May 21, 1946. H. EINZIG 2,400,744

BOOKBINDING

Filed Feb. 13, 1943 3 Sheets-Sheet 1

Fig. 1.

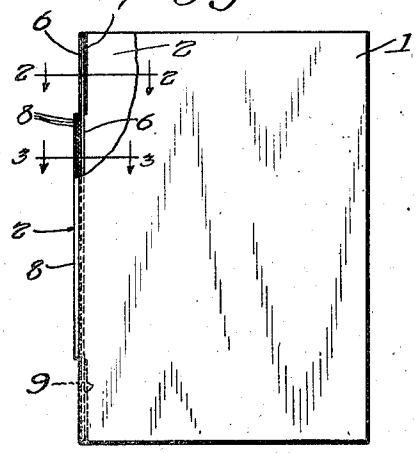


Fig. 2.

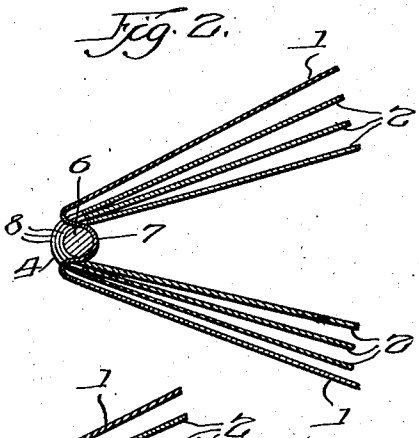


Fig. 3.

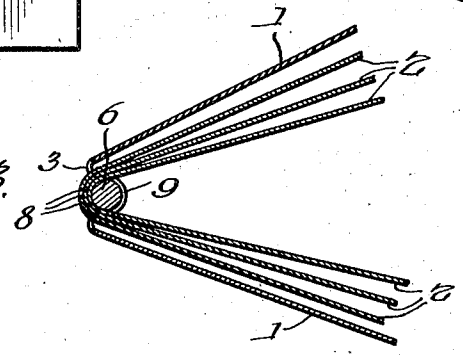


Fig. 4.

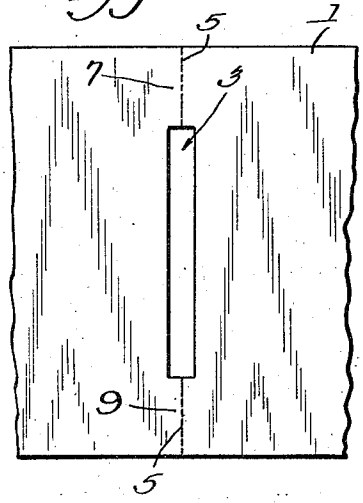


Fig. 5.

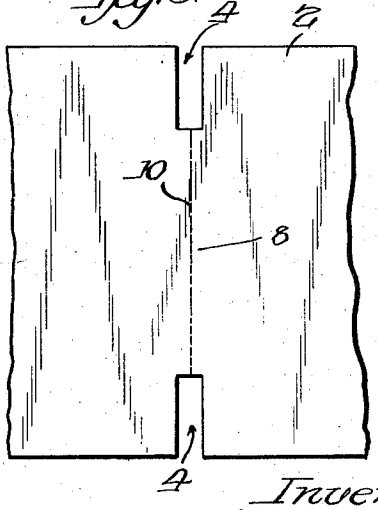


Fig. 6.



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BOOKBINDING

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Fig. 7.

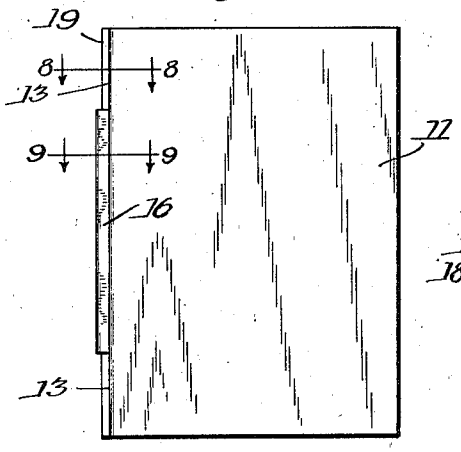


Fig. 8

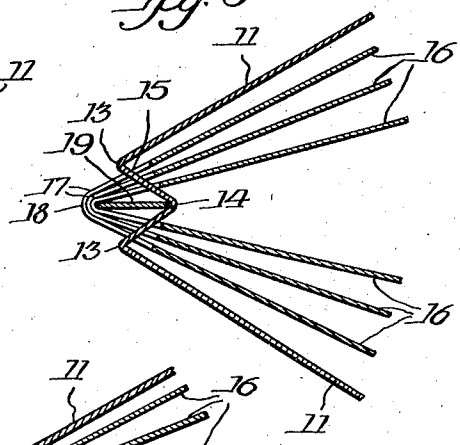


Fig. 9.

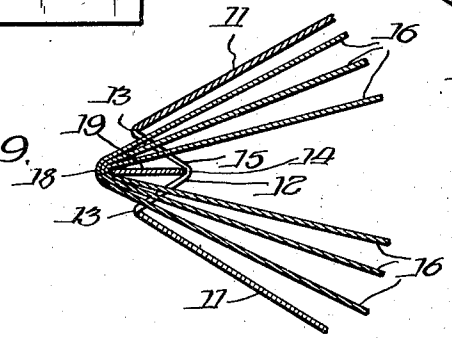


Fig. 10

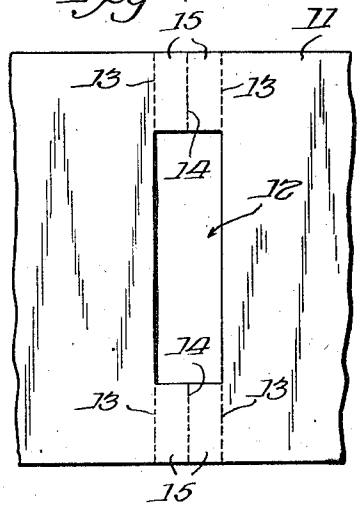


Fig. 11

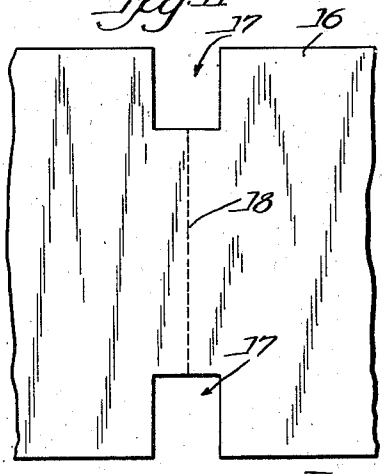
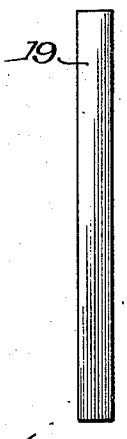


Fig. 12.



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BOOKBINDING

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Fig. 13.

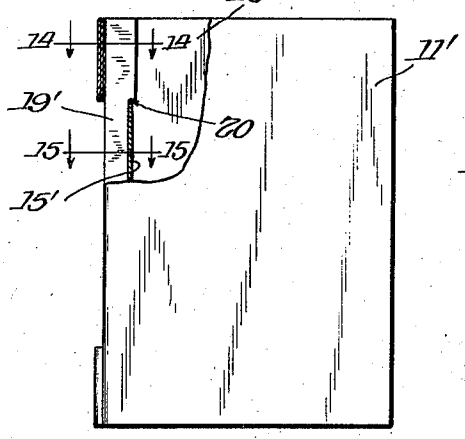


Fig. 14.

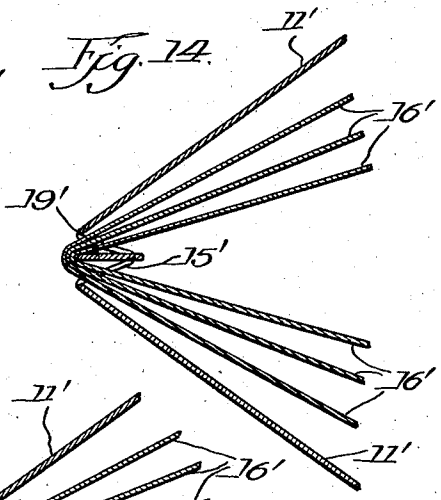


Fig. 15.

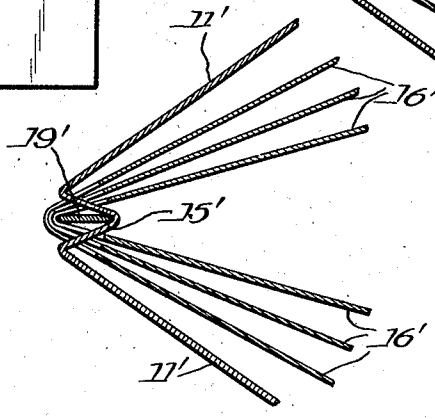


Fig. 16.

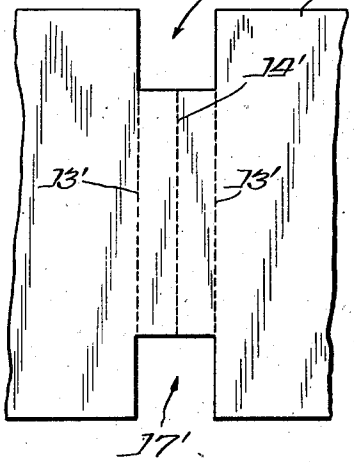


Fig. 17.

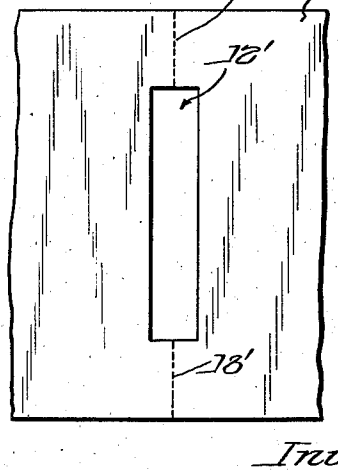
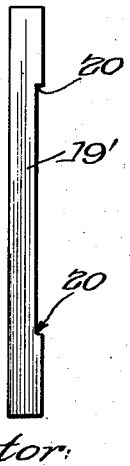


Fig. 18.



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Patented May 21, 1946 2,400,744

UNITED STATES PATENT OFFICE

2,400,744

BOOKBINDING

Henry Einzig, Chicago, Ill., assignor to Stemar Displays Company, Chicago, Ill.

Application February 13, 1943, Serial No. 475,827

2 Claims. (Cl. 129—1)

This invention relates to improvements in book binding. It is, more particularly, an object of the invention to provide a binding device capable of advantageous and economical use in the binding or securing of the pages or sheets of books, magazines, pamphlets, etc., in juxtaposed relation and against displacement.

Furthermore, it is an object of the invention to provide a device of the above stated character, wherein no use, or an absolute minimum of use, of metal fasteners is involved.

Another object of the invention resides in the provision of binding means so associated with the treated leaves, pages or sheets of the same or any thereof may be released for removal without disturbing the bound security of the remaining ones, and if desired, replaced and rebound in the original assembly.

Other objects of the invention will be in part obvious and in part pointed out hereinafter.

In order that the invention and its mode of operation may be readily understood by those skilled in the art to which it appertains, I have in the accompanying drawings and the detailed description based thereupon, set out several embodiments of my invention.

In these drawings:

Figure 1 is a side elevation of a book, pamphlet, or the like, bound according to the invention.

Figure 2 is an enlarged fragmentary transverse section taken on the line 2—2 of Figure 1, looking in the direction in which the arrows point.

Figure 3 is a similar view, but taken on the line 3—3 of Figure 1, looking in the direction in which the arrows point.

Figure 4 is a fragmentary elevation of the cover sheet, prior to folding.

Figure 5 is a similar view of one of the bound or locked double sheets or pages received within the cover sheet, and prior to folding.

Figure 6 is an elevation of one type of locking rod whereby the cover and bound or locked sheets are interconnected.

Figure 7 is a side elevation of a modified form of a book, pamphlet or the like, bound according to the invention.

Figure 8 is an enlarged fragmentary transverse section taken on the line 8—8 of Figure 7, looking in the direction in which the arrows point.

Figure 9 is a similar view taken on the line 9—9 of Figure 7, looking in the direction in which the arrows point.

Figure 10 is an elevation of the type of cover sheet employed in the form of invention disclosed in Figures 7, 8 and 9, prior to folding thereof.

Figure 11 is a similar view of one of the double sheets or pages adapted to be received in or by the cover sheet shown in Figure 10.

Figure 12 is an elevation of the locking means or bar employed to interconnect or interlock the cover sheet and pages or leaves of the form of invention disclosed in Figures 7, 8 and 9.

Figure 13 is a side elevation, with parts broken away and shown in section, of a slightly modified form of locking means or bar for binding or interconnecting the cover sheet and double leaves or pages received thereby.

Figure 14 is an enlarged fragmentary section taken on line 14—14 of Figure 13, looking in the direction in which the arrows point.

Figure 15 is an enlarged fragmentary section taken on line 15—15 of Figure 13, looking in the direction in which the arrows point.

Figure 16 is an elevation of the modified type or form of cover sheet used in the Figure 13 device.

Figure 17 is a similar view of the modified form of double sheets or pages, and

Figure 18 is a side elevation of the modified form of locking bar.

Having more particular reference to the drawings, in connection with which like characters of reference will designate corresponding parts throughout, and referring to the type of invention disclosed in Figures 1–6, inclusive, the numeral 1 designates the cover of the improved invention, the same being preferably, though not necessarily, formed of stock or material somewhat heavier than that from which the double sheets or pages 2 are formed. The cover sheet 1, as shown in Figure 4, is formed with an intermediately disposed and transversely extending slot or way 3, the opposite ends of which, as will be noted upon reference to Figure 4, are terminated inwardly of the opposite transversal edges or marginal portions thereof. The double sheets or leaves 2, it may be noted, are of substantially the same size and shape as that of the cover sheet 1, though if desired, they may be somewhat smaller, for reasons well known and appreciated in the art. Corresponding intermediate portions of each of said double sheets or leaves 2 are formed with marginally opening and inwardly extending slots or ways indicated at 4, the respective depths of which are such as to approximately correspond with the widths of those portions of the cover sheet 1 outwardly of the opposite extremities of the slot or way 3 in the latter. More-

over, the respective widths of these slots or ways 4 approximately correspond to the width of the slot or way 3, aforesaid, formed in the intermediate portion of the cover sheet 1.

In assembling the constituent elements 1 and 2 (the cover sheet 1 and the double sheets or leaves 2) preparatory to their arrangement or binding in book, pamphlet or like formation, as shown in Figures 1, 2 and 3 of the accompanying drawings, the double leaves 2 are arranged in juxtaposed or aligned relation so that their respective marginal opening slots or ways 4 register one with the other. The cover sheet 1 is now arranged over the outermost of the thus juxtaposed double sheets or leaves 2 in such a manner that its intermediate transverse way 3 longitudinally aligns with the sheet or page provided slots or ways 4. Thereupon, those portions of the cover sheet 1 outwardly of the opposite ends of its said slot or way 3, i. e., preferably along the line indicated at 5, are slightly inwardly depressed, causing them to be received in and through the adjacent and registering slots or ways 4 of the double sheets 2. At this time, a locking or connecting rod 6, whose length approximately corresponds to the intermediate width of the cover sheet 1, is longitudinally passed through the inwardly extended or flexed portions of the cover sheet 1, that is to say, through the loops or sleeves thus formed by the flexing or bending of these portions of the cover sheet along the several dotted lines hereinbefore identified by the numeral 5. As the connecting rod 6 is passed through one of the said inwardly extended portions of the cover sheet 1, as clearly indicated at 7 in Figure 2, it is engaged with the adjacent intermediate portion of the innermost double sheet or leaf 2, as clearly shown at 8, whereupon it is engaged by the opposite inwardly flexed or bent intermediate portion of the cover sheet 1, as indicated in Figure 3 by the numeral 9. The connecting rod 6, when in connecting or operative position, is so arranged that its opposite ends are immediately adjacent the opposite transverse marginal portions of the cover sheet 1 and the double sheets 2, though in some instances, and if desired, its opposite ends may be spaced slightly inwardly of these opposite transverse marginal portions.

With the connecting rod 6 thus engaged with the cover sheet 1 and the double sheets 2, the assembly is transversely folded along the aforesaid lines 5 and hence, along the adjacent intermediate portions of the sheets 2, i. e., the dotted line 10 of the sheet 2 shown in Figure 5.

Sheets or leaves 2, bindingly secured as above described, will be assured retention in booklet, pamphlet or like formation or relationship. Moreover, if desired, any particular one or more of such sheets 2 may be readily removed from the assembly merely by disengaging the connecting rod 6 therefrom and from the cover sheet 1—removing the particularly desired sheet or sheets 2 and then reassembling the same in the manner hereinbefore explained.

The connecting bar 6, should it be so desired, may be provided with means whereby to prevent its undesired sliding-like disengagement from the cover sheet 1 and the double sheets 2 by means of various devices well known in the art, viz, the rod may have its opposite ends slightly bent or it may be bent at one or more points throughout its length, thus causing it to have frictional binding engagement with the adjacent and contacted portions of the cover sheet and the double sheets 2 when arranged in operative position with respect thereto.

In Figures 7–12, inclusive, I have shown a somewhat modified form of binding wherein the numeral 11 represents the cover sheet of the book, booklet, magazine, etc., being preferably, though not necessarily, formed of material or stock of a sufficiently heavy gauge or weight to withstand the rigors of use to which it will be subjected. This cover sheet 11 is of size and shape whereby it will provide forward and rearward covers for the book, i. e., when transversely folded intermediately of itself, as indicated in Figure 7. An intermediate portion of the cover or cover sheet 11 is formed with a rectangular transversely disposed slot or way 12, the ends of which terminate in spaced relation to the adjacent and opposite transverse marginal portions of the sheet, as shown in Figure 10. When in use, those portions of the cover sheet between the opposite ends of the way 12 and the adjacent transversal marginal portions of said sheet are inwardly folded along the dotted lines indicated by the numeral 13 and an intermediate parallel fold 14 is also formed in each of said portions but, as shown in Figures 8 and 9, in an opposite direction to that in which the folds 13 are effected. Thus, it will be seen that inwardly disposed substantially V-shaped portions 15 will be provided by the referred to opposite portions of the cover sheet 11, i. e., those portions of the same outwardly of the opposite ends of the transverse way 12. The leaves or pages of a book, booklet, magazine, etc., to be bound according to and through the instrumentalities of my invention, are of double sheet formation, as designated at 16. That is, the length of each of such double sheets is such that when they are folded transversely and intermediately of themselves, they will provide leaves or pages of respective widths such as will be effectually received within or housed by the folded cover sheet 11. The double sheets 16 are formed with marginally opening transversely aligned slots or ways 17 in their respective intermediate portions and the widths of such slots or ways are preferably slightly greater than the widths of the inwardly disposed V-shaped portions 15, above described. Also, the respective depths of the slots or ways 17 approximately correspond with the lengths of these inwardly disposed V-shaped portions 15, hence, permitting of their comparatively snug introduction therethrough in the manner shown in Figure 8.

In assembling the sheets 11 and 16 (the cover sheet and the double sheets or leaves) preparatory to their binding in book, booklet, magazine or like formation, as shown in Figures 7 and 8, the double sheets 16 are arranged in juxtaposed and aligned relationship in order that their respective marginal opening slots or ways 17 will be in registration one with the other, and are then collectively folded transversely of themselves along the line 18. The cover sheet 11, thereupon, is arranged over the outermost of the aligned double sheets 16 in such a manner that its inwardly disposed substantially V-shaped formations 15 are engaged and extend through the aligned ways 17 of said double sheets 16, as clearly shown in Figure 8 of the accompanying drawings. At this time, a locking bar 19, made of cardboard, plastic, etc., is longitudinally passed between the inwardly disposed V-shaped portions 15 and the intermediately folded portions 18 of the double sheets 16. It will be noted

that the length of said locking bar approximately corresponds to the depth of the thus interconnected or bound double sheets 16 and cover 11; also, that its opposite ends are adapted to be arranged adjacent the transversal marginal portions of both the sheets 16 and 11. Due to the fact that the width of the locking bar 19 substantially corresponds to the space between said folded portions 14 and 18, it will be understood that the resulting frictional engagement with such portions will act to releasably, yet firmly, secure it against undesired sliding displacement therefrom.

A book, booklet, magazine or like, having its cover sheet and leaves or pages bound as described in the immediately preceding embodiment of my invention, will be positively retained in assembled or collated relation, although if desired, certain of the double leaves or sheets may be selectively removed therefrom, merely by sliding the locking bar 19 out of engagement with the inwardly disposed V-shaped portions 15 and the intermediately folded portions 18 of said sheets 16. At such time, the desired double sheet or leaf may be removed and the remaining leaves and the cover sheet reassembled in the manner above described.

It may be desirable that the locking bar 19 shall be provided with positive means for preventing its unwarranted or unwanted slidable displacement from engagement with the aforesaid double sheets 16 and cover sheet 11. To this end, I propose that type of modified form of locking bar illustrated in Figures 13 and 18 of the accompanying drawings and designated by the numeral 19'. Also, if desired, the relative formations of the cover sheet 11 and the double sheets or leaves 16, as shown in the Figures 10 and 11, may be reversed, as shown in Figures 16 and 17. In this particular form of the invention, the cover sheet 11' is formed with relatively transversely opposed intermediately arranged marginal opening slots or ways 17', as shown in Figure 16, and that portion of said cover sheet intermediately of the inner ends of said slots or ways 17' is adapted to be inwardly folded along the lines 13' and then reversely folded along the line 14', whereby to provide an inwardly disposed cross-sectionally V-shaped portion 15'. The various double sheets or leaves 16' have their corresponding intermediate portions each formed with transversely disposed slots or ways 12', the opposite ends of which, as will be noted upon reference to Figure 17, terminate inwardly of the opposite transverse marginal portions of their sheets. To assemble the sheets 11' and 16' into book, booklet, magazine or the like form, the sheets 16' are transversely collated and then folded upon themselves along the line 18', which folding, as will be understood upon reference to Figures 14 and 17, will substantially bisect the transversely disposed slots or ways 12'. At this time, the inwardly disposed cross sectionally V-shaped portion 15' of the cover sheet 11' is inserted or passed inwardly through the registering slots or ways 12' of the sheets 16', as is well shown in Figures 15 and 16, hence, interconnecting said sheets 11' and 16'. Thereupon, the locking bar 19' is slidably inserted or passed between the folded outer portions of the sheets 16' and the inner end of the cross sectionally V-shaped portion 15' until its opposite ends are substantially adjacent or aligned with the opposite transversal marginal portions of the cover sheets or double sheets or leaves, as is seen in Figure 13. To prevent undesired sliding movement of the locking bar 19' from such position or engagement, the normally inner longitudinal edge of said bar is inwardly shouldered or rightangularly cut as indicated at 20. The shouldering of the bar 19', as at 20, is so effected that such shoulders will engage over the opposite ends of the inwardly folded portion 14' of the V-shaped portion 15', as clearly shown in Figures 13, 14 and 15, and hence, will securely though releasably lock or secure said bar against undesired sliding movement with respect to the cover sheet and double sheets 11' and 16'.

Manifestly, the construction shown is capable of further modification, and such modification as is within the scope of my claims, I consider within the spirit of my invention.

I claim:

1. In combination, a plurality of longitudinally folded and nested sheets, certain of said sheets having longitudinally disposed aligned and spaced ways formed therein along its fold opening onto its opposite sides, another of said sheets having a longitudinally disposed way formed therein intermediately of its opposite sides along its fold, the opposite ends of which terminate at points thereon in proximity to the inner ends of the spaced ways in the first mentioned sheet, the folded intermediate portion of the first mentioned sheet engaging through the adjacent intermediately arranged way in the second mentioned sheet, and the folded portions of the second mentioned sheet outwardly of its intermediately arranged way engaging through the aligned and spaced ways in the first mentioned sheet in a direction opposite to that of the intermediate portion of said first mentioned sheet, and connecting means passing between and through the engaged portions of said first and second mentioned sheets.

2. In combination, a plurality of longitudinally folded and nested sheets, certain of said sheets having longitudinally disposed aligned and spaced ways formed therein along its fold opening onto its opposite sides, another of said sheets having a longitudinally disposed way formed therein intermediately of its opposite sides along its fold, the opposite ends of which terminate at points thereon in proximity to the inner ends of the spaced ways in the first mentioned sheet, the folded intermediate portion of the first mentioned sheet engaging through the adjacent intermediately arranged way in the second mentioned sheet and the folded portion of the second mentioned sheet outwardly of its intermediately arranged way engaging through the aligned and spaced ways in the first mentioned sheet in a direction opposite to that of the intermediate portion of said first mentioned sheet, and a flat connecting body passing between and through the engaged portions of said first and second mentioned sheets having its flattened sides substantially parallel to the folded sides of said sheets and its opposite edges engaged with and along the adjacent folded portions of the same.

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