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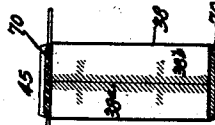
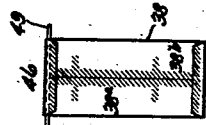
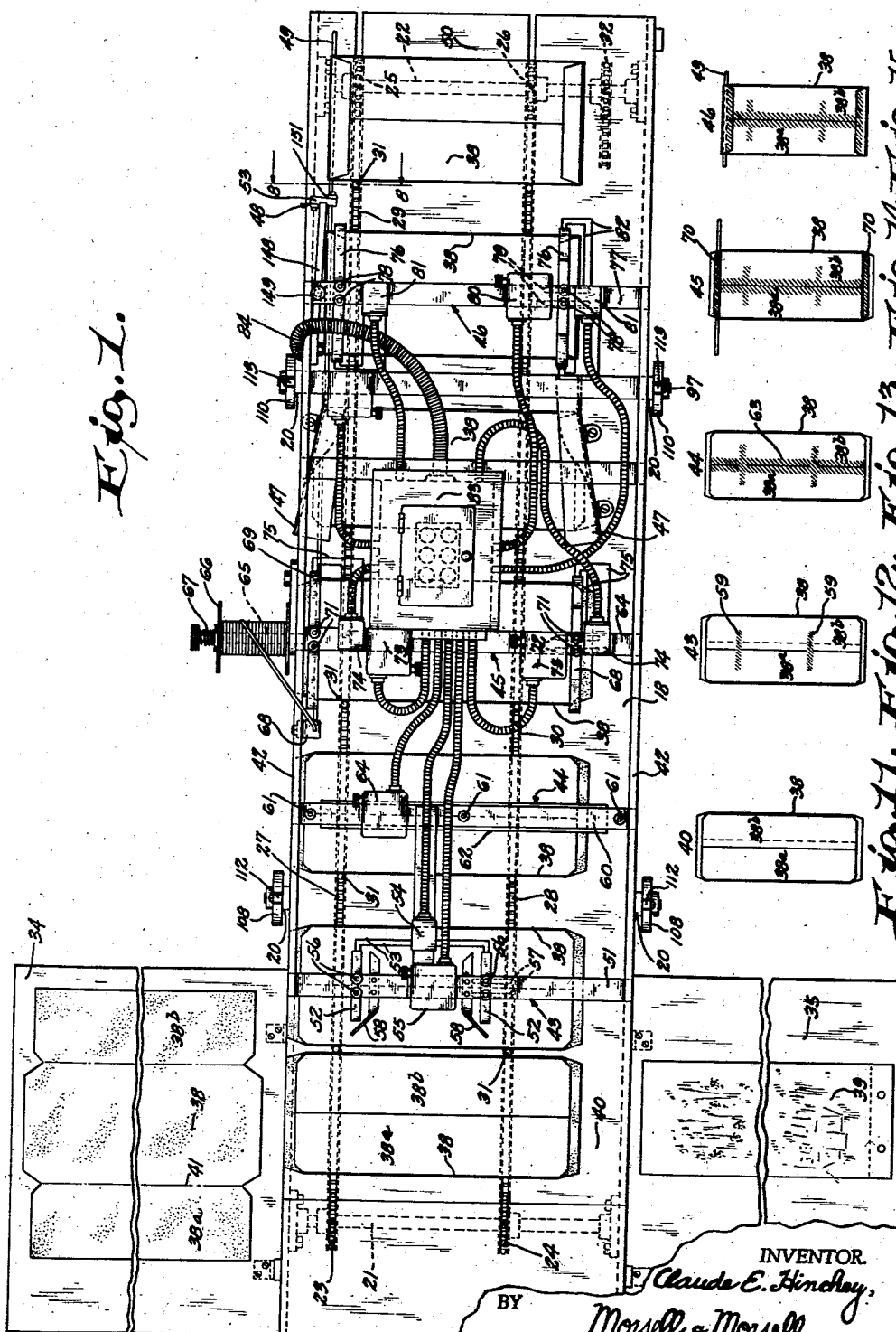
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2,362,819

PACKAGE WRAPPING MACHINE

Filed Jan. 28, 1942

4 Sheets-Sheet 1



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4 Sheets-Sheet 2

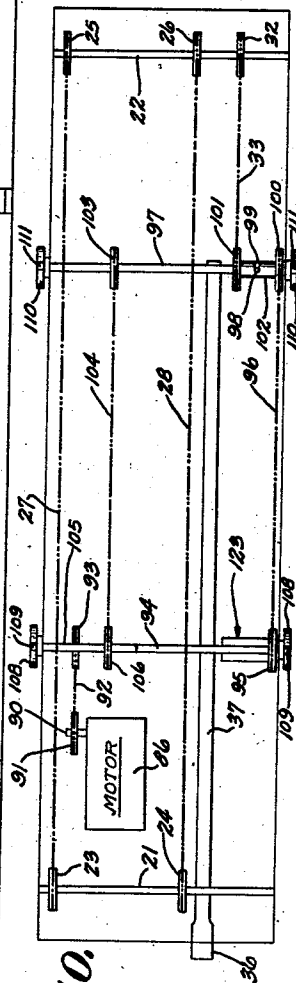
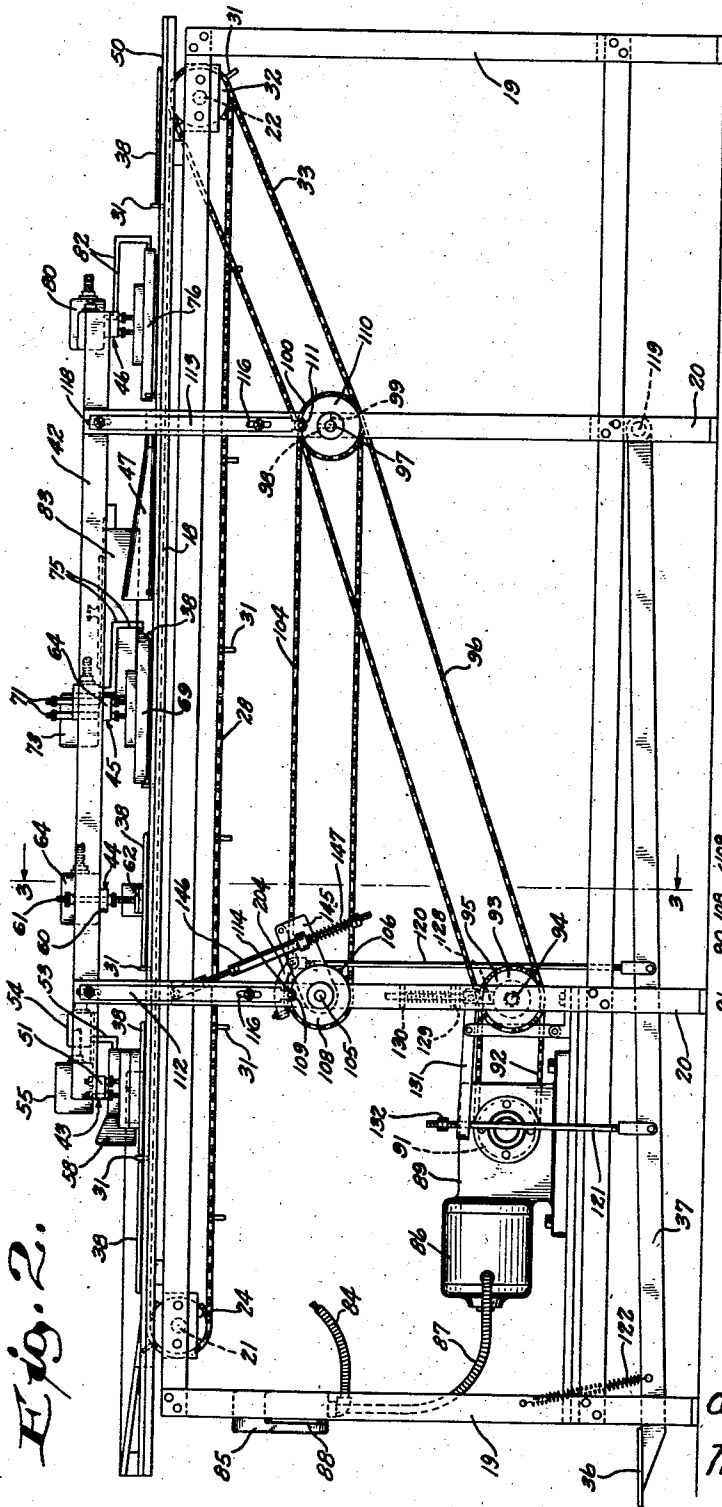


Fig. 10.

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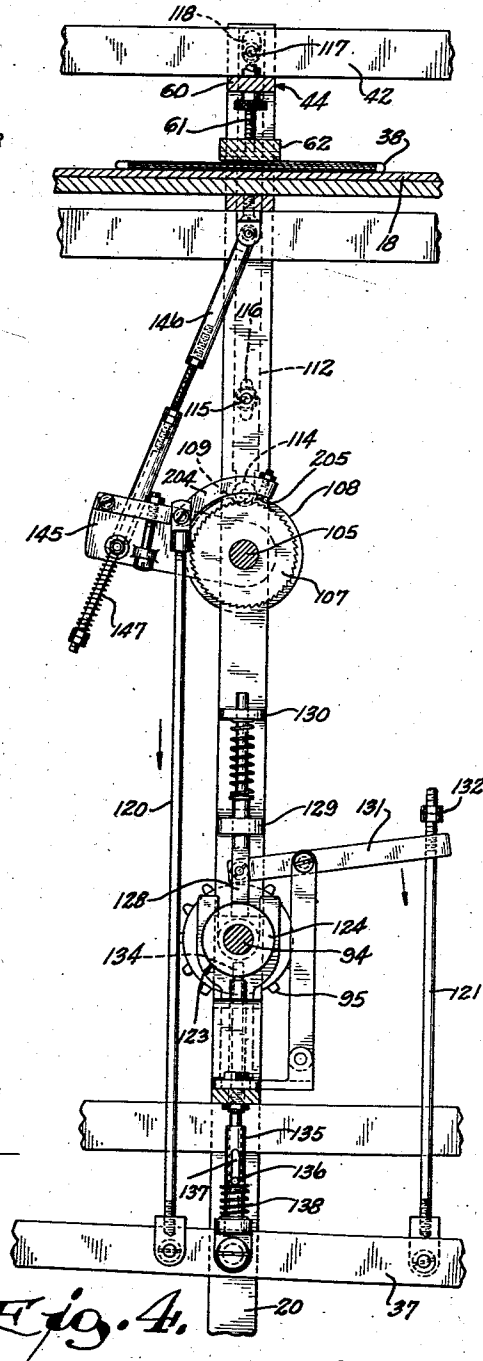
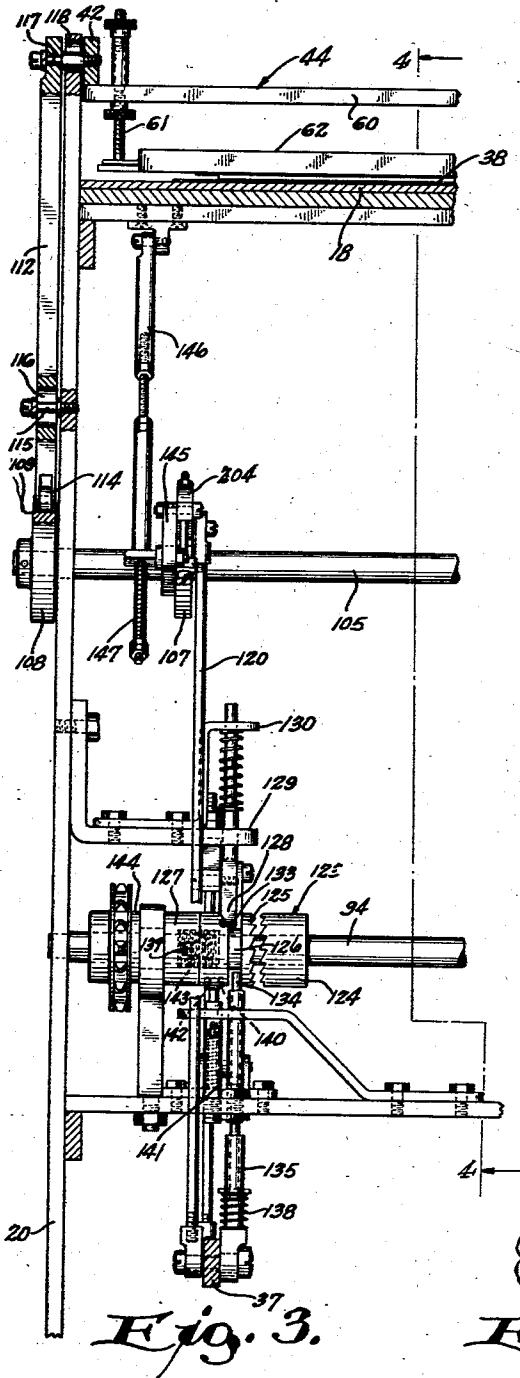
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4 Sheets-Sheet 3



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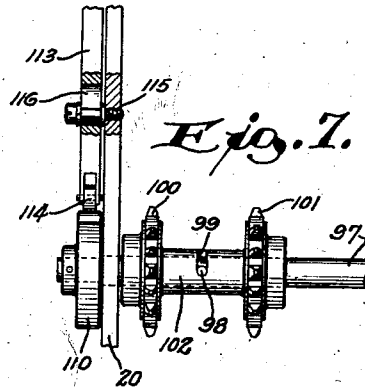
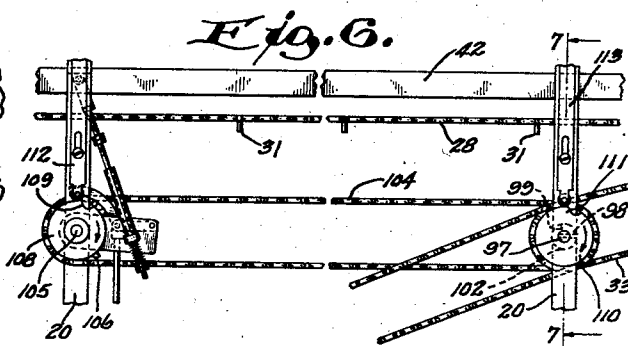
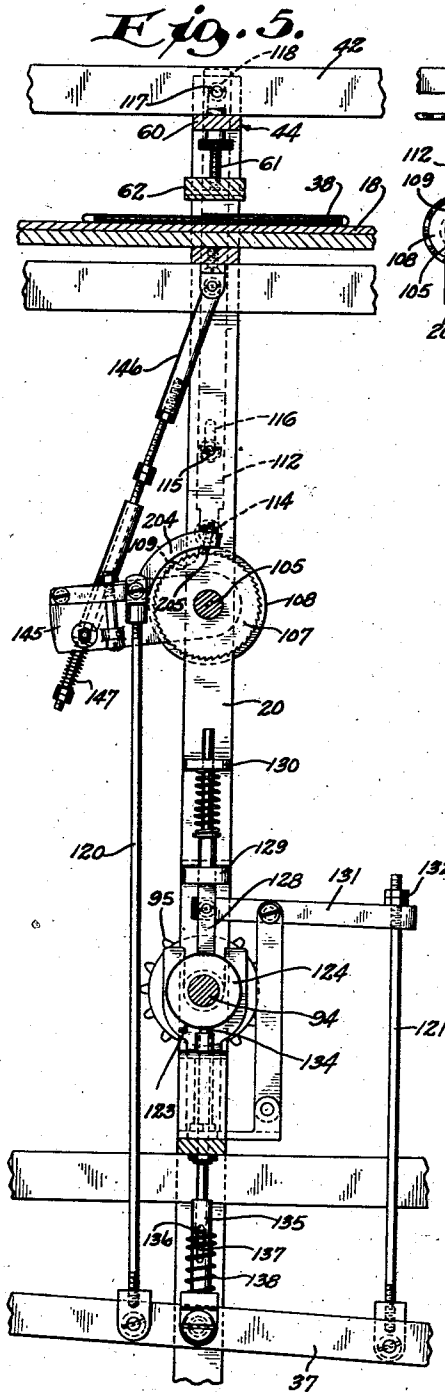
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Filed Jan. 28, 1942

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UNITED STATES PATENT OFFICE

2,362,819

PACKAGE WRAPPING MACHINE

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Application January 28, 1942, Serial No. 128,526

5 Claims. (Cl. 93-2)

This invention relates to improvements in package wrapping machines.

In the packaging of certain commodities it is customary to apply neat wrappers to uniform piles of the goods with the seams and flaps of a folded wrapper, after it is applied, being sealed or adhered in closed positions, and with one of the sealed flaps enclosing a length of opening tape or twine. Heretofore, for the sealed packaging of certain types of merchandise, because of the many complex operations required to obtain proper folded, overlapped and adhered flaps in the package wrapper, the wrapping was done by hand, making the same relatively slow and expensive.

It is, therefore, the primary object of the present invention to provide a machine for automatically folding and adhering a wrapper sheet about a bulky object or stack of uniform goods, while applying within one of the sealed flaps a tape which when pulled severs and opens one side of the package.

A further object of the invention is to provide a machine for automatically folding the end flaps of waxed sheets applied to packages, and heating the flap and seam portions of the applied wrappers to cause adhesion.

A further object of the invention is to provide a machine of the character described wherein adhesion of desired portions of a wrapper is caused by thermostatically controlled heating irons applied to an advancing wrapped package at different stations, together with means for automatically applying the irons to and removing the same from the package wrappers.

A further object of the invention is to provide a package wrapping machine which is readily adjustable in order to handle packages and wrappers of various sizes.

A further object of the invention is to provide a package wrapping machine in which successive wrapper folding and sealing operations are performed at successively advanced stations to which the packages are delivered by a conveyor arranged for intermittent or stepped movements.

A further object of the invention is to provide a package wrapping machine including a novel clutch mechanism for controlling the movement and operations of certain elements at the desired times and in a predetermined sequence.

A further object of the invention is to provide a package wrapping machine which is efficient, economical, and expeditious in operation, which is strong and durable, which can be manipulated

and controlled by a single operator, and which is well adapted for the purposes set forth.

With the above and other objects in view the invention consists of the improved package wrapping machine, and its parts and combinations as set forth in the claims, and all equivalents thereof.

In the accompanying drawings in which the same reference characters indicate the same parts in all of the views:

Fig. 1 is a plan view of the improved package wrapping machine;

Fig. 2 is a side view thereof;

Fig. 3 is a fragmentary, transverse vertical sectional view taken on line 3-3 of Fig. 2 and on a larger scale and with additional portions broken away and in section;

Fig. 4 is an enlarged, fragmentary, transverse vertical sectional view taken on line 4-4 of Fig. 3;

Fig. 5 is a view similar to Fig. 4 only showing some of the movable elements in different positions;

Fig. 6 is a fragmentary side view of a portion of the machine showing particularly the station lowering and lifting mechanism;

Fig. 7 is a fragmentary, detail, sectional view taken on line 7-7 of Fig. 6, and on a larger scale;

Fig. 8 is an enlarged, fragmentary, detail sectional view taken on line 8-8 of Fig. 1 with the tape cutting scissors in closed condition;

Fig. 9 is a view similar to Fig. 8 only with the scissors open;

Fig. 10 is a schematic plan view of the driving mechanism and arrangement for the machine; and

Figs. 11 to 15 inclusive illustrate, on a smaller scale, a wrapper applied package during the various stages of the operation of the improved machine.

Referring now more particularly to the drawings it will appear that the improved package wrapping machine is incorporated in a convenient table-like structure which includes a relatively elongated, flat, horizontal table-top suitably elevated by means of end corner supporting legs 19 and intermediate legs 20. Immediately adjacent the under side of the table 18 are suitably mounted transverse revoluble shafts 21 and 22. There are fast on the shaft 21 suitably spaced sprockets 23 and 24. Likewise, the shaft 22 carries fast thereon similar sprockets 25 and 26. The sprockets 23 and 25 are joined by an endless conveyor chain 27, and the sprockets 24 and 26 are connected by a similar endless

conveyor chain 28. Both of the conveyor chains extend spacedly lengthwise of the table top 18 and register with longitudinal slots 29 and 30 in the table top. At twelve inch intervals on the conveyor chains are projecting pins 31 for the purpose of engaging and propelling packages along the extent of the table top, the pins 31 on the upper flights of the chains 27 projecting through said slots 29 and 30 and somewhat above the table top 18. The transverse shaft 22 carries fast thereon an additional sprocket 32 engaged by an endless chain 33. Conveyor driving power is transmitted to the shaft 22 through the chain 33 and sprocket 32 through connections which will hereinafter be explained.

The incoming end of the table 18 (the end at the left in Figs. 1 and 2) is augmented by suitably supported removable side wings 34 and 35. For convenience of illustration the extensions 34 and 35 have been omitted from Fig. 2. Although the invention is not to be limited specifically thereto, the present embodiment is adapted for the purpose of wrapping packages of stencils. The machine operator assumes a position beyond the incoming end of the machine and can conveniently engage and operate with his foot the treadle end 36 of a lower pivotally mounted operating lever 37. A stack of properly shaped pre-cut wrappers 38 is disposed on the table wing 34 and a stack of stencils 39, a suitable number of which are to be successively wrapped by single wrappers, are positioned on the table wing or extension 35. The initial or incoming operating station is at the left hand end of the table top between the extension wings 34 and 35. The operator, with his hands, disposes a wrapper 38 in a proper position on the table, said incoming station being designated 40. Each wrapper is of a type wherein one surface thereof is coated with wax and in disposing the cut wrapper on the station 40 the wax covered surface should be uppermost. On the flat wrapper so disposed a suitable pile of stencils 39 or other uniform objects to be wrapped is disposed centrally on the wrapper and then the front flap 38a of the wrapper is manually folded over onto the top of the stencil stack, the fold being accomplished along the line 41. Next the rear flap 38b is manually folded over onto the first folded flap 38a, providing an overlapped longitudinal wrapper seam as shown in Fig. 11 and a likewise shown at the station 40 in Fig. 1. The package, as thus manually prepared, overlies certain extents of the upper flights of the conveyor chains 27 and 28 and is properly located by being alined against a raised side edge of the wing 34 and by having its forward longitudinal edge in abutment with a pair of pins 31 on the conveyor chains.

Suitably vertically movably carried above the table top 18 by a pair of spaced side rails 42 are a series of transverse operating station carrying elements. The first operating station beyond the incoming station 40 is a wrapper seam spot sealing station designated generally by the numeral 43. At a suitable interval beyond the station 43 is a full seaming station 44. The following station, designated 45, is a top end flap sealing and tape applying station. Toward the discharge end of the table 18 is a total end flap sealing station 46. However, between the stations 45 and 46 are suitably spaced flap folding channels 47 which, during the travel of a package from station 45 to station 46, cause the extended lower end flaps to be folded over onto the top portions of the ends of the package to per-

mit the final sealing of these overlapped and folded end flaps at station 46.

On one side of the top surface of the table top 18 beyond the station 46 is a scissors mechanism designated generally by the numeral 48. Said scissors mechanism is for the purpose of cutting a tape or ribbon 49, which has been applied to one end of the sealed package, into a suitable length, whereby ultimately an extended end of the ribbon length sealed into the package may be grasped and pulled for the purpose of opening the package. Beyond the station 46 and scissors mechanism 48 the table top forms a discharge station 50 where the fully wrapped and sealed packages are successively delivered and are subsequently removed therefrom.

The instrumentalities at the spot sealing station 43 are carried by a transverse elevated bar 51 having its ends secured to the vertically movable side rails 42. Depended from the lower face of the bar 51 are a pair of spaced heating irons 52 at right angles to the bar 51 and spaced so as to engage top portions of a wrapper 38 as applied to a package at the station 40, said irons at station 43 extending across the top wrapper seam. Said irons 52 are of conventional structure including heating elements therein which are energized by electricity supplied through wires 53. Suitably mounted on the top portion of the bar 51 are a terminal box 54 and a standard adjustable thermostat 55 which controls the temperature of the heating irons 52. The heating irons 52 are vertically adjustable by virtue of threaded bolts 56 on which they are mounted and one of the irons 52 is longitudinally adjustable on the bar 53 by virtue of slots 57 in said bar through which the bolts 56 are clampingly and adjustably extended. The vertical adjustments of the irons adapt the station for packages of different thicknesses, while the longitudinal adjustment of one of the irons 52 adapts the station 53 for the reception of packages of different lengths, within certain limitations.

Hereinafter will be explained the manner in which the intermittent movement of the conveyor chains 27 and 28 is controlled. Likewise at this point it should be stated that when the conveyor is moving to advance packages from one station to another, the side rails 42 carrying the various station mechanisms is elevated so that the mechanisms carried by the station bars will not contact the moving packages. However, when a package reaches an advanced station and an operation at that station is desired, the control and operating mechanism, to be later explained, lowers the side rails 42 so that the various station bars affixed thereto are likewise lowered toward the table top, causing the stationed mechanisms on the bars to forcefully contact the top surfaces of the packages.

When a package at the incoming station 40 is to be advanced to the spot sealing station 43, the operator holds his hand on the overlapped top flap 38b of the wrapper to keep said flap in folded condition until the wrapper applied package reaches the station 43 and is engaged by the lowered irons 52. To protect the operator's hand from possible accidental contact with the heating irons 52, spaced flared wings 58 are attached to and extend from the underside of the bar 51. At this point it may be stated that when a package is delivered to station 43 and is engaged by the heating irons 52, said irons become effective to melt the wax on the overlapped top portions of the wrapper along several trans-

verse lines as indicated at 59 in Fig. 12. This operation is effective to hold the wrapper in the folded condition of Fig. 12 for the convenient performance of the subsequent operations.

The station 44 likewise includes a raised transverse bar 60 from which is vertically adjustably depended by bolts 61, an elongated heating iron 62 which spacedly underlies the bar 60 and which is adapted to register with the top longitudinal seam in the package wrapper and to heat the wax along said seam as at 63 in Fig. 13 and to cause full adhesion of the overlapped top flaps of the package wrapper. The temperature of the iron 62 is controlled by an adjustable thermostat 64 mounted on the top portion of the bar 60.

It should be noted that the pre-cut wrappers 38 are so shaped that after the flap 38a is folded over onto the top of the package and is overlapped by the complementary top flap 38b, bottom end flaps project somewhat beyond the top end flaps. The following station 45 is for the purpose of sealing onto the extended bottom end flaps the narrow extents of the top end flaps and at the same time for applying under one of the top end flaps so sealed an extent of package opening tape or ribbon 49. The station 45 includes an elevated transverse bar 64 carried by the side rails 42. Extending from one side of the table 18 slightly below the top surface thereof and aligned with the bar 64, is a spool stud 65 on which is revolvably mounted a spool 66 having wound thereon a suitable supply of ribbon or tape 49. Free movement of the spool 66 is retarded by a spring 67 on the stud 65 and bearing against the spool. An extent of tape or ribbon from the spool 66 is threaded through an apertured guide clip 68 mounted on the same side of the table 18 rearwardly of the spool and rearwardly of the station 45. The clip 68 and extent of tape extended forwardly therefrom, longitudinally of the table top 18, is arranged so that as a package advances from station 44 to station 45 the tape will be threaded between the top and bottom end flaps at one end of the package. At the station 45, when the mechanism carrying bar 64 is lowered, transverse heating irons 69 register with and engage only the top end flaps of the package. The heat and pressure effected by the irons 69, when the same are engaged with the package, are effective to melt the wax so as to seal the top end flaps down onto the longer lower end flaps, as indicated at 70 in Fig. 14. This operation also serves to seal into one end of the package an extent of the tape or ribbon 49. The irons 68 are slightly longer than the transverse dimension of the package. Both of the irons 68 are vertically adjustable on studs 71 while one of the irons is longitudinally adjustable relative to the bar 64 by virtue of slots 72 in the bar 64 and through which one pair of studs 71 pass. The heating irons 68 are controlled by regulatable thermostats 73 which are electrically connected with terminal boxes 74 with suitable connections 75 being made to the irons.

As was previously mentioned, the table top 18, along opposite sides thereof and between the stations 45 and 46, carries a pair of end flap folders 47. Each folder 47 is of curved formation, as shown in Figs. 1 and 2, and is outwardly inclined and enlarged toward the station 45. As a package is being propelled by the conveyor from station 45 to station 46, the extended lower end flaps enter the enlarged flared ends of the

folders 47 and as these folders are tapered and directed toward the discharge end of the machine, and as they have curved walls which are progressively restricted, the same function to engage the extended lower end flaps and to fold the same over onto the top end portions of the package wrapper with the result that when a package reaches station 46 the lower end flaps have been folded over onto the top end portions of the package.

At station 46 it becomes desirable to seal the folded over end flaps of the package. This is accomplished by heating irons 76 which are depended from end portions of a station bar 77, at right angles to said bar, it being noted that the bar 77 is carried above the table top by the side slats 42. Both heating irons 76 are vertically adjustably carried by threaded studs 78 and one of the irons 76 is longitudinally adjustable on the bar 77 by means of slots 79 through which one pair of studs 78 clampingly extend. The irons 76 are controlled by an adjustable thermostat 80 mounted on the bar 77 and said bar also carries terminal boxes 81. The terminal boxes have circuit wire connections 82 with the irons 76 and are also suitably electrically connected with the thermostat 80.

Conveniently mounted on transverse bars carried by the side slats 42 is an electrical fuse box 83 from which cables to the various thermostats and terminal boxes at the stations extend. A main power line cable 84 enters the fuse box. This power line cable connects with a manually operated switch box 85 at the inlet end of the table 18 and from the switch box there is a cable, as is customary, which connects with a source of electrical energy.

All of the moving parts of the machine receive their power from an electric motor 86 mounted on a lower base portion of the table 18. The motor is controlled, through a cable 87, by a conveniently located switch 88, the latter being connected with a source of electrical energy by wires (not shown). Integral with the motor 86 is a speed reduction transmission 89 having an outwardly projecting driven shaft 90 carrying fast thereon a sprocket 91. Said sprocket is engaged by a short endless chain 92 which also engages a sprocket 93 mounted fast on the continuously driven portion of a lower, transverse, clutch controlled shaft 94. On the opposite end portion of said shaft 94 (the clutch controlled portion) there is mounted a sprocket 95 engaged by one end portion of an endless chain 96.

Revolvably extended transversely between intermediate portions of the intermediate legs 20 closest to the discharge end of the table 18 is an upper shaft 97. On one end portion of this shaft and connected thereto by a lost motion arrangement consisting of a pin 98 and a slot 99, is a sleeve 102. A sprocket 100 is integral with one end of said sleeve and another sprocket 101 is integral with the other end portion of said sleeve. The sprocket 100 is engaged by the chain 96, and the sprocket 101 is engaged by the chain 33 previously referred to. Fast on an intermediate portion of the shaft 97 is still another sprocket 103 engaged by one end portion of an endless chain 104.

The other pair of intermediate table legs 20 has extended therebetween a revolvable upper transverse shaft 105 which overlies the shaft 94 and carries, longitudinally aligned with the sprocket 103, a similar sprocket 106 also drivingly engaged by the chain 104. The shaft 105 toward the end

at the front in Fig. 2, carries fast thereon a ratchet wheel 107. Both extremities of said shaft, exteriorly of the side rails 42, also have fast thereon cam wheels 108 provided with peripheral recesses 109. The extremities of the other transverse upper shaft 97 carry similar cam wheels 110 having peripheral recesses 111.

Vertically slidably superimposed on the outer faces of the upper portions of one pair of intermediate table legs 20 are vertical arms 112. Similar arms 113 are vertically slidably carried by the upper outer portions of the other intermediate legs 20. The arms 112 and 113 are similar and are vertically actuated by adjacent cam wheels and are also connected with the longitudinal side rails 42. Structural details are shown in Figs. 2, 3 and 4 and the arrangement of only one of said arms will be described. As shown, an arm 112 (or 113) has its lower end bifurcated to receive a stud on which a cam roller 114 is mounted. A laterally projecting pin 115 from a leg 20 extends through a slot 116 in an arm, while at the upper end of an arm a pin 117 extends through a vertical slot 118 in the leg 20 and is secured to the rail 42. Hence, both side rails 42, which carry all of the station bars 44, 45 and 46, are fast with the upper ends of the movable arms 112 and 113. Also said arms 112 and 113 are mounted to reciprocate vertically on the legs 20, the same being elevated when the cam rollers 114 ride on the normal peripheral portions of the cam wheels 108 and 110, and being lowered when the cam rollers drop into the recesses 109 and 111 in said cam wheels.

The operating lever 37 previously mentioned has its inner end pivotally mounted on an inner, transverse, lower rod, as at 119. Intermediate portions of said lever have pivotally attached thereto by means of clevises, vertical operating rods 120 and 121. Downward movement of the outer end of said lever 37 is against the force of a coiled spring 122.

When the switch 88 for the motor 86 is turned on the portion of the shaft 94 which carries the sprocket 93 will be constantly revolved. Revolution of mechanism on the other portion of said shaft will depend upon whether or not a clutch, designated generally by the numeral 123, is engaged, said clutch being interposed in the shaft 94.

A certain degree of foot pressure on the treadle portion 36 of the lever 37, will, because of the downward swing of said lever, pull downwardly on the vertical rod 120. A curved ratchet arm 204 has one end pivotally connected to the upper end of said rod 120 and a depending lug 205 at the outer end of said ratchet arm will be swung so as to engage a tooth on the ratchet wheel 107. Then, further downward pressure of the lever 37 will actuate said ratchet arm to cause it to turn the wheel 107 in a counter-clockwise direction (relative to Figs. 4 and 5) a desired distance. The movement of said ratchet wheel, which is fast on the shaft 105, causes a turning movement of said shaft sufficient to turn the cam wheels 108, also fast on said shaft, a distance to disengage the rollers 114 from the cam wheel recesses 109. It will be noted that through the sprockets 106 and 103, and the chain 104, the other upper transverse shaft 97 will be turned a similar distance in the same direction to lift the rollers on the arms 113 free of the cam wheel recesses 111 whereby the four arms 112 and 113 are simultaneously reciprocated upwardly. This movement of the shaft 97 does

not affect the shaft 22 with which it is connected because the shaft pin 98 rides in the lost motion sleeve slot 99 (see Figs. 7 and 10). By virtue of the elevation of the arms 112 and 113, the side rails 42 and all of the station bars and elements carried thereby are elevated. This serves to remove the various sealing irons from wrapped packages at the various stations and during this period of elevation of the station instrumentalities it is proposed that the conveyor 27-28 be steppedly advanced (a distance of twelve inches in the exemplification shown) to move the packages to the next advanced stations.

During the operation last described the clutch 123 remains disengaged. Said clutch includes a toothed disc 124 fast on the shaft 94 and a complementary toothed clutch spool 125 loose on said shaft. The clutch spool 125 has a reduced or recessed sleeve portion 126 and an outer head formed with an axially extending lug 139. There is also loose on the shaft a disc 127 (see Fig. 3) having a side recess entered by the lug 139, whereby the discs 125 and 127 will turn together. A coiled spring 143 is interposed between the outer head of the spool 125 and disc 127 and urges the same apart, but never to an extent to cause full withdrawal of the lug 129 from the recess of the disc 127. The latter disc has integral outwardly extending sleeve portions 144 surrounding the shaft 94 and with which the sprocket 95 is integral. A spring urged plunger 128 is adapted to ride in the recess of the spool 125. The plunger 128, which has an upper portion guided through supporting lugs 129 and 130, is actuated by an intermediately pivoted fulcrum arm 131 whose outer end is slidably confined on the upper end portion of the vertical rod 121. The arrangement is such that initial downward movement of the lever 37 does not rock the arm 131, but upon additional downward movement of said lever 37 the rod 121 will move downwardly in the outer end of the fulcrum arm until the nuts 132 engage said fulcrum arm, whereupon the latter will move from the position of Fig. 4 to the position of Fig. 5, lifting the plunger 128 from its clutch sleeve recess engaging position.

When the clutch elements 124 and 125 are disengaged the plunger 128 is in its lowered position and abuts a beveled shoulder 133 on a face portion of the spool 125. Also, a vertically reciprocating bottom pin 134 is lodged within a reduced portion of the spool recess 126. Said pin 134 is mounted in a cylinder 135 upstanding from the lever 37 and carries a transverse pin 136 extending through a vertical slot 137 in the cylindrical wall engaged by a confined coiled spring 138. The result is that movements of the lever 37 impart reciprocating delayed action movements to the pin 134.

During the operation of the mechanism to cause disengagement of the clutch elements 124 and 125 the bottom pin 134 engages a local shoulder within the spool recess 126 and moves the clutch element 125 only sufficiently far from the clutch element 124 so that the teeth on said complementary clutch elements are out of engagement. At this time, the plunger 128 is riding on a narrowed face portion of the shoulder 133 in spool 125 and then rides onto a wider portion of the shoulder to force clutch element 125 further from clutch element 124. Temporary locking of the complementary clutch elements in this separated position is accomplished by a spring urged wedge 140 carried by a supported

cylinder 141, said wedge dropping into a transverse slot 142 therefor in the spool 125.

With the arms 112 and 113 raised, whereby the station instrumentalities are out of engagement with the packages, it immediately becomes desirable to next engage the clutch to establish the drive to the conveyor chains 27 and 28 to quickly progress the packages to the succeeding stations. This is accomplished by further downward pressure on the lever 27. Until this point the delayed action arrangements for fulcrum 131 and pin 134 have permitted the plunger 128 and pin 134, as well as the wedge 140, to be unaffected by the lever 27. However at this point the final and full downward movement of the lever will take up the slack in the delayed action arrangements and cause the lever 27 to move fulcrum 131 and pin 134, withdrawing the same from the spool 125. Thereupon, the spring 143 becomes effective to shift the spool 125 to the right, relative to Fig. 3, to engage its teeth with the teeth of the complementary clutch disc 124. As previously mentioned, the lug 139 does not move entirely free of the recess therefor in disc 127 so that the drive from the shaft 94 is established to the sprocket 95, through the chain 96 to the shaft 97, and from there to the conveyor shaft 22, whereby the conveyor chains 27 and 28 are driven.

The clutch elements 124 and 125 will remain engaged only for one complete revolution of the sprocket 93 on shaft 94 and this is commensurate with the distance between two adjacent stations traveled by the conveyor. This is accomplished because after the clutch elements are engaged and the conveyor moved, the operator releases the pressure from the lever 27, allowing it to lift to its original position. Thereupon, the clutch operating plunger 128, the pin 134, and the wedge 140 return from their retracted positions and engage the clutch spool to separate it from the clutch disc 124.

The ratchet arm 204, connected to and operated by the rod 120 is also carried by a plate 145 whose inner end is pivotally mounted on the shaft 105. The outer end of the plate is yieldingly supported by an adjustable hanger 146 pivotally depended from the under surface of the table top 18. A lower extension portion of the hanger 146 is slidably extended through an extension from the plate 145 and carries a confined, compressible coiled spring 147. Following a depression of the rod 120 to cause the ratchet arm 204 to engage and turn the ratchet wheel 107 from the position of Fig. 4 to the position of Fig. 5, the plate 145 also having been swung downwardly, there will be compression of the spring 147. Thereafter, when the lever 27 is released and rises, the upward movement of the rod 120 together with the expansive force of the spring 147 will return the plate 145 and ratchet arm 204 to the original position of Fig. 4, ready to take a new bite on the ratchet wheel 107 for the next turning movement thereof.

It has previously been mentioned that a tape or ribbon cutting scissors mechanism 48 is operatively mounted beyond the final sealing station 46. This scissors mechanism is best shown in Figs. 1, 8 and 9 and includes an elongated supporting slat 148 having its inner end pivotally attached to a depending extension 150 on an inner side portion of a leg 20, being angled away from the leg toward the discharge end of the machine. An intermediate portion of said slat is pivotally carried by a vertically adjustable

clevis 149 depended from the transverse bar 77. The forward extremity of the slat has pivotally attached thereto the upper end of a link 151 whose lower end portion is pivotally attached to the outer end of an upper scissors blade 152. The forward end of the slat 148 also carries one end of a strap 153 whose other end has pivotally attached thereto one end of a link 154. The other end of said link pivotally carries the inner end of a lower scissors blade 155, to an intermediate portion of which is pivoted the upper scissors blade 152. It will thus be seen that both of the scissors blades are indirectly connected with and carried by the vertically reciprocable arm 113 through suitable linkages and hence the scissors mechanism is automatically operated through raising and lowering movements of the arm 113. When the arm 113 rises the scissors blades are automatically opened up, as in Fig. 9, there being a recess 156 to accommodate the lowered blade. When the arm 113 drops the scissors blades close, as in Fig. 8, snipping the tape 49 passing therebetween.

The operation of the improved package wrapping machine should be obvious from the description of the various parts thereof. However, to recapitulate, let it be understood that the switches 85 and 88 should both be turned on, when the machine is to be used, so that electricity will flow to the electric motor 86 and to the thermostatically controlled heating and sealing irons at the various stations. The shaft 94 will then be constantly driven from the motor. The wings 34 and 35 of the incoming end of the table top 18 are supplied with piles of pre-cut wrappers 38 and stencils or other objects to be wrapped 39 respectively. On the station 40 the operator prepares each package, with a wrapper thereabout, as previously described. It is of course assumed that the machine is being operated for the delivery of a succession of wrapped packages so that there will be packages, at various stages of completion, at each of the stations. The operator next depresses the treadle portion 36 on the lever 27 slightly and this is effective to cause movement of the cam wheels 108 and 110 to project the arms 112 and 113 upwardly, raising the longitudinal upper side rails 42 and all of the transverse bars and station mechanisms carried thereby. Thereupon, with further depression of the treadle portion of the lever 27, the complementary parts of the clutch 123 will engage to effect driving of the sprocket 95 and through the various chains and sprockets previously described this power will be transmitted to the shaft 22 whereby the conveyor chains 27 and 28 will move so as to advance each package one station. Upon release of the pressure on the lever 27 the side arms 112 and 113 will drop into the recesses in the cam wheels 108 and 109, lowering the longitudinal rails 42 and transverse bars carried thereby relative to the table top, causing the various instrumentalities carried at the stations to contact the packages. At station 43 the wrapper is spot sealed as in Fig. 12; at station 44 the top seam in the wrapper is fully sealed as in Fig. 13; at station 45 the top end flaps are sealed down with one of the same confining a length of tape or ribbon; between stations 45 and 46 the longer bottom end flaps are folded over onto the top portion of the package and at station 46 said folded over bottom end flaps are sealed down to fully close the package. Between station 46 and the discharge station 50

on the table top, the tape and package end passes through the scissors mechanism 43 to effect snipping of the ribbon or tape, with the completed package being delivered at station 50 for removal. Successive operations are performed by the previously described manipulations of the control lever 37.

From the foregoing description it will be seen that the improved package wrapping machine performs a number of successive operations relative to a wrapped package of commodities, is automatic and expeditious in its operation, requires only a single operator, and is well adapted for the purposes described.

What is claimed as the invention is:

1. A package wrapping machine comprising, a table having an elongated flat top, a super structure spanning said top and vertically, reciprocally mounted on portions of the table, a package conveyor movable along said table top, clutch controlled means for steppedly advancing the conveyor, means including revoluble cams for reciprocating the super structure, a motor operatively connected with both the conveyor-advancing means and the reciprocating means for operating the same, and a single lever controlling operation of the conveyor advancing means and the reciprocating means at proper intervals and in a desired sequence, the conveyor advancing means including a delayed action mechanism.

2. A package wrapping machine comprising, a table having an elongated flat top, a package conveyor movable along said top in a rectilinear path, a bridge extending substantially lengthwise of and spanning said top and including spaced, transverse carriers, wrapper flap electric sealing irons depended from said carriers, means vertically movably mounting the bridge on the table, means for steppedly advancing the conveyor to carry wrapped packages beneath said carriers, means for lowering and raising the bridge between stepped movements of the conveyor, the sealing irons contacting portions of the package wrappers when the bridge is lowered, and means carried by the table between certain of said carriers for folding some of the package wrapper flaps during travel of wrapped packages in a rectilinear path.

3. A package wrapping machine comprising, a table having an elongated flat top, a bridge spanning said top and including spaced, transverse carriers, wrapper flap electric sealing irons depended from said carriers, means vertically movably mounting the bridge on the table, means for steppedly advancing the conveyor to carry wrapped packages beneath said carriers, means for lowering and raising the bridge between stepped movements of the conveyor, the sealing irons contacting portions of the package wrappers when the bridge is lowered, and means carried by the table for applying lengths of ribbon to and sealing the same within end portions of wrapped packages passing thereadjacent.

4. A package wrapping machine comprising, a table having an elongated flat top, a bridge spanning said top and including spaced, transverse carriers, wrapper flap electric sealing irons depended from said carriers, means vertically movably mounting the bridge on the table, means for steppedly advancing the conveyor to carry wrapped packages beneath said carriers, means for lowering and raising the bridge between stepped movements of the conveyor, the sealing irons contacting portions of the package wrappers when the bridge is lowered, means carried by the table between certain of said carriers for folding some of the package wrapper flaps, means carried by the table for applying lengths of ribbon to and sealing the same within end portions of wrapped packages passing thereadjacent, and a scissors mechanism associated with the vertically movable bridge for cutting the lengths of ribbon sealed within the packages, said scissors mechanism being automatically operated by movements of the bridge.

5. A package wrapping machine comprising a table having a top, a super structure spanning said top and vertically, reciprocally mounted on portions of the table, a package conveyor movable along said table top, means for steppedly advancing the conveyor, means for reciprocating the super structure, and control means for the conveyor advancing means and the reciprocating means, the conveyor advancing means including a delayed action mechanism.

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