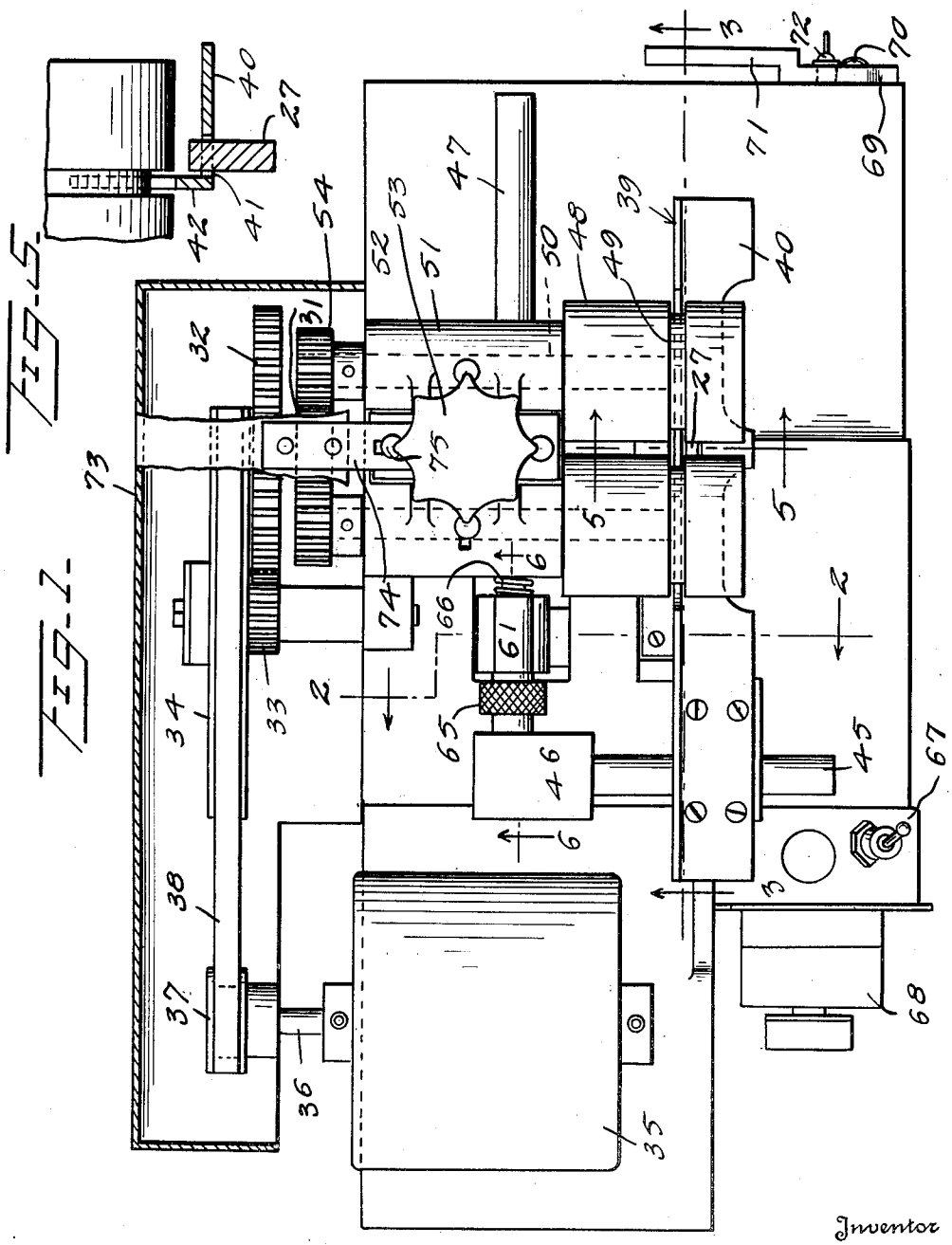
Feb. 13, 1951 R. MINKOW 2,541,598

MARGIN GLUING MACHINE

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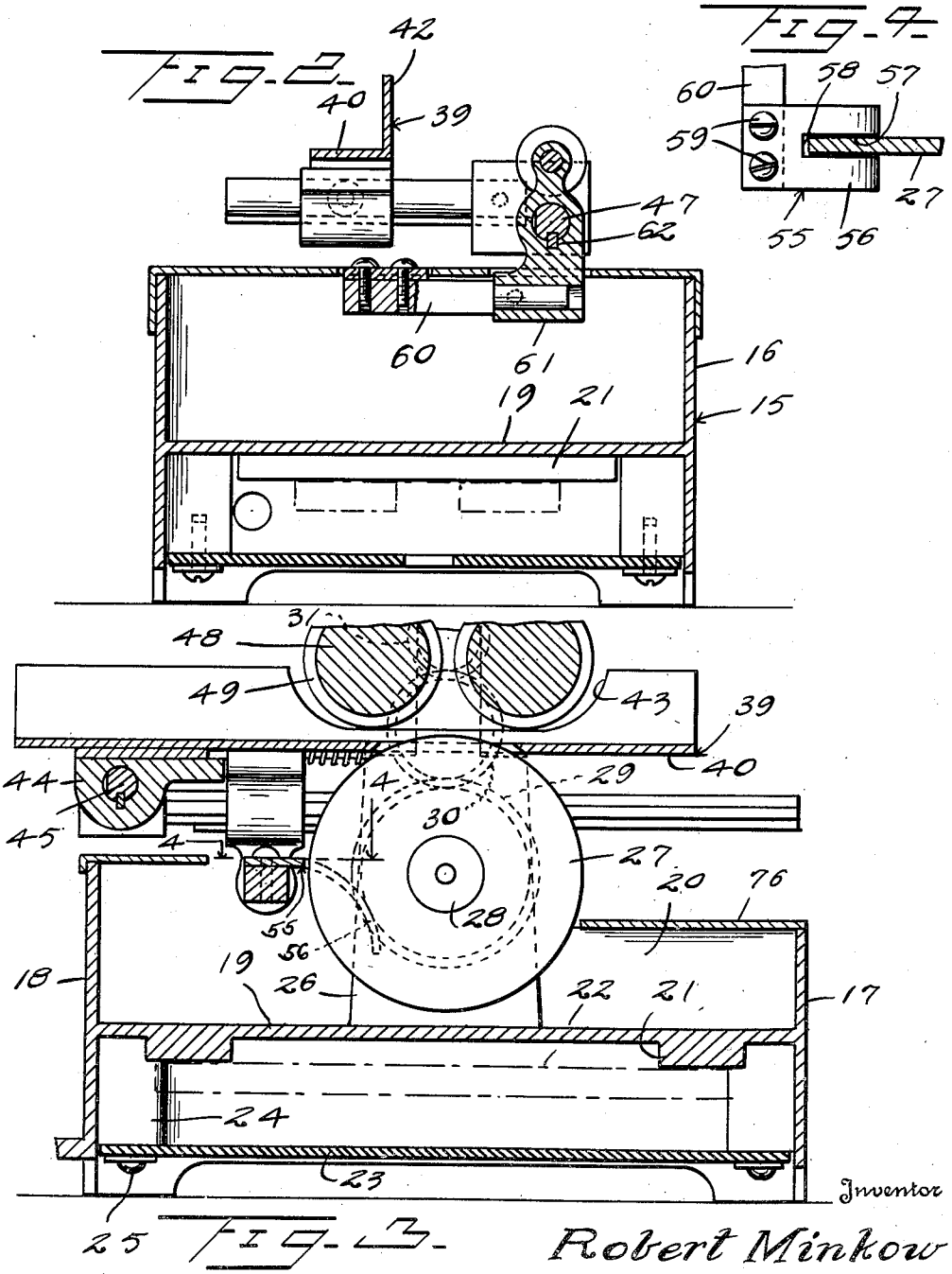


FIG. 2.

FIG. 4.

FIG. 3.

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Fig. 7.

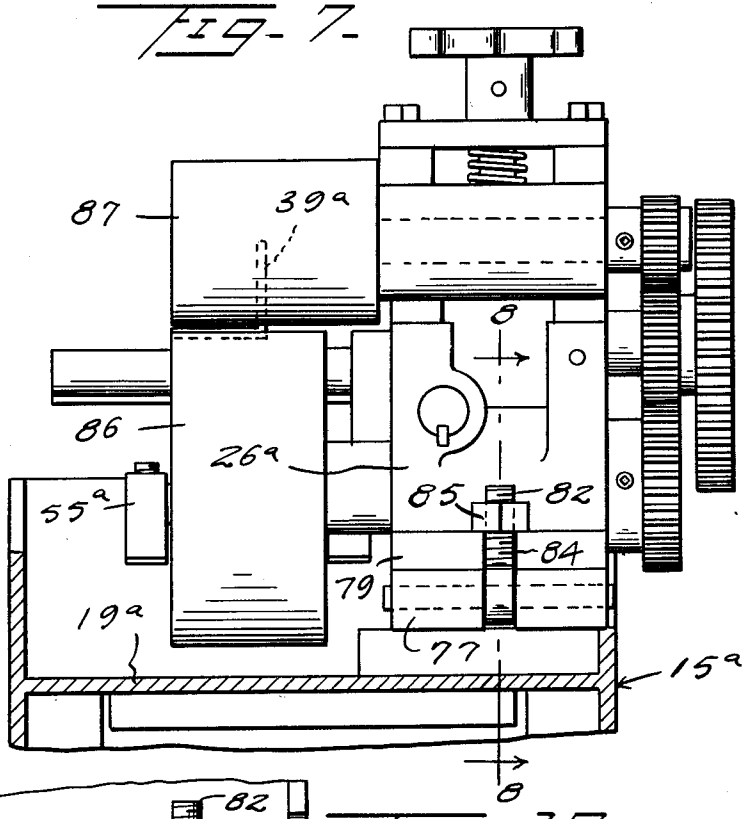


Fig. 10.

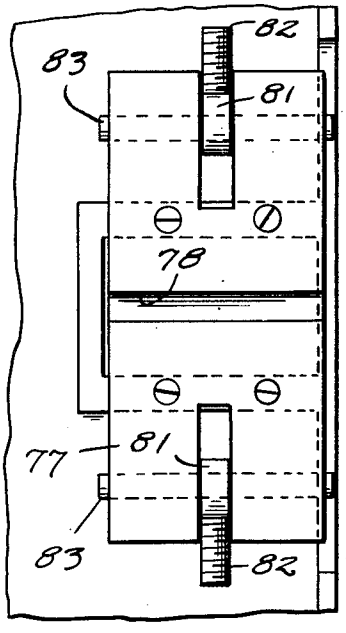
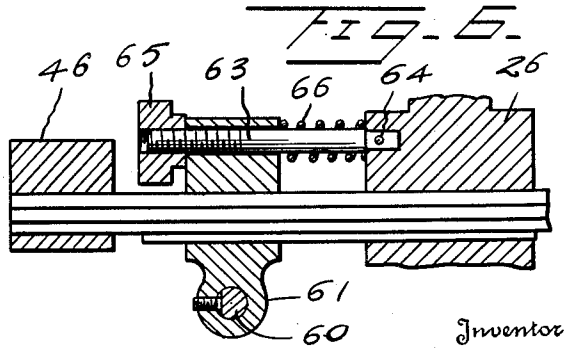


Fig. 6.



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MARGIN GLUING MACHINE

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Fig. 8.

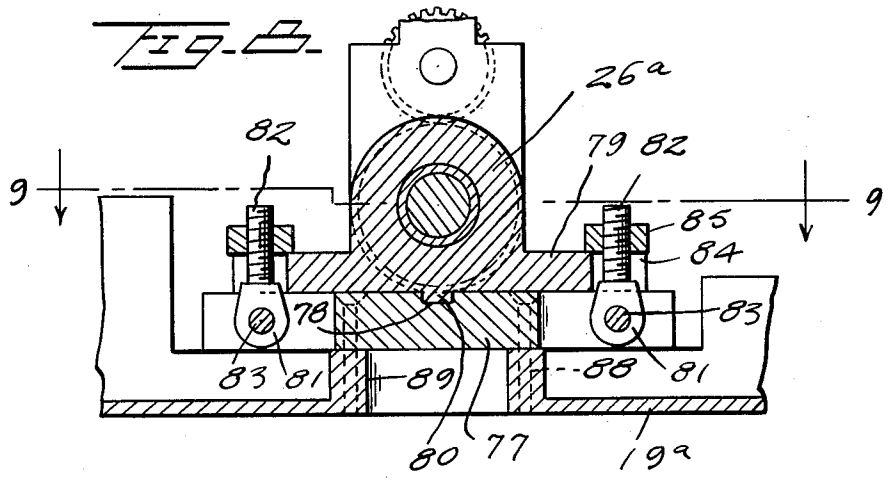


Fig. 9.

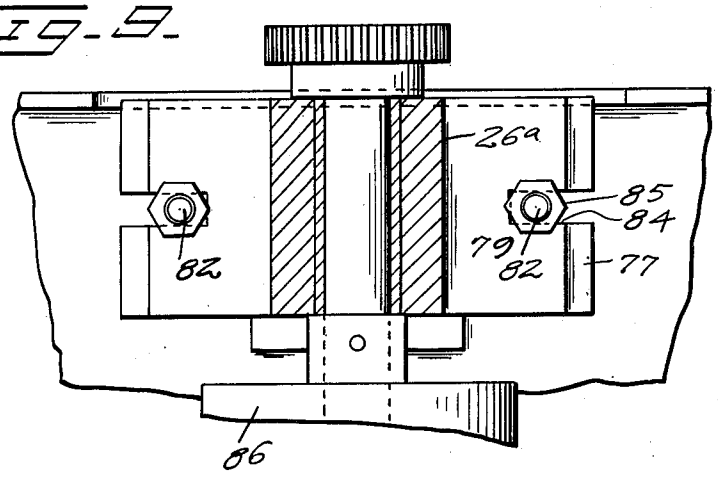
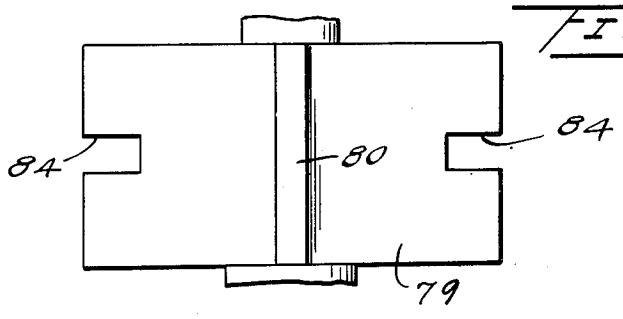


Fig. 11.



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UNITED STATES PATENT OFFICE

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MARGIN GLUING MACHINE

Robert Minkow, New York, N. Y.

Application December 5, 1947, Serial No. 789,987

5 Claims. (Cl. 91—12)

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This invention relates to a marginal gluing machine.

An object of this invention is to provide a gluing machine whereby a ribbon of glue of predetermined width may be applied to a sheet.

Another object of this invention is to provide an improved means whereby a ribbon of glue may be applied to a sheet which may be polygonal, round or of other irregular or regular shape.

A further object of this invention is to provide a machine of this kind, including an improved wiping means for the gluing roll so that a predetermined quantity or depth of glue will be transferred from the gluing roll to the sheet.

A further object of this invention is to provide in a machine of this kind, a removable mounting for the operating mechanism so that the operating mechanism may be bodily lifted from the glue well or base for cleaning or other purposes.

A further object of this invention is to provide in a machine of this kind, an improved adjustable means whereby the width of the applied glue ribbon may be regulated.

With the above and other objects in view, my invention consists in the arrangement, combination and details of construction disclosed in the drawing and specifications, and then more particularly pointed out in the appended claims.

In the drawings,

Figure 1 is a plan view, partly broken away and in section, of a marginal gluing machine constructed according to an embodiment of this invention,

Figure 2 is a fragmentary sectional view taken on the line 2—2 of Figure 1,

Figure 3 is a fragmentary sectional view taken on the line 3—3 of Figure 1,

Figure 4 is a fragmentary sectional view taken on the line 4—4 of Figure 3,

Figure 5 is a fragmentary sectional view taken on the line 5—5 of Figure 1,

Figure 6 is a fragmentary sectional view taken on the line 6—6 of Figure 1,

Figure 7 is a fragmentary end elevation, partly broken away and in section, of a modified form of this invention,

Figure 8 is a fragmentary sectional view taken on the line 8—8 of Figure 7,

Figure 9 is a fragmentary sectional view taken on the line 9—9 of Figure 8,

Figure 10 is a top plan view of the fixed base and the removable securing means for securing the removable operating mechanism on the fixed base,

Figure 11 is a bottom plan view of the base carried by the removable operating mechanism.

Referring to the drawings, and first to Figures 1 to 6 inclusive, the numeral 15 designates generally a base structure which is formed of upright side walls 16 and upright end walls 17 and

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18. A bottom wall 19 is secured between the opposite side walls 16 and the end walls 17 and 18 at a point above the side and end walls and forms a well or reservoir 20 within which glue is adapted to be positioned.

The bottom wall 19 is formed with a pair of downwardly projecting lugs or ribs 21 on the lower side thereof, on which a heating element 22 is adapted to be secured. An insulating plate 23 is secured to the lugs 24 by fastening means 25 and is spaced downwardly from the heating element 22. The base structure 15 includes an upwardly projecting standard 26 adjacent one of the side walls which forms a guide for rollers and feeding means as will be hereinafter described.

A gluing roller 27 is secured to a shaft 28 which is journaled through the standard 26, and the shaft 28 has secured thereto a spur gear 29. The spur gear 29 meshes with an intermediate gear 30 rotatably carried by the standard 26, and the gear 30 meshes with an upper gear 31 also rotatably carried by the standard 26. The gear 30 has fixed relative thereto a large speed reducing gear 32 which has meshing therewith a small spur gear 33, and the gear 33 has fixed relative thereto a large grooved pulley 34.

A motor 35 is disposed at one end of the base structure, as shown in Figure 1, and the shaft 36 of the motor 35 has secured thereto a pulley 37 about which a driving belt 38 is trained. The belt 38 is also trained over the pulley 34.

An angle-shaped guide table 39 is disposed in operative relation with respect to the gluing roller 27 and includes a horizontal side 40 which is provided with a slot 41 through which the roller 27 is adapted to project. The guide 39 includes a vertical side 42 which is cut out as indicated at 43, the purpose for which will be hereinafter described.

The guide or table 39 is secured to a block 44 which is carried by a rod 45, being fixed relative to the rod 45, and the rod 45 is secured to a block 46. The block 46 is secured to an elongated rod 47 extending through the standard 26, and lengthwise adjusted with respect to the standard 26 so that the table 39 may, if desired, be endwise adjustable.

A pair of rollers 48 are disposed above the roller 27, being disposed with the axes thereof parallel to each other and with the roller 27. The rollers 48 are each formed with a peripheral groove 49 within which the vertical side 42 of the table 39 is adapted to loosely engage. Each roller 48 is fixed to a shaft 50 which is journaled through a bearing 51 and the two bearings 51 are connected together by connecting webs 52. The bearings 51 are adapted to be vertically adjusted by means of an adjusting screw 53 so that the

rollers 48 may be adjusted toward or away from the gluing roller 27.

The shafts 50 of the upper rollers 48 have fixed thereto spur gears 54 which are adapted to mesh with the upper roller 31. In order to provide for regulating the amount of glue which is transferred from the gluing roller 27 to the sheet material which engages on the horizontal side 40 of the table, I have provided a scraper structure generally designated as 55. The scraper structure 55 includes a longitudinally curved plate 56 which is formed with a slot 57, and the roller 27 engages between the parallel sides of the slot 57 so that the plate 56 will scrape substantially all of the glue from the sides of the roller 27. The upper or outer end 58 of the slot 57 is adapted to be adjusted toward or away from the peripheral surface of the roller 27 so that the desired amount of glue will be retained on the peripheral or gluing surface of the roller 27.

The plate 56 is secured by fastening means 59 to an elongated supporting bar 60, and the bar 60 is secured to a block 61. The block 61 is slidable on the bar 47, being held against rotation by means of a key 62. The block 61 extends above the bar 47 and has loosely disposed therethrough a bolt 63 which is fixedly secured as at 64 in the standard 26. An adjusting nut 65 is threaded on the bolt 63, bearing at one end against the block 61, and a spring 66 is interposed between the block 61 and the adjacent side of the standard 26. The spring 66 constantly urges the block 61 outwardly.

The motor 35 is connected to a switch 67 and this switch may also be connected to the heater 22. A rheostat 68 is connected with the heater 22 so that this heater may be energized to the desired degree.

The reservoir 20 is adapted to be emptied by means of a valve 69 mounted on a pivot member 70, engaging against end wall 17, and a handle 71 is carried by the valve 69. A stop bolt 72 is adapted to lock the valve member 69 in closed position. The gears and the pulleys associated with the operating mechanism are adapted to be enclosed in a cover or shield 73 which is secured to the upper end of the standard 26, the shield 73 having a strap 74 extending from the upper side thereof which is engageable with a fastening member 75 carried by the upper end of the standard 26. The gluing well 20 is covered by means of a stepped cover plate 76, and the plate 76 is suitably apertured to provide for projection of the roller 27 therethrough and the block 61.

Referring now to Figures 7 to 11 inclusive, there is disclosed a modified form of this invention which includes a base structure 15*a*, similar to the base 15, with the exception that the bottom wall 19*a* has fixed thereto an upstanding block 77 which is formed with a transversely disposed keyway 78. A standard 26*a*, similar to the standard 26, engages on the block 27, the standard 26*a* being formed at its lower end with a base plate 79 having a transversely extending key 80 which is engageable in the keyway 78. The block 77 has secured thereto a pair of eye bolts 81, including a threaded shank 82. The bolts 81 are pivotally mounted on pins 83 which extend transversely through the base block 77, and the base member 79 is formed at the opposite ends thereof with slots 84.

Nuts 85 threaded on the shanks 82 are adapted to removably secure the standard 26*a* on the base block 77. In the present instance a relatively wide gluing roll 86 is rotatably carried by the

standard 26*a* and the gluing roll 86 has associated therewith a pair of feeding rollers 87. The operating mechanism for the rollers 86, 87 is identical with the operating mechanism for the roller 27 and the rollers 48.

The fixed or base block 77 is secured by fastening means 88 to a pair of upstanding ribs or flanges 89 which are carried by the bottom wall 19*a*. It will be understood that the gluing roller 86 has associated therewith a glue regulating member 55*a* which is similar to the regulating member 55 and is adjustably mounted in the same manner as the regulating member 55.

In the use and operation of this device, the sheet of material which may be cardboard or other fibrous material having a degree of flexibility and a degree of rigidity, is adapted to be engaged with the horizontal side 40 of the table 39. The marginal edge of the sheet which is being glued is engaged between the feeding rollers 48 and the feeding rollers 48 are then vertically adjusted by the adjusting screw 53. The wiper 55 is adjusted relative to the roller 27 so as to provide for transfer of the desired thickness of a gluing ribbon on the sheet. This sheet which is being glued may be of any desired configuration, that is may be either rectangular, round, oval, or of irregular configuration.

The structure shown in Figures 7 to 11 inclusive will operate in the same manner as the structure shown in Figures 1 to 6, with the exception that the table 39*a* may be adjusted relative to the gluing roller 27 so that the desired width of the marginal edge of the sheet which is being glued will engage between the feeding rollers 87 and the gluing roller 86.

I do not mean to confine myself to the exact details of construction herein disclosed, but claim all variations falling within the purview of the appended claims.

What I claim is:

1. A marginal gluing machine comprising a base formed with a glue well, a standard rising from said base, a glue applying roller rotatably carried by said standard and extending partly into said well, a feed roll carrier slidably engaging said standard, a pair of feed rolls rotatably carried by said carrier having the axes thereof disposed on opposite sides of the axis of said gluing roller, means adjusting said feed rolls relative to said glue applying roller, and a sheet guide member disposed between said glue applying roller and said feed rolls and formed with an opening through which said glue applying roller is adapted to project, means supporting said guide for lateral and longitudinal adjustment relative to said gluing roller.

2. A marginal gluing machine comprising a base formed with a glue well, a standard rising from said base, a glue applying roller rotatably carried by said standard and extending partly into said well, a feed roll carrier slidably engaging said standard, a pair of feed rolls rotatably carried by said carrier having the axes thereof disposed on opposite sides of the axis of said gluing roller, means adjusting said feed rolls relative to said glue applying roller, a sheet guide member disposed between said glue applying roller and said feed rolls and formed with an opening through which said glue applying roller is adapted to project, means supporting said guide for lateral and longitudinal adjustment relative to said gluing roller said guide member being of L-shape with one side horizontal and the other side vertical, said opening being dis-

posed in said horizontal side whereby said guide member may be disposed on opposite sides of said feed roller.

3. A marginal gluing machine comprising a base formed with a glue well, a standard rising from said base, a glue applying roller rotatably carried by said standard, a pair of feed rolls having the axes thereof disposed on opposite sides of the axis of said gluing roller, means supporting said feed rolls for adjustment relative to said glue applying roller, a sheet guide member, means supporting said guide member for lateral and longitudinal adjustment relative to said glue applying roller and said feed rolls, said guide member being of L-shape in transverse section with one side thereof horizontal and formed with an opening through which said glue applying roller engages, the other side of said guide member being vertical and formed with a cut-out within which said feed rollers loosely engage.

4. A marginal gluing machine comprising a base, a glue well carried by said base, a rotatable glue applying wheel extending from said glue well and supported by said base, a sheet guide member having a free end disposed over the wheel, said guide being integrally formed with a horizontal portion disposed at right angles to a vertical portion, an aperture formed in said horizontal portion of the guide laterally of said vertical portion for limited exposure of the

gluing wheel therethrough, and material feeding means comprised of vertically adjustable rollers spaced at each side of said aperture formed in the guide and having peripheral grooves formed in said rollers engageable with the vertical portion of said guide.

5. A marginal gluing machine comprising a base, a glue well carried by said base, a rotatably mounted glue applying wheel, a transverse support member, a guide plate supported at one end by said transverse support with an opposite end extendible over the glue wheel, said opposite end being integrally formed with a vertical portion and a horizontal portion, and an aperture formed in said horizontal portion adjacent said vertical portion for limited exposure of the wheel at the edge of said vertical portion.

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