G. J. DORMANDY.

GLUING MACHINE.

APPLICATION FILED JUNE 5, 1912.

1,067,867.

Patented July 22, 1913.

2 SHEETS—SHEET 1.

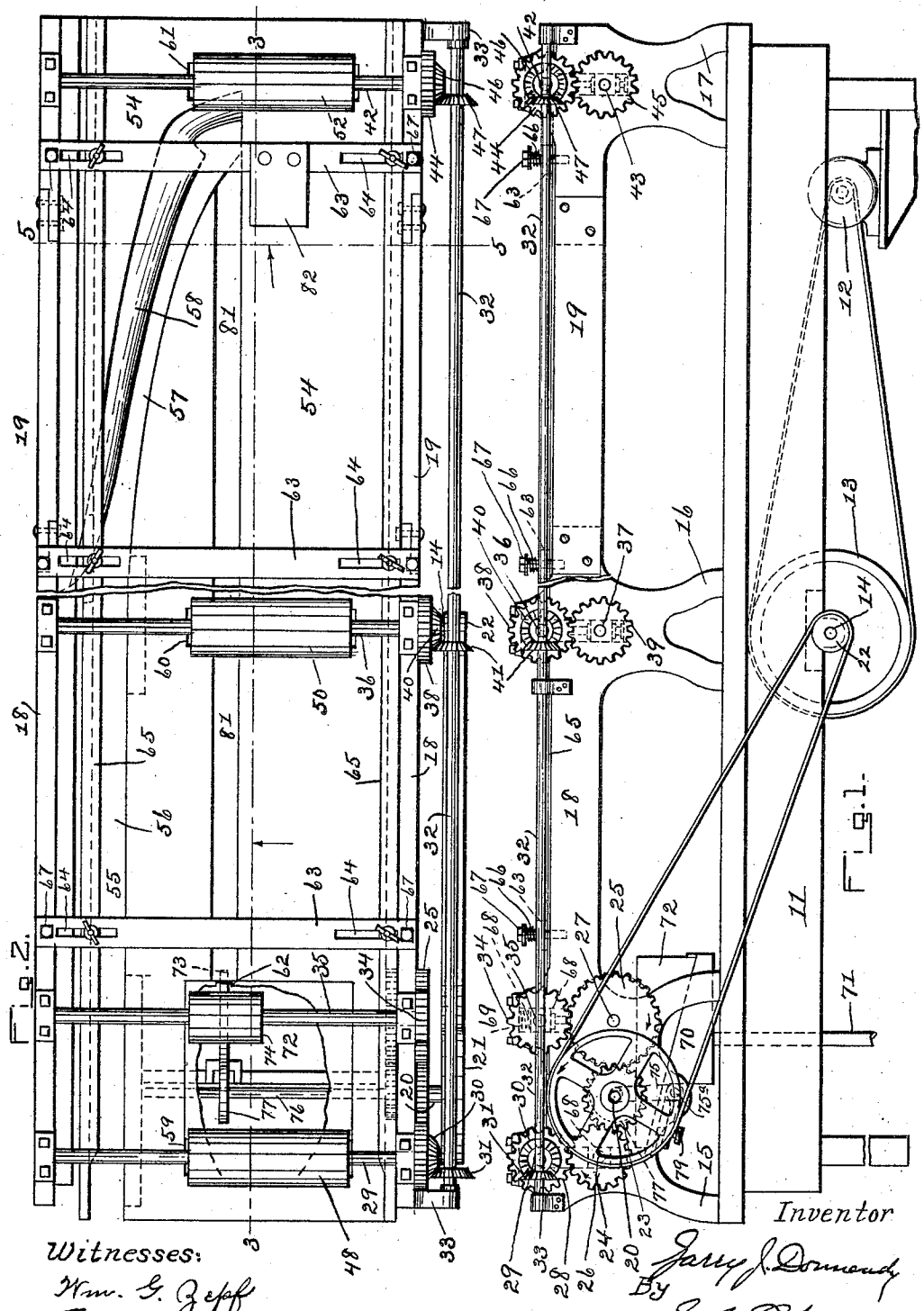


Fig. 2.

Fig. 1.

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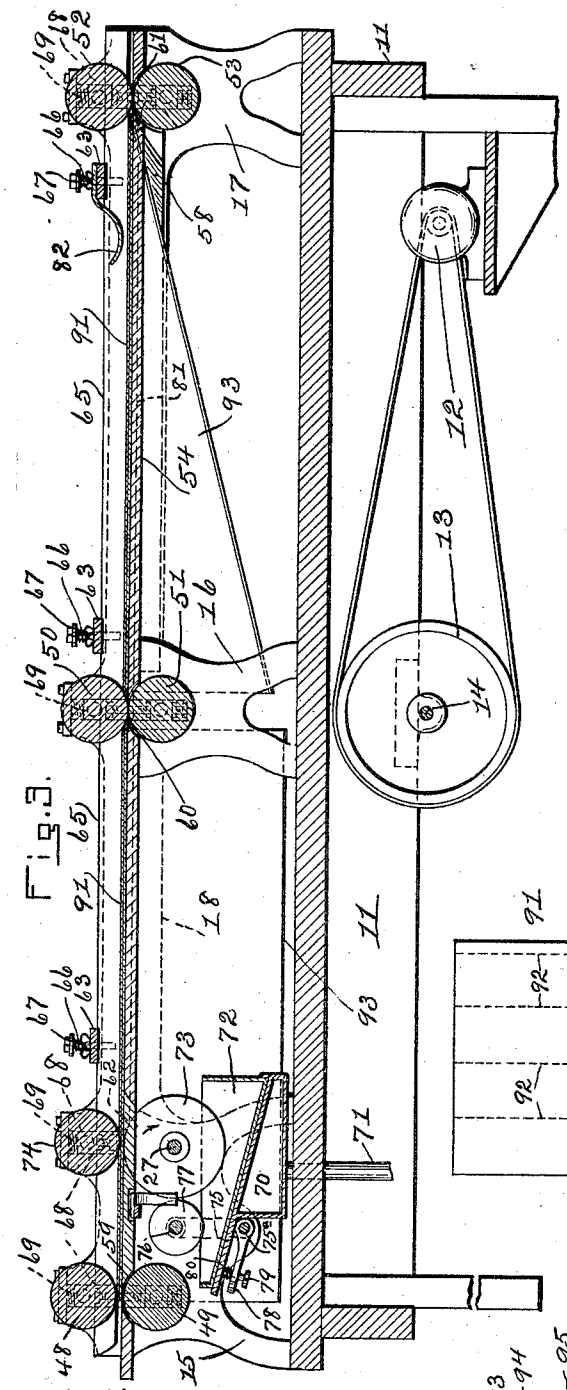


Fig. 3.

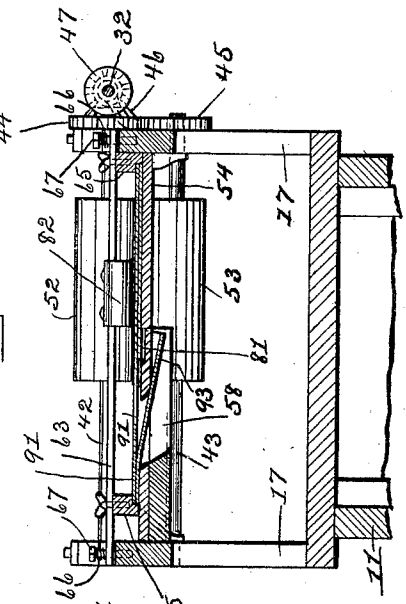


Fig. 5.

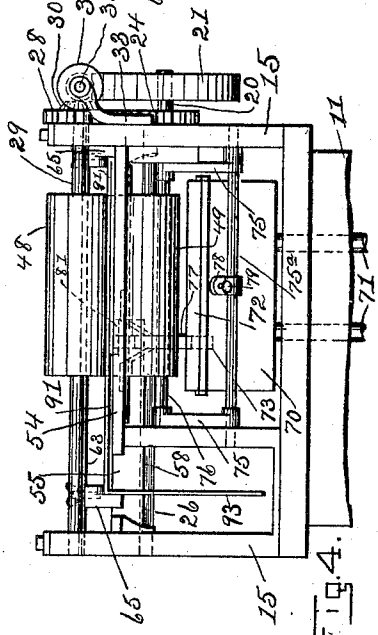


Fig. 4.

Fig. 6.

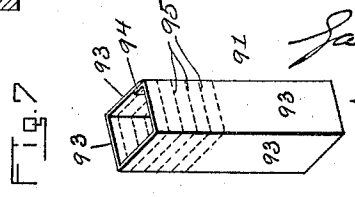


Fig. 7.

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UNITED STATES PATENT OFFICE.

GARRY J. DORMANDY, OF TROY, NEW YORK, ASSIGNOR OF ONE-HALF TO UNITED SHIRT AND COLLAR COMPANY, OF TROY, NEW YORK, A CORPORATION OF NEW YORK.

GLUING-MACHINE.

1,067,867. Specification of Letters Patent. Patented July 22, 1913.

Application filed June 5, 1912. Serial No. 701,902.

To all whom it may concern:

Be it known that I, GARRY J. DORMANDY, a citizen of the United States, and resident of Troy, Rensselaer county, New York, have invented certain new and useful Improvements in Gluing-Machines, of which the following is a specification.

My invention relates to machines for gluing or pasting overlapped edges, which may be of paper-board, paper or other material. It is particularly adapted for connecting the edges of a flat blank to form a tube, which, if made of straw- or box-board or the like, may be employed to form the body of one or more boxes. Its object is to provide a simple, durable, efficient and easily operated machine for these and similar purposes.

In the drawings, which show a preferred form of my device as adapted to gluing or pasting box-board tubes, Figure 1 is a side elevation, and Fig. 2, a top plan view of the machine; Fig. 3 is a longitudinal section through the plane 3—3, Fig. 2; Fig. 4 is a front end view and Fig. 5 a transverse section through the plane 5—5, Fig. 2; Fig. 6 shows a scored blank ready for folding and gluing; Fig. 7 shows in perspective the completed tube.

The machine is shown as mounted on a low bench 11, which supports a motor 12, belted to a pulley 13 on a drive shaft 14; and as having three pairs of standards 15, 16 and 17, of which the first two support an integral frame 18, which is connected to standard 17 by detachable side bars 19. Mounted near the front end of the machine is a stub shaft 20, carrying pulley 21, which is belted to a pinion 22 on shaft 14, stub shaft 20 being connected by gears 23, 24, 25 to shafts 26, 27. Gear 24 meshes with gear 28 on shaft 29, which also carries a bevel gear 30, meshing with a like gear 31 on a longitudinal shaft 32, supported in bracket bearings 33 at the side of the machine. Gear 25 meshes with gear 34 on shaft 35 directly above shaft 27. Above standard 16 are mounted two shafts 36, 37, one above the other, and having intermeshing gears 38, 39, shaft 36 also carrying a bevel gear 40 meshing with a like gear 41 on shaft 32. Above standard 17 are two other vertically disposed shafts 42, 43, connected by gears 44, 45, the upper shaft 42 also carrying a bevel gear 46 meshing with a third bevel gear 47 on shaft 32. Preferably, the relations of the bevel gears are such that the primary feed rolls 48, 49 on shafts 29, 26 run at the same speed as the second pair of feed rolls 50, 51 on shafts 36, 37, which speed is slightly exceeded by that of the presser rolls 52, 53 on shafts 42, 43.

Within frame portions 18, 19 is supported a bed 54 divided for nearly its entire length by a slot 55 comprising a straight portion 56 and a curved portion 57. Secured beneath bed 54 at the left of curved slot portion 57 is a curved, tapered, inclined guide-board 58, the shape and function of which will hereafter appear. Through bed 54 are cut four transverse apertures 59, 60, 61, 62, through the first three of which pass rolls 49, 51, 53, respectively, aperture 62 being for a purpose to be explained.

Bolted to the upper faces of frame parts 18, 19 are three transverse bars 63, each longitudinally slotted at 64, 64, and together carrying two transversely adjustable, longitudinal guide-bars 65, held in resilient contact with bed 54 by springs 66 interposed between cross bars 63 and the heads of bolts 67. It will also be noted that shafts 29, 35, 36, 42 are mounted in vertically adjustable boxes 68, forced resiliently downward by springs 69.

Suitably supported beneath shaft 27 is a heating device shown as a steam chest 70, provided with connecting pipes 71, on which chest is mounted an open-top glue tank 72, into which dips a narrow wheel 73 on shaft 27, above which is a roll 74 on shaft 35; wheel 73 passing through aperture 62 above described.

Mounted in swinging bearings 75, pivoted on rock shaft 75^a, is a shaft 76, which carries a wiping wheel 77, the periphery of which is adjustably spaced away from that of wheel 73 by means of a lever 78 on shaft 75^a through the end of which passes a screw 79 carrying a spring 80 bearing against a stationary part of the machine. A longitudinal groove or depression 81 in bed 54 in line with wheel 73 extends from aperture 62 to the rear end of slot 55. A flat curved spring 82 is secured on rear bar 63 and extends above bed 54.

The blank 91 of box- or straw-board, shown in Fig. 6, is scored at 92 to form four sides 93 and a lap 94. Fig. 7 shows the completed tube, the dotted lines 95 serving to

indicate the short box bodies, into which the tube may be cut if desired.

The operation of the machine is as follows: The feeder or operator picks up a blank 91, "breaks" it at the first and third scores from the left, Fig. 6, folding under right side 93 and lap 94 and permitting left side 93 to hang downward, engages the blank between primary feed rolls 48, 49; it being understood that guide bars 65 at each side of bed 54 are laterally adjusted to the width of the folded blank. Lap 94 of the blank passes over wheel 73, being held thereagainst by roll 74, and receives a supply of glue or paste therefrom, the quantity of which is regulated by moving wiping wheel 77 toward or from the rising side of glue wheel 73 by means of screw 79. Folded blank 91 passes on over bed 54, lap 94 traveling over groove 81 and depending left side 93 through slot 55. The distance between the two pairs of feed rolls is preferably such that the second pair 50, 51, nips the blank just as it leaves the first pair 48, 49; while the effective distance between rolls 50, 51 and presser rolls 52, 53 is at least slightly greater than the length of blank 91; whereby the movement of each successive blank is continuous until it reaches the part of bed 54 at the rear of rolls 50, 51, where it rests until a succeeding blank is picked up, broken and fed through the rolls as before, where it acts to start the preceding blank forward into the "nip" of presser rolls 52, 53.

Figs. 2, 3 and 5 show the construction and function of curved slot portion 57 and inclined, curved board 58. Figs. 3 and 5 show a blank 91 after it has passed rolls 50, 51, with the forward end of its pendant side 93 raised by board 58 to a horizontal position above bed 54, and with its edge in contact with glued lap 94; so that the blank passes between rolls 52, 53 as a flattened tube and with its edges firmly adhered. Spring 82 serves to prevent the folded portion of the blank from buckling upward as side 93 is being lifted.

It will be understood that the "dwell" of each blank on the rear part of the bed permits the glue or paste to become desirably set or "tacky." To increase the time elapsing between the gluing and pressing operations, the bars 19 of the length shown may be removed and replaced by longer ones, so that a plurality of glued blanks may rest on the elongated bed 54, board 58 being retained in its space relation to the pressing rolls.

It is obvious that many mechanical alterations may be made in my machine without departing from my invention. And, as already stated, the machine is adapted to other classes of work and to other materials than here shown.

In the claims, I shall use the word "glue" or "gluing" as including gum, paste, or gumming, pasting, respectively. Referring to the blank, I shall call the upper ply of the folded part the "body," and the underfolded and depending parts, the "wings."

What I claim is:

1. In a gluing machine, a bed; means for feeding a blank over said bed with one wing folded against its body and the other wing separated therefrom; means for applying glue to the free edge of one of said wings; means for forcing said wings into lapping position; additional feeding means operative to press said lapped wings together, the effective distance between said last named feeding means and the proximate prior feeding means being greater than the length of the blank, whereby the blank comes to a state of rest on said bed between the gluing and pressing operations and remains at rest until it is started by the movement of a subsequent blank, substantially for the purposes set forth.

2. In a gluing machine, a bed; means for feeding a blank over said bed with one wing folded against its body and the other wing separated therefrom; means for applying glue to the free edge of one of said wings; means for forcing said wings into lapping position; additional feeding means operative to press said lapped wings together; means for varying the effective distance between said last named feeding means and the proximate prior feeding means, whereby such distance may always be greater than the length of the blank operated on, so that such blank comes to a state of rest on said bed between the gluing and pressing operations and remains at rest until it is started by the movement of a subsequent blank, substantially for the purposes set forth.

3. In a gluing machine, a bed; rolls for feeding a blank over said bed with one wing folded beneath its body and the other wing depending therefrom; means for applying glue to the edge of such underfolded wing; means for raising such depending wing to underlap such glued edge; additional feeding rolls operative to force such lapped portions together, the effective distance between said last named feeding rolls and the proximate prior feeding rolls being greater than the length of the blank, whereby the blank comes to a state of rest on said bed between the gluing and pressing operations and remains at rest until it is started by the movement of a subsequent blank, substantially for the purposes set forth.

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."