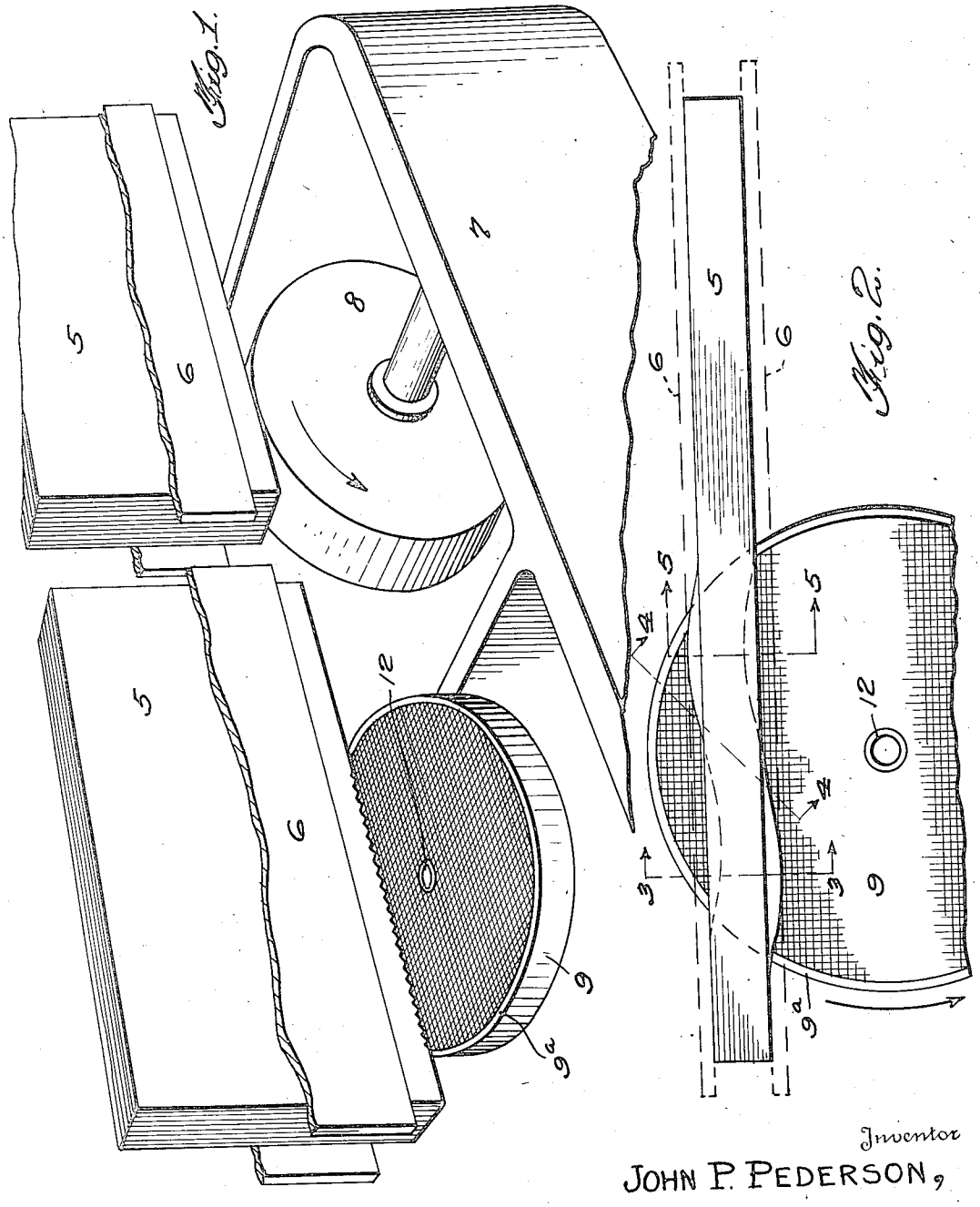
June 16, 1936. J. P. PEDERSON 2,044,365

APPARATUS FOR APPLYING ADHESIVE

Filed Dec. 20, 1934 2 Sheets-Sheet 1



Inventor
JOHN P. PEDERSON,
By Samuel Herrick,
Attorney.

June 16, 1936. J. P. PEDERSON 2,044,365

APPARATUS FOR APPLYING ADHESIVE

Filed Dec. 20, 1934 2 Sheets-Sheet 2

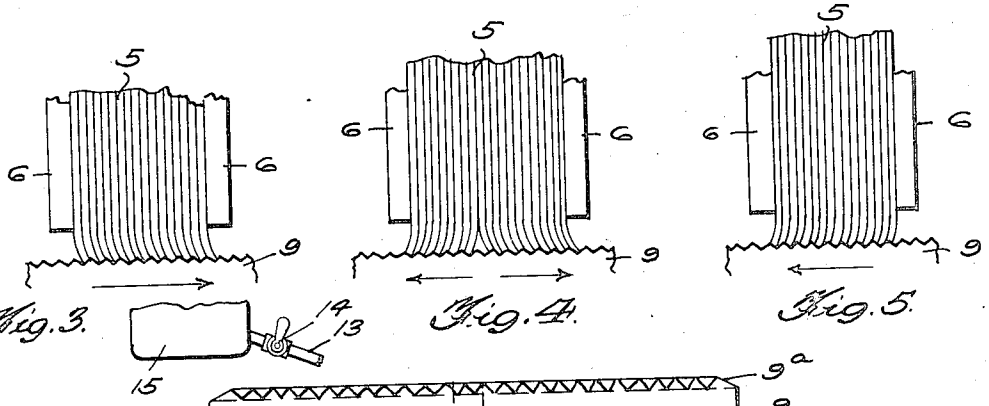


Fig. 3. Fig. 4. Fig. 5.

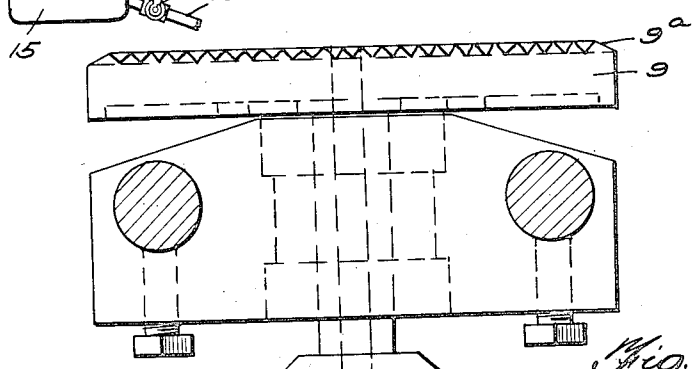
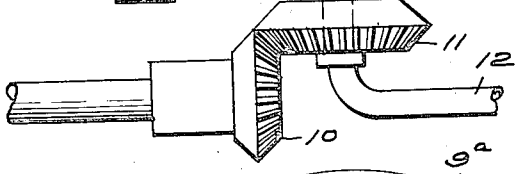


Fig. 6.



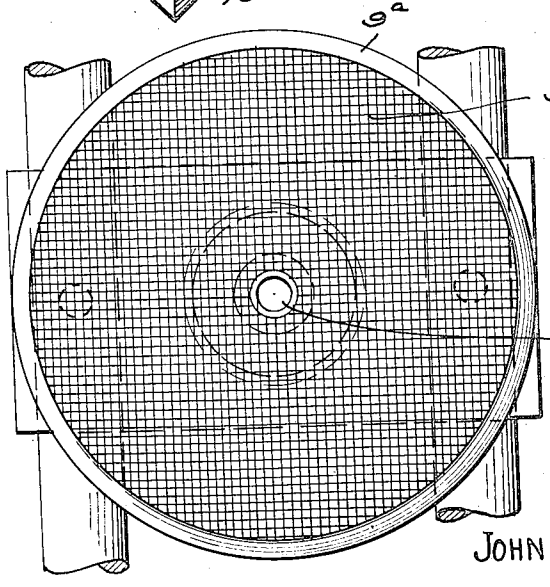


Fig. 7.

Inventor

JOHN P. PEDERSON,

By Samuel Herrick

Attorney

Patented June 16, 1936

2,044,365

UNITED STATES PATENT OFFICE

2,044,365

APPARATUS FOR APPLYING ADHESIVE

John P. Pederson, Chicago, Ill., assignor to W. F. Hall Printing Company, a corporation of Illinois

Application December 20, 1934, Serial No. 758,507

9 Claims. (Cl. 91—48)

The present invention has for its object to provide an improved means for applying glue or other adhesive to groups of leaves which are to be bound together. While the invention is of use in the manufacture of tablets and the like, it is particularly intended for use in book-binding. It is well-known to those skilled in the art, that the binding of books is greatly improved if the glue or other adhesive, in addition to being applied to the rear edges of the sheets being bound is also applied for short distances from the binding edge on both sides of all the sheets being bound. It is therefore a primary object of the present invention to provide novel and efficient means by which the adhesive may be applied as indicated, rapidly and with great uniformity, to the leaves of books to which binding fabric and covers are to be applied with the object of providing a book of greatly improved strength and one which will resist the strains incident to opening and closing, over a long period of time. Further objects and advantages of the invention will be set forth in the detailed description which follows.

In the accompanying drawings, Figure 1 is a fragmentary perspective view of the adhesive-applying apparatus of the present invention.

Fig. 2 is a plan view of the injector or serrated disk hereinafter described.

Fig. 3 is a fragmentary sectional view upon line 3—3 of Fig. 2, illustrating how the sheets are fanned in one direction.

Fig. 4 is a sectional view upon line 4—4 of Fig. 2, illustrating how some of the sheets are fanned in one direction and others are fanned in the opposite direction.

Fig. 5 is a sectional view upon line 5—5 of Fig. 2, illustrating how the sheets are fanned in a direction opposite to that of Fig. 3.

Fig. 6 is a side elevation of the injector disk, and Fig. 7 is a plan view of the structure of Fig. 6.

Like numerals designate corresponding parts in all of the figures of the drawings.

In the drawings, the numerals 5 indicate groups of leaves which are to have adhesive applied to their rear portions in the manner described, so that said groups of leaves may thereafter be bound into conventional book form. The groups of leaves are caused to travel to the left in Fig. 1 by clamps 6, constituting parts of a conventional book-binding machine. A glue pot 7, contains a glue wheel 8, over the periphery of which the rear edges of the leaves 5, travel. The injector 9, consists of a rotative disk having its upper face roughened, knurled or serrated, and this disk is disposed in the line of travel of the groups of leaves, so that the lower or rear edges of said leaves ride over, and rest upon, said disk. The disk is preferably disposed so that the leaves contact therewith to one side of the center of the disk, so that the action illustrated in Figures 2, 3, 4, and 5 takes place. That is to say, the serrations of the disk fan or spread the leaves first in one direction and then in the other, with the result that the adhesive is spread not only upon the rear edges of the leaves, but for limited, but uniform, distances upon the opposite side edges of the leaves, for the purpose stated. The disk is preferably beveled upon its edges as indicated at 9a in Fig. 6, so that the groups of leaves will easily ride over and upon the upper surface of the injector disk. When the injector is set in the manner described so that the path of the book is beyond the center line of the injector, the contact of the book rotates the disk and spreads the adhesive as described. It may be desired to operate the injector at faster or slower speeds than the travel of the book, or it may be desired to have the path of the book at or near the center of the injector, or to have the injector rotate in a direction opposite to the travel of the leaves, and in such cases, the injector may be power-driven through any suitable gearing, such as that illustrated at 10 and 11 in Fig. 6.

The degree of fanning of the leaves and spreading of the adhesive is controlled by the size and depth of the serrations, or knurling, and is also regulated by the height to which the injector is raised in relation to the book. Thus the depth to which the adhesive penetrates the book, or the width of the margin of the adhesive on the sides of the sheets is easily controlled. It is clear that the adhesive will be thrust further inwardly along the sides of the sheets when the injector is caused to press forcibly against the leaves than when said injector merely contacts said leaves lightly.

I may rely upon the glue wheel 8, to supply the necessary amount of adhesive, or I may additionally supply adhesive to the injector either through a pipe 12 or through a pipe 13 (Fig. 6), the latter being valve-controlled at 14, and leading from a suitable glue receptacle 15. It will readily be apparent that when the sheets are "fanned" as described, a narrow margin along the edge of each sheet is exposed beyond the edge of an adjacent sheet, and I take advantage of this fact to apply the adhesive along such marginal edge. Further, it will be observed that I utilize the same element which fans the sheets

to rub or spread the adhesive upon such margins.

The mechanism shown and described is exceedingly simple, economical and efficient. By its use, I am able to apply adhesive in the manner described, rapidly and economically, and turn out books of rugged construction and capable of standing great abuse, with facility and economy. I wish it to be understood that the invention is not limited to the precise arrangement shown and described, but that it includes within its purview whatever changes fairly come within either the terms or the spirit of the appended claims.

Having described my invention, what I claim is:

1. Apparatus for applying adhesive to the rear binding edges of leaves comprising means for moving groups of paper leaves, and a movable member having a surface over which the binding edges of said leaves travel, said member being movable first in one direction and then in another direction, laterally with respect to the line of travel of said leaves, and being roughened to such an extent as to cause it to fan said leaves first in one direction and then in the other, as and for the purposes set forth and means for applying adhesive material to the surface of said movable member.

2. Apparatus for binding the edges of leaves comprising a conveyor for conducting groups of paper leaves longitudinally with their lower edges exposed and free to flex laterally and a horizontally rotative disk with the upper surface of which the binding edges of said leaves contact, said disk being roughened upon its upper face, as and for the purposes set forth.

3. A structure as recited in claim 1, in combination with an adhesive-applying member disposed in advance of said surface.

4. Apparatus of the character described comprising an adhesive receptacle, an adhesive transfer wheel therein, a conveyor for traversing groups of paper leaves over said adhesive transfer wheel with their binding edge portions in contact with the periphery of said wheel, and a horizontally rotative disk having a roughened upper face over which the groups of leaves ride after leaving the transfer wheel, the rear edges of said leaves projecting beyond the conveyor and being free to flex laterally.

5. A structure as recited in claim 4 in combination with means for imparting positive rotation to said disk.

6. A structure as recited in claim 4 in combination with means for feeding adhesive upon the upper surface of said disk.

7. Apparatus of the character described comprising means for conducting groups of paper leaves in a straight line, and a member having a roughened plane surface over which the rear edges of said leaves are passed, said surface being capable of movement in such direction that at one point in the contact of the edges of the leaves therewith, it is moving obliquely in one direction with respect to said leaves, and at another point in the contact of the leaves therewith, it is moving in an opposite direction and obliquely with respect to said leaves, as and for the purposes set forth.

8. An adhesive applying element comprising a horizontally rotative disk having its upper face roughened and having its upper edge beveled, in combination with means for traversing groups of paper leaves across said disc at a point to one side of the center thereof, the rear edges of said leaves being exposed and free to flex laterally.

9. Apparatus of the character described comprising a conveyor for conducting groups of paper leaves longitudinally with their rear edges exposed and free to flex laterally and a horizontal rotative disc having a serrated upper face and disposed in such relation to the groups of leaves that the rear edges of said leaves contact with said disc at a point well to one side of the axis of said disc.

JOHN P. PEDERSON.