

APPLICATION FILED MAR. 24, 1921.

6 SHEETS—SHEET 1.

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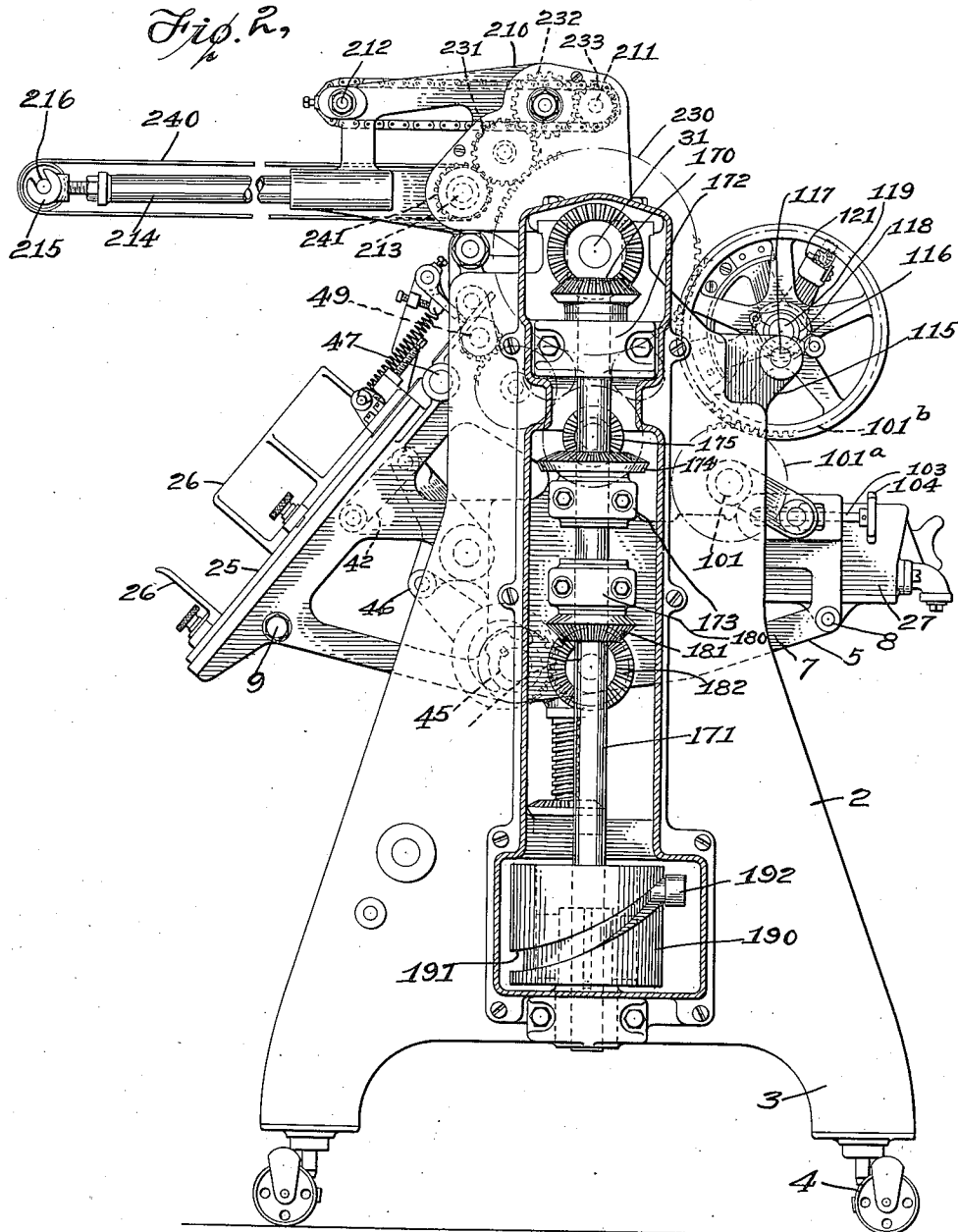
W. A. WEIGHTMAN AND C. H. NITSCH.
GLUING MACHINE.

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1,437,285.

Patented Nov. 28, 1922.

6 SHEETS—SHEET 2.



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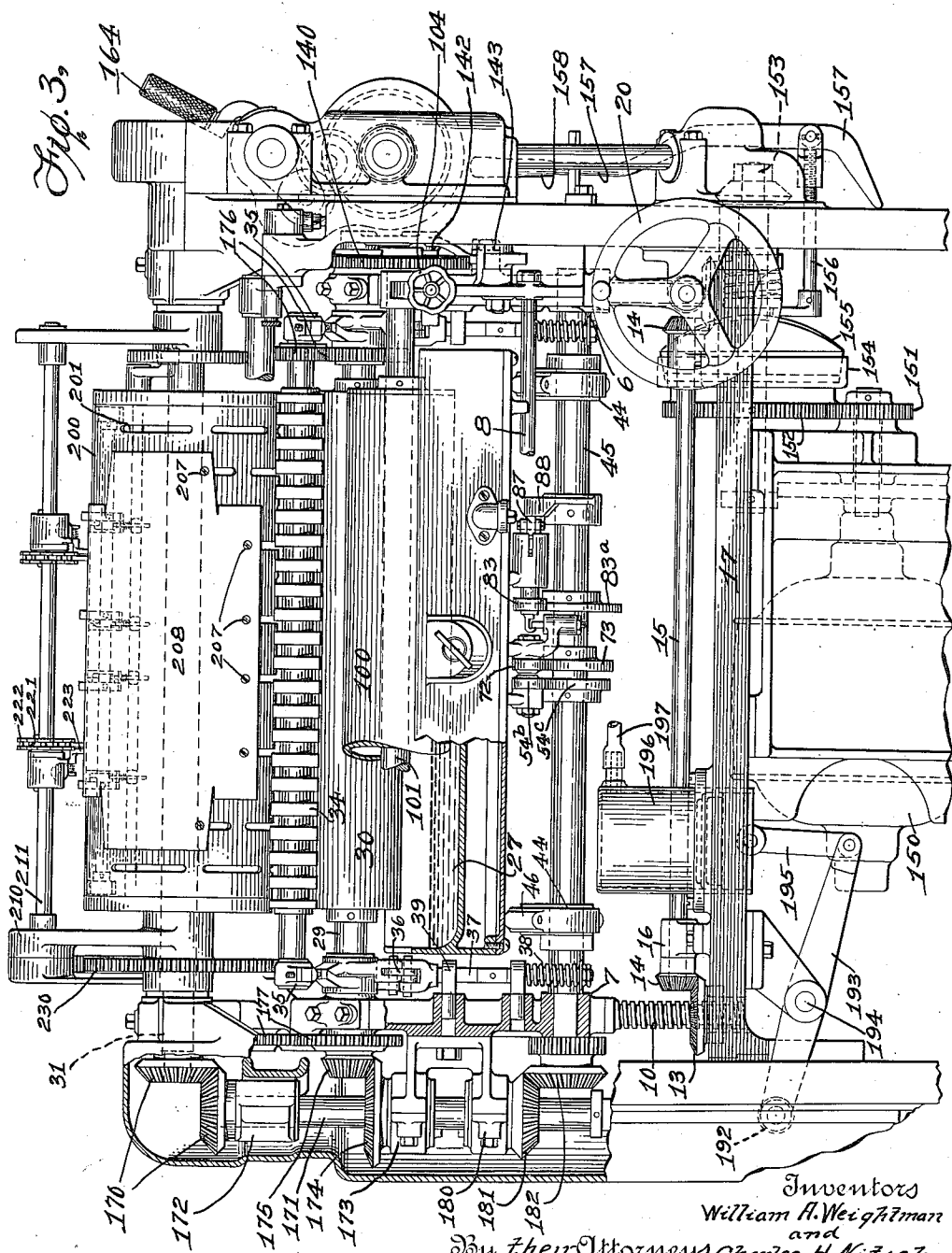
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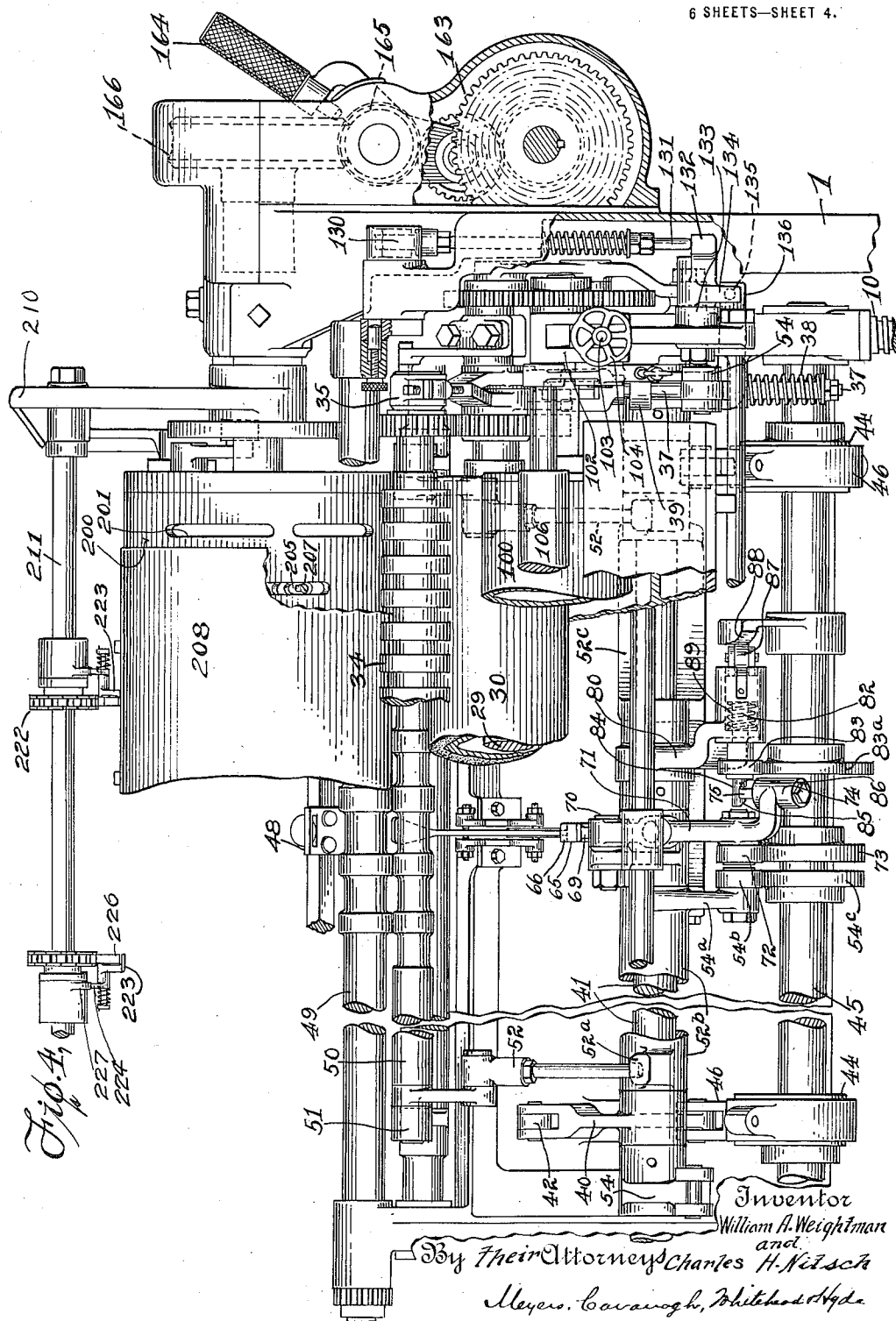


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6 SHEETS—SHEET 4.



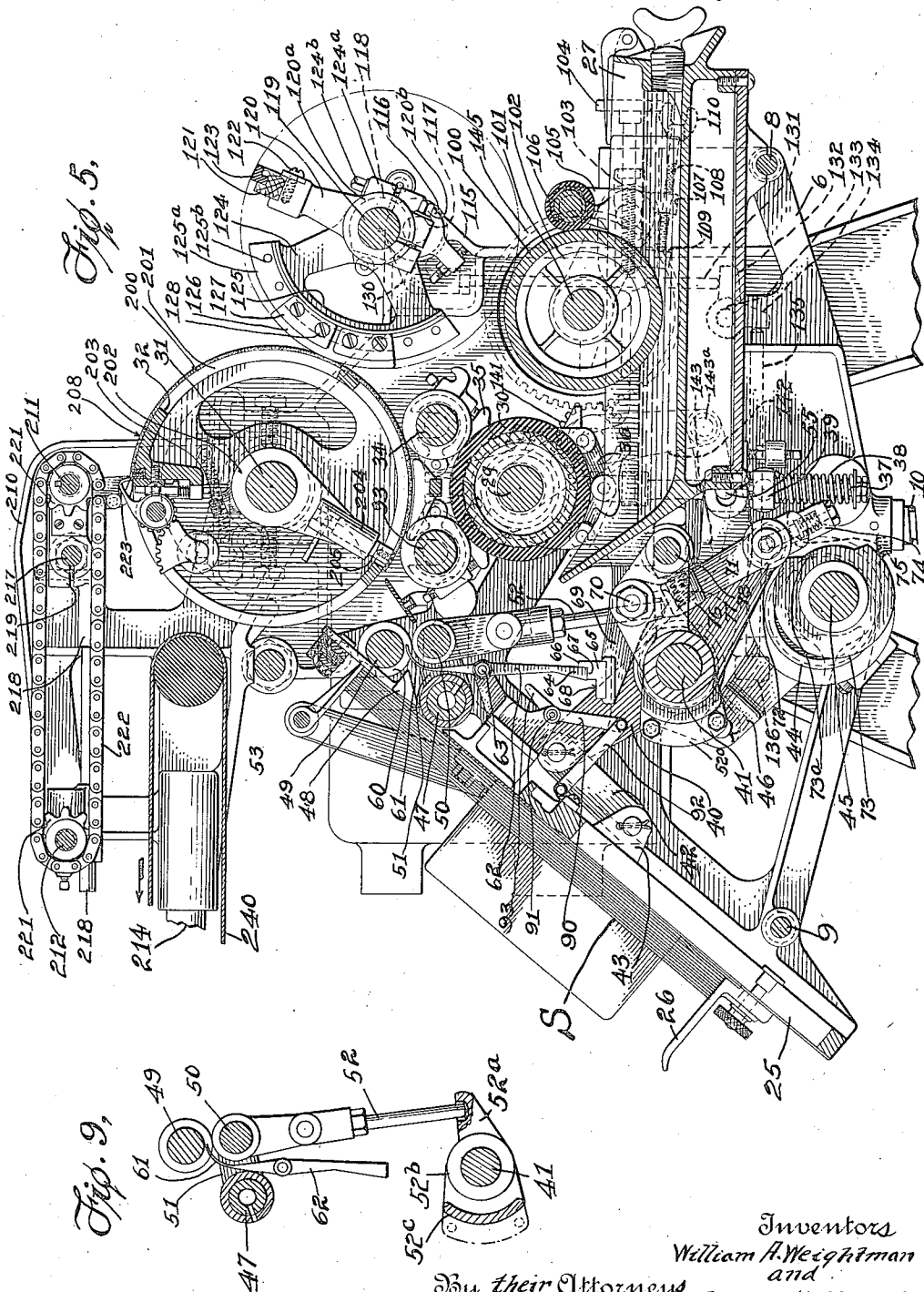
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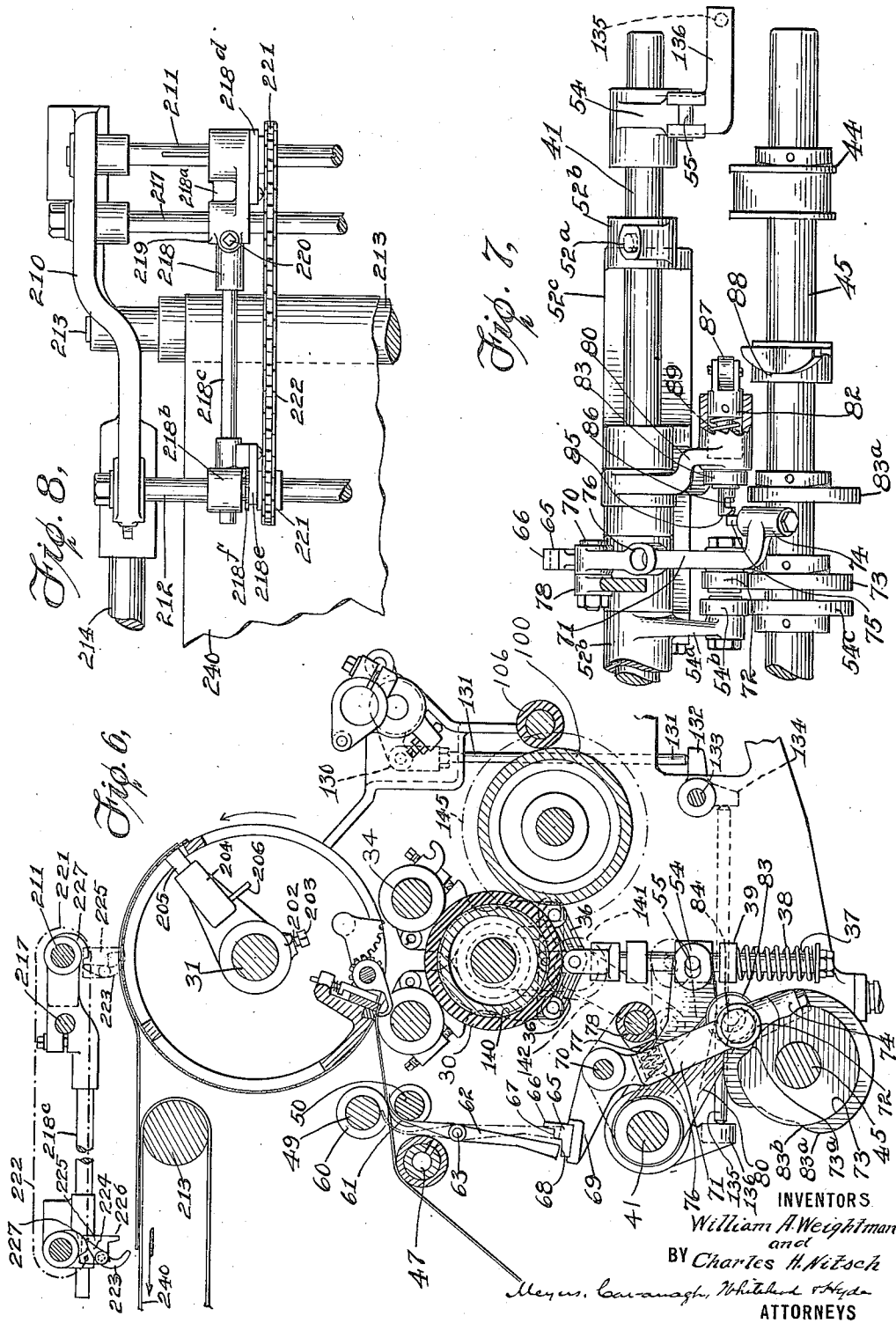
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6 SHEETS—SHEET 5.



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UNITED STATES PATENT OFFICE.

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GLUING MACHINE.

Application filed March 24, 1921. Serial No. 454,990.

To all whom it may concern:

- Be it known that we, WILLIAM A. WEIGHTMAN and CHARLES H. NITSCH, citizens of the United States, and residents of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Gluing Machines, of which the following is a specification.
- 10 Our invention relates to mechanism for applying adhesive, usually glue, to sheets or blanks, usually of paper, which are subsequently applied as coverings or wrappings to box shells or packages.
- 15 An important object of the invention is to provide means for applying glue either to substantially an entire surface of each of the blanks which are successively fed to the gluing mechanism, or for applying marginal stripes or other "stenciled" patterns of glue to the blank surfaces, and to organize the machine in general so that the different gluing devices may be conveniently used alternatively as desired.
- 25 Another important object is to provide new and improved means for operating the gluing devices so that the devices are rendered inoperative whenever a sheet or blank is omitted by the sheet feeding mechanism.
- 30 An incidental object is to eliminate electrical devices in connection with the glue omitting arrangement and to substitute entirely mechanical devices for performing this function.
- 35 Another object is to provide improved and simplified means for mounting the pad or blanket on the blank carrying platen.
- Another object is to provide for movably or adjustably mounting certain important parts, such as parts carrying the stripe or stencil gluing device.
- Another object is to provide improved transferring mechanism for taking the blanks from the gluing platen and delivering them to another machine, or to suitable receiving devices of another machine such as a package wrapping or box part covering machine with which the present machine may be associated in use.
- 50 A further important object of the invention is to attain the above described and other objects in a machine of the general

character disclosed in United States Patent No. 1,282,948, to J. D. Reifsnyder, W. A. Weightman and E. G. Rider, dated October 29, 1918, and in addition to improve the general organization and construction of such machines in various ways as sufficiently explained hereinafter.

The advantages and characteristics of the invention are further sufficiently explained in connection with a detail description of the accompanying drawings, which illustrate an exemplifying structure embodying the invention. After considering this exemplification persons skilled in the art will understand that many variations may be made in details as well as in combinations and sub-combinations of parts, and we contemplate the employment of any structures that are properly within the scope of the appended claims.

In the accompanying drawing:

Fig. 1 is a right side elevation of a machine embodying the invention.

Fig. 2 is a left side elevation.

Fig. 3 is an elevation, enlarged, of the upper portion of the machine, from the front; that is from the left of Fig. 1.

Fig. 4 is a view still further enlarged of the upper right hand portion of the mechanism shown in Fig. 3.

Fig. 5 is a vertical longitudinal section of the upper part of the mechanism in the same scale as Fig. 4.

Fig. 6 is a vertical sectional diagram showing mainly positions of the gluer operating mechanism, glue feed mechanism, etc.

Fig. 7 is a right side elevation of the cam mechanism of Fig. 6 and some related parts.

Fig. 8 is a fragmentary plan view of the sheet take-off mechanism.

Fig. 9 is a detail of short-feed roll operating mechanism.

The machine has a main frame comprising the side upright members 1 and 2 connected by suitable cross members. Desirably the side members have legs 3 provided with casters 4.

The main frame supports an auxiliary frame 5 which carries certain operative parts of the mechanism including the sheet feed mechanism, glue tank, main gluing

rolls and the alternatively used pattern or stencil gluing device. The auxiliary frame comprises side members 6 and 7 connected by suitable cross pieces such as rods 8 and 9; and it is guided for vertical movement in the main frame, substantially in the manner shown in Patent 1,282,948, above mentioned. The vertical adjustment of the auxiliary frame is accomplished by screws 10 connected to the side members 6 and 7 at 11 and engaging rotatable nuts 12, which bear against seats on transverse frame members 17. These nuts are provided with bevel gears 13. The two bevel gears 13 are engaged by pinions 14 on a transverse shaft 15 mounted in bearings 16 on frame member 17. One of the bevel gears 13 is also engaged by a pinion 18 on a horizontal shaft 19 extending toward the front of the machine, where it is provided with a hand wheel 20 to which manual power may be applied to lift or depress the auxiliary frame.

At the rear of the machine the side members of the auxiliary frame support the inclined reciprocating table 25 on which the stack of sheets or blanks S is supported in suitable guides 26. At the front of the machine the auxiliary frame supports a removable glue pan 27, the construction and arrangement of which are substantially as in the above identified patent. The side members of the auxiliary frame also support in suitable bearings a transverse shaft 29, which carries a glue distributing roll 30. Above the distributing roll the main frame side members support in suitable bearings a transverse shaft 31 on which is mounted the cylindrical blank platen 32; and intermediate the distributing roll and the blank platen are the main (or "all-over") gluing rolls 33 and 34, each consisting of spaced flanges with cylindrical peripheries, the flanges of one of the rolls being placed longitudinally opposite the spaces of the other roll, so that by co-operation the two rolls usually entirely cover the surface of the blank with glue, although they may be arranged to apply a striped glue pattern if so desired. These glue rolls are carried detachably in socket-bearings in the ends of "scissors arms" 35, which are fulcrumed on the same axis as shaft 29, and the lower ends of these arms are connected by toggle links 36 to vertical rods 37. These rods are provided with springs 38, bearing against washers secured to the ends of the rods and against abutments 39 carried by side plates 6 and 7, respectively. The springs normally urge rods 37 downward, and thus through the toggle linkage urge the main gluing rolls toward engagement with the surface of the sheet carrying member of the platen, as later more particularly explained. The general arrangement of the glue distributing roll and main gluing rolls and

their operating linkage is similar to that disclosed in the above identified patent.

The reciprocating table carrying the stack of blanks S is moved by bell cranks 40, mounted on a transverse shaft 41. One arm of each bell crank is connected by a link 42 to a lug 43 fixed to the table. The bell cranks are operated by eccentrics 44 on a transverse shaft 45, each eccentric being connected by a link 46 to the other arm of the adjacent bell crank 40.

At each advance movement of the blank table a blank is seized for feeding by a rotary suction roll 47 and guided by the assistance of transverse guide member 48 between feed rolls 49 and 50. The upper roll 49 is mounted in stationary bearings and the lower roll 50 is carried in bearings on arms 51 pivoted at or about the axis of suction roll 47. Arms 51 are connected by links, or push rods 52, one of which may be placed near each side of the machine, to operating arms 52^a, carried by sleeves 52^b rotatably mounted on shaft 41 (see Figs. 4 and 7). These sleeves are separated near the center of the machine as best shown in Fig. 7, to accommodate other operative parts located on and near shaft 41, and the separated sleeves are connected, to move together, by yoke members 52^c. One of the sleeves 52^b has an arm 54^a, provided with a cam roller 54^b, and this engages a cam 54^c on shaft 45, the cam being contoured and arranged so that at every rotation of the shaft 45 the movable feed roll 50 is withdrawn and again returned to active position at the proper moment to grip the forward edge of a sheet delivered by the suction roll, and advance the sheet over a fixed guide plate 53 to a point where it is seized by the platen grippers.

To detect the failure of the blank feeding mechanism to feed a blank, and to thereupon withdraw the gluing rolls so that glue will not be applied to the platen surface, the following mechanism is provided, which is entirely mechanical and, therefore, dispenses with electrical devices employed in the patented structure above referred to and is also very certain and positive in operation.

Feed roll 49 has an annular space or channel 60 to accommodate the curved upward end 61 of a trigger 62 pivoted at 63, and having its lower end 64 adjacent to a stop 65 provided with a shoulder 66 and two steps 67 and 68. This stop is carried by an arm 69, fulcrumed at 70 and operatively united with another arm 71, which carries a cam roller 72 running on the periphery of a cam 73 fixed on shaft 45; and arm 71 also carries a sleeve 74 in which is mounted a plunger 75 urged outward by a spring within the sleeve. Arm 71 also has a socket 76 containing a spring 77 bearing against a

spring abutment carried by a transverse frame rod 78, this spring serving to urge arm 71 in a direction to engage cam roller 72 with its cam, and also to move connected arm 69 upward. Cam 73 has a part-circular periphery and a shorter depressed portion or gap 73^a of smaller radius.

To retract the glue rolls in response to action of the trigger mechanism, the following means are provided: Fixed on shaft 41 is an arm 80 which has a transversely arranged sleeve 81 in which is a plunger 82 carrying near one end a cam roller 83 co-operating with a cam 83^a on shaft 45. Cam 83^a has a part-circular peripheral portion and a shorter "gap" or depressed portion 83^b, of smaller radius. Plunger 82 also has an extension 84 formed with a beveled face 85, and a notch 86 to co-operate with the end of plunger 75. Plunger 82 at the opposite end has a cam roller 87 engaging a face cam 88 carried by shaft 45. Plunger 82 is acted upon by a spring 89 within sleeve 81 tending to move the plunger to the right, as viewed in Figs. 4 and 7.

Cam 88 is so arranged that at each rotation of shaft 45 it moves the plunger 82, and so moves cam roller 83 into the gap 83^a of cam 83^b at a time when that gap is opposite the side face of the roller. Cam 88 passes away from cam roller 87 before cam roller 83 can be lifted by its cam. At each rotation of shaft 45 cam roller 72 tends to drop into the gap of cam 73 by reason of spring 77 acting on arm 71, and whenever a sheet is being properly fed at that time the trigger 62 is moved as indicated in full lines in Fig. 6, carrying its lower end away from surface 67 of block 65 and the cam roller 72 is thus permitted to drop into the depression of its cam. In doing so the end of plunger 75 carried by arm 71 is moved out of the path of the end 84 of plunger 82. Therefore, when plunger 82 is moved over by cam 88 as previously described, its end 84 is not engaged by plunger 75 and as soon as cam 88 passes away from cam 87 the plunger 82 is retracted by its spring, carrying its cam roller 83 out of the gap of cam 83^a before the cam can act upon the roller. Consequently arm 80 is not actuated and the position of the gluing rolls is not affected. After cam roller 72 drops into the gap of its cam it is again moved outward onto the enlarged peripheral portion of the cam, and in this movement at each rotation the arm 69 connected with arm 71 is depressed and block 65 is depressed so that the lower end of trigger 62 is permitted to swing over stop face 67. Whenever a sheet fails to be fed by the blank feeding mechanism the trigger will remain in this position, indicated by dotted lines in Fig. 6, and consequently when the gap of cam 73 comes under cam roller 72 the roller cannot drop into it; the

end of plunger 75 is thus held in the path of plunger 82, and when that plunger is moved over by its cam 88 (this movement taking place before the time when the sheet-carrying surface of the platen reaches the first gluing roll) the beveled face 85 of the plunger extension depresses plunger 75, which thereupon snaps into notch 86 of plunger 82; cam roller 83 is thus held in active relation to its cam 83^a after cam 88 passes away from cam roller 87, and cam roller 83 is elevated onto the enlarged peripheral portion of cam 83^a. Arm 80 is thus moved so that the ends of arms 54 are raised, and the rods 37 are raised and actuate the toggle mechanism so that the gluing rolls are retracted and do not come in contact with the blank carrying portion of the platen. As soon as another sheet is properly fed the trigger is moved to the solid line position of Fig. 6, and cam roller 72 drops into its cam gap and the parts function normally for gluing as previously explained.

Trigger 62 may be balanced to move by gravity, or a positive trigger actuating device may be provided, such as a bell crank 90 pivoted at 91, and having one arm connected by a link 92 with the blank table and another arm or toe 93 arranged opposite the long arm of the trigger. This device acts at each return movement of the blank table to positively move the trigger to the position shown in Fig. 5.

The glue distributing roll 30 is supplied by a dipper roll 100 carried by a shaft 101 mounted in slidable carriers 102 and these carriers are adjusted by screws 103 having hand wheels 104 so that the carriers and the dipper roll may be moved into contact with the distributing roll and properly adjusted in contact, or the dipper roll may be retracted to co-operate with the stencil gluer, later to be described. When roll 100 engages the stencil gluer, it is desirable to provide means for removing excess glue and also to evenly distribute glue on the roll 100. For this purpose the carriers 102 have pivoted arms 105, and a "doctor" or pressure roll 106 has its shaft mounted detachably in socket bearings on the arms.

These arms 105 have downward projections 107 engaged by screws 108, the ends of which bear against lugs 109 on the carriers and the screws have winged heads 110, so that by turning the screws the engagement of the doctor roll with the dipper roll may be properly regulated. When the dipper roll is in engagement with distributing roll 30, for supplying glue to the "all over" gluers, the pressure roll 105 may be removed from its bearings or it may be retracted from engagement with roll 100.

Main frame members 1 and 2 have lugs 115 Fig. 2, in which short swinging arms 116 (see also Fig. 5) are pivotally mounted

on studs or trunnions 117. These arms are provided with bearings 118 for a shaft 119 which carries different stenciling or glue pattern applying devices. The bearings have pivoted caps secured by pins or screws so that shaft 119 may be easily dismounted when desired.

The glue stripe or stencil pattern applying devices which may be carried by shaft 119 include the following: For applying transverse stripes to the blanks, the shaft is provided with one or more pairs of arms 120, each of which has a split sleeve 120^a surrounding the shaft, and the ends of this sleeve are drawn together by a screw 120^b. Thus the arms may be adjusted either laterally or angularly on the shaft. Each pair of the arms supports a transverse bar 121 which may be of any suitable material, in the present instance wood, and is detachably secured by suitable means such as screws 122. This bar is provided with a printing surface 123 of suitable material, such as rubber composition, for applying a transverse stripe of glue to the blank. For applying longitudinal stripes to the blanks one or more pairs of arms 124 are provided. Each pair of these arms is desirably connected to a split sleeve 124^a surrounding shaft 119. The ends of this sleeve are drawn together by a screw 124^b so that the two arms of a pair may be adjusted as a unit, either longitudinally or angularly, on the shaft. Each pair of arms carries an arc-shaped sector 125 having a flange 125^a provided with a series of screw holes 125^b. Longitudinal striping members 126 of suitable rubber composition and of various lengths are provided and these are attached to the sectors in the desired arrangement by plates 127, which may be of various lengths, and screws 128. Usually, at least two of the sector units 125, each comprising a pair of arms 124, a split sleeve 124^a, and carrying a suitable glue inprinting member 126, are provided, to place two longitudinal stripes near the margins of a blank, but evidently by the described devices any desired stencil pattern of longitudinal and transverse stripes, may be provided for.

The stencil gluer is desirably moved out of contact with the blank carrying surface of the platen upon failure of the sheet feed mechanism to feed a blank, and the blank feed detecting trigger mechanism and the cam mechanism controlled thereby for withdrawing the main or "all over" gluing rolls, previously described, is desirably employed for this purpose, with the addition of suitable operating connections as follows: The arms which carry the stencil gluer shaft 119 are operatively connected to arms 130 (Figs. 1, 2, 5 and 6) and these are pivotally connected to the upper ends of vertical push rods 131. The lower ends of these rods rest on arms 132 of bell cranks pivoted at 133 and

the other arms 134 of these bell cranks are acted upon by horizontal rods 135. The rear ends of these rods engage the ends of arms 136 (see Figs 5, 6 and 7) which are operatively integral with arms 54 which operate the main gluing rolls. In this way the stencil devices when in use, are moved away from the platen at the proper time when a sheet is omitted, by the same mechanism described in connection with the main gluing rolls.

When the blanks are to be glued all over, the stencil mechanism is removed by releasing the caps of bearings 118 and lifting the stencil shaft 119 out of its bearings. The dipper roll 100 is moved over into contact with distributing roll 30 and in this position the dipper roll is driven by a gear 140 on distributor roll shaft 29, engaging a gear 145 on dipper roll shaft 101. The pressure roll 106 may be removed. When the stencil gluer is to be used its shaft is placed in its bearings and the stencil devices are properly arranged and adjusted on the shaft. The dipper roll 100 is then moved over into engagement with the stencil applying devices and the pressure roll 106 is put in position and adjusted for the supply of the proper amount of glue. In this position the dipper roll is driven by an idler pinion 141 which always engages the teeth of gear 140 previously mentioned, and for this purpose is mounted on an arm 142 pivoted at a point concentric with shaft 29. The lower end of arm 142 moves over a sector on one of the side frame members and when the main gluer is in operation is secured in an idle position at the point 143 by a screw or bolt. When stencil gluing is in operation the arm is moved over and secured at the point 143^a and in that position the idler pinion engages gear 145 to drive the dipper roll. When stencil gluing is in progress the main or all over glue rolls are left in position to act as guide rolls for the blanks intermediate the feed mechanism and the stencil gluer, these main glue rolls being, of course, suitably cleaned and the distributing roll 30 being also cleaned so that no glue is applied to the blanks by the main glue rolls.

The driving mechanism, except for modifications and improvements mentioned above, may be substantially as shown in Patent 1,282,948, above mentioned, but preferably driving mechanism arranged as here shown may be employed as follows: A suitable initial driving device such as an electric motor 150 is suitably secured on the main frame and this has a pinion 151 engaging a gear 152 on shaft 153. This gear is connected with the driving member 154 of a clutch 155 which may be shifted by a rod 156 and lever 157 having a handle 158 convenient to the operator. The driven

member 155 of the clutch carries a pinion 159 engaging a gear 160, and this is connected by bevel gears 161 to a shaft 162 leading to a gear box 163 of any desirable type providing a number of gear changes, controlled by a handle 164. The driven member of the gearing in this instance is a worm 165 which drives a worm gear 166 on one end of the platen shaft 31. The other end of shaft 31 is connected by bevel gears 170 to the upper end of a vertical shaft 171 secured in a main frame member by suitable bearings such as bearing 172. A side frame member of the supplemental frame has an extension 173 providing a bearing for the sleeve of bevel gear 174 which is slidably mounted and splined on shaft 171 so that the bevel gear travels vertically in accordance with the vertical adjustment of the supplemental frame. Gear 174 engages a bevel pinion 175 on the adjacent end of the distributor roll shaft 29. The main gluing rolls 33 and 34 may be driven in any of the ways described in the previously identified patent. For instance, one of them may be driven by gears 176 from one end of shaft 29 and the other may be driven by gears 177 from the other end of shaft 29 or this driving arrangement may be changed as may be convenient. The side frame member of the supplemental frame has another extension 180 providing a bearing carrying a sleeve to which is connected a bevel gear 181 and the gear sleeve is splined on shaft 171, as in the case of gear 174. Gear 181 engages a bevel gear 182 on the adjacent end of cam shaft 45. On the lower end of shaft 171 is a cam drum 190 having a cam groove 191 in which is located a cam follower 192 carried by one end of a lever 193 fulcrumed at 194 and having its other end connected by a link 195 to the piston of a suitable pump 196 which is connected by a tube 197 to suction roll 47. Suitable arrangement is made for the control of low pressure induced in the suction roll by pump 196 to properly control the sheet feeding action of the suction roll. Such mechanism is well known and need not be particularly described.

The construction of the blank platen 32 with its sheet gripping and other devices may be in general as described in the previously identified patent. Improvements are made, however, in the means for securing a sheet receiving member, such as a pad or blanket, to the surface of the platen, embodied in this instance as follows: The part-cylindrical surface 200 is provided with a multiplicity of slots 201, each of which is usually of considerable length in the direction of the circumference of the platen and these slots may be arranged in rows as sufficiently indicated in Fig. 3. On shaft 31 are mounted a suitable plurality of blank se-

cure or hub 202 (Fig. 5), slidably mounted on the shaft and secured in respect to angular and longitudinal position by a set screw 203. Each of these devices has a sleeve 204, in which is mounted a plunger 205, which can be moved in and out and secured in outward position by a pin 206. The outer end of each plunger is adapted to fit the slots 201 and in the end of each plunger is a screw hole adapted to receive a screw 207. A suitable blank holding device, such as a blanket 208 shaped to agree substantially with the shape of the blank, is secured to the platen by first adjusting a suitable number of devices 202 in different slots 201 to agree more or less with the peripheral contour of the blank, and by then inserting screws 207 to secure marginal portions of the blanket to the ends of the plungers 205. The blanket forms a raised surface with which the glue printing devices co-operate without possibility of engaging other portions of the platen.

The invention also includes improved means for seizing and transporting sheets delivered by the platen to another co-operating machine, comprising in the present instance the following: Frame members 1 and 2 have upward extensions 210 providing bearings for sprocket shafts 211 and 212 and for a conveyor shaft 213 and these frame members also support extension bars 214 which carry in adjustable socket bearings 215 a conveyor shaft 216. Between shafts 211 and 212 is a transverse bar 217 secured in frame members 210. A pair of laterally adjustable sprocket frame members 218 is mounted on the shafts 211, 212, and 217. Each of these frame members has a split clamping member 219 provided with a screw 220 so that the lateral position of the sprocket frame member may be fixed after adjustment. The sprocket frame members also desirably comprise heads 218^a and 218^b, each of which has a sleeve in which the corresponding shaft 211 or 212 rotates. The heads are connected by a strut 218^c. Head 218^a carries the clamping member 219, above mentioned. For each sprocket frame two sprockets 221 are provided, one on shaft 211 and the other on shaft 212, and one of these sprockets has a splined connection with its shaft. Specifically, the two sprockets 221 on shaft 211 are splined so that they rotate with it and can slide axially on it, while the sprockets 221 on shaft 212 have merely a bearing fit on the shaft so that they may rotate freely and slide laterally on the shaft. The sprockets are connected to the adjacent heads 218^a and 218^b by yoke members 218^d and 218^e engaging annular grooves 218^f in the sprocket hubs. The two sprockets corresponding to each of the sprocket frames are connected by a chain 222. Each chain is provided with a grip-

per or sheet directing finger 223 to receive the forward edge of a sheet as it is released by the platen gripping devices. The grippers on the two chains are arranged opposite each other, that is they are in a line parallel to the platen axis, so that they simultaneously engage or grip the forward edge of a sheet carried by the platen. The construction and operation of the grippers are further described hereafter.

The sprocket frame members are adjusted laterally to agree with the position and width of the blank, as sufficiently indicated in Fig. 3. The blank directing sprockets and chains are driven by a large gear 230 on the platen shaft which engages a gear 231 mounted on a stub shaft on one of the frame members 210, and this gear drives an idler 232 on bar 217 and the idler in turn drives a gear 223 on one end of a sprocket shaft 211. The lower stretches of chains 222 move in the same direction as the upper side of the platen, as best understood in Fig. 5, and the chains are driven at such speed that the grippers or guide fingers 223 receive the forward edge of each sheet delivered by the platen and direct the forward edge of the sheet to the initial end of a conveyor belt 240 which runs over belt pulleys mounted on shafts 213 and 216 and this conveyor belt delivers the sheets to the machine with which the present machine is associated, such as a box covering or package wrapping machine. The conveyor belt is driven by a gear 241 on shaft 213 engaging gear 231 previously mentioned.

The sheet grippers 223 of the transfer mechanism are, in the present embodiment, in the form of curved fingers operatively integral with arms 224 and are pivoted on blocks 225, which are connected to the chains 222. Each block has a projecting member 226 to co-operate with one of the fingers 223. The fingers are operated by cams 227 carried by the members 218^a and 218^b of the transfer chain sprocket frames 218. As the grippers approach their rearward position as shown in Fig. 6, the fingers are opened by the rearward cams 227 to release the sheet. When the grippers have traveled forward again and are approaching the position shown in dotted lines, Fig. 6, the fingers are moved to open position by the action of the forward cams 227 and after the forward edge of the sheet is positioned under the projections 226, the gripping fingers are released by the cams and moved backward and upward so that they grip the forward edge of the sheet and thereafter the sheet is transferred from the gluing platen to the conveyor 240 in a manner previously described.

Features of construction other than described may be as desired, or may be for example as shown in the previously mentioned prior patent; and the operation of the ma-

chine, further than as here described will be easily understood by persons skilled in the art or by consideration of said patent.

After considering the foregoing description in connection with the drawings, it will be evident that subordinate parts and sub-combinations of the present invention are valuable apart from the entire combination; also that many variations in details and in combinations and sub-combinations of parts may be made within the principles of the invention, and we do not limit ourselves to details, except as claimed.

What we claim is:

1. Blank gluing mechanism comprising a rotary blank platen, means for feeding single blanks successively to the platen, and an all-over gluer and a stencil gluer for alternative use acting on the platen at different points in the direction of platen rotation.
2. Blank gluing mechanism comprising a rotary blank platen, means for feeding single blanks successively to the platen, an all-over gluer and a stencil gluer for alternative use acting on the platen at different points in the direction of platen rotation, and means for driving both of the gluers.
3. Blank gluing mechanism comprising a rotary blank platen, means for feeding single blanks successively to the platen, an all-over gluer and a stencil gluer for alternative use acting on the platen at different points in the direction of platen rotation, and a support in which one of the gluers is detachably mounted.
4. Blank gluing mechanism comprising a rotary blank platen, means for feeding single blanks successively to the platen, an all-over gluer and a stencil gluer for alternative use acting on the platen at different points in the direction of platen rotation, and means for rendering one of the gluers inoperative while the other is in operation.
5. Blank gluing mechanism comprising a rotary blank platen, means for feeding single blanks successively to the platen, an all-over gluer and a stencil gluer for alternative use acting on the platen at different points in the direction of platen rotation, a support in which one of the gluers is detachably mounted, and means for rendering one of the gluers inoperative while the other is in operation.
6. Blank gluing mechanism comprising a rotary blank platen, means for feeding single blanks successively to the platen, two rotary gluers for alternative use acting on the platen at different points in the direction of platen rotation, and means for supplying glue to the active gluer while the other performs a blank feeding function without glue supply.
7. Blank gluing mechanism comprising a rotary blank platen, means for feeding single blanks successively to the platen, two ro-

tary gluers for alternative use acting on the platen at different points in the direction of platen rotation, a support in which one of the gluers is detachably mounted, and means
5 for supplying glue to the active gluer while the other performs a blank feeding function without glue supply.

8. Blank gluing mechanism comprising a rotary platen, means for feeding blanks successively to the platen, two gluing devices
10 for alternative use, means for supplying glue alternatively to the gluing devices, and means for operating both of the devices.

9. Blank gluing mechanism comprising a rotary blank platen, means for feeding single blanks successively to the platen, an all-over gluer normally in operative relation to a blank carrying surface of the platen for applying glue or for advancing the blanks
20 without glue application, a stencil gluer, means for detachably supporting the stencil gluer in operative relation to the platen, and glue supply means arranged to supply glue to the all over gluer when the stencil gluer
25 is detached and to supply glue to the stencil gluer without glue supply to the all over gluer when the stencil gluer is in position.

10. Blank gluing mechanism comprising a rotary blank platen, means for feeding single blanks successively to the platen, an all over gluer normally in operative relation to a blank carrying surface of the platen for applying glue or for advancing the blanks without glue application, a stencil
35 gluer, means for detachably supporting the stencil gluer in operative relation to the platen, glue supply means arranged to supply glue to the all over gluer when the stencil gluer is detached and to supply glue to the stencil gluer without glue supply to the
40 all over gluer when the stencil gluer is in position, and means for driving both of the gluers.

11. Blank gluing mechanism comprising a rotary blank platen, means for feeding single blanks successively to the platen, and an all over gluer normally in operative relation to the blank carrying surface of the platen for applying glue or for advancing the blanks without glue application, a stencil
50 gluer, a movable support for the stencil gluer, and glue supply means arranged to supply glue to the all over gluer when the stencil gluer is inoperative and to supply glue to the stencil gluer without glue supply to the all over gluer when the stencil gluer
55 is in operation.

12. Blank gluing mechanism comprising a rotary blank platen, means for feeding single blanks successively to the platen, an all over gluer normally in operative relation to a blank carrying surface of the platen for applying glue or for advancing the blanks without glue application, a stencil gluer, a
65 movable support for the stencil gluer, glue

supply means arranged to supply glue to the all over gluer when the stencil gluer is inoperative and to supply glue to the stencil gluer without glue supply to the all over gluer when the stencil gluer is in operation, 70 means for driving the gluers, and means for moving the stencil gluer support to omit glue in the absence of a blank.

13. Blank gluing mechanism comprising a rotary platen, means for feeding blanks successively to the platen, an all-over gluer and a stencil gluer adapted for alternative use, a retractable carrier for each of the gluers, means for rendering one of the gluers inoperative while the other is operative, and
80 operating mechanism for both of the carriers including means for retracting them simultaneously upon failure to feed a blank.

14. Blank gluing mechanism comprising a rotary platen, means for feeding blanks successively to the platen, two rotary gluing devices co-operating with the platen and arranged for alternative use, and operating mechanism for both of the gluing devices including means for retracting them upon
90 failure to feed a blank.

15. Blank gluing mechanism comprising a rotary platen, means for feeding blanks successively to the platen, two alternatively operative gluing devices and operating
95 mechanism for both of the gluing devices including means for retracting the gluing device which is in use upon failure of the blank feeding means to feed a blank.

16. Blank gluing mechanism comprising a rotary platen, means for feeding blanks successively to the platen, two rotary gluing devices co-operating with the platen and arranged for alternative use and operating mechanism for both of the gluing devices including means for retracting the gluing device which is in use upon failure of the blank feeding means to feed a blank. 100

17. In blank gluing mechanism of the class described, a rotary platen, means for feeding blanks successively to the platen, an "all-over" gluing device, a stencil gluing device, means for retracting both of the devices upon a blank-feed failure, a glue supplying roll, and means for engaging said
115 roll with either the main gluing device or the glue stenciling device.

18. In blank gluing mechanism of the class described, a rotary platen, means for feeding blanks successively to the platen, an "all over" gluing device, a stencil gluing device, means for retracting both of the devices upon a blank-feed failure, a glue supplying roll, means for engaging said roll with either the main gluing device or the
125 glue stenciling device, and means for driving the glue roll in either of its positions.

19. In gluing mechanism of the class described, a rotary platen, means for feeding blanks to the platen, a distributing roll 130

for a main gluing device, a rotary glue stenciling device, a glue pan, a dipper roll in the pan, and means for shifting the dipper roll to engage either with the distributing roll or with the glue stenciling device.

20. In gluing mechanism of the class described, a rotary platen, means for feeding blanks to the platen, a distributing roll for a main gluing device, a rotary glue stenciling device, a glue pan, a dipper roll in the pan, means for shifting the dipper roll to engage either with the distributing roll or with the glue stenciling device, and a pressure roll to engage the dipper roll.

21. In gluing mechanism of the class described, a rotary platen, means for feeding blanks to the platen, a distributing roll for a main gluing device, a rotary glue stenciling device, a glue pan, a dipper roll in the pan, means for shifting the dipper roll to engage either with the distributing roll or with the glue stenciling device, and a detachably mounted pressure roll co-operating with the dipper roll.

22. In gluing mechanism of the class described, a rotary platen, means for feeding blanks to the platen, a distributing roll for a main gluing device, a rotary glue stenciling device, a glue pan, a dipper roll in the pan, means for shifting the dipper roll to engage either with the distributing roll or with the glue stenciling device, a pressure roll to engage the dipper roll, and means for adjusting the pressure roll.

23. In blank gluing mechanism of the class described, a rotary platen, means for feeding blanks successively to the platen, a main glue applying roll, a distributing roll for supplying glue to the main applying roll, a stencil gluer, a glue trough, a movable dipper roll therein arranged to co-operate either with the distributing roll or the stencil gluer, and means for driving the dipper roll in either of its operative positions.

24. In blank gluing mechanism of the class described, a rotary platen, means for feeding blanks successively to the platen, a main glue applying roll, a distributing roll for supplying glue to the main applying roll, a stencil gluer, a glue trough, a movable dipper roll therein arranged to co-operate either with the distributing roll or the stencil gluer, a gear rotatively connected with the distributing roll, a gear rotatively connected with the dipper roll and arranged to engage the distributing-roll gear when the dipper roll co-operates with the distributing roll, and an idler pinion engaging the gear first mentioned and arranged to engage the second gear when the movable roll co-operates with the stencil gluer.

25. Blank gluing mechanism comprising a rotary platen, means for feeding blanks

successively to the platen, two rotary glue applying devices arranged for alternative use, a sheet feed detector, a retracting element, means controlled by the detector for moving the element to an active position upon a skip in the blank feed, and an operative connection between said element and each of said glue applying devices to retract the devices when the element is moved to active position.

26. Blank gluing mechanism comprising a rotary platen, means for feeding blanks successively to the platen, two alternatively operative rotary glue applying devices arranged to co-operate with different circumferential parts of the platen, a retractable carrier for each of the glue applying devices, a sheet feed detector, a retracting element, and means controlled by the detector for moving the element to an active position upon a skip in the blank feed, and an operative connection between said element and each of said carriers to retract the carriers simultaneously when the element is moved to active position.

27. Blank gluing mechanism comprising a rotary platen, means for feeding blanks successively to the platen, a glue applying roll, a retractable carrier therefor, a cam, a cam follower for retracting the carrier, means for moving the cam follower to active and inactive positions in relation to the cam, an element acted upon by blanks going to the platen, and means co-operating with said element and said cam follower to retain the follower in active position to retract the carrier upon a skip in the blank feed.

28. Blank gluing mechanism comprising a rotary platen, means for feeding blanks successively to the platen, a glue applying roll, a retractable carrier therefor, a cam, a cam follower for retracting the carrier, means for moving the cam follower to active and inactive positions in relation to the cam, an element acted upon by blanks going to the platen, and mechanical means co-operating with said element and said cam follower to retain the follower in active position to retract the carrier upon a skip in the blank feed.

29. In a blank gluing machine, a stencil-pattern applying instrumentality comprising a shaft, movable bearing-supports for the shaft, means for moving the supports, and stencil-stripe imprinting elements carried by the shaft.

30. In a blank gluing machine, a platen, a stencil-pattern applying instrumentality comprising a shaft, movable shaft supports for moving the shaft toward and from the platen, quickly-detachable means for securing the shaft in said supports, and stencil-stripe imprinting elements carried by the shaft.

31. In gluing mechanism of the class de-

scribed, a rotary glue stencil pattern applying instrumentality comprising a shaft, a plurality of independent stencil carriers movable axially and angularly on the shaft, means for securing the carriers in adjusted positions on the shaft, and glue stenciling elements connected to the carriers.

32. In gluing mechanism of the class described, a rotary glue stencil pattern applying instrumentality comprising a shaft, a plurality of arc-shaped members movable axially on the shaft, means for securing the members in adjusted positions, and arc-shaped stencil stripe imprinting members detachably secured to the arc-shaped members.

33. A glue stencil pattern applying instrumentality for blank gluing machines, comprising a shaft and a plurality of arms mounted thereon for angular and axial adjustment, means for securing the arms in adjusted positions, and longitudinal and transverse glue stripe applying elements detachably secured to certain of the arms.

34. A gluing machine of the class described comprising a rotary platen, means for feeding blanks to the platen, means for

gluing the blanks, blank transporting mechanism comprising a conveyor, means for transporting blanks from the platen to the conveyor, the last named means comprising blank guiding fingers, carriers for the fingers, and means for adjusting the carriers laterally.

35. In a gluing machine of the class described, the combination with a rotary blank platen, of blank delivery mechanism comprising transverse shafts, a pair of sprocket frames, means for adjusting the frames laterally, sprockets carried by each frame, one of the sprockets being mounted on each of said shafts, the two sprockets on one shaft being splined thereon, a chain carried by each pair of sprockets, a blank engaging member on each chain, and a conveyor to receive blanks transferred to it by the delivery mechanism.

Signed at Philadelphia, in the county of Philadelphia and State of Pennsylvania this 22nd day of March A. D. 1921.

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