

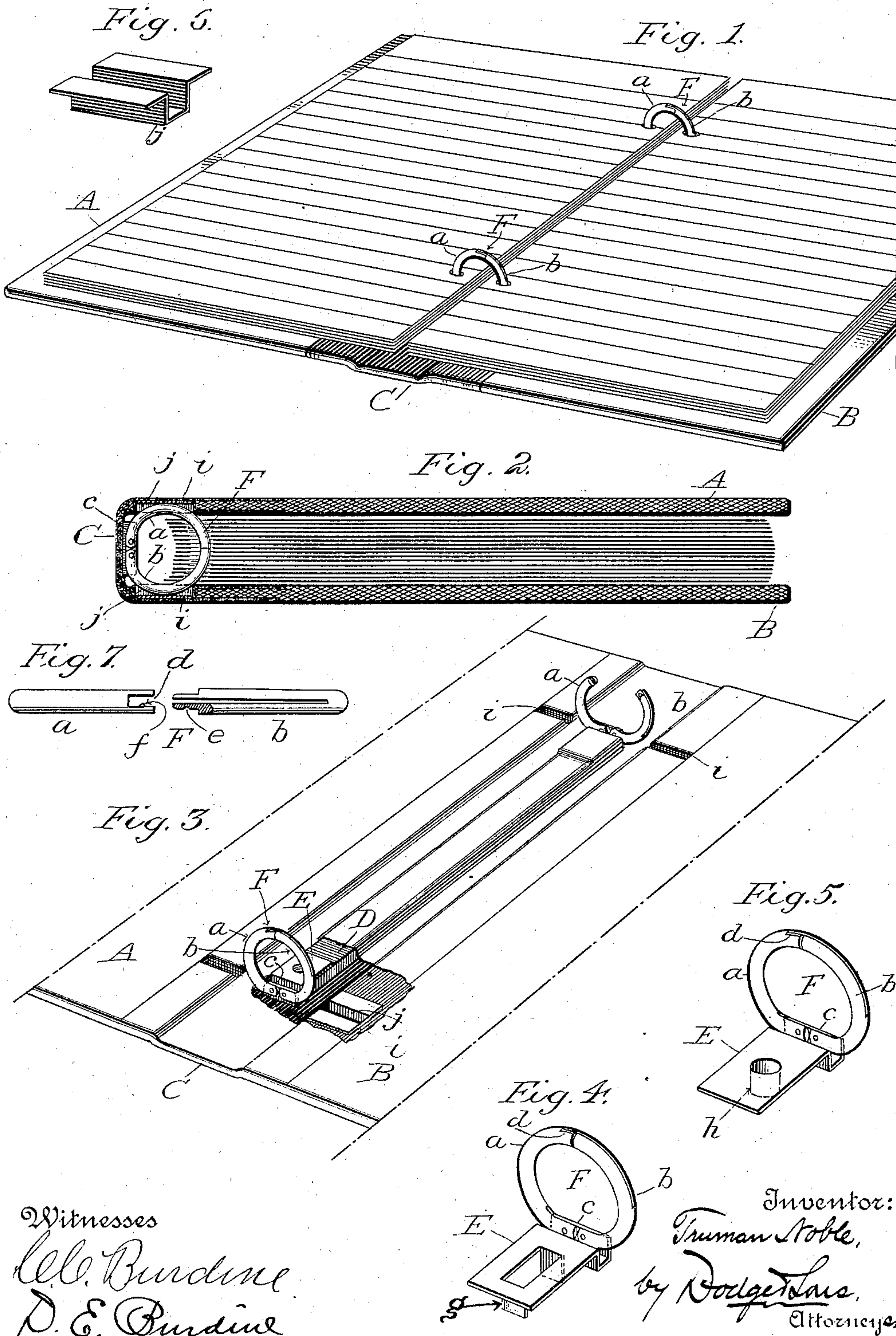
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T. NOBLE.
BINDER FOR LOOSE SHEETS.

(Application filed Sept. 30, 1899.)

(No Model.)



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UNITED STATES PATENT OFFICE.

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BINDER FOR LOOSE SHEETS.

SPECIFICATION forming part of Letters Patent No. 656,568, dated August 21, 1900.

Application filed September 30, 1899. Serial No. 782,194. (No model.)

To all whom it may concern:

Be it known that I, TRUMAN NOBLE, a citizen of the United States, residing at Ithaca, in the county of Tompkins and State of New York, have invented certain new and useful Improvements in Binders for Loose Sheets, of which the following is a specification.

My invention pertains to that class of binders or covers commonly known as "loose-sheet" binders and designed to hold a number of sheets in such manner as to permit the removal of a sheet or sheets in any part of the series without disturbing others.

The objects sought by the present invention are to give to the binder and its contained sheets as nearly as possible the appearance of a permanently-bound book of ordinary form, to adapt the binder or cover to contain as many sheets as are required to fill the space between the two lids or cover-boards, and particularly to cause the sheets to lie perfectly flat upon the boards or covers when the binder or book is opened to the end that notes may be easily and legibly written. The construction by which these results are attained is illustrated in the accompanying drawings, wherein—

Figure 1 is a perspective view of the book or the binder with it contained sheets opened and in condition for receiving notes or permitting notes to be read; Fig. 2, a transverse sectional view taken through one of the sheet-holders or bails; Fig. 3, a view of the binder without any sheets; Figs. 4 and 5, perspective views of one of the sheet-holders or bails and the clip or plate which carries it, the latter being shown in two slightly-varying forms; Fig. 6, a perspective view of one of the metal linings used in the sockets or recesses formed in the cover-boards to receive the bails or sheet-holders; Fig. 7, a view illustrating the manner of interlocking the ends of the bail sections or members.

Loose-sheet binders have hitherto generally been constructed in one or the other of two ways—first, with some sort of impaling or holding device reaching across the space from cover to cover and requiring a bending of the leaves or sheets to cause them to open out parallel with the cover-boards, or approximately so, and, second, with such holding or impaling devices applied to one or the other cover-board

itself. Both these prior constructions present objectionable features in use, which I aim by my present plan to overcome. With this purpose in view I employ the usual cover-boards or lids A and B, connected by an intermediate back-section C, said parts being united by flexible portions or hinges, as in ordinary book covers or binders. The character of the hinges or flexible connections may be varied as occasion requires or fancy suggests, and the back C may be stiffened to any extent desired and either made flat and plain on the outside or finished to give the shape and appearance of common bindings.

Between the lids or covers A B and enough narrower than the intervening space to leave room for the hinges or flexible connections is a strip D, of binders' board or other suitable material, of the same thickness as the covers A B, or thereabout, thus making a practically-uniform surface from one extremity of the cover to the other when the latter is opened out and laid flat, as in Figs. 1 and 3. Prior to placing the strip D in position there is secured to each of its ends a metal clip or plate E, to each of which are pivoted the two member *a* and *b* of a bail or two-part metal loop F, upon which the leaves are held in the manner illustrated in Figs. 1 and 2. These bails or loops are advisably made of metal wire of about the thickness of the strip D and have each a U shape, so that when combined with their ends abutting or interlocking they form rings of approximately-circular form, with a flattened side where they are attached to the clips or plate E. To enable the members *a* *b* of the bails or loops to open widely apart, I prefer to pivot each separately to the upturned end of the clip or plate E, the pivoted end portion of each member being split or having a kerf sawed in it to enable it to straddle said upturned end *c*. The upper ends of said members *a* *b* are adapted to interlock or engage with each other in any convenient manner. In the drawings I have represented a construction which is well adapted to the purpose and which I find it advantageous to adopt in practice. As best shown in Figs. 4 and 5, the member *a* has its end provided with a slot or recess *d* to receive the reduced end of member *b*, which latter is split or slitted for a considerable distance from its reduced

end backward to permit the two branches to be pressed together and to allow them to spring apart again when relieved of pressure. The reduced end portion has a cavity or depression *e* made in the side face of one of its parts to receive a small spur or stud *f*, projecting inward from one of the walls of cavity *d*, as seen in Fig. 7. By grasping the slitted member between the fingers and pressing its parts together the recess *e* is carried clear of spur *f*, and the members *a* and *b* may both be swung back upon their pivots, thus affording a wide opening between them. The members *a* and *b* are of such length that either one will hold all the sheets that can be accommodated between the lids or covers A and B. Hence all or any portion of the entire package or series may be moved to one or the other member at will preparatory to opening or separating the bails or loops. In this way a sheet may be removed from the front or the back of the series, or by dividing the package at any desired point and placing the sheets at one side thereof on one member of the bail and those on the other side thereof on the other bail a sheet or sheets may be removed or inserted from or at any point in the package. This is peculiarly advantageous for students in taking notes upon different topics or of different lectures, enabling them to arrange the same consecutively, though not so taken in the first instance, and also to substitute corrected for incorrect pages.

The manner of securing the clips E to the strip D may be varied considerably. In Fig. 4 I have shown the clip as having ears or spurs *g* struck up out of its body and adapted to pass through or about the edges of strip D and to be bent down thereon to retain the clip in place. In Fig. 5 I have shown the clip as perforated to receive an eyelet or a rivet *h*, by which to attach it to strip D. Any simple mode of attachment may be adopted, those illustrated being found quite satisfactory in use.

It will be seen that if the thickness of the wire or stock of which the bails or loops E are formed had to be deducted from the available sheet-containing space the package of leaves would necessarily be considerably thinner than the space between the lids and the binder would present an unsightly appearance, thicker at the back than at the free edges of the lids with the binder closed. To obviate this, I recess the covers or lids A B, as shown at *i*, and to preserve the edges or walls of the recesses, and particularly to prevent the bails from pushing through the recesses and forming protuberances on the outside, I provide these recesses with metal linings *j*, which may conveniently be made of thin sheet metal in the form shown in Fig. 6. These linings, having lips or flanges to lie upon the inner surfaces of the lids or covers, cannot be forced through and made to project beyond the outer surfaces of the boards constituting the covers A B, and yet they

preserve the form of the cavities and insure a proper seating of the bails therein. By this simple arrangement I overcome a difficulty that has existed in nearly or quite all prior loose-sheet binders designed or adapted to cause the sheets to lie flat when the binder is opened.

The strip D may be glued or otherwise secured to the back C, and the linings *j* may likewise be secured by cement or by spurs or lips bent over the edges or carried through the body of the boards or covers. Suitable linings or facings, of leather, woven fabric, or the like, carried over the strip D and over the lateral flanges or leaves of the linings *j* will further secure them in place. Other means may of course be adopted to the same end.

Prominent and peculiar features of my construction, it will be seen, are: the sinking of the pivotal ends of the bail-sections below the common level of the boards A B and intervening strip D, the production of a practically-continuous surface in common plane by the introduction of said strip D, the recessing of the boards to permit the bails or loops to sink therein to the thickness of the wire or stock of which they are composed, the placing of the bails entirely in or upon the back-section C wholly independent of the boards A and B and equidistant from the free edges thereof, the recessing of the covers or lids to receive the bails, and the lining and strengthening of said recesses to maintain their form and prevent the bails from pressing through the boards.

It will be seen that by reason of the peculiar construction hereinbefore set forth I am enabled to fold either lid or cover at will entirely back flat against or beneath the other lid and to carry the entire body of loose sheets in a compact mass from either lid over to the other when the lids are opened out in common plane or thrown back one against the other. This capability enables a stenographer or other person taking notes to keep the book in a compact shape, to carry over leaves from one to the other side as fast as they are written, and to preserve at all times a perfectly-flat writing-surface with a firm support beneath.

Having thus described my invention, I claim—

1. A loose-sheet binder, comprising a flat back and lids or covers flexibly connected therewith, and separable bails or impaling-wires carried by the back and wholly unconnected with the lids or covers, said bails when closed presenting a retaining portion as great in extent on either side as the portion opposite the back, to permit the entire package of leaves to be carried toward and laid flat upon either lid or cover at will when the lids are opened apart or folded back.

2. A binder for loose sheets, having a rigid back, and lids or covers flexibly connected to said back and in common plane therewith

on their inner and outer faces when opened out flat; and bails or impaling devices carried by the back and unaffected by the opening of the lids or covers into plane with the back, but adapted to be separated at will.

3. In a binder for loose sheets, the combination of a back; lids or covers flexibly connected therewith; a filling-strip applied to the back and serving to bring its inner face into plane with the lids or covers; and bails or impaling-wires presenting when closed a retaining portion as great in extent on either side as the portion opposite the back, whereby the binder is adapted to permit the entire package of sheets or leaves to be thrown into flat-surface contact throughout with the back and either lid at will, when the binder is opened.

4. In a binder for loose sheets, the combination of a back; lids or covers hinged to said back; a filling-piece applied to the back and serving to bring its inner face into plane with the inner faces of the lids or covers; and bails or impaling devices carried by the back and wholly independent of the lids or covers, said bails presenting when closed a retaining portion as great in extent on either side as the portion opposite the back, whereby all the contained sheets or leaves may be thrown into flat-surface contact with either lid at will when the binder is opened.

5. In a binder for loose sheets, the combination of a back; bails or impaling devices carried thereby; and lids or covers flexibly connected to the back and recessed to permit the bails to extend into them beyond the plane or face of the main body of the cover, substantially as described and shown.

6. In a binder for loose sheets, the combination of a rigid back; lids or covers flexibly connected thereto; a filling-piece applied to the back to bring its inner face into plane with the lids or covers; and curved bails or loops carried by said filling-strip and each comprising two members adapted to be engaged and disengaged at their proximate ends, said bails when closed presenting a retaining portion as great in extent on either side as the portion opposite the back, to permit the entire package of leaves or sheets held by them to be carried into flat-surface contact with either lid at will, substantially as set forth.

7. In a binder for loose sheets, the combination of two lids or covers and an intervening back to which said covers are hinged having its inner and outer faces flush or in plane with the corresponding faces of the lids or covers when the latter are opened out flat; bails or impaling devices carried by the back and wholly independent of the lids or covers; and recesses formed in the lids or covers to

accommodate the bails and permit the impaled leaves or sheets to come into surface contact with the lids or covers throughout.

8. In combination with the back C and lids or covers A, B, flexibly connected therewith and provided with recesses *i*, metal linings *j* applied to said recesses; and bails or impaling devices carried wholly by the back-section C and adapted to enter said recesses when the binder is closed and to withdraw therefrom when the binder is opened, without thereby opening the bails or impaling devices.

9. In a binder, the combination of a back; lids or covers flexibly connected thereto; clip or plate E carried by the back and having an upturned end; and interlocking impaling members *a*, *b*, independently pivoted to the upturned end of said clip E, the bail formed by said interlocking members presenting a retaining portion as great in extent on either side as the portion opposite the back, substantially as described and shown, whereby the leaves impaled thereon are adapted to lie flat upon the back and lids when the latter are opened outward.

10. The herein-described impaling or binding device, comprising a clip or plate E having an upturned end and provided with ears or spurs *g*, and wires or members *a*, *b*, independently pivoted to the upturned end of the clip and having their ends adapted to interlock, substantially as described and shown.

11. In a binder for loose sheets or leaves, the combination of a metal clip or plate having an upturned end; two curved bails each slotted and independently straddling said upturned end, and independently pivoted thereto, said bails being adapted to receive and hold loose sheets or leaves and to have their free ends engaged one with the other, substantially as and for the purpose set forth.

12. A binder comprising a back-section C provided with impaling or holding devices capable of movement and of separation independent of the back to permit the sheets to be divided or to be carried wholly to either side of the point of separation; and lids or covers flexibly connected with the back-section, but wholly independent of the impaling devices and provided with recesses into which the latter may enter when the cover is closed and from which they may withdraw without separation or opening.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

TRUMAN NOBLE.

Witnesses:

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HOWARD COBB.