Feb. 24, 1953 H. J. BARNHARD 2,629,530

APPARATUS FOR PACKING ARTICLES ON A STANDARD

Filed Feb. 16, 1952 3 Sheets-Sheet 1

FIG. 1

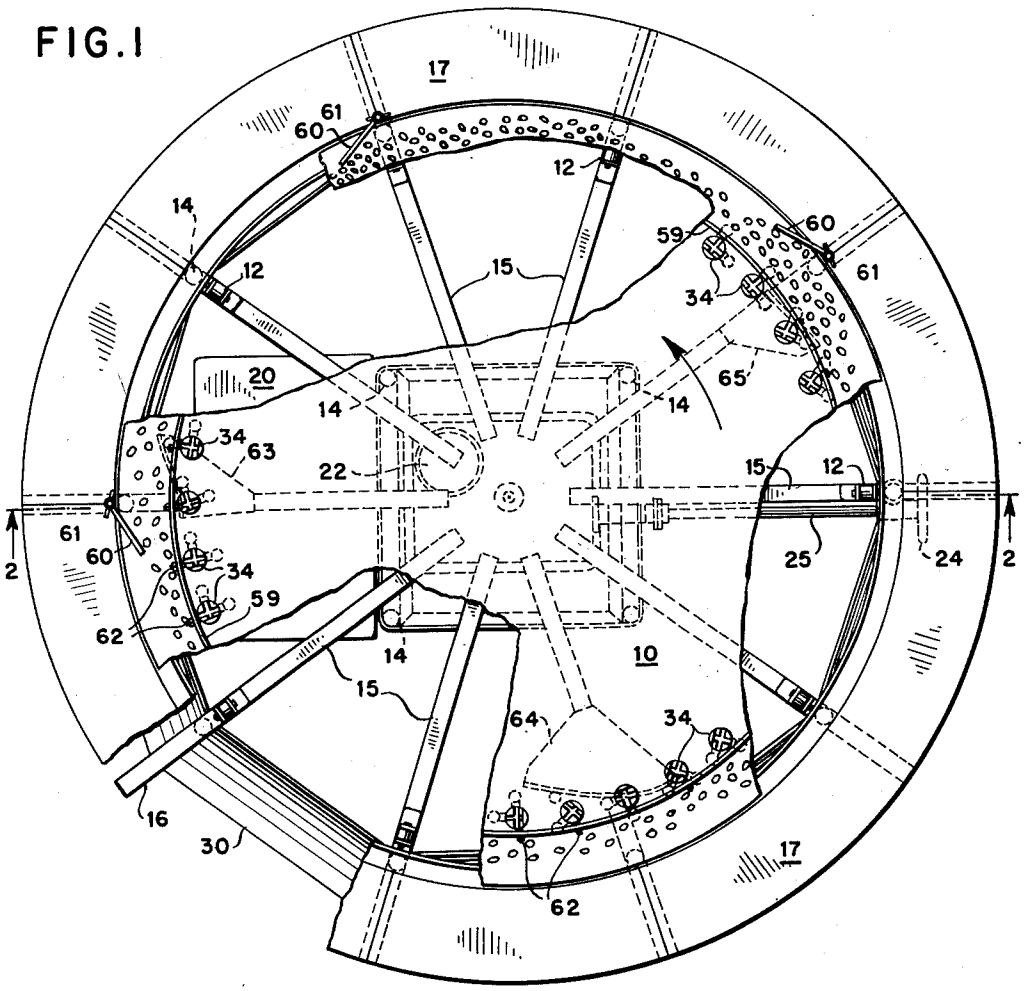


FIG. 8

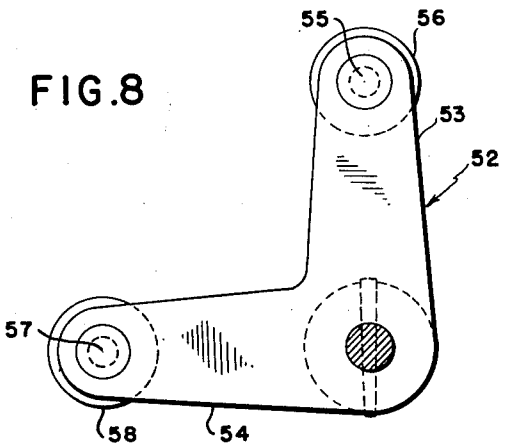
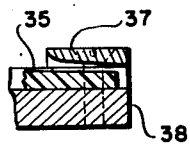


FIG. 9



INVENTOR.
Harold J. Barnhard
BY W. Lee Nelms

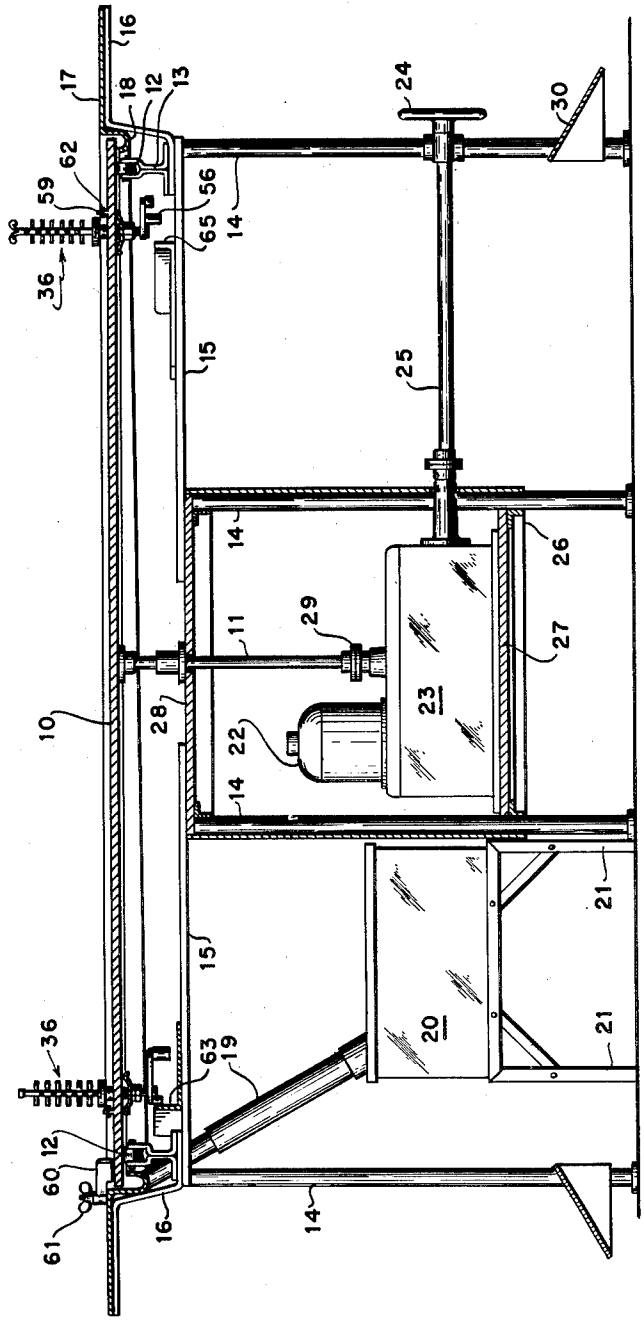
ATTORNEY

Feb. 24, 1953 H. J. BARNHARD 2,629,530

APPARATUS FOR PACKING ARTICLES ON A STANDARD

Filed Feb. 16, 1952 3 Sheets-Sheet 2

FIG. 2



INVENTOR.

Harold J. Barnhard

BY W. Lee Rilmes

ATTORNEY

Feb. 24, 1953 H. J. BARNHARD 2,629,530

APPARATUS FOR PACKING ARTICLES ON A STANDARD

Filed Feb. 16, 1952 3 Sheets-Sheet 3

FIG.3

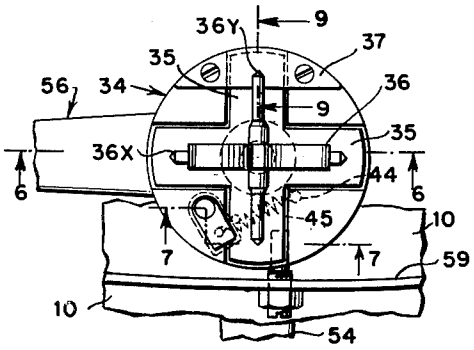


FIG.4

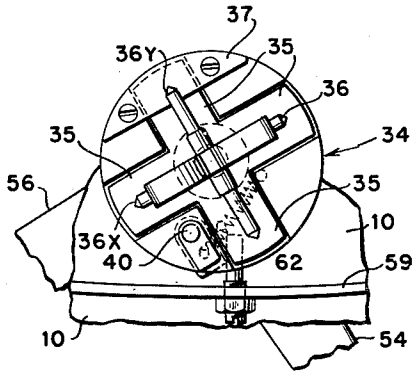


FIG.5

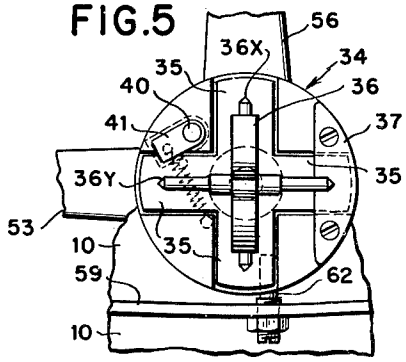


FIG.6

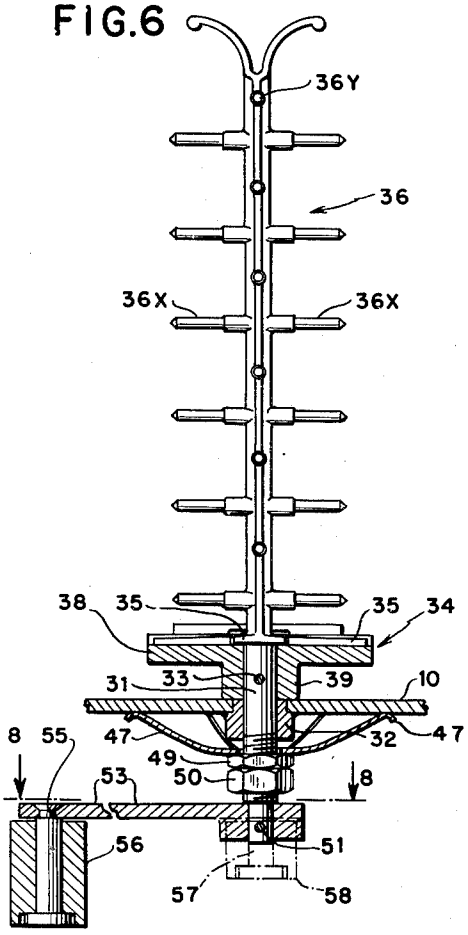
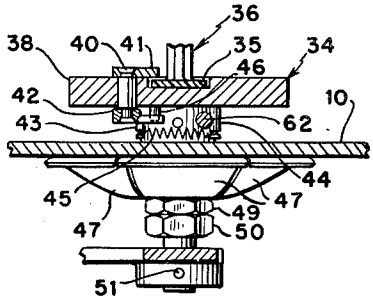


FIG.7



INVENTOR.
Harold J. Barnhard
BY W. Lee Nelms

ATTORNEY

Patented Feb. 24, 1953

2,629,530

UNITED STATES PATENT OFFICE

2,629,530

APPARATUS FOR PACKING ARTICLES ON A STANDARD

Harold J. Barnhard, Croton-on-Hudson, N. Y., assignor to Packease-Servease Corp., Buchanan, N. Y., a corporation of New York

Application February 16, 1952, Serial No. 271,966

4 Claims. (Cl. 226—14)

1

This invention relates to an apparatus and a method for packing articles on a standard having spines thereon adapted to receive such articles.

The packing of olives and other articles on a standard to effect a pleasing appearance and to facilitate removal of such articles when they are packed in jars, is a difficult and time-consuming operation generally performed by hand without the aid of mechanical devices. This invention provides an apparatus for and a method of placing olives and other articles about a plastic standard having spines thereon adapted to receive said foodstuff.

It is an object of this invention to provide an apparatus for rapid packing of foodstuffs upon an upright standard having spines thereon, said standard being adapted for insertion into a glass jar.

It is also an object of this invention to provide a method for rapidly packing foodstuffs difficult to pack in glass jars.

It is a further object of this invention to provide an inexpensive apparatus for facilitating a method of rapidly packing articles on standards.

These and other objects will become apparent on reading the following disclosure, read in conjunction with the accompanying drawings in which:

Fig. 1 is a top plan view partly broken away to show the lowermost elements more clearly,

Fig. 2 is a cross-section of the apparatus taken on line 2—2 of Fig. 1,

Fig. 3 is a top plan view of one of the rotatory elements in locked position,

Fig. 4 is a top plan view of one of the rotatory elements in open position,

Fig. 5 is a top plan view of one of the rotatory elements in locked position but rotated 90° relative to the view shown in Fig. 3,

Fig. 6 is a cross-section of a rotatory element, with an unsectioned standard thereon, showing the short arm roller in outline and taken on line 6—6 of Fig. 3,

Fig. 7 is an enlarged view of the rotatory element taken on line 7—7 of Fig. 3,

Fig. 8 is a top plan view of the right angled bell crank lever arm taken on line 8—8 of Fig. 7, and

Fig. 9 is a detailed view taken on line 9—9 of Fig. 3 and showing the method of insertion of a foot of a standard to secure it in place on the rotatory element.

Referring to the drawings and more particularly to Figs. 1 and 2, a flat disc 10 is mounted

2

to an axle 11 for rotational movement in a counter-clockwise manner as shown in Fig. 1. The periphery of the disc 10 is supported on rollers 12 which are journaled in vertical supports 13. A plurality of upright tubular supports 14 carry a plurality of radially disposed bars 15 to which the vertical supports 13 are attached at the extreme radial distance from the axis 11. Angle bars 16 are secured to the radial bars 15 by conventional means such as welding to provide a supporting surface for an annular arm rest apron 17. The apron 17 is provided with a trough 18 sloping downwardly to an outlet tube 19 whereby any liquid in said trough 18 flows by gravity into tube 19. The tube 19 leads to a removable brine waste tank 20 which may be placed on a structural support 21 made of angle iron.

A motor 22 is connected to a speed reducer 23 and is controlled by a control wheel 24 through horizontal axle 25 whereby a desired rotational speed of axle 11 and of disc 10 is obtainable. The centrally disposed vertical supports 14 have angle irons 26 secured thereto, to which is secured a platform 27, providing a base support for the speed reducer 23.

A top plate 28 is secured to the centrally disposed vertical supports 14 and has an aperture therein providing a journal surface for axle 11. Coupler 29 may be provided as well as an annular foot rest 30.

A plurality of apertures are circularly disposed near the outer circumference of flat disc or table 10, through each of which is passed a partly threaded rod 31. Intermediate the disc 10 and rod 31 is a bearing block 32 the upper surface of which is continuous with the surface of disc 10. Secured to rod 31 by key 33 and resting on the top of bearing block 32 is a support collar or carrier 34 having perpendicular cross recess therein adapted to receive the four perpendicular cross feet 35 of standard support 36. The support 36 has one of its feet 35 inserted beneath a clamping plate 37 which is screwed or otherwise secured to collar 34 (Fig. 9).

Carrier 34 has an enlarged circular flat plate section 38, from which an integral projection or collar 39 of lesser diameter depends. Plate 38 has an aperture therein for lock axle 40, to which is firmly secured a top lever plate 41 and a bottom lever plate 42. The bottom lever plate 42 has a spring latch 43 secured thereto. A second spring latch 44 is secured to the undersurface of collar top plate 38, and a torsional spring 45 is secured to spring latches 43 and 44. A stop 46 is secured to the undersurface of plate 38 for arresting the

simultaneous forward movement of top lever plate 41 and of bottom lever plate 42 in locked position.

A circular leaf spring, having a plurality of leaf springs 47, pulls rod 31 downward so that the bottom of projection 39 frictionally engages the top surface disc 10. The leaf springs 47 are held in place by threaded nut 49 co-acting with lock nut 50.

Secured to bottom of rod 31 by key 51 is a bell crank 52 (Fig. 8) having lever arms 53 and 54. Secured to lever arm 53 by means of bolt 55 is a long lever roller 56, and secured to lever arm 54 by means of bolt 57 is a short lever roller 58 (shown in phantom in Fig. 6).

In operating applicant's machine olives are poured onto the outer annular surface of disc 10, which is separated from the inner surface of disc 10 and the circle of apertures therein by a perpendicular circular wall 59. Attached adjacent the inner circular are a plurality of obliquely disposed pusher plates 60 adapted to push the olives close to wall 59 (Figs. 1 and 2), said pusher plates being secured in place at a desired angle by wing nut 61 or other conventional means.

A plurality of fingers 62 are bolted to wall 59 adjacent each rotational packing unit with its plastic support 36 (Fig. 1). This counter-clockwise rotation of the collar 34, produced by long roller 56 of lever arm 54 rubbing against stationary cam 64 (Fig. 2), causes the collar 34 to rotate about 45 degrees causing lower lever plate 41 to move against finger 62 thereby freeing the foot 35, formerly held in place below plate 41, since plate 41 and 42 move simultaneously. In this open position, the standard 36, which may be loaded with packed olives, is easily removed and a fresh plastic standard substituted in its place.

Continued counter-clockwise rotation of disc 10 causes long roller 56 of lever arm 53 to engage stationary cam 65 (Fig. 1) causing the collar 34 with its standard 36 to rotate through an angle allowing spring 45 to pull lever plate 41, into a closed or locked position, over foot 35 of the plastic standard or olive tree 36. In order to prevent toppling over of a loaded or packed olive standard or tree, when in "open" position, one of the feet 35 is inserted beneath clamping plate 37.

Fig. 3 shows the olive tree or standard 36 in locked position with top lever arm 41 over one of the feet 35. In this position of bell crank 52 one set of the perpendicularly disposed arms is substantially parallel to wall 59 and to an operator seated therebefore, thus enabling the operator to pack olives onto the tree limbs or spines $36x$ from both sides using both hands.

To facilitate packing of olives onto the remaining set of limbs or spines $36y$ of the tree, which set is located at 90° to the packed set $36x$, it is necessary to rotate the tree 90°. This rotation is accomplished by having the short roller 58 engage cam 63 so that continued rotation of disc 10, causes the plastic standard or tree to rotate 90°, thereby presenting the unpacked limbs $36y$ parallel to wall 59 and an operator seated at this station. The second set of limbs or spines $36y$ is now easily packed from both sides by an operator using both hands. The carrier 34 therefore reciprocates back and forth through an angle of about 135°.

It is thus clear that a plastic standard or tree loaded with olives, is removed by an operator from plate 38, after the lock 41 has been actuated into an open position by bell crank 52 working in coaction with finger 62. A fresh or new standard 36 is inserted under the plate 37 preferably by the same operator at this open station. Further rotation of the disc causes an operative lever arm of the bell crank to rub against an appropriate stationary cam surface causing one set of limbs of the tree to be presented to another packer at another or second station. Further rotation of the disc 10 causes the other arm of the bell crank to rub up against another stationary cam, thereby rotating the tree through an arc of 90° and thus presenting the second set of limbs ready to be packed. Still further rotation of the disc 10 brings the loaded tree back to cam 64 where the lock 41 is again opened, and the cycle described above is ready to be repeated.

More than three operators may be seated about the apron 17. Moreover, it is within the scope of this invention that a large disc 10 may be so operated as to have more than one complete packing assembly on its periphery. Thus, for example, two or more loading and unloading stations may be located about a large disc with intermediate packing stations between each unloading station.

In a modification of this invention, leaf spring 47, which holds collar 34 in position, can be replaced by a helical spring on rod 31, and simultaneously therewith the cams 63, 64 and 65 may be interconnected to form one continuous cam.

Other modifications will become readily apparent to those skilled in the art after reading this disclosure, but these modifications are intended to be embraced by the scope of the appended claims.

Having described my invention, what I claim and desire to secure by Letters Patent, is as follows:

1. A device for packing edibles on a standard comprising a rotatable table having a plurality of circumferentially disposed apertures, a tubular carrier having a depending collar disposed over each of said table apertures and in frictional engagement with said table, a dished leaf spring having a centrally positioned opening disposed beneath said apertures of said table, a rotatable rod disposed in and secured to said carrier and traversing said aperture of said table and the opening of said spring, means for adjusting the tension of said spring against said table, and means for rotating reciprocally said rod, whereby packing of edibles on said standard is facilitated.

2. An apparatus adapted to rotatably support a pluralty of standards comprising a frame, a disc rotatably mounted on said frame and having a plurality of apertures disposed adjacent the disc edge, a rod disposed in each of said apertures, a carrier disposed on the top of said rod and secured thereto having grooves therein forming a seat for said standard and having a collar in frictional engagement with said disc, a multiple leaf spring having an aperture therein disposed on said rod beneath said disc and adapted to effect adjustable frictional engagement between the collar of said carrier and said disc, a bell crank fixed to said rod beneath said leaf spring and adapted to reciprocate said rod, and a plurality of stationary cams secured to said frame beneath said disc and adapted to engage said cranks, whereby rotation of said disc effects reciprocal rotation of said carriers.

3. A device for packing pierceable edibles upon plastic trees or standards having pointed limbs thereon comprising a frame, a rotatable table

mounted on said frame having a circumferentially disposed wall in spaced relation to the periphery of said table and having a plurality of apertures interiorly and circumferentially disposed adjacent to said wall, means for rotating said table, an annular wall secured to said frame and adjacent the periphery of said table for keeping said edibles from falling off said table, a plurality of stationary cams disposed beneath said table and secured to said frame, a plurality of rotatable carriers mounted on rotatable rods disposed in said peripheral apertures of said table each having a grooved seat adapted to receive one of said standards and further having a collar in frictional engagement with said table, and rotatable means disposed on said carrier for locking said standard in said seat.

4. A device for packing pierceable edibles upon plastic trees or standards having pointed limbs thereon comprising a frame, a rotatable table mounted on said frame having a circumferentially disposed wall in spaced relation to the periphery of said table and having a plurality of apertures interiorly and circumferentially disposed adjacent to said wall, means for rotating said table, an annular wall secured to said frame and adjacent the periphery of said table for keeping said edibles from falling off said table,

a plurality of stationary cams disposed beneath said table and secured to said frame, a plurality of rotatable carriers mounted on rotatable rods disposed in said peripheral apertures of said table each having a grooved seat adapted to receive one of said standards and further having a collar in frictional engagement with said table, a locking mechanism disposed in said carrier adapted to lock a seated standard and comprising a rotatable lock-rod journaled in said carrier with a top and bottom plate fixed to said lock-rod, tension means secured to said bottom plate and the carrier collar and adapted to maintain said top plate in locked position, and means disposed in said circumferentially disposed wall adapted to motivate said bottom plate to unlock said top plate.

HAROLD J. BARNHARD.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,765,419	Gross	June 24, 1930
1,833,417	Drake	Nov. 24, 1931
2,261,548	Gridley	Nov. 4, 1941