Jan. 31, 1928. 1,657,474

T. P. HYLAND

LOOSE LEAF BINDER AND METHOD OF MAKING THE SAME

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Fig. 1.

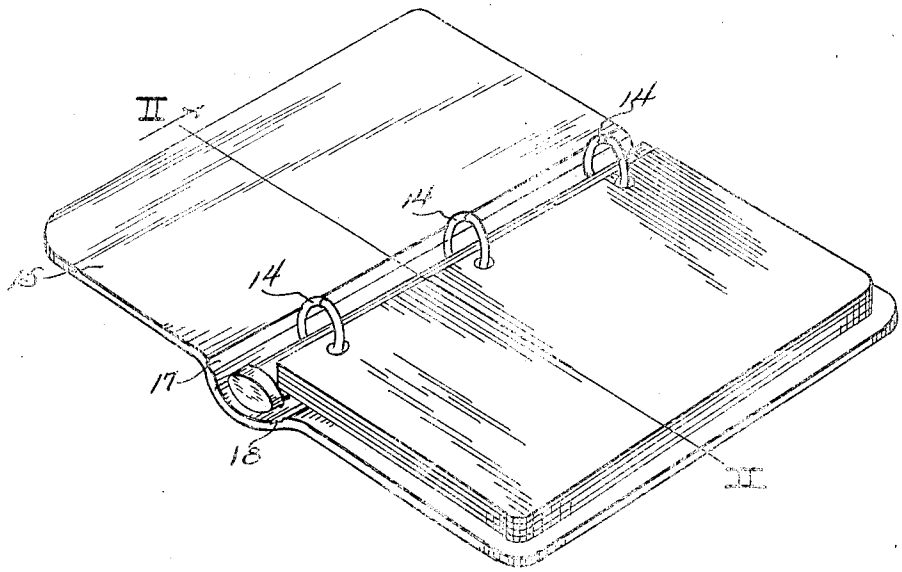


Fig. 2.

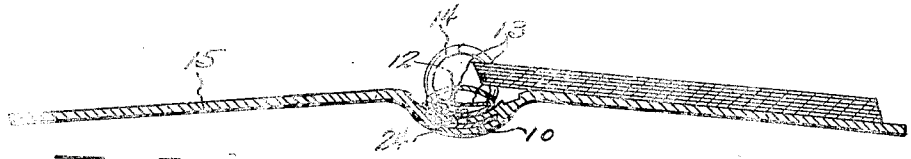


Fig. 3.

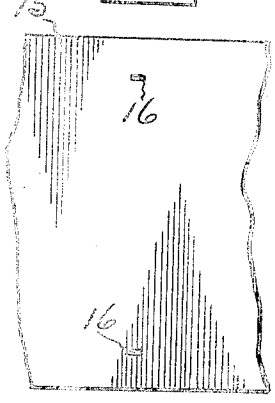


Fig. 4.

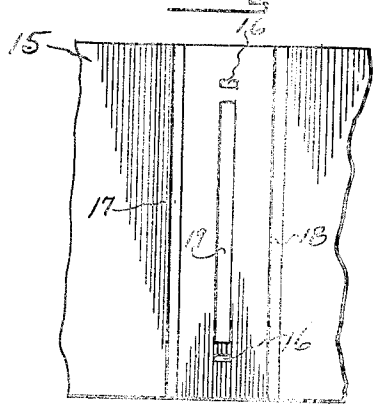
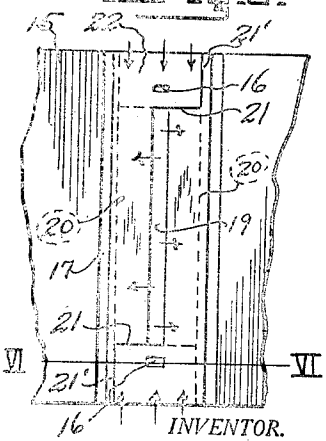


Fig. 5.



INVENTOR.

Thomas P. Hyland

BY

ATTORNEY.

Jan. 31, 1928. **1,657,474**

T. P. HYLAND

LOOSE LEAF BINDER AND METHOD OF MAKING THE SAME

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Fig. 6.

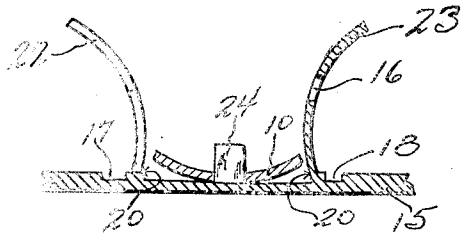


Fig. 7.

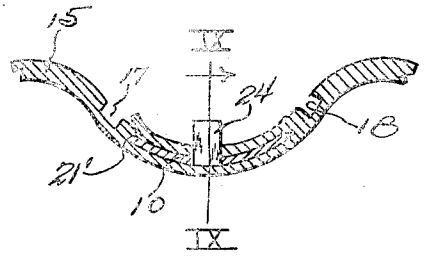


Fig. 8.

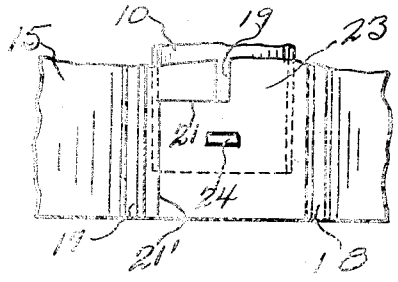


Fig. 9.

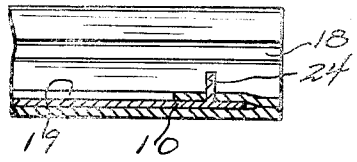
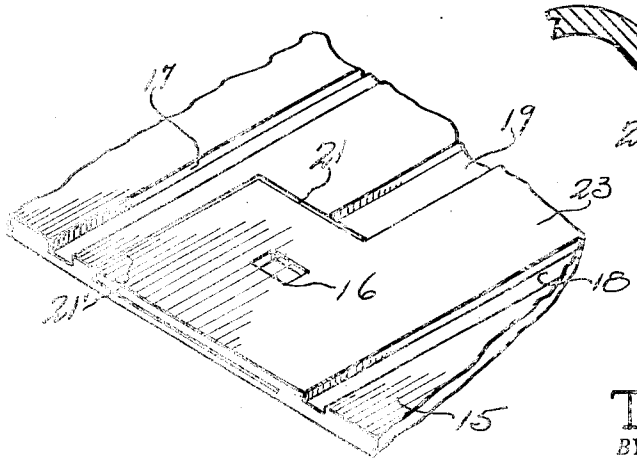


Fig. 11.



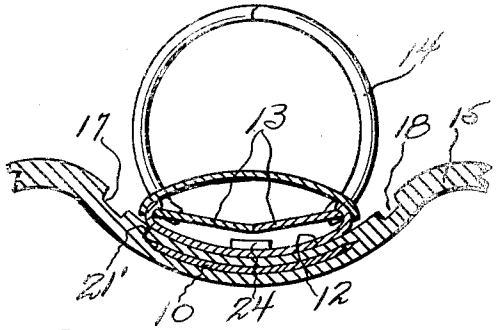


Fig. 10.

INVENTOR.
Thomas P. Hyland
BY
ATTORNEY.

Patented Jan. 31, 1928. 1,657,474

UNITED STATES PATENT OFFICE.

THOMAS P. HYLAND, OF KANSAS CITY, MISSOURI, ASSIGNOR TO IRVING-PITT MANUFACTURING COMPANY, OF KANSAS CITY, MISSOURI, A CORPORATION OF MISSOURI.

LOOSE-LEAF BINDER AND METHOD OF MAKING THE SAME.

Application filed December 16, 1925. Serial No. 75,734.

This invention relates to loose-leaf binders of the ring type, and particularly to such temporary binders as are provided with one-piece, single ply and flexible backs adapted to be engaged by an arcuate back plate.

The primary object of the present invention is the provision of a new and novel method of cutting the single ply back to form a suitable pocket for the reception of the back plate, whereby the concave surface thereof is covered with a smooth facing of the back material.

Heretofore, when arcuate, metal back plates were inserted or affixed to the back, that portion of the material extending over the concave face of said plate always gathered or wrinkled on account of the shorter distance across that face.

It is, therefore, the object of the instant invention to provide a novel method of forming a pocket in a single ply book back whereby a back plate may be attached thereto in a manner which does not permit of anything but an extremely neat appearance, will not allow gathering of the material over the concave face of the back plate and is extremely effective in securely holding the same in place.

Yet another object of this invention is to provide flaps, for engaging the arcuate back plate of a book, which are cut from the single ply back in a way to present an uninterrupted edge with no exposed slits or raw edges.

Still another object of this invention is to provide flaps for engaging the arcuate back plate of a book which draw the cover members snugly around the plate and give a more desirable and pleasing form to the binder.

With these and minor objects in view, the invention will now be described with reference to the accompanying drawing, in which,

Figure 1 is a perspective view of a flexible back, loose-leaf ring binder made in accordance with this invention.

Fig. 2 is a vertical cross section of the binder taken on line II—II of Fig. 1.

Fig. 3 is a fragmentary face view of a piece of single ply material which is used in forming the back and which has been subjected to the first step in forming the back plate securing pocket.

Figs. 4 and 5 show the material after treatment of the following two steps.

Figs. 6 and 7 are enlarged fragmentary cross sections of the book back material taken on line IV—IV of Fig. 5 and showing the relation of the back plate to the pocket before and after the flaps are affixed to the concave face of the plate.

Fig. 8 is an enlarged fragmentary plan view of one end of the back plate showing the covering flaps in place.

Fig. 9 is a fragmentary section taken on line IX—IX of Fig. 7.

Fig. 10 is an enlarged cross section of a binder showing the parts in place, and,

Fig. 11 is an enlarged perspective view of a portion of the back showing one end of the pocket.

Like reference characters refer to like parts throughout the several views, and the numeral 10 designates the well-known arcuate back plate of a loose-leaf ring binder which is utilized to engage the channel 12 and hold the same firmly affixed in its proper relation. As is known in the art, channel 12 supports a pair of plates 13 which are used to carry rings 14 and maintain the same in the open or closed position.

Generally, the structure so far set forth is old, and thoroughly understood. This invention relates particularly to the cutting and forming of a suitable pocket or attaching means in the single ply, one-piece back 15 which forms the covers of the book.

The material used to make the flexible back 15 is preferably leather, and the first step in the method is to form cavities 16 at points spaced inwardly from the opposite edges and on the longitudinal centers thereof. These cavities 16 extend approximately one-half way through the back material 15 and open on the inner face or surface thereof.

The tools used in performing the following steps are common to the leather working trade, and need not be specifically described.

Two longitudinal grooves 17 and 18 respectively are formed across the inner face of the back material 15 and on a longitudinal line spaced on either side of the back center. These grooves extend entirely across the back and have a depth approximately one-half the thickness thereof. Grooves 17 and 18 afford a "breaking" line for the backs of the book and should have their distance apart varied in accordance with the size of the binder to be made.

The next step in treating or cutting the back material 15 is to form an intermediate groove 19, as shown in Fig. 4, along the longitudinal center of the back and substantially parallel to grooves 17 and 18. This groove 19 should be approximately as deep as the cavities 16 and grooves 17 and 18, and some material should be left between its ends and the cavities 16.

In horizontally severing the material to form a pocket to receive back plate 10, the cutting instrument should be forced outwardly to the left and right of intermediate groove 19 to a line 20 parallel to grooves 17 and 18. This horizontal cut is made between the faces of back material 15 and on a plane with the bottom of intermediate groove 19.

After this transverse horizontal cut is made, slits 21 are cut, the depth of grooves 17, 18 and 19, from each end of intermediate groove 19 to a point spaced inwardly from grooves 17 and 18 as shown in Figs. 5 and 11. These slits 21 should be cut to the point near the grooves as also shown in Fig. 5 to join a slit 21′ extending parallel to the grooves 17 and 18 and at right angles to slit 21 in the manner shown. After slits 21 and 21′ are cut, the horizontal severing is completed by cutting inwardly from the edges of back material 15 to meet the pocket formed by the first-mentioned horizontal cut. The arrows of Fig. 5 indicate the direction of travel of the cutting tool, and the horizontal cutting extends to longitudinal slit 21′ which opens at the edge of material 15 as illustrated in Fig. 11. In this manner, a pair of flaps 22 and 23 are cut free from material 15 which have a transverse portion extending along the edges of the material between the grooves 17 and 18 and which carries the opening 16. The adjoining edges between the transverse portions are spaced apart the width of intermediate groove 19, and the flaps may be hinged back as shown in Fig. 6 to allow the introduction of back plate 10 to the pocket.

As will be noticed in Fig. 5, each of the two flaps terminates at an end spaced inwardly from the edge of the back, while its other end is disposed in flush relation with the opposite edge of the back. The end flush with the back edge is wider than that end terminating at the inwardly spaced point, and extends entirely across the space between the two lines 20 which determine the total width of the two flaps. As above, this wider or transverse portion extends uninterruptedly across the split-away part forming the flaps and its continuous outer edge presents a desirable effect after it has been cemented back in place.

After the several cutting operations have taken place as before set forth, and the flaps hinged back to admit the back plate, each flap is coated on its under side with any suitable adhesive. The back is pulled around the convex side of plate 10, and the two flaps are pulled together and pressed over the concave surface of the same. In pulling the flaps 22 and 23 together, the distance apart of their adjoining edges is greatly reduced due to the shorter distance across this particular side of the plate 10.

In some instances, it may be desirable to cut intermediate groove 19 a width which will permit of the adjoining edges to substantially abut when the flaps are pressed into place.

In this operation, the lug 24 is caused to pass upwardly through opening 16. The transverse portion of each flap 22 and 23 will overlap its respective slit 21′ when the flaps are glued in place as shown in Fig. 7. To finish the operation, the superfluous material at the end of this portion is cut off on a line with the slit 21′, and the material glued together as shown in Fig. 9. In this manner, no jagged edges or cuts are exposed, and the plate 10 is entirely covered without creating gathers or wrinkles in the cover material. Also, the slit 21′ is covered by channel 12, as shown in Fig. 10, when the binder is assembled and the hinging or folding back of the back material 15 will not cause the flaps to strip or peel.

As a result of this new method, the back plate serves to hold the material 15 in a pleasing curve around the back of the book. The covers will not flatten or pull away from the plate, and a most desirable binder is produced.

What I claim is:

1. The method of securing a metal back plate in a leather book cover consisting in cutting two longitudinal grooves entirely across the back to form hinge lines, cutting a longitudinal groove intermediate said two grooves, severing the material a predetermined distance on each side of the intermediate groove and inwardly from the two edges of the back between the two longitudinal grooves to meet said severed portion.

2. The method of securing a metal back plate in a leather book cover consisting in cutting two longitudinal grooves entirely across the back to form hinge lines, cutting a longitudinal groove intermediate said grooves, cutting a slit from each end of said intermediate groove toward one of said two longitudinal grooves and thence outwardly to the edge of said back and horizontally severing the material a predetermined distance on each side of the intermediate groove and inwardly from the edges of the back between said slit and one of the two longitudinal grooves.

3. The method of securing a metal back plate in a leather book cover consisting in cutting two longitudinal grooves entirely

across the back to form hinge lines, cutting a longitudinal groove intermediate said two grooves, cutting in the back in one side of but not entirely through the back a slit from each end of said intermediate groove toward one of said two longitudinal grooves and thence parallel thereto to the edge of said back, horizontally severing the material a predetermined distance on each side of the intermediate groove and inwardly from each side of the back between said slit and one of the two longitudinal grooves to meet said severed portion and the said slit.

4. The method of securing a metal back plate in a leather book cover consisting in forming a recess in one side of said back adjacent each edge, cutting two longitudinal grooves entirely across the back, cutting a longitudinal groove intermediate said two grooves in longitudinal alinement with said recesses, cutting in the back a slit from each end of said intermediate groove toward opposite ones of said two longitudinal grooves and thence parallel thereto to the edge of said back, horizontally severing the material inwardly from the sides of said back from the slit parallel to one of said grooves to within a short distance of the other of said longitudinal grooves whereby a flap is formed having an opening therethrough.

5. The method of securing a metal back plate in a leather book cover consisting in forming a recess in one side of said back adjacent each edge, cutting two longitudinal grooves entirely across the back, cutting a longitudinal groove intermediate said two grooves in longitudinal alinement with said recesses, cutting in the back a slit from each end of said intermediate groove toward opposite ones of said two longitudinal grooves and thence parallel thereto to the edge of said back, horizontally severing the material on each side of said intermediate groove to within a distance of each of said two longitudinal grooves and horizontally severing the material inwardly from each side of said back to meet said first mentioned severed portion and extending from the slit parallel to the longitudinal groove to a line in longitudinal extension of the terminating line of the first mentioned severed portion.

6. The method of attaching the back plate to the back of a book consisting in forming a pair of longitudinal flaps from the back having their adjoining edges spaced apart, positioning an arcuate back plate beneath said flaps and gluing the under side of said flaps to the concave face of said back plate.

7. A book cover having a single ply back provided with a longitudinal pocket adapted to receive a back plate and extending entirely across said back, a slot cut in one side of said pocket and transverse slits cut in the same side of said pocket extending at right angles to said slot and oppositely from the two sides respectively thereof, said slits meeting at their remote ends slits extending inwardly from the adjacent edges of said back.

8. In a single ply back for loose-leaf binders adapted to receive an arcuate back plate, a pair of longitudinal flaps formed from the material of said back, the adjacent edges of said flaps being spaced apart when said back is in a flat plane, whereby when said back plate is positioned, the concave surface thereof is covered and a smooth facing of cover material is presented by drawing the adjacent edges of said flaps together.

9. In a single ply back for loose-leaf binders adapted to receive an arcuate back plate, a pair of longitudinal flaps formed from the material of said back, the adjacent edges of said flaps being spaced apart before said back plate is positioned and caused to lie in substantially abutting relation after said plate is in place and said flaps are affixed to the concave face thereof.

10. In a single ply back for loose-leaf binders adapted to receive an arcuate back plate, a pair of longitudinal flaps formed from the material of said back, said flaps being cut to present a smooth arcuate surface after said back plate is positioned and said flaps are affixed to the concave face thereof.

11. In a single ply back for loose-leaf binders, a pair of flaps split from said back, each of said flaps terminating at one end spaced inwardly from one edge of said back, the other end of each flap respectively being flush with the opposite edge of the back.

12. In a single ply back for loose-leaf binders, a pair of flaps split from said back each having a transverse portion at one end thereof, said portion extending the full width of the two flaps and having its outer edge flush with the adjacent edge of said back.

13. In a single ply back for loose-leaf binders, a pair of flaps split from said back each having a transverse portion at one end thereof extending the full width of the two flaps, the transverse portion of each flap respectively being adjacent opposite edges of the back.

14. In a single ply back for loose-leaf binders, a pair of flaps split from said back each having a transverse portion at opposite ends thereof extending the entire width of both flaps, the adjacent edges of both flaps between the transverse portions being spaced apart and an opening through the transverse portion of each flap.

In testimony whereof I hereunto affix my signature.

THOMAS P. HYLAND.