Jan. 19, 1932. O. KLEINSCHMIT 1,841,539

SHEET EDGE PASTING MACHINE

Filed Oct. 10, 1929 2 Sheets-Sheet 1

Fig. 1.

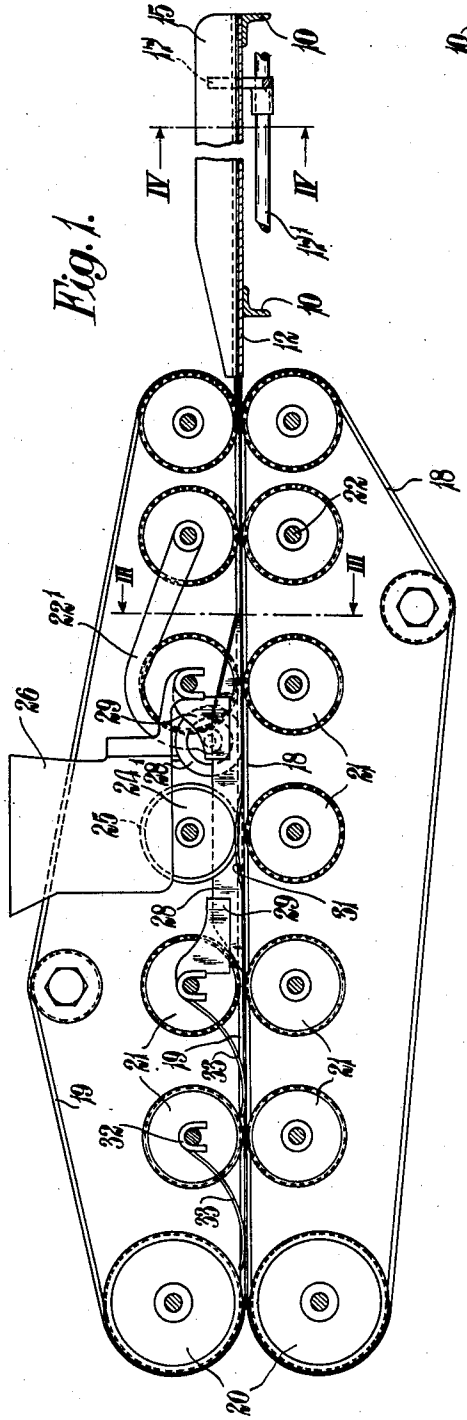
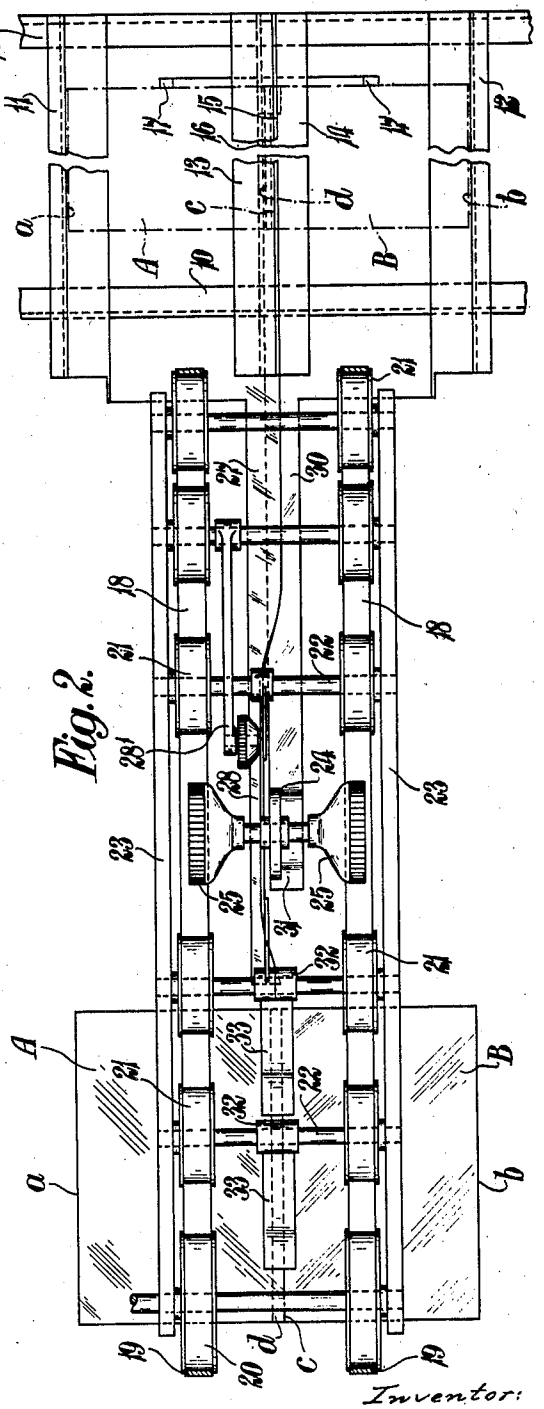


Fig. 2.



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Fig. 3.

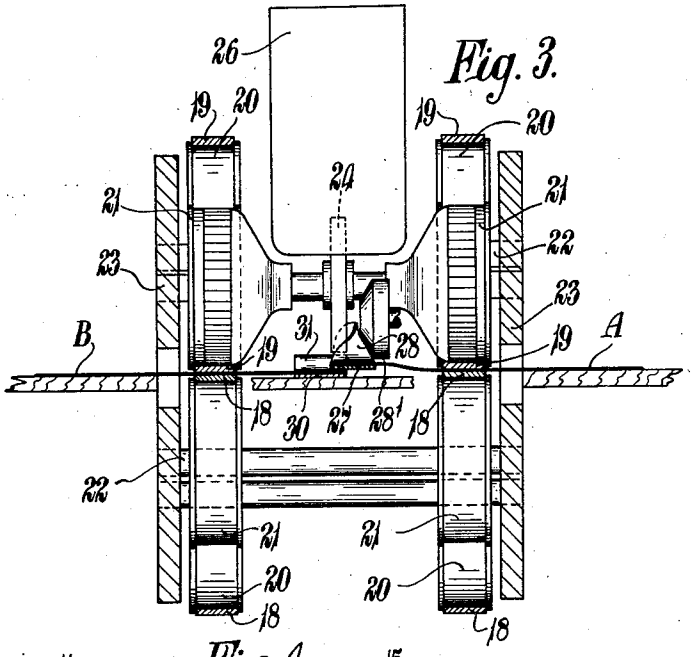


Fig. 4.

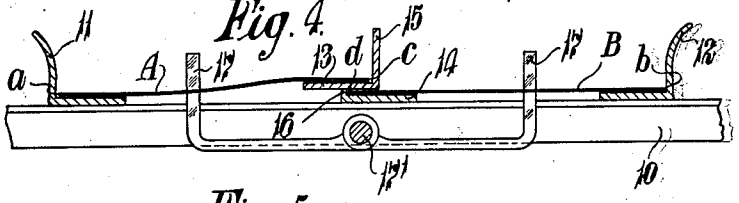


Fig. 5.

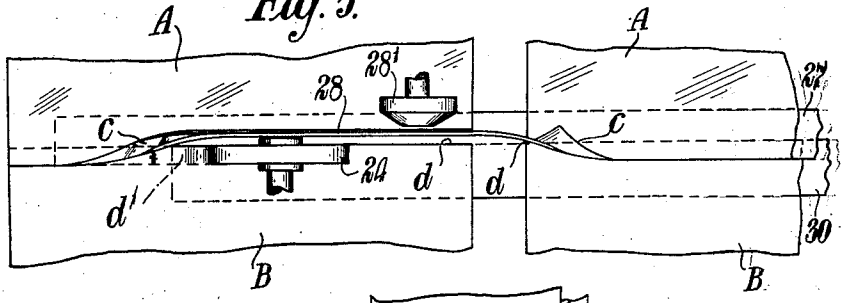
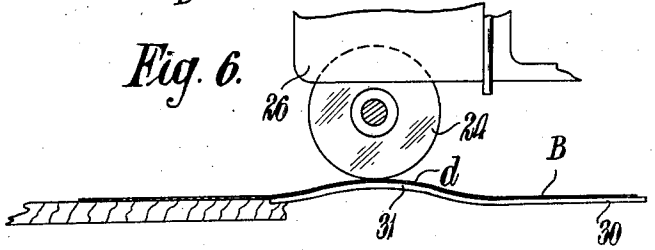


Fig. 6.



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UNITED STATES PATENT OFFICE

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SHEET EDGE PASTING MACHINE

Application filed October 10, 1929, Serial No. 398,743, and in Germany January 8, 1929.

This invention relates to an arrangement in sheet edge pasting machines enabling individual sheets introduced in a flat position with edges overlapping to be pasted together along their edges, while preventing the pasting wheel from hindering the transport of the sheets.

Such object is attained by arranging, in the path of the sheets, a curved deflecting guide which is adapted to bend the edge of the upper sheet over so far as to enable a paster wheel arranged above said edge to apply a strip of paste to the edge of the lower sheet without interfering with the edge of the upper sheet. In the rear of the paster wheel the bent-up edge of the upper sheet is then turned down again on to the lower one by an appropriately shaped guide member, whereupon both sheets are subjected to the action of a pressure device, being thus connected one with the other while in a flat position.

The accompanying drawings illustrate more or less diagrammatically a constructional example of this arrangement.

Fig. 1 is a longitudinal elevation of the machine.

Fig. 2 shows a plan view of the same, with the upper conveyor belts and paste tank removed.

Fig. 3 is a part sectional view on an enlarged scale taken on the line III—III of Fig. 1.

Fig. 4 is a sectional view taken on line IV—IV of Fig. 1.

Fig. 5 shows diagrammatically the action of the sheet edge deflector plate and

Fig. 6 shows, also in diagrammatic outline, the manner of contact between the paster wheel and the under sheet.

Referring to Figs. 1, 2 and 4, it will be seen that the feed table at the front of the machine is supported upon angle irons 10 and has mounted upon it adjustable guides 11 and 12. Situated on the top of the feed table and centrally placed thereon is a guide abutment 13 formed with a guide wall 15. Immediately below the member 13 and also centrally positioned is a further guide abutment 14 with a reduced wall 16. The sheets A and B (Figs. 2 and 4) to be pasted together are placed on the feed table with their outer edges *a* and *b* in contact with the appropriately adjusted guides 11 and 12 respectively. The left hand edge *c* of the upper sheet A then rests on the member 13 and abuts against the guide wall 15 while the right hand edge *d* of the lower sheet B rests on the member 14 and abuts against the guide wall 16. Both sheets are thus positioned with their edges *c* and *d* overlapping but held apart while both sheets are guided but free to be advanced by any appropriate conveyor such as by means of fingers 17 moving on a rod 17′. The guides 11 and 12 are adjustable at will to accommodate the particular sheets to be pasted together, while the guides 13 and 14 can be readily adjusted for a purpose which will hereinafter be made clear.

Associated with the end of the feed table are conveyor belts 18 which are given a positive gripping action by means of superimposed belts 19, all of which belts are driven from the pulleys 20 and kept in gripping contact by means of a series of follower pulleys 21 which revolve on shafts 22 journalled in bearings supported by the side plates 23 (Figs. 2, 3). Placed approximately in the centre of the machine and revolving upon a shaft similarly supported is a paster wheel 24 slightly raised above the level of the moving sheets and revolved by means of two follower wheels 25 which are keyed to the same shaft and bear upon the inner stretches of the conveyor belts 19. Positioned over the paster wheel 24 is a paste supply tank 26.

Leading from the feed table and forming an extension of the guide members 13 is a top guide plate 27 (Figs. 2, 3) terminating in a curved deflecting wall 28 which is supported by suitable saddle-shaped members 29 depending from two of the shafts 22. A wheel 28′ journalled in a bracket 22′ and shaped to conform to the curve of the deflecting wall 28 is positioned adjacent thereto and thus forms a directing path for the deflected edge *c* of the sheet A (Fig. 3). A lower guide plate 30 forming an extension of the guide member 14 runs parallel to the upper plate 27 and terminates in a convex curve 31 which serves to bring the edge *d* of the lower sheet

into close contact with the revolving paster wheel 24.

Further saddle-shaped members 32 serve to position and hold in operation two or more spring blades 33 which function as wipers along the overlapping edges of the sheets A and B.

In operation, the sheets A and B to be pasted together are placed against the appropriately adjusted guides 11, 12, 13 and 14 on the feed table as previously explained and are advanced to the conveyor belts 18, 19 by the fingers 17. From this point, being held in accurate alignment between the conveyor belts 18, 19, the sheets are conveyed forwardly along the main table of the machine toward the paster wheel 24. The edges *c* and *d* of the sheets A and B are caused to travel along the guide plates 27 and 30 at their respective levels and in the same direction. Upon nearing the paster wheel the edge *c* of the sheet A rides up upon the curve of the deflecting wall 28 and guided by the wheel 28′ passes along the back of the deflecting wall (Fig. 5) and so clears the paster wheel, at the same time leaving the edge *d* of sheet B clear to pass under the paster wheel. The edge *d* in passing under the paster wheel is pressed into close contact therewith by the convex curve 31 of the plate 30, thus receiving a strip of paste as shown at *d′* (Fig. 5). Still held by the conveyor belts, the sheets pass beyond the paster wheel on to a further portion of the flat main table of the machine. Here the edge *c* of sheet A, following the contour of the deflecting wall, is guided down flat upon the edge *d* of the sheet B. The edges *c* and *d* are then caused to pass under the wipers 33 which press the edges together and so complete the pasted joint. The joined sheets A and B are then delivered by the conveyor belts, for example to delivery tapes (not shown) and stacked as desired.

It will be readily understood that both the width and position of the paste strip can be easily altered by a simple adjustment of the guides 13 and 14, the maximum width of the stripe being the full width of the paster wheel employed.

What I claim is:—

1. In combination in a sheet edge pasting machine, conveyor mechanism for advancing individual pairs of overlapping sheets through the machine, a pasting device for applying paste to the edge of one of said sheets, means for deflecting the edge of the other sheet during such application of paste, and means for returning the deflected edge for attachment to the pasted sheet.

2. In combination in a sheet edge pasting machine, a feed table comprising guides adjustable to the sizes of the individual sheets to be joined, sheet conveying means, means for removing the sheets assembled on said table and advancing them to the said conveying means, a pasting device for applying paste to the edge of one of said sheets, a deflector causing the edge of the other sheet to lift and to be turned away from the paster during the application of paste, and a guide roller co-operating with said deflector.

3. In combination in a sheet edge pasting machine, a feed table upon which sheets may be assembled with their inner adjacent edges overlapping, conveyor mechanism for conveying the sheets through the machine, means for advancing the sheets from the table to the said conveying mechanism, a paster wheel for applying paste to the edge of one of said sheets, a curved support pressing said sheet into contact with said wheel, deflecting means for lifting and removing the edge of the other sheet from its overlapping position during the application of paste, and means for uniting the edges of the sheets.

4. A sheet edge pasting machine, comprising a table to receive a pair of separate sheets with their mutually-adjacent inner edges in overlapping relation; a pasting device for applying paste to the inner edge of one of the sheets; means for feeding said sheets in such overlapping relation through the machine to said pasting device; means for deflecting the inner edge of the other sheet during the paste-applying operation; and means for restoring the deflected edge of the second-named sheet to normal overlapping position for attachment to the pasted sheet.

5. A pasting machine according to claim 4, in which spring wipers are provided whereunder the overlapping edges of the sheets pass, said wipers exerting pressure upon and along said edges to complete the pasted joint.

6. A sheet edge pasting machine, comprising a table to receive a pair of separate sheets with their mutually-adjacent inner edges in overlapping relation; adjustable guides, including a central guide, and a pair of side guides at opposite sides of the central guide, for positioning sheets of different sizes to be pasted; a pasting device for applying paste to the inner edge of one sheet; conveying means engaging the outer edges of the two sheets for feeding the latter in such overlapping relation from said table and through the machine to the pasting device; means for deflecting the inner edge of the other sheet during the paste-applying operations; and means for restoring the deflected edge of the second-named sheet to normal overlapping position for attachment to the pasted sheet.

7. A sheet edge pasting machine, comprising a table to receive a pair of separate sheets with their mutually-adjacent inner edges in overlapping relation; a wheel for applying paste to the inner edge of one of the sheets; means for feeding said sheets in such overlapping relation from said table through the machine to the paste wheel; a curved support

pressing the sheet against said wheel; deflecting means for removing the edge of the other sheet from its overlapping position during the paste-applying operation; and means exerting pressure upon and along the overlapping edges of said sheets for uniting them.

8. A pasting machine according to claim 7, in which a guide roller is provided for cooperation with the deflecting means.

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