Nov. 26, 1940. E. LARNEY 2,223,325

BOOKMAKING

Filed Dec. 28, 1938

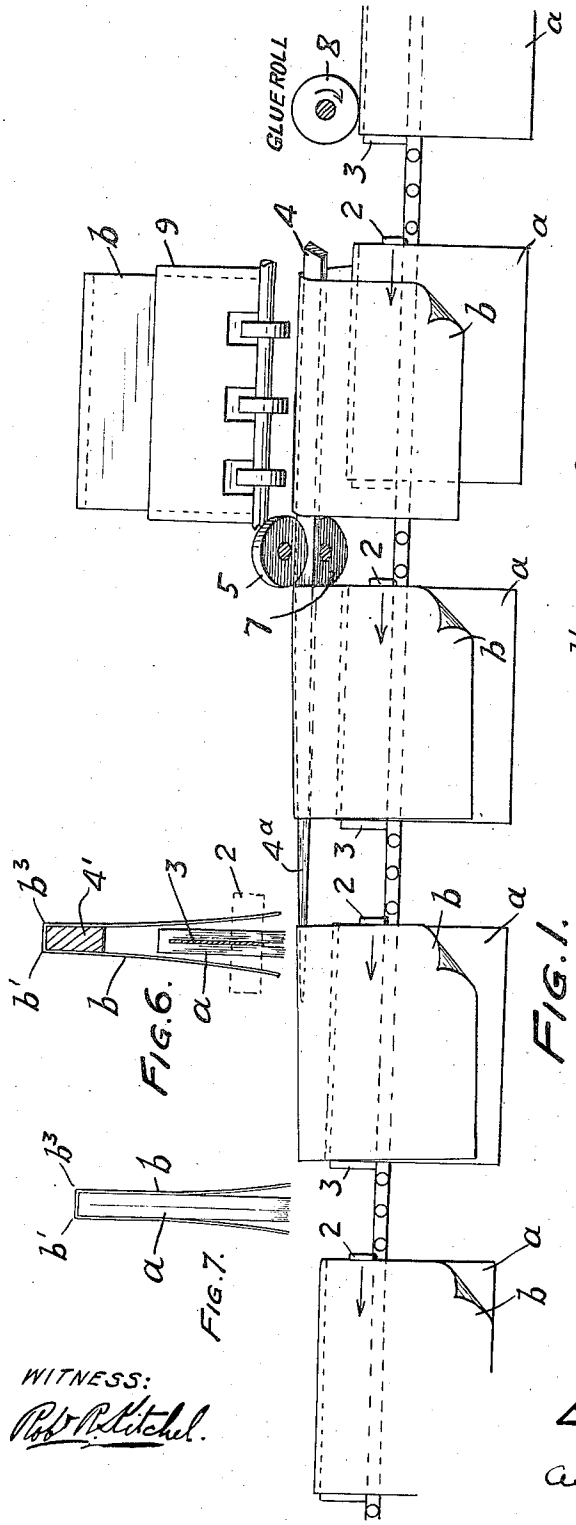


FIG. 6.

FIG. 7.

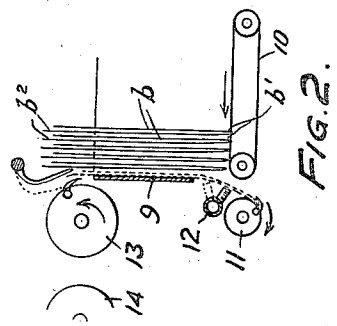


FIG. 2.

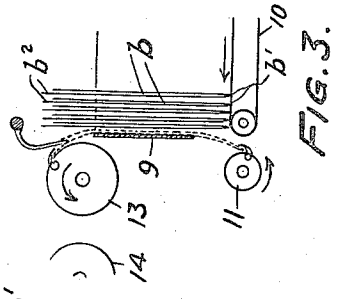


FIG. 3.

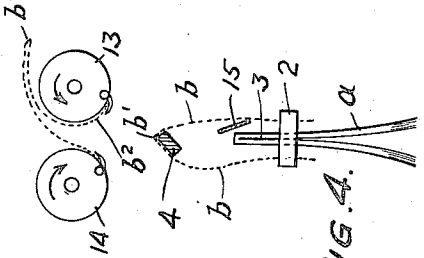


FIG. 4.

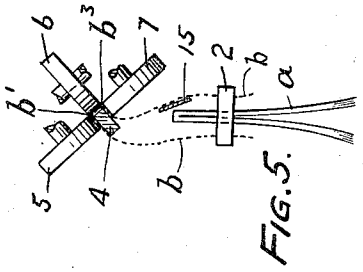


FIG. 5.

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UNITED STATES PATENT OFFICE

2,223,325

BOOKMAKING

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6 Claims. (Cl. 11—4)

Books or magazines having square backs derived from peaked backs are known and are referred to in Letters Patent No. 2,066,620 of January 5, 1937.

Heretofore cover presses, either for second side or two side printing, deliver a flat sheet including four complete magazine covers (four pages each). These sheets are cut on a guillotine cutter into separate four page covers. The flat covers are loaded on to a cover feed board, combed out and each cover is dropped on to a collated magazine which has been square backed, stapled and glued. As the completed book is delivered the cover backbone assumes to some extent the shape of the book. However, there are variations in positioning of the edge of the front cover subject, and there is a rounded appearance of the cover backbone so that it does not conform to the square backed book.

The principal object of the present invention is to obviate the above mentioned defects and disadvantages and to provide books of the character indicated with covers also presenting square backs. This is done in such manner that where the printed matter extends to the edge of the cover, or bleed subjects, as they are called, are displayed, the printed matter or bleed subjects are confined to the cover and do not extend to the backbone where they would present an unsightly appearance.

Another object of the invention is to provide for printing and drying covers on both sides of the web on a press equipped with a folder unit adapted to deliver complete individual covers having a single fold accurately positioned along one edge of the backbone, thereby greatly speeding production.

According to the present invention covers are printed and dried on both sides of the web on a drying press equipped with a folder unit and the individual covers have a single fold positioned accurately along what will be one edge of the backbone of the finished book. A second crease fold parallel with the first fold is made, using the first fold as a guide, and in that way the back of the cover is made square in conformity with the back of the book and with the bleed subject clear of the backbone of the cover and confined to the back or front of the book.

In the following description reference will be made to the accompanying drawing which illustrates one type of apparatus selected from other types and adapted for the practice of the invention.

In the drawing

Figure 1 is a diagrammatic view showing that the press-folded covers are given a second fold using the first fold as a guide.

Figs. 2, 3 and 4 are diagrammatic cross sectional views illustrating a rotary box feeder from which the press covers having a single fold are delivered to receive a second fold aligned with the first fold.

Fig. 5 is a view illustrating the making of the second fold.

Fig. 6 is a view illustrating the application of the twice folded cover to the square back of the book, and

Fig. 7 is an end view of the finished book or magazine.

Referring to the drawing the square backed books or magazines *a* are carried along from right to left in Fig. 1 by impellers **2** on suitable conveyers **3**. Above the conveyer **3** there is a saddle bar **4** generally rectangular in cross section although somewhat pointed at the end **4a**. This saddle bar at the right hand portion is arranged with its major axis at an angle of about 45° as indicated in Figs. 4 and 5, thereafter, by reason of a twist in it, it assumes the position shown in Fig. 6 with its longer axis vertical. **5**, **6** and **7** indicate a set of driven rolls arranged to exert pressure on the sides and top of the cover. **8** is a glue roll which applies glue to the back of the assembled books *a*, as they pass beneath it.

The covers having a single fold applied at the press and with flaps of uneven length are supplied in the rotary feeder **9**. From the box feeder **9** the covers are fed into the position indicated in Fig. 2 by the belt **10** and roll **11** and its accessory **12** so that the longer lap is gripped by the roll **13** which ultimately transfers it into the position indicated in Fig. 4 where the ends of its flap are held in the gripper rolls **13** and **14**. Box feeders are not new and Figs. 2 and 3 merely diagrammatically represent their operation. As shown in Fig. 4 the cover *b* is indicated in dotted lines with its single fold b^1 and with its longer flap b^2 positioned by the revolution of the rolls **13** and **14**, and with the release of the fingers of the rolls **13** and **14** the cover is dropped on to the inclined portion of the saddle bar **4**. **15** is a deflector for keeping the cover away from the glued portion of the book *a*. After the cover is in the position indicated in Fig. 4 it is carried along by the impeller **2** with the book. In passing thru the set of rolls **5**, **6** and **7** a second fold b^3 is put into the cover, the first fold serving as a guide for the second fold. At the left hand end of the

saddle bar 4 the cover is dropped on to the book by running off the end of the saddle bar.

In connection with the foregoing description it may be remarked that the folding mechanism of the press accurately locates the first fold b^1 in the cover, if desired making one flap to conform in size with the size of the book and making the other flap of a width somewhat greater for a purpose to be described. The second crease fold is accurately positioned because it is located by the first press fold, in this way a printed subject or bleed on the face or back of the magazine does not extend to the backbone of the cover. The purpose or object in making one flap of the cover wider than the other is to enable the application of covers to books or magazines of different thicknesses, and with different thicknesses of magazines different and appropriate saddle bars are employed. The unbound edges of the cover are of course trimmed.

It will be obvious to those skilled in the art that modifications may be made in details of procedure and in matters of mere form without departing from the spirit of the invention which is not limited as to such matters or otherwise than the prior art and the appended claims may require.

I claim:

1. The method of applying press folded covers to magazines having square backs which consists in single folding a cover at one edge of the portion which will be the backbone of the magazine, second crease folding the cover at the other edge of the portion which will be the backbone of the magazine and parallel with the first single fold by using the first fold as a guide in making the crease of the second fold, and mounting the twice-folded cover on to the back of the book.

2. In the method of applying press folded covers to magazines having square backs, the improvement which consists in single folding a cover at one edge of the portion which will be the backbone of the magazine, and second crease folding the cover at the other edge of the portion which will be the backbone of the magazine and parallel with the first single fold by using the first fold as a guide in making the crease of the second fold.

3. The method of applying press-folded covers to magazines having square backs which consists, in single-folding the cover at one edge of the portion which will be the backbone of the book providing a flap of substantially the width of the book and a wider flap, second-folding the cover at the other edge of the portion which will be the backbone of the book using the first fold as a guide in making the second fold thereby accommodating books of different thicknesses, and mounting the twice-folded cover on the square back of the book and trimming the wider flaps.

4. In the method of applying press-folded covers to magazines having square backs, the improvement which consists in single-folding the cover at one edge of the portion which will be the backbone of the book providing a flap of substantially the width of the book and a wider flap, and second-folding the cover at the other edge of the portion which will be the backbone of the book using the first fold as a guide in making the second fold thereby accommodating a book of a selected thickness.

5. The method of applying covers to magazines having square backs which consists in press-folding a printed and dried cover, mounting the first fold upon the peak provided by one corner of a warped rectangular support, with the cover astride the support, creasing a second fold by applying pressure in three directions to the cover on the support, guiding the double-folded cover to upright position and dropping it on a book by shifting it over and past an upright portion of the support.

6. In the method of applying covers to magazines having square backs the improvement which consists in press folding a printed and dried cover, mounting the folded cover upon a rectangular support with the first fold in engagement with an edge of the support, and creasing a second fold by applying pressure in three directions to the cover while located apart from the magazine, and guiding the cover by the first fold.

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