Dec. 13, 1927. 1,652,698

W. F. BOETTGER

STACKING DEVICE

Filed Dec. 13, 1926

Fig. 1.

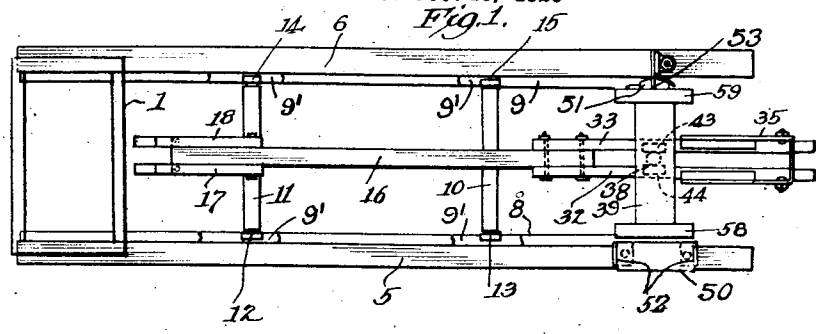


Fig. 2.

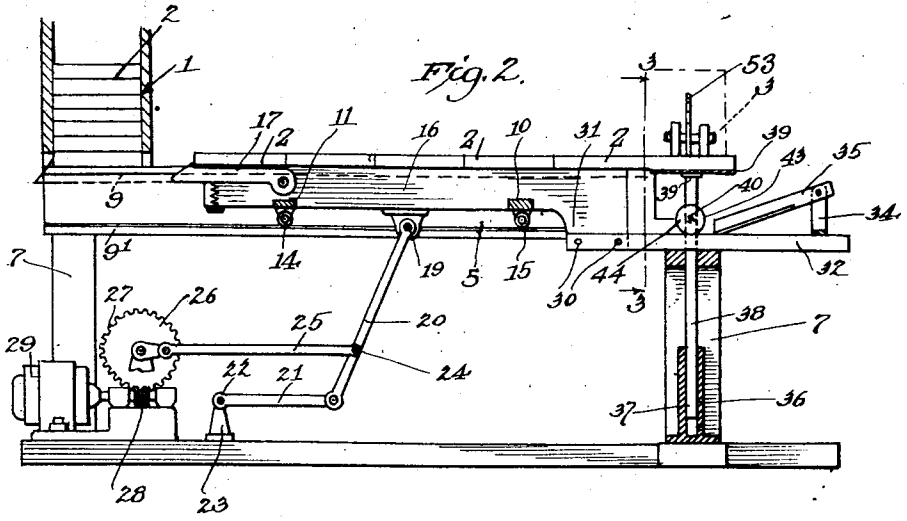
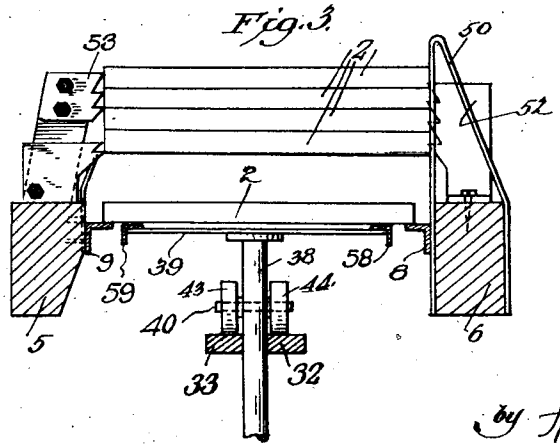


Fig. 3.



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UNITED STATES PATENT OFFICE.

WILLIAM F. BOETTGER, OF REDLANDS, CALIFORNIA.

STACKING DEVICE.

Application filed December 13, 1926. Serial No. 154,566.

This invention relates to stacking machines and is especially adapted for use in connection with labeling machines, such as I have shown and described in my co-pending application Serial No. 154,565, filed Dec. 13, 1926.

An object of this invention is to provide a machine which will stack a series of boards, plates or box heads and the like in superimposed relation.

Another object of this invention is to provide a machine which is composed of relatively few parts, which is strong and durable, and which is not likely to get out of order.

With the foregoing and other objects in view which will be made manifest in the following detailed description and specifically pointed out in the appended claims, reference is had to the accompanying drawings for an illustrative embodiment of the invention, wherein:

Figure 1 is a plan view of my stacking device showing the parts in operative arrangement, the box heads being removed,

Fig. 2 is a side elevation parts being in section of my stacking device, showing the same in actual use, and

Fig. 3 is a sectional view taken on the line 3—3 of Fig. 2.

Referring to the accompanying drawings wherein similar reference characters designate similar parts throughout, 1 designates a hopper having box heads 2 therein in superimposed or stacked relation. It is an object of this invention to selectively remove the heads from this hopper, carry them in contiguous relationship along a track or runway, and stack the same as shown at 3. Towards this end I have provided a longitudinal frame composed of side bars 5 and 6. This frame is stationary and is held in position by suitable supports 7. Fastened securely to each of the side bars are a pair of angle irons 8 and 9, which angle irons form a track or runway for the wooden box heads 2. A similar pair of angle irons 8′ and 9′ are fastened to the bars 5 and 6 below the angle irons 8 and 9. A pair of cross bars 10 and 11 carrying rollers 12, 13, 14 and 15 rest upon the angle irons 8′ and 9′ and are adapted to slide longitudinally along the same. The cross bars 10 and 11 carry a central longitudinal bar 16 to which are pivoted a pair of latch members 17 and 18. The central longitudinal bar 16 carries a bracket 19 to which is pivoted a link 20 which in turn is pivoted to a link 21, and the link 21 is pivoted as at 22 to a stationary support 23. Pivoted intermediate the link 20 as at 24 is another link 25, one end of which is pivoted to the eccentric of a crank wheel 26. This crank wheel has teeth 27 on the periphery thereof which engage a worm 28, which worm is driven by a suitable source of electric power 29. It will be obvious that rotation of the crank wheel causes the central bar 16 to slide in its track with simple harmonic motion.

The central bar 16 is provided with a depending portion 31, which depending portion has secured by means of suitable bolts 30 a pair of rods 32 and 33, which rods carry uprights 34, and securely fastened to the upper end of said uprights are inclines 35. A dashpot 36 is provided on the base having a piston 37 formed integral with a vertical rod 38 having a table 39 thereon. The vertical rod 38 has a pin 40 extending therethrough and on either side of the same has a pair of rollers 43 and 44. It will be noted that as the rods 32 and 33 are moved in the direction of hopper 1, the inclines 35 will engage the underside of the rollers 43 and 44 and serve to elevate the table 39 so as to force upwardly any box heads which may be resting upon the same.

The operation of my device is as follows: The box heads 2 are placed in the hopper 1 and the motor 29 is caused to begin its operation. By means of the links 25, 21 and 20, the central rod 16, as stated hereinbefore, is caused to reciprocate with simple harmonic motion in the direction of the tracks upon which the same rests. At the end of the path of its travel, the hooks 17 and 18 engage one of the box heads 2 in the hopper 1 and during their travel pull the same from the hopper as shown in Fig. 2, thereby sliding other box heads previously removed along the track formed by the angle irons 8 and 9. As the successive heads are pulled from the hopper 1, they travel along their path until they rest on the bars directly above the table 39. As the central bar 16 is again drawn toward the hopper, the inclines 35 engage the rollers 43 and 44 and elevate the table, thereby raising the particular box head which rests above the table. In order that, when the table is lowered, the box heads will not follow the same, there is provided as at 50 and 51 a pair of inverted

V-shaped members to which are attached plates 52 and 53 having teeth thereon adapted to frictionally engage the sides of the box heads and hold the same in elevated position until the next successive box head is inserted under the stack and the box head and stack are raised in unison. It will be noted in this connection that the table 39 is of the shape of an elongated rectangle having channel members 58 and 59 attached to the ends thereof. It will also be noted that the dashpot insures free movement of the table and prevents the rod 38 from binding when the end of the rod 37 hits the bottom of the dashpot.

The object of removing the boards or box heads from the hopper and stacking them at the other end of the table is to pass them through a desired treatment, such as coating the same with paste or the like. This stacking device is well adapted to be used in connection with my labeling machine described in my co-pending application above mentioned.

It will be understood that various changes may be made in the detail of construction without departing from the spirit and scope of the invention as defined by the appended claims.

I claim:

1. A stacking device comprising in combination a track, a hopper at one end of said track, a second track, a frame slidable in said second track, said frame having a latch member pivoted thereto, means associated with said frame for selectively removing box heads from said hopper and stacking them at a point situated at the other end of said first mentioned track from said hopper.

2. A stacking device comprising in combination a hopper adapted to retain box heads, a pair of tracks, a frame slidable upon one of said tracks, means associated with said frame for selectively removing box heads from said hopper, sliding them along the first mentioned track and stacking them at a point remote from said hopper.

3. A stacking device comprising in combination a hopper adapted to retain box heads in superimposed relation, a pair of tracks associated with said stacking device, a frame slidable upon one of said pair of tracks, a pivoted latch member associated with said frame, means associated with said latch member for engaging box heads in said hopper, a dashpot located beneath said tracks, a table movable vertically associated with said dashpot, said latch member being adapted to slide the box heads along the first mentioned track and locate them above said table, means whereby said table may elevate said box heads, and means for holding said box heads in elevated stacked relationship.

4. A stacking device comprising in combination a hopper adapted to retain box heads in superimposed relation, a pair of tracks associated with said stacking device, a frame slidable upon one of said pair of tracks, a pivoted latch member associated with said frame, means associated with said latch member for engaging box heads in said hopper, a dashpot located beneath said tracks, a table movable vertically associated with said dashpot, said latch member being adapted to slide the box heads along the first mentioned track and locate them above said table, a pair of rollers positioned beneath said table, an incline associated with said frame adapted to engage said rollers, and elevate said table whereby said box heads may be elevated in superimposed stacked relationship.

5. A stacking device comprising in combination a hopper adapted to retain box heads in superimposed relation, a pair of tracks associated with said stacking device, a frame slidable upon one of said pair of tracks, a pivoted latch member associated with said frame, means associated with said latch member for engaging box heads in said hopper, a dashpot located beneath said tracks, a table movable vertically associated with said dashpot, said latch member being adapted to slide the box heads along the first mentioned track and locate them above said table, a pair of rollers positioned beneath said table, an incline associated with said frame adapted to engage said rollers and elevate said table whereby said box heads may be elevated in superimposed stacked relationship, and a pair of links one of which is associated with a source of electric motive power adapted to operate said frame.

In testimony whereof I have signed my name to this specification.

WM. F. BOETTGER.