

June 13, 1933.

F. L. IMPEY

1,913,634

LOOSE OR BOUND LEAF COVER OR SUPPORT

Filed Nov. 14, 1932

2 Sheets-Sheet 1

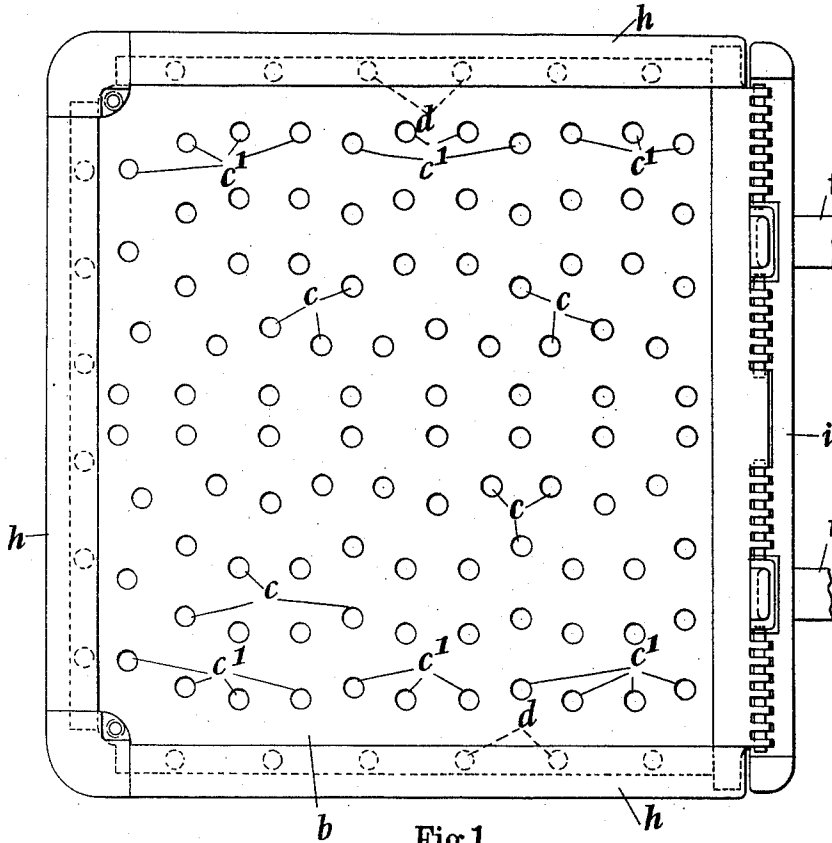


Fig.1

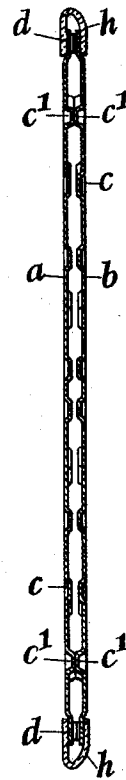


Fig.2

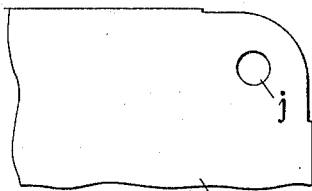


Fig.6

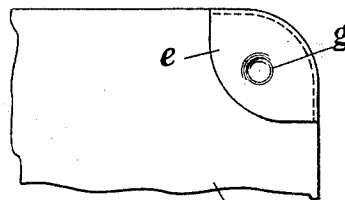


Fig.7

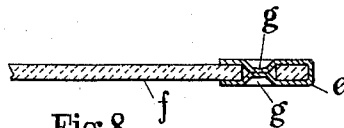


Fig.8

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2 Sheets-Sheet 2

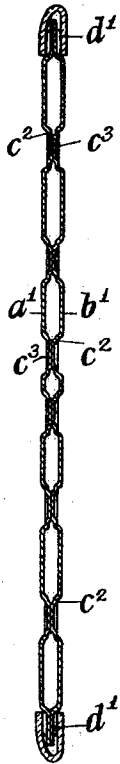


Fig. 4

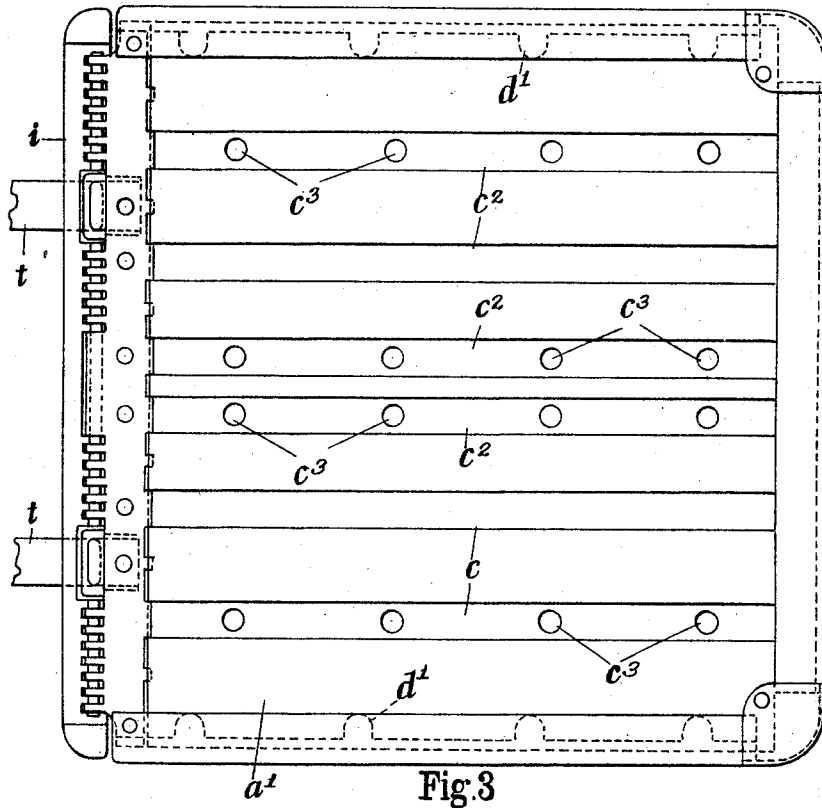


Fig. 3

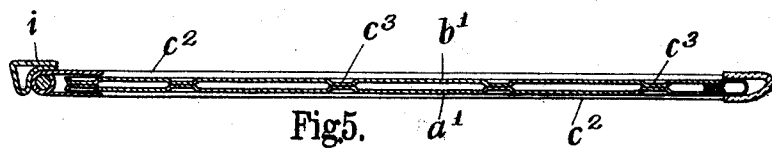


Fig. 5.

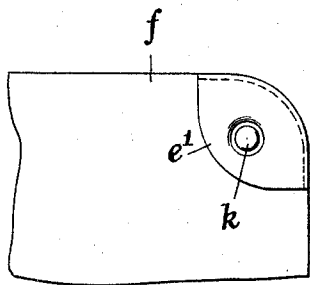


Fig. 9

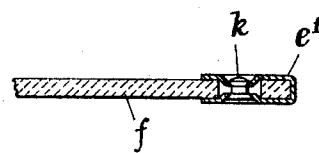


Fig. 10

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UNITED STATES PATENT OFFICE

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LOOSE OR BOUND LEAF COVER OR SUPPORT

Application filed November 14, 1932, Serial No. 642,631, and in Great Britain December 31, 1931.

This invention relates particularly to the covers of loose leaf binders, but is applicable to other sheet holders, or supports, and also to ordinary book covers.

The object of the invention is to enable a light and durable cover or leaf support or holder to be constructed in a simple and economical manner.

The invention comprises the construction of the cover or leaf support or the like wholly or in part from a pair or pairs of metal pieces which are suitably spaced apart and are united by the welding or riveting of depressed portions in one or each piece to corresponding portions or to plain portions on the other piece.

In a modification the invention comprises the combination of a cardboard or other stiff and non-metallic sheet, and corners or edges or both constructed from metal parts as above described, the depressions in this construction being engaged with holes in the cardboard or like part.

In the two accompanying sheets of explanatory drawings:—

Figure 1 is a front elevation of a book cover constructed in accordance with this invention, and Figure 2 is a cross section of the same.

Figure 3 is a front elevation of a modified form of book cover constructed in accordance with this invention, and Figures 4 and 5 are respectively sectional end elevation and sectional plan of the same.

Figure 6 is an elevation of one corner of a cardboard or like cover prior to the application to it of a metal corner piece in accordance with this invention.

Figure 7 shows the corner piece in position.

Figure 8 is a section through the corner piece and cover.

Figures 9 and 10 show a modified method of attaching the corner piece.

Figures 8 and 10 also serve as cross sections illustrating the mode of attaching an edge piece to one or more of the edges of the cover.

In carrying the invention into effect in the manner illustrated in Figures 1 and 2, each

cover of a loose leaf binder, or of an ordinary book, or a back support for a number of loose sheets, is constructed from two thin sheets of metal *a* and *b*. These may be formed by folding a single sheet. Each sheet is formed at suitable positions on its surface with a number of small, circular or other depressed portions *c*. These portions on the two sheets may be arranged opposite each other, or otherwise. Their purpose is to space the two sheets at a suitable distance apart. The two sheets are united by welding or riveting together some or all of the abutting ends of adjacent depressed portions, or by welding or riveting depressed portions of one sheet to the plain surface of the other sheet. The edges of the two sheets which are not joined by the fold may be bent over and united in any convenient manner such as by welding at the parts marked *d*. Also the edges may be enclosed by channel strips *h* made from compressed fibre, vulcanite or other hard non-metallic material. The part *i* in Figures 1 and 2 indicates a member which is hingedly attached to the rear edge of the cover.

It will be seen in the cross section in Figure 2, that only the opposite depressed portions marked *c*¹ are in contact with each other. This arises out of the fact that the cover illustrated is required to contain part of the binding mechanism of a loose leaf book, which mechanism consists in part of a pair of flexible thongs *t*. The ends of the thongs which lie within the interior of this cover are connected by a cross bar, and the latter is engaged by a screw whereby the bar and thongs can be moved relatively to the cover for releasing or securing the leaves held between the covers. The cross bar and screw are well known and form no part of the present invention. To accommodate the thongs, cross bar and screw, the depressions *c* which would otherwise interfere with those parts are made of varying depths so as to leave spaces between their adjacent faces as will be seen in Figure 2; to accommodate and permit the necessary movements of the said parts within the cover. But all the other depressions as *c*¹ are brought into contact with

the opposite depressions or with the plain portions of the opposite sheet and are welded or riveted. When the cover is not required to contain moving parts of the binding mechanism, then the spacing of opposite depressed portions is not required and is not employed.

In the alternative construction shown in Figures 3 to 5, the cover comprises a pair of parts *a*, *b* which may be formed from two sheets or by folding a single sheet. Each part *a'*, *b'* has formed on its depressed portions in the form of transverse channels *c*², and the parts are secured together by welding or riveting at such positions as those marked *c*³. In the example illustrated the bottoms of opposite channels do not touch each other, a small space being left between them, except where the welding occurs, but if desired the bottoms of opposite channels may be brought into contact with each other along their entire length. Also the edges are welded or riveted together at the positions marked *d'*. When it is necessary to arrange part of the binding mechanism within the cover, then the channels are suitably modified either in shape, disposition or depth in a manner similar to that described in connection with Figures 1 and 2.

A cover or leaf support as above described is light and rigid and is capable of being readily produced at small cost.

When it is preferred to make the article mainly of cardboard, wood or the like, the metal parts may be limited to the corners or edges of the article as shown in Figures 6 to 10. In applying my invention to the corners of each or either cover of a loose leaf binder or the like in the manner illustrated in Figures 3 to 7, each of the corners to be reinforced is fitted with a sheet steel piece *e* of channel section consisting of a pair of sides which can be slipped over the inner and outer surfaces of the cover *f* whose rounded corner (Figure 6) is preferably reduced as shown to the extent of the thickness of the metal sheet. The sides of the piece *e* are united along two of their adjacent edges and the corner contained between the said edges may be rounded, as will be clear from Figure 7, so as to fit the corner of the cover *f*. In each side a portion of the metal is depressed to form an inward projection *g*, the two projections being opposite each other (Figure 8). A suitably placed hole *j* is formed in the cover, and the corner piece may be secured to the cover by engaging the inward projections with the hole, but preferably the corner piece *e* after having been placed in position is permanently secured by electric welding as shown in Figure 8. Alternatively a similar corner piece *e'* may be secured by a rivet or eyelet *k* (Figures 9 and 10) the ends of which are sunk below the outer surfaces of the corner piece.

For reinforcing one or more of the edges of the cover, a sheet steel or other metal strip of channel section and of suitable length is used. Either of the sections shown in Figures 8 and 10 serves to illustrate this modification. Each side is formed with one or more depressions *g* for engaging holes *j* in the cover, and the depressed portions are united by welding or riveting as shown. Whilst it is immaterial to the invention whether the depressions are formed before or after placing the metal corner or edge pieces in position on the cover, it may sometimes be convenient and preferable to form them after the pieces have been placed in position. Also it is convenient to provide depressions on each side opposite each other so that the adjacent ends come together and can be welded or otherwise united. It may, however, be desirable for some purposes to provide a depression on one side only which extends into or nearly into contact with the opposite side, or to provide non-coincident depressions in each side of the reinforcing pieces.

Having thus described my invention what I claim as new and desire to secure by Letters Patent is:—

1. A cover for a loose leaf binder or other book, or a leaf support, comprising at least one pair of metal pieces which are suitably spaced apart and at least one of which has depressed portions, and which are united by securing some depressed portions in one piece to portions on the other piece.

2. A loose leaf or other book cover, or a sheet support, constructed from a pair of spaced metal sheets at least one of which is formed with small depressed portions, the sheets being united by securing some of the depressed portions on one sheet to portions on the other sheet.

3. A loose leaf or other book cover, or a sheet support, constructed from a pair of spaced metal sheets at least one of which is formed with depressed transverse channels, the sheets being united by securing parts of the channels on one sheet to parts of the other sheet.

4. A loose leaf or other book cover, or a sheet support, as claimed in claim 2, in which the two metal sheets are formed by folding a single metal sheet, the edges of the folded sheet being secured at intervals by welding.

5. A cover for a loose leaf binder or other book, or a leaf support, comprising a pair of metal pieces which are suitably spaced apart, at least one of the pieces having depressed portions, and which are united by welding some depressed portions in one piece to portions on the other piece.

6. A cover for a loose leaf binder or other book, or a leaf support, comprising a pair of metal pieces which are suitably spaced apart, and which have depressed portions and which are united by the welding of depressed por-

tions in one piece to corresponding portions on the other piece.

7. A cover for a loose leaf binder or other book, or a leaf support, comprising a pair of metal pieces which are suitably spaced apart, and which have depressed portions and which are united by the riveting of depressed portions in one piece to portions of the other piece.

8. A loose leaf or other book cover, or a sheet support, constructed from stiff, non-metallic material having holes, and having edges made from a pair of metal parts one of which is formed with a plurality of depressed portions engaging holes in the non-metallic part, the metal parts being secured in position on the depressed portions.

9. A loose leaf or other book cover, or a sheet support, constructed from stiff, non-metallic material having holes, and having edges made from a pair of metal parts each of which is formed with a plurality of depressed portions engaging the holes in the non-metallic part, the metal parts being welded together at the depressed portions.

10. A cover for a loose leaf binder or other book, or a leaf support, comprising at least one pair of metallic pieces suitably spaced apart and at least one of which has at least one depressed portion which is secured to a portion of the other piece.

11. A loose leaf or other book cover, or a sheet support, constructed from stiff, non-metallic material, having holes at the corners thereof the cover having corners each made from a pair of metal parts each of which is formed with a depressed portion engaging a hole in the non-metallic part, the metal parts being welded at the depressed portions.

12. A loose leaf or other book cover, or a sheet support, constructed from stiff, non-metallic material, having a hole at each corner, the cover having corners each made from a pair of metal parts each of which is formed with a depressed portion engaging a hole in the non-metallic part, the metal parts being riveted together at the depressed portions through the holes.

In testimony whereof I have signed my name to this specification.

FRANCIS LEVITT IMPEY.

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