Dec. 27, 1949 H. C. CARMAN 2,492,843

GLUING APPARATUS

Filed Sept. 22, 1947 2 Sheets-Sheet 1

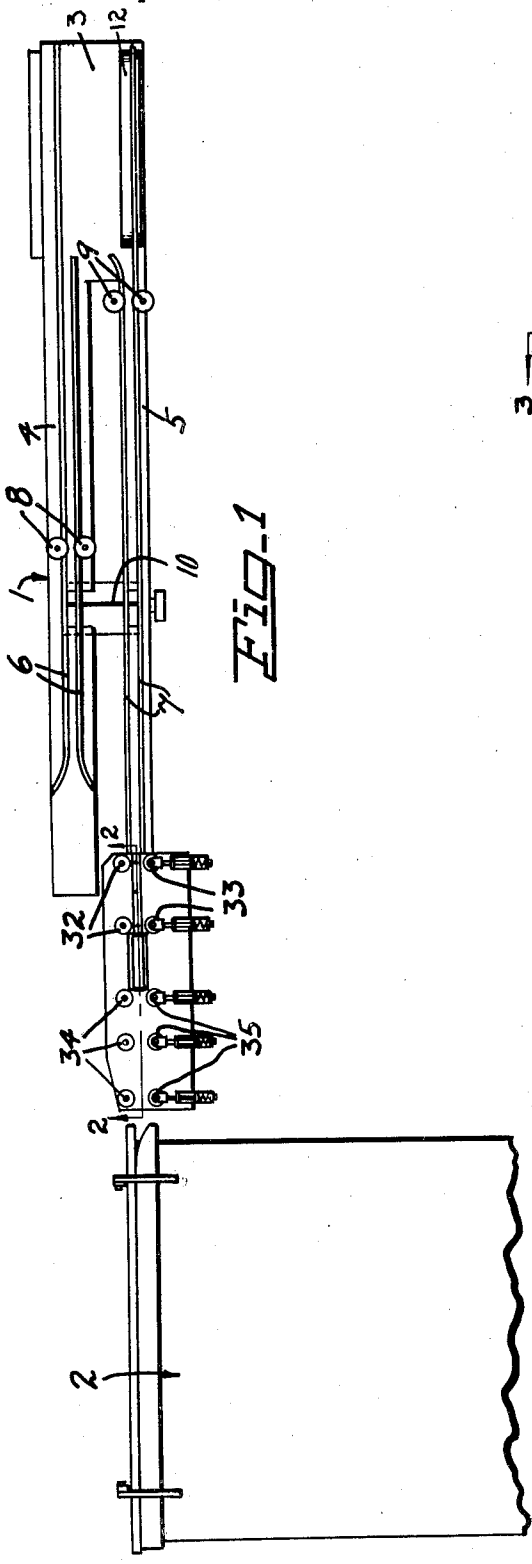


FIG-1

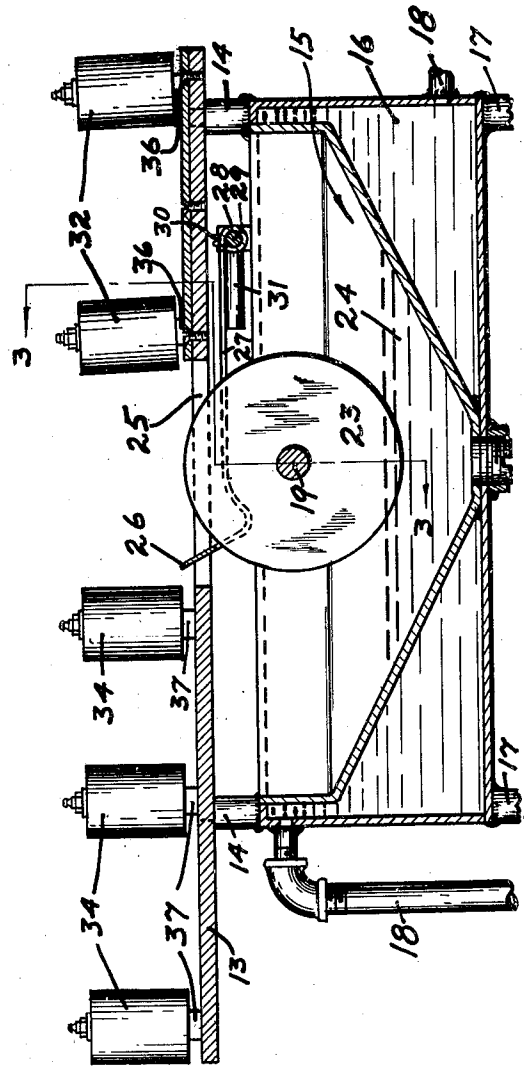


FIG-2

Inventor
Harold C. Carman

By Glenn L. Fish
Attorney

Dec. 27, 1949 H. C. CARMAN 2,492,843

GLUING APPARATUS

Filed Sept. 22, 1947 2 Sheets-Sheet 2

FIG. 3

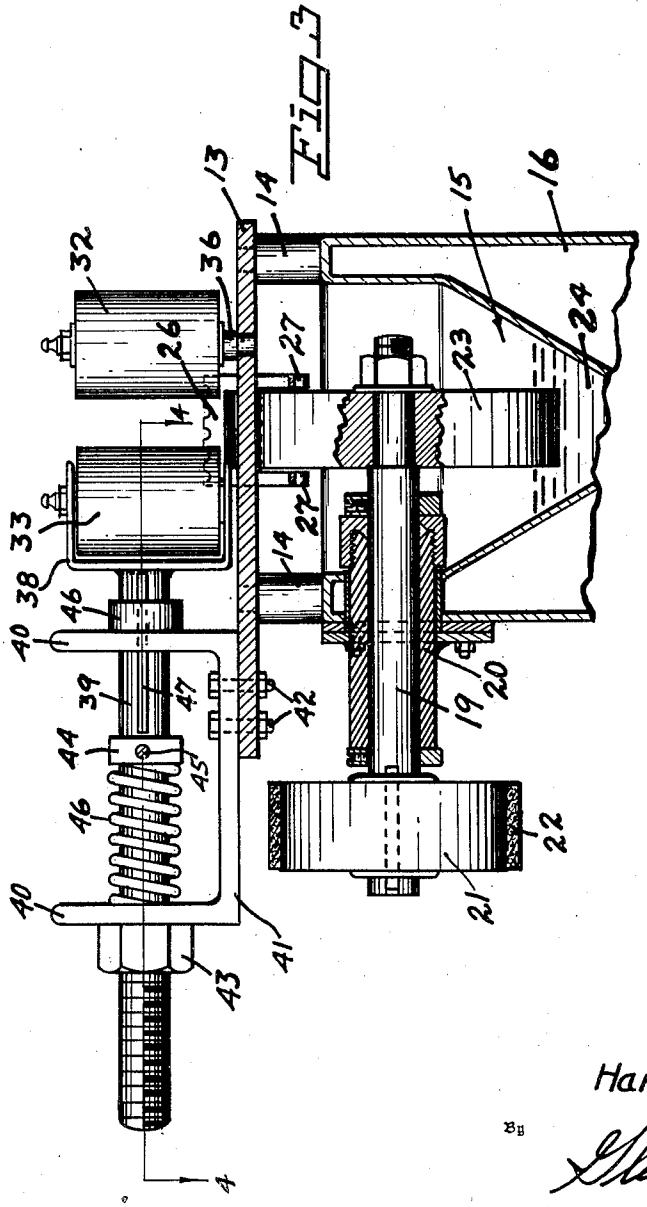
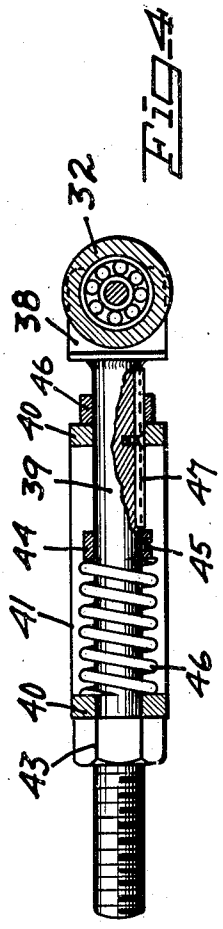


FIG. 4



Inventor
Harold C. Carman

By Glenn L. Fish
Attorney

Patented Dec. 27, 1949

2,492,843

UNITED STATES PATENT OFFICE

2,492,843

GLUING APPARATUS

Harold C. Carman, Spokane, Wash., assignor to Western Pine Manufacturing Company, Spokane, Wash.

Application September 22, 1947, Serial No. 775,441

2 Claims. (Cl. 91—33)

1

This invention relates to a gluing apparatus and it is one object of the invention to provide an apparatus by use of which a number of wooden strips may be glued to each other and thus form a single board of desired width and thickness.

Another object of the invention is to provide a gluing apparatus wherein a glue pot or reservoir is mounted under a table top and improved means provided for removing glue from the reservoir and applying it to boards or wooden strips as they are moved longitudinally along the table to a device for applying heat and pressure for setting the glue and thus form a board of united strips.

Another object of the invention is to provide improved rollers for supporting the boards or strips on edge as they are moved across a wheel by means of which glue is removed from the reservoir and applied to edge faces of the strips.

Another object of the invention is to provide means for removing surplus glue from the edge faces of the wooden strips or boards.

Another object of the invention is to provide guide rollers for supporting the boards or strips on edge, the rollers for engaging one side face of a board or strip being mounted for movement towards and away from rollers which engage the opposite side face of a board and the shiftable rollers being urged towards the companion rollers so that they may accommodate themselves to boards of various thicknesses.

Another object of the invention is to provide a glue applying device, which may be used in connection with a planer and a presser of conventional construction, thus making it unnecessary to provide specially constructed planing and pressure applying mechanism in order to make use of the improved gluing mechanism.

Another object of the invention is to provide a gluing mechanism which is of simple construction and very efficient in operation.

The invention is illustrated in the accompanying drawings:

Fig. 1 is a top plan view showing the improved gluing mechanism in position for use between a planer and the pressure applying mechanism.

Fig. 2 is a sectional view upon an enlarged scale taken longitudinally through the gluing mechanism along the line 2—2 of Figure 1.

Fig. 3 is a sectional view taken transversely through the gluing mechanism along the line 3—3 of Figure 2.

Fig. 4 is a sectional view taken through one of the rollers and its mounting along the line 4—4 of Figure 3.

2

The improved gluing apparatus constituting the subject-matter of this invention is mounted between a planer, indicated in general by the numeral 1, and a heating and pressure applying mechanism 2 by means of which glued boards or strips are held in close contacting engagement with each other while the glue is setting.

The planer is of conventional construction and has a table 3 from which arms 4 and 5 extend. Guide strips 6 and 7 extend along the arms 4 and 5 for holding boards or wooden strips upright upon the arms and feed rollers 8 and 9 serve to move the boards along the arms and across rotary cutter 10. The boards or strips which are to be glued together and form a wide board are individually set on edge upon the arm 4 and thrust between the guides 5 until the lower edge face of a board, so applied, passes over the cutter 10 and is engaged between the feed rollers 8 which move the board along the arm and onto the table 3, where it is turned over and set on edge upon the feed belt 12, which moves the board into position between the guides 7. The belt 12 and the feed rollers 9 move the inverted board along the arm 5 and across the cutter 10, and as the boards are delivered from the arm 5, they move onto the gluing apparatus, it being understood that as each board moves out of engagement with the feed rollers a succeeding board will push it along the planer. The gluing apparatus applies glue to the lower edge faces of the boards and the boards are then delivered to the apparatus 2, which presses the boards or strips firmly against each other and heats the glue so that the boards will be firmly glued to each other and thus form a single board formed of a number of narrow boards and of desired width.

The gluing apparatus is constructed as shown in Figures 2, 3 and 4 and has a table top or platform 13 carried by posts 14 which project upwardly from the glue reservoir 15 and water receptacle 16, supported upon legs 17. Pipes 18 communicate with the water receptacle 16, so that cold water may flow through it and chill the glue in the reservoir 15. A shaft 19 is rotatably mounted through a bearing 20, which is mounted transversely of the reservoir and receptacle, at one side thereof, and at its outer end the shaft carries a pulley 21 about which is trained a belt 22 by means of which the shaft is rotated. At its inner end the shaft carries a roller 23 which has its lower portion immersed in the glue 24, and its upper portion projecting through an opening 25 formed in the platform 13, so that as the boards

are moved along the arm 5 of the table 3 and then along the gluing apparatus glue will be applied to lower edge faces of the boards by contact with the roller. A scraper 26 which is formed of resilient sheet metal projects upwardly through the opening 25 in the platform for removing surplus glue from lower edge faces of the boards, and this scraper has arms 27, which extend longitudinally of the reservoir at opposite sides of the roller 23 and are bent to form sleeves 28 which fit about a rod 29 extending transversely of the reservoir. Set screws 30, secure the sleeves in fixed position upon the rod 29 and a lever 31 is provided for adjusting the tension of the scraper and causing it to properly spread glue upon the boards and remove surplus glue which flows back into the reservoir.

In order to guide and control movement of boards along the gluing apparatus there has been provided rollers 32, 33, 34 and 35. The rollers 32 are carried by axles 36 and the rollers 34 by axles 37, the axles 36 being mounted at a slight incline, so that the rollers 32 will be pitched somewhat towards the rollers 33 and hold the boards against the roller 23, for receiving glue therefrom, and the axles 37 being perpendicular to the table 13, and the rollers 34 parallel to the rollers 35, so that, after glue has been applied to the lower edge faces of the boards the rollers 34 and 35 will hold the boards out of contact with the table and consequent removal of glue from the boards avoided.

The rollers 33 and 35 and their mountings are of duplicate construction and each is so mounted that it is urged towards the companion roller 32 or 34 at the same pitch as its companion roller for gripping engagement with boards fed between the rollers. This is shown in Figures 3 and 4 and referring to these figures it will be seen that each of these rollers is rotatably mounted in a yoke 38 having a shank 39. The shank or bar 39 passes through the arms 40 of a bracket or yoke 41, which is secured upon the platform 13 by bolts 42, and the outer end portion of the shank is threaded to receive a nut 43. A collar 44 is secured in fixed position upon the shank between the arms of the yoke 41 by a set screw 45, and this collar engaged one end of a spring 46 which is coiled about the shank and has its other end engaging the outer arm of the yoke or bracket. The spring urges the shank longitudinally so that the roller 33 or 35 is urged towards the companion roller 32 or 34, and the nut 43 limits movement of the shiftable roller towards its companion roller. By adjusting the position of the nut upon the threaded end portion of the shank, tension of the spring may be controlled and also the sliding movement of the shank controlled. A collar 46 carried by the inner arm of the bracket 41 serves as a bearing for the shank and in order to prevent turning of the shank and tilting of the roller out of a position perpendicular to the platform there has been provided a key 47 mounted in a groove formed longitudinally in the shank and passing through a groove formed in the collar. By so mounting the rollers 33 and 35 they will be urged towards the rollers 32 and 34 and have pressing engagement with the side faces of the boards which pass between the companion rollers. As the boards or strips leave the gluing apparatus they are delivered to the presser and heater 2, where they are held in engagement with each other until the glue hardens and the boards then firmly adhere to each other and form a board of desired width.

Having thus described the invention, what is claimed is:

1. A gluing apparatus comprising a reservoir for holding glue, a platform over said reservoir formed with an opening, means for removing glue from the reservoir having a portion projecting upwardly through the opening for applying glue to under faces of boards moved along the platform and across the opening therein, rollers rotatably mounted in upright position at one side of the opening, companion rollers disposed upright at the other side of the opening opposite the first rollers, vertical axles for the second rollers, yokes straddling the second rollers and carrying the axles and each having a horizontal shaft extending outwardly therefrom and threaded from their outer ends, brackets carried by the platform transversely thereof and having upstanding inner and outer arms through which the shafts slidably pass, keys fitted into registering grooves formed in the shafts and the arms of the brackets for preventing turning of the shafts, collars mounted about the shafts between the arms of the bracket in spaced relation thereto, springs about the shafts between the collars and outer arms of the brackets and urging the shafts longitudinally and yieldably resisting movement of the second rollers away from the first rollers, and nuts screwed upon outer end portions of the shafts and engaging outer faces of the outer arms of the brackets to tension the springs and limit movement of the second rollers towards the first rollers.

2. A gluing apparatus comprising a reservoir for holding glue, a platform over said reservoir formed with an opening, means for removing glue from the reservoir and applying it to under faces of boards moved across the platform and over the opening, a vertical roller over the platform rotatably mounted about a stationary axis at one side of the opening, a bracket carried by said platform transversely thereof in spaced relation to the other side of the opening and having upstanding inner and outer arms, a shaft slidable longitudinally through the arms of said bracket, a yoke at the inner end of said shaft having upper and lower arms, a vertical roller rotatably supported between the arms of said yoke and disposed opposite the first roller, a collar adjustable along the shaft between the arms of said bracket, a spring coiled about the shaft and engaging the collar and the outer arm and urging the shaft longitudinally towards the first roller and yieldably holding the second roller in spaced relation to the first roller, and means for limiting movement of the second roller towards the first roller.

HAROLD C. CARMAN.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
767,026	White	Aug. 9, 1904
1,026,921	Nuss	May 21, 1912
1,510,465	Dittmar	Oct. 7, 1924
2,015,768	Thompson	Oct. 1, 1935
2,357,471	Jalbert	Sept. 5, 1944
2,360,918	Wade	Oct. 24, 1944