Nov. 14, 1939. J. SCHADE 2,179,757

FLYLEAF CONSTRUCTION FOR RING BINDERS

Filed Jan. 4, 1939

FIG. 1.

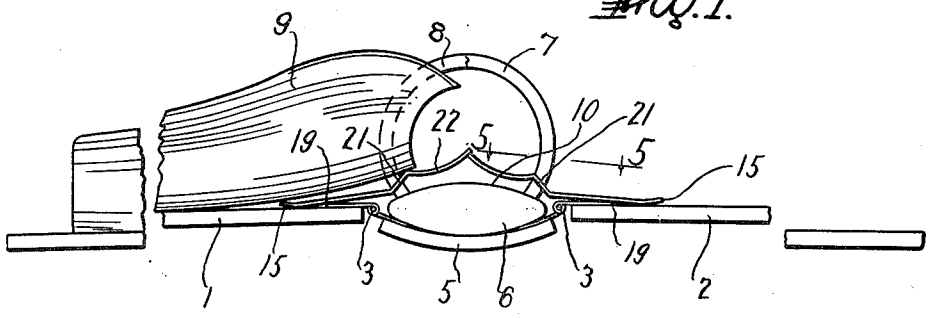


FIG. 2.

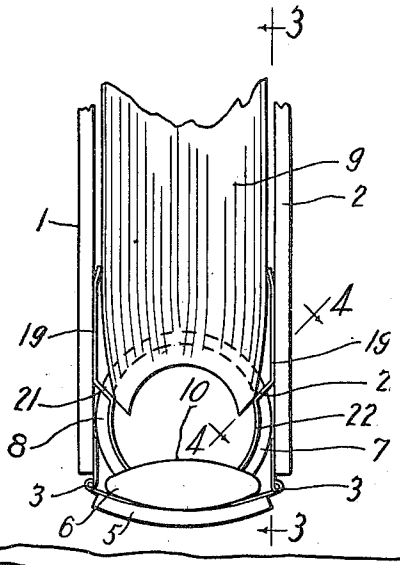


FIG. 3.

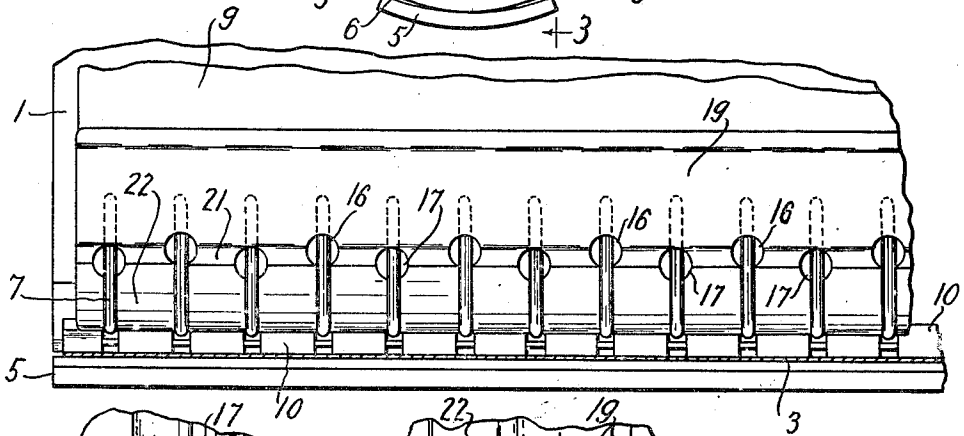


FIG. 4.

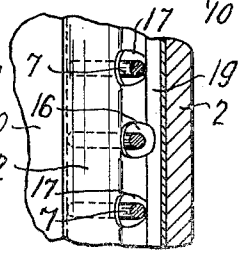
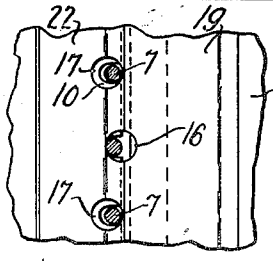


FIG. 5.



INVENTOR
JOHN SCHADE
BY
Chapin & Neal
ATTORNEYS

Patented Nov. 14, 1939 2,179,757

UNITED STATES PATENT OFFICE

2,179,757

FLYLEAF CONSTRUCTION FOR RING BINDERS

John Schade, Holyoke, Mass., assignor to National Blank Book Company, Holyoke, Mass., a corporation of Massachusetts

Application January 4, 1939, Serial No. 249,216

5 Claims. (Cl. 129—4)

This invention relates to an improved flyleaf construction for use with ring binders.

One object is to provide a simple, inexpensive, flyleaf construction which will operate in some respects the same as and in some respects different from and better than those of the prior art. As the differences over the prior art involve consideration of details, these will be specifically disclosed in connection with the accompanying drawing, and then the inventive features pointed out.

Fig. 1 is an end view of a loose-leaf ring binder in open position showing how the flyleaf structure is used;

Fig. 2 is a view similar to Fig. 1, but with the binder in closed position;

Fig. 3 is a sectional elevation on line 3—3 of Fig. 2;

Fig. 4 is a detail sectional view on line 4—4 of Fig. 2; and

Fig. 5 is a sectional view on line 5—5 of Fig. 1.

In the drawing, the flyleaf structure is shown associated with one form of well known ring binder, its applicability to similar forms being readily apparent to those skilled in the art. Thus, in Fig. 1, the ring binder consists of covers 1 and 2 pivotally connected as at 3 by well known "piano-hinge" construction to the back panel portion 5. Ring mechanism 6 is attached to the panel portion 5 in any suitable manner, such as by rivets, not shown, and has ring halves 7 and 8 on which a pack of loose-leaf sheets 9 is threaded by passing the ring halves through the binding holes in the edges of the sheets. The ring halves are maintained in abutting relation by the operation of spring plate 10 and may be separated for the insertion of new sheets or removal of old by lateral tension on the ring halves 7 and 8. This particular form of ring binder mechanism is well known and, therefore, no further detailed description is deemed necessary.

As shown in Figs. 1 to 3, there is one flyleaf structure 15 for each cover 1 and 2, the flyleaves being positioned between their respective covers and the pack of loose-leaf sheets 9. These flyleaves are mounted on the ring halves 7 and 8 by having the halves threaded through a series of holes 16 and 17 punched out of the material of the flyleaf, see Fig. 3. As can be seen, the holes in the series 16 are offset to those of the series 17, for a purpose to be explained.

As appears in Figs. 1 and 2, the flyleaves are formed with a flat portion 19 which in the open position of the book overlies the covers 1 and 2. Where the ring halves 7 and 8 pass through the flyleaves, the material of the flyleaf is bent at an angle to the portion 19 as at 21 and finally terminates in an offset arcuate portion 22, the radius of which corresponds to that of the ring halves 7 and 8, the portions 19 and 22 being offset substantially the cross-sectional diameter of the ring half 7 or 8. The intermediate angular portion 21 is slightly larger than the cross-sectional diameter of each ring half and formed so that the top edges of the holes 17 come substantially at the vertex of the angle between portions 19 and 21, while the bottom edges of holes 16 come substantially at the vertex of the angle between portion 21 and the arcuate portion 22, see Fig. 3.

Referring to Figs. 4 and 5, when the book is closed, alternate rings abut the top edges of holes 17 and in the open position of the book the remaining rings abut the lower edges of holes 16, the "lower edge" being the lower edge when looking at Fig. 3.

When the book is being closed the flyleaves act as follows: the covers lift the flyleaves first contacting them along flat portion 19 and causing the arcuate portions 22 to bear on spring plate 10. As the covers 1 and 2 are swung further the arcuate portions slide along the spring plate 10 and the intermediate angular portions 21 follow around the ring halves, bearing either on the edges of holes 16 or 17, until when the book is closed, as shown in Fig. 2, the flat portions 19 are vertical, the ring halves bear against the top edges of holes 17, and the arcuate portions 22 are nested against the inside of the ring halves. In this last position the space between the vertical portions 19 of the flyleaves is equal to that of the maximum capacity of the binder in closed position as determined by the dimensions of the covers and ring mechanism, see Fig. 2. When the binder is employed with a full pack of paper as indicated in Fig. 1, the flyleaves contact the outermost sheets to positively support them and prevent any binding or undue wear as the book is being closed; while in the closed position of the binder the flyleaves assume a position in which the binder capacity is not interfered with and the sheets are not pinched along the binding edge.

Inasmuch as the holes 16 and 17 are staggered and only one series is in contact with the ring halves at a time, the friction between the ring halves 7 and 8 and the flyleaves is materially decreased with the result that the action is exceedingly smooth. Also, by keeping

the bearing surfaces between the flyleaves and ring halves completely within the angular surfaces 21, the distance between the bearing surfaces formed by the edges of the holes 16 and 17, see Figs. 4 and 5, is kept at a minimum because the angle between portion 19 and the circumferential axis of the ring halves is large and close to 90° in all positions of the flyleaves. This last allows the flyleaves to be constructed to fit the ring halves closely so that they are not inherently sloppy in various book positions as in the case of the usual flat flyleaf which customarily is provided with long slots to allow the desired lifting action on the paper sheets. It is, of course, apparent that if desired the holes 16 and 17 can be replaced by a series of similar slots without interfering with the various positions assumed by the flyleaves.

Likewise, while I have disclosed my flyleaf as having the arcuate portion 22 which nests against the inside of the ring halves, it is to be understood that my invention is not limited to this preferred form. The arcuate portion could be replaced by, for instance, a suitable straight portion to bear on the spring plate 10 during the closing of the book. The important feature here is that portion 19 may lie parallel to the covers when the book is closed, so that the capacity of the binder is not interferred with when a full pack of loose-leaf sheets is being used, as in Fig. 2. This result is attained by having the intermediate portion which offsets portion 19 extend across the circumferential axis of the ring halves and slightly beyond the outer and inner surfaces of the rings.

Considering the foregoing, it will be clear that by using the structure described, I have attained a simple flyleaf which performs the desired function of preventing undue wear on the binding holes of the sheets when the covers are being closed, and which in addition is arranged to cooperate with the ring mechanism in a manner not to interfere with the capacity of the binder.

I claim:

1. A flyleaf for use with a loose-leaf binder of the kind having hinged covers and a back portion with binding rings overlying the top plate of a ring mechanism mounted on the back portion, said flyleaf consisting of a thin, stiff sheet having an intermediate portion connecting two offset portions and holes to mount the flyleaf on binding rings, said holes being located in said intermediate portion whereby loose-leaf sheets resting on the flyleaf and mounted on the binder rings may entirely overlap said intermediate portion, all for the purpose described.

2. The structure of claim 1 with the offset of the intermediate portion substantially equal to the cross-sectional diameter of the rings.

3. A flyleaf construction for use with a loose-leaf binder having covers pivoted to a back portion and binding rings overlying the top plate of a ring mechanism mounted on said back portion, said flyleaf consisting of a thin, stiff member having an intermediate portion and two offset portions with holes in the intermediate portion for threading in binding rings, one of said offset portions being flat and adapted to be supported by binder covers and the other portion arcuate and adapted to ride over the top plate of the ring mechanism and then nest against the inside surfaces of the rings when the covers are moved to close the book.

4. A flyleaf construction for use with a loose-leaf binder having covers pivoted to a back portion and binding rings overlying the top plate of a ring mechanism mounted on said back portion, said flyleaf consisting of a thin, stiff sheet having an intermediate portion connecting two offset portions with holes in said intermediate portion to mount the flyleaf on binding rings, said holes being larger in diameter than in the binding rings with the holes staggered whereby each successive hole may form a bearing for the opposite side of the ring from the preceding hole, all for the purpose described.

5. A flyleaf construction for use with a loose-leaf binder having covers pivoted to a back portion and binding rings overlying the top plate of a ring mechanism mounted on said back portion, said flyleaf consisting of a thin stiff member having two end portions connected by a flat offset with holes in the offset for threading on binding rings, one of said end portions being flat and adapted to be supported by binder covers and dimensioned to lie parallel to said covers, the other portion being arcuate and adapted to ride over the top plate of the ring mechanism and then nest against the inside surfaces of the rings with its bottom edge in contact with said top plate of the ring mechanism when the covers are fully closed.

JOHN SCHADE.