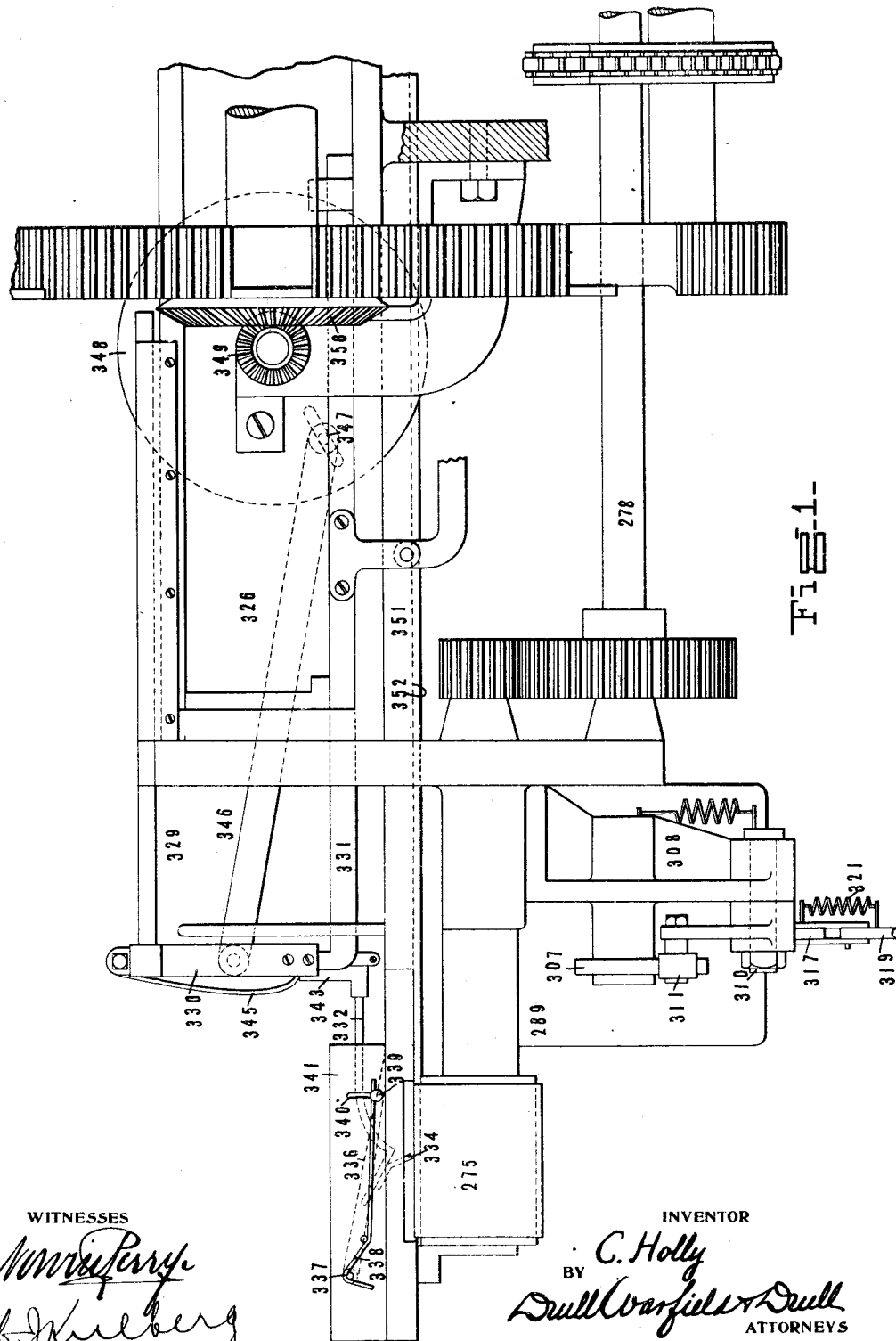


1,053,602.

C. HOLLY.
BOX MAKING MACHINE.
APPLICATION FILED JUNE 24, 1912.

Patented Feb. 18, 1913.
5 SHEETS—SHEET 1.



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5 SHEETS—SHEET 2.

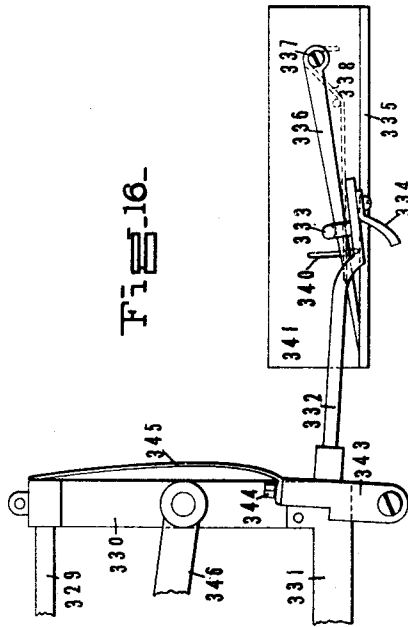


Fig-16-

Fig-5-

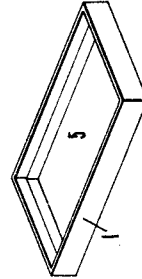


Fig-4-

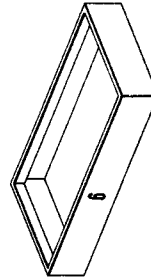


Fig-6-

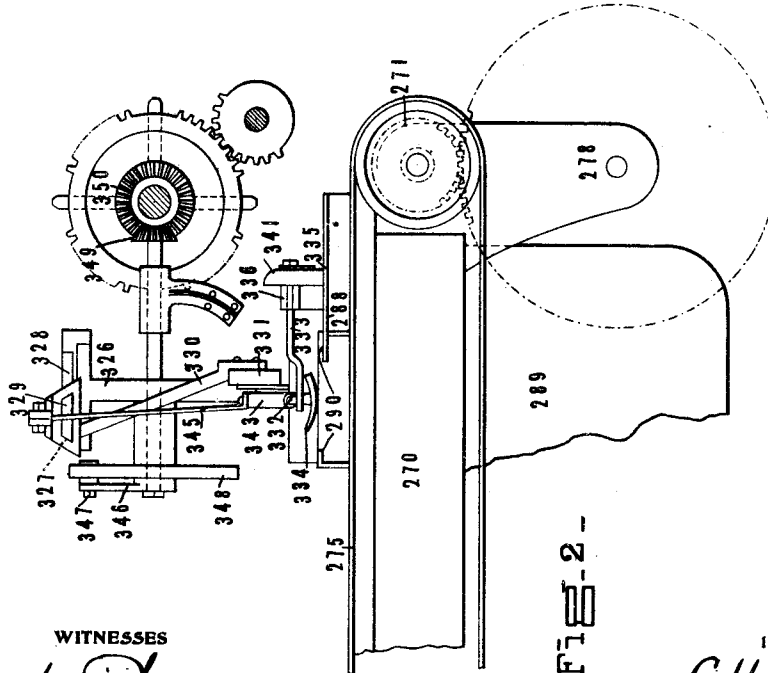
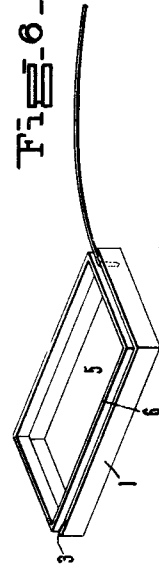
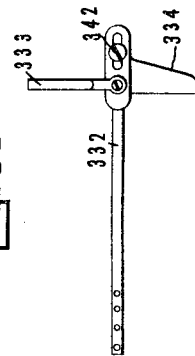


Fig-2-

Fig-3-



WITNESSES

Wm. H. H. H.
C. J. K. L. B.

INVENTOR

BY *C. Holly*
Dull, Warfield & Dull
ATTORNEYS

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5 SHEETS—SHEET 3.

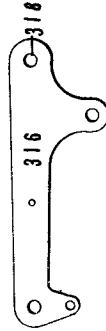


Fig. 8-

Fig. 9-

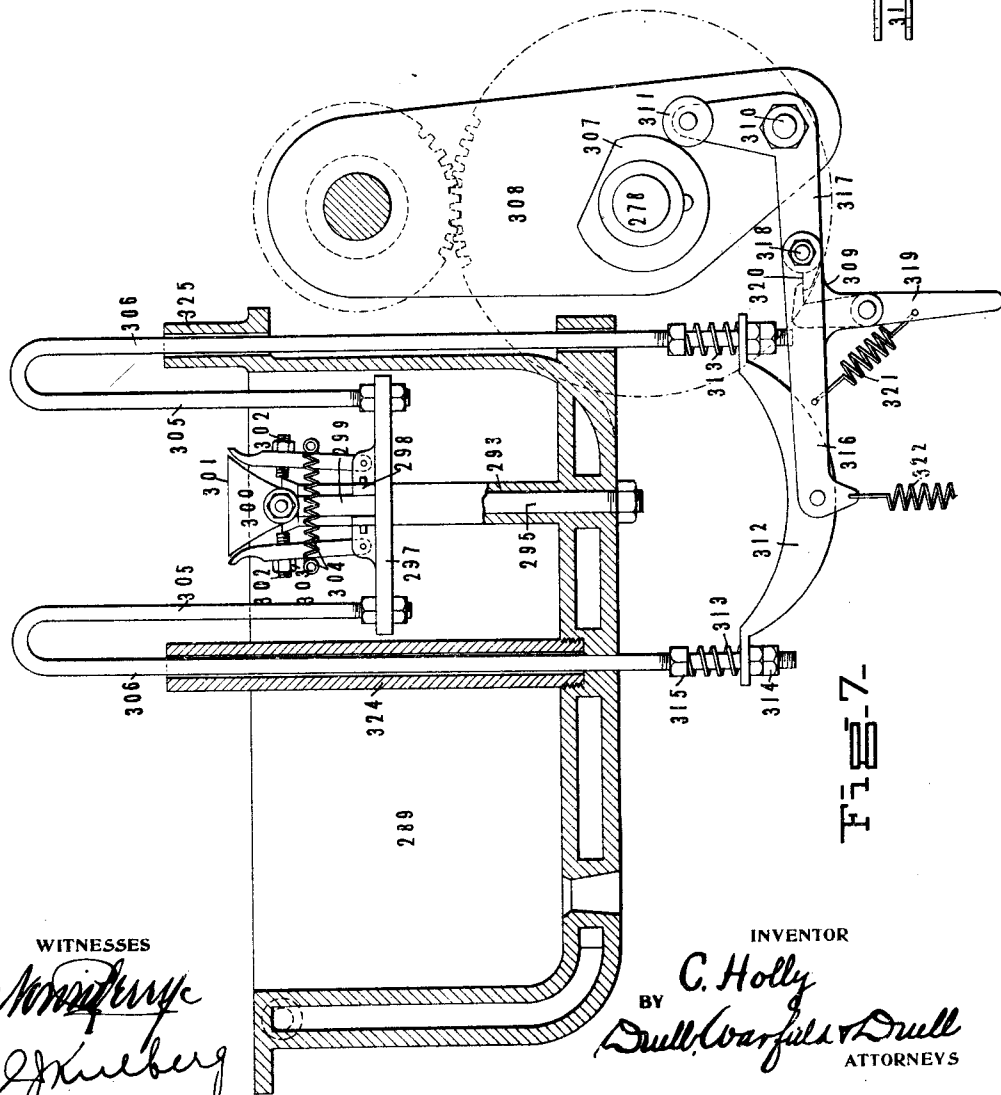
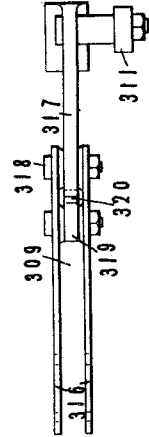


Fig. 7-

WITNESSES
Wm. H. H. H.
Spiegelberg

INVENTOR
C. Holly
BY *Dull, Warfield & Dull*
ATTORNEYS

1,053,602.

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5 SHEETS—SHEET 4.

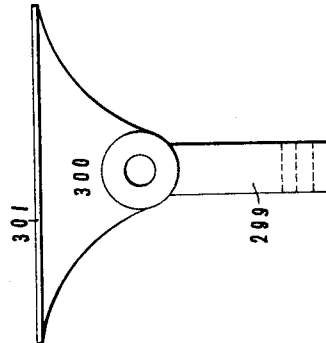


Fig. 12-

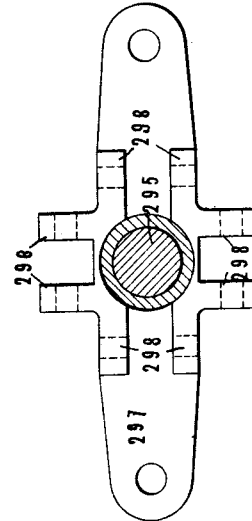


Fig. 13-

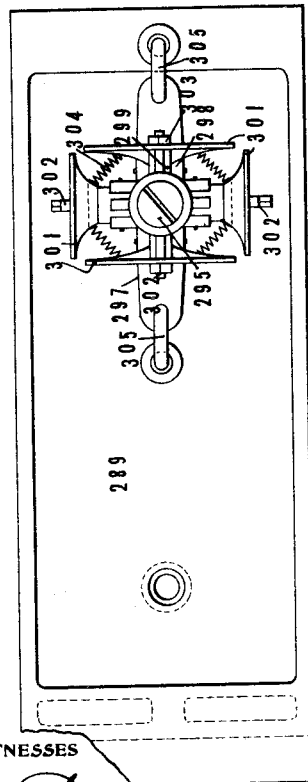


Fig. 10-

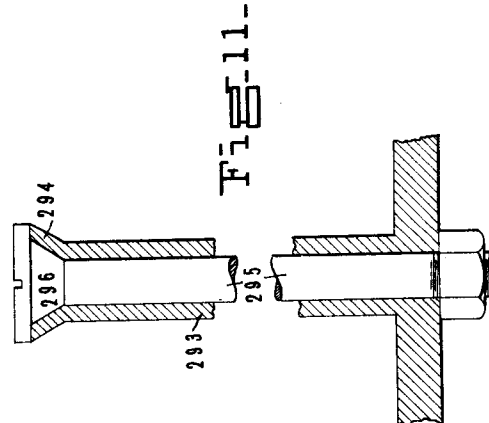


Fig. 11-

WITNESSES

Wm. R. Perry
E. J. Kurlberg

INVENTOR

BY *C. Holly*
Dull, Warfield & Dull
ATTORNEYS

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1,053,602.

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5 SHEETS—SHEET 5.

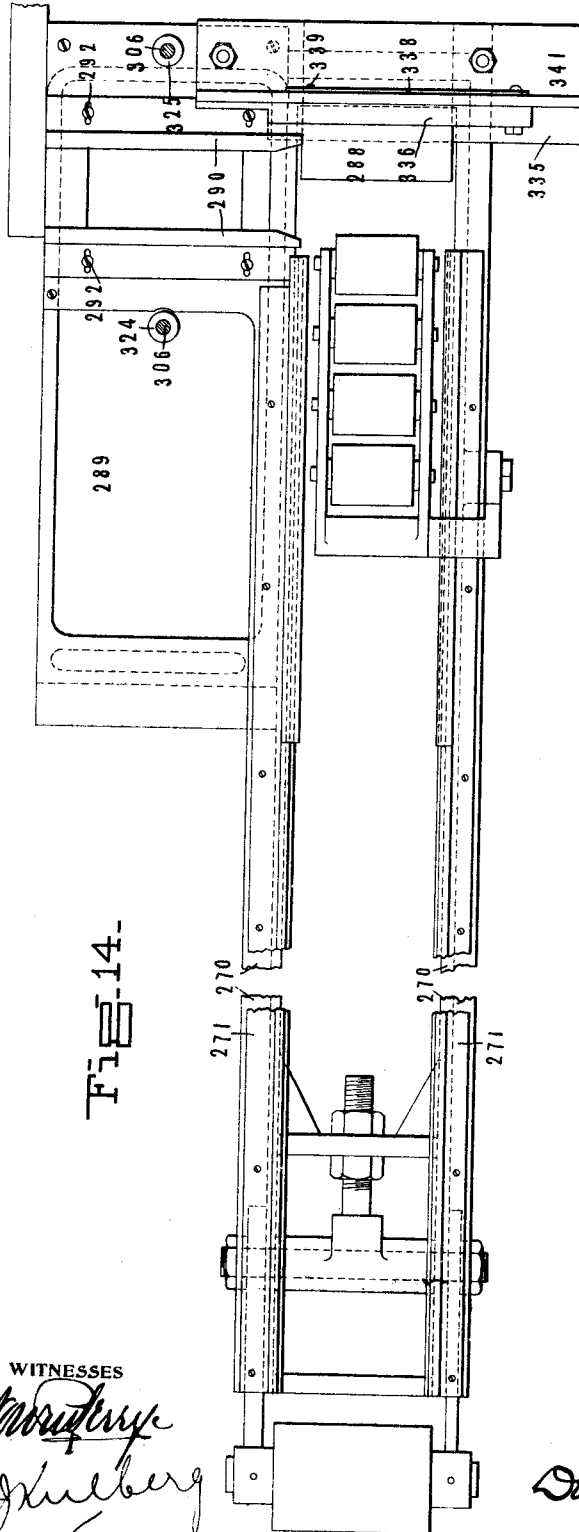


Fig-14-

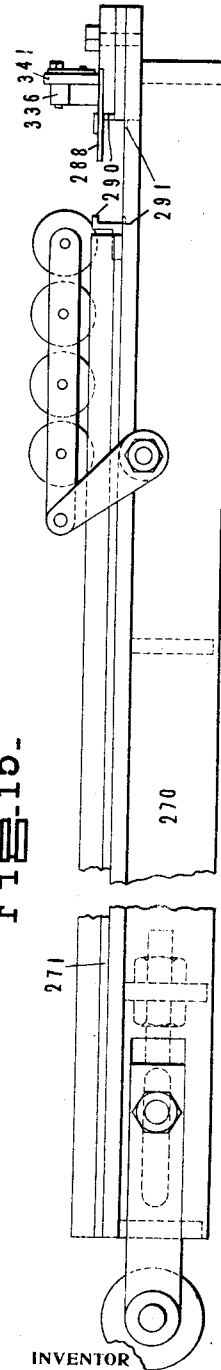


Fig-15-

WITNESSES
W. H. H. H.
W. H. H. H.

INVENTOR
C. Holly
BY *Dull, Warfield & Dull*
ATTORNEYS

UNITED STATES PATENT OFFICE.

CARLOS HOLLY, OF LOCKPORT, NEW YORK, ASSIGNOR, BY MESNE ASSIGNMENTS, TO
F. N. BURT COMPANY, LIMITED, OF BUFFALO, NEW YORK, A CORPORATION OF
ONTARIO, CANADA.

BOX-MAKING MACHINE.

1,053,602.

Specification of Letters Patent.

Patented Feb. 18, 1913.

Original application filed January 16, 1911, Serial No. 602,862. Divided and this application filed June 24, 1912. Serial No. 705,516.

To all whom it may concern:

Be it known that I, CARLOS HOLLY, a citizen of the United States, residing at Lockport, in the county of Niagara and State of New York, have invented certain new and useful Improvements in Box-Making Machines, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to machines for making boxes, and more particularly to the mechanism for applying adhesive to the box elements whereby they may be securely held in assembled relation.

One of the objects of the invention is the provision of a practical means for applying glue to the flanges of boxes in order to retain necks or collars therein.

Another object of the invention is the production of simple mechanism for efficiently gluing the inner walls of a box in definite places.

Other objects will be in part obvious and in part pointed out hereinafter.

The invention accordingly consists in the features of construction, combinations of elements and arrangement of parts which will be exemplified in the construction hereinafter set forth, and the scope of the application of which will be indicated in the following claims.

In the accompanying drawings wherein similar reference characters refer to similar parts throughout the several views: Figure 1 represents a rear view of a box machine, with the gluing device associated therewith; Fig. 2 represents a side view of a portion of the machine; Fig. 3 represents a detail plan of the picker; Fig. 4 represents a box collar in perspective; Fig. 5 represents a box body in perspective; Fig. 6 represents the assembled box body, collar and cord; Fig. 7 is a sectional elevation of the gluing device; Figs. 8 and 9 are details; Fig. 10 is a plan of the glue tank and the dauber; Figs. 11, 12 and 13 are detail views; Fig. 14 is a plan of the mechanism for feeding the boxes to the picker; Fig. 15 is a side elevation of Fig. 14; Fig. 16 is an elevation of the picker from the front.

Referring now more specifically to the

drawings, it may be noted that the invention forming the subject-matter of this application is a division of applicant's prior application, filed January 16, 1911, Serial No. 602,862, and is herein described in its relation to said machine. Figs. 4, 5 and 6 disclose, respectively, a box collar, a box body and an assembled collar, body and cord, and while it is preferred that the elements of the box be made in the manner set forth in the prior application, it is to be understood that the invention is of general utility and is not limited in its application to the precise form of box elements therein described.

The box body is composed of a rectangular head 5 and a surrounding flange 1, the collar or neck being preferably composed of an open rectangular element 6 adapted to be inserted within the body and to be adhesively attached to the inner walls of the flange 1. The collar projects above the upper edge of the flange, forming therewith a shoulder 3. In order that the body and collar may be efficiently attached, adhesive is interposed between them, and in the present embodiment the adhesive is preferably applied to the inner walls of the box bodies, the collars being subsequently telescoped with the bodies, as explained, and the assembled elements subsequently pressed to obtain secure adherence.

Any suitable mechanism may be employed to feed the box bodies into and out of gluing position, but the present embodiment provides an endless carrier comprising a belt 275 passing over ways 271, which belt feeds the boxes to position beneath a rearwardly projecting plate 288, where they remain at rest and from which position they are fed laterally to the mechanism for applying glue to their interior.

289 is a glue supply reservoir or pot provided with chambered walls through which steam may be passed to heat said pot. This pot is located to the left of the angle irons 270, guiding the belt with its edge approximately level therewith, and extending over said pot are two supporting and guiding plates 290 for the box bodies. These plates extend at right angles to the ways 271, being provided with flanges or tracks 291, between and on which the box bodies slide

from the belt feeding mechanism just described. Accurate adjustment of the distance between the guides 290 is permitted by means of the pin and slot connections 292.

5 When the box bodies reach the end of their forward movement accomplished by the belt, mechanism is provided for intermittently moving them successively along the guides 290 to position over the glue in the
10 pot.

Projecting upwardly from the bottom of the glue pot at a point corresponding to the center of the box when placed in glue applying position over the pot, is a guide rod
15 or sleeve 293 having a deflecting or cam portion comprising an upwardly and outwardly flaring, preferably conical, upper portion 294 for a purpose to be hereinafter described. Secured within the sleeve 293
20 is a rod 295 having a shoulder 296 extending upwardly from the end of the conical portion 294 of the sleeve 293. Mounted on the guide rod or sleeve 293 and adapted to reciprocate up and down thereon is a support
25 or plate 297 preferably elongated, and having at its central portion, surrounding the guide rod, preferably four lugs 298 spaced 90° apart and serving as journal bearings for the axes of the glue applying arms or
30 dauber fingers 299 of an expansible dauber, the fingers of which are pivoted respectively to said lugs. Each dauber finger is gradually widened or outwardly tapered toward its upper extremity and terminates in a projecting portion 300 and a preferably plain
35 narrow face 301, the length of the glue line to be applied, in this case substantially corresponding to the length of the sides or walls of the box body with which they contact, respectively. Passing through each of
40 the arms 299 is a cam 302 adapted to cooperate with the cam portion 294 and comprising an adjustable screw which may be locked in adjusted position by means of the
45 nut 303. The inner end of each screw contacts with the sleeve 293 throughout the movement of the plate 297 up and down thereon. The dauber fingers 299 are connected in diametrically opposed
50 pairs by means of springs 304 which tend to retain the cams 302 against the rod 293. The end portions of the elongated plate 297 are secured to supporting and guiding rods
55 being curved laterally and downwardly into the connecting rods 306. The rods 306 in connection with the rods 305 are designed to move up and down to introduce the dauber fingers 299 alternately into the box
60 body, and into the glue, submerging the fingers in the glue, and in order that this operation may be performed the following mechanism is provided: The shaft 278 is extended to a convenient point near the glue
65 carrier and on its end portion is provided

with a cam 307. Mounted upon a downwardly extending bracket 308 is a rock arm
309 pivoted at 310 and provided at one end with the offset roller 311 which contacts
70 with the cam 307. The other end of the rock arm 309 is pivotally connected to a cross plate 312 at the central portion thereof, said cross plate being yieldingly connected to the glue carrier connecting rods
75 306 by means of the springs 313. The rods 306 pass through openings in each end of the plate 312 and are retained thereon by the nuts 314 engaging the screw threaded
80 ends of the rods 306. Nuts 315 are provided on each rod 306 between which and the extremity of the plate 312 the springs 313 are located. The nuts 315 serve as a means for adjusting the tension of the springs 313
85 and may serve at times as stops to limit the upward motion of the glue carrier.

The box bodies are placed in an inverted position on the belt which leads them toward the glue carrier. That is, they are placed on the belt with their open sides
90 down, and when they are fed into position over the glue applying device they present their open sides to said device, and the flanges of the plates 290, which support the boxes in glue applying position, are of such
95 width as not to interfere with the application of glue to the inner sides of the walls of the box. As the shaft 278 rotates, the high portion of the cam 307 will operate the rock arm 309 to elevate the plate 297,
100 and as said plate rises the cams 302 will be pressed outwardly by the flared upper end 294 of the sleeve 293 carrying the edges 301 of the dauber fingers outwardly against the inner face of the walls of the box opposite
105 thereto, the glue on said arms being thus deposited upon the walls of the box, preferably in a thin line. As the glue is deposited on the walls of the box the plates
110 290 serve to brace, or, as it were, reinforce the walls, preventing any substantial bending of said walls or movement thereof away from the gluing fingers. The position of the
115 flaring portion 294 is such that the arms 299 will not have been pressed outwardly a sufficient distance to engage the walls of the box until said arms shall have entered the box. It is preferred to so proportion the
120 parts of this gluer that the line of glue shall be applied to the inside wall of the box a short distance from its edge and it will be observed that with the construction described, the glue will be rubbed on the box
125 as it is applied. Inward movement of the cams 292, should they pass beyond the upper limit of the surface 294, may be prevented by the extension of the shoulder 296, previously referred to. The connections including the springs 313 permit the movement
130 of the dauber to be restrained upon the encounter of abnormal resistance, such, for in-

stance, as might be occasioned by the improper positioning of a box or by any other article held in the path of the dauber.

In connection with the glue applying mechanism just described, means are provided for throwing the same into and out of operation without interfering with the continued operation of the other portions of the machine. This is accomplished by making the arm 309 in two parts 316 and 317 pivotally connected at 318. Preferably the part 316 consists of links pivoted at 318 upon opposite sides of the arm 317 at the end of the latter. Pivotally supported between the pair of links 316 is a latch 319, which may engage a shoulder 320 on the part 317, and when the latch 319 engages the shoulder 320 the parts 316 and 317 are locked in position and together form an arm of the rock lever 309. When the latch 319 is disengaged from the shoulder 320, movement of the part 317 by the cam 307 will no longer be effectively communicated to the part 316 so as to raise the cross plate 312 and, in consequence, the glue carrying device. A spring 321 is connected to the latch and the arm 316 to yieldingly maintain the latch in engagement with the shoulder 320. Thus the latch may be readily disengaged, as will be obvious. When the roller 311 on the rock arm 309 is engaged with the low part of the cam 307 the glue carrier has dropped to its lowest position and is submerged in the glue, the lowering of the glue carrier being due to gravity assisted by a spring 322 attached at one end to the extremity of the rock arm near the central portion of the cross plate 312 and at its other end to a convenient point on the frame of the machine. In order to provide for the smooth and accurate operation of the rods 306 an elongated bearing sleeve 324 projects upwardly from the interior of the glue pot, the same being secured to the inner bottom portion of the pot by a screw threaded connection, permitting its removal. One of the rods 306 extends through the sleeve 324 and through the bottom of the pot. The other similar rod engages vertical and elongated bearings 325 in the flanges provided at the top and bottom of the pot. The upper end of the bearing sleeve 324 is situated above the glue level of the pot, thus permitting the free passage of the rod 306 without contacting the glue, and also avoiding leakage. It will be observed from the foregoing description that not only is a practical and efficient glue applying mechanism provided, but also one which may be readily taken apart and packed or repaired as may be desirable.

The mechanism for moving or feeding the box bodies into glue-applying position over the glue pot is preferably constructed as follows: At the upper right hand portion of the machine is a frame portion consisting

of substantially an I-beam horizontally arranged and extending transversely of the machine and comprising the upstanding web 326. The upper flange of the I-beam supports a guide plate in which is a longitudinal groove having an undercut wall 327, between which and a spaced removable plate 328, slides a guide rod 329 of a reciprocating cross head. Besides rod 329 the reciprocating cross head comprises an inclined cross bar 330 connecting one end of the rod 329 with a lower rod 331 supported and sliding on the bottom flange of the I-beam and in the angle where said flange joins the I-beam. The rods 329 and 331 are of a sufficient length to retain the cross head in proper alinement during its reciprocations and to permit the cross head to have an amplitude of reciprocation corresponding with the distance from the end of the feeding channels for the bodies to the glue applying position of said bodies. Pivotally connected to the bottom end portion of the cross head is a picker rod 332 extending longitudinally of the cross head and provided with a transversely projecting arm 333 and a downwardly and laterally projecting picker 334. The latter being adapted to engage and move the box bodies from the feeding guideway to glue applying position as the cross head reciprocates. In order that the picker may accomplish this result, the inner end of the guideway is provided with a supporting and guiding plate 335, on which the arm 333 plays when moving in one direction. A switch comprising a tapered rod 336, one end of which is pivoted to an upstanding wall at 337, has its other end resting upon the guideway 335 at the end toward which the box bodies are fed and is yieldingly pressed against said guideway 335 by the spring 338 engaging a pin 339 projecting through a curved slot 340 in the upstanding wall 341. As the cross head reciprocates the picker 334 at the beginning of its inward movement is in a position to engage an outer wall of the box body which is at the end of the guideway formed by the bars 270, the arm 333 resting upon the guideway 335. As the cross head moves inwardly the picker feeds the box into glue applying position on the guides 290, at which position the supporting bar 333 has passed beneath and beyond the switch 336. As the picker reciprocates in the opposite direction the switch will be yieldingly held in the path of the rod 333 by its spring 338, and the picker will accordingly be lifted as the rod 333 follows the upper surface of the switch and thus carried over the succeeding box body, which at this time has been brought to the end of the feeding guideway. The rod 333 at the end of its reciprocation drops from the end of the switch 336 onto the guideway 335, thus carrying the picker into position

to engage another box which is about to be fed into glue applying position. In order that the picker may be accurately positioned with respect to the box bodies as they rest in the guideway it is adjustably connected to the picker arm 332 by a pin and slot connection, as at 342. And in order to provide for the accurate placing of the box in glue applying position the picker arm 332 is adjustably connected to the cross head 331 by means of a pivoted arm 343 having an opening through which the arm 332 extends and in which it may be adjustably secured by means of the pin 344. The arm 333 is yieldingly held in contact with the guideway 335 by means of a spring 345 attached to the upper part of the cross head and to the member 343, preferably by means of the screw 344 which passes through a perforation in the lower end of the spring 345.

Reciprocating motion is communicated to the picker through the cross head by means of a connecting rod 346 pivoted at one end to an intermediate portion of the cross bar 330 of the cross head, the other end of the connecting rod being joined to a crank pin 347 adjustably connected to a disk wheel 348 journaled through an intermediate portion of the web 326 and located in front thereof. The rear end of the shaft of the wheel 348 is provided with a bevel pinion 349 which meshes with a bevel gear 350 on the shaft of the carrier. As the carrier shaft intermittently rotates, as previously described, intermittent rotary motion is communicated to the wheel 348 and the picker thus intermittently reciprocates in accordance with the movement of the carrier.

The box bodies, after glue has been applied thereto in the manner hereinbefore described, are fed successively and automatically from glue applying position into a downwardly open channel or guideway in line with the channel formed by the bars 290. This channel is practically a continuation of the channel 291 and is formed by depending plates 351 secured to opposite sides of the lower head of the I-beam. The plates 351 are provided with flanges 352 to support the edges of the boxes in their passage through the guideway. As the picker 334 reciprocates and draws a succeeding box body into glue applying position the forward end of said body engages the box which had been previously fed to glue applying position and feeds it forwardly away from such position and to the guideway formed by the plates 351.

It will be observed that the path of movement of the dauber, or more particularly the glue applying face of the dauber fingers, is caused by the upward movement of the plate 297 and the lateral deflection caused by the cam 294, being thus a resultant of movements in paths at an angle to each

other. Thus the dauber fingers move upwardly and simultaneously outwardly so that when the glue is applied to the boxes, it is not only pressed against the box walls, but rubbed thereon. The rubbing not only more efficiently glues the box, but the movement causing the rubbing enables a dauber with a thin edge to be employed and yet a relatively wide line of glue to be applied. Thus by the above described construction are accomplished, among others, the objects hereinbefore referred to.

As many changes could be made in the above construction and many apparently widely different embodiments of this invention could be made without departing from the scope thereof, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense. It is also to be understood that the language used in the following claims is intended to cover all of the generic and specific features of the invention herein described, and all statements of the scope of the invention which, as a matter of language, might be said to fall therebetween.

Having described my invention, what I claim as new and desire to secure by Letters Patent is:

1. In an apparatus of the character described, in combination, means adapted to support a box, a glue supply, a dauber adapted to receive glue from the supply, means adapted to cause the dauber and the box to be glued to contact, and means adapted to cause the contacting portions of the dauber and the box to relatively reciprocate while in contact.

2. In an apparatus of the character described, in combination, a glue supply, a stationary guide, a dauber adapted to reciprocate longitudinally and transversely of the guide, and means adapted to move the dauber to the article to be glued.

3. In an apparatus of the character described, in combination, a glue supply, a stationary guide, a dauber movable relatively to the guide and adapted to transfer glue from the supply to an article, and means adapted to adjust the path of movement of the dauber.

4. In an apparatus of the character described, in combination, a glue supply, a stationary guide, a dauber movable relatively to the guide and adapted to transfer and rub glue on an article, and means adapted to adjust the path of movement of the dauber.

5. In an apparatus of the character described, in combination, a glue supply, a stationary guide, a dauber comprising a movable rigid member adapted to receive glue from the supply and to reciprocate lon-

gitudinally and transversely of said guide, and means adapted to cause said member to contact and slide on an article to be glued.

6. In an apparatus of the character described, in combination, a glue supply, a stationary guide, a dauber comprising a movable rigid member adapted to receive glue from the supply and to reciprocate longitudinally and transversely of said guide, and means adapted to cause said member to reciprocatorily contact the inner wall of a box so as to leave an unglued portion adjacent the edge of the opening of the box.

7. In an apparatus of the character described, in combination, a glue supply, a stationary guide, a dauber comprising a movable rigid finger having a narrow edge adapted to receive glue from the supply and to reciprocate longitudinally and transversely of said guide, and means adapted to cause said finger to reciprocatorily contact the inner wall of a box so as to leave an unglued portion adjacent the edge of the opening of the box.

8. In an apparatus of the character described, in combination, a glue supply, a movable dauber adapted to transfer glue from the supply to an article, means adapted to move the dauber in a path which is a resultant of movements at an angle to each other into contact with the article to be glued, and means adapted to adjust the plane of the path of movement of the dauber.

9. In an apparatus of the character described, in combination, a glue supply, a stationary guide, a dauber adapted to move longitudinally and transversely of said guide, and means comprising an adjustable device adapted to determine the path of transverse movement.

10. In an apparatus of the character described, in combination, a glue supply, a stationary guide comprising a cam, a dauber adapted to move longitudinally and transversely of said guide, and means carried by the dauber adapted to contact the guide and determine the path of transverse movement.

11. In an apparatus of the character described, in combination, a glue supply, a stationary guide comprising a cam, a dauber adapted to move longitudinally and transversely of said guide, and adjustable means carried by the dauber adapted to contact the guide and determine the path of transverse movement.

12. In an apparatus of the character described, in combination, a glue supply, a stationary guide comprising a cam, a dauber pivoted to move transversely of the guide, and an adjustable contact device between the dauber and guide.

13. In an apparatus of the character described, in combination, a glue supply, a stationary guide comprising a cam, a dauber

pivoted to move transversely of the guide, and a pin carried by the dauber adapted to contact the guide, and means adapted to adjust the pin.

14. In an apparatus of the character described, in combination, a glue supply, a stationary guide comprising a cam, a dauber adapted to move longitudinally and transversely of said guide, and yielding means adapted to maintain the dauber in contact with said guide.

15. In an apparatus of the character described, in combination, a glue supply, a stationary guide comprising a cam, a dauber adapted to move longitudinally and transversely of said guide, yielding means adapted to maintain the dauber in contact with said guide, and an adjustable pin carried by the dauber and adapted to contact the guide.

16. In an apparatus of the character described, in combination, a glue supply, a stationary guide comprising a cam, a support movably mounted on the guide, a dauber pivotally connected to the support to move transversely of the movement of the support, and means whereby transverse movement of the dauber is determined by the guide.

17. In an apparatus of the character described, in combination, a glue supply, a stationary guide comprising a cam, a support movably mounted on the guide, a dauber pivotally connected to the support to move transversely of the movement of the support, and means to yieldingly maintain the dauber in contact with the guide.

18. In an apparatus of the character described, in combination, a glue supply, a stationary guide comprising a cam, a dauber adapted to move longitudinally and transversely of said guide, means whereby the path of movement of the dauber is determined by said guide, and means comprising a yielding connection adapted to move the dauber longitudinally of the guide.

19. In an apparatus of the character described, in combination, a glue supply, a stationary guide comprising a cam, a dauber adapted to move longitudinally and transversely of said guide, means whereby the path of movement of the dauber is determined by said guide, a support adapted to position a box in the path of movement of the dauber, means adapted to move the dauber longitudinally of the guide, thereby causing the dauber to contact with the inner lateral wall of the box, and means adapted to yieldingly restrain movement of the dauber upon the encounter of abnormal resistance.

20. In an apparatus of the character described, in combination, a glue supply, a stationary guide comprising a cam, a reciprocatory dauber adapted to move longitudinally and transversely of the guide, means whereby the path of movement of the dauber

is determined by said guide, a support adapted to position a box in the path of movement of the dauber, means adapted to move the dauber longitudinally of the guide and cause the dauber to contact with the inner wall of a box comprising a shaft, a cam operated thereby, a lever operated by the cam and operatively connected to the dauber, said dauber-moving means being operative at will to prevent movement of the shaft being transmitted to the dauber.

21. In an apparatus of the character described, in combination, a reciprocatory dauber, a rock lever operatively connected to the dauber to reciprocate the same, means adapted to rock said lever, comprising a cam, one arm of said lever comprising pivotally connected sections, and means comprising a latch pivotally connected to one section and adapted to engage the other adapted at will to lock the sections together to move as one.

22. In an apparatus of the character described, in combination, a reciprocatory dauber, a rock lever operatively connected to the dauber to reciprocate the same, means adapted to rock said lever comprising a cam, one arm of said lever comprising pivotally connected sections, means comprising a latch pivoted to one section adapted to engage the other and lock the sections together to move as one, and a spring adapted to yieldingly retain the latch in locking position.

23. In an apparatus of the character described, in combination, a reciprocatory dauber, a rock lever operatively connected to the dauber to reciprocate the same, means adapted to rock said lever, one arm of said lever comprising pivotally connected sections, one of said sections comprising oppositely disposed links, and means comprising a latch pivoted to said links and adapted to engage the other section and lock the sections together to move as one.

24. In an apparatus of the character described, in combination, a reciprocatory dauber, a rock lever operatively connected to the dauber to reciprocate the same, means adapted to rock said lever, comprising a cam, one arm of said lever comprising pivotally connected sections, one of said sections comprising oppositely disposed links, means comprising a latch pivoted to said links and adapted to engage the other section and lock the sections together to move as one, and a spring adapted to yieldingly retain the latch in locking position.

25. In an apparatus of the character described, in combination, a stationary glue pot, a stationary guide rod, a dauber adapted to move in a predetermined line relatively to the rod, into and out of the glue in the pot, and means whereby movement of the dauber in said line causes the same to move transversely to said line.

26. In an apparatus of the character described, in combination, a stationary pot, a stationary guide rod, a dauber comprising a plurality of fingers disposed around the guide rod, means adapted to move the fingers longitudinally relatively to said rod, and means whereby the longitudinal movement of the fingers causes them to move transversely of said rod.

27. In an apparatus of the character described, in combination, a stationary glue pot, a stationary guide rod extending from the bottom of the pot, a dauber comprising a plurality of fingers disposed around the rod, said fingers being pivoted to move transversely of the rod, a cam on said rod, means adapted to yieldingly move the fingers on their pivots into contact with said rod and cam, and means adapted to reciprocate the fingers longitudinally of said rod and cam.

28. In an apparatus of the character described, in combination, a stationary glue pot, a stationary guide rod extending from the bottom of the pot, a dauber comprising a plurality of fingers disposed around the rod, said fingers being pivoted to move transversely of the rod, a cam on said rod, means adapted to yieldingly move the fingers on their pivots into contact with said rod and cam, an adjustable contacting device carried by each finger, and means adapted to reciprocate the fingers longitudinally of said rod and cam.

29. In an apparatus of the character described, in combination, a stationary glue pot, a stationary guide rod extending from the pot and comprising a cam at its outer portion, a dauber comprising a plurality of fingers disposed around the rod, said fingers being pivotally supported to move transversely of the rod, means adapted to yieldingly move the fingers on their pivots into contact with said rod, operating means comprising a rod connected to the fingers and extending outside the pot, a rock lever connected to said rod, and means to rock said lever.

30. In an apparatus of the character described, in combination, a stationary glue pot, a stationary guide rod extending from the pot and comprising a cam at its outer portion, a dauber comprising a plurality of fingers disposed around the rod, said fingers being pivotally supported to move transversely of the rod, means adapted to yieldingly move the fingers on their pivots into contact with said rod, operating means comprising connecting rods connected to the fingers at either side, respectively, of the guide rod, guide openings in the pot through which the connecting rods pass, and means adapted to reciprocate said connecting rods.

31. In an apparatus of the character described, in combination, a stationary glue

pot, a stationary guide rod extending from the pot and comprising a cam at its outer portion, a dauber comprising a plurality of fingers disposed around the rod, said fingers being pivotally supported to move transversely of the rod, means adapted to yieldingly move the fingers on their pivots into contact with said rod, operating means comprising connecting rods connected to the fingers at either side, respectively, of the guide rod, guide openings in the pot through which the connecting rods pass, a cross plate movably mounted on said connecting rods, springs adapted to transmit movement of the cross plate to said connecting rods, and means adapted to reciprocate said plate.

32. In an apparatus of the character described, in combination, a glue supply, stationary means adapted to support boxes in position to be glued, a dauber adapted to receive glue from the supply, means whereby the dauber is pressed against the box, and means adapted to brace the part glued against the pressure of the dauber.

33. In an apparatus of the character described, in combination, a glue supply, stationary guide means between which boxes move, means adapted to support boxes between said guides, a dauber adapted to receive glue from the supply, and means whereby the dauber is pressed against the part of the boxes opposite the guide means.

34. In an apparatus of the character described, in combination, a glue supply, stationary guide means between which boxes move, means adapted to support boxes between said guides, a dauber adapted to receive glue from the supply, and means whereby the dauber is pressed against the interior of the boxes opposite the guide means.

35. In an apparatus of the character described, in combination, a glue supply, stationary means adapted to support articles in position to be glued, a dauber, a stationary dauber guide, and means adapted to move the dauber relatively to the guide to and from the article.

36. In an apparatus of the character described, in combination, a glue supply, stationary spaced tracks adapted to support boxes in position to be glued, a stationary guide comprising a cam, a dauber movable longitudinally and transversely of said guide, and means adapted to move the dauber relatively to the guide to and from the boxes.

37. In an apparatus of the character described, in combination, a glue supply, stationary spaced tracks adapted to support boxes in position to be glued, stationary guides for the boxes adapted to reinforce the wall to be glued, a stationary guide comprising a cam, a dauber movable longitudinally and transversely of said guide, and means

adapted to move the dauber relatively to the guide to and from the boxes and cause the dauber to apply glue to the interior of the boxes opposite the box guides.

38. In an apparatus of the character described, in combination, a glue supply, stationary box supporting guides spaced apart, a dauber adapted to move to and from the supply and between the guides, and means adapted to move boxes along the guides into and out of position opposite the dauber.

39. In an apparatus of the character described, in combination, a glue supply, stationary guides comprising horizontally disposed tracks spaced apart, a dauber adapted to move to and from the supply and between the tracks, reciprocatory means adapted to move boxes along the tracks into and out of gluing position relatively to the dauber, and means to adjust the distance between the guides.

40. In an apparatus of the character described, in combination, a glue supply, stationary box supporting guides spaced apart, a dauber adapted to move to and from the supply and between the guides, and means comprising a reciprocatory finger adapted to move boxes along the guides into and out of position to be glued.

41. In an apparatus of the character described, in combination, a glue supply, stationary box supporting guides spaced apart, a dauber adapted to move to and from the supply and between the guides, a box supply device, a track, a switch resting on said track, a pivoted picker finger having an arm adapted to slide on said track, and means adapted to reciprocate said finger relatively to the track and thereby successively feed boxes from the box supply device into and out of position to be glued.

42. In an apparatus of the character described, in combination, stationary box supporting tracks spaced apart, a dauber adapted to apply glue to the walls of boxes on said tracks, a reciprocatory picker adapted to positively feed boxes in succession along the tracks to glue applying position, and means to operate the picker comprising a mutilated gear, whereby the picker is caused to dwell between its reciprocations.

43. In an apparatus of the character described, in combination, a glue supply, means adapted to support a box in glue applying position, a box supply device, means adapted to positively move a box from the supply to the supporting means, and means whereby said moving means is so operated as to leave the box on the supporting means until displaced by the succeeding box from the supply.

44. In an apparatus of the character described, in combination, a glue reservoir, a fixed guide rod therein having a cam portion, and a dauber movably mounted on the

rod and comprising means adapted to contact the cam portion and move the dauber transversely of the guide.

45. In an apparatus of the character described, in combination, a glue reservoir, a fixed guide rod therein having a cam portion, dauber fingers guided on the rod, means to reciprocate the dauber fingers relatively to the rod, and means permitting the dauber fingers to move at an angle to the reciprocatory path.

46. In an apparatus of the character described, in combination, a glue reservoir, a stationary guide rod having a cam portion, a supporting plate guided on the rod, dauber fingers pivoted on the plate, means to reciprocate the plate, and means whereby movement of the dauber fingers is guided by the rod.

47. In an apparatus of the character described, in combination, a glue reservoir, a stationary guide rod having a cam portion, a supporting plate guided on the rod, oppositely disposed dauber fingers pivoted on the plate, means to reciprocate the plate, and spring means adapted to retain the fingers in contact with the rod.

48. In an apparatus of the character described, in combination, a glue reservoir, a stationary guide rod having a cam portion, a supporting plate guided on the rod, oppositely disposed dauber fingers pivoted on the plate, means to reciprocate the plate, and spring means joining the daubers and adapted to retain the fingers in contact with the rod.

49. In an apparatus of the character described, in combination, a glue reservoir, a stationary guide rod having a cam portion, a supporting plate guided on the rod, dauber fingers pivoted on the plate and comprising adjustable means adapted to slidably contact the rod, means to reciprocate the plate, and means adapted to retain the rod and the adjustable contact means in contact.

50. In an apparatus of the character described, in combination, a glue reservoir, a stationary guide rod, a supporting plate mounted to move relatively to the rod, dauber fingers pivoted on the plate, means adapted to reciprocate the dauber fingers relatively to the guide rod, and means whereby as the fingers are reciprocated they are caused to oscillate on their pivots.

51. In an apparatus of the character described, in combination, a glue tank, a stationary guide rod having a cam portion, a plate mounted to move relatively to the rod, dauber fingers pivoted on the plate to move transversely of the rod, supporting rods guided by the tank and connected to the plate, and means to reciprocate the supporting rods.

52. In an apparatus of the character de-

scribed, in combination, a glue tank, a stationary guide rod having a cam portion, a supporting plate, dauber fingers pivoted on the plate to move transversely of the rod, guides on the tank, supporting rods engaging the guides and connected to the plate, said supporting rods extending outside the tank, a rock arm, means for rocking said arm, and resilient connections between the arm and said supporting rods.

53. In an apparatus of the character described, in combination, a glue tank, a sleeve fixed to the bottom of the tank and extending above the glue therein, a dauber, and means adapted to move the dauber into and out of the glue in the tank comprising parallel rods extending above and below the tank, one of said rods being guided in said sleeve, a reciprocatory cross plate engaging said rods, means whereby the movement of the cross plate in one direction resiliently moves the rods, and connections adapted to cause the cross plate to positively move the rods in the opposite direction.

54. In an apparatus of the character described, in combination, a glue reservoir, a fixed guide rod therein, and an expansible dauber movably mounted on the guide rod.

55. In an apparatus of the character described, in combination, a glue reservoir, a guide rod having a tapered portion, a dauber comprising movable dauber fingers adapted to slidably contact the guide rod, and means to move the dauber along the rod and in contact with said tapered portion.

56. In an apparatus of the character described, in combination, a glue reservoir, a guide rod having an enlarged end and an intermediate tapered portion, a dauber comprising movable dauber fingers adapted to slidably contact the rod including the tapered portion, springs connecting said fingers in pairs, and means to reciprocate the dauber on the rod.

57. In an apparatus of the character described, in combination, a glue reservoir, guides thereon, connecting rods adapted to move in said guides, a guide rod mounted between the connecting rods and comprising an enlarged end portion, a dauber connected to said connecting rods and adapted to slide on the guide rod and comprising pivoted spring connected dauber fingers, a plate yieldingly connected to the connecting rods, and means to move the plate to reciprocate the connecting rods.

58. In an apparatus of the character described, in combination, a glue reservoir, a stationary guide, a dauber and means whereby movement of the dauber on the guide causes the dauber to move transversely of said guide.

59. In an apparatus of the character described, in combination, a glue reservoir, a stationary guide, a dauber and means where-

by relative movement of the dauber and guide causes the dauber to move longitudinally and transversely of said guide.

5 60. In an apparatus of the character described, in combination, a stationary guide rod, means adapted to feed an open box element into alinement with said rod, a plurality of fingers, means adapted to move the
10 from the box in alinement with said rod, and means whereby the movement toward the box causes the fingers to move transversely of the guide rod into contact with the inner wall of the box.

15 61. In an apparatus of the character described, in combination, a glue supply, guide means between which boxes are adapted to move, means adapted to support boxes between said guides, a dauber comprising a
20 finger adapted to receive glue from said supply, means adapted to move boxes successively into position between said guides, and means adapted to cause relative movement between the finger and the box supporting means to cause the finger to glue
25

the inner wall of the boxes and leave an unglued portion adjacent the openings of the boxes.

62. In an apparatus of the character described, in combination, a glue supply, guide 30 means between which boxes are adapted to move, means adapted to support boxes between said guides, a dauber comprising a finger adapted to receive glue from said supply, means adapted to move boxes successively into position between said guides, means adapted to cause relative movement
35 between the finger and the box supporting means to cause the finger to glue the inner wall of the boxes and leave an unglued portion adjacent the openings of the boxes, and means adapted to reciprocate the finger while in contact with said wall. 40

In testimony whereof I affix my signature, in the presence of two witnesses.

CARLOS HOLLY.

Witnesses:

DANA E. SHERMAN,
GEORGE W. RILEY.

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by relative movement of the dauber and guide causes the dauber to move longitudinally and transversely of said guide.

60. In an apparatus of the character described, in combination, a stationary guide rod, means adapted to feed an open box element into alinement with said rod, a plurality of fingers, means adapted to move the fingers relative to the rod and toward and from the box in alinement with said rod, and means whereby the movement toward the box causes the fingers to move transversely of the guide rod into contact with the inner wall of the box.

61. In an apparatus of the character described, in combination, a glue supply, guide means between which boxes are adapted to move, means adapted to support boxes between said guides, a dauber comprising a finger adapted to receive glue from said supply, means adapted to move boxes successively into position between said guides, and means adapted to cause relative movement between the finger and the box supporting means to cause the finger to glue

the inner wall of the boxes and leave an unglued portion adjacent the openings of the boxes.

62. In an apparatus of the character described, in combination, a glue supply, guide means between which boxes are adapted to move, means adapted to support boxes between said guides, a dauber comprising a finger adapted to receive glue from said supply, means adapted to move boxes successively into position between said guides, means adapted to cause relative movement between the finger and the box supporting means to cause the finger to glue the inner wall of the boxes and leave an unglued portion adjacent the openings of the boxes, and means adapted to reciprocate the finger while in contact with said wall.

In testimony whereof I affix my signature, in the presence of two witnesses:

CARLOS HOLLY.

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Correction in Letters Patent No. 1,053,602.

It is hereby certified that in Letters Patent No. 1,053,602, granted February 18, 1913, upon the application of Carlos Holly, of Lockport, New York, for an improvement in "Box-Making Machines," an error appears in the printed specification requiring correction as follows: In the heading of the specification, line 8, for "Serial No. 705,516" read *Serial No. 705,511*; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 25th day of March, A. D., 1913.

[SEAL.]

C. C. BILLINGS,

Acting Commissioner of Patents.

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