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2,602,279

FRUIT, NUT, AND OLIVE HARVESTING MACHINE

Filed Nov. 28, 1949

3 Sheets-Sheet 1

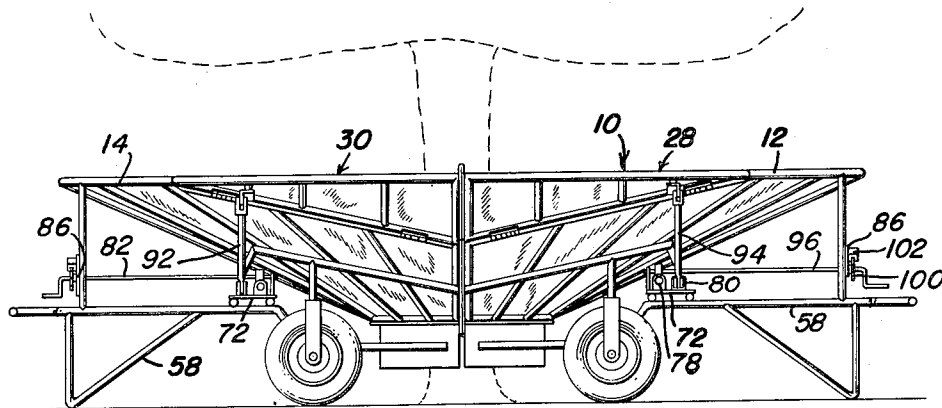


Fig. 1.

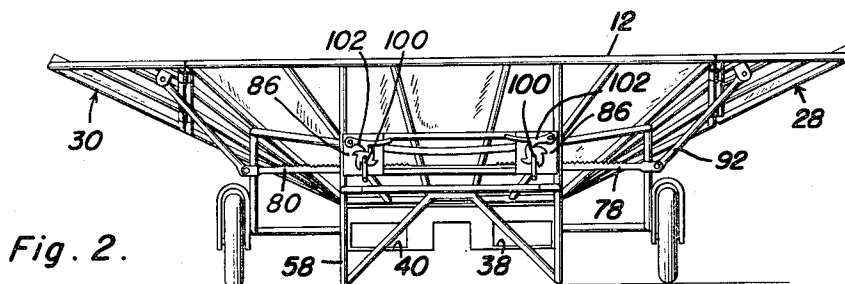


Fig. 2.

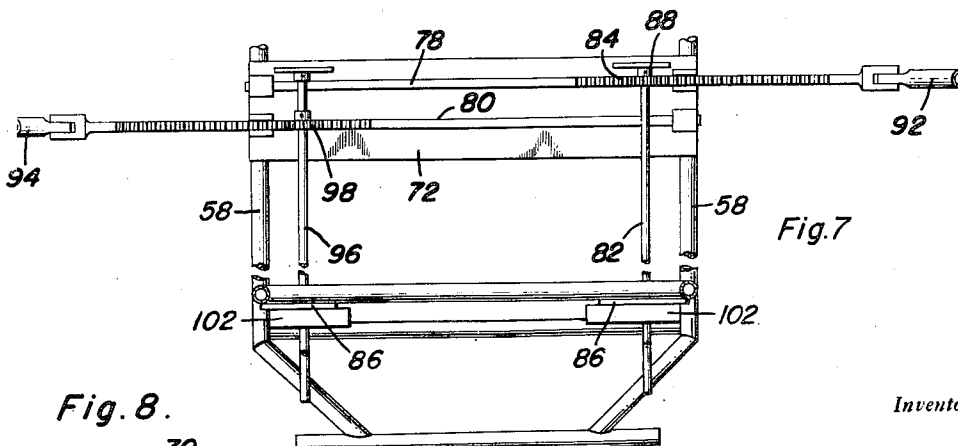


Fig. 7

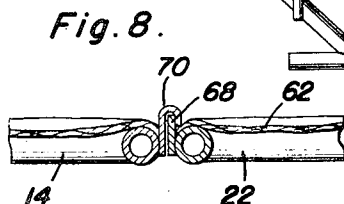


Fig. 8.

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Fig. 3.

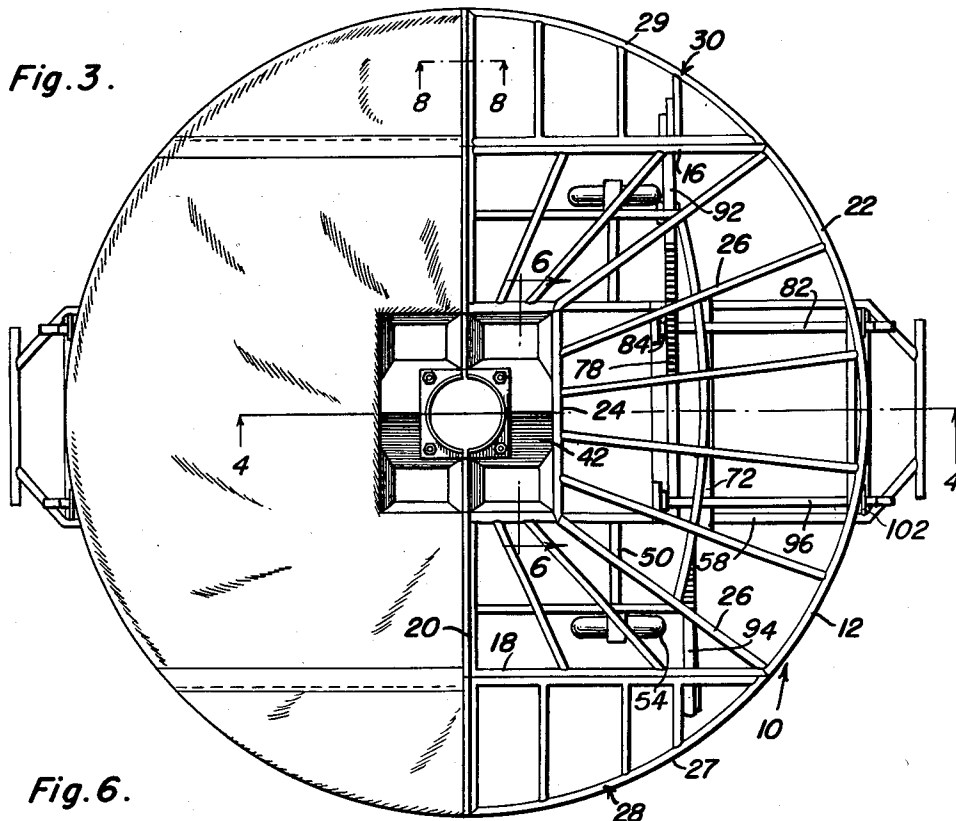
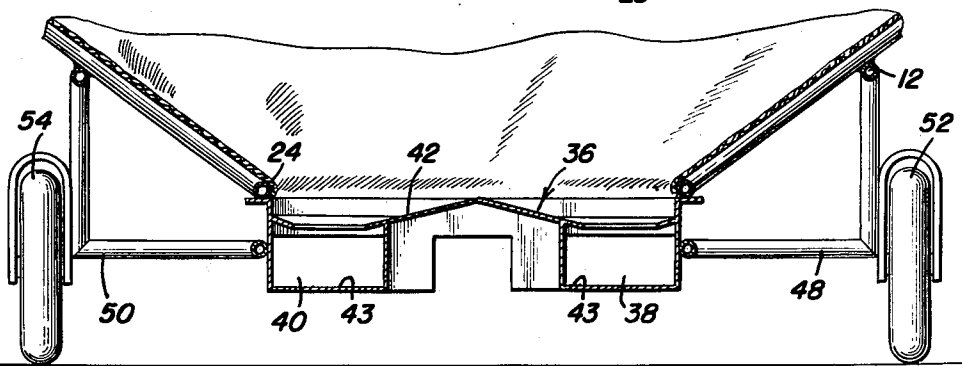


Fig. 6.



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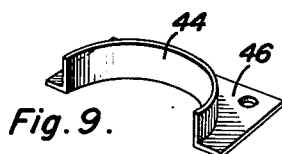


Fig. 9.

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3 Sheets-Sheet 3

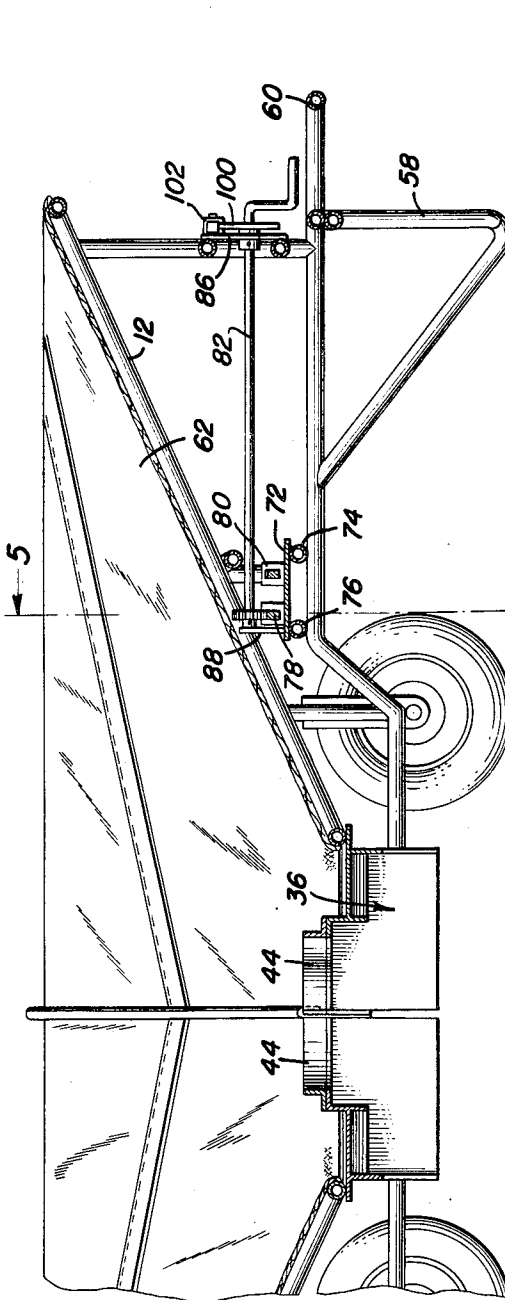


Fig. 4.

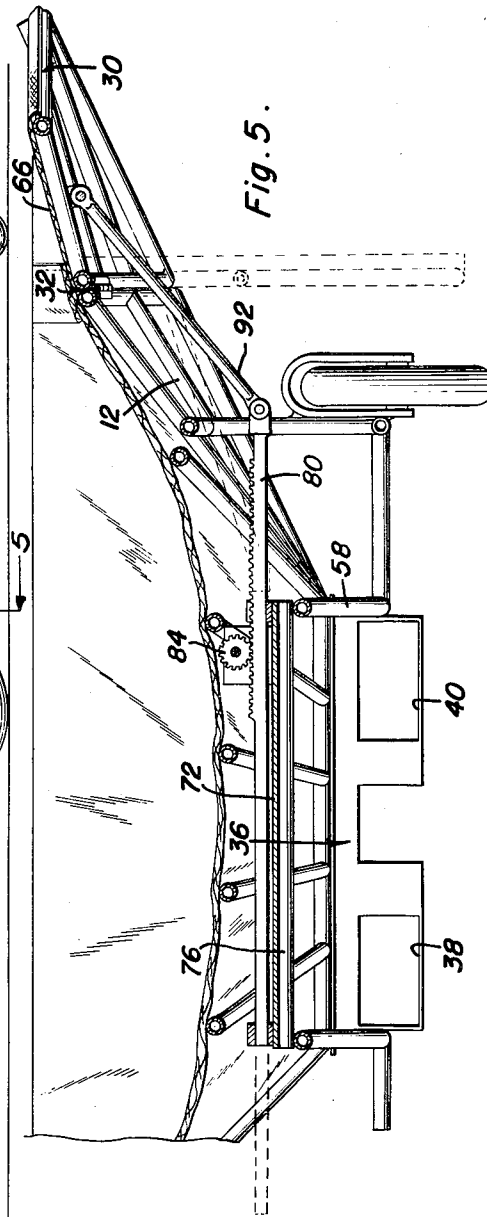


Fig. 5.

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UNITED STATES PATENT OFFICE

2,602,279

FRUIT, NUT, AND OLIVE HARVESTING
MACHINE

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Application November 28, 1949, Serial No. 129,773

4 Claims. (Cl. 56—329)

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This invention relates to improvements in fruit and nut collectors of the type which is adapted to be disposed under a tree for collection purposes.

An object of this invention is to provide a frame sloped downwardly toward a center, a cover being provided on said frame so that the harvest is received in the frame striking the cover and rolling to the lower part of the frame into a hopper or a number of hoppers which are provided. The hopper or hoppers direct the harvest into regular lug boxes which are inserted in a rack beneath the hoppers receiving the harvest.

Another object of this invention is to effectively lengthen and widen the frame by means of extensions which are adjustably carried by the peripheral edges of said frame.

Another object of this invention is to construct the frame of such arrangement whereby the frame sections may be easily brought together, maintained in place and then removed or separated from each other for ready and easy transportation.

Ancillary objects and features of novelty will become apparent in following the illustrated form of the invention.

In the drawings:

Figure 1 is an elevational view of one form of the invention showing its adaptation to the environment of a single tree;

Figure 2 is an end view of the device in Figure 1;

Figure 3 is a plan view of the device in Figure 2, portions of the cover being removed to illustrate the detail of one of the frame sections;

Figure 4 is a fragmentary enlarged sectional view taken on the line 4—4 of Figure 3 and showing a part of the device;

Figure 5 is a fragmentary sectional view of the entire device viewed as would be taken substantially on the line 5—5 of Figure 4 and in the direction of the arrows;

Figure 6 is an enlarged sectional view taken on the line 6—6 of Figure 3 and in the direction of the arrows;

Figure 7 is a fragmentary plan view of a part of the means of operating the extensions;

Figure 8 is a sectional view in enlarged scale, taken on the line 8—8 of Figure 3, and showing the structure employed in releasably attaching three sections together; and

Figure 9 is a perspective view in enlarged scale of a part of a collar which is adapted to encircle one-half of the tree trunk.

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Reference is now made to the accompanying drawings wherein there is disclosed a frame generally indicated at 10 consisting of a pair of sections 12 and 14. Each section is substantially identical in structure and shape. There is a pair of straight parallel side pieces 16 and 18, respectively, with a perpendicular side 20 connecting them together with an arcuate opposite side 22. A rectangular frame 24 in a plane lower than the plane of the sides is connected with the sides by means of the connecting members or braces 26 which are tubing or similar material. Similar extension parts 28 and 30 are connected by means of hinges 32 to the respective sides 16 and 18. The outside or peripheral end members 27 and 29 of the extensions 28 and 30 together with the side 22 form a semi-circle. Identical structure is provided for the section 14 of the frame. Although the plan form of the illustrated embodiment of the device is circular, it may be made any form in accordance with manufacturing expediency.

Mounted in the frame 24 is a hopper, generally indicated at 36, which has openings 38 and 40 at the bottom thereof in order to receive conventional lug boxes. The upper baffle plate 42 which forms a part of the hopper 36, directs the products of the harvest into the lower part of the hopper 36 and into the regular field lug boxes which are removably disposed on the rack 43 at the bottom of the hopper. Hence, the collected harvest is already in the boxes. If one tree does not yield enough to fill the harvest boxes, the device is rolled on its wheels to the next trees to complete the filling of the boxes.

Disposed at the top of the baffle plate 42 is a collar consisting of a semi-circular flange 44 and a lower plate 46 which is fixed removably to the baffle plate 42. The trunk of the tree is adapted to be encircled by the collar 44, an identical hopper construction and collar construction being supplied in connection with the frame 14.

Hangers 48 and 50 support the wheels 52 and 54 and said hangers are composed of frame construction. There are two wheels for each section so that the sections are easily moved from one location to the other. A stand 58 is operatively connected with the section 12 and forms a part thereof. A similar stand is provided for the section 14 and each stand has a handle 60 projecting therefrom for manual manipulation.

A cover 62 of canvas or any other suitable material is provided on the section 12 and a cover 66 is fixed to the extension part 28 and a similar cover is fixed to the extension part 30.

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Referring to Figure 8, the flange 68 is illustrated as being welded or otherwise rigidly fixed to the side 20. The corresponding side of the frame 14 is illustrated as having a channel 70 fixed thereto as by welding or the like. By interfitting the flange 68 in the channel 70, the two sections are releasably connected together after being set beneath a tree.

In order to operate the extensions, one extension being made of two extension parts as the part 28 and its counterpart associated with the frame 16, the means seen best in Figure 7 is supplied. A bed plate 72 is disposed on cross members 74 and 76 (Figure 4) which are, in turn, welded or otherwise rigidly fixed to a part of the stand 58 adjacent the hangers for the wheels. This bed plate has two racks 78 and 80, respectively, mounted in bearings (unnumbered) on the bed plate. A shaft 82, with a pinion 84 enmeshed with the teeth of the rack 78, is disposed in a bearing plate 86 and in a hanger 88. The hanger 88 is supported by the bed plate 72 while the bearing plate 86 is fixed to some of the vertical framing for the section 12. A pitman 92 is secured at one end to the rack and secured at the other end to the part 28 in order to pivotally operate said part 28. A pitman 94 is pivoted to one end of the rack 80 and at the other end pivotally connected with the extension part 30 whereby, upon operation of the shaft 96, the extension part is pivotally raised and lowered. The shaft 96 has a pinion 98 fixed thereto and enmeshed with the teeth of the rack 80. The shaft 96 is mounted similar to the shaft 82.

Each shaft 82 and 96, respectively, is provided with a ratchet 100 which is fixed thereto and a pawl 102 engageable with the teeth of the ratchet. One pawl is carried by the plate 86, while the other pawl is carried by the plate pertinent to the shaft 96.

In operation, the frames are moved together around the tree trunk until the collar having the flange 44 is in embracing relationship with the tree trunk. Then, if it is necessary, the extensions are operated to their extended position in order to collect the products of the harvest. When the products are being collected, they are disposed on the covers which are inclined toward a center. At this center, the hoppers or single hopper is located in order that the products may be collected and guided directly in the field boxes and then the boxes removed to be stacked.

Having described the invention, what is claimed as new is:

1. A fruit and nut collecting device comprising a frame which includes a pair of sections, one section having a channel and the other section having a flange releasably disposed in said channel thereby releasably connecting the sections, and a cover disposed on said sections, extensions hingedly secured to said sections, means for raising and lowering said extensions, said means including a rack bar, a guide carried by

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said frame with said rack bar disposed therein, means connected with said rack bar for displacing said bar, and a link connecting said rack bar with one of said extensions.

2. A fruit and nut collecting device comprising a frame which includes a pair of sections, one section having a channel and the other section having a flange releasably disposed in said channel thereby releasably connecting the sections, a cover disposed on said sections, extensions hingedly secured to said sections, means connected to said sections and said extensions for raising and lowering said extensions and for retaining said extensions in selected hinged positions, said frame having an inclined upper surface supporting said cover at an angle with respect to a horizontal plane, a hopper with a laterally arranged discharge opening connected with said frame and disposed at the lower part of said frame upper surface, and said hopper having a bottom located below said opening and constituting a seat for a field box.

3. A fruit and nut collecting device comprising a frame which includes a pair of sections, one section having a downwardly opening channel and the other section having an upwardly extending flange releasably disposed in said channel thereby releasably connecting the sections, a cover disposed on said sections, extensions, hinges hingedly secured to said sections and said extensions connecting said extensions to said sections, and means connected to said sections and said extensions for raising and lowering said extensions and for retaining said extensions in selected hinged positions, said frame having an inclined upper surface supporting said cover at an angle with respect to a horizontal plane, a hopper with a laterally arranged discharge opening and connected with said frame and disposed at the lower part of said frame upper surface, wheels with hangers secured to said frame supporting said wheels, and stands secured to said sections to support said sections beneath a tree.

4. The combination of claim 3 and said laterally arranged opening constituting a seat for a field box to be disposed in said hopper to collect the harvest.

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