

A. L. BAUSMAN.

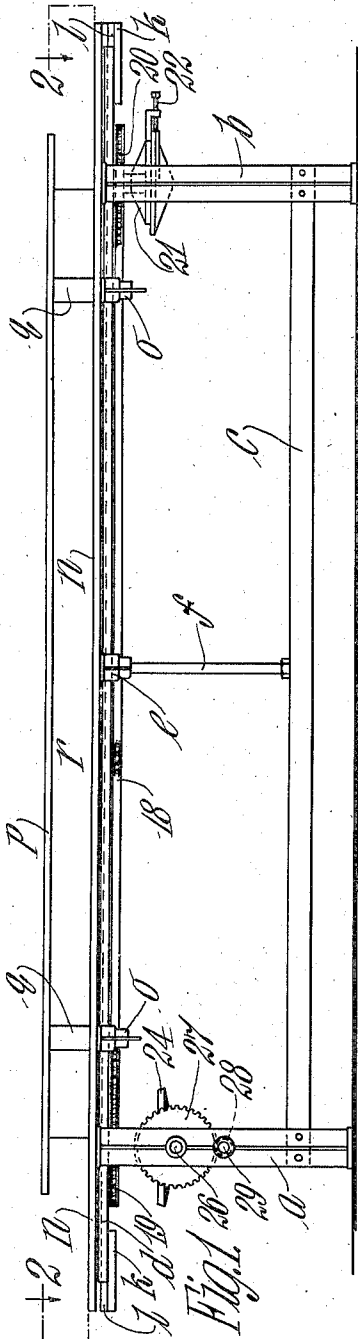
PACKING TABLE.

APPLICATION FILED FEB. 12, 1917.

Patented Aug. 20, 1918.

2 SHEETS—SHEET 1.

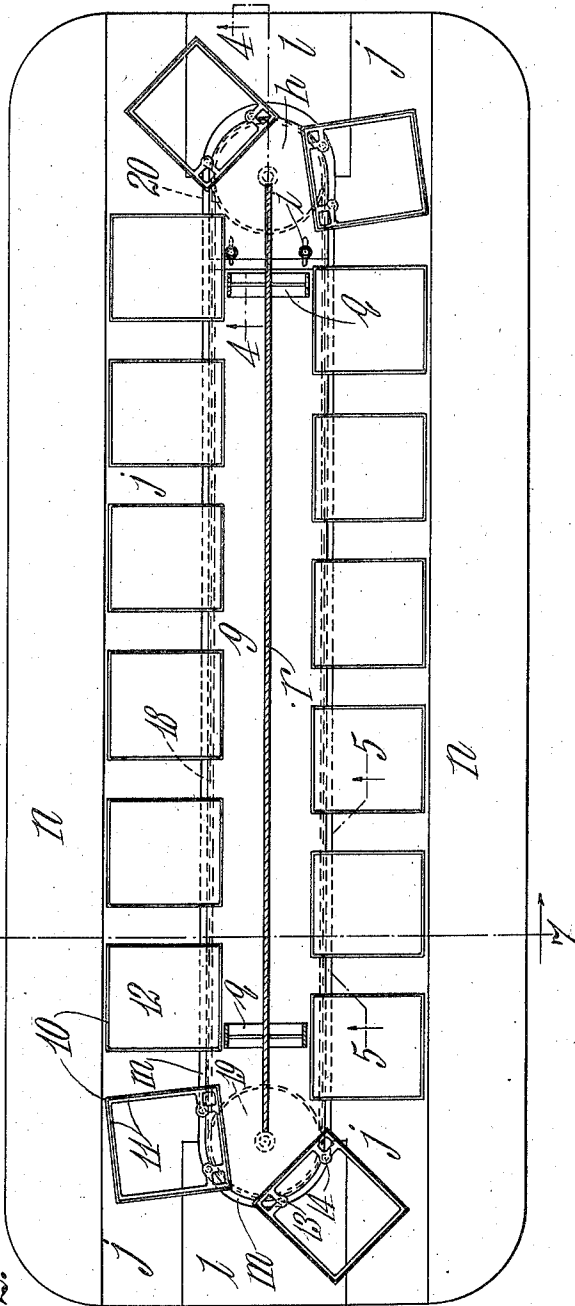
1,276,007.



WITNESSES:

H. E. Hartwell.

Fig. 2.



INVENTOR.

Alonzo L. Bausman.

BY

Chapman & Neal.

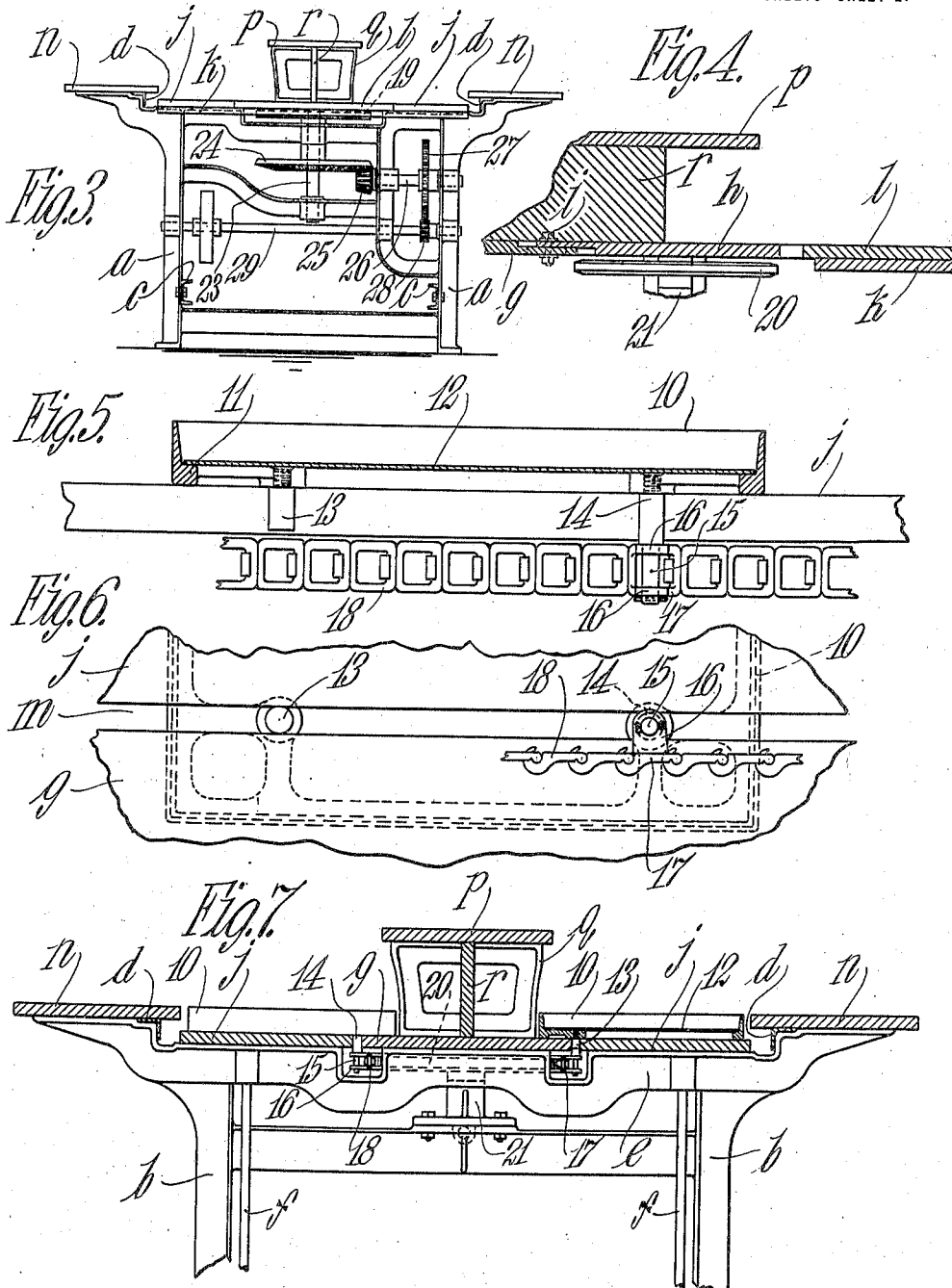
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BY *Chapin & Neal*

ATTORNEYS.

UNITED STATES PATENT OFFICE.

ALONZO LINTON BAUSMAN, OF CHICOPEE, MASSACHUSETTS, ASSIGNOR TO NATIONAL EQUIPMENT COMPANY, OF SPRINGFIELD, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS.

PACKING-TABLE.

1,276,007.

Specification of Letters Patent. Patented Aug. 20, 1918.

Application filed February 12, 1917. Serial No. 148,281.

To all whom it may concern:

Be it known that I, ALONZO LINTON BAUSMAN, a citizen of the United States of America, residing at Chicopee, in the county of Hampden and State of Massachusetts, have invented certain new and useful Improvements in Packing-Tables, of which the following is a specification.

This invention relates to improvements in packing tables. The invention, while capable of general application, finds one preferred specific use as an aid to confectioners in the packing of candies, particularly assorted candies.

Packing tables broadly have been used heretofore, and United States Letters Patent No. 1,023,102, granted to A. L. Bausman and D. C. Cottreal April 9, 1912, shows one example of the prior art. Packing tables have come into extensive use in the confectioner's art and serve to advantage, not only as labor saving devices to eliminate useless motions of and prevent waste of time by packers, but also as an efficient means to standardize the packing of assorted candies and thus to make the assortment in each package uniform in number and kind.

An object of the invention is to provide in a packing table, a series of movably mounted trays with means to move the latter and devices to guide the trays in a closed loop path along the table, the construction being characterized in that the trays always move in a single substantially horizontal plane.

A further object of the invention is to provide in a packing table a generally improved and economical arrangement of mechanical structure as will be hereinafter pointed out with particularity in the appended claims.

The invention, in an embodiment at present preferred, is shown for illustrative purposes in the accompanying drawings, in which—

Figure 1 is a side elevational view of the improved packing table;

Fig. 2 is a sectional plan view taken on the line 2—2 of Fig. 1;

Fig. 3 is an elevational view of the left end of Fig. 1;

Fig. 4 is a partial sectional elevation taken on the line 4—4 of Fig. 2;

Fig. 5 is a partial sectional elevation taken on the line 5—5 of Fig. 2;

Fig. 6 is a bottom plan view of Fig. 5; and

Fig. 7 is a fragmentary cross sectional view taken on the line 7—7 of Fig. 2.

Referring to these drawings in detail and particularly to Figs. 1, 2, 3, and 7, the supporting frame of the packing table comprises a pair of end standards *a* and *b* which are held together in spaced relation by a pair of longitudinally disposed channel irons *c* (Figs. 1 and 3) arranged near the base of the standards and by a pair of similarly disposed angle irons *d* (Figs. 1, 3, and 7) arranged near the top of the standards. A horizontal frame *e* is arranged intermediate the latter in parallel relation therewith and is supported from channels *c* by a pair of posts *f*, as clearly shown in Figs. 1 and 7.

Supported by the members *a*, *b*, and *e* and fixed thereto by any suitable means are a plurality of horizontally arranged boards which form the top of the packing table. A board *g* is centrally arranged with respect to the several members *a*, *b*, and *e* and the end of board *g* adjacent standard *a* is of semi-circular shape, as clearly shown in Fig. 2. Referring to Figs. 2 and 4, the other end of member *g* is connected by a "half-joint" to a board *h*, one end of which is semi-circular in shape. Bolts *i* pass through the scarfed portions of boards *g* and *h*, moving in suitable slots in the former (Fig. 2), and thereby hold the boards together and permit longitudinal adjustment of board *h* for a reason which will later appear. On each side of board *g* and in the same horizontal plane therewith is a board *j* which is laterally spaced as shown in Figs. 2 and 7 from the member *g*. The ends of boards *j* are connected together by laterally arranged boards *k* fixed to the under side thereof (Figs. 1, 3, and 4) and boards *l* rest upon and are suitably fixed to boards *k*. Members *l* close the space between the boards *j* and the inner ends of the former are cut out in semi-circular shape to fit around the semi-circular ends of boards *g* or *h* in spaced relation therewith. Thus, a continuous slot *m* is formed between the members *g*, *h*, *j*, and *l*, which slot forms a closed loop in the table top.

On the outer side of each board *j* is a board *n* which is raised above the plane of members *g* and *j*, as shown in Figs. 3 and 7 and is adapted for use as a packing shelf. Frame members *o* (Fig. 1) similar to member *e* arranged intermediate each end standard and frame *e* connect the boards *g*, *j*, and *n* and provide an adequate support for the ends of boards *g* and *h* which, as will be evident from an inspection of Fig. 3, do not have an adequate bearing on the standards *a* and *b*. A centrally arranged raised shelf *p*, to hold empty boxes or other things conveniently in position for the packers, is supported from and above board *g* by a pair of brackets *q* and a centrally disposed vertical partition board *r*.

The members *g*, *h*, *j*, and *l* are arranged all in the same plane and form a supporting surface for a plurality of traveling trays 10, and the slot *m* constitutes a guiding means to control the direction of movement of these trays. The trays 10 are of rectangular shape and may be advantageously formed by casting. Referring to Figs. 5 and 6, the bottom of each tray is open, there being only a narrow inwardly turned rim 11 which is adapted to support a thin plate 12. The latter constitutes a removable bottom for the tray and in Fig. 2 several of the trays 10 have been shown for illustration with plates 12 removed. Fixed in lugs on each tray 10, as best shown in Fig. 5, are pins 13 and 14 which extend downwardly from the tray into the guide slot *m*. The pin 13 is substantially equal in length to the thickness of members *g* and *j*, but pin 14 has a necked down extension 15 which extends below these members, as shown in Fig. 5. The extension 15 loosely fits in and extends through a pair of spaced ears 16 projecting outwardly from a suitable chain attachment 17. These several members 17 are connected at suitable intervals into a chain 18, and the latter is mounted upon spaced sprockets 19 and 20, the axes of which are disposed vertically and substantially in under the center of curvature of the ends of boards *g* and *h*, as shown in Fig. 2. Sprocket 20 is an idler and is rotatably supported in a bracket 21 which is adjustably secured as indicated in Figs. 1 and 7 to the standard *b*. By turning a screw 22 threaded in bracket 21, the latter may be moved horizontally relatively to standard *b* to tighten chain 18 in an obvious manner. Sprocket 19 is fixed to a shaft 23, rotatably mounted, as shown in Fig. 3, in standard *a* and also fixed to the shaft below the sprocket is a bevel gear 24. A bevel pinion 25 meshes with the latter and is fixed to the end of a horizontally arranged shaft 26 mounted in bracket *a*. A gear 27 on shaft 26 meshes with a pinion 28 on a horizontal shaft 29, and the latter

is adapted to be driven in any desired manner from a suitable source of power.

The arrangement of the driving and guiding means for the trays is important and advantageous. It is desired to have the trays move in a definite predetermined path and yet have the trays move freely in this path without binding. The pin 14 riding in slot *m* and driven by chain 18 would move the trays without binding in a closed loop path, but the trays would be free to swing on the pin as a pivot. Some other means is necessary to constrain the trays to move in a definite manner in the closed loop path, and, instead of providing side guides or the like for the trays, each thereof has been provided simply with an additional pin 13 which also rides in slot *m*. The pair of pins necessarily constrain the tray to move in a predetermined manner and, since one only is driven, no binding results as the tray moves around the curves. Preferably the driven pin should be foremost of the pair in the direction of travel of the tray for the other guiding pin will ride more smoothly in the slot when drawn than when pushed.

The preferred operation of the packing table will now be described. The packers are seated alongside each shelf *n* and upon the latter are placed the boxes which are to be packed with assorted candies. When power is applied to shaft 29, chain 18 is driven and by its connection with pin 14 propels the trays 10. The latter slide upon the boards *g*, *h*, *j*, and *l* and are guided by the pins 13 and 14 as described. The trays are thus moved in a circuitous path upon the table top and are always maintained in a horizontal plane. The trays move at a uniform speed, which may, of course, be anything desired, but in practice the trays are generally moved at a speed of from fifteen to thirty feet a minute. An operator stands at the end of the table adjacent standard *a* and places candies in boxes or on plaques or, if desired, directly upon plate 12. Different kinds of candies are placed in successive trays as they pass the head operator, and, with the arrangement illustrated, sixteen different varieties of candy may be used. As the trays pass around their circuit, each packer takes a certain amount (say, for example, the proportionate part of the contents of the tray) and proceeds to pack them, receiving successively the various kinds of goods in a definite order. The trays may, if desired also be used to convey unfilled boxes to the packers and to remove packed boxes to a common point.

By this arrangement each packer is obliged to work at a uniform speed and must keep pace with the rest of the packers and one cannot shirk without being soon discovered for each tray as it returns to the

head operator should be empty. Furthermore, unnecessary motions on the part of the packers are eliminated and their work made efficient. The packers work while seated and do not have to run around from box to box selecting a piece here and a piece there and incidentally getting in one another's way and otherwise wasting valuable time. Moreover, the assortment obtained when goods are packed in the described manner may be kept uniform and even the order of arrangement of the goods within the box may be readily controlled.

It is to be noted particularly that the trays are movable closely adjacent the packing shelf and with the tops thereof substantially flush with the shelf so that the goods in the trays are conveniently accessible to the packers. The apparatus is further characterized in that the trays always move in one horizontal plane, and this fact is believed to be particularly advantageous. For example, the described arrangement permits every tray to be constantly exposed and consequently the ratio of the number of packers to the number of trays is greater than is possible with other arrangements. Heretofore, trays carried between a pair of chains have been so supported that they always remain horizontal, but the supporting sprockets for the chains have been arranged to travel on a horizontal axis with the result that at least half of the trays were inaccessible during their lower travel. Consequently, more trays are required for a given number of packers and also a more elaborate structure, involving not only duplicate sprockets and chains but also special supporting devices to maintain the trays in a horizontal plane.

Thus an improved packing table has been provided, which is characterized by generally improved mechanical structure and a simplified and economical structural arrangement and is adapted for efficient use as an aid in packing. The invention has been described in one preferred form for illustrative purposes, but the scope of the invention is defined by the appended claims rather than by the foregoing description.

What I claim is—

1. The combination in a packing table, of a plurality of trays mounted therein for travel in a substantially horizontal plane, guiding means arranged to form a closed loop path, spaced devices on each tray en-

gageable with said means to guide the tray in a definite path, and driving means to move the trays in said path, said last-named means having a swiveled engagement with that one of the devices of each tray which is foremost in the direction of its travel, all constructed and arranged so that the trays are constrained to move in a predetermined manner without binding.

2. A packing table, comprising, in combination, suitable supporting members, a flat horizontally arranged table top supported therefrom, said table top being provided with a continuous slot arranged in closed loop form, a driving member below the table top and movable in parallel relation with the slot, a series of trays movable along the table top, a pivotal connection between each tray and the driving member, said connection being movable in said slot, and guiding devices depending from the trays into said slot.

3. The combination, in a packing table, of a plurality of trays mounted thereon for travel in a substantially horizontal plane, said top being provided with guiding means to form a closed loop path, a driving member below said means and movable in parallel relation therewith, means engageable with the guiding means to connect the driving member and each tray for relative swinging movement, and a device on each tray spaced from said connecting means and engageable with the guiding means to constrain the trays to travel in a definite path, all constructed and arranged so that the trays are propelled without vibration and without binding in said guiding means.

4. A packing apparatus, comprising in combination, a table having an upper horizontal surface and provided with a continuous slot therein to form a closed loop path, a driving and a driven sprocket rotatable on vertical axes below said surface, a chain carried by said sprockets and arranged to move in parallel relation to the slot, a plurality of trays movable along said surface, a pair of guide pins depending from each tray into said slot, and a device connecting one pin of each pair to said chain at spaced intervals, all constructed and arranged so that said trays may be moved in a closed loop path upon the table and maintained in a common horizontal plane.

ALONZO LINTON BAUSMAN.