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AUTOMATIC PACKAGE SEPARATOR FOR CONVEYER SYSTEMS

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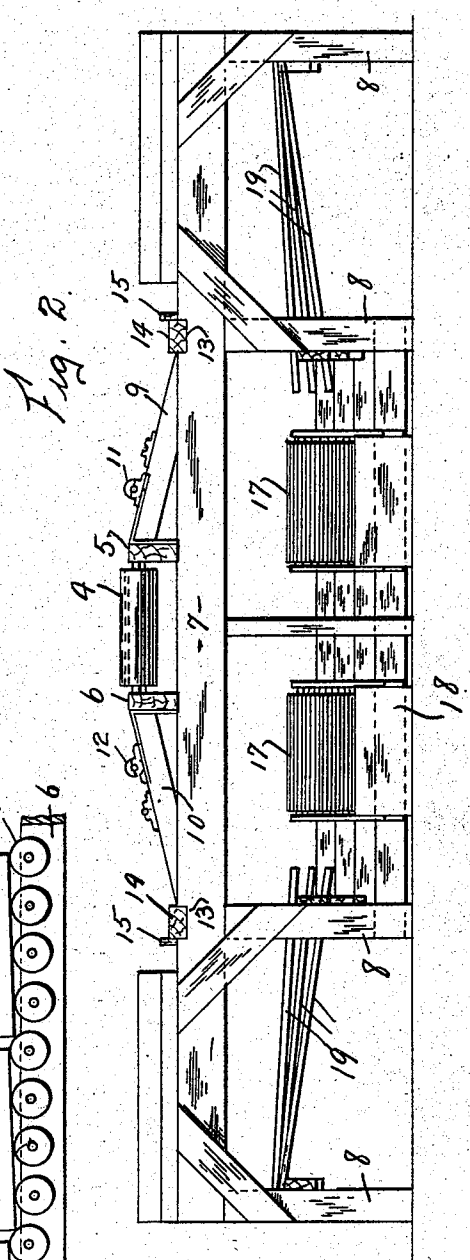


Fig. 2.

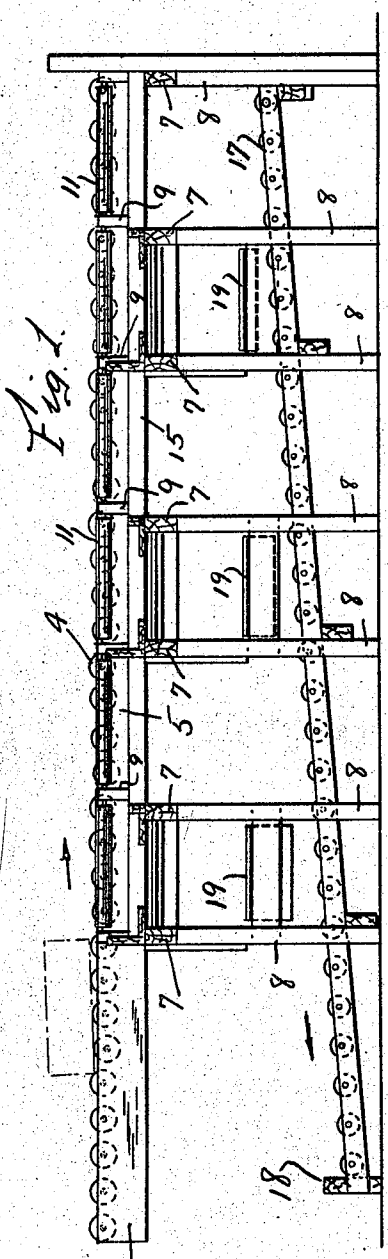


Fig. 1.

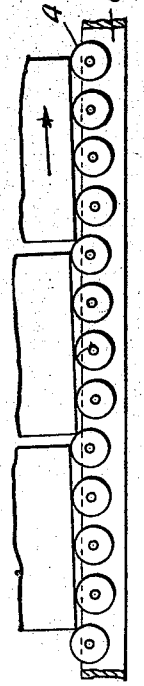


Fig. 3.

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AUTOMATIC PACKAGE SEPARATOR FOR CONVEYER SYSTEMS.

Application filed August 22, 1922. Serial No. 583,621.

To all whom it may concern:

Be it known that we, THOMAS M. MILLS and JOHN T. CLARK, citizens of the United States, and residents of the city of Fresno, county of Fresno, and State of California, have invented new and useful Improvements in Automatic Package Separators for Conveyer Systems, of which the following is a specification.

Our invention relates primarily to a package separator for gravity systems such as are used in distributing boxes to the packing tables used in packing fresh fruit.

Usually in packing fresh fruit the lug boxes in which the fruit is brought from the growers are fed to the packers along a conveyer table formed of rollers, at each side of which are provided the packing tables at which the packers stand and transfer the fruit from the lug boxes to the containers in which the fruit is marketed. The lug boxes travel along the conveyer table until a packing table is reached, when the packer there stationed pulls a box off the conveyer side ways on to said packing tables. Heretofore, in the use of this system considerable difficulty has been encountered by the packers in pulling the boxes off side ways owing to the fact that the ends of the boxes abutted together, necessitating great effort in separating the same.

It is the object of our invention to provide means in a device of the above character for automatically separating the boxes, thereby eliminating the above difficulties.

Other objects and advantages will appear hereinafter and, while we have shown and will describe the preferred form of our invention, we wish it understood that we do not limit ourselves to such preferred form but that various changes and adaptations may be made therein without departing from the spirit of our invention.

In the drawings accompanying and forming a part hereof:

Fig. 1 is a side elevation of a distributing table equipped with our device.

Fig. 2 is a left hand elevation of Fig. 1.

Fig. 3 is an enlarged fragmentary detail illustration of the prime feature of our invention.

Referring to the drawings, our device comprises a central conveyer table composed of rollers 4 supported by side members 5 and 6. Members 5 and 6 are supported at a suitable distance above the ground by transverse members 7 and legs 8. Extending downwardly and outwardly at an angle from the outer sides of members 5 and 6, and terminating at the upper edge of members 7, are the stationary tables 9 and 10 upon the upper face of which are mounted rollers 11 and 12, the purpose of which will be hereafter explained. Extending longitudinally of our table, formed in the upper edges of members 7, at the outer termination of members 9 and 10, are recesses 13 in which are mounted the box supporting members 14, the purpose of which is to support the lower ends of the lug boxes. Secured on the outer edges of members 13 are stops 15 which serve to hold the lug boxes positioned upon tables 9 and 10.

As best shown in Fig. 3, our conveyer table comprises a plurality of sets of rollers 4, the rollers of each set being mounted so that their upper surfaces form a slight incline or grade horizontally, the highest roller of one set and the lowest roller of the adjoining set being adjacent, the effect being to produce a series of inclines, the high roller of each set serving to prevent the boxes or packages from travelling backwards, the length of each grade being sufficiently longer than the packages to be handled to permit the same to become separated slightly.

In the use of our table the packages will be fed by hand or otherwise to the conveyer table at the inlet end 16 and will be propelled by hand, or otherwise, in the direction of the arrow in Figs. 1 and 3, each succeeding package or box being used to propel the row of boxes toward the other end in the usual manner. When the pressure is removed from the end of the row of boxes or packages each package will travel by gravity down its particular incline until the end contacts with the highest roller, when it will be brought to a stop. As the distance between the highest rollers is greater than the length of the packages the same will be separated thereby permitting any particular box being withdrawn side ways without interfering with any of the other boxes in the row. As the lug boxes are emptied by the packers the same are removed from the stationary tables and are placed upon the return conveyer 17 down which they travel by gravity to the end 18 from whence they are removed by the workman. The shelves 19

are provided to support cull boxes in which the culls are placed from the lug boxes during the packing, from whence they are removed in any desirable manner.

Having described our invention, what we claim is:

1. A conveyer table comprising a plurality of sets of rollers, the rollers of each set being so mounted that a plane passing centrally through all of said rollers is slightly inclined to the horizontal.

2. A conveyer table formed of a plurality of sets of rollers revolubly mounted at their ends, the rollers of each set being so mounted that their upper surfaces form an incline with the horizontal, the high roller of each set and the lower roller of each adjoining set being adjacent, whereby packages are prevented from moving backwards.

3. A conveyer table formed of a plurality of sets of rollers, the rollers of each set being so mounted that their upper surfaces are slightly inclined to the horizontal, the inclination of each of said set of rollers being in parallel planes.

4. A conveyer table comprising a plurality of rollers revolubly mounted at their ends, said rollers being so mounted as to form a plurality of inclines extending in the same direction, the highest roller and the lowest roller of the adjoining sets being adjacent.

5. A conveyer table comprising a plurality of rollers revolubly mounted at their ends, said rollers being so mounted as to form a plurality of inclines with the horizontal, the highest roller of each set acting as a stop to prevent the package supported by the adjoining set from moving backward.

6. A conveyer table formed of a plurality of rollers revolubly mounted at their ends to extend horizontally, said rollers being so positioned and arranged that packages carried thereby are permitted to return a short distance toward their starting point, whereby the adjoining ends thereof are spaced apart.

7. A conveyer table formed of a plurality of sets of rollers the rollers of each set being so mounted that their upper surface forms an incline to the horizontal, the direction of inclination being in the same direction for each set of rollers.

8. A conveyer table formed of a plurality of sets of rollers the rollers of each set being so mounted that their upper surfaces are inclined slightly with the horizontal, the incline of each set of rollers being in a parallel plane, said inclination being upward in the direction which the packages travel.

9. A conveyer table comprising a plurality of sets of rollers the rollers of each set being so mounted as to form a plurality of inclines with the horizontal, the inclination of each set of rollers being in parallel planes whereby the highest roller of each set acts as a stop to prevent the package carried by the adjoining set from moving backwards.

10. An automatic package separator for conveyer systems comprising a table formed of a plurality of sets of rollers along which packages are propelled, the rollers of each set being mounted so that their upper surfaces form an incline plane, said inclination extending upwardly in the direction of travel of said packages, the highest roller of each set acting to limit the backward movement of the package supported by the adjoining set, the incline of each set being of a length to permit a slight backward movement of the packages when pressure is removed therefrom, whereby the adjoining ends of said packages are separated.

11. In an automatic package separator for conveyer systems a conveyer table formed of a plurality of sets of rollers along which packages are adapted to be propelled, the rollers of each set being so mounted that when said propelling means is inoperative each of said packages will travel a short distance backward, whereby the adjacent ends thereof are caused to separate.

In witness that we claim the foregoing we have hereunto set our hands this 11th day of August, 1922.

THOMAS M. MILLS.
JOHN T. CLARK.