W. H. BECKMAN.

PACKING STAND.

APPLICATION FILED MAR. 13, 1916.

1,238,248. Patented Aug. 28, 1917.

Fig. 1.

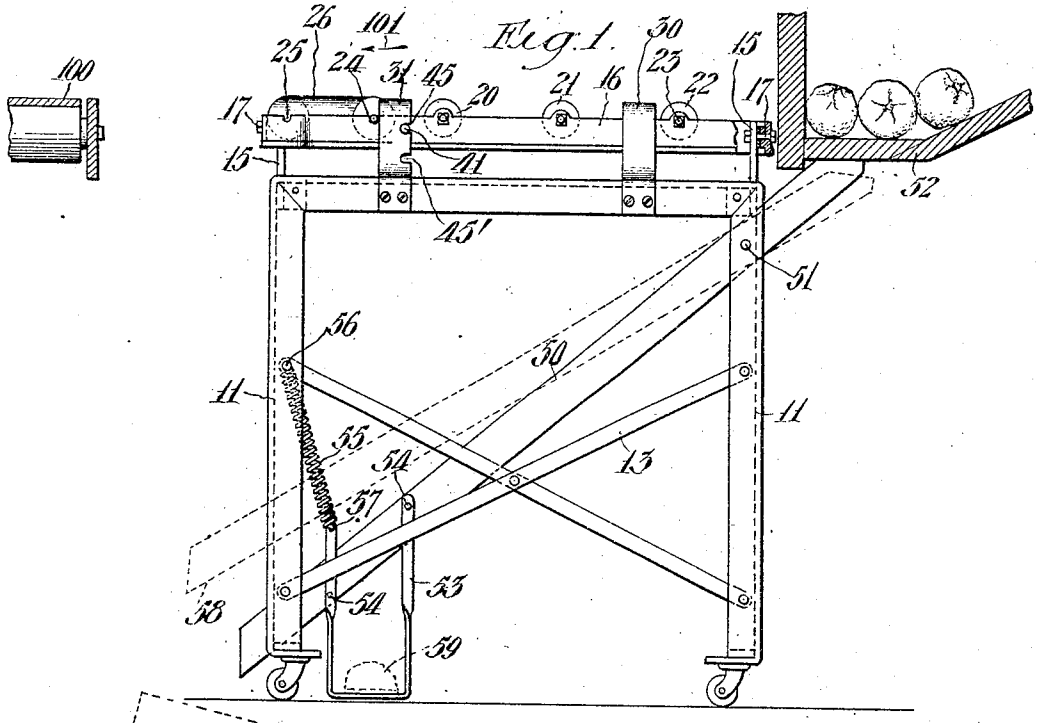


Fig. 2.

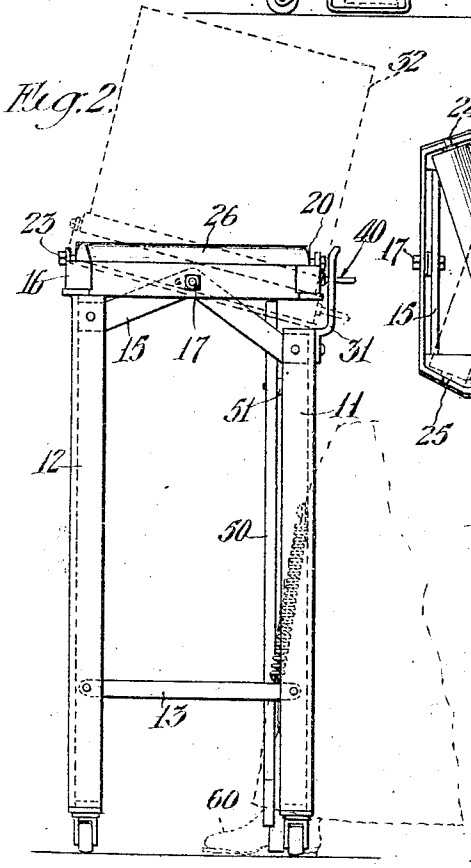


Fig. 3.

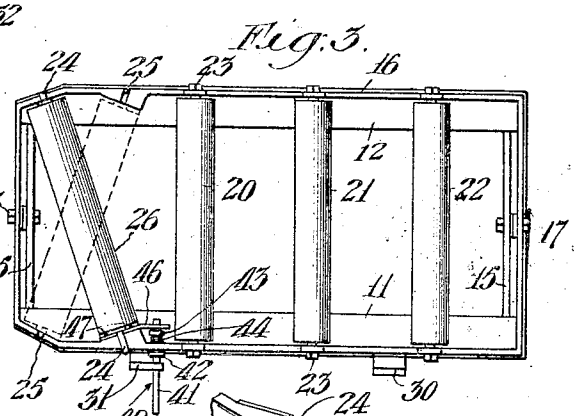
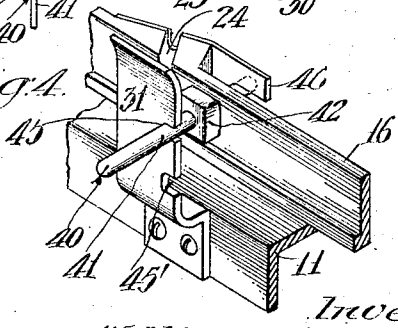


Fig. 4.



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UNITED STATES PATENT OFFICE.

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PACKING-STAND.

1,238,248. Specification of Letters Patent. Patented Aug. 28, 1917.

Application filed March 13, 1916. Serial No. 83,989.

To all whom it may concern:

Be it known that I, WILLIAM H. BECKMAN, a citizen of the United States, residing at San Gabriel, in the county of Los Angeles and State of California, have invented a new and useful Packing-Stand, of which the following is a specification.

My invention relates to the art of packing, and while it is particularly applicable to the art of packing oranges, or other fruits, in boxes or cartons, it may be used in the packing of any articles which are similarly handled. It will, however, be described in connection with the citrus fruit industry as practised in California. In this industry it is common practice to provide bins into which the fruit is delivered from the grader, the different bins containing fruit of different sizes. The packer, usually a woman, takes the fruit from the bins, wraps it in paper, and places it in boxes which are usually provided with a central partition extending across the box intermediate of the ends thereof, dividing it into two compartments.

The principal object of my invention is to provide a packing stand on which the boxes may be placed, this stand being so arranged that the boxes can be quickly handled with a minimum of physical effort, so that men are not required. To accomplish this object various means are employed which will be described more fully hereinafter.

Referring to the drawings, which are for illustrative purposes only:

Figure 1 is a side elevation of my invention, a portion thereof being shown in section to better illustrate the construction, the invention being shown as used in connection with a bin.

Fig. 2 is an end view of my invention.

Fig. 3 is a plan view, and Fig. 4 is a perspective view of a preferred form of latch.

In the form of my invention illustrated in these drawings, a stand is provided, this stand being preferably formed of angle iron members 11 and 12 joined together by suitable braces 13 and provided with suitable casters. End pivot members 15 are secured across either end of the stand between the members 11 and 12, and a table 16, preferably of cast metal, is pivoted on bolts 17, these bolts being rigidly secured in the members 15. Journaled in the table 16 are a series of parallel rollers 20, 21 and 22, these rollers having journals 23. At the end of the stand two sets of bearings 24 and 25 are provided, these bearings being for the purpose of receiving an end roller 26, as shown in the plan view, Fig. 3. This end roller 26 may be mounted in the position shown in full lines at an angle with the parallel rollers 20, 21 and 22, or it may be mounted in the bearings 25 at a reversed angle, as shown in dotted lines. Rigidly secured to the angle iron member 11 is a pair of stops 30 and 31, these stops being of such a length that they are slightly below the upper surface of the rollers 20, 21, 22 and 26 when the table 16 is in its level position, but project considerably above the upper edge of the rollers when the table is turned into its inclined position, as shown in dotted lines in Fig. 2. With the table in the inclined position, a box 32, shown in dotted lines in Fig. 2, resting on the rollers is thrown against the stops 30 and 31. When in this position the stops 30 and 31 restrain the box from sliding off the rollers toward the packer, these stops also preventing the box from moving on the rollers in a direction at right angles to the packer. For the purpose of restraining the table 16 in either its level or inclined position, a stop 40 is provided, this stop consisting of a pin 41 which passes through a hole in the side of the table 16, this pin being provided with nuts 42 and 43 and a spring 44 which is placed between the nut 43 and the casting and tends to hold the pin 41 in its central position. The forward end of the pin 41 engages an upper slot 45 or a lower slot 45′ in the stop 31, the rear end of the pin 41 sliding in and being guided by a guide 46, this guide being secured by means of rivets 47 at the inner end of the casting 16.

For the purpose of securely locking the stand in position with relation to the bin, I provide a lever 50, this lever being pivoted to one of the angle iron members 11 on a bolt 51 and extending under the bin 52 in the position shown in Fig. 1. A stirrup 53 is secured by means of rivets 54 to the lever 50, and a tension spring 55 is secured at its upper end on a pivot 56 carried on the angle iron member 11, being secured at its lower end to a hole 57 formed in the stirrup 53, this spring being so formed that it tends to pull the lever 50 into the position shown in dotted lines at 58, the stirrup 53 being so located that the packer, by stepping upon it,

can pull it down into the position shown in full lines in Fig. 1, the foot of the packer being shown in dotted lines at 59 in Fig. 1 and in dotted lines at 60 in Fig. 2.

The method of operation of the invention is as follows:

The packer places an empty box on the rollers 20, 21 and 22, the roller 26 being placed in the position shown in full lines in Fig. 3, or in the position shown in dotted lines, the position depending on the direction of motion of the conveyer 100. The stand is then rolled up adjacent to the bin 52, the end of the lever 50 projecting thereunder. The packer then steps upon the stirrup 53, pulling the lever 50 down into the position shown in full lines in Fig. 1 and forcing the end of the lever under the bin 52 and securely locking the stand to the bin 52. The packer then seizes the end of the pin 41, pulling it out of the slot 45 and forcing the table 16 down into the inclined position shown in dotted lines in Fig. 2, the box 32 assuming the position shown in dotted lines in Fig. 2, and the pin 41 being thrown into the slot 45′ by the spring 44. The box 32 then slides against the stops 30 and 31 and is supported thereby, these stops locking the box securely in position. The packer then fills the end compartment of the box 32, nearest the bin 52, with the wrapped fruit. When this compartment is filled, the packer seizes the pin 41 and pulls it out of the slot 45′, at the same time pressing against the box 32 and forcing the table 16 to assume a level position. The table is then locked in its level position by means of the pin 41 which snaps into the slot 45 under the influence of the spring 44, the table being thus supported in a level position. The stops 30 and 31 being somewhat lower than the upper surface of the rollers 20, 21 and 22, the box 32 may be completely turned around, the bottom of the box clearing the stops 30 and 31 as it is turned.

The box 32 being turned around, the packer releases the pin 41 and throws the table 16 into its inclined position, locking it in this position by means of the pin 41. The other end compartment of the box 32 may then be filled with fruit. The whole box being filled the foot of the packer then releases the stirrup 53, the spring 55 pulling the lever 50 into the position shown in dotted lines at 58, the extreme end of the lever 50 being released from the bin 52 so that the stand may be wheeled across into the position adjacent to the conveyer which is shown at 100 in Fig. 1. The packer throws the table 16 to the level position by releasing the pin 41 from the slot 45′, allowing it to enter the slot 45, thus locking the table in the level position. The conveyer 100 runs at right angles to the long dimension of the stand and the box 32 as it rests upon the stand. The packing is preferably done by girls who are ordinarily unable to lift the filled boxes, and to obviate this I have provided the inclined end roller 26, the packer simply pushing the box in the direction of the arrow 101 in Fig. 1, and the end roller 26 turning the box so that the roller 26 and the conveyer 100 work in unison, swinging the box through an angle of 90° so that it is deposited longitudinally of the conveyer 100 without any special effort on the part of the packer. For the purpose of providing for conveyers moving in either direction the end roll 26 may be mounted in either of two positions.

I attach particular importance to the manner of pivoting the table 16. By pivoting this table near its center, the box of fruit 32 is very nearly balanced, so that the table can be readily shifted from the inclined to a level position. As there is very little change in the height of center of gravity of the box 32, in shifting from the inclined to the level position, this change can be very readily made and with very little muscular effort. This is important as a great deal of the fruit is packed by women and girls. As a box of oranges weighs approximately eighty pounds, and as the packers handle a considerable number of boxes in the course of a day, it is evident that the muscular effort required to lift any considerable portion of the weight of these boxes, would be beyond the endurance of the ordinary packers.

I claim as my invention:—

1. In a packing stand, a series of parallel rollers on which the box to be packed may be supported, and an end roller in the same plane as said parallel rollers but at an inclination to them.

2. In a packing stand, a series of parallel rollers in the same plane, an end roller in said plane, a support in which said parallel rollers are carried, and means on said support for carrying said end roller in one or more angular positions with relation to said parallel rollers.

3. In a packing stand, a frame, a table centrally pivoted at either end on said frame, rollers in said table on which the box or carton to be packed may rest, means for securing said table in a level position, and means for securing said table in an inclined position.

4. In a packing stand, a frame, a table centrally pivoted at either end on said frame, rollers in said table on which the box or carton to be packed may rest, means for securing said table in a level position, means for securing said table in an inclined position, and stops rigidly secured to said frame in such a position that the box to be packed rests against them when the table is inclined, but swings over them when the table is level.

5. In a packing stand, a frame, a table centrally pivoted at either end on said frame, stops secured to said frame and projecting above the edge of said table when said table is inclined, said stops being of such a length that a box resting on said table will swing over said stops when said table is level, and means for securing said table in either a level or an inclined position.

6. In a packing stand, a frame, a table centrally pivoted at either end on said frame, stops secured to said frame and projecting above the edge of said table when said table is inclined, said stops being of such a length that a box resting on said table will swing over said stops when said table is level, and a latch carried on said table and engaging one of said stops to lock said table in either a level or an inclined position.

In testimony whereof, I have hereunto set my hand at Los Angeles, California, this 8th day of March, 1916.

WILLIAM H. BECKMAN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."