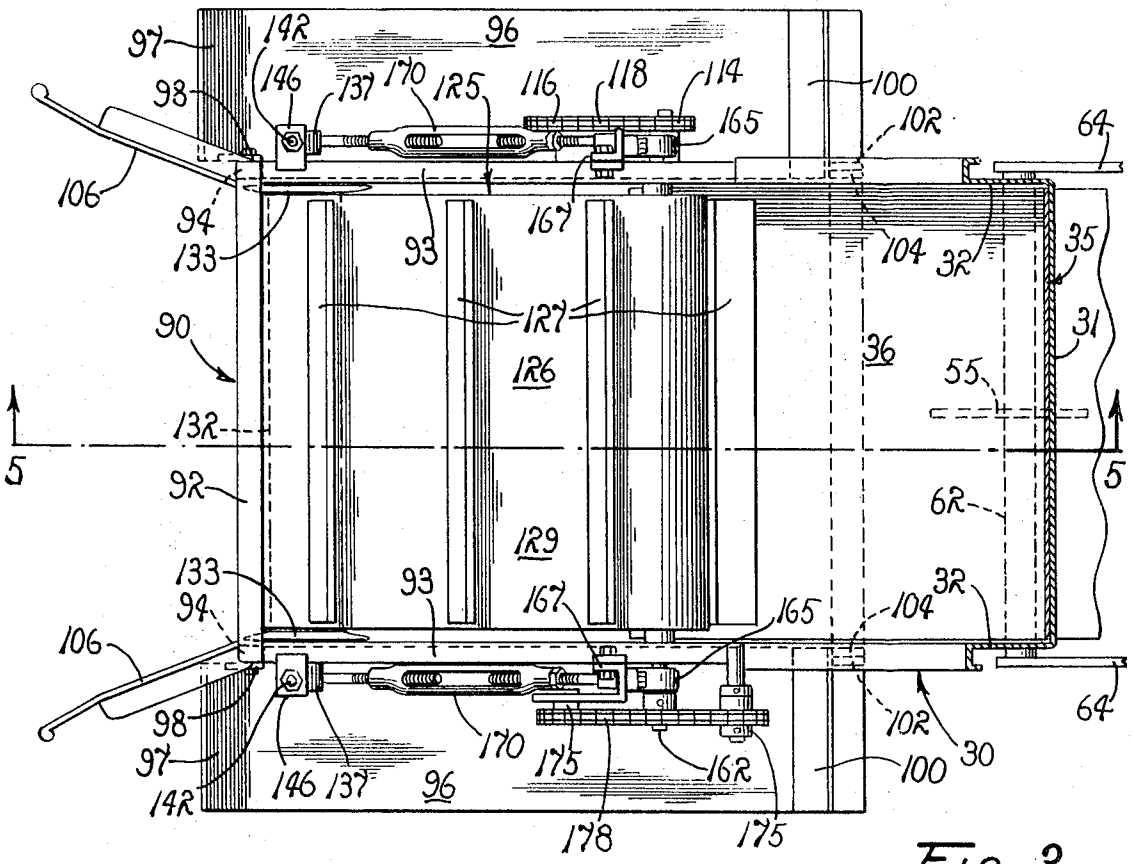


FIG. 3.

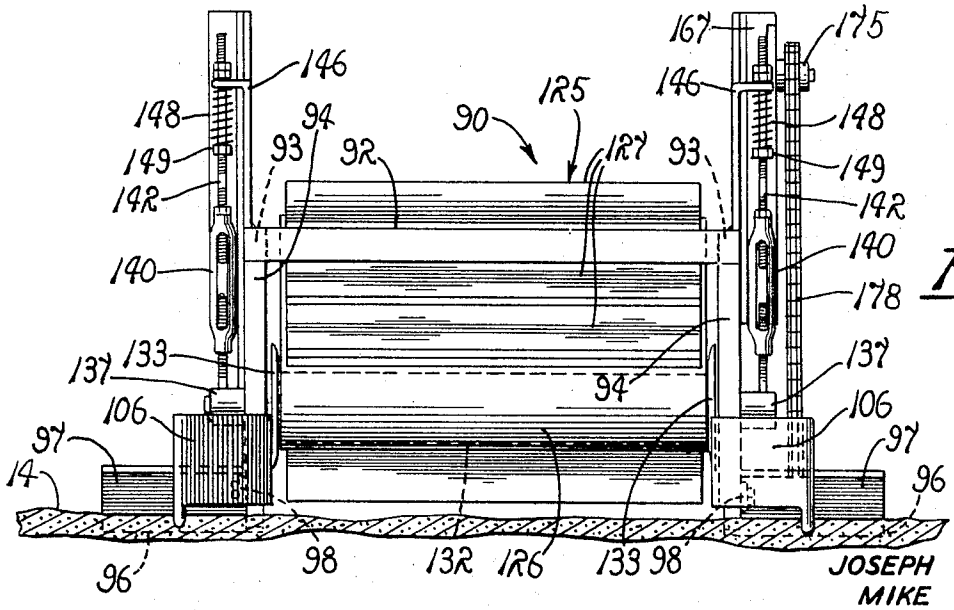


FIG. 4.

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FIG. 5.

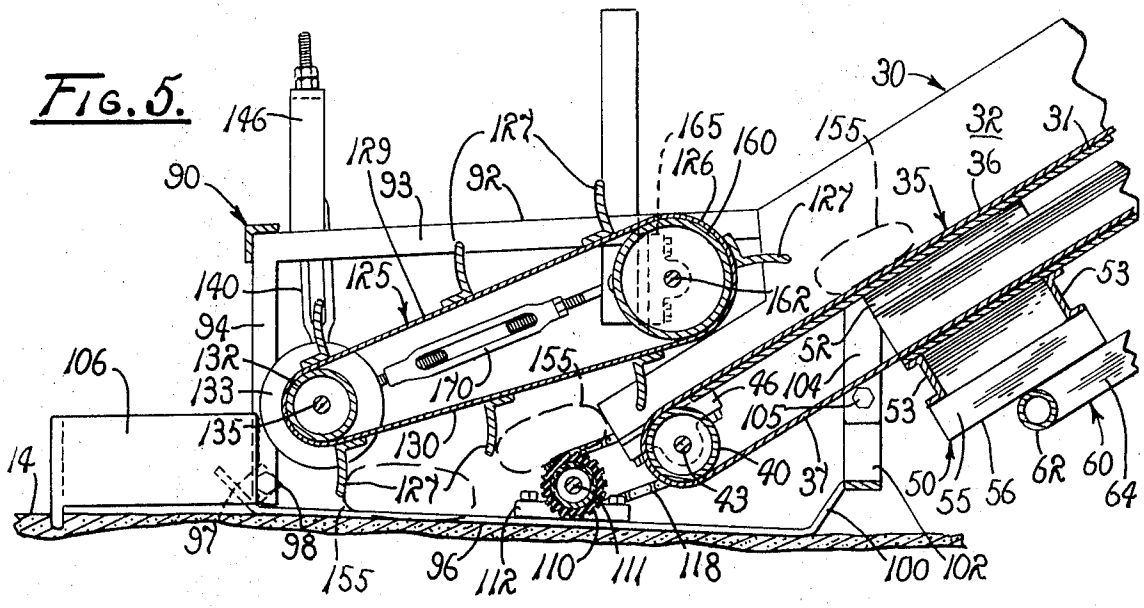
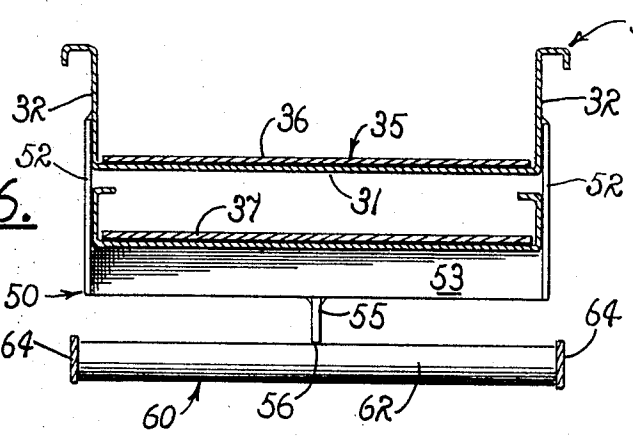


FIG. 6.



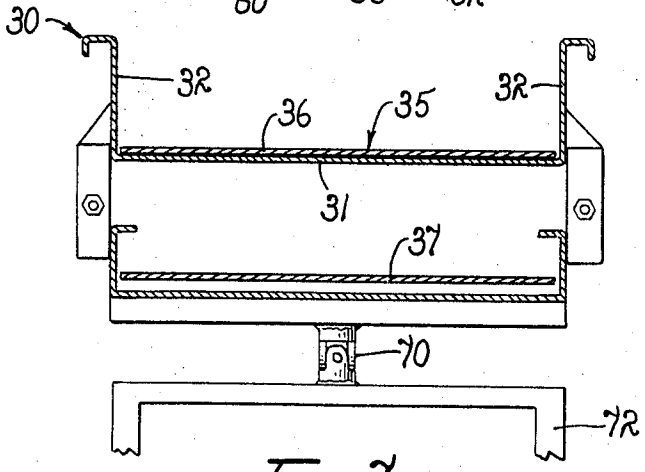


FIG. 7.

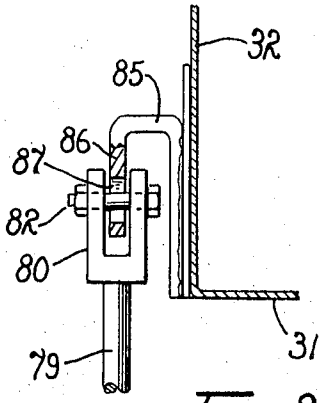


FIG. 8.

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ARTICLE PICKUP MACHINE

BACKGROUND OF THE INVENTION

It is the usual practice in the raisin industry to place picked grapes on paper trays in the rows between the vines for drying by the sun. The vines are frequently longitudinally extended in an east to west direction with the ground transversely sloped between adjacent rows in a southernly direction so as to obtain maximum advantage from the sun's rays. After drying, the trays are folded and wrapped about the raisins in order to cure them and to protect them against early rain until they can be picked up and transported from the vineyard. During the wrapping operation, the trays are either folded in a substantially square configuration commonly known as a "biscuit roll" or they are rolled in a cylindrical form with the ends folded under, which is known as a "cigarette roll." In either event, care must be exercised during the pickup operation to insure that the rolls do not unwrap and spill their contents prior to reaching the raisin collection container.

The spillage problem has not been successfully overcome by the prior art machines. The conventional machines usually employ a plurality of earth penetrating tines ahead of an upwardly inclined elevating conveyor with the tines initially lifting the rolled trays permitting them to slide rearwardly toward the conveyor incident to forward ground traversing movement of the machine. The rows, however, usually contain a substantial amount of grass, weeds, trash and other debris which tends to accumulate on and between the tines. Such accumulation inhibits the free sliding movement of the trays upon the tines and causes them to tumble or to be unduly agitated during their rearward movement toward the conveyor. As a result, the trays are frequently unwrapped and permitted to spill their contents on the ground prior to reaching the elevating conveyor. This requires constant attention by the operator who must stop the machine and manually remove the accumulated grass, weeds and the like from the tines.

Furthermore, the elevating conveyor and the lifting tines must be raised at the end of each vine row to permit the machine freely to negotiate a 360° turn for return travel along a subsequent row of trays. In order to accommodate the necessary vertical positioning of the conveyor, it is pivotally mounted on a horizontal axis at its upper end on the machine. Such pivotal connection, however, restricts any transverse tipping of the conveyor which is desirable in order for the conveyor and the pickup mechanism on the lower end thereof to conform to the laterally sloped rows in order to preclude any trays on the lower side of the row from passing under the tines. In order to conform the conveyor to the slope of the row in both directions of machine travel, the conveyor must be permitted lateral tipping adjustment or accommodation to both sides. This is necessary due to the fact that the successive rows slope in different directions relative to the conveyor during successive reciprocal passes of the machine along the rows in different directions. It is of no practical advantage pivotally to mount the tines or other tray pickup mechanism on the forward end of the conveyor since a similar gap would result between the tines and the conveyor through which the trays could pass without reaching the conveyor.

SUMMARY OF THE INVENTION

Accordingly, it is an object of the present invention to provide an improved article pickup machine for articles lying upon the ground.

Another object is to provide such an improved article pickup machine which is particularly adapted for picking up rolled raisin trays with a minimum of disturbance of the trays.

Another object is to provide such an article pickup machine which can be successfully employed with either the cigarette-type tray roll or the biscuit-type tray roll.

Another object is to provide an article pickup machine of the character described which is capable of picking up and delivering raisin trays to an elevating conveyor on the machine while maintaining the trays in their fully wrapped condition with virtually no spillage of raisins from the trays.

Another object is to provide an article pickup machine which is capable of ground traversing movement along the rows between the vines in a vineyard which is not adversely affected by the presence of grass, weeds, debris and other trash within the rows.

Another object is to provide an article pickup machine which utilizes a pickup roller which is effective to roll over grass, weeds, debris, and the like.

Another object is to provide a tray pickup machine which incorporates an upper hold down belt having a plurality of tray engaging flight members above the pickup roller to force the raisin trays against the roller for a positive drive with a minimum of disturbance of the trays.

Another object is to provide a tray pickup machine having a pickup mechanism and elevating conveyor capable of precisely conforming to elevations and depressions and the lateral slope encountered in the rows in which the trays are lying.

Another object is to provide an article pickup machine in which the pickup mechanism is disposed in free floating condition on the machine for unrestricted vertical pivotal movement and lateral tipping movement relative to the machine.

Other objects and advantages of the present invention will subsequently become more clearly apparent upon reference to the following description and accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a side elevation of an article pickup machine embodying the principles of the present invention showing in full lines its pickup mechanism and elevating conveyor disposed in a lowered ground engaging operating position with its elevated transport position shown in dashed lines.

FIG. **2** is a somewhat enlarged fragmentary side elevation showing the lower article receiving end of the conveyor and the article pickup mechanism in its ground engaging operating position of FIG. **1**.

FIG. **3** is a somewhat enlarged top plan view of the lower end of the conveyor and the pickup mechanism of FIG. **2**.

FIG. **4** is a front elevation of the pickup mechanism and lower end of the conveyor disposed in a substantially level condition which is capable of tipping transversely in conforming relation to the sloping ground surfaces indicated in dashed lines.

FIG. **5** is a longitudinal vertical section centrally through the pickup mechanism and lower end of the conveyor, taken generally on line **5–5** of FIG. **3**.

FIG. **6** is a somewhat enlarged transverse vertical section through the lower end of the article elevating conveyor, taken on line **6–6** of FIG. **1**.

FIG. **7** is a somewhat enlarged transverse vertical section through the upper end of the elevating conveyor, taken on line **7–7** of FIG. **1**.

FIG. **8** is a somewhat enlarged fragmentary section through an intermediate portion of the elevating conveyor, taken on line **8–8** of FIG. **1**.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring more particularly to the drawings, an article pickup machine embodying the principles of the present invention is best shown in FIG. **1** providing a mobile chassis generally indicated by the reference numeral **10**. The chassis includes an elongated substantially rectangular main frame **11** rollably supported for earth traversing movement upon a plurality of wheels **12** engaging a ground surface **14**. The main frame provides a predetermined forward end **16** and an opposite rearward end **18**, the latter of which supports a shaker mechanism for separating dirt from harvested raisins, which is not shown in detail as it forms no part of the present invention.

An elongated upwardly inclined article elevating conveyor **25** is borne by the mobile chassis **10**. The conveyor includes a predetermined lower article receiving forward end **26** which is

disposed in closely spaced elevated position above the ground surface **14** when the conveyor is disposed in its full line operating position of FIG. **1** and an opposite article discharging upper end **28** disposed immediately above the shaker mechanism **20** on the chassis. The conveyor has an elongated substantially rectangular support frame **30** providing a bottom wall **31** and oppositely spaced substantially parallel sidewalls **32** extended between the upper and lower ends of the conveyor. An elongated endless belt **35** having opposite upper and lower runs **36** and **37**, respectively, is extended for circuitous movement between the ends of the conveyor frame about a pair of upper and lower rollers **39** and **40**, respectively. The rollers are individually supported on elongated shafts **42** and **43**, respectively providing outwardly extended end portions journaled in bearing blocks **46** and extended through the sidewalls **32** of the conveyor frame. An hydraulic drive motor **47** is mounted on the upper end **28** of the conveyor frame **30** and is connected to the outer end **39** of the upper roller shaft **42** by a sprocket and drive chain assembly **48** for traveling the upper run **36** of the conveyor belt **35** upwardly of the conveyor frame.

As best shown in FIGS. **5** and **6**, a conveyor rocker frame **50** providing opposite side plates **52** and spaced substantially parallel channel irons **53** is disposed beneath the lower forward end **26** of the elevating conveyor **25**. The side plates are disposed in depending relation from the sidewalls **32** of the conveyor frame **30** and are rigidly secured thereto, as by welding or the like. The channel irons **53** are transversely extended between the lower ends of the side plates and are similarly secured in interconnecting relation therebetween. A rocker bar **55** having a lower edge **56** is disposed beneath the channel irons in interconnecting relation therewith substantially intermediate the side panels **52** and substantially in a vertical plane aligned with the longitudinal center line of the conveyor.

The forward lower end **26** of the elevating conveyor **25** is supported in floating relation on a cradle frame **60** swingably mounted beneath the forward end **16** of the main frame **11** of the mobile chassis **10**. The cradle frame provides an elongated cylindrical support rod **62** disposed in lower edgeward engagement with the rocker bar **55**. The rod is supported at its opposite ends by a pair of arms **64** individually pivotally mounted at their rearward ends on a pair of depending brackets **65** rigidly secured to the main frame, as by welding or the like. A pair of elongated substantially heavy duty tension springs **67** are connected at their opposite ends between their respectively associated arms **64** adjacent to the support rod and the forward end of the main frame.

The opposite upper end **28** of the elevating conveyor **25** is supported intermediate the sidewalls **32** of the conveyor support frame **30** on a universal connector **70** which permits vertical swinging movement of the forward end **26** of the conveyor and transverse tipping in either direction of the entire conveyor relative to the main frame **11** of the chassis. The universal connector is supported in elevationally spaced relation above the main frame by a superstructure **72** immediately ahead of the shaker mechanism **20** on the rearward end **18** of the main frame.

The conveyor **25** is laterally stabilized by a pair of hydraulic jacks **75** having lower cylinder ends **76** pivotally mounted on brackets **77** connected to the main frame intermediate its ends. The jacks further include upwardly extended rod ends **79** which, as best shown in FIG. **8**, include a clevice **80** having an elongated bolt **82** extended therethrough. A bracket **85** is mounted, as by welding or the like, on each of the sidewalls **32** of the conveyor support frame **30** substantially intermediate its ends to provide an outwardly and downwardly extended connector portion **86**. The connector portion of the bracket has an elongated slot **87** therethrough for loosely accommodating the bolt **82** of the cylinder clevice to permit limited transverse tipping of the conveyor upon the universal connector **70** and the rocker bar **55** at the forward end **26** of the conveyor.

An article pickup mechanism generally indicated by the reference numeral **90**, is disposed in ground engaging extended relation from the lower forward end **26** of the elevating conveyor **25**. The pickup mechanism includes a frame **92** having a pair of elongated side rails **93** respectively forwardly extended from their associated sidewalls **32** of the conveyor support frame **30**. The side rails include substantially upright forward portions **94** which terminate in lower ends adjacent to the ground surface **14**. A pair of elongated substantially flat rectangular skid plates **96** are disposed below the side rails in laterally outwardly extended relation therefrom and in sliding earth engaging relation. The skid plates include upwardly angularly extended nose portions **97** which are pivotally connected to the lower ends of the upright portions of the side rails by an upwardly extended ear **98**. The rearward ends of the skid plates provide upwardly angularly rearwardly extended portions **100** having substantially upstanding slotted hanger plates **102** secured thereto, as by welding or the like. The hanger plates are adjustably connected to an elongated connecting strap **104** secured to the side panels **32** of the conveyor support frame by a bolt and nut assembly **105**. A pair of forwardly outwardly extended wings **106** are mounted on the forward upright portions **94** of the side rails so as to direct articles encountered upon the ground surface **14** inwardly into the pickup mechanism.

An elongated article pickup roller **110** is rotatably mounted in laterally extended relation between the skid plates **96** in closely spaced relation to the forward end **26** of the elevating conveyor **25**. The roller has a longitudinally fluted periphery and is mounted on a shaft **111** having ends rotatably journaled in a pair of bearing blocks **112** individually mounted on the upper surface of the skid plates **96**. As best shown in FIGS. **3** and **5**, one end of the shaft **111** is outwardly extended from its respective bearing block to mount a sprocket **114**. The sprocket is disposed in coplanar relation with a similar sprocket **116** on the adjacent end of the roller shaft **43** of the elevating conveyor. An endless chain **118** is trained about the sprockets **114** and **116** to provide a drive from the conveyor to the pickup roller for rotating the same in a clockwise direction, as viewed in FIGS. **2** and **3**, so that the upper fluted periphery thereof is traveled in a rearward direction toward the conveyor belt **35**.

An upper holddown and article delivery mechanism is mounted on the pickup mechanism **90** and is generally indicated by the reference numeral **125**. The holddown mechanism includes an elongated endless belt **126** having a plurality of spaced laterally extended arcuate flight members **127** for engaging articles on the ground surface **14** ahead of the pickup roller **110**. The belt has an upper run **129** and an opposite lower run **130** disposed in spaced relation immediately above the pickup roller and the lower forward end **26** of the conveyor **25**. The belt is disposed for circuitous movement around a forward roller **132** having opposite end flanges **133** rotatable about an elongated mounting shaft **135**. The shaft is journaled at its ends outwardly adjacent to the flanges by a floating bearing **137** having an upwardly extended screw-threaded rod portion **138**. The rod portion of the bearing is adjustably supported by a turnbuckle **140** suspended by an upper screw-threaded end portion **142** from a hanger bracket **146** upwardly extended from the side rails **93** of the pickup frame **92**. A compression spring **148** is disposed about the upper end of the turnbuckle between the hanger bracket and an adjusting nut **149** to permit upward movement of the forward roller **132** and the belt **126** upon direct engagement of the flight members **127** with a raisin tray roll **155** indicated in the dashed lines in FIG. **2**. A rearward belt support roller **160** provides a shaft **162** which is journaled in a pair of bearing blocks **165**. The blocks are individually mounted on the lower end of a substantially upstanding idler mounting bracket **167** adjacent to the rearward ends of the side rails **93** of the pickup frame **92**. A pair of turnbuckles **170** are extended between the lower end of the idler mounting bracket and the bearing **137** at each end of the forward roller **132** adjustably to tension the

belt about the rollers. It will be noted that the rear roller **160** is of a somewhat larger diameter than the forward roller **132** in order that the lower run **130** of the belt converges toward the elevating conveyor belt **35** in gradually compressing relation to the articles traveling over the pickup roller **110** onto the conveyor.

As best shown in FIG. **2**, a drive sprocket **172** is mounted on the lower roller shaft **43** of the elevating conveyor **25** opposite to the sprocket **116** in coplanar relation with a sprocket **173** on the end of the rear roller shaft **162**. A pair of idler sprockets **175** and **176** are respectively rotatably mounted on the upper end of the idler mounting bracket **167** and the rearward end of the side rails **93** of the pickup frame **92** for receiving an endless chain **178** thereabout in driving relation to the rearward roller **160**. It will be noted that the idler sprockets are positioned to train the chain around the forward periphery of the driven sprocket **173** so that during rotation of the lower conveyor sprocket in a clockwise direction, the roller sprocket is driven in a counterclockwise direction to travel the flight members **127** toward the lower end of the conveyor **25**.

OPERATION

The operation of the described embodiment of the subject invention is believed to be clearly apparent and is briefly summarized at this point. Prior to entry of the article pickup machine between the rows of vines in a vineyard, the pickup mechanism **90** and the elevating conveyor **25** are disposed in the operating position of FIG. **1** with the pickup mechanism disposed in ground engaging relation by retraction of the hydraulic jacks **75**. The conveyor motor **47** is energized to drive the conveyor belt **35** in a direction traveling the upper run **36** thereof upwardly from the lower end **26** of the conveyor toward the upper end **28** thereof. At the same time, the pickup roller **110** is driven in a clockwise direction, as viewed in FIGS. **2** and **5**, with the lower periphery thereof disposed in ground skimming relation and with the upper periphery thereof traveled rearwardly toward the lower end of the conveyor. The article holddown and delivery belt **126** is also driven by the chain **178** and its associated sprockets so that the lower run **130** thereof is traveled in a direction from left to right toward the lower end of the conveyor and at a speed substantially corresponding to the forward earth traversing movement of the pickup machine.

During earth traversing movement of the pickup machine, the wings **106** funnel the article or raisin trays inwardly into the pickup mechanism **90** with the trays usually being spaced along the rows for engagement by successive flight members **127** on the holddown mechanism **125**. In most instances, the flight members gently engage the outermost end of the tray and move rearwardly at the same speed as the forward movement of the machine so that the flight members remain substantially stationary with respect to the trays. Upon continued forward movement of the machine, the trays encounter the forwardly upwardly disposed periphery of the fluted pickup roller which initially raises and travels the trays rearwardly toward the lower end of the conveyor belt while the flight members **127** preclude any backward sliding of the tray relative to the roller. It is noted that even should the flight members downwardly engage the upper surface of a particular tray intermediate its ends, the entire forward end of the belt **126** and the forward roller **132** are permitted to raise against the springs **148** on the turnbuckle **140** so as to preclude any damage to the tray or its contents. Such floating movement of the belt and flight members permits the holddown mechanism automatically to adjust itself to the various thicknesses of trays while being effective positively to hold the trays against the pickup roller and the lower end of the elevating conveyor.

During the described movement of the pickup machine along the row of trays, the pickup roller **110** is permitted merely to slide over any grass, weeds or other debris which may be encountered within the row. The pickup mechanism is virtually clogproof and ensures that the trays are delivered to the lower end of the conveyor in a fully wrapped condition with virtually no chance of spillage or intermixing of debris and the like with the raisins contained within the trays.

It is also important that the pickup mechanism **90** is always precisely aligned with the lower end of the conveyor **25** by virtue of the three-point suspension of the conveyor frame **30** on the chassis **10**. The conveyor frame is virtually free floating in a plurality of directions so that the skid plates **96** of the pickup mechanism are permitted to rise and fall in precisely conforming relation with elevations and depressions encountered in the rows and also to conform to the lateral sloping of the rows as usually formed between the vines in a vineyard. As described, the lower end of the conveyor frame **30** is teetered upon the single point or edgeward contact provided between the rocker bar **55** and the support rod **62** of the cradle frame **60**. The movement permitted by the cradle frame through the tension springs **67** is accommodated by the elongated slotted connection between the rod ends of the hydraulic jacks **75** and the conveyor frame. Such transverse rocking movement is permitted at the upper end of the conveyor frame by the universal connector **70**.

Upon reaching the end entry between a row, the hydraulic jacks **75** are energized through suitable controls, not shown, on the machine to extend the rod ends **79** thereof to swing the forward end of the conveyor and the pickup mechanism about the rearward horizontal pivot provided by the universal connector **70** to the upper dashed line transport position of FIG. **1**. The machine is then turned through an arc of 360° for entry between the vines of the next succeeding row and the hydraulic jacks retracted again to lower the conveyor frame **30** until the rocker bar **55** is again rested upon the support rod **62** of the cradle frame **60**. Upon full retraction of the hydraulic jacks, the entire weight of the conveyor frame is then relieved from the jacks by way of the elongated slot **87** in the connector bracket **85**. It is also noted that upon entry of the machine in the next succeeding row, the angular slope of the row will be in an opposite direction relative to the machine so that the pickup mechanism and conveyor will be laterally tipped in the opposite direction in conforming relation to the row. Again, such lateral tipping is provided by the floating three-point suspension provided by the cradle frame and the universal connector.

In view of the foregoing, it is readily apparent that the structure of the present invention provides an improved article pickup machine for use in picking up folded raisin trays and the like from a ground surface with substantially no intermixing of dirt, grass, weeds or other debris with the raisins elevated by the machine. The pickup mechanism is virtually clogproof by utilizing the reversely rotating pickup roller which is permitted to skim over any grass, weeds or the like within the rows without becoming entangled therein so as to permit extended operation of the machine through an entire vineyard without stopping.

Although the invention has been herein shown and described in what is conceived to be the most practical and preferred embodiment, it is recognized that departures may be made therefrom within the scope of the invention, which is not to be limited to the details disclosed herein but is to be accorded the full scope of the claims so as to embrace any and all equivalent devices and apparatus.

We claim:

1. An article pickup machine comprising a mobile chassis adapted for ground traversing movement in a predetermined forward longitudinal direction along transversely sloping rows having a plurality of spaced articles lying thereon, an elongated upwardly inclined conveyor frame mounted on the chassis, an elongated endless article elevating conveyor on the frame having a lower forwardly disposed article receiving end in closely spaced relation to the ground and an opposite rearwardly disposed article discharging end, an article pickup roller rotatably mounted on the conveyor frame in forwardly extended relation from said lower end of the conveyor for elevating the articles from the ground onto the conveyor dur-

ing said ground traversing movement of the machine, an article holddown and feeding belt mounted on said frame above and forwardly of said pickup means to direct articles on the ground onto said pickup means and onto said lower end of the conveyor, and means mounting said conveyor frame and said pickup means in free floating relation on said chassis in order to conform to elevations and depressions and said transverse slope of the rows during said ground traversing movement of the machine.

2. In an article pickup machine including a transporting vehicle and an elongated pickup having a lower receiving end and an upper dishcarging end, an article pickup roller rotatably mounted on the conveyor frame in forwardly extended relation from said lower end of the conveyor for elevating articles from the ground onto the conveyor during said ground traversing movement of the machine, an article holddown and feeding belt mounted on said frame above and forwardly of said pickup means to direct articles on the ground onto said pickup means and onto said lower end of the conveyor, an apparatus mounting the conveyor in the vehicle for transport thereby and conformance of the receiving end of the conveyor with uneven terrain traversed by the machine comprising a first universal support mounted on the vehicle and supporting the upper end of the conveyor at a fixed position on the vehicle intermediate opposite sides of the conveyor for free transverse and longitudinal tipping, a second universal support, means mounting the second support in the frame for free floating movement therein in resilient support to the lower end of the conveyor intermediate the opposite sides thereof for free transverse and longitudinal tipping, and a pair of independent ground engaging supports mounted on opposite sides of the lower end of the conveyor with said lower end of the conveyor rested thereon.

3. An article pickup machine comprising a mobile chassis adapted for ground traversing movement in a predetermined forward longitudinal direction along transversely sloping rows having a plurality of spaced articles lying thereon; an elongated upwardly inclined article elevating conveyor mounted on the chassis having a lower forwardly disposed article receiving end in closely spaced relation to the ground and an opposite upper rearwardly disposed article discharging end; an article pickup mechanism mounted on the lower receiving end of said conveyor in forwardly extended relation therefrom including an elongated powered article lifting roller disposed for rotation about a substantially horizontal axis extended transversely of said direction of chassis travel along said article receiving end of the conveyor and having a lower periphery disposed in ground skimming relation for unrestricted movement over grass, weeds and the like in the rows and an opposite upper rearwardly traveled peripheral portion engageable with said articles on the ground to elevate and to propel them rearwardly onto the lower end of the conveyor; an elongated endless article holddown and feed belt mounted on said article pickup mechanism above and somewhat ahead of said article lifting roller providing a plurality of spaced article engaging flight members of resiliently flexible material mounted thereon for circuitous article engaging movement from a position ahead of the roller to a position rearwardly thereof and spaced above said lower end of the conveyor, said belt having opposite upper and lower runs and said flight members along said lower run being arcuately forwardly curved in flexing engagement against said articles on the ground; power means on the chassis driving said conveyor and said lower run of the holddown belt rearwardly in synchronous relation with the ground traversing speed of the machine; means mounting said conveyor and said article pickup mechanism on the chassis in order precisely to conform to uneven terrain and the transversely sloping rows traversed by the machine including a first universal support mounting the upper end of the conveyor at a fixed position on the chassis intermediate opposite sides of the conveyor for free transverse and longitudinal tipping; a second universal support; means resiliently mounting the second support in free floating depending relation from the chassis for supporting the lower end of the conveyor intermediate the opposite sides thereof for free transverse and longitudinal tipping; and a pair of independent ground engaging supports mounted on opposite sides of the lower end of the conveyor and the article pickup mechanism in sliding ground engagement in conforming relation to the terrain traversed by the machine.

4. The article pickup machine of claim 3 in which said second universal support comprises a rocker bar disposed substantially centrally beneath said lower end of the conveyor, and an upwardly spring tensioned cradle frame pivotally mounted on the chassis having a cross bar supporting said rocker bar on the conveyor for permitting said free transverse and longitudinal tipping of the conveyor in conforming relation to the terrain traversed by the machine.

5. The article pickup machine of claim 3 including a pair of powered jacks connected between the chassis and the conveyor substantially intermediate its ends for elevating said pickup mechanism and the conveyor to a raised transport position, and an elongated slotted connection between said jacks and the conveyor permitting said floating movement of the conveyor and pickup mechanism when retraced to lower said pickup mechanism and said supports to their sliding ground engaging position.