UNITED STATES PATENT OFFICE.

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BOOKBINDER'S GAGE.


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To all whom it may concern:

Be it known that I, ALWIN VON AUW, a citizen of the United States, residing in New York, county of Queens, and State of New York, have invented certain new and useful Improvements in Bookbinders' Gages, of which the following is a specification.

This invention relates to bookbinders' gages, and particularly to a gage for accurately placing the hubs upon the backs of "spring-back" books.

According to one method of making spring-backs for blank-books and the like a sheet of binders' board is laid on a suitable support and a plurality of strips of material suitable for forming the hubs are cemented upon the sheet of board with glue or other adhesive, and the board, with the strips applied thereto, is then divided transversely of the strips into pieces of suitable width to serve as blanks for the book-backs. The blanks produced in this way are subjected to the action of heated dies to give them the rounded form desired, and the female die employed in the operation of forming the backs is provided with transverse grooves or channels to receive the pieces of material which form the hubs. The pieces of material to form the hubs must therefore be accurately positioned upon the blanks in order to register with the grooves or channels of the die, and in order to secure the necessary degree of accuracy in the positions of the hubs the strips pasted upon the sheet of binders' board must be very accurately spaced.

The object of the present invention is to provide a gage by means of which the strips of material for the formation of the hubs upon spring-backs for books may be spaced with perfect accuracy and which will enable the operation of applying the strips to be expeditiously performed by unskilled workers.

Several slightly different forms of gages constructed in accord with the present invention are hereinafter described in detail and are illustrated in the accompanying drawings, in which corresponding parts are designated by similar characters of reference throughout, it being understood that changes in the details of construction may be resorted to within the scope of the appended claims without departing from the spirit of the invention.

In the drawings, Figure 1 is a view in perspective of one form of gage. Fig. 2 is a view in longitudinal section through the gage shown in Fig. 1, the raised position of the lifting device being indicated in dotted lines. Fig. 3 is a transverse section through the gage shown in Fig. 1, showing the article produced by means of the gage in position thereon. Fig. 4 is a perspective view of another form of gage. Fig. 5 is a transverse sectional view of the gage shown in Fig. 4, the article produced by means of the gage being shown in position thereon. Fig. 6 is a perspective view of a third form of gage, and Fig. 7 is a perspective view showing a part of the article produced with a gage of any one of the several forms illustrated.

Referring to the drawings, and more particularly to Figs. 1, 2, and 3 thereof, I designates a bed-piece or supporting member which consists, preferably, of a plate of metal in order to secure the requisite strength, weight, and freedom from warping. The bed-piece 1 is provided, preferably at one end and two sides, with marginal elevations 2, by means of which a sheet of bookbinders' board or other suitable material may be accurately positioned upon the bed-piece. Extending longitudinally of the bed-piece are a plurality of channels 3, which are adapted to receive the strips of material out of which the hubs for the spring-backs are made. In the bottom of each of the channels 3 there is formed a narrower channel for the reception of a lifter-arm 4. Each of the channels for the lifter-arms is extended beneath the elevation at the end of the bed-piece, and the ends of the said lifter-arms are bent upward, as shown at 5 in Fig. 2, to engage with a lip formed at the edge of the said elevation and on its under surface. The arms 4 extend beyond the other end of the bed-piece 1 and are preferably connected by a rigid cross-piece 6, by means of which all of the arms 4 may be simultaneously raised to the position shown in dotted lines in Fig. 2. Upward movement of the lifter is preferably limited in some suitable way, as by means of a loop 7, secured at one end of the bed-piece 1 and bridging one of the arms 4 of the lifter. The use of this form of gage will be readily understood from an inspection of the drawings. Strips of suitable material to form the hubs are coated upon their upper surfaces with glue or other adhesive and are laid in the channels 3, which are exactly the right width to receive them and which are exactly parallel. Then a sheet of bookbinders' board 9 is laid on the upper surface of the bed-piece 1 with two of
its margins in contact with the elevations at one side and one end, respectively, of the bed-piece. Pressure is then applied to the sheet 9 in any suitable manner and the strips are so caused to adhere thereto. After a few moments the sheet with the strips adherent thereto may be removed from the gage by raising the lifter into the position indicated in dotted lines in Fig. 2. The lifter performs its function without in any way altering the position of the strips on the sheet of board and permits the sheet to be readily removed therefrom after it has been raised to the extent permitted by the loop 7.

The lifter-arms 4 are ordinarily made narrower than the channels 3, as shown in Fig. 3, in order that the said lifter-arms may not come in contact with the sides of the channels, which may become coated to a certain extent with glue and from which the lifter-arms would also become coated. The presence of glue on the lifter-arms would be extremely undesirable, because it would set and bind the lifter-arms in their channels after each period of use, so rendering the lifter practically useless.

The gage shown in Figs. 4 and 5 consists of a bed-piece 10, which is provided at its ends and one side with marginal elevations or strips 11, and this bed-piece 10 is also preferably formed of metal. Hinged to the elevation 11 at one side of the bed-piece 10 is a plate 12, which is substantially the same length as the bed-piece, but is slightly narrower and is provided with a plurality of longitudinal slots 13, which are of the proper dimensions to receive strips of material suitable for the formation of hubs. On the elevation 11, to which the plate 12 is hinged, a stop 14 of any suitable character is preferably provided to limit the opening movement of the plate upon its hinges.

In the use of the form of gage shown in Figs. 4 and 5 the sheet of material for forming the back-blanks is first positioned on the bed-piece 10, the plate 12 being uplifted for that purpose. The hinged plate is lowered until it assumes the position shown in Fig. 4, and the previously-gummed strips of hub-forming material are then introduced through the slots 13 and passed down upon the sheet of material. After the glue has obtained a hold the plate 12 must be lifted, so that the strips 5 will no longer occupy the slots 13, and thus the sheet with the attached strips may be instantly removed.

In Fig. 6 I have illustrated a form of gage bearing some resemblance to that shown in Figs. 4 and 5, but especially adapted for use in the formation of hubs of unusual thickness. When strips of material for the formation of thick hubs are applied to the sheet of binders' board with the use of a gage, such as that shown in Fig. 4, the turning of the plate 12 upon its hinges may cause some slight displacement of the strips on account of the curved path of the plate in turning on its hinges. To obviate this difficulty, the gage shown in Fig. 6 is employed. In this form of gage I make use of a bed-piece 20, provided with marginal elevations 21, and having oppositely arranged at the ends two standards 22. Each of the standards 22 is provided at the top with a small guide-pulley 23, as shown, and a plate 24, provided with slots 25 for the reception of hub-forming strips, is arranged for a sliding movement upon the standards 22. In order to insure perfectly rectilinear movement of the plate 24, sleeves 26 are preferably provided at the ends of the plate and encircle the standards 22. In order to facilitate the upward movement of the plate 24, cords 27, attached to eyebolts 28 or other suitable fastening devices carried by the plate 24, are extended over the guide-pulleys 23 and have counterweights 29 attached to the ends thereof. The counterweights 29 are of such magnitude as to practically counterbalance the plate 24, so that it may be very easily raised after the strips have been accurately positioned and secured.

In the last-described form of the invention the operation is very similar to that of the form illustrated in Figs. 4 and 5. The sheet of binders' board is first positioned upon the bed-piece. Then the plate 24 is lowered and previously-gummed strips of suitable material for forming the hubs are introduced through the slots 25 and pressed firmly against the sheet of binders' board in order to unite them thereto.

The operations of the several forms of gage are generally similar and the product from each is practically the same. In Fig. 7 a fragmentary view of the finished article produced by means of the gage is shown. In this view the binders' board 9 is shown as provided with accurately-spaced parallel strips 8 of material for forming the hubs.

The mode of using the sheet of board with the strips applied thereto in the formation of spring-back books is not described in detail, as it forms no part of the present invention. Having thus described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is:

1. A bookbinder's gage providing a sheet-supporting surface provided with elevations at two or more margins forming sheet-positioning devices, and having means for accurately positioning a plurality of strips of material in relation to a sheet resting upon said sheet-supporting surface.

2. A bookbinder's gage having a bed-plate provided with marginal elevations and presenting a sheet-supporting surface provided with strip-receiving channels.

3. In a bookbinder's gage, the combination with a bed-piece having a plurality of strip-receiving channels, of means for simul-
taneously removing the strips from all of said channels.

4. In a bookbinder's gage, the combination with a sheet-supporting member provided with means for positioning a plurality of strips, of devices for lifting the sheet and the strips off the sheet-supporting member.

5. In a bookbinder's gage, the combination with a bed-piece presenting a sheet-supporting surface provided with a plurality of strip-receiving channels, of a lifter comprising a plurality of arms normally resting in said channels.

6. In a bookbinder's gage, the combination with a bed-plate presenting a sheet-supporting surface provided with strip-receiving channels, of a lifting device comprising a plurality of arms somewhat narrower than said channels and normally resting in said channels.

7. In a bookbinder's gage, the combination with a bed-plate presenting a sheet-supporting surface provided with strip-receiving channels having narrower channels formed in the bottoms thereof, of a plurality of lifter arms secured at one end and normally resting in said narrower channels.

8. In a bookbinder's gage, the combination with means for supporting a sheet of material and means for accurately positioning a plurality of strips in relation thereto, of a device for lifting the sheet and the strips simultaneously from the gage, and means for limiting the movement of said lifting device.

In witness whereof I have hereunto set my hand this 21st day of July, 1904.

ALWIN VON AUW.

Witnesses:

H. RICHARD WÖBSE,
BAXTER MORTON.