

May 7, 1935.

W. H. SMITH

2,000,357

PERMANENT BINDER FOR LOOSE LEAVES

Filed Oct. 7, 1933

2 Sheets-Sheet 1

FIG. 1.

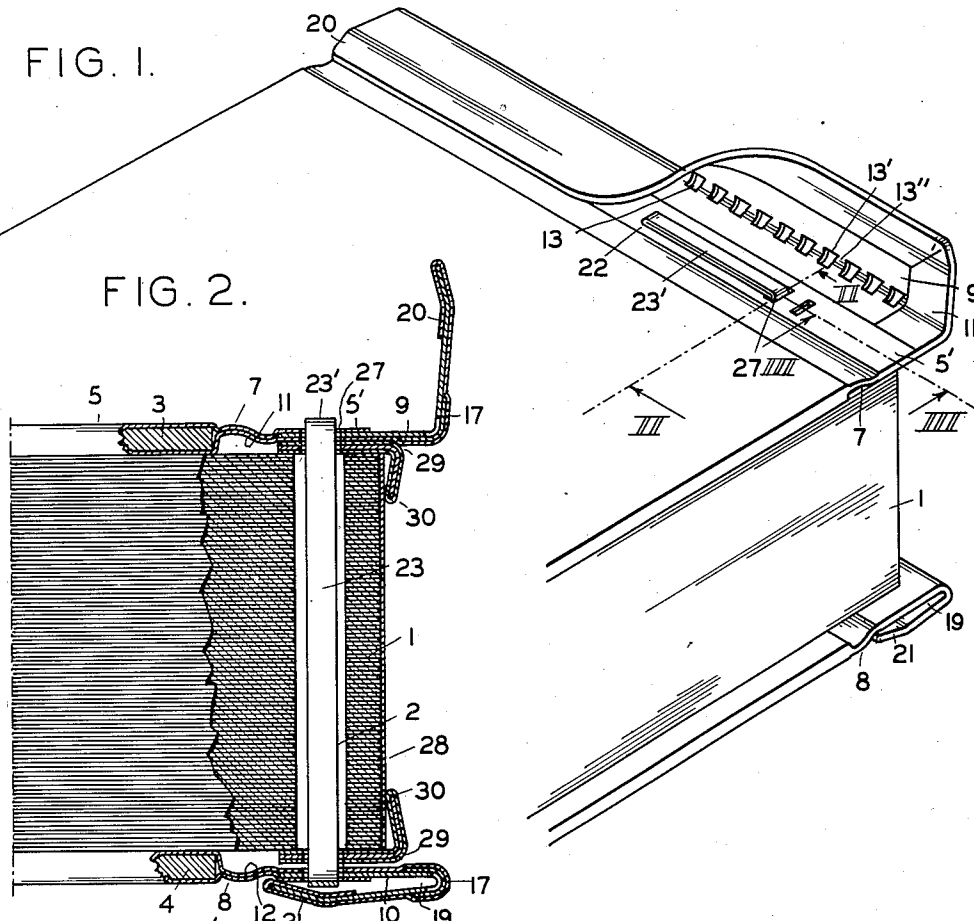


FIG. 2.

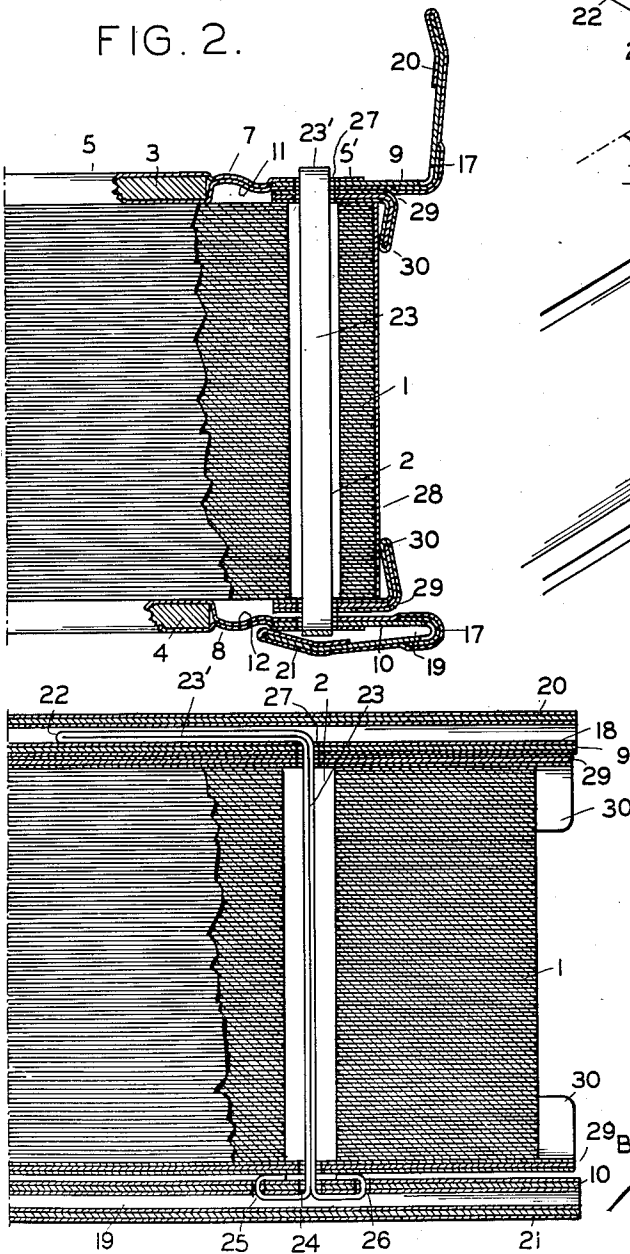
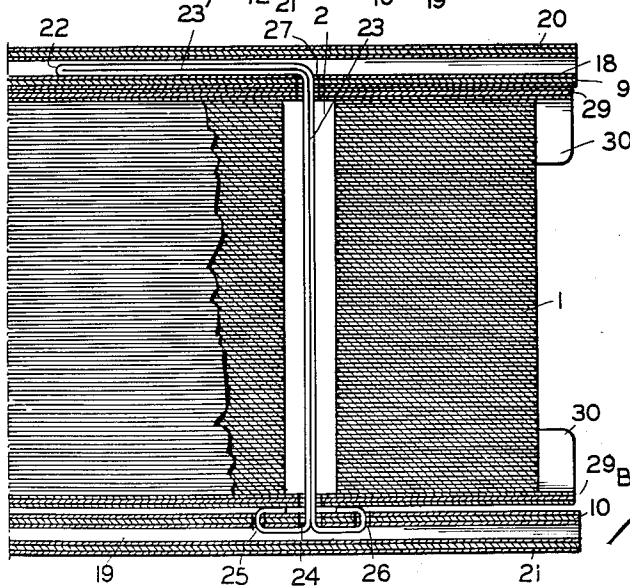


FIG. 3.



INVENTOR:

WILLIAM H. SMITH

BY *Bradwin*

ATTORNEY.

May 7, 1935.

W. H. SMITH

2,000,357

PERMANENT BINDER FOR LOOSE LEAVES

Filed Oct. 7, 1933

2 Sheets-Sheet 2

FIG. 5.

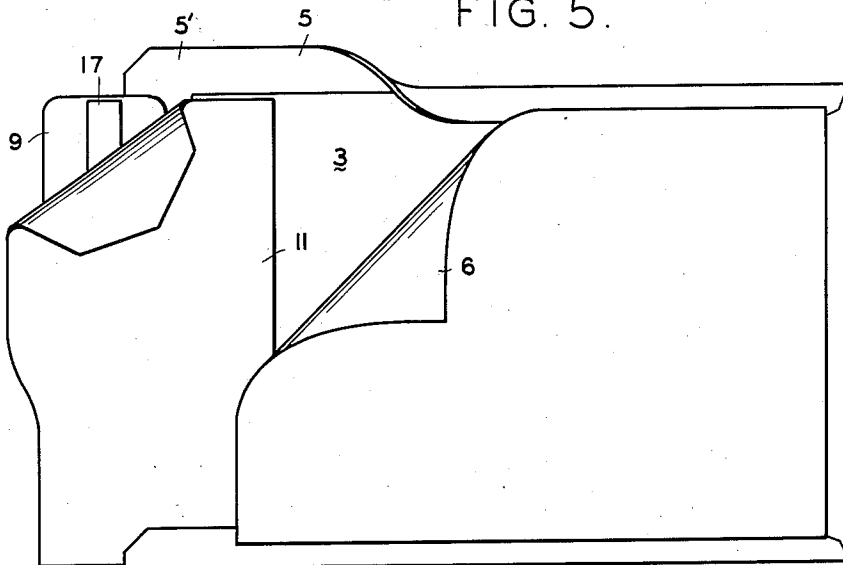


FIG. 4.

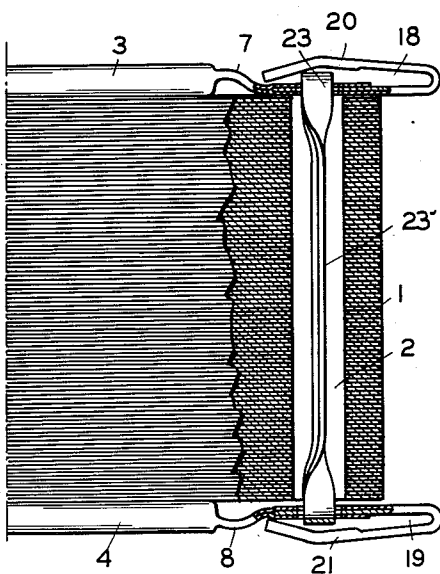


FIG. 6.

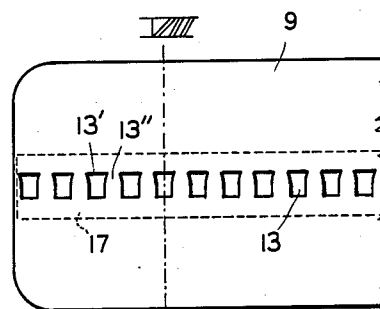
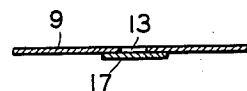


FIG. 7.



INVENTOR:

WILLIAM H. SMITH

BY

Radwin M. M.

ATTORNEY.

UNITED STATES PATENT OFFICE

2,000,357

PERMANENT BINDER FOR LOOSE LEAVES

William H. Smith, San Francisco, Calif.

Application October 7, 1933; Serial No. 692,568

7 Claims. (Cl. 281—25)

This invention relates to improvements in permanent binders for loose leaves and more particularly to the combination and arrangement of the covers and posts.

5 Among the objects of the invention are to provide means for binding an indefinite number of sheets in a substantial manner.

Another object is to so construct and apply the covers that the binding posts are concealed.

10 Another object is to simplify the binding operation so that it may be practiced by relatively unskilled persons.

A further object is to provide for the temporary binding of current record sheets prior to the permanent binding operation.

15 Other objects and advantages will appear as the description progresses.

In this specification and the accompanying drawings the invention is disclosed in its preferred form. It is to be understood, however, that it is not limited to this form because it may be embodied in other forms within the spirit of the invention as defined in the claims following the description.

25 In the accompanying two sheets of drawings:

Fig. 1 is a perspective view of the top and back portion of a book bound in accordance with this invention.

30 Fig. 2 is a fragmentary vertical section of the same viewed from the edge as indicated by the line II—II, in Fig. 1.

Fig. 3 is a similar view from the front edge of the book at substantially the same point as indicated by the line III—III.

35 Fig. 4 is a view similar to Fig. 2 showing a modification of the post.

Fig. 5 is a diagrammatic detail in plan illustrating the structure of the cover.

40 Fig. 6 is a fragmentary detail in plan showing the end of the perforated metal reinforcing strip.

Fig. 7 is a cross section of the same taken on the line VII—VII.

45 In detail the construction illustrated in the drawings referring to Fig. 2 comprises the loose sheets 1, cut to size and perforated adjacent one edge by interspaced holes such as 2 in the conventional manner.

The stiff board covers are alike in construction, see Fig. 5. They consist of the fiber boards 3 and 4 enclosed within the conventional binding fabric such as 5 folded over the edges and covered by the sheet 6. The fabric at 5' extends beyond one end of the boards to form the hinges 7 and 8.

55 The reinforcing metal plates 9 and 10 are spaced

from the edges of the boards 3 and 4 respectively and glued to the hinge strips 7 and 8. The second hinge flaps 11 and 12 are glued to the boards 3 and 4 and the metal plates 9 and 10 and folded around their edges reinforcing the hinges, concealing the plates and forming substantial binding heads on each cover.

5 These heads are provided with a row of aligned perforations 13. The heads are thus weakened to permit easy bending. The perforations also serve to confine the bending to a straight line.

10 One side of each of the perforations is preferably enlarged at 13' to weaken the adjacent ends of the bridges therebetween. The bridges normally bend nearest the side of the plates 9 and 10 fixed to the body of the book. The weakening of the opposite side of the bridges at 13'' tends to distribute the bending throughout the full length of the bridges to secure a longer bending radius.

15 The plates 9 and 10 are backed up by the heavy paper strips 17 to prevent the fabric strips 11 and 12 receding into the perforations 13 and producing "dimples".

25 When thus bent the extended reinforced heads of the covers form the channels 18 and 19 with the concealing flanges 20 and 21, respectively, within which the ends of the binding means are hidden and prevented from marring any surface upon which the book may be laid, see Fig. 4.

30 As a binding tie or post 23, I prefer a single length of soft metal strap, such as cold rolled steel. This is bent back upon itself at 22, see Fig. 3. The free ends are extended through the center hole 24 of a series of three holes through the plate 10, then returned through the holes 25 and 26, respectively, and clinched to the lower cover before the flanges 20 and 21 are folded back. This fixes the posts 23 securely in the lower plate 10 from which they extend perpendicularly. The current sheets 2 can be stacked up on these posts from time to time and covered by the top cover 3 before the flange 20 is folded down, see Fig. 2. This acts as a temporary file until the desired quantity of sheets is accumulated before being permanently bound.

45 With the desired thickness of sheets stacked upon the posts 23, the top cover is placed in position with the surplus portion 23' of the posts protruding through the holes 27 in the top plate 9, the book is then ready for permanent binding.

50 The assembled book is then placed in a suitable press and compressed to the desired extent. The post portions 23' are then bent over to retain the compression of the leaves. The surplus 55

lengths 23' of the posts is then bent over as in Fig. 3. A portion of this surplus may be nipped off if desired.

The flanges 20 and 21 when bent flat, as in Fig. 4, conceal the post ends and the permanent binding is thus complete.

In very thick volumes it is desirable to put a quarter turn in the posts 23, as at 23x in Fig. 4. This permits the back of the book to flex and open more nearly flat giving access to data written near to the bound margins of the sheet ends.

Where it is desired to cover the back of the book with an ornamental or data card, as at 28 in Fig. 2, the guide plates 29—29 are interposed between the stack of sheets and the head plates 9 and 10 prior to the permanent binding operation. These guide plates have the angular edges 30 respectively overhanging the back edges of the sheets. They may be bent inward to retain the card 28 after it is inserted from the edge of the book.

Having thus described this invention, what is claimed and desired to secure by Letters Patent is:

1. A binder including opposed covers having binding heads with substantially rigid ends foldable back upon themselves; binding means extending through said heads beneath said ends.

2. A binder including opposed covers having metal heads with foldable flanges thereon and hinged to said covers; and binding means engaging said heads beneath said flanges.

3. A binder including opposed covers having reinforced heads hinged thereto and having their

ends folded back upon themselves to form rigid channels; and binding means engaging said heads within said channels.

4. A binder including opposed cover boards; perforated head plates spaced from the head ends of said boards; a flexible binding fabric enclosing said boards and plates; and binding means engaging said plates, said plates being foldable along said perforations and over said binding means.

5. A binder including opposed cover boards; perforated head plates spaced from the head ends of said boards; reinforcing strips fixed to said plates over said perforations; a flexible binding fabric enclosing said boards and plates and forming a hinge therebetween and binding means engaging said plates, said plates being foldable along said perforations and over said binding means.

6. A binder including opposed covers having rigid binding heads with foldable metal flanges thereon; a binding means comprising a metal strip bent back upon itself intermediate its length and having its free ends fixed in one of said heads and its bent end extending through the head of the opposed cover and bent over beneath the flange thereon.

7. A binder including opposed covers having heads hinged thereto; perforated metal plates reinforcing said heads and foldable along said perforations to form channels; and binding means engaging said heads within said channels.

WILLIAM H. SMITH,