

April 24, 1962

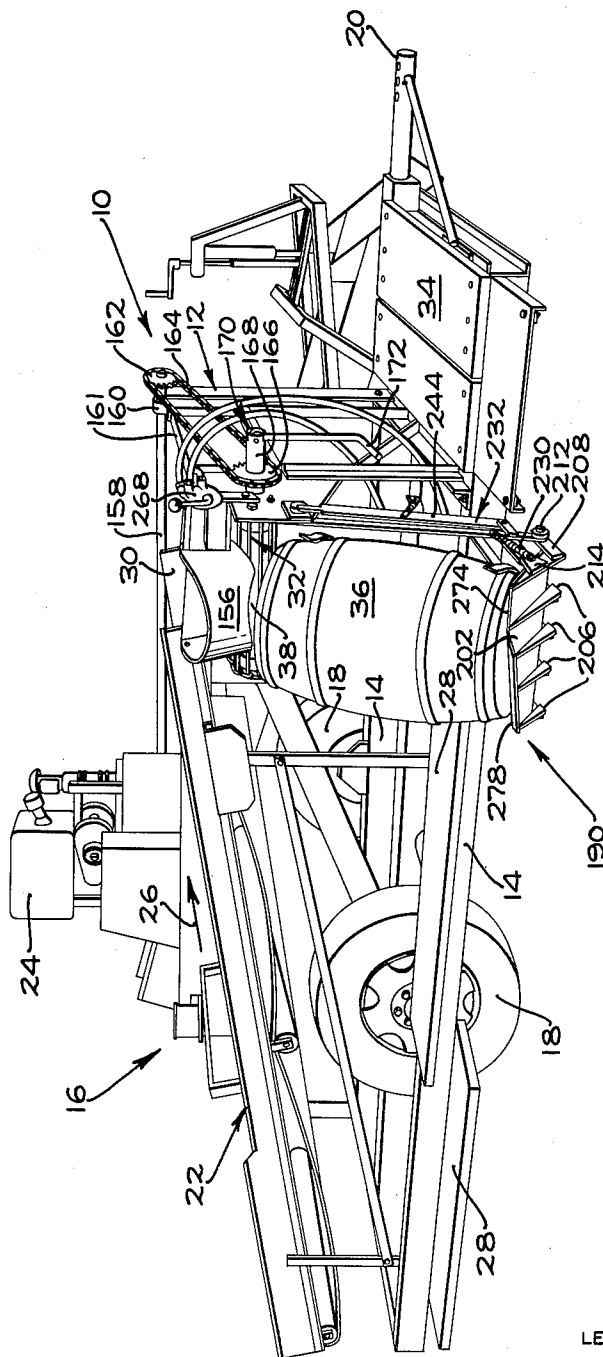
L. R. McROBERT
CONTAINER LOADER

3,030,751

Filed Aug. 26, 1958

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FIG. 1



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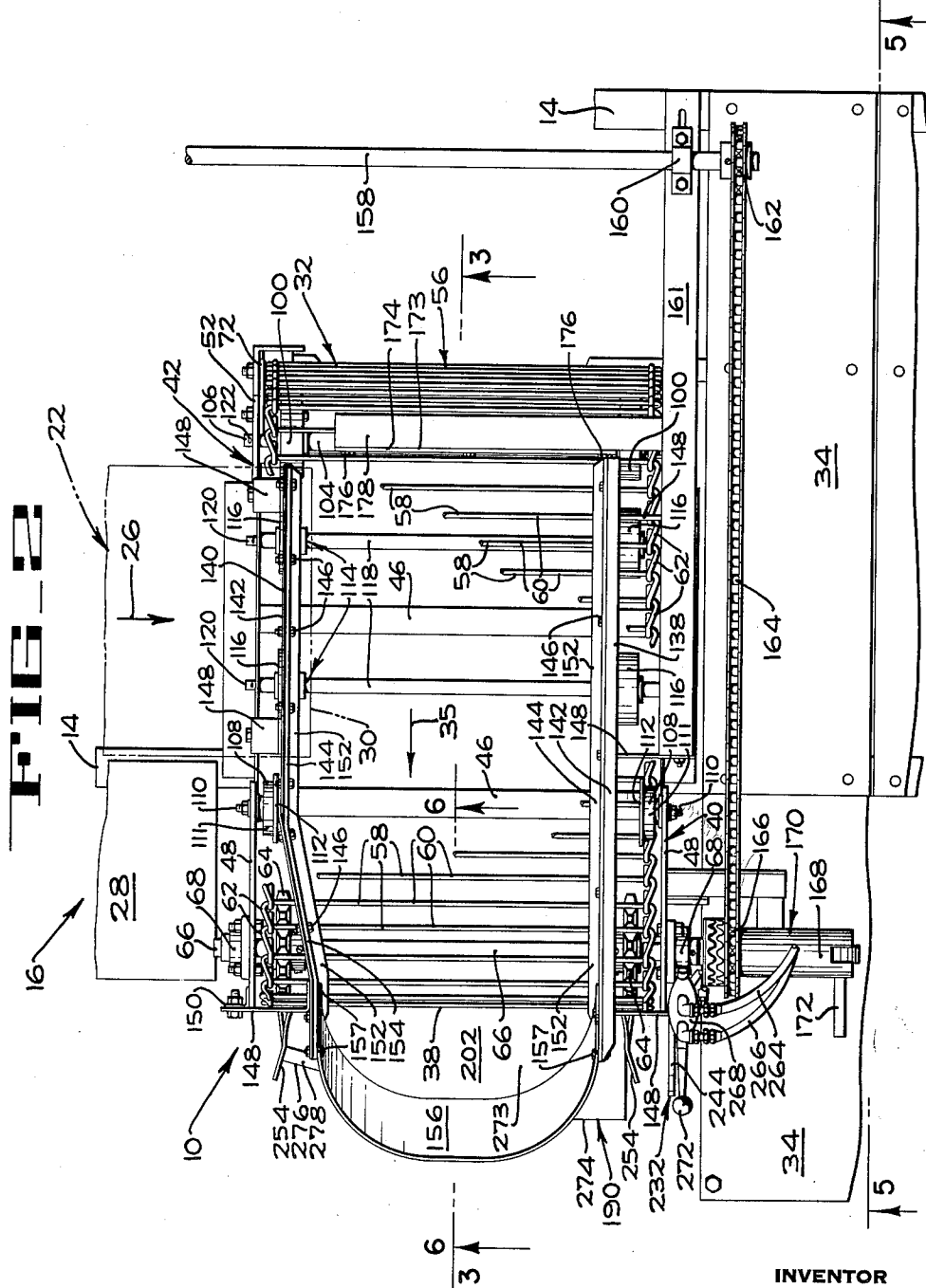
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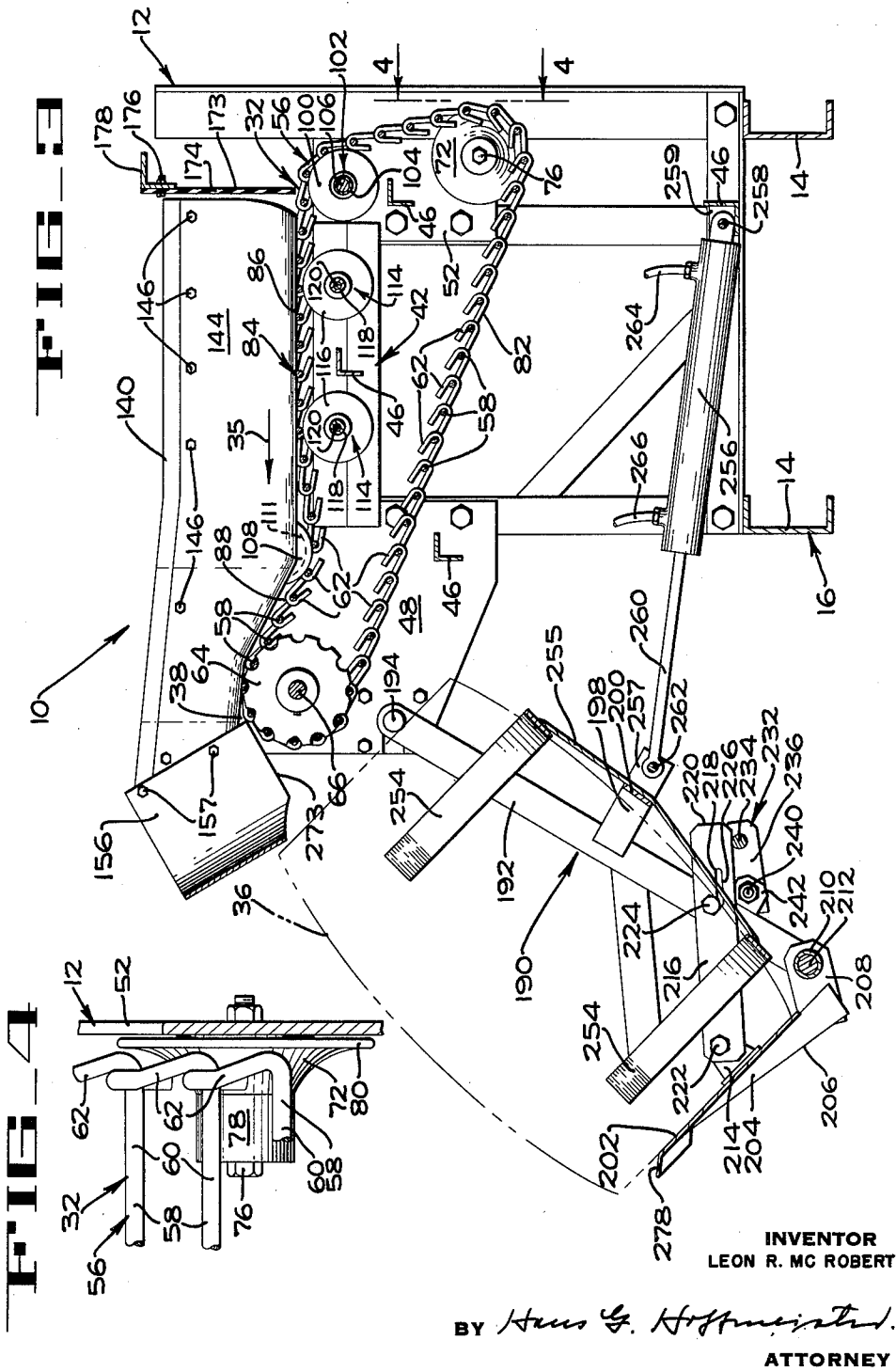
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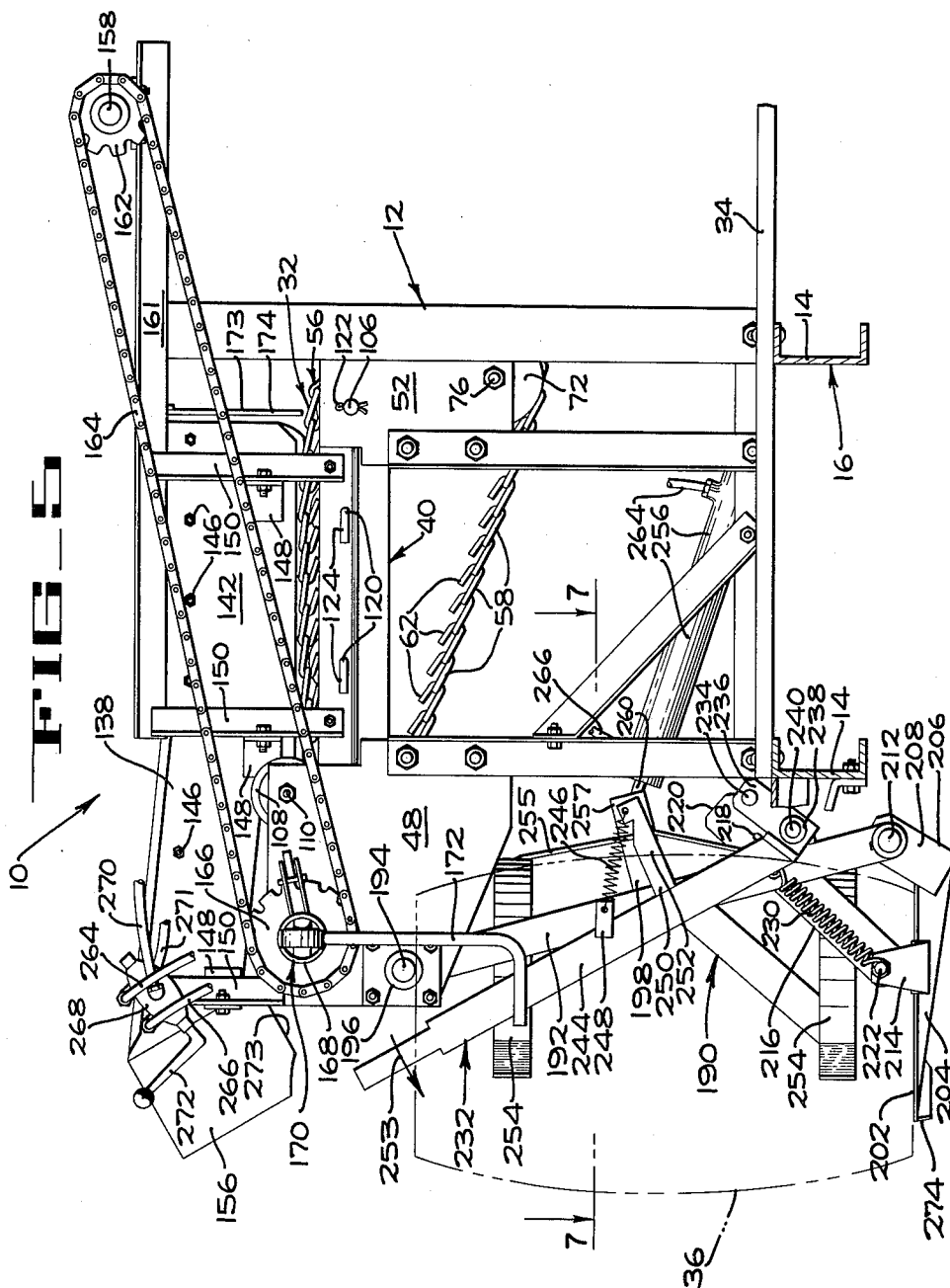
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5 Sheets-Sheet 5

FIG. 7

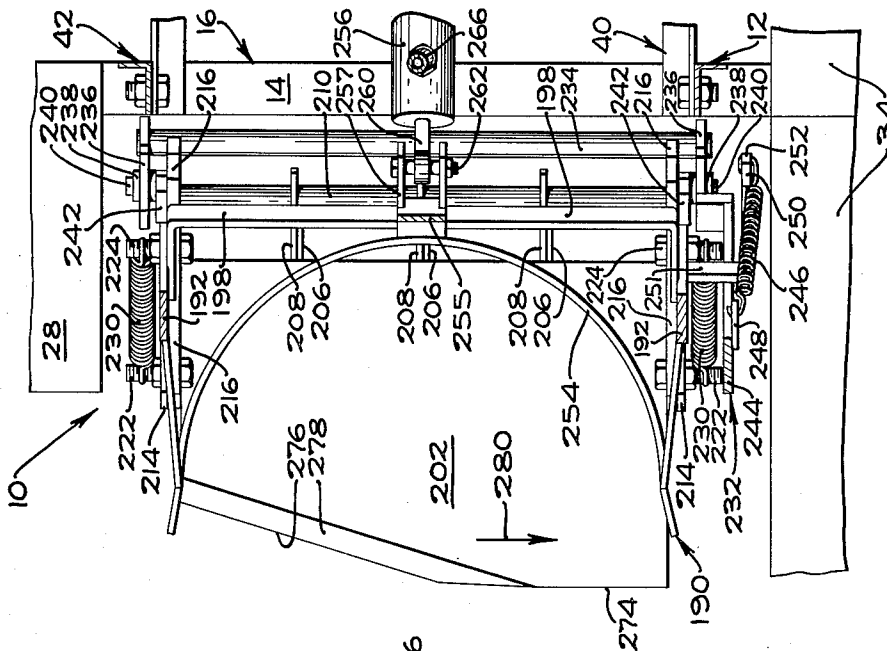
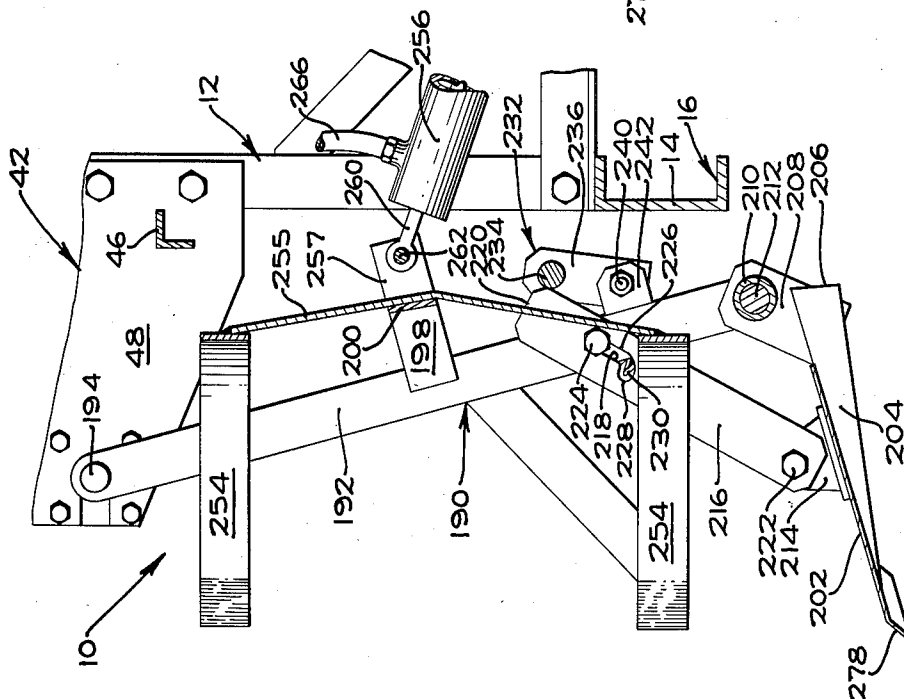


FIG. 6



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1

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CONTAINER LOADER

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Filed Aug. 26, 1958, Ser. No. 757,241
6 Claims. (Cl. 53-244)

The present invention appertains generally to article handling equipment and more particularly relates to apparatus for loading articles into containers such as barrels.

One object of the present invention is to provide an improved container loading apparatus.

Another object is to provide a barrel loading apparatus capable of accumulating a plurality of articles into a charge which will later be deposited into a barrel.

Another object is to provide improved means in a container loader for holding a container adjacent a discharge conveyor in readiness to receive articles therefrom.

Another object is to provide means in a barrel loader for tilting a barrel into different angular positions while the barrel is being loaded so that the articles loaded therein will have substantially no, or at most limited, free fall in order to protect the articles from bruising.

Another object is to provide means for facilitating the removal of filled barrels from a barrel loader of the type mentioned.

These and other objects and advantages of the present invention, as well as the manner in which it is employed, will become apparent from the following description and the accompanying drawings, in which:

FIG. 1 is a perspective of a potato harvester having the barrel loader of the present invention incorporated therein.

FIG. 2 is an enlarged, partly broken away plan of the barrel loader of the present invention, including a fragment of the potato harvester.

FIG. 3 is a vertical section of the barrel loader taken along the lines 3—3 of FIG. 2 with certain parts removed.

FIG. 4 is an enlarged fragmentary section taken along the lines 4—4 of FIG. 3.

FIG. 5 is an elevation of the barrel loader taken along the lines 5—5 of FIG. 2, but showing the apparatus in another operative position.

FIG. 6 is an enlarged fragmentary vertical section taken along the lines 6—6 of FIG. 2 and showing the apparatus in still another operative position.

FIG. 7 is an enlarged fragmentary horizontal section taken along the lines 7—7 of FIG. 5.

Referring to FIG. 1, the barrel loader 10 of the present invention is provided with a frame structure 12 by which it is rigidly attached to the chassis members 14 of a potato harvester 16. The harvester 16 has suitable ground engaging wheels 18 upon which it is moved about. A tractor (not shown) may be attached to the harvester 16 by means of the tongue 20 to move the harvester about a field of potatoes to harvest the potatoes in a well known manner. The potato harvester 16 includes an inspection conveyor 22 and a motor 24 to continuously advance the conveyor 22 in the direction of the arrow 26 (FIGS. 1 and 2) during harvesting operations. Side platforms 28 are provided along the chassis member 14 adjacent the conveyor 22 for the use of personnel while inspecting the potatoes on the conveyor 22 as the harvesting progresses and manually removing those that do not conform to certain standards of quality. Potatoes of the quality desired to be loaded into barrels are discharged from the conveyor 22 at the end 30 and onto

2

another conveyor 32 that comprises part of the barrel loader 10.

An operator standing on a platform 34 at the front of the harvester 16 controls the loader 10 by means later to be described. The conveyor 32 is permitted to remain at rest while a plurality of potatoes are delivered by the inspection or supply conveyor 22 of the harvester to the conveyor 32 of the barrel loader 10. After a plurality of potatoes are accumulated on the conveyor 32 to form a charge weighing approximately twenty pounds and comprising a fraction of a barrel load the loader attendant actuates the accumulator conveyor 32 which then advances the charge of potatoes in the direction of the arrow 35 (FIGS. 2 and 3) to a waiting, empty barrel 36. By means of the barrel loader 10 of the present invention the loader attendant is able to move the barrel along an arcuate path to tilt the barrel into any one of a plurality of angular positions with respect to the discharge end 38 of the accumulator conveyor 32. In this way, the barrel 36 can be tilted into such an angular position that the first charge of potatoes will fall only a short distance from the conveyor 32 before the charge contacts the interior of the barrel adjacent the mouth.

The manner of depositing charges of potatoes into the barrel decreases the bruising incurred by the individual potatoes over that incurred thereby if deposited singly into the barrel. Since the barrel is tilted, the potatoes of the first charge roll gently down the side of the barrel until they reach the bottom of the barrel. Each charge of potatoes delivered into the barrel reduces the distance that the succeeding charge must drop and, consequently, reduces the possibility of bruising the potatoes. Therefore, the operator moves the barrel one step toward vertical after receiving each successive charge to level out the potatoes already in the barrel so as to make room for the next succeeding charge. The last charge is delivered to the barrel when the barrel is substantially vertical. Thereafter, the filled barrel is removed from the loader, and an empty barrel is put in place for another loading operation.

As shown best in FIGS. 2, 3 and 5, the frame structure 12 of the barrel loader 10 comprises opposite sides 40 and 42 that are held in suitable horizontally spaced relation by means of a plurality of cross ties 46 (FIG. 3). Adjacent the discharge end 38 of the accumulator conveyor 32 the sides 40 and 42 of the frame structure 12 each has a longitudinal projection 48 in the form of a vertically extending plate. Adjacent the opposite end of the accumulator conveyor 32 are other plate-like projections 52, one on each of the sides 40 and 42.

The accumulator conveyor 32 comprises an endless chain 56 formed of a series of similar links 58 (FIGS. 2, 3 and 4). Each link 58 has a straight, transversely extending, central part 60 (FIG. 4) and opposite ends 62 that project in trailing relation substantially longitudinally of the chain 56 from the central part 60. The accumulator conveyor chain 56 is located between the sides 40 and 42 and is trained, at the discharge end 38 of the conveyor 32, about drive sprockets 64 that engage the straight parts 60 of the links 58 to drive the chain 56 and are rigidly secured to a horizontal drive shaft 66. The drive shaft 66 is journaled in bearings 68 (FIG. 2) that are fixed to the opposite projections 48. At the opposite end of the conveyor 32 from the drive sprockets 64 the conveyor chain 56 is trained about oppositely disposed main idler rollers 72 that are coaxially aligned transversely of the barrel loader 10 and are journaled by means of bolts 76 on the frame projections 52. It will be apparent (FIG. 4) that each main idler roller 72 has a central, cylindrical part 78 at the inner end which

merges with a radially enlarged flange 80 that is of substantially conical form and diverges from the cylindrical part 78 toward the adjacent projection 52.

The lower run 82 of the conveyor chain 56 (FIG. 3) is inclined downwardly from the drive sprockets 64 at the discharge end 38 of the barrel loader 10 to the main idler sprockets 72 at the opposite end of the conveyor 32.

The upper run 84 of the conveyor chain 56 (FIG. 3) includes a substantially horizontal part 86 adjacent to and above the main idler rollers 72 and an oblique part 88 that inclines upwardly from the horizontal part 86 to the drive sprockets 64. From the main idler rollers 72 the chain 56 leads upwardly and about two axially spaced apart-rollers 100 comprising an idler roller assembly 102 that is located at a level somewhat lower than the drive sprockets 64.

The two rollers 100 of the roller assembly 102 are spaced inwardly from the ends of a sleeve 104 to which both rollers 100 are fixed. A rod 106 received in suitable openings (not shown) in the opposite projections 52 of the frame structure 12 extends transversely of the barrel loader 10 and through the sleeve 104 to journal the roller assembly 102.

The previously mentioned upper run 84 of the conveyor chain 56 extends longitudinally from the idler rollers 100 of the assembly 102 to the drive sprockets 64. In the upper run 84 the substantially horizontal part 86 thereof and the oblique part 88 are formed through the action of opposite hold-down and guide rollers 108 (FIGS. 2, 3 and 5). The rollers 108 are located near the drive sprockets 64 and each is journaled on one of the opposite frame projections 48 by means of a bolt 110 (FIGS. 2 and 5), the two bolts 110 being coaxially aligned transversely of the conveyor 32. Each roller 108 has a cylindrical part 111 at the outer end and a radially enlarged flange 112 at its inner end. The rollers 108 are spaced apart transversely of the conveyor 32 so that the flanges 112 cooperate with the longitudinally extending ends 62 of the links 58 at opposite sides of the chain 56 and have a lateral guiding effect on the chain 56 to aid in centering the same between the frame sides 40 and 42. Additionally, the cylindrical parts 111 of the rollers 108 engage the upper sides of the link ends 62 to hold down the upper run 84 of the chain 56 in a region intermediate the ends of the run 84, and thereby assure that the potato-receiving part 86 of the run remains horizontal and that the slope of the oblique part 88 remains constant.

Additional roller assemblies 114, similar to the roller assembly 102, are provided between the assembly 102 and the hold-down rollers 108 in order to support the chain 56 in the horizontal part 86 of the upper run 84. One of the two rollers 116 of each assembly 114 is aligned longitudinally of the barrel loader 10 with one of the rollers 100 of the assembly 102 and is fixed to a sleeve 118, one roller 116 being adjacent each end of the sleeve. The sleeve 118 of each roller assembly 114 extends between the opposite sides 40 and 42 of the frame structure 12 and is journaled on a rod 120 that is received in the sleeve 118 and in suitable aligned holes (not shown) in the sides 40 and 42. It will be noted (FIG. 5) that the rollers 116 of the assemblies 114 hold the horizontal part 86 of the chain 56, in the region of the assemblies 114, at a height slightly above the opposite ends of the horizontal part 86. Thus the horizontal part 86 of the upper run 84 is upwardly inclined from the rollers 108 to the adjacent assembly 114 and between the assembly 102 and the adjacent assembly 114.

In order that the roller assemblies 102 and 114 can be easily and quickly removed from the frame structure 12 of the barrel loader 10 the mounting rods 106 and 120, respectively, are arranged to be axially withdrawn from the assemblies and the frame structure. Accordingly, the rod 106 receives a cotter pin 122 (FIGS. 2 and 5) adjacent the opposite ends of the rod 106 to

hold the rod against unwarranted axial displacement but permit its easy removal. The rods 120 for the roller assemblies 114 are hooked as at 124 (FIG. 5) at one end and receive cotter pins adjacent their other ends. Thus the rods 120 are retained against axial displacement by the hooks 124 and cotter pins but can be easily removed by first removing the pins then grasping the hooks 124 and withdrawing the rods 120 axially.

The chain 56 (FIG. 3) is driven in the direction of the arrow 35 by engagement of the drive sprockets 64 with the elongate central parts 60 of the chain links 58. The rollers 108, as previously explained, aid in maintaining alignment of the chain 56 with respect to the frame structure 12 in the region of the discharge end 38. At the opposite end of the conveyor 32 the ends 62 of the links 58 comprising the lateral edges of the chain 56 are drawn into positive engagement with the opposed conical surfaces of the flanges 80 (only one of which is shown, FIG. 4) of the main idler rollers 72 to further center and align the chain 56. The chain 56 thus guided rides smoothly as the links 58 in the upper flight 84 move across the rollers 100 and 116 of the assemblies 102 and 114, respectively, and the rollers 108.

The conveyor 32, which functions as an accumulator for successive charges of potatoes, is provided with opposite longitudinal fenders 138 and 140 located above the upper run 84 of the conveyor chain 56 and spaced inwardly from the lateral edges thereof. Each of the fenders 138 and 140 comprises a backing plate 142 preferably of thin sheet metal having a resilient pad 144 of rubber or other suitable cushioning material, that is attached to the inner surface of the plate 142 by bolts 146. The fenders 138 and 140 are supported in operative position at the inner ends of a plurality of horizontal spacers 148 (FIG. 2) that rigidly connect the plates 142 of the fenders 138 and 140 to a plurality of upwardly projecting posts 150 (FIG. 5) on the sides 40 and 42, respectively, of the loader. The lower edges of the fender plates 142 are spaced above the conveyor chain 56 in both the horizontal part 86 and the oblique part 88 of the upper run 84. The pads 144, however, project below the plates 142, providing flexible lips 152 (FIG. 2) on the fenders 138 and 140 that lie upon and have resilient contact with the article advancing surface of the chain 56.

As shown in FIG. 2 the fenders 138 and 140 are in substantially parallel relation except that a part 154 of the fender 140, in the region of the oblique part 88 of the upper run 84, is deflected toward the fender 138 thus providing the discharge end 38 of the conveyor 32 with an outlet of restricted transverse dimension. A chute 156 (FIGS. 2, 3 and 5), of arcuate form, attached to the plates 142 by bolts 157 (FIG. 3) interconnects the ends of the fenders 138 and 140 at the discharge end 38 of the accumulator conveyor 32. The chute 156 is inclined downwardly and inwardly of the filler 10 for a purpose to be made clear hereinafter.

Power for driving the chain 56 of the accumulator 32 is supplied by means of a shaft 158 (FIGS. 1, 2 and 5) that is constantly driven by the motor 24 when the harvester 16 is in operation. The end of the shaft 158, adjacent the loader 10 is journaled in a bearing 160 fixed to the projecting end of an angle member 161 that is supported in substantially horizontal position by two of the posts 150 on the frame side 40. A sprocket 162, adjacent the end of the shaft 158, is operatively connected by and endles roller chain 164 to a sprocket 166 fixed to a constantly rotating part 168 of a manually operable clutch 170 that is rotatable on the accumulator drive shaft 66. A clutch control arm 172, which is journaled in the part 168, is movable to engage the sprocket 166 with the drive shaft 66 for advancement of the accumulator 32 in the direction of the arrow 35.

A barrier 173 (FIGS. 2 and 3) extending crosswise of the accumulator conveyor 32 is provided by a strip of belting 174 or similar flexible but rather stiff material.

5

The barrier 173 is attached by bolts 176 along its upper edge to an angle member 178 that projects transversely of the conveyor 32 from the angle member 161 above the roller assembly 102. The barrier 173 prevents potatoes, which are delivered by the supply conveyor 22 to the accumulator conveyor 32, from possible loss off the adjacent end of the conveyor 32.

A barrel support 190, hereinafter referred to as a cradle, comprises two side bars 192 (FIGS. 3, 5 and 7) spaced apart transversely of the loader 10 and located between the sides 40 and 42 of the frame structure 12. Adjacent their top ends the side bars 192 are provided with coaxially aligned, transversely extending stub shafts 194 which project outwardly from the cradle 190. Each stub shaft 194, is journaled in a bearing 196 (only one of which is shown, FIG. 5) fixed to the associated projection 48 below the discharge end 38 of the conveyor 32. The side bars 192 are rigidly interconnected, about midway of their length (FIGS. 3, 6 and 7) by a U-shaped tie bar 198. The bight 200 of the tie bar 198 is spaced longitudinally of the conveyor 32 toward the frame 12 from the side bars 192.

Adjacent the lower ends of the side bars 192 is a transversely extending plate 202 comprising the floor of the cradle 190. As best shown in FIGS. 6 and 7 the floor plate 202 is generally rectangular and is fixed to the legs 204 of a plurality of reclining, L-shaped bars 206. The feet 208 of the L-shaped bars 206 project upward and are fixed at their ends to a tube 210, which extends between the side bars 192 and is rotatable about a rod 212 extending through the bore of the tube 210. The rod 212 rigidly interconnects the cradle side bars 192. Opposite, upwardly projecting ears 214 are provided on the plate 202 at substantially the center of the lateral edges thereof. A link 216 having an L-shaped slot 218 adjacent one end 220 is pivotally attached adjacent the other end by a bolt 222 to each of the ears 214. It is apparent (FIGS. 5, 6 and 7) that the links 216 are disposed between the cradle side bars 192 and that the L-shaped slot 218 in each link receives a stud 224, which projects inwardly from the adjacent side bar 192. Each slot 218 (FIG. 6) has an elongate part 226 extending longitudinally of the link 216 and an end part 228 that projects upwardly at a right angle to the slot part 226 from the end of the part 226 adjacent the pivot bolt 222.

Two strong tension springs 230 (FIGS. 5 and 7) are provided, each being stretched between the outer end of one of the pivot bolts 222 and the associated one of the studs 224, which project outwardly beyond the opposite lateral sides of the cradle 190. The springs 230 are of such strength as to draw the floor plate 202 upward about the rod 212 to normally dispose the ends parts 228 of the latching slots 218 about the studs 224 (FIGS. 3 and 5) and thus releasably retain the floor plate 202 in fixed relation with respect to the cradle side bars 192. It is apparent, therefore, that the links 216 serve as detents that releasably retain the barrel support plate 202 in barrel receiving position. When in the latched position the floor plate 202 is ready to receive a barrel 36 and the upper ends 220 of the links 216 project well beyond the side bars 192 toward the frame structure 12 (FIG. 5).

A latch release 232 (FIGS. 1, 5 and 7) comprises a horizontal rod 234 extending transversely of the loader 10 and having two fixed arms 236, which are spaced apart longitudinally of the rod and project radially from the rod 234 in co-planar alignment. The ends of the arms 236 opposite to the rod 234 are provided with coaxially aligned sleeve sections 238, respectively (FIG. 7), that are journaled on coaxially aligned studs 240, which project laterally of the cradle 190 from lugs 242 (FIGS. 6 and 7) on the side bars 192. By means of the studs 240 the rod 234 of the latch release 232 is located beneath the upper ends 220 of the latching links 216 (FIGS. 3 and 5) so that the rod 234 can swing the links 216 upward relatively to the latch studs 224 to unlatch the floor

6

plate 202. At the side of the cradle 190 below the conveyor control clutch 170 the latch release 232 is provided with a lever arm 244 (FIGS. 1, 5 and 7) that is fixed to the adjacent arm 236, and projects upward therefrom in a radial direction with respect to the stud 240. The latch release 232 is biased into inoperative position against an abutment stop 250 (FIGS. 5 and 7) by means of a tension spring 246 that is stretched between a lug 248 on the lever arm 244 and the abutment stop 250 on the adjacent side bar 192 of the cradle 190. As best understood from FIG. 7 the abutment stop 250 first projects laterally as at 251 from the associated side bar 192 beyond the arm 244 and then longitudinally of the loader 10 as at 252 toward the frame structure 12.

If a barrel is supported by the cradle floor plate 202 and the slots 218 of the links 216 are disposed with the hooked end parts 228 about the studs 224 of the cradle side bars 192, the floor plate can be released for downward pivotal movement from the latched position shown in FIG. 5 to the FIG. 6 position by movement of the lever arm 244 in the direction of the arrows 253 (FIG. 5). Upon such movement of the lever arm 244 the short arms 236 are pivoted about the studs 240 thereby swinging the rod 234 of the latch release 232 in a counterclockwise direction (FIG. 5). Engagement of the rod 234 with the ends 220 of the links 216 cams the links upward about their pivots 222 on the floor plate 202 so that the elongate parts 226 of the latching slots 218 register with the studs 224 and the plate 202 is free to pivot downward (FIG. 6) against the action of the springs 230. Thereafter, when no barrel is on the cradle floor plate 202 and the lever arm 244 is released the lever arm 244 is drawn by the spring 246 against the stop 250 so that the latch camming rod 234 is in inoperative position. The cradle floor 202 is then pivoted upward by the springs 230 so that the hooked end parts 228 of slots 218 in the links 216 register with the studs 224 and the weight of the links 216 causes them to move into latched position on the studs 224.

Two arcuately curved straps 254 (FIGS. 3 and 7), which are spaced apart in coaxial alignment, are located between and fixed to the cradle side bars 192. The sides of the straps 254 nearest the frame structure 12 are interconnected by a vertical tie 255 that is attached to the bight 200 of the U-shaped tie bar 198 as well as to the straps 254. In this way, the arcuate straps 254 are held in fixed position with respect to the side bars 192 of the cradle 190. The straps 254 assure that a barrel being filled in the loader 10 is located on the floor plate 202 in the cradle 190 in position below the discharge end 38 of the accumulator conveyor 32 to receive successive charges of potatoes therefrom.

In order that the cradle may be pivoted longitudinally of the loader 10 on the stub shafts 194, into any one of a plurality of different loading positions, a double acting power cylinder 256 is connected between the base of the frame structure 12 and a bracket 257 on the vertical tie bar 255 of the cradle 190. As best seen in FIG. 3, the cylinder 256 is pivotally attached at one end to a pin 258 carried by a bracket 259 on one of the cross ties 46 of the frame structure 12 below the roller assembly 102. The piston rod 260 of the cylinder 256 is pivotally connected by means of a pin 262 in the bracket 257. Fluid conducting lines 264 and 266 lead to opposite ends of the cylinder 256 from a control valve 268 (FIGS. 1 and 5) fixed to the post 150 adjacent the clutch 170. A fluid supply line 270 and a return line 271 leading, respectively, to a pump (not shown) and a reservoir (not shown) from which fluid is supplied to the pump, are connected with the control valve 268. Upon suitable manipulation of a valve control handle 272 fluid under pressure is directed through the line 264 to the cylinder 256 to project the piston rod 260 and swing the cradle in a clockwise direction into, for instance, the fully raised position shown in FIG. 3. Thereafter, when the handle 272 is oppo-

sitely moved, fluid under pressure is directed through the line 266 to the cylinder 256 in order to lower the cradle 190 into any one of a plurality of loading positions between the position shown in FIG. 3 and the position shown at FIG. 5, as determined by the length of time that the handle 272 is kept in the cradle lowering position.

Let it be assumed that no potatoes are on the accumulator conveyor 32 of the barrel loader 10 and that the accumulator conveyor 32 is at rest. An empty barrel 36 is located in the cradle 190 and has been raised into the position shown in FIG. 3 by manipulation of the control valve handle 272. During operation of the potato harvester 16, the potatoes will be delivered at random onto the horizontal part 86 of the accumulator conveyor 32 by means of the supply conveyor 22. When a quantity of potatoes comprising a charge of the desired size, say approximately one-third of a barrel load, have been accumulated on the horizontal part 86 of the accumulator conveyor 32 the attendant, by appropriate movement of the clutch control arm 172 actuates the conveyor 32. The charge of potatoes accumulated on the conveyor 32 will then be advanced between the fenders 138 and 140 up the oblique part 88 of the conveyor 32 and over the discharge end 38. As the potatoes are discharged in a mass from the conveyor 32 they are directed by both the chute 156 and the discharge end 38 of the conveyor downward through an opening 273 (FIG. 2) into the mouth of the empty barrel 36. It will be apparent (FIG. 3) that the charge of potatoes will fall against the side of the barrel adjacent the mouth thereof and from there roll gently to the bottom of the barrel. When the first charge of potatoes has entered the barrel the operator stops the advancement of the conveyor 32 by means of the clutch 170 and by manipulation of the handle 272 of the control valve 268, swings the cradle one step toward vertical from the fully raised position shown in FIG. 3. Thereafter another charge of potatoes which accumulated on the conveyor 32 in the meantime can be discharged from the accumulator into the barrel in the manner previously described. After receiving the second charge of potatoes the barrel 36 is moved another step, either toward vertical position or into vertical position, depending upon the number of charges that the barrel can accommodate. After receiving a sufficient number of charges in the manner described to completely fill the barrel, the barrel is in the vertical position shown in FIG. 5 and ready to be discharged from the loader 10. If desired the accumulator 32 can be operated continuously to fill the barrel while the barrel is lowered by more or less constant movement from the FIG. 3 position to the FIG. 5 position.

Since the floor plate 202 of the cradle 190 is spaced only a short distance above the ground the filled barrel can be easily removed from the cradle by moving the lever arm 244 of the latch release 232 in the direction of the arrow 253 (FIG. 5). This unlatches the floor plate 202 in the manner described for movement from the position shown in FIG. 5 to the downwardly inclined position shown in FIG. 6. The filled barrel can then be easily slid off the floor plate 202 by an attendant. Thereafter, upon release of the lever arm 244 the floor plate 202 will be returned to and latched in barrel receiving position FIG. 5. After an empty barrel is located in the cradle 190 another barrel filling operation can be performed.

Referring to FIGS. 5, 6 and 7, the edge 274 of the floor plate 202 at the discharge side of the cradle has an oblique part 276 that slants inwardly of the plate 202 toward the trailing end of the harvester 16. Additionally, the oblique edge 276 is provided with a downwardly inclined lip 278. During the discharge of a barrel from the loader 10 the attendant may be on the ground facing the barrel. Since the harvester is moving in the direction of the arrow 280 (FIG. 7) and if the attendant is on the ground he can simultaneously grasp both the lever arm 244 to release the cradle floor plate 202 for downward movement (FIG. 6) and the side of the barrel adjacent him-

self. The lever arm 244 is then immediately released and the barrel turned in a counterclockwise direction on the bottom edge first engaging the ground. The oblique edge 276 of the plate 202 permits the barrel, at its trailing, bottom edge, to engage the ground while the lip 278 allows the floor plate to slide along under the barrel without damage thereto. The ends of the arcuate straps 254 at the trailing side of the cradle 190 push against the barrel, during discharge thereof, to further aid in the removal of the barrel from the cradle.

The manner in which the charges of potatoes enter the barrel while the barrel is held in the loader of the present invention assures that less bruising will be incurred by the individual potatoes than in loaders heretofore known. Additionally, the filled barrels are easily discharged from the loader 10 with a minimum of exertion by the attendant.

While a particular embodiment of the present invention has been shown and described it will be understood that the container loader of the present invention is capable of modification and variation without departing from the principles of the invention and that the scope of the invention should be limited only by the scope and proper interpretation of the claims appended hereto.

The invention having thus been described, what is believed to be new and desired to be protected by Letters Patent is:

1. In a container positioning apparatus, an arm journaled adjacent one end for vertical swinging movement, a container support plate mounted on said arm adjacent the other end thereof for pivotal movement relative thereto, a latch operably associated with said support plate and said arm and arranged to releasably retain said support plate in container receiving position with respect to said arm, latch actuating means carried by said arm and operable to release said latch for movement of said support plate from said container receiving position, and resilient means arranged to urge said support plate into said container receiving position.

2. In a container positioning apparatus, an arm journaled adjacent one end for vertical swinging movement, a container support plate journaled for vertical swinging movement on said arm adjacent the other end thereof, a latch operably associated with said support plate and said arm and arranged to releasably retain said support plate in container receiving position with respect to said arm, latch actuating means carried by said arm and operable to release said latch for movement of said support plate from said container receiving position, resilient means arranged to urge said support plate into container receiving position, and arm moving means connected to said arm and arranged to swing said arm with said container support plate into any one of a plurality of fixed container supporting positions.

3. In a container positioning apparatus, an arm journaled adjacent one end for vertical swinging movement, a container support plane journaled for vertical swinging movement on said arm adjacent the other end thereof, a detent pivoted on said container support plate and arranged to engage said arm to releasably retain said support plate in a certain position with respect to said arm to receive and support a container, spring means operably associated with said arm and said container support plate and arranged to urge said support plate toward container receiving position, and detent release means on said arm arranged to release said detent for movement of said container support plate out of container receiving position.

4. In a container positioning apparatus, an arm journaled adjacent one end for vertical swinging movement, a container support plate journaled for vertical swinging movement on said arm adjacent the other end thereof, a detent pivoted on said container support plate and arranged to engage said arm to releasably retain said support plate in a certain position with respect to said arm to receive and support a container, spring means operably

associated with said arm and said container support plate and arranged to urge said support plate toward container receiving position, detent release means on said arm arranged to release said detent for movement of said container support plate out of container receiving position, and spring means operably associated with said detent release means and arranged to urge the detent release means into inoperative position. 5

5. In a container positioning apparatus, an arm pivotally mounted for vertical swinging movement, a container support plate on said arm and having a certain position with respect to said arm remote from the pivotal mounting thereof, and arm moving means connected to said arm and arranged to swing said arm by angular increments for movement of said support plate into a succession of fixed container supporting positions. 10 15

6. In a container positioning apparatus, an arm pivotally mounted for vertical swinging movement, a container support plate journaled for vertical swinging movement on said arm remote from the pivotal mounting of the arm, a latch arranged to releasably retain said support plate in a certain position with respect to said arm, and 20

moving means connected to said arm and arranged to swing said arm by angular increments to move said support plate into any one of a plurality of fixed container supporting positions.

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