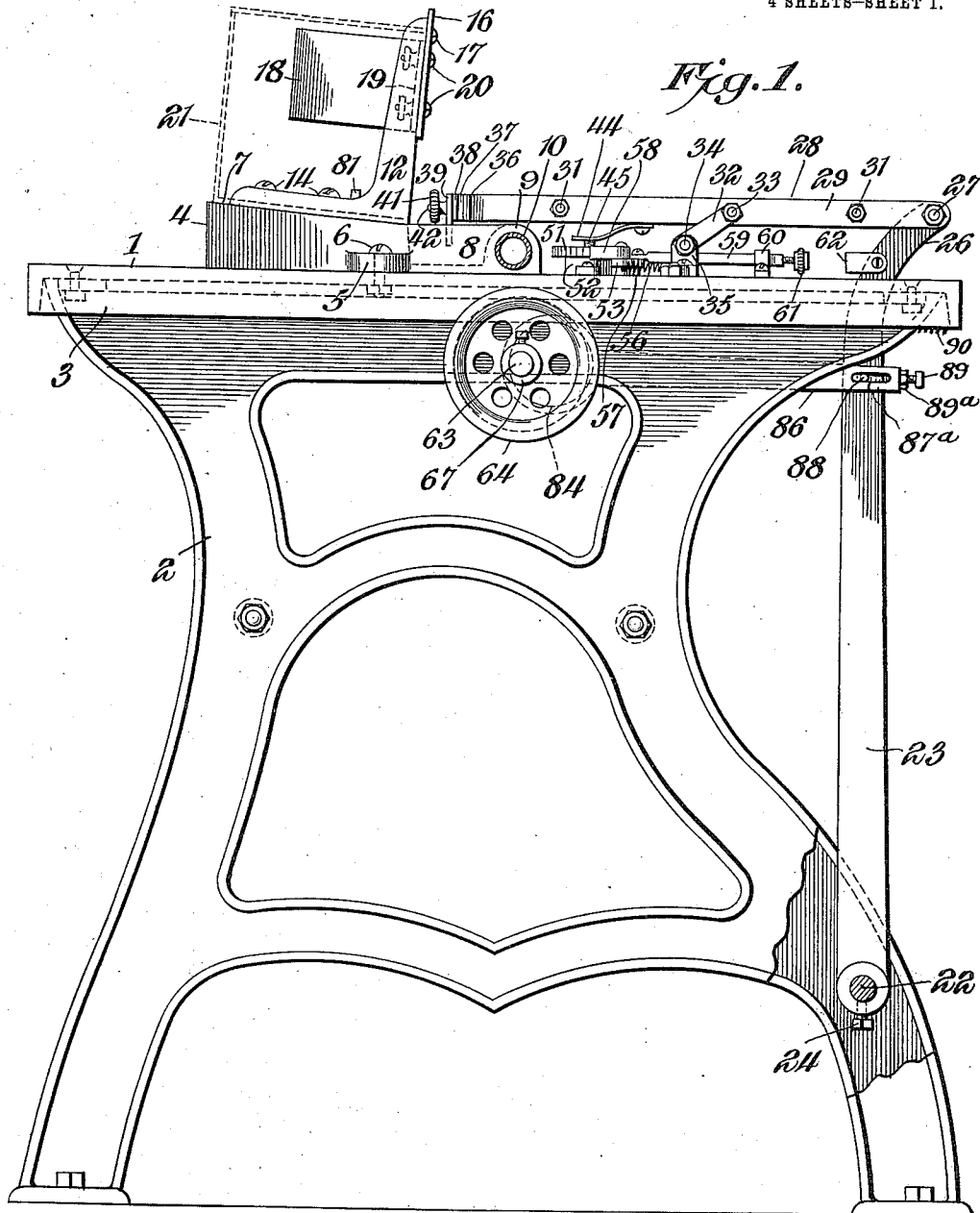


A. L. PATTERSON.
MACHINE FOR APPLYING PASTE TO BOXES FOR FLIES.
APPLICATION FILED APR. 15, 1911.

1,027,890.

Patented May 28, 1912.

4 SHEETS—SHEET 1.



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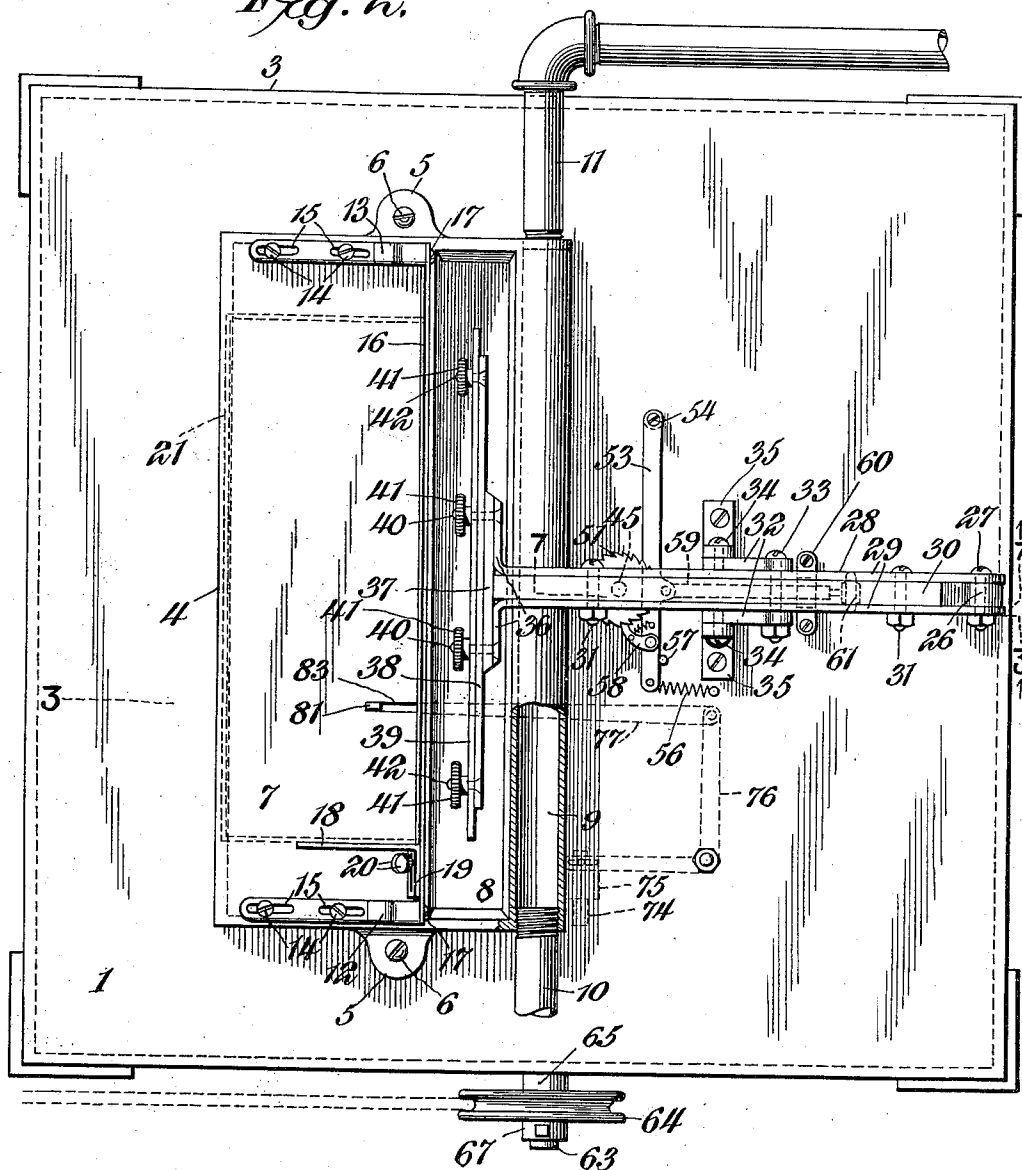
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4 SHEETS-SHEET 2.

Fig. 2.



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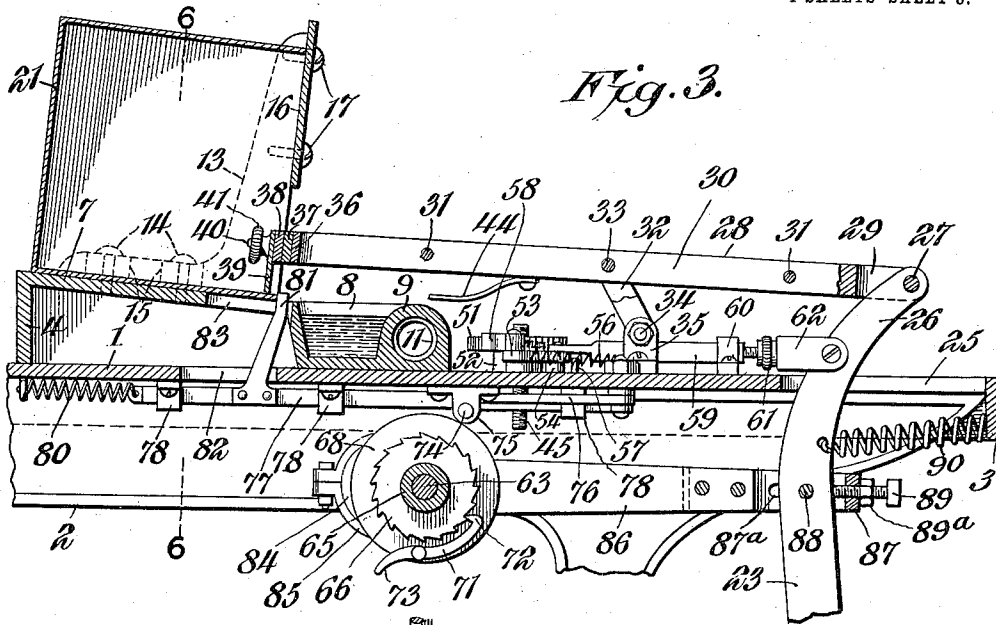


Fig. 4.

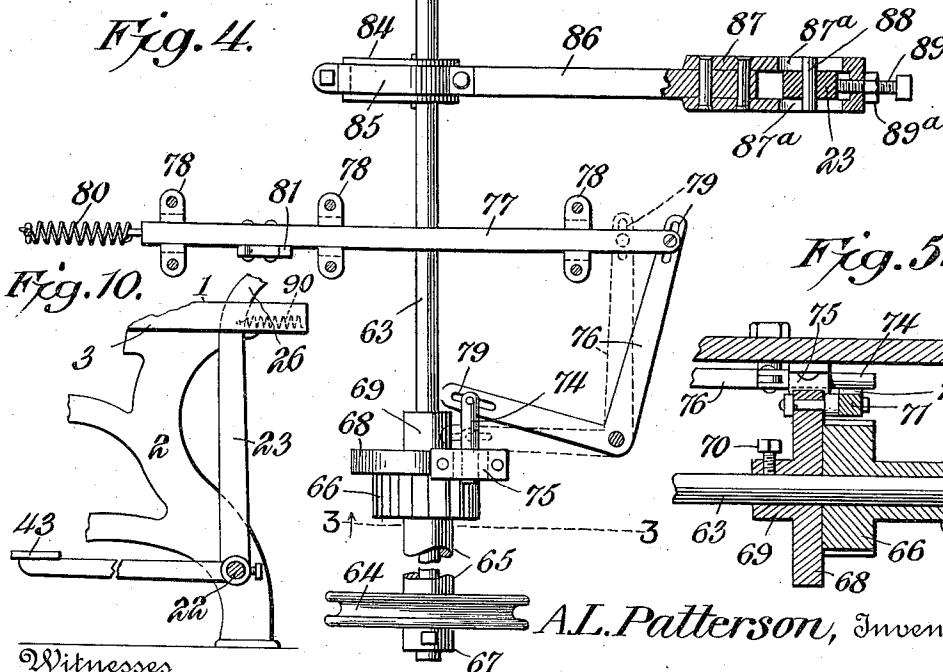


Fig. 5.

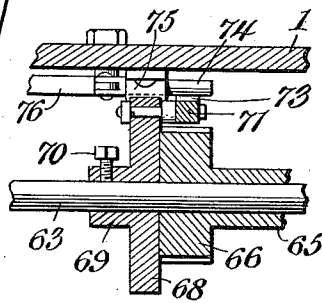
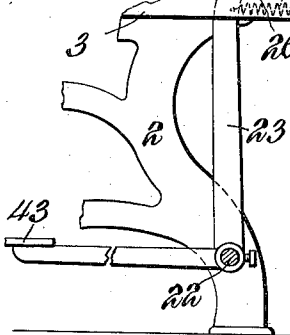


Fig. 10.



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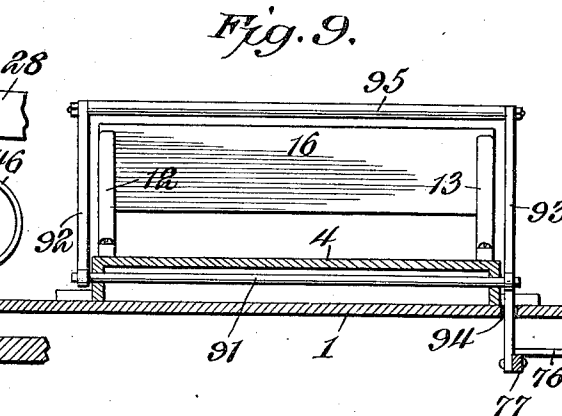
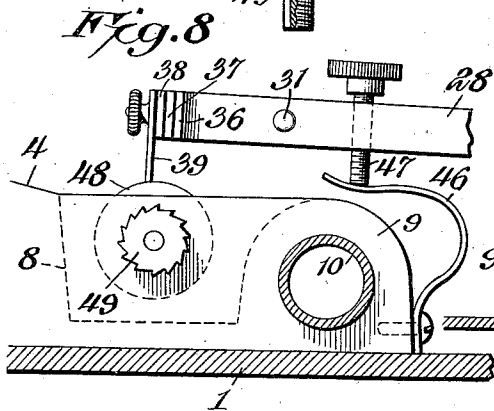
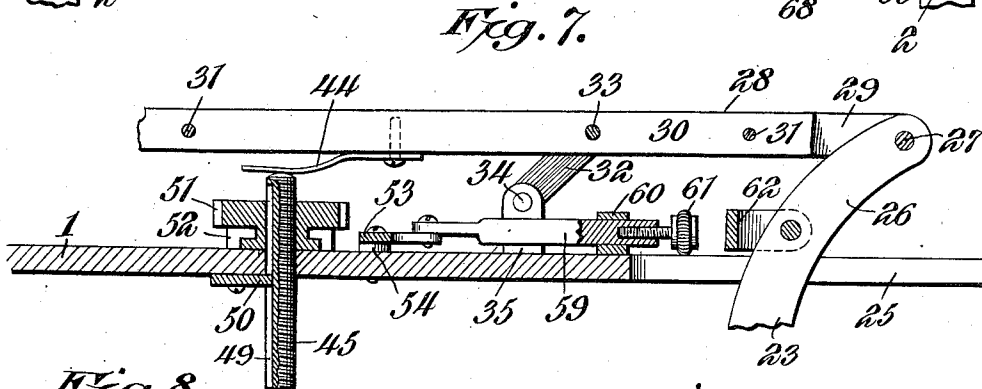
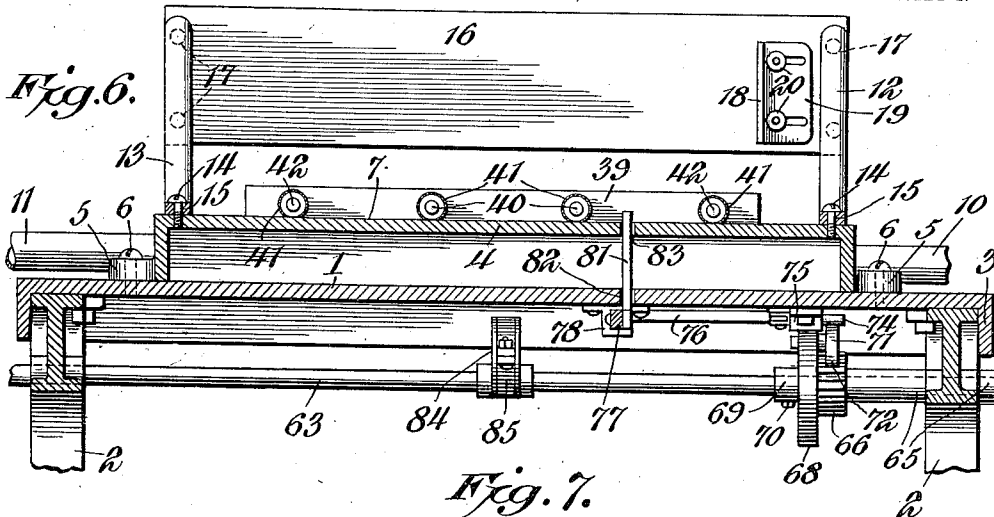
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4 SHEETS—SHEET 4.



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UNITED STATES PATENT OFFICE.

ARTHUR LOW PATTERSON, OF ALBEMARLE, NORTH CAROLINA.

MACHINE FOR APPLYING PASTE TO BOXES FOR FLIES.

1,027,890.

Specification of Letters Patent.

Patented May 28, 1912.

Application filed April 15, 1911. Serial No. 621,402.

To all whom it may concern:

Be it known that I, ARTHUR L. PATTERSON, a citizen of the United States, residing at Albemarle, in the county of Stanley and State of North Carolina, have invented a new and useful Machine for Applying Paste to Boxes for Flies, of which the following is a specification.

This invention has reference to improvements in machines for applying an adhesive to boxes for the purpose of attaching flies to said boxes, and the object of the present invention is to provide a machine whereby such operation may be performed expeditiously and a suitable amount of adhesive be conveyed to the proper portion of the interior of the box irrespective of differences in the condition of the adhesive, and, moreover, it is also the object of the invention to provide a machine of the character to which the invention relates wherein the parts designed to contain the adhesive and the parts designed to carry the adhesive may be readily cleaned and additional supplies of adhesive provided.

In accordance with the present invention there is provided an adhesive applying strip and a carrier therefor, so arranged that on the application of a suitable power the applying strip will convey a minimum but sufficient quantity of adhesive from a reservoir to the proper point in the interior of a box and then return to the reservoir to obtain a fresh supply, provision being made for preventing the adhesive applying strip from dipping into the adhesive in the reservoir except to an extent sufficient to receive and retain a minimum quantity of the adhesive by capillary attraction. In accordance with the present invention the paste applying strip may be made to maintain a constant relation to the lowering level of the paste within the reservoir as the supply of paste is used up.

For the purpose of conveying the adhesive from the reservoir to the box and returning the adhesive applying member again to the reservoir either manually operated mechanism or power operated mechanism may be employed. In the latter case the invention provides means whereby the placing of the box in position in the machine causes the coupling of the driving power to the carrier for the adhesive and the removal of the box subsequent to the application of the adhesive thereto brings about the cutting out

of the power and the stopping of the mechanism with the adhesive applying strip again provided with a minimum supply of adhesive ready to carry the same to another box on the insertion of the latter into the machine.

The invention will be best understood from a consideration of the following detailed description taken in connection with the accompanying drawings forming a part of this specification, with the understanding, however, that while the drawings illustrate a practical embodiment of the invention the latter is susceptible of various modifications and changes over the showing of the drawings and may be otherwise embodied so long as there is no material departure from the principles of the invention.

In the drawings:—Figure 1 is an end elevation of the machine with some parts broken away and in section. Fig. 2 is a plan view of the machine of Fig. 1 also with some parts broken away. Fig. 3 is a section in the main on the line 3—3 of Fig. 2 and with parts in section on the line 3—3 of Fig. 4. Fig. 4 is a plan view with some parts in section and some parts broken away of the release mechanism for causing the coupling of the power to the parts to be driven and also the uncoupling of the power from the parts driven. Fig. 5 is a vertical section of the clutch mechanism on a plane coincident with the longitudinal axis of the power shaft, some parts being shown in elevation. Fig. 6 is a section on the line 6—6 of Fig. 3. Fig. 7 is a section on the line 7—7 of Fig. 2 but drawn to a larger scale. Fig. 8 is an elevation with parts in section of one end of the adhesive reservoir and parts adjacent thereto, the structure being somewhat modified from the showing of the preceding figures. Fig. 9 is a section similar to Fig. 6 but drawn to a smaller scale and illustrating a modification of the structure of Fig. 6, some parts being omitted. Fig. 10 is an elevation on a small scale indicating the manual driving arrangement when foot power is employed.

Referring to the drawings, there is shown a frame comprising a suitable table 1 and supporting legs 2, the latter being ordinarily in the form of end frames of flange and web construction, and the table being provided with a marginal web 3 for strengthening it. It is customary to make the table 1 with

a plane surface unbroken by openings other than those necessary for the passage of structural parts, but this does not preclude making the table 1 of open work for the purpose of lightness.

Appropriately located on the table is a casting 4 provided with lugs 5 for the passage of screws 6 or other fastening devices, whereby the casting 4 is secured to the upper face of the table, and this casting, which may be of hollow construction for lightness, has an upper surface 7 inclined with relation to the face of the table top and since the table top is usually set level, such surface 7 is inclined to the horizontal. Boxes to which flies are applied are usually longer than wide and different boxes may vary in length, for which reason the casting, or as it may be termed the box support 4, is made longer than wide and sufficiently long to accommodate the longest box to which it is desired to attach a fly. The width of the surface 7 is customarily made equal to the depth of the largest box designed to be used in connection with the machine. The box support 4 is wider than the extent of the inclined surface 7 and has formed therein in the extended portion a trough or receptacle 8 and on the side of this reservoir remote from the surface 7 there is a channel 9 which may be cylindrical or other suitable shape with the ends open and adapted for the reception of pipes 10, 11, respectively, these pipes being designed to be one connected to a suitable supply of steam and the other leading to a suitable point of exhaust for steam, so that the contents of the trough or reservoir 8 which is designed to receive a suitable supply of adhesive may be kept in the desired state of fluidity by the heat furnished by the steam. The use of steam is advisable where animal glue is employed, but where other adhesives not requiring the use of heat are employed, the steam heating devices may be omitted. Of course, hot water or hot air may replace the steam with the same results.

At each end of the surface 7 the box support 4 carries an angle bracket 12, 13, respectively, having one arm upstanding from the surface 7 at substantially right angles thereto, while the other arm rests upon the surface 7 and is secured to the support 4 by screws 14 or other suitable fastening means extending through slots 15 in the corresponding arm of the bracket, whereby these brackets may be adjusted toward and from the reservoir 8 within limits defined by the length of the slots 15. The upstanding arms 60 of the brackets 12 carry the ends of an abutment plate 16 extending from one bracket to the other, and secured thereto by screws 17 or otherwise.

Near one of the brackets, say the bracket 65 13, the abutment plate 16 carries a position-

ing follower 18 having a portion perpendicular to the plate 16 and an angle portion 19 provided with slots traversed by bolts 20, which latter may be provided with thumb nuts, so that the positioning follower 18 may be adjusted toward and from the bracket 12 within the limits defined by the slots in the angle portion 19. The abutment plate 16 is designed to be engaged by one edge of the open portion of a box, which latter is indicated in dotted lines at 21 in Figs. 1 and 2 and in full lines in transverse section in Fig. 3. The follower 18 is intended to position the box lengthwise of the plate 16, so that the box on being moved into engagement with the plate 16 and follower 18 is brought into the proper relation to other parts to be described.

The casting 4 is located near one side of the table 1 and the operator sits at this side of the table in order to place boxes 21 upon the box receptacle 4 and to remove them therefrom, and, therefore, this side of the table may be called the front of the table and of the machine. At the rear lower portion of the end members 2 there is journaled a shaft 22 extending from one leg member 2 to the other, and this shaft carries a rock arm 23 secured thereto by a set screw 24, and this rock arm rises from the shaft 22 to and extends through a slot 25 in the table 1, so that the arm 23 may rock with the shaft 22 about the longitudinal axis of the latter. The upper end of the arm 23 is curved rearwardly as indicated at 26, although the curvature of the arm is not mandatory, and to the upper end of the arm 26 there is secured by a pivot bolt 27 a bar 28, shown in the drawings as composed of side strips 29 connected to an intermediate filling piece 30 by bolts 31, but such structure is not mandatory, since the bar 28 may be formed in one piece instead of being built up as shown. The plates 29 in the particular structure illustrated embrace the end of the arm 26 and are traversed by the bolt 27.

At an intermediate point the bar 28 is carried by links 32, these links being disposed on opposite sides of the bar and connected thereto each at one end of a pivot bolt 33, while the other ends of these links are pivoted by screws 34 to respective brackets 35 fast to the top or table 1. The ends of the side strips 29 remote from the arm 26 are bent oppositely as indicated at 36, and applied to these oppositely bent ends and to the corresponding end of the filling in piece 30 is a plate 37, which in turn carries a longer plate 38, and the latter has fast thereto a strip 39 considerably wider than the plate 38 and projecting from one side of the said plate 38. The ends 36 of the strips 29 carry bolts 40 each extending through the plates 37 and 38 and also through the strip 39, and each provided with a thumb nut 41.

The outer end of the strip 38 is provided with bolts 42 each provided with a thumb nut 41 like the bolts 40. The particular number of bolts 40 and 42 is not at all mandatory, but constitutes a convenient number for use and the thumb nuts 41 provide a means whereby the strip or blade 39 is readily attachable to or removable from the plate 38, and the latter may be readily removed from the plate 37 if such be desired. By this means strips or blades 39 of different lengths are readily applied to or removed from the end of the bar 28 remote from the end 26 of the arm 23 and hence the machine is readily changed at the will of an operator to accommodate it to boxes of different lengths or widths, since as will hereinafter appear the blade or strip 39 is designed to apply the adhesive to the interior of the side or end walls of the boxes.

Reciprocatory or rocking movements of the arm 23 causes like movements of the bar 28, such movements being longitudinal of said bar, and the links 32 impart to the bar another motion about the axis of the screws 34 which are in line one with the other, whereby the end of the bar 28 carrying the blade 39 moves through a path which is the resultant of the movements of the arms 23 and links 32, the said path being curved or arc-shape.

The relation of the parts is such that when the arm 23 is in its rearmost position the pivot pin or bolt 33 is to the rear of the pivots 34, so that the links 32 slant away from these pivots toward the rear of the table and the end of the arm 28 carrying the blade 39 is so related to the reservoir 8 that the lower end of this blade which projects below the lower edge of the bar 28 is within the confines of the reservoir. When the arm 23 is moved toward the front of the machine, the links 32 are rocked about the pivots 34, this causing the other ends of the links to move first through a rising arc until the pin 33 is directly over the pivots 34 and then through a lowering arc, so long as the movement of the bar 28 continues. The result of this is that the blade 39 is moved toward the surface 7 but is being continually elevated until the highest point of the arc described by the pin or bolt 33 has been reached and the bottom of the blade is then lowered until in close overlying relation to the surface 7, and if there be present a box 21 the blade 39 is brought into contact with the inner wall of the side of the box resting on the surface 7. Assuming that within the reservoir 8 there is a suitable quantity of an adhesive, such as glue, maintained in a fluid state by heat furnished by steam passing through the steam channel 9, then the blade 39 being brought into contact with the glue will receive a film of such glue on its lower edge,

and this film of glue is carried by the blade 39 upward from the reservoir and in the direction toward the box 21, assuming the latter to be in place, thence into the box, and finally downward and forward until the film of glue on the lower edge of the blade 39 is brought into engagement with the inner edge of the box and will adhere thereto because of the superior attraction of the material of the box for the glue over the material of the blade 39, which may be a metal blade. When the arm 23 is moved rearwardly the blade 39 is first lifted from its position of contact with the inner wall of the box and then through a curved path is carried over and lowered into the reservoir to make contact with and receive a fresh film of glue or other adhesive within the reservoir, and on the next operation, the box first receiving the glue having been removed, and replaced by a fresh box, said second box will receive a long narrow band of glue, and so the operation may continue as rapidly as the operator is able to place and remove the boxes.

The operation so far described may be entirely manual, and for this purpose the shaft 22 may have applied thereto a treadle 43, whereby the shaft may be rocked at the will of an operator.

It is desirable that only so much of the adhesive be taken up by the blade 39 as shall be necessary to properly unite the fly with the side of the box, this resulting in also preventing any of the adhesive from dropping by gravity or shock on to parts where it is not wanted. To bring this desirable condition about, the bar 28 has attached to its under side by one end a spring 44, the spring being attached at one end to the bar and free at the other end. In the path of the spring 44 where the bar 28 is in the retracted position is a stop 45 shown in Figs. 1, 2, 3 and 7 as an exteriorly threaded pin or a screw pin for a purpose which will presently appear. The purpose of the spring 44 is to operate in the nature of an elastic buffer, which will permit the end of the arm carrying the blade 39 to drop a short distance by the yielding of the spring under the momentum of the bar, so that by a proper adjustment of the parts the edge of the blade 39 designed to receive the adhesive will be brought into contact with the surface of the supply of adhesive within the reservoir 8, but immediately afterward as the parts come to rest, the reaction of the spring 44 is sufficient to lift the blade 39 a short distance, so that it no longer is at but is above the surface of the adhesive in the material. The parts may be adjusted so that only the lower edge of the blade 39 is brought into engagement with the adhesive, while the sides of the blade are not carried to any material depth into the supply of

adhesive, and consequently when the blade is elevated by the spring 44 and afterward is lifted away from the reservoir in the operation of the machine, there remains on the edge of the blade only a thin film of adhesive, held thereto by capillary attraction and the surface tension of the adhesive.

It is not mandatory that the spring 44 be carried by the bar 28 and the stop be located on the table 1 for the position of the parts may be reversed, as indicated in Fig. 8, where there is shown a spring 46 secured to the casting 4 at the rear side of the steam conduit 9 therethrough, and the bar 28 is provided with a stop member 47 in the form of a thumb screw adapted to engage the spring 46, but the action of the parts is the same as before. The structure of Fig. 8 differs from that of the structure already described in that the trough or reservoir 8 has mounted therein a roller 48 carrying exterior to the trough a ratchet wheel 49, whereby by suitable mechanism the roller may be turned as rapidly as necessary to carry adhesive from the trough to a higher point, and this roller is in the path of the blade 39 when the momentum of the bar 28 on its return stroke causes a yielding of the spring 46, when the blade 39 is carried into contact with the surface of the roller 48 and a film of adhesive is transmitted to the blade 39, after which the blade by the reaction of the spring 46 is raised away from the roller and the forward movement of the bar 28 carries the blade with its film of adhesive into engagement with the placed box. The presence of the roller 48 in the structure of Fig. 8 is not mandatory, since the spring structure therein shown is useful in connection with the devices shown in the other figures of the drawing.

As the blade 39 carries successive quantities of the adhesive away from the supply of the reservoir the level of such supply is gradually lowered, and in order to compensate for this whereby to keep the relation of the blade to the surface of the adhesive in the reservoir constant, the stop member 45 is made in the form of a screw free to move longitudinally but held against rotation by any suitable means, such for instance as providing the screw with a longitudinal groove 49 into which there fits a key or projection 50. Applied to the screw 45 on the end thereof above the table 1 is a ratchet wheel 51 held to the table 1 by a suitable bearing structure 52 permitting the ratchet wheel to be turned, but preventing it from moving in the direction of its longitudinal axis. When the ratchet wheel 51 is rotated in the proper direction it follows that the screw pin 45 must move longitudinally, and by adjusting the speed of rotation of this ratchet wheel 51 and the pitch of the threads of the pin 45 and of the ratchet wheel 51 which is adapted

to act as a nut for the threaded pin 45, the longitudinal movement of the pin 45 may be made to agree with the lowering level of the adhesive within the reservoir and, therefore, the blade 39 will be maintained in constant relation to such lowering level.

In order to impart rotative movement to the ratchet wheel or nut 51, there is provided an arm 53 pivoted at one end to the table 1 by a pivot screw 54 or otherwise and at the other end controlled by a spring 56 attached at one end to the corresponding end of the arm 53 and at the other to a fixed point on the table 1. The spring 56 holds the arm 53 normally in contact with a stop pin 57. The arm 53 near the free end carries a spring controlled pawl 58 in engagement with the teeth of the ratchet wheel 51, and the arrangement is such that an oscillation of the arm 53 will cause the pawl 58 to engage the teeth of the ratchet wheel, rotate the wheel the distance of a tooth, and then on the return movement of the arm bring the pawl into engagement with the next tooth in order. The arm 53 is connected to one end of a slide bar 59 moving through a bearing bracket 60 fast on the table 1 and at the end remote from that connected to the arm 53 this bar 59 carries an adjustable stop screw 61 in the path of an actuating bracket 62 carried by the end 26 of the arm 23. Each time the arm 23 is rocked actively, the bracket 62 engages the stop screw 61 and the bar 59 is moved in a direction to actuate the arm 53 against the action of the spring 56, and by means of the pawl 58 rotate the ratchet wheel or nut 51 a distance equal to the length of a tooth. When the arm 23 is retracted the spring 56 returns the arm 53 and the bar 59 to the first position ready for the second and subsequent actuations on the further rocking of the arm 23. By this means the screw stop pin 45 is progressively lowered and the bar 28 may drop to a progressively greater extent toward the table 1, so as to follow up the retreating level of the adhesive within the reservoir 8. By the proper proportioning of the several parts the relation of the carrying edge of the blade 39 through the adhesive within the reservoir may be maintained within sufficiently near adherence to constancy for all practical purposes.

The structure shown in Figs. 1, 2, 3, 4, 5 and 6 is provided with means whereby power is utilized for the actuation of the adhesive applying devices, and for this purpose there is journaled in the members 2 beneath the table 1 a shaft 63 carrying to one side of the table a pulley 64, said pulley being shown as indicative of any means for the application of a driving power, whether such power be applied by a belt, as a pulley would indicate, or by any other transmission

means. The pulley 64 is provided with an elongated hub 65 on one side, or is made fast to a sleeve serving the purposes of such a hub, and the other portion of this hub or sleeve 65 carries a ratchet wheel 66. The pulley 64 and sleeve or hub 65 as well as the ratchet wheel 66 are not directly connected to the shaft 63 and are free to rotate thereon until purposely coupled thereto. The pulley is held against longitudinal movement on the shaft 63 in one direction by a set collar 67. Fast on the shaft 63 on the side of the ratchet wheel 66 remote from the pulley 64 is a disk 68 which may be provided with a hub 69 through which there is extended a set screw 70, whereby the disk 68 is made fast to the shaft 63. The disk 68 carries a pawl 71 having at one end a tooth 72 in position to engage the teeth of the ratchet wheel 66 and at the other end is provided with an actuating finger 73 into the path of which there may be moved a pin 74 slidably mounted in a bracket 75 fast on the under side of the table 1. The pin 74 is pivoted to one arm of a bell crank lever 76, the other arm of which latter is pivoted to a longitudinally slidable bar 77 mounted in guiding brackets 78 fast on the under side of the table, the bell crank lever 76 being provided with suitable slots 79 for permitting changing relations of the pivot connections between the pin 74 and the bar 77 with said bell crank lever 76. The end of the bar 77 remote from the lever 76 has secured thereto one end of a spring 80, the other end of which is made fast to the under side of the table, this spring having a normal tendency to move the bar 77 in a direction to actuate the bell crank lever 76 so as to project the pin 74 into the path of the finger 73 on the pawl 71, and it is only by an extension of the spring 80 and the movement of the bar 77 in the appropriate direction that the pin 74 may be withdrawn from the path of the end 73 of the pawl 71. The bar 77 carries a finger 81 in upstanding relation to the bar and projecting through a slot 82 in the table 1 and also through a matching slot 83 in the receiving portion of the casting 4. The upper or free end of the finger 81 projects a sufficient distance above the surface 7 to be engaged by the edge of a box 21 placed on such surface and moved toward the retaining plate 16, so that when the plate 16 is engaged by the box 21 the finger 81 will have been moved sufficiently to cause a like movement of the rod 77 and a withdrawal of the stop pin 74 from the path of the pawl 71.

Fast to the shaft 63 is an eccentric 84 encircled by an eccentric strap 85 on one end of a pitman 86, the other end of which is in the form of a strap 87 in embracing relation to the arm 23 a short distance from

the under surface of the table 1. The sides of the strap 87 are provided with matching longitudinal slots 87^a for the passage of a pin 88 carried by the arm 23, and the yoke end of the strap 87 carries a set screw 89 on which is a jam-nut 89^a so that the forward stroke of the arm 23 may be varied by adjusting the screw 89 lengthwise of the pitman, whereby the relation of the blade 39 to the surface 7 is regulated for pressure of the blade upon the box and for thick and thin boxes. A spring 90 connected at one end to the arm 23 and at the other end to the flange 3 tends to move the arm 23 rearwardly and holds the arm 23 to the screw 89 but the travel of the pitman is such that the screw 89 is carried rearwardly away from the arm 23 and the latter may, therefore, move to compensate for the lowering of the bar 28 in following the lowering level of the adhesive in the trough 8.

When a box 21 is placed upon the surface 7 and is moved into engagement with the finger 81, the latter is actuated until the box comes in contact with the stop plate 16, and this amount of movement is sufficient to carry the pin 74 out of the path of the pawl 71 which at this time is in overriding relation to the ratchet wheel 66, whereupon the superior weight of the toothed end 72 of the pawl causes it to drop into engagement with the teeth of the ratchet wheel 66, and the latter being connected and rotating with the pulley 64 immediately imparts rotative movement to the disk 68 and by the latter to the shaft 63, whereupon the eccentric 84 will rock the arm 23 toward the front of the machine, causing the transfer of the blade 39 from the adhesive reservoir to the box and back again, the intermediate position where the blade 39 is engaging the interior wall of that side of the box resting on the surface 7 being shown in Fig. 3, while the initial position of the several parts is shown in Fig. 1. As the arm 23 is retracted, the operator removes the box 21, whereby the finger 81 is released and the spring 80 acts through the bar 77 and lever 76 to move the pin 74 into the path of the pawl 71, and when the single rotation has been completed, the end 73 of the pawl 71 is engaged by the pin 74 and the tooth 72 is moved out of engagement with the ratchet 66 so that the parts actuated by this ratchet are released and stop movement and are only again coupled up to the power represented by the pulley 64 when another box 21 is placed upon the box support 4 and moved into engagement with the stop plate 16.

It is not necessary that the clutch operating mechanism should be controlled by that portion of the box resting directly on the surface 7, but the arrangement shown in Fig. 9 may be employed. In this case the bar 77 is so arranged that it is to one side

of the casting 4 and the latter carries a pivot rod 91 to the opposite ends of which are connected a rock arm 92 and a lever 93, respectively, the rock arm 92 and lever 93 being more distantly disposed than the brackets 12 and 13. The lever 93 has an arm projecting through a slot 94 in the table 1 and pivotally connected to the bar 77, this bar in other respects agreeing to the bar 77 of Figs. 3 and 4, except that the finger 81 is omitted. The ends of the arm 92 and lever 93 remote from the pivot rod 91 are connected together by another rod 95 above the stop plate 16 in position to be engaged by the top of the box, the plate 16 in this construction being situated lower than in the construction shown in the other figures. The structure of Fig. 9 provides a means whereby that side of the box which is uppermost when the box is placed on the support 4 causes the actuation of the clutch rather than that side of the box which is lowermost. The operation in other respects is the same as in the construction shown in the other figures.

When it is desired to clean the reservoir, which operation should be performed occasionally, the blade 39 is readily moved out of the way by removing the bolt or pin 33 when the arm carrying the blade may be turned on the pivot connection to the arm 23 to a position whereby it will not interfere with the cleansing of the reservoir, and the entire casing 4 is readily removable from the table for cleansing or other purposes.

The adhesive carrying blades are readily attachable and detachable, so that long or short or thick or thin blades may be used as desired. The employment of metal blades for carrying the adhesive is advantageous in that they will last indefinitely and not wear out like brushes.

The arrangement whereby the adhesive carrying blade is caused to rise out of the adhesive by the reaction of the spring buffer may be varied by permitting the blade to move into the adhesive for a distance which will cause it to receive and carry a larger amount of adhesive than where it simply makes edge contact. These features are matters of adjustment and such adjustments are made in accordance with the conditions to be met, the kind of adhesive used and such other conditions as may necessitate such adjustments.

What is claimed is:—

1. In a machine for applying adhesive material to the interior of boxes, a transfer blade for the adhesive, and means for moving the blade edgewise into engaging relation with the adhesive, and from thence into edge engagement with the interior of the box to which the adhesive is to be applied, said means comprising an arm at one end carrying the blade intermediately of the

latter, a pivot support for the arm intermediate of the ends of said arm and in turn pivoted at a point spaced from its connection with the arm, and an actuating member for the arm connected thereto at the end of said arm remote from the blade and adapted to impart longitudinal movement to the arm.

2. In a machine for applying adhesive to the interior of boxes, an adhesive transfer blade, means for moving the blade from close relation to a body of adhesive to the interior of a box and into edge engagement with the inner wall thereof and then returning the blade again into close relation to the body of adhesive, and means yieldable to the momentum of the blade and parts carrying the same to permit the entrance of the edge of the blade into the adhesive, said last named means tending to support the blade in close relation to but out of the adhesive.

3. In a machine for applying adhesive to the interior of boxes, an adhesive transfer blade, and means for moving the blade from close relation to a body of adhesive to the interior of a box and into edge engagement with the inner wall thereof, the blade carrying parts having a normal tendency to remain out of engagement with the body of adhesive and moving into engagement therewith against such normal tendency and in response to the momentum of said blade carrying parts.

4. In a machine for applying adhesive to the interior of boxes, a longitudinally movable bar, an adhesive transfer blade carried by one end of said bar in traversing relation thereto, the lateral extent of the blade and the bar carrying the same being less than the portion of the box to be treated, a receptacle for an adhesive in position to have adhesive therein engaged by one edge of the blade at one limit of its movement, means intermediate of the ends of the bar for converting longitudinal movement of the bar at the end carrying the blade into a progressive rising and falling movement in both directions of travel of the bar, and an actuating means for the bar connected to the end thereof remote from the blade and imparting to said bar through the motion converting means a greater rising and falling movement at the blade end than at the actuated end of the bar.

5. In a machine for applying adhesive to the interior of boxes, a reciprocable bar carrying at one end an adhesive applying blade, a reservoir for adhesive in position to be entered by the blade at one limit of its travel, means acting on the bar at the end thereof remote from the blade for imparting reciprocatory movement thereto, and means for constraining the blade carrying end of the bar to move in a path in rising

and falling relation to adhesive within the reservoir and in rising and falling relation to the interior of a box in the path of the blade, the path of movement of the blade
 5 end of the bar being of greater extent than the movement of the actuated end of the bar.

6. In a machine for applying adhesive to the interior of boxes, a reciprocable bar
 10 carrying at one end an adhesive applying blade, a reservoir for adhesive in position to be entered by the blade at one limit of its travel, means for constraining the blade
 15 carrying end of the bar to move in a curved path in rising and falling relation to adhesive within the reservoir, and an elastic buffer related to the bar to be active there-
 20 to at the limit of its travel when carrying the blade into the adhesive reservoir.

7. In a machine for applying adhesive to the interior of boxes, a reciprocable bar, a rock arm connected to one end of said bar
 25 for imparting thereto movements for reciprocation, an adhesive transferring blade carried by the end of the bar remote from
 30 the actuating end and of a length to enter a box to which adhesive is to be applied, an adhesive reservoir in position to receive the blade on the retractive movement of the
 35 arm, a support for the box in position to cause a box thereon to be entered by the blade on its forward or active movement, and an elongated fulcrum support for the bar between the blade and the point of
 40 connection of the rock arm to the bar.

8. In a machine for applying adhesive to the interior of boxes, a reciprocable bar, a rock arm connected to one end of said bar
 45 for imparting the movements of reciprocation to said bar, an adhesive transferring blade carried by the end of the bar remote from the actuating arm, an adhesive reservoir in position to receive the blade on the
 50 retractive movement of the arm, a support for a box in position to cause a box thereon to be entered by the blade on its forward or active movement, an elongated fulcrum support for the bar between the ends there-
 55 of for constraining the blade carrying end to move in a curved path, and an elastic buffer comprising a spring and a stop member, one being carried by the bar and the other by a fixed part of the machine and active at the terminal portion of the re-
 60 tractive movement of the bar.

9. In a machine for applying adhesive to the interior of boxes, a reciprocable bar, a rock arm connected to one end of said bar
 65 for imparting the movements of reciprocation to said bar, an adhesive transferring blade carried by the end of the bar remote from the actuating arm, an adhesive reservoir in position to receive the blade on the
 70 retractive movement of the arm, a support for a box in position to cause a box thereon to be

entered by the blade on its forward or active movement, an elongated fulcrum support for the bar between the ends thereof for
 75 constraining the blade carrying end to move in a curved path, and an elastic buffer comprising a spring and an adjustable stop member, one carried by the bar and the other by a fixed portion of the machine in position to be brought into engagement at the terminal portion of the retractive move-
 80 ment of the bar.

10. In a machine for applying adhesive to the interior of boxes, a reciprocable bar, a rock arm connected to one end of said bar
 85 for imparting the movements of reciprocation to said bar, an adhesive transferring blade carried by the end of the bar remote from the actuating arm, an adhesive reservoir in position to receive the blade on the retractive movement of the arm, a support
 90 for a box in position to cause a box thereon to be entered by the blade on its forward or active movement, an elongated fulcrum support for the bar between the ends thereof for constraining the blade carrying end to
 95 move in a curved path, and an elastic buffer comprising a spring carried by the bar and an adjustable stop member carried by fixed portion of the machine.

11. In a machine for applying adhesive to the interior of boxes, a reciprocable bar, a rock arm connected to one end of said bar
 100 for imparting the movements of reciprocation to said bar, an adhesive transferring blade carried by the end of the bar remote from the actuating arm, an adhesive reservoir in position to receive the blade on the retractive movement of the arm, a support
 105 for a box in position to cause a box thereon to be entered by the blade on its forward or active movement, an elongated fulcrum support for the bar between the ends thereof for constraining the blade carrying end to
 110 move in a curved path, and an elastic buffer comprising a spring carried by the bar, and an adjustable stop member carried by a fixed portion of the machine, said adjustable stop member being provided with means for its automatic adjustment by the reciproca-
 115 tory movement of the bar actuating means.

12. In a machine for applying adhesive to the interior of boxes, a reciprocatory adhesive carrying member, a reservoir for adhesive in position to be entered by said recip-
 120 rocatory member, and an elastic buffer related to the adhesive carrying member to be active thereto as a buffer on the entrance of said member into the reservoir.

13. In a machine for applying adhesive to the interior of boxes, a reciprocatory bar, an
 125 adhesive carrier at one end of said bar, a reservoir for adhesive in position to be entered by the carrier at one limit of its movement, an actuating member for imparting reciprocatory movement to the bar, an ad-
 130

justable buffer structure in position to be engaged by the bar on the entrance of the adhesive carrier into said reservoir, and an actuating member for the adjustable buffer structure movable by the actuating member for the bar.

14. In a machine for applying adhesive to the interior of boxes, a reciprocable bar, an adhesive carrier at one end of said bar, an adhesive reservoir into and out of which the carrier is movable by the bar, means for imparting reciprocatory movement to the bar, a spring carried by the bar, a screw stop carried by a fixed portion of the machine in the path of the spring on the entrance of the adhesive carrier into the reservoir, a nut on the screw stop provided with ratchet teeth, a reciprocatory pawl carrier normally constrained into inactive position and adapted to engage the teeth of the ratchet successively, and a slidable member in the path of the actuating means for the bar and connected to the pawl carrier for causing the progressive step by step rotation of the ratchet and nut carrying the same.

15. In a machine for applying adhesive to the interior of boxes, a reciprocable bar, an adhesive carrier at one end of said bar, an adhesive reservoir into and out of which the carrier is movable by the bar, means for imparting reciprocatory movement to the bar, a spring carried by the bar, a screw stop carried by a fixed portion of the machine in the path of the spring on the entrance of the adhesive carrier into the reservoir, a nut on the screw stop provided with ratchet teeth, a reciprocatory pawl carrier normally constrained into inactive position and adapted to engage the teeth of the ratchet successively, and a slidable member in the path of the actuating means for the bar and connected to the pawl carrier for causing the progressive step by step rotation of the ratchet and nut carrying the same, said slidable bar being provided with a longitudinally adjustable engaging member in the path of the actuating means.

16. In a machine for applying adhesive to the interior of boxes, a support for a box, an adhesive reservoir, a reciprocable bar provided with a laterally disposed adhesive carrier of less lateral extent than the portion of the box to be treated and movable from the reservoir to the interior of a box lodged on the box carrier, a rock arm connected to the bar for imparting reciprocatory movements thereto, a power member, connections between the power member and the rock arm, said connections including a clutch, and means responsive to a box placed upon the box support for causing the coupling of the power means to and the uncoupling thereof from the rock arm.

17. In a machine for applying adhesive to the interior of boxes, a reservoir for adhesive,

a support for a box to which adhesive is to be applied, adhesive transfer means movable between the reservoir and a box applied to the support, an actuating means for the adhesive transfer means, a power drive means for said actuating means, a clutch between the power means and the said actuating means, said clutch comprising a ratchet member carried by the power means and a dog connected to the said actuating means and having a normal tendency to engage the ratchet, a dog engaging pin movable into and out of the path of said dog, a slidable member having connections to the pin for actuating the same, said slidable member being constrained to move the pin into engaging relation to the dog, and means on the slidable member in the path of a box applied to the box support for moving the pin out of the path of the dog.

18. In a machine for applying adhesive to the interior of boxes, a reciprocable adhesive carrier for applying adhesive to the interior of the box, a rock arm connected to the reciprocable member for actuating the same, a power member, a pitman between the power member and the rock arm, and connections between said pitman and the rock arm for varying the effective length of said pitman member at will.

19. In a machine for applying adhesive to the interior of boxes, an adhesive reservoir, an inclined support for a box adjacent said reservoir, a reciprocable bar carrying at one end a blade adapted to enter the reservoir and to move into the interior of a box on the box support at the extremities of its reciprocatory movement, a rock arm connected to the bar for imparting reciprocatory movement thereto, a rockable support for the bar constraining the blade to a curved path between the adhesive reservoir and the box support, a power means, connections between the power means and the rock arm including a clutch, and clutch operating means having a member in operative relation to the box support for engagement by a box to cause the coupling of the power means to the rock arm.

20. A machine for applying adhesive to the interior of boxes comprising a table and supports therefor, an adhesive reservoir on the table, an inclined box support adjacent the reservoir and provided with stop members for positioning the box on said support, a rock arm carried by the table support and projecting through the table, a bar connected at one end to the rock arm above the table and at the other end carrying a blade adapted to enter the adhesive within the adhesive reservoir and to move into over-riding relation to the box support, a rockable support for the bar constraining the blade to a curved path when the bar is reciprocated by the rock arm, power means

for rocking the arm, a clutch means between the power means and arm for coupling the power means to and uncoupling it from the arm, actuating means for the clutch member having a part in operative relation to the box support to be engaged by a box for causing the operation of the clutch, an elastic buffer for the rock arm active thereto on the entrance of the blade into the adhesive reservoir, and means controlled by the rock arm for causing a progressive shifting of the point of activity of the elastic buffer in accordance with the level of adhesive within the adhesive reservoir.

21. In a machine for applying adhesive, an elongated adhesive applying blade, a carrier therefor comprising an arm having lateral extension at one end provided with means for the ready attachment of the blade thereto with one edge of the blade extending beyond one edge of the lateral extensions, an adhesive reservoir, a support for the article to which the adhesive is to be transmitted, and means for imparting to the arm and to the blade carried thereby a transitional movement to and from the adhesive reservoir and an article to which the adhesive is to be applied.

22. In a machine for applying adhesive, an adhesive reservoir, a support for the article to which the adhesive is to be applied, said support being tilted with reference to and toward the reservoir, a blade adapted to move between the reservoir and the article to which the adhesive is to be applied, and a carrier for the blade movable from the reservoir to an article on the tilted support in a direction to approach such article substantially perpendicular to the plane of the article receiving surface of the tilted support.

23. In a machine for applying adhesive to boxes, an adhesive reservoir, a box support having the box receiving surface tilted with reference to and toward the adhesive reservoir, an adhesive carrying and applying blade adapted to move from the reservoir into a box on the support, an arm at one end carrying the blade, means for imparting reciprocatory movement to the end of the arm remote from the blade, and a fulcrum support for the arm intermediate of the said arm and coacting with the actuating means for the arm to move the blade in a curved path from the reservoir into and against the interior of the box, the tilted box support relating to the direction of movement imparted to the blade on entering the box to cause the blade to engage the box substantially

perpendicular to the plane of the wall of the box to which the adhesive is applied.

24. A machine for applying adhesive to the interior of boxes, a reciprocable bar, an adhesive carrier at one end of said bar, an adhesive reservoir into and out of which the carrier is movable by the bar, means for imparting reciprocatory movement to the bar, a screw stop carried by a fixed portion of the machine in position to determine the entrance of the adhesive carrier into the reservoir, a nut on the screw provided with ratchet teeth, a reciprocatory pawl carrier normally constrained into inactive position and adapted to engage the teeth of the ratchet successively, and a slidable member in the path of the actuating means for the bar and connected to the pawl carrier for causing a progressive step by step rotation of the ratchet and nut carrying the same.

25. A machine for applying adhesive to the interior of boxes, a reciprocable bar, an adhesive carrier at one end of said bar, an adhesive reservoir into and out of which the carrier is movable by the bar, means for imparting reciprocatory movement to the bar, a screw stop carried by a fixed portion of the machine in position to determine the entrance of the adhesive carrier into the reservoir, a nut on the screw provided with ratchet teeth, a reciprocatory pawl carrier normally constrained into inactive position and adapted to engage the teeth of the ratchet successively, and a slidable member in the path of the actuating means for the bar and connected to the pawl carrier for causing a progressive step by step rotation of the ratchet and nut carrying the same, said slidable bar being provided with a longitudinally adjustable engaging member in the path of the actuating means.

26. In a machine for applying adhesive, an adhesive reservoir, an adhesive carrier movable into and out of the reservoir, a stop member for said adhesive carrier determining its extent of movement into the reservoir, actuating means for the adhesive carrier, and means for moving the stop member progressively to compensate for varying levels of adhesive within the reservoir.

In testimony, that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

ARTHUR LOW PATTERSON.

Witnesses:

R. L. HALL,
R. L. SMITH.