(No Model.)

L. KOSBY.

DETACHABLE AND INTERCHANGEABLE LEAF BINDING FOR BOOKS.

No. 561,670. Patented June 9, 1896.

Fig. 1.

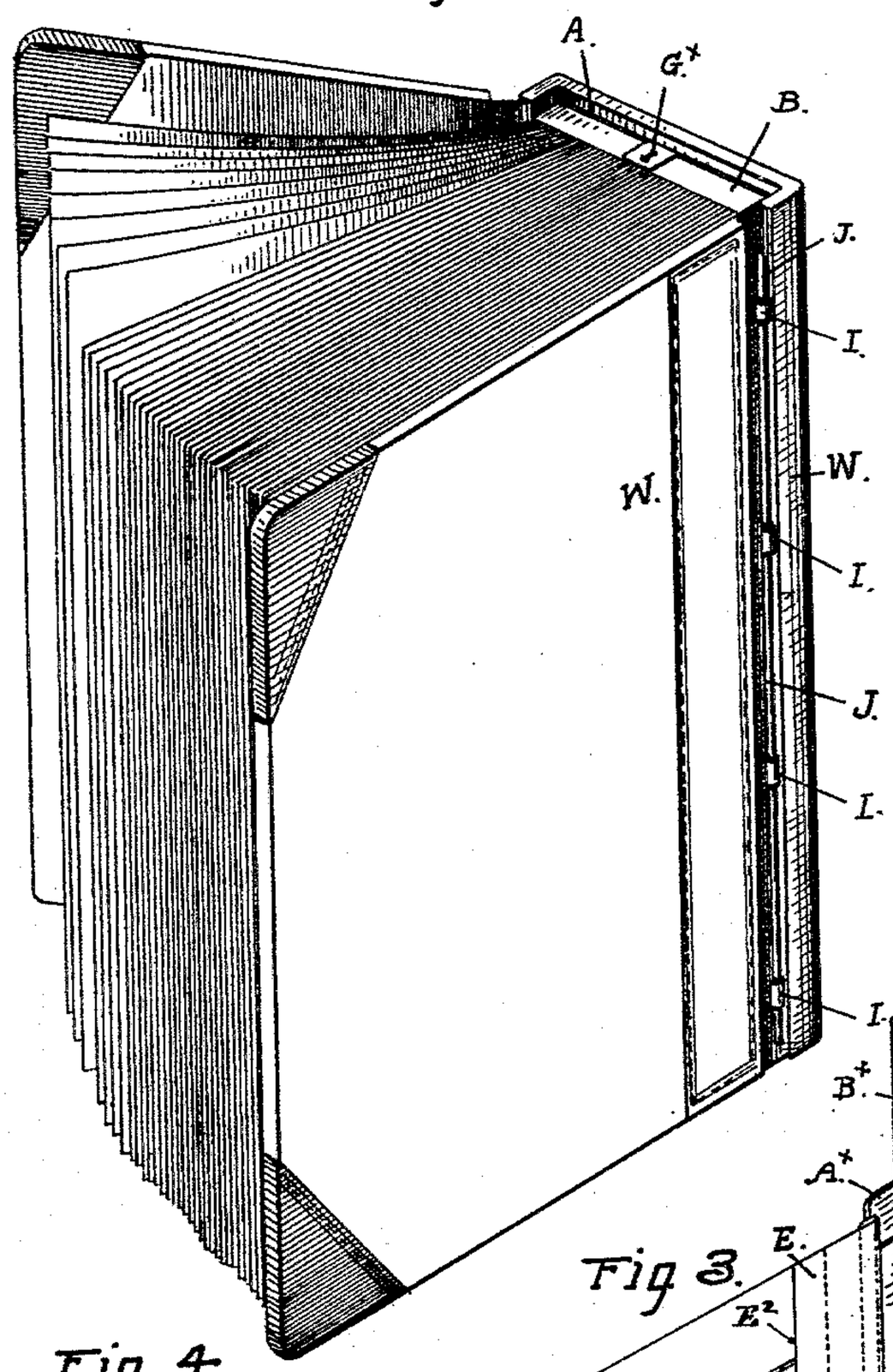


Fig. 2.

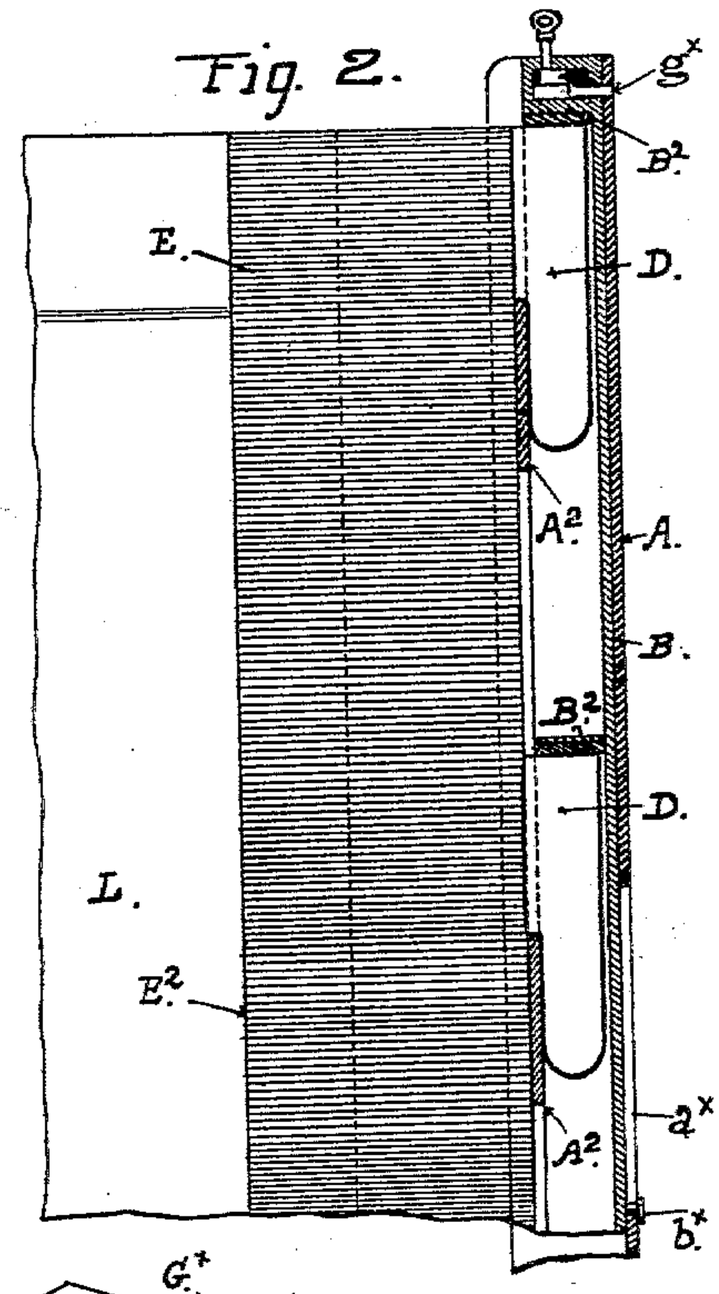
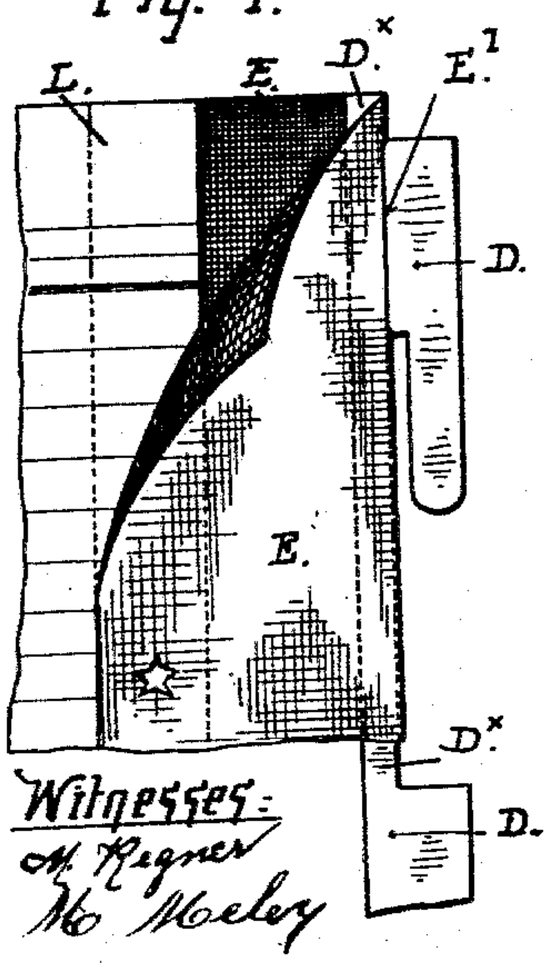


Fig. 3.

Fig. 4.



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UNITED STATES PATENT OFFICE.

LEON KOSBY, OF SAN FRANCISCO, CALIFORNIA, ASSIGNOR TO MATILDA KOSBY, OF SAME PLACE.

DETACHABLE AND INTERCHANGEABLE LEAF-BINDING FOR BOOKS.

SPECIFICATION forming part of Letters Patent No. 561,670, dated June 9, 1896.

Application filed January 20, 1896. Serial No. 576,204. (No model.)

To all whom it may concern:

Be it known that I, LEON KOSBY, a citizen of the German Empire, residing in the city and county of San Francisco and State of California, have invented certain new and useful Improvements in Detachable and Interchangeable Leaf-Bindings for Books, of which the following is a specification.

My invention relates to improvements made in bindings for account-books, mercantile books, record-books, and albums; and it has for its object to produce a book in which any leaf can be loosened and detached at will without disturbing the remaining leaves, for the purpose of removing leaves or of rearranging the leaves in different order, or of changing the location of one or more leaves, or of inserting a new leaf, and in addition thereto all the leaves are securely locked and confined in place in the binding and cannot be removed surreptitiously or tampered with.

My said improvements are designed more especially for constructing and manufacturing ledgers and other mercantile books; but the same will be found applicable as well to albums, record-books, and files of all kinds wherein it may be necessary or convenient to have the leaves or sheets separately detachable and removable without disturbing the other leaves or sheets, and the whole set or number of leaves so attached and confined together between the covers; also, that no leaf or sheet can be improperly detached or removed.

To such ends and object my invention consists in a novel binding for leaves and sheets comprising, essentially, stiff tongues or hooks on the back edge of each leaf or sheet and a back composed of a fixed or stationary frame having cross-bars at intervals apart horizontally across the front to receive and engage the hooks or tongues of the leaves, and a sliding frame having limited movement in the stationary frame and provided with cross-bars which are arranged to engage the hooks or tongues on the leaves from above when the same are placed in position between the cross-bars of the stationary frame and those of the sliding frame, whereby the said hooks or tongues are held and confined in the said back or binding by moving the sliding frame into place within the other stationary part. Combined with these two parts composing the back is a locking device operated by a key, by means of which the said two parts are locked together and cannot be opened or separated to release the leaves or sheets except by using the key. The said parts composing the back are permanently fixed to the cover of the book or are attached to covers by locking devices that allow the same cover to be used for several different backs or bindings.

The nature of my said improvements and the manner in which I proceed to construct, apply, and produce the same to secure the desired end and object of my invention is fully explained in the following description, reference being had therein to the accompanying drawings, that form part of this specification.

In the said drawings, Figure 1 is a perspective view of a ledger or account-book embodying my said improvements. Fig. 2 is a vertical section, on an enlarged scale, through the parts composing the locking back or binding, said section being taken in a plane parallel with the leaves when the book is closed, the said parts of the binding being locked together and one of the leaves being shown in position. Fig. 3 is a view, on an enlarged scale and in perspective, showing the parts which compose the back or binding in the position that allows the leaves to be detached and taken out. Fig. 4 is a side view, in detail, of a portion of a leaf or sheet, showing the manner of securing the locking tongues or hooks to the back edge of the sheet.

A indicates the part which I have herein termed the "stationary frame," and B the sliding frame. These two parts are best made of sheet metal, and the part B is fitted to slide longitudinally in the part A to a limited extent, but is attached thereto and prevented from being separated or drawn entirely out by means of a stop $b^{\times}$ on the one part working in a slot $a^{\times}$ in the other part, as seen in Fig. 2. These two parts compose the back before mentioned. The turned-up sides $A^{\times}$ of the outside part of this back extend beyond the perpendicular sides $b^{\times}$ of the inside sliding part B, and the distance between these side pieces is determined by the thickness of the book to be made or the number

of sheets or leaves that the back is required to hold, and in like manner the length of the same part A is governed by the length of the rear edges of the leaves, so that in the manufacture of the book the dimensions of these parts are governed by the thickness and number and size of leaves which the book is to contain.

A^2 A^2 indicate cross bars or strips fixed to the side pieces of the stationary frame and extending across the front of the sliding frame, which is fitted to slide smoothly within the stationary back and behind these bars. The stiff hooks or locking-tongues D D, secured on the back edge of each sheet or leaf, as shown in Figs. 2 and 3, are fitted to these bars or strips, and by means of one or more of these hooks each leaf is attached to the back. Said hooks or tongues are formed on the edges of a narrow strip $D^\times$, and to this strip the sheet or leaf L is attached in such a strong and secure manner that the leaf cannot be separated from the strip without tearing it or so mutilating it that the same is clearly apparent on inspection and cannot be concealed. The manner in which I attach the sheet or leaf to the said locking-strip is clearly shown in Figs. 2 and 4.

A strip of fine strong fabric, such as silk or fine linen, is slitted at intervals perpendicularly down the middle, and through these slits E′ the hooks or tongues D are inserted, so that the strip $D^\times$ is brought up against the fold in the fabric, after which the strip is folded over upon itself, and the back edge of the sheet or leaf is then inserted in the fold and is secured by gluing the two sides E E of the strip closely together upon themselves and upon the sheet or leaf inserted between them. The edges E^2 of such strip should overlap the leaf the proper distance to insure a strong hold on the same. This strip of fabric extends from top to bottom of the sheet or leaf to produce a strong and flexible hinge, from the back of which the hooks or locking-tongues project at intervals apart along the edge and in the plane of the leaf.

B^2 B^2 are cross-bars extending horizontally across the sliding frame B, to which they are secured, or of which they are a part, and these cross-bars are fixed at such distances apart that by the vertical movement of such frame in the stationary part when the hooks D of a leaf are inserted in position in the back, as shown in Fig. 3, the said cross-bars are brought down closely against the top of the hooks by the movement inward of the sliding frame. The lock G on one end of the sliding frame with its bolt arranged to engage a socket or recess *h* in the stationary part locks the sliding frame in the stationary part, the keyhole $G^\times$ being easily accessible from the end of the frame.

As thus constructed and applied these parts and devices operate as follows: When the sliding part B is drawn out, as represented in Fig. 3, the two series of cross-bars A^2 B^2 are separated to such an extent that the locking-tongues D on the leaf or sheet can be inserted in position between the fixed cross-bar and the movable cross-bar, after which the part B is returned to place with the part A, by which movement all the bars B^2 are brought down closely upon the tops of the tongues D, as shown in the sectional view, Fig. 2, and the two parts are then secured by the lock G. The bars B^2 are faced with rubber, leather, or some similar elastic or yielding material that when pressed against the edges of the tongues D will hold them firmly without bending them.

This back or leaf binding can be permanently secured in and be made a part of the covers or binding proper of the book, and it can also be secured in place between the covers by means of fastening devices that will allow the covers to be detached at will, so that when one set of leaves or sheets is filled or used it can be removed with the back A B, and all the leaves thereof can be kept together. Another back with a set of new leaves can then be placed in and fastened between the same covers.

I have shown in Figs. 1 and 3 a simple and efficient means of securing the back A B in place between the covers of the binding. A number of eyes or staples I I, projecting from the side of the part A are arranged in line at intervals apart, and to these a long rod or wire J is fitted tightly for insertion from one end through all the said loops.

Apertures are made in the sides of the binding W in line with the eyes on the backs and at corresponding distances apart, so that by inserting the eyes through such apertures after the back A B is placed between the covers the rod J can be passed through the eyes on the outside.

It should be mentioned that the tongues D on the sheets or leaves can be made of any material having proper strength and stiffness to engage with and be held by the locking parts of the back without yielding or bending under the ordinary strains that the leaf is called upon to bear.

The number of tongues attached to a leaf is determined by the length of such leaf; but as a leaf can in no case be detached and removed until every tongue on its back edge is first released from the back it will be seen that so far as security is concerned a single tongue serves to connect a leaf to the back and prevent it from being improperly removed. Half-sheets and sheets of different lengths or sizes can thus be locked up together in the same back.

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

1. A binding for books consisting of projecting tongues on the rear edges of the leaves or sheets, and a back composed of a stationary part fastened in the back of the covers, and having bars to engage said catches, a mov-

able part adapted to confine and hold said tongues in place, and a locking device adapted to fasten said stationary part and movable part of the back together.

2. The combination, with separate leaves or sheets having locking-tongues secured to and along the back edges thereof; of the back or binding composed of a stationary frame having cross-bars to engage said locking-tongues, a movable frame adapted to confine and hold the said locking-tongues when inserted in the back, and a locking device operating to secure said stationary and movable frames together and prevent them from being separated.

3. A leaf having a set of locking-tongues secured to the back edge by a flexible strip and projecting from such edge in the plane of the leaf; in combination with a back or binding composed of a stationary frame having cross-bars that engage and hold said locking-tongues, and a movable frame constructed to confine in place said locking-tongues and prevent them from being detached when said stationary frame and movable frame are closed together.

4. The combination, with a leaf or sheet having stiff locking-tongues on the edge thereof and a flexible strip interposed between each of said tongues and the leaf, forming a connecting hinge portion between one and the other; of the locking back or binding composed of a stationary frame provided with cross-bars to engage and confine the said tongues, and a movable frame adapted to slide within said stationary frame and to confine the said tongues when they are inserted in the binding and prevent them from being withdrawn; and a means on the said parts of the frame to lock the movable part in the stationary part, substantially as described.

5. The herein-described book, the leaves whereof are separately movable and interchangeable comprising leaves having stiff locking-tongues on the back, the flexible strips securing said tongues to the leaves and forming hinge connections between leaf and locking-tongue, the stationary frame secured between the covers by fastenings that allow said covers to be removed, the movable frame sliding in said stationary frame, the cross-bars in said frames arranged to engage said locking-tongues when inserted in place between said bars and a locking device on one part adapted to secure said parts together in closed position to confine the locking-tongues and prevent them from being separated.

In testimony that I claim the foregoing I have hereunto set my hand and seal.

LEON KOSBY. [L. S.]

Witnesses:
M. REGNER,
EDWARD E. OSBORN.