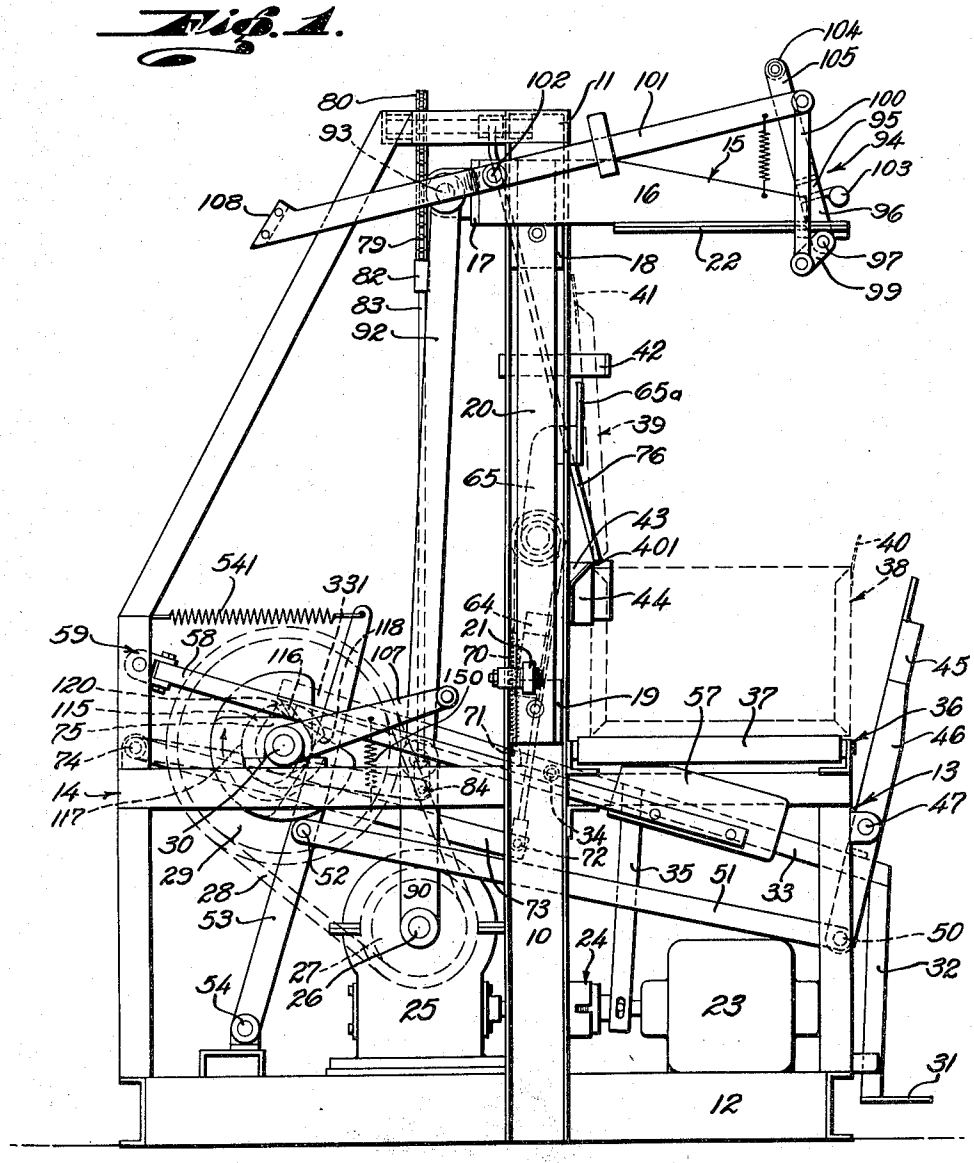
April 24, 1951 L. H. PLATT ET AL 2,550,292

PRODUCE BOX LIDDER

Filed April 9, 1948 5 Sheets-Sheet 1

Fig. 1.



LELAND H. PLATT
LELAND H. PLATT JR.
JOHN DEE. PLATT
INVENTORS

BY Hawkins White

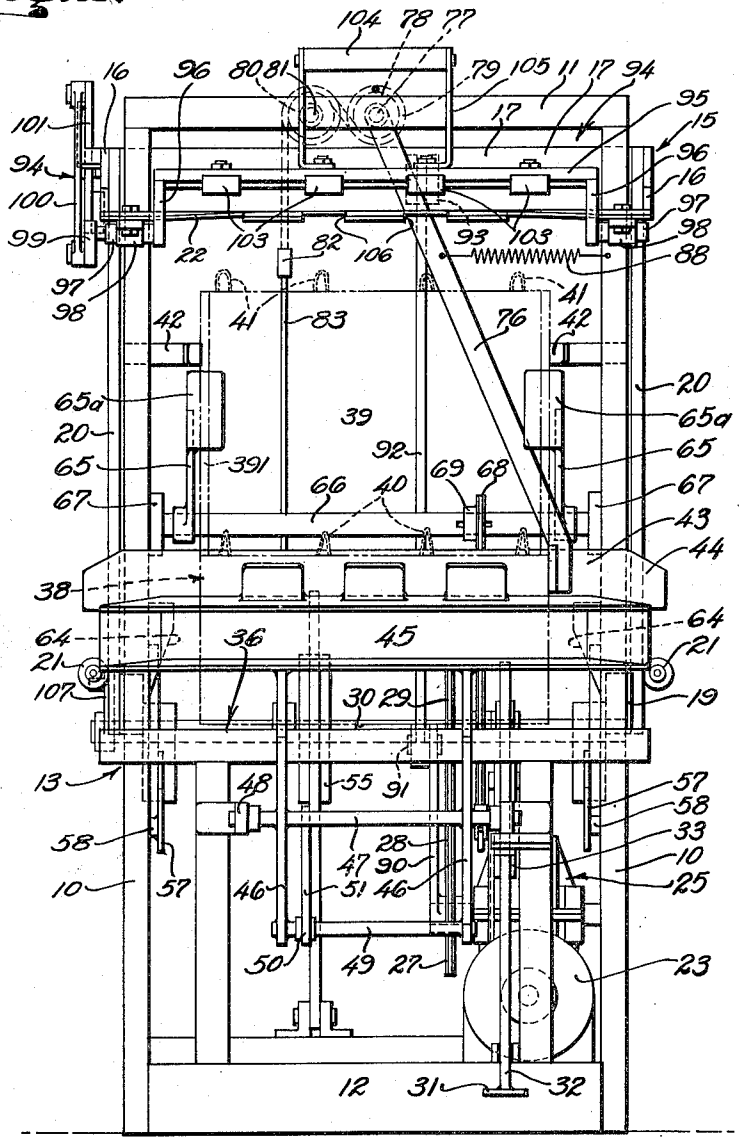
ATTORNEY

April 24, 1951 L. H. PLATT ET AL 2,550,292

PRODUCE BOX LIDDER

Filed April 9, 1948 5 Sheets-Sheet 2

Fig. 2.



LELAND H. PLATT
LELAND H. PLATT JR.
JOHN DEE PLATT
INVENTORS

BY Malcolm White

ATTORNEY

April 24, 1951 L. H. PLATT ET AL 2,550,292

PRODUCE BOX LIDDER

Filed April 9, 1948 5 Sheets-Sheet 3

Fig. 3.

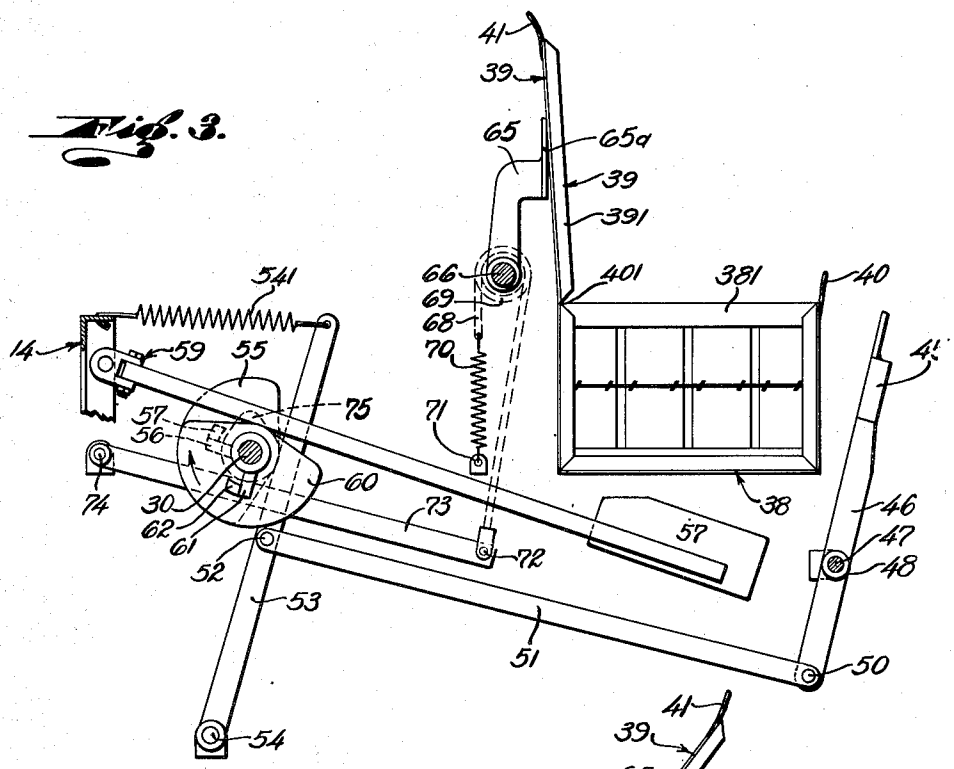
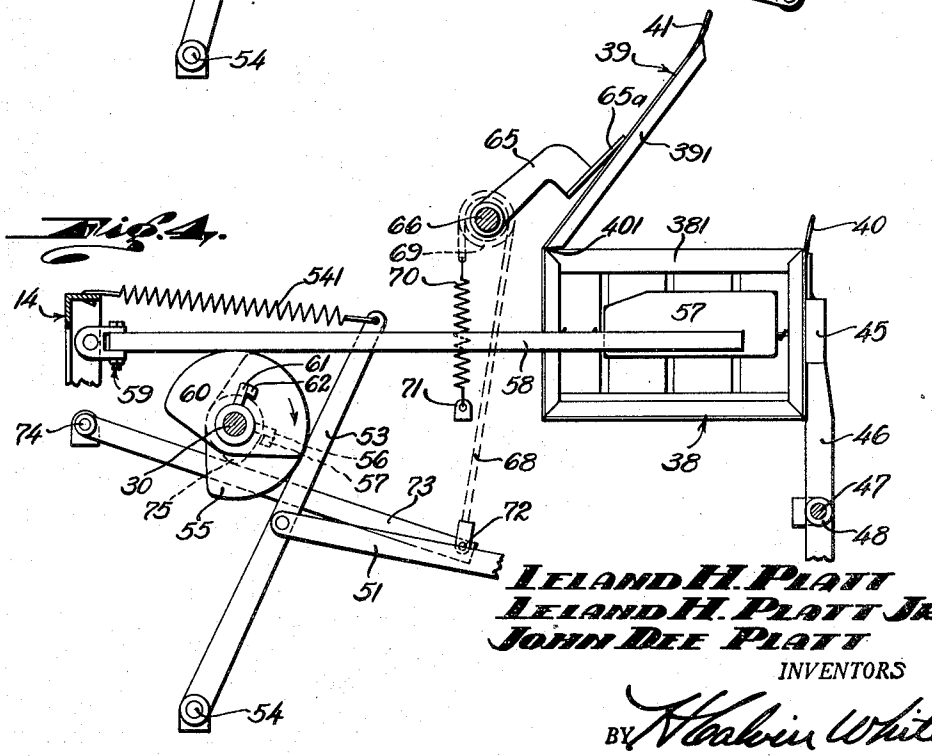


Fig. 4.



LELAND H. PLATT
LELAND H. PLATT JR.
JOHN DEE PLATT
INVENTORS

BY Hoskin White

ATTORNEY

April 24, 1951 L. H. PLATT ET AL 2,550,292

PRODUCE BOX LIDDER

Filed April 9, 1948 5 Sheets-Sheet 4

Fig. 5.

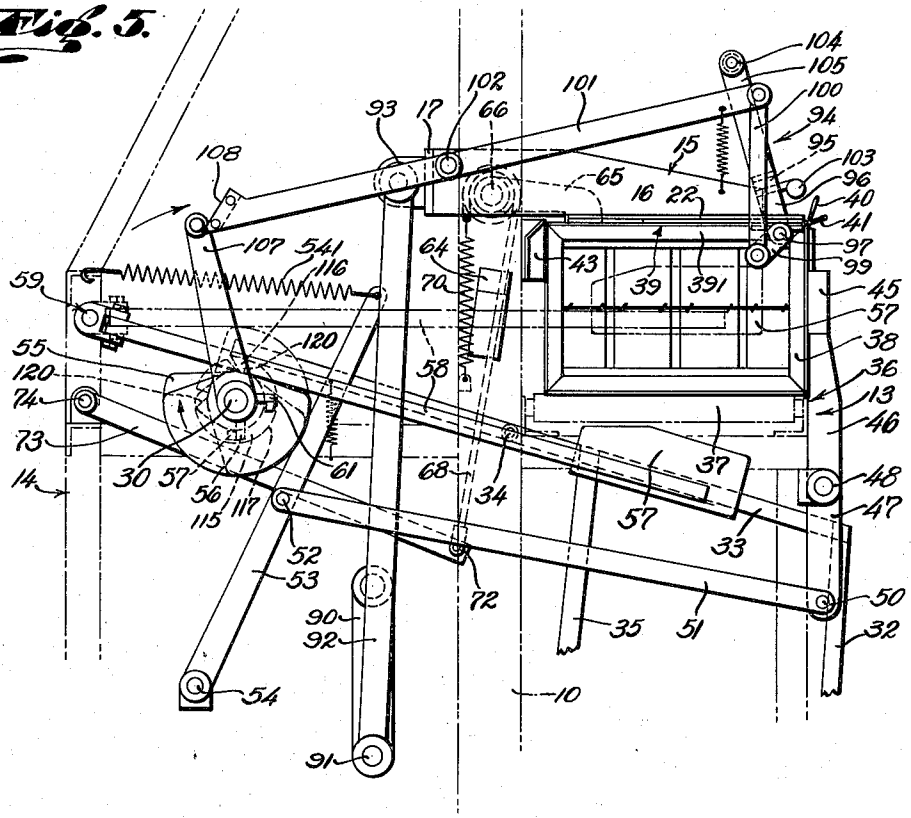


Fig. 6.

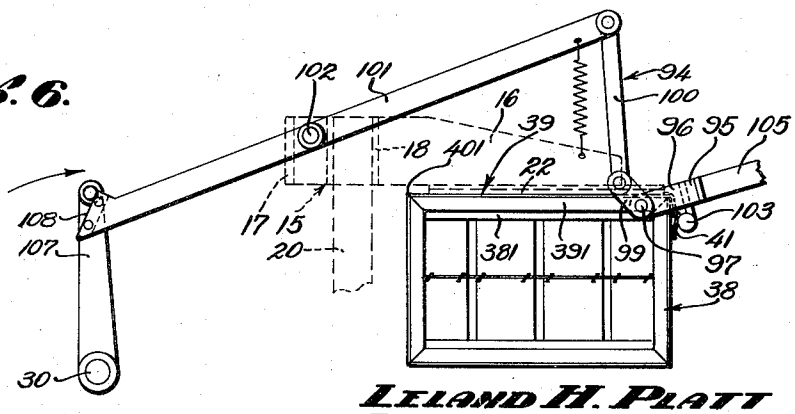
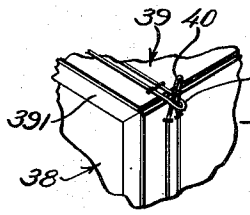


Fig. 7.



LELAND H. PLATT
LELAND H. PLATT JR.
JOHN DEE PLATT
INVENTORS

BY Herbert White

ATTORNEY

April 24, 1951 L. H. PLATT ET AL 2,550,292

PRODUCE BOX LIDDER

Filed April 9, 1948 5 Sheets-Sheet 5

Fig. 8.

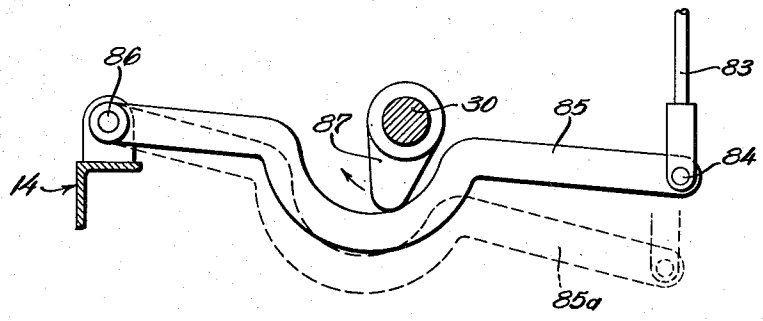


Fig. 9.

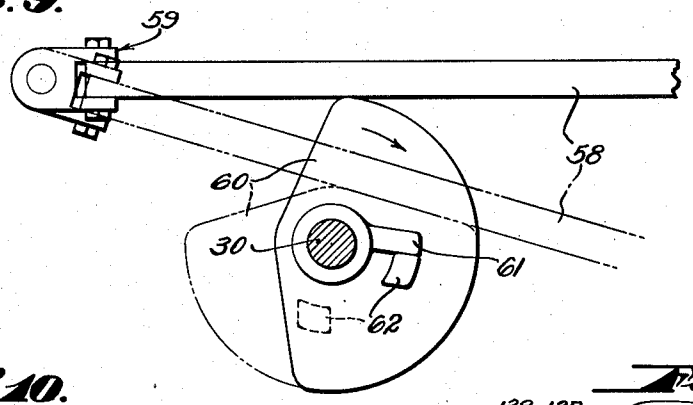


Fig. 10.

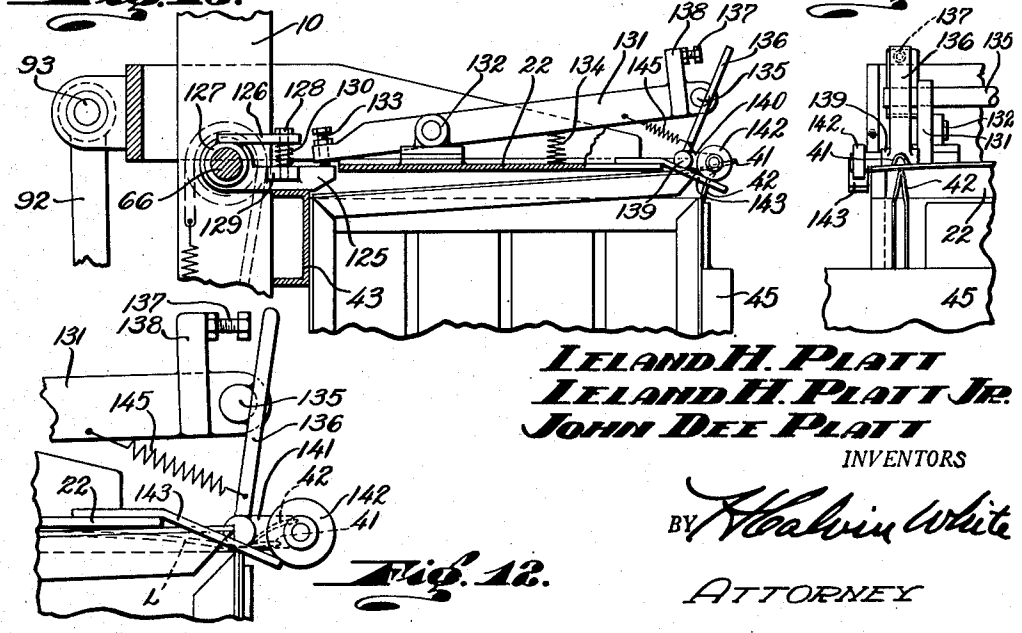


Fig. 11.

Fig. 12.

LELAND H. PLATT
LELAND H. PLATT JR.
JOHN DEE PLATT
INVENTORS

BY Hoskin & White

ATTORNEY

Patented Apr. 24, 1951

2,550,292

UNITED STATES PATENT OFFICE

2,550,292

PRODUCE BOX LIDDER

Leland H. Platt, Leland H. Platt, Jr., and John Dee Platt, Los Angeles, Calif.

Application April 9, 1948, Serial No. 19,908

13 Claims. (Cl. 100—57)

1

This invention has to do with box lidding or closing machines, particularly of a type especially adapted to the lidding of wire bound boxes characterized by their flexibility under pressure, and structurally, by the wire hinged attachment of the lid or cover to the box proper, the closed lid being secured to the box by interlocking wire loops. More specifically, the invention is directed to improvements in the mechanisms constituting the subject matter of our copending application Serial No. 752,854, filed June 5, 1947, on Wire Bound Box Lidder, and issued August 5, 1950, to Patent No. 2,517,710.

The general mode of operation of the present type of machine involves applying the hinged lid to an overfilled or crown packed box by deforming the lid and bringing its outer free edge adjacent the corresponding box edge to secure the interlocking wire loops. Proper application of the lid to the box and interlocking of the fastener loops requires exact alinement of the cover with the box, and involves problems presented because of the tendency of the box to deform, and the lid to become displaced, when subjected to the pressures required to apply the lid over the crown-packed produce.

Such problems are met in accordance with the disclosure in our prior application referred to above by laterally supporting the box and lid during the lid applying operations, in a manner preventing deformation or bulging of the lid, and its displacement or misalinement, at least to degrees assuring their proper interfit as the lid is brought to closed position. Specifically, we employ side and end pressure members confining the box against bulging, and confine and guide the lid in accurately alined relation with the top of the box.

One of our present major objects is to increase the throughput potential of the machine by providing for automatic displacement of the lidded box in an ejecting direction. Generally speaking, this object is accomplished by incorporation in the machine of a powered box ejector operating in timed relation with the end box pressure members, or that member in the box ejection path, so that upon application of the lid to the box, such member is withdrawn from its path, freeing the box for movement by the ejector.

A further object is to provide a mechanism for automatically interlocking the lid and box carried wire loops when the lid is brought down to closed position. As will appear, this function is performed by a powered mechanism, carried preferably by the cover press head, and operating

2

automatically to engage and deform into interlocking relation the interfitted loops.

The invention has various additional features and objects, all of which, together with those referred to in the foregoing, will be understood to best advantage from the description given below of a typical and illustrative embodiment. It is to be understood that in its broad aspects, the invention contemplates the adaptation of the essential claimed features to any suitable lid press mechanism operable as a crown packed press type machine and to which such features are applicable. Reference is had throughout the description to the accompanying drawings, in which:

Fig. 1 is a view showing the machine in side elevation;

Fig. 2 is a front elevation of Fig. 1;

Figs. 3 and 4 are fragmentary views illustrating sequential positions of the side and end pressure plates together with a lid swinging arm;

Fig. 5 is a fragmentary view illustrating the pressure plate positions and wire loop interlocking mechanisms when the pressure head has reached cover applying position;

Fig. 6 shows the working advancement of the interlocking device beyond the position of Fig. 5;

Fig. 7 is a fragmentary view showing the wire bound box cover and side loop relation in the closed position of the cover;

Figs. 8 and 9 are enlarged fragmentary views showing certain positions of the loop interlocking end and pressure plate actuating arms and their associated cams.

Fig. 10 is a view showing in end elevation a variational form of automatic loop interlocking mechanism;

Fig. 11 is a fragmentary front elevation of Fig. 10; and

Fig. 12 is an enlarged fragmentary view of certain parts of Fig. 10 in changed position.

Referring first to Figs. 1 and 2, the machine has a frame structure comprising a pair of vertical guide members 10 in the form of outwardly flanged channels interconnected at their upper ends by cross member 11; also a base structure 12 carrying the box support framework 13 and a rear frame structure 14 supporting the later described driving mechanisms. Members 10 serve to carry and guide the vertical reciprocations of a cover press head structure, generally indicated at 15, comprising a pair of arms 16 interconnected by cross member 17 at the rear of the guides 10, and carried by a pair of slides each comprising a pair of blocks 18 and 19 interconnected by a bar 20 slidable vertically in the supports. Bars 20 are

confined at their lower extents within the channels by rollers 21, see Fig. 1, carried by the channel flanges and bearing against the bars. Arms 16 carry on their under surfaces the cover press head proper, which may be formed of sheet stock 22 having upward concavity transversely of the machine as viewed in Fig. 2, to conform with the lidded box crown pack.

The working parts of the machine are powered by a motor 23, the drive of which is transmitted through clutch 24 and gear reduction unit 25 to a shaft 26, the latter carrying a sprocket 27 driving by way of chain 28 a sprocket 29 keyed to a countershaft 30. The relationship between the sizes of sprockets 27 and 29 is such that shaft 30 will be driven at a speed exactly equal to half the speed of shaft 26. Therefore as shaft 26 makes two complete revolutions, countershaft 30 travels through exactly one revolution. The clutch 24 is manually controlled in any suitable manner, as by a foot pedal 31 carried by arm 32 on lever 33 pivoted intermediate its ends to the frame at 34 and carrying a second arm 35 so connected to the clutch as to engage the latter upon depression of the foot pedal.

Forwardly of the guide members 10, the frame structure accommodates a box support 36 which may include a series of rollers 37 onto which the box 38 is movable horizontally from the right as viewed in Fig. 2 to a position of vertical alinement with the head 22, and from which the lidded box is ejected toward the left, as will later appear. The drawings illustrate the known type of wire bound box to the body 38 of which is attached a cover 39 by wire hinges 40, the forward side of the box, see Fig. 7, having upwardly projecting wire loops 40 adapted to be received within correspondingly spaced wire loops 41 projecting from the cover 39 so that the loops may be deformed and interlocked to secure the closed cover to the box. When the box is received on the support 36, the cover 39 is swung back between stationary guide arms 42 carried by members 10 to accurately position the cover, and therefore the box assembly, in centered relation to the head and the working parts carried thereby.

The upper extent of the rear side of the box is engageable against a stationary guide and pressure plate 43 having angular extremities 44 and carried by the vertical columns 10. The upper extent of the forward side of the box is engageable by a movable pressure plate 45 carried by a pair of arms 46, see Fig. 2, mounted for swinging movement with shaft 47 journalled in bearings 48. The lower ends of arms 46 are interconnected by rod 49 pivotally attached at 50 to an actuating mechanism comprising link 51, see Figs. 3 and 4, pivoted at 52 to a lever 53 swinging about the stationary pivot 54 and urged in counterclockwise direction by the connected coil spring 54a attached to the frame structure 14. The pressure plate 45 is actuated through the described linkage by a cam 55 rotatable on the shaft 30 but carried therewith by engagement of the shaft-carried arm 56 with lug 57 on the cam. Upon engagement of the cam with lever 53, the pressure plate 45 is swung inwardly against the forward side of the box throughout its length, as shown in the Fig. 4 position.

A pair of pressure plates 57, engageable against the ends of the boxes, are carried by arms 58 mounted on the frame structure 14 for both vertical and horizontal swinging movement by the universal joints 59. Before operation of the machine the end pressure plates 57 assume the positions illustrated in Fig. 3, from which, however, they are displaceable upwardly and inwardly against the box ends to the position of Fig. 4. Arms 58 are actuated to so displace the pressure plates by a pair of cams 60 which, like cams 55, are rotatable on the shaft 30 but are carried therewith in its actuating travel by engagement of the shaft arms 61 with lugs 62 on the cams. Upon rotation from the Fig. 3 position to that of Fig. 4, the cams 60 engage arms 58 and swing them upwardly against and along a pair of stationary frame-supported guides or cams 64, see Fig. 2, which causes the pressure plates 57 to be displaced inwardly and in tight pressural engagement with the ends of the box 38.

The cover 39 is swung forwardly from its initial upright position between the guides 42, by a pair of arms 65 which, together with the terminal plates 65a overlie the outer or top surface of the cover and are carried by shaft 66 rotatable in the frame-supported bearings 67. Arms 65 are actuated through rotation of the shaft 66 by chain 68, see Figs. 3 and 4, applied to the shaft sprocket 69. One end of the chain is connected through spring 70 with the frame at 71. The opposite end of the chain is connected at 72 with lever 73 pivoted to the frame at 74 and engageable with a cam 75 carried by and rotatable with the shaft 30.

The lidded box is ejected from the support 36 by a swinging arm 76 engageable against the end of the box and carried by a shaft 77, see Fig. 2. The latter carries a sprocket 78 to which is applied a chain 79 extending about idler sprocket 80 on shaft 81, downwardly to connect at 82 with rod 83. Referring to Fig. 8, rod 83 is pivoted at 84 to a throw arm 85 pivoted at 86 to the frame structure 14 and engageable by cam 87 on shaft 30 acting to depress the arm to its dotted line position at 85a, and in so doing, to swing arm 76 to the left and thus displace the lidded box 36 in a corresponding or ejecting direction. Arm 76 is displaced against resistance of spring 88 acting to return the arm to its Fig. 2 position after ejection of the box.

The head assembly 15 is vertically reciprocated by a connection with the shaft 26 comprising a crank arm 90 on the shaft pivotally attached at 91 to rod 92, the upper end of which is pivoted at 93 to the cross member 17 interconnecting the arms 16. Thus the head assembly 15 travels one down and up cycle for each rotation of the shaft 26.

The box wire loop interlocking mechanism generally indicated at 94 is carried by the head assembly 15 for vertical travel therewith and actuation to interlock the loops 40 and 41 when the head is finally brought down to cover applying position.

Referring to Fig. 2, the mechanism 94 comprises a bar 95 extending along and above the forward edge portion of plate 22 and carried by a pair of arms 96 having stub shafts 97 rotatable in the head-carried bearings 98. The shaft 97 at the left has an arm 99 pivotally connected by way of link 100 with lever 101 pivoted at 102 intermediate its ends on the adjacent arm 16. Bar 95 carries a series of cylindrical projections 103 spaced in accordance with the spacing of the box loops 40 and 41. Bar 95 also carries a handle 104 mounted on brackets 105 and by means of which, if desired, the bar 95 may be manually swung downwardly to engage projections 103 against the interfitted box

loops, the outer edge portion of cover plate 22 being notched at 106 to pass the projections as they are swung downwardly. The bar 95 is mechanically and automatically operable to interlock the box loops, by the engagement of an arm 107 rotated by and with the shaft 30 into engagement with the angular end face 108 of lever 101 at the later described point in the machine cycle. At this point it may be observed that upon swinging from the Fig. 5 position to that of Fig. 6, arm 107 swings a lever 101 in a direction producing outward and downward swinging of bar 95 and its projections 103, causing the latter to engage and bend the loops 40, see Fig. 7, outwardly and downwardly into interlocked engagement with the cover loops 41.

In considering the operation of the machine, assume its parts to be positioned as in Figs. 1, 2 and 3, with the box 38 and its lid 39 placed as illustrated. As previously indicated, the box is to be overfilled or crown packed with produce so that as applied to the box, its lid will be upwardly bulged to accommodate the crown pack. When the operator steps on the foot pedal 31, clutch 24 is engaged to simultaneously start the rotation of shafts 26 and 30. Connecting rod 92 starts the head assembly 15 on its downward travel. At the start of the head travel, cam 55 engages lever 53 to swing the forward pressure plate 45 against and in tight pressural engagement with the box side to hold it against subsequent bulging as pressure is applied to the pack. Simultaneously, cams 60 throw the pressure plates 57 upwardly and inwardly against the ends of the box to thereafter resist bulging and maintain the end frame pieces 381 in position such that when the lid is closed down upon the box the lid end cleats 391 will be brought down at the outside of pieces 381. By virtue of the pressure exerted by plate 45, the rear side of the box is prevented from bulging by reason of its engagement against the stationary plate 43. The latter serves the further function of supporting the rear edge of the cover 39 as the latter subsequently is forced down over the crown pack, thus assuring proper final alinement of the cover with the box in a transverse direction.

By reason of the speed relation between shafts 26 and 30, the cover assembly 15 travels a full down stroke, bringing plate 22 against the produce crown pack to compress it into the box, before the cover is displaced from its initial position. Then as the head is elevated on its return stroke above the cover, cam 75 engages and throws arm 73 downwardly to cause the arms 65 to swing the cover from the Fig. 3 to Fig. 4 position inwardly beneath the head plate 22. Then as the head is brought down a second time, plate 22 engages the cover 39 to press it down over the crown pack and to the box engaging position of Fig. 5. As this position is reached, and after the box ends are secured between the lid cleats 391, cams 60 travel just beyond the position of Fig. 9 whereupon the weight of arms 58 causes the cams to rotate about shaft 30 and drop the end pressure plates 57 to the Fig. 5 position. At this point clutch 24 is automatically disengaged to arrest the machine operation by the cooperation of the free end 331 of lever 33, with a cam 115 carried by and rotatable with shaft 30. While the machine is in operation, that is when clutch 24 is engaged, the follower lug 116 on the end 331 of arm 33 is urged to ride the circular surface of the cam by spring 150 attached to the lever. At the start of the machine operation, follower

116 was received within the cam notch 118, from which the follower was withdrawn by pressure on the foot pedal 31 to engage the clutch. The follower 116 then traveled the cam surface 117 through the described portion of the machine cycle up to the Fig. 5 condition.

Operation of the machine is interrupted to permit the operator to correct any misalinement of the wire loops 40 and 41. The machine then is restarted in operation by depression of the foot pedal 31, whereupon arm 107 through lever 101 actuates the head-carried mechanism 94 to clamp the loops 40 and 41 into interlocked engagement. With the lid thus secured to the box, cam 55 advances beyond its Fig. 5 position to release the front pressure plate 45 back to its starting position of Fig. 1. Immediately then, cam 87 engages the arm 85 to cause, through the chain connection with sprocket 79, arm 76 to swing to the left and eject the lidded box. During the box ejecting actuation of arm 76, the head assembly 15 will have returned to its top or starting position. The cycle of the machine thus having been completed, follower 116 drops into the cam notch 120 to disengage the clutch 24.

Figs. 10 to 12 illustrate a variational mechanism for automatically interlocking the loops 40 and 41 when the box lid is brought down to closed position. Referring first to Fig. 10, the mechanism there shown may be arranged on and at one end of the head 22, or in duplicate at both ends thereof. An arm 125 rotatable on or relative to the shaft 66 (carrying arms 65 as previously described), is positioned adjacent a second arm 126 carried by sleeve 127 and rotatable with shaft 66. A yielding, lost motion connection between arms 125 and 126, consisting typically of a headed bolt 128 extending through an opening in arm 126 and terminating in lug 129 on the side of arm 125, permits downward relative swinging of arm 126 beyond the position illustrated, against the resistance of coil spring 130 confined about the bolt between the arms.

The head 22 carries a lever 131 fulcrumed in the bearings 132 and carrying a terminal adjustment screw 133 engageable against the arm 125. Downward swinging of the lever from the position shown is resisted by coil spring 134. At its forward end the lever 131 carries a rotatable shaft 135 to the end of which is secured an arm 136, the upper end of which is engageable with an adjustable stop 137 carried by member 138 on the lever. At its lower end arm 136 carries the curved surface hammer or loop interlocking head 139. As will be understood by reference to Fig. 11, shaft 135 may carry a plurality of arms 136 and head members 139, corresponding to the number and spacing of the loops 40 and 41 to be interlocked, although only one of the arms, or those at the ends of the head, need be actuated by association with a lever or levers 131.

Projecting from head 139 is an angular arm 141 which carries a roller 142. The latter is movable downwardly along and beyond an inclined cam plate 143 carried by and extending downwardly and forwardly along the end edge of the head 22 so that the plate may serve the incidental function of centering the lid 39 relative to the box 38. Plate 143 projects forwardly of the head and box, as shown in Figs. 10 and 12, to permit the required advancement of roller 142, as and for the purposes now to be explained.

As will be understood from the foregoing when the head 22 is in its up position, the arm as-

sembly 125, 126 will have assumed an upright position on shaft 66 corresponding to arms 65, since both rotate with the shaft, and the arm assembly will so remain during the initial down and up strokes of the head occurring as explained, before the successive portion of the cycle utilized to press the lid on the box. As the head starts down on its second stroke arms 125 and 126 are swung down (with arms 65) so that when the head reaches the Fig. 10 position, arm 125 will have engaged the stationary pressure plate 43. As will be recalled, the head travel is arrested at this position to permit manual alinement of the loops 40 and 41.

Then, as the final downward head motion is started, arm 126 is permitted to swing down relative to arm 125, while the latter is engaged by and serves as an abutment for lever 131. Down movement of the head from the Fig. 10 position carries lever 131 to rock on its fulcrum bearing 132, the down swing of the forward end of the lever causing roller 142 to advance along the cam 143 while the head 139 is consequently moved forwardly on the lid surface, actually depressing the lid, as indicated by the dotted line L in Fig. 12, below the horizontal plane of the top end surfaces of the box. As the roller and heads 139 continue forwardly, the latter engage and start to deform the loops 40 and 41 in an interlocking direction as indicated by the Fig. 12 position. Finally, as the press head approaches the limit of its down travel and the hammer heads 139 are advanced just sufficiently to move down along the side of the box, roller 142 leaves the cam 143 and the hammer heads are thrust down at the outside of the box to deform and interlock the loops. Then as the press head starts its up travel and the hammer heads 139 clear the box edge, they are returned to the Fig. 10 position by coil spring 145 connected to the arms 136 and 131.

We claim:

1. A machine for lidding a crown-packed wire-bound flexible wall box having a cover carrying end portions adapted to close down at the outsides of the box ends, comprising mechanism for pressing a cover on the box and including a box support, a cover pressing head overlying the support, and means producing relative vertical movement of the support and head to and from cover applying position, ejecting means operating in timed relation with said mechanism for ejecting a lidded box from said support, a member movable into the box ejection path to a position engaging a vertical end wall of the box at its transverse central portion to resist bulging thereof during pressural application of the cover to the box, and actuating means operating in timed relation with said mechanism to move said member to said position in advance of relative movement of the head and support to the limit of the cover-applying travel and before application by the head to the box contents of pressure that would otherwise bulge the box end beyond said end portion of the cover, said actuating means thereafter operating to remove said member from said path in advance of the box ejection by said ejecting means.

2. A machine for lidding a crown-packed wire-bound flexible wall box having a cover carrying end portion adapted to close down at the outsides of the box ends, comprising mechanism for pressing a cover on the box and including a box support, a cover pressing head overlying the support, and means producing relative vertical movement of the support and head to and from cover applying position, ejecting means engageable against a first vertical wall of the box and operating in timed relation with said mechanism for ejecting a lidded box from said support, a member movable into the box ejection path to a position engaging an opposite vertical end wall of the box at its transverse central portion to resist bulging thereof during pressural application of the cover to the box, and actuating means operating in timed relation with said mechanism to move said member to said position in advance of relative movement of the head and support to the limit of the cover-applying travel and before application by the head to the box contents of pressure that would otherwise bulge the box end beyond said end portions of the cover, said actuating means thereafter operating to remove said member from said path in advance of the box ejection by said ejecting means.

3. A machine for lidding a crown-packed wire-bound flexible wall box having cover carrying end portions adapted to close down at the outsides of the box ends, comprising mechanism for pressing a cover on the box and including a box support, a cover pressing head overlying the support, and means producing relative vertical movement of the support and head to and from cover applying position, ejecting means operating in timed relation with said mechanism for ejecting a lidded box from said support, a member mounted below and independently of said head and movable into the box ejection path to a position engaging a vertical end wall of the box at its transverse central portion to resist bulging thereof during pressural application of the cover to the box, and actuating means operating in timed relation with said mechanism to move said member to said position in advance of relative movement of the head and support to the limit of the cover-applying travel and before application by the head to the box contents of pressure that would otherwise bulge the box end beyond said end portion of the cover, said actuating means thereafter operating to remove said member from said path in advance of the box ejection by said ejecting means.

4. A machine for lidding a crown-packed wire-bound flexible wall box having cover carrying end portions adapted to close down at the outsides of the box ends, comprising mechanism for pressing a cover on the box and including a box support, a cover pressing head overlying the support, and means producing relative vertical movement of the support and head to and from cover applying position, ejecting means operating in timed relation with said mechanism for ejecting a lidded box from said support, a member movable from below the plane of the bottom of the box upwardly into the box ejection path to a position engaging a vertical end wall of the box at its transverse central portion to resist bulging thereof during pressural application of the cover to the box, and actuating means operating in timed relation with said mechanism to move said member to said position in advance of relative movement of the head and support to the limit of the cover-applying travel and before application by the head to the box contents of pressure that would otherwise bulge the box end beyond said end portions of the cover, said actuating means thereafter operating to move said member downwardly out of said path in advance of the box ejection by said ejecting means.

5. A machine for lidding a crown-packed wire-

bound flexible wall box having cover carrying end portions adapted to close down at the outsides of the box ends, comprising mechanism for pressing a cover on the box and including a box support, a cover pressing head overlying the support, and means producing relative vertical movement of the support and head to and from cover applying position, ejecting means operating in timed relation with said mechanism for ejecting a lidded box from said support, a pair of members one of which is movable into the box ejection path and both movable to positions engaging the vertical end walls of the box at their transverse central portions to resist bulging thereof during pressural application of the cover to the box, and actuating means operating in timed relation with said mechanism to move said members to said positions in advance of relative movement of the head and support to the limit of the cover-applying travel and before application by the head to the box contents of pressure that would otherwise bulge the box ends beyond said end portions of the cover, said actuating means thereafter operating to remove said member from said path in advance of the box ejection by said ejecting means.

6. A machine for lidding a crown-packed wire-bound flexible wall box having cover carrying end portions adapted to close down at the outsides of the box ends, comprising mechanism for pressing a cover on the box and including a box support, a cover pressing head overlying the support, and means producing relative vertical movement of the support and head to and from cover applying position, ejecting means operating in timed relation with said mechanism for ejecting a lidded box from said support, a pair of members mounted for vertical swinging movement at the outside of the ends of the box, one of said members being movable into the box ejection path and both being movable to positions engaging the vertical end walls of the box at their transverse central portions to resist bulging thereof during pressural application of the cover to the box, and actuating means operating in timed relation with said mechanism to move said members to said positions in advance of relative movement of the head and support to the limit of the cover-applying travel and before application by the head to the box contents of pressure that would otherwise bulge the box ends beyond said end portions of the cover, said actuating means thereafter operating to remove said member from said path in advance of the box ejection by said ejecting means.

7. A machine for lidding a wire-bound box having a hinged cover displaceable longitudinally of the hinge and body of the box to bring the ends of the cover into and out of alinement with the box ends, comprising mechanism for pressing a cover on a box body and including a head and beneath the head a support for a box having said hinged cover and interlockable wire loops on the outer edge of the cover and corresponding box edge, said mechanism also including power means for moving said head and support relatively vertically, a movable device operable to interlock said loops when the cover is pressed on the box, means for alining said cover and the box body longitudinally of the hinge in advance of the interlocking of said loops, and an actuating mechanism operating in timed relation with the operation of said power means for actuating said device to interlock said loops.

8. A machine for lidding a wire-bound box

having a hinged cover displaceable longitudinally of the hinge and body of the box to bring the ends of the cover into and out of alinement with the box ends, comprising mechanism for pressing a cover on a box body and including a head and beneath the head a support for a box having said hinged cover and interlockable wire loops on the outer edge of the cover and corresponding box edge, said mechanism also including power means for moving said head and support relatively vertically, means supporting said cover at its hinge against movement outwardly from the box, a movable device operable to interlock said loops when the cover is pressed on the box, means for alining said cover and the box body longitudinally of the hinge in advance of the interlocking of said loops, and an actuating mechanism operating in timed relation with the operation of said power means for actuating said device to interlock said loops.

9. A machine for lidding a wire-bound box having a hinged cover displaceable longitudinally of the hinge and body of the box to bring the ends of the cover into and out of alinement with the box ends, comprising mechanism for pressing a cover on a box body and including a head and beneath the head a support for a box having said hinged cover and interlockable wire loops on the outer edge of the cover and corresponding box edge, said mechanism also including power means for moving said head vertically, a movable device carried by and vertically movable with the head and operable to interlock said loops when the cover is pressed on the box, means for alining said cover and the box body longitudinally of the hinge in advance of the interlocking of said loops, and an actuating mechanism operating in timed relation with the operation of said power means for actuating said device to interlock said loops.

10. A machine for lidding a wire-bound box having a hinged cover displaceable longitudinally of the hinge and body of the box to bring the ends of the cover into and out of alinement with the box ends, comprising mechanism for pressing a cover on a box body and including a head and beneath the head a support for a box having said hinged cover and interlockable wire loops on the outer edge of the cover and corresponding box edge, said mechanism also including power means for moving said head vertically, a movable device carried by and vertically movable with the head, said device including an element mounted on the head for downward swinging movement to engage and interlock said loops when the cover is pressed on the box, means for alining said cover and the box body longitudinally of the hinge in advance of the interlocking of said loops, and an actuating mechanism operating in timed relation with the operation of said power means for actuating said device to interlock said loops.

11. A machine for lidding a wire-bound box having a hinged cover displaceable longitudinally of the hinge and body of the box to bring the ends of the cover into and out of alinement with the box ends, comprising mechanism for pressing a cover on a box body and including a head and beneath the head a support for a box having said hinged cover and interlockable wire loops on the outer edge of the cover and corresponding box edge, said mechanism also including power means for moving said head and support relatively vertically, a movable device comprising a member mounted for swinging movement downwardly at the outside of the box, said member being oper-

able to interlock said loops when the cover is pressed on the box, means for alining said cover and the box body longitudinally of the hinge in advance of the interlocking of said loops, and an actuating mechanism operating in timed relation with the operation of said power means for actuating said member to interlock said loops.

12. A machine for lidding a box having a lid hinged at one edge to one side of the box and having an opposite edge carrying a first flexible projection adapted to be connected with an alined second flexible projection carried by a side of the box opposite its first mentioned side, said machine comprising a press structure including a frame, a support carried by the frame for reception of the box with its cover in an open position, and a cover engaging head member spaced from the support, power means for producing a relative movement together of said support and head member to press and apply said cover on the box, a locking element movably carried by said structure and engageable with said projections to interlock them, and mechanism for actuating said element to interlock the projections, said mechanism including means operating automatically upon relative movement together of said support and head member to cover applying position to actuate said element to interlock the projections.

13. A machine for lidding a box having a lid hinged at one edge to one side of the box and having an opposite edge carrying a first flexible projection adapted to be connected with an alined second flexible projection carried by a side of the box opposite its first mentioned side, said machine

comprising a press structure including a frame, a support carried by the frame for reception of the box with its cover in an open position, and a cover engaging head member spaced from the support, power means for producing relative movement together of said support and head member to press and apply said cover on the box, a locking element carried by said structure above the support and box and mounted for downward swinging movement to engage and interlockingly deflect said projections downwardly at the outside of the box, and mechanism for actuating said element to so deflect and interlock the projections, said mechanism including means operating automatically upon relative movement together of said support and head member to cover applying position to actuate said element to interlock the projections.

LELAND H. PLATT.
LELAND H. PLATT, JR.
JOHN DEE PLATT.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,829,230	Meer	Oct. 27, 1931
1,976,033	Platt	Oct. 9, 1934
2,063,124	Rosenmund	Dec. 8, 1936
2,114,729	Twomley	Apr. 19, 1938
2,121,821	Paxton	June 28, 1938