G. R. FOSDICK.

BOX GLUING APPARATUS.

APPLICATION FILED MAR. 16, 1912.

1,030,254.

Patented June 18, 1912.

Fig. 3.

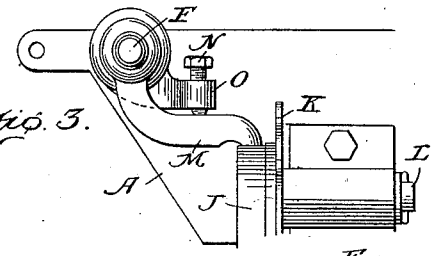


Fig. 1.

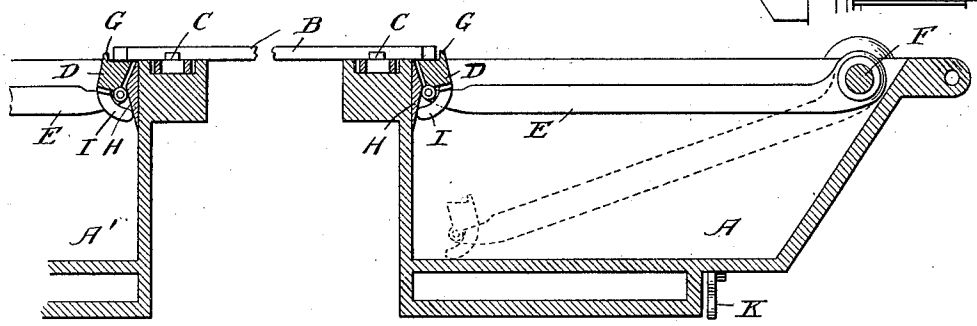
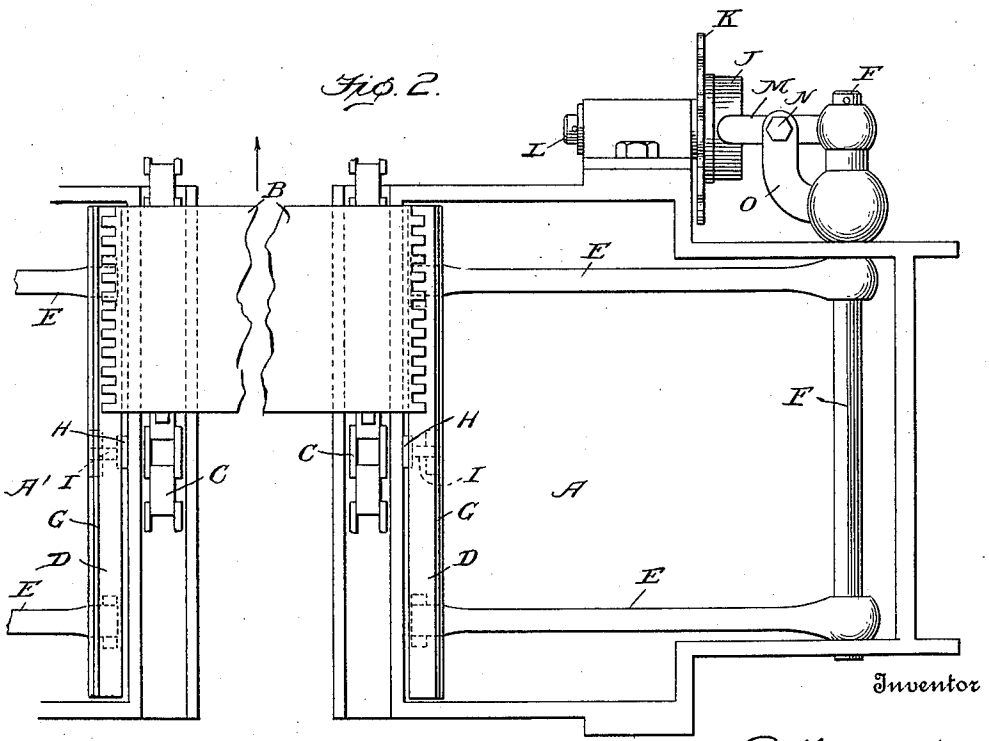


Fig. 2.



Witnesses

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UNITED STATES PATENT OFFICE.

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BOX-GLUING APPARATUS.

1,030,254. Specification of Letters Patent. Patented June 18, 1912.

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To all whom it may concern:

Be it known that I, GEORGE R. FOSDICK, a citizen of the United States, residing at Winchester, in the county of Cheshire and State of New Hampshire, have invented certain new and useful Improvements in Box-Gluing Apparatus, of which the following is a specification, reference being had therein to the accompanying drawing.

It has proved somewhat difficult to glue perfectly the corners of boxes of various kinds, particularly such wood boxes as are known as "lock-corner" boxes, which for commercial reasons must be strong and yet must be made cheaply, or in other words rapidly and largely by automatic machinery. To apply the glue uniformly, without much waste, without internal smearing, so rapidly that the box pieces after receiving the glue may be assembled before any setting occurs, and to do this by means of apparatus adapted for great variation in size of the boxes and practically unchanging by wear in use has not been found a simple problem.

The object of this invention is to secure all the results just suggested.

In the accompanying drawings, Figure 1 is a vertical sectional view of so much of a gluing apparatus as is necessary to an understanding of the invention. Fig. 2 is a corresponding plan view. Fig. 3 is a detail view looking in the direction of the arrow of Fig. 2.

Box pieces or boards are usually carried in suitable hoppers having no novelty, and in order that the glue may not set before the boards are assembled, as well as to expedite the work generally, the opposite ends of each piece are provided with glue simultaneously by entirely similar mechanisms, one only of which will be described.

In the drawings, A, A′ represent two adjacent glue receptacles which are heated and adjusted in relative position by devices without novelty herein claimed. The box pieces or boards B are advanced over the two receptacles by chain belts C in such manner that each momentarily comes to rest with its notched ends projecting over the glue receptacle, respectively. Glue is then applied by a channeled bar D normally lying in the glue near the bottom of the receptacle so that no drying of the glue thereon ever occurs. This bar is long enough and the receptacle is wide enough to suit the widest box pieces likely to be employed, and the bar is supported by arms E carried by a rotary shaft F parallel to the bar and to the notched end of the board as it lies at rest upon the chains just above the receptacle's margin. The bar is pivoted to the arms to rock laterally and its upper face is normally so inclined that its outer margin would strike the under side of the box piece first when it is raised to meet the latter. At the side opposite this margin the bar is provided with a narrow lip G extending its whole length and the parts are so arranged that as the bar rises this lip lies slightly beyond the block's end. Upon the side of the receptacle below the plane of the chains is an inclined block H serving as a sort of deflector to push from the side an arm I depending from the bar, which is thus rocked about its pivotal axis just before it reaches the box piece, bringing its upper surface into a plane parallel to the box piece and swinging its lip toward the end of the latter. This raising of the bar is brought about at proper intervals by means of a cam J rotated by a sprocket wheel K upon the same shaft L, and loose arm M projecting from the shaft F and resting upon the cam, the position of the arm with reference to the shaft being regulated by a screw N working in an arm O fixed to the shaft F and acting against the arm M. Obviously, the lifting of the glue bar may be regulated by this screw. As the glue bar rises from the glue, glue fills the angular space in front of its lip thus forming a body of glue which is triangular in cross section, there being practically no free glue at the margin opposite the lip. When the bar meets the box board, therefore, little or no glue is transferred by the marginal portion, but the lower side of the extreme end of the box board is plunged in glue and the end face of the board has between itself and the bar's lip a body of glue as deep as the lip. Naturally a considerable amount of glue enters each notch in the board, and this amount is materially increased by the rocking of the bar which narrows the space between the lip and the end of the box board and thus positively presses the glue into the notches where a considerable amount remains when the cam allows the glue bar to drop. The block on the wall of the receptacle compels the bar to rock in one direction, and gravity tends to return it to position instantly when it leaves the block, but in any case, when the

arm strikes the bottom of the receptacle it must be returned to initial position. The lower face of the box board being the one against which the adjacent side piece of the box is pressed in assembling, the glue upon this face joins these faces of the tongues to the bottoms of the notches in the companion piece, and the glue deposited in the notches as above described is spread by the tongues of the second board as the two are pressed together with the result that the entire meeting surfaces receive the necessary amount of glue and no more, provided that proper adjustment is made and the glue is of proper consistency.

Where a brush of any kind is employed to apply glue to the entire width of the board, the brush wears, and if it be used for a long time on boards of a certain width it cannot then be satisfactorily used on wider pieces, for the worn and unworn parts will not apply the same amount of glue. With this device there is no appreciable wear even after years of use, and at all times the glue is uniformly applied, and easily regulated in amount according to the particular character of the wood or variations in consistency of the glue.

What I claim is:

1. In apparatus of the class described, the combination with a glue receptacle and means for supporting a board adjacent to the receptacle, as long as the board, normally beneath the glue in said receptacle, and means for periodically moving said bar to position for bringing the glue in its channel against both faces of the lower angle of the marginal portion of said board.

2. In apparatus of the class described, the combination with a glue receptacle and means for supporting adjacent thereto a board to receive glue, of a pivoted bar normally lying below the surface of the glue in said receptacle and provided with a lip in position to project alongside the edge face of the board when the body of the bar closely approaches the marginal side face thereof, means for moving the body of the bar into close proximity to said side face, and means for moving said lip toward the edge face alongside which it is brought.

3. In apparatus of the class described, the combination with a glue receptacle wider than the boards to be glued, of means for supporting above said receptacle a board to be glued, a bar provided with a marginal lip and extending across the receptacle below the surface plane of glue therein, a rock-shaft parallel to said bar and provided with rigid arms pivoted to the bar, means for actuating the rock-shaft to raise said bar to the margin of said board, and means whereby the raised bar is rocked to force its lip toward the edge face of the board.

4. The combination with a glue receptacle and means for bringing box boards to position above the same, of a rock-shaft having rigid arms normally extending below the surface of glue in the receptacle, a bar, parallel to said shaft and to the margin of a board in position, arranged to swing toward said margin and return, as said rock-shaft moves back and forth, and means for varying the degree of the bar's approach to said margin.

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

GEORGE R. FOSDICK.

Witnesses:
RALPH H. DICKINSON,
EARLE H. CHAPMAN.