

Sept. 1, 1964

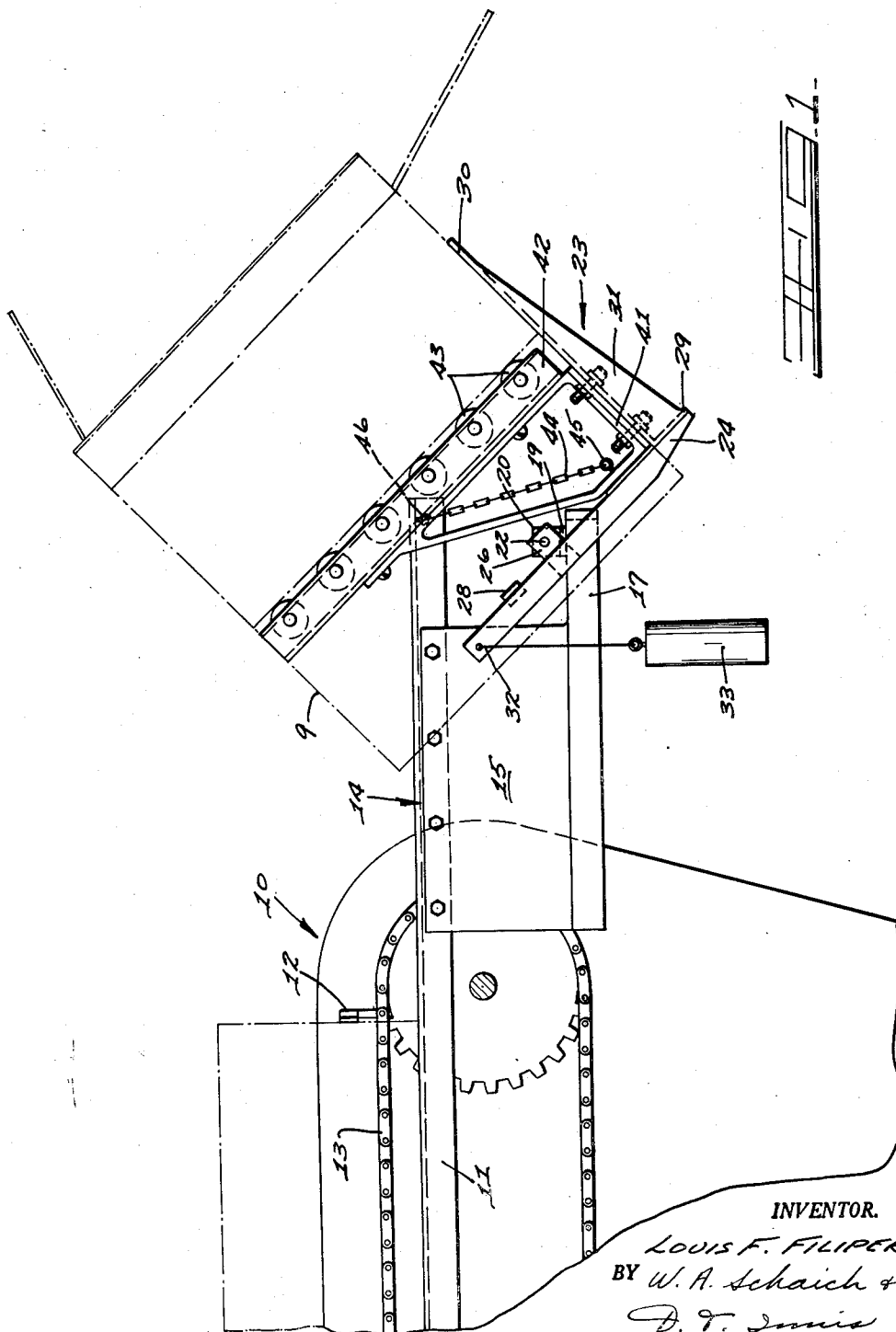
L. F. FILIPEK

3,146,567

PACKING BUCK

Filed April 30, 1962

3 Sheets--Sheet 1



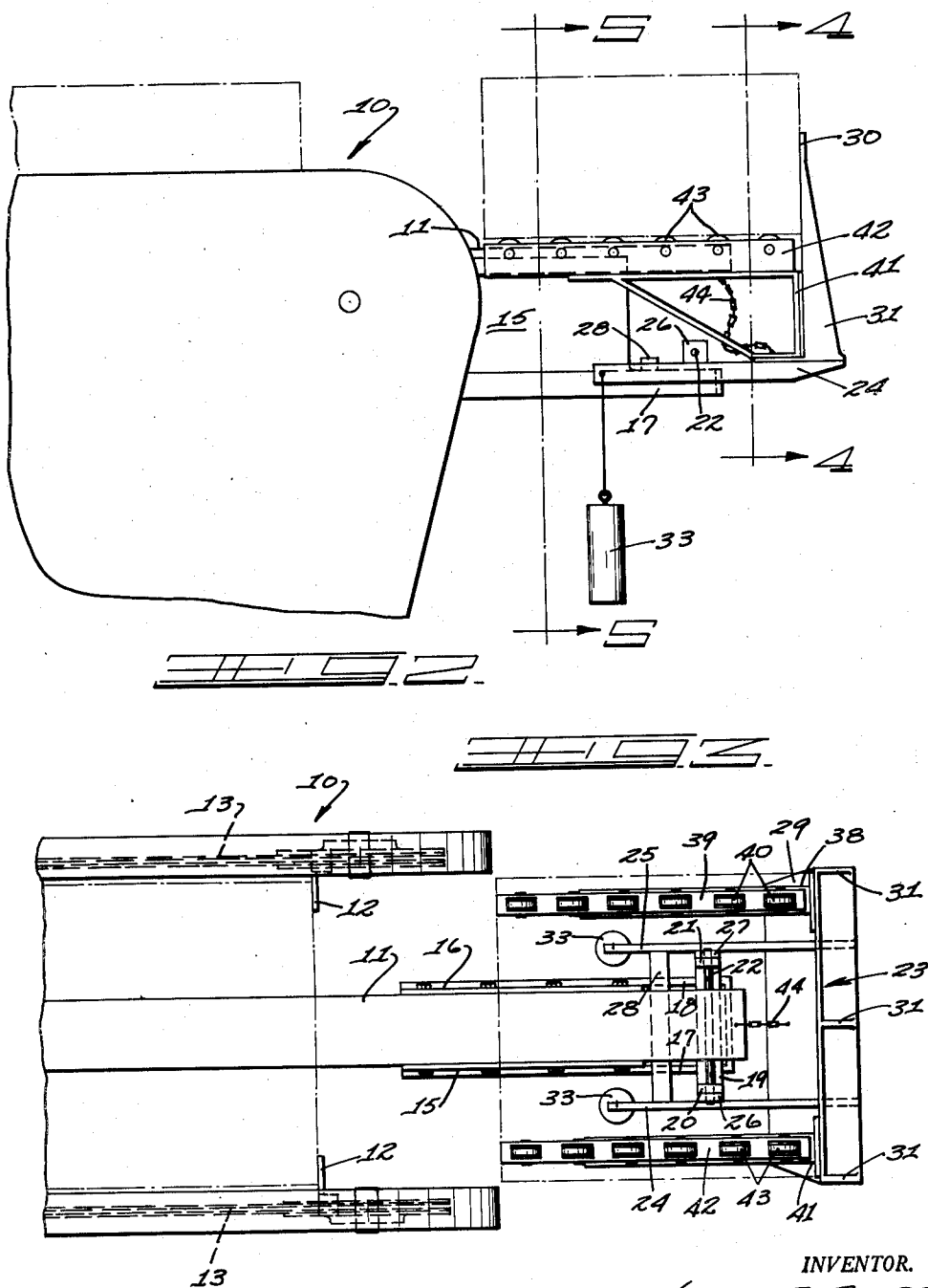
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3 Sheets--Sheet 2



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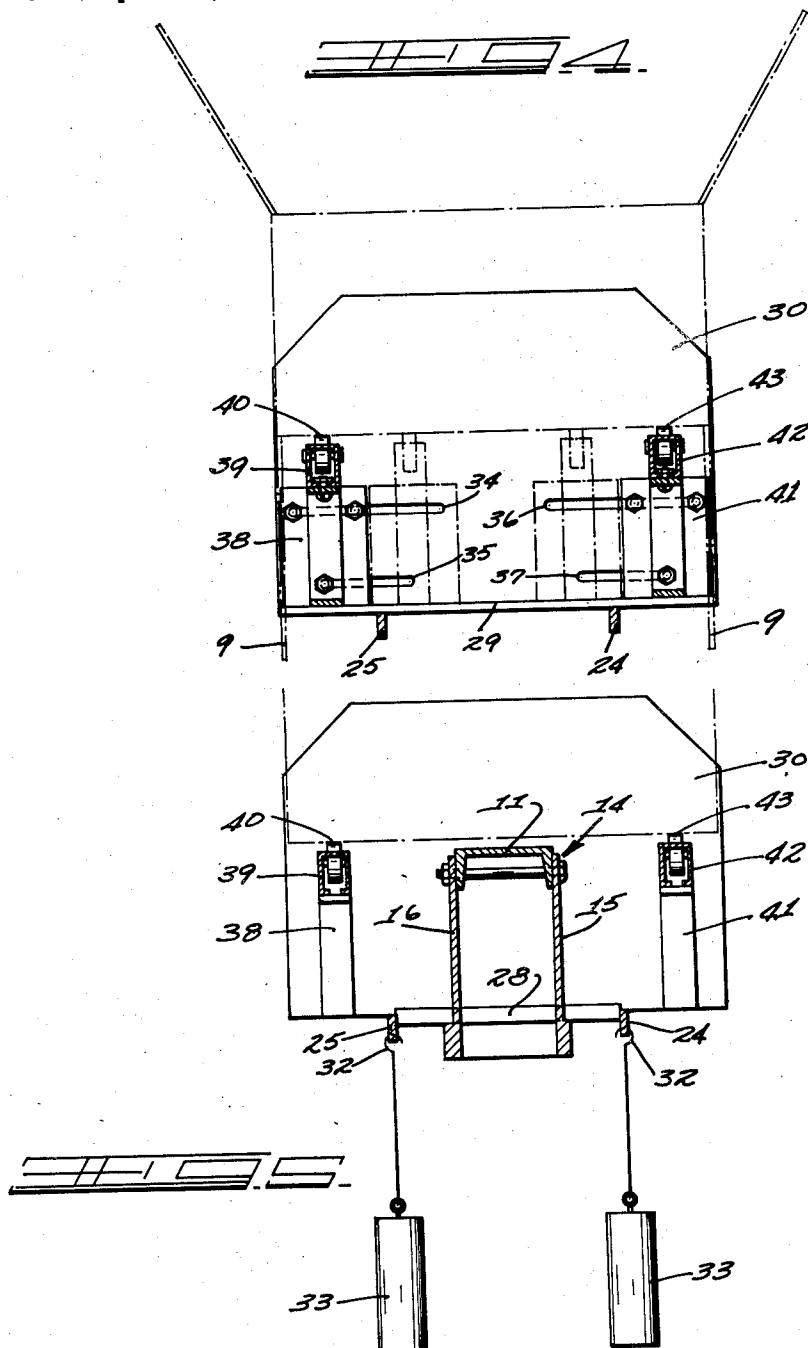
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PACKING BUCK

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This invention relates to an apparatus for supporting cartons at an angle of approximately 45° for ease in packing and which is tiltable to a horizontal position for sliding the filled cartons into a carton sealer.

More specifically this invention relates to a tilting carton buck which is mounted on the loading end of a carton sealing machine and has a counter-weighted frame that is easily moved into a horizontal position with a filled carton resting thereon.

It has been the practice to load cartons with glassware adjacent the end of alehr belt while the cartons are horizontal and after the carton is loaded, it was necessary to lift the carton onto a conveyor or stack them on a pallet.

With the present invention an operator may transfer glassware from a lehr belt or straight line conveyor and place the ware in the carton which is supported at approximately a 45° angle. After the carton is loaded it may be easily tilted onto a horizontal position and by mounting the tilting buck to the end of a carton sealer, it is only necessary to push the carton in a horizontal direction from the buck onto the feed end of the sealer. This requires little effort on the part of the operator and eliminates separate handling of filled cartons between the location where the cartons are loaded and the position of the carton sealer.

With the foregoing in mind it is an object of this invention to provide apparatus for supporting unsealed cartons, tilted at an angle toward the operator during loading of the carton, and after filling of the carton, the support can be tilted with a minimum of effort into horizontal alignment with the feed end of a carton sealing machine.

A further object of this invention is to provide a tilting carton buck using spaced apart flow tracks which may be adjusted relative to each other to accommodate cartons of varying sizes with their side-connected, bottom flaps extending downward.

Other and further objects will be apparent from the accompanying drawings wherein:

FIG. 1 is a side elevational view of the carton buck of the invention attached to the end of a sealer.

FIG. 2 is a view similar to FIG. 1 showing the carton buck of the invention in a non-tilted position.

FIG. 3 is a top plan view of the apparatus of FIG. 2.

FIG. 4 is a sectional view taken at line 4—4 of FIG. 2 on a slightly enlarged scale, and

FIG. 5 is a sectional view taken at line 5—5 of FIG. 2 on the same scale as FIG. 4.

Referring to the drawings, there is shown the end portion of an A-B-C "Junior" Case sealer manufactured by the A-B-C Packaging Machine Corporation, Tarpon Springs, Florida, and generally designated by the reference numeral 10. The sealer 10 has a channel 11 extending from the end thereof onto which cartons to be sealed are normally placed and then slid to the left until a pair of dogs 12 engage the back of the carton to move it into the mechanism of the sealer. The dogs 12 are located on opposite sides of the channel 11 and connected to continuously moving chains 13. As shown on FIGS. 1 and 4, a carton (shown in phantom line) which is fed to the sealer has its side-connected bottom flaps 9 extending vertically downward. At the same time the end-connected bottom flaps are turned in, and in a sense, act as

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the temporary bottom of the carton while it is resting on the carton buck and being loaded.

The above description relating to the sealer forms no part of this invention as such, but is necessary to set forth the environment in which the invention is used. It should be kept in mind that the invention could be used with carton sealers other than the above, specifically referred to carton sealer.

A mounting frame generally designated 14 is formed from a pair of rectangular plates 15 and 16 which are spaced apart with their upper edges bolted to the sides of the channel 11. Both plates have rearwardly extending portions 17 and 18 which are joined together at their extending ends. A horizontal bar 19 is fastened between the portions 17 and 18 and has upstanding flange members 20 and 21 fastened thereto adjacent the ends of the bar. These flange members have openings therethrough for receiving a horizontal shaft 22 which serves as the pivot axis for a rack, generally designated 23. The rack 23 includes a pair of side bars 24 and 25. Intermediate the length of the bars are bearing brackets 26 and 27 through which the shaft 22 is adapted to extend. The forward ends of the bars 24 and 25 are joined together by a cross bar 28 and the opposite ends of the bars 24 and 25 have a flat plate 29 fastened thereto and spanning the distance between the two bars. The plate 29 has an integrally formed plate 30 extending normally from the upper surface thereof. Inasmuch as the plate 30 is the member which retains the carton on the rack, it has a number of fillets 31 welded thereto to increase its strength.

The ends of the bars 24 and 25 opposite the plate 30 have small holes drilled therethrough to accommodate a pair of hooks 32 from which a pair of counter-weights 33 are suspended. While the counter-weights are specifically shown, it should be kept in mind that other means having the same functional effect could be used, for example, tension springs.

As best shown in FIG. 4, the plate 30 has four horizontal slots 34, 35, 36 and 37 formed therethrough. The slots 34 and 35 serve as bolt holes for adjustably connecting a track bracket 38 thereto. The bracket 38 has an upper horizontal member to which a flow track 39 is attached. The flow track has a series of free-running wheels 40 therein. The wheels are mounted in the track such that a portion of their circumference extends above the upper surface of the flow track side rails. A second track bracket 41 is adjustably bolted to the plate 30 by bolts extending through the slots 36 and 37. The bracket 41 also has a flow track 42 fastened to its upper surface within which free-running wheels 43 are adapted to rotate.

When the carton supporting buck of the invention is positioned for loading as shown in FIG. 1, the flow track is tilted at an angle of approximately 45°. The amount of tilt is adjustable for the convenience of the selector who is loading the cartons. However, as shown in FIG. 1, a chain 44 extends between an "eye" bolt 45 fastened to the plate 29 and an "eye" bolt 46 fastened to the under surface of the channel 11 to limit the angle of tilt to approximately 45°. It has been observed that this is the most convenient angle for a selector when loading the cartons.

As shown in FIG. 1 in phantom line, a carton when in position to be loaded will have its two end-connected bottom flaps folded toward each other and resting on the flow track wheels 40 and 43. One end of the carton will be resting against the plate 30. Inasmuch as the sealer 10, to which the filled cartons are to be fed, requires that the side-connected bottom flaps be extending vertically downward, clearance must be provided for these flaps. With this in view, the adjustability of the

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brackets 38 and 41 is necessary so that the invention may be used in handling cartons of varying widths. After a carton is filled, the selector will tilt the rack in a counter-clockwise direction. This tilting is assisted by the counter-weights 33 and the rack is prevented from rotating beyond a horizontal plane by the cross bar 28 contacting the upper edges of the rearwardly extending portions 17 and 18 of the side plates 15 and 16. With the rack in the position shown in FIG. 2, it is only necessary for the operator to push the loaded carton to the left to introduce the carton into the sealer.

Thus it can be seen that applicant has provided apparatus for supporting a carton while being loaded by a selector or operator which positions the carton in a convenient manner. Additionally, the apparatus of the invention provides a convenient and easily tiltable carton buck attached to the sealer which obviates the necessity of the cartons being lifted or moved except as assisted by the carton buck.

Various modifications may be resorted to within the spirit and scope of the appended claims.

I claim:

1. Apparatus for supporting cartons at an angle for ease in loading, comprising a fixed mounting frame, means for connecting the frame to the end of a carton sealer, a rack, means pivotally connecting said rack to said fixed mounting frame, said rack comprising a pair of elongated bars joined together at one end by a first flat plate, a second plate connected to and extending normally to the surface of said first plate, a pair of flow tracks, means for fastening said flow tracks to said second plate spaced above and parallel to said first plate, counter-weight means connected to the ends of said bars opposite the ends connected to said first flat plate, means connected between said mounting frame and said rack for limiting the amount of tilt of said rack with respect to said mounting frame, whereby cartons placed on said flow tracks may be loaded in a tilted position and pivoted into horizontal alignment with the sealer to which it is attached.

2. Apparatus as defined in claim 1 wherein said fastening means is adjustable for adjusting the spacing of said flow tracks with respect to each other, whereby cartons of varying sizes, having their side connected bottom flaps open, may be accommodated.

3. Apparatus for supporting cartons at an angle for ease in loading, comprising a fixed mounting frame, means for connecting the frame to the end of a carton sealer, a rack, means pivotally connecting said rack to said fixed mounting frame, said rack comprising a pair of elongated bars joined together at one end by a first flat plate, a second plate extending normally to the sur-

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face of said first plate, a pair of track brackets, means for fastening said track brackets to said second plate, a pair of flow tracks, means for connecting one of said flow tracks to the stop of each track bracket, counter-weight means connected to the ends of said bars opposite the ends connected to said first flat plate, means connected between said mounting frame and said rack for limiting the amount of tilt of said rack with respect to said mounting frame, whereby cartons placed on said flow tracks may be loaded in a tilted position and pivoted into horizontal alignment with the sealer to which it is attached.

4. Apparatus as defined in claim 3 further including means for adjusting the spacing of said flow tracks with respect to each other, whereby cartons of varying sizes, having their side connected bottom flaps open, may be accommodated.

5. Apparatus for supporting partially closed cartons alternately at an angle for ease in loading and pivoted into horizontal alignment with sealing apparatus for ease in delivery of the filled carton into the sealing apparatus comprising, in combination, a mounting frame, means for connecting the mounting frame to the input end of the sealer and a rack, said rack comprising a pair of spaced apart, coextensive elongated bars, a first plate joined to one end of said pair of bars, said first plate being horizontal when said rack is pivoted into delivery position, a second plate having a length greater than the spacing between said bars, said second plate being joined to the upper surface of said first plate and extending at right angles thereto, a pair of flow tracks, a pair of brackets having upper horizontal members, means connecting one flow track to the upper horizontal member of each said bracket, means for connecting each track bracket to said second plate so that each track extends at right angles to the surface of said second plate and generally parallel to but spaced above said elongated bars, means interconnecting said bars and frame, intermediate the length of said bars for pivotally supporting said rack with respect to said frame, flexible means connected between said frame and rack for limiting the amount of tilt of said rack in one direction and means carried by said bars and engageable with said frame for limiting the amount of tilt of the rack in the opposite direction to ensure the flow tracks being in a horizontal position for delivery of the filled carton to the sealer.

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