No. 809,557. PATENTED JAN. 9, 1906.

E. G. DUMAS.

LOOSE LEAF BINDER.

APPLICATION FILED SEPT. 11, 1905.

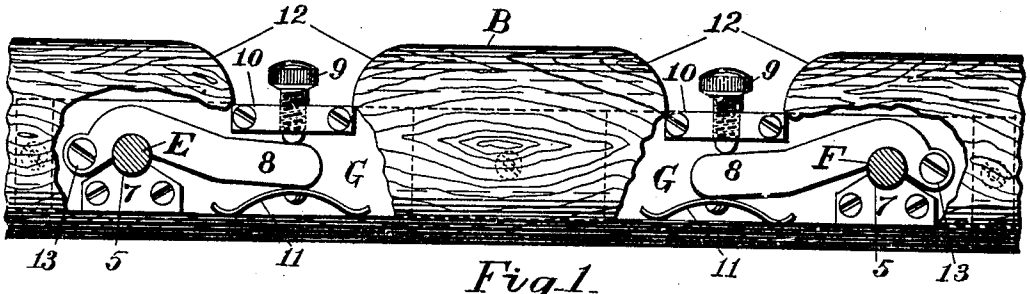

Fig. 1.

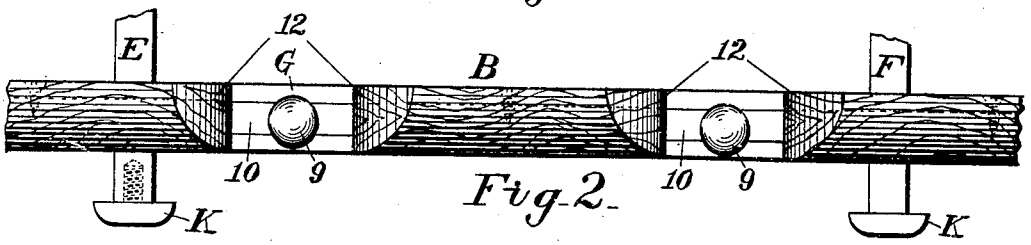

Fig. 2.

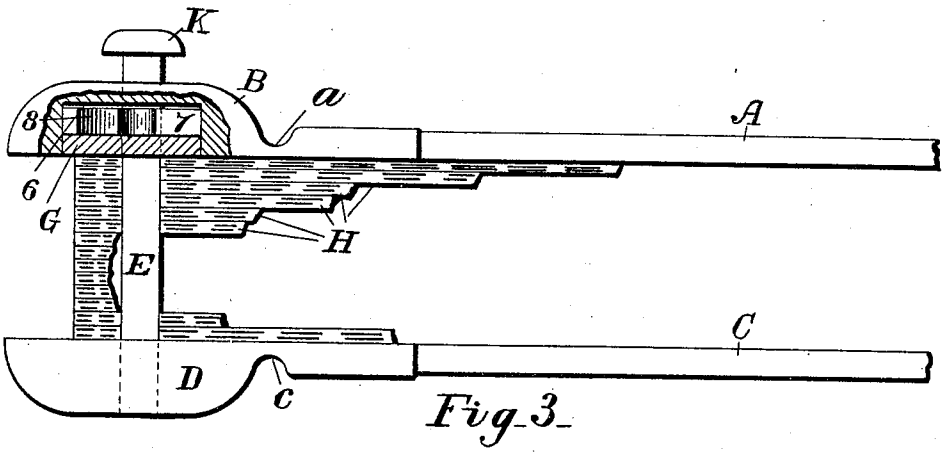

Fig. 3.

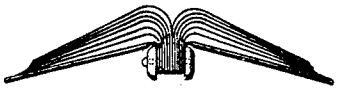

Fig. 4.

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LOOSE-LEAF BINDER.

No. 809,557. Specification of Letters Patent. Patented Jan. 9, 1906.

Application filed September 11, 1905. Serial No. 277,885.

To all whom it may concern:

Be it known that I, ERNEST G. DUMAS, a citizen of the United States, residing at Lowell, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Loose-Leaf Binders, of which the following is a specification.

My invention relates to that class of binders used with what are known as "loose-leaf systems" of ledgers, account-books, &c., in which the leaves are inserted or removed at will and when inserted are held in place in book-form.

It relates particularly to the means of holding and clamping the covers of such books in place.

In the type of book to which my invention is applicable the lower cover is of heavy material and near the back rise two or more posts, either solid or sectional. The loose leaves are passed over the top of these posts or are so cut as to pass by on both sides of them. The top cover is also heavy and is provided with orifices adapted for the passage of the posts. To hold the covers and interposed leaves together, the top cover must be capable of being pressed very firmly down upon the leaves, and in that position it must be securely fastened to the posts. It must also be easy to detach. This has been done by various forms of clamps. As the complete article is an account or other class of book which is to be used on a desk and must be slid around a great deal, it is necessary that it should have no projections or rough edges to catch.

To accomplish the above-named objects, the working parts are usually placed inside the upper cover and are operated by a detachable key or wrench which is passed through a suitable hole therein. This key is being constantly lost and is objectionable on that account.

The objects of my invention are to provide a positive and secure binder and one which can be operated without a detachable key and one on which are no projections or rough parts.

In the accompanying drawings, Figure 1 is a sectional view from the top of the back of the top cover with the leather removed and the wood partly broken away. Fig. 2 is a view from the back of the top cover, the leather being removed. Fig. 3 is a view from the end of a book, the leaves and part of the top cover being shown in section. Fig. 4 shows the way the book usually rests when open.

A is the flat part of the top cover, usually of pasteboard and connected with the binder member B by a leather hinge *a*.

C is the flat part of the bottom cover, usually of pasteboard and connected with its binder member D by a leather hinge *c*. (See Fig. 3.)

The binder members B and D are preferably made of wood and are covered with leather, usually of the same piece as hinges *a* and *c*.

From the bottom member D rise at right angles two or more binding-posts E F, which may each be of one piece or of the sectional type. These are firmly fixed in member D. Top member B is recessed lengthwise, and in the recess 6, which is so cut away as to receive the working parts, is secured clamp-plate G, which carries the clamps and attachments. Top member B and clamp-plate G are pierced by orifices 5 5 to allow posts E F to pass entirely through them. I use one complete clamp for each post.

To plate G is secured by screws or otherwise the fixed jaws 7 7 of my clamps. These fixed jaws conform to the surface of posts E and F and form an extension of the orifices 5 5, through which said posts pass. On the other side of orifices 5 5 are the levers 8 8, which form the movable jaws of my clamps and are pivoted on pivots 13 13 on plate G. Near the pivots 13 13 the levers 8 8 are recessed to conform to the surface of posts E F. These jaws are operated as clamps by means of set-screws 9 9, which pass through blocks 10 10, attached to plate G by screws or otherwise, and bear against the long arm of levers 8 8. To release the levers 8 8, I provide the half-elliptic springs 11 11, which are attached at their center points to the ends of levers 8 8 and at their ends bear against the side of recess 6 in member B, as shown in Fig. 1. Member B is cut away sufficiently to form depressions at the points 12 12, whereby set-screws 9 9 are dropped entirely below the back edge, and so presents a smooth surface to the desk or table on which the book rests. (See Fig. 4.)

Fig. 3 shows the way the book usually rests when closed. If turned over, the rubber caps K protect the desk from the ends of posts E F. These caps K K are preferably screwed into the ends of posts E and F. Fig. 4 shows the way the book usually rests when open

and shows why the set-screws are located in recesses 12 12.

The operation is as follows: The lower cover C D is laid flat by itself with posts E F up, leaves H are put in place, set-screws 9 9 are loosened, top cover A B is put in place on top of the leaves H and pressed down forcibly with the hands, set-screws 9 9 are tightened, thus clamping jaws 8 8 and 7 7 with posts E and F between them, and thus the whole book is held firmly together. The levers and set-screws allow tremendous pressure to be exerted on the jaws which hold posts E F, and there is no danger of slipping or accidental turning of the set-screws, as they are entirely inside recesses 12 12. Besides this, as each post has its own clamp the pressure on each can be regulated independently, and any fine adjustment or balancing of parts is thereby avoided.

What I claim as my invention, and desire to cover by Letters Patent, is—

1. In a loose-leaf binder, a lower cover comprising a binder member, posts arising from the lower binder member, an upper cover comprising a binder member, a recess in the upper binder member, a plate secured in the recess, orifices in the upper binder member and in the plate for the passage of said posts, fixed jaws, and levers forming clamps therewith about the posts, springs at the ends of the levers, set-screws bearing against the levers, and depressions in the upper binder member to receive the set-screws.

2. In a loose-leaf binder, a plate, a fixed clamp-jaw, a pivoted clamp-jaw coöperating therewith, a spring carried by the lever, and a set-screw adapted to operate the lever, combined with a binder member recessed for the plate with depressions for the set-screws, and orifices for the posts, a lower binder member, and posts rising therefrom as described.

3. In a loose-leaf binder, a lower cover, and posts rising therefrom, combined with an upper cover including a clamp-plate with orifices for the posts, clamp-jaws fixed thereto, clamp-jaws pivoted thereto, set-screws, and half-elliptic springs adapted to operate the pivoted jaws, rubber caps for the posts, and a binder member recessed for the plate, cut away for the set-screws and pierced for the posts as described.

4. In a loose-leaf binder, an upper binder member and a lower binder member; posts arising from the lower binder member; openings in said upper binder member through which said posts pass; and means contained in the upper binder member for clamping said binder members comprising for each post, a fixed jaw, a lever-jaw pivoted at one end near said post, a half-elliptic spring carried by the other end of the pivoted jaw, a set-screw bearing against the free end of the pivoted jaw in opposition to the half-elliptic spring, and a depression in the upper binder member to receive said set-screw.

5. In a loose-leaf binder; a lower binder member; a plurality of posts arising therefrom; a complementary upper binder member comprising a recess for a plate, openings for the passage of the posts, and depressions for set-screws; combined with a plate fitted into the recess, a plurality of fixed jaws arranged to adjoin said openings and to conform to the surface of the posts, a plurality of lever-jaws pivoted at one end near said openings and shaped to conform to the surface of the posts and with an elongated free arm, a plurality of half-elliptic springs one centrally carried by the end of the long arm of each pivoted jaw whereby its ends bear against the side of the recess, a plurality of set-screws carried by said plate and adapted to bear against the side of the long arm of the pivoted jaw opposite to the half-elliptic springs; and rubber caps for said posts as described.

In testimony whereof I affix my signature in presence of two witnesses.

ERNEST G. DUMAS.

Witnesses:
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ALLAN M. DUMAS.