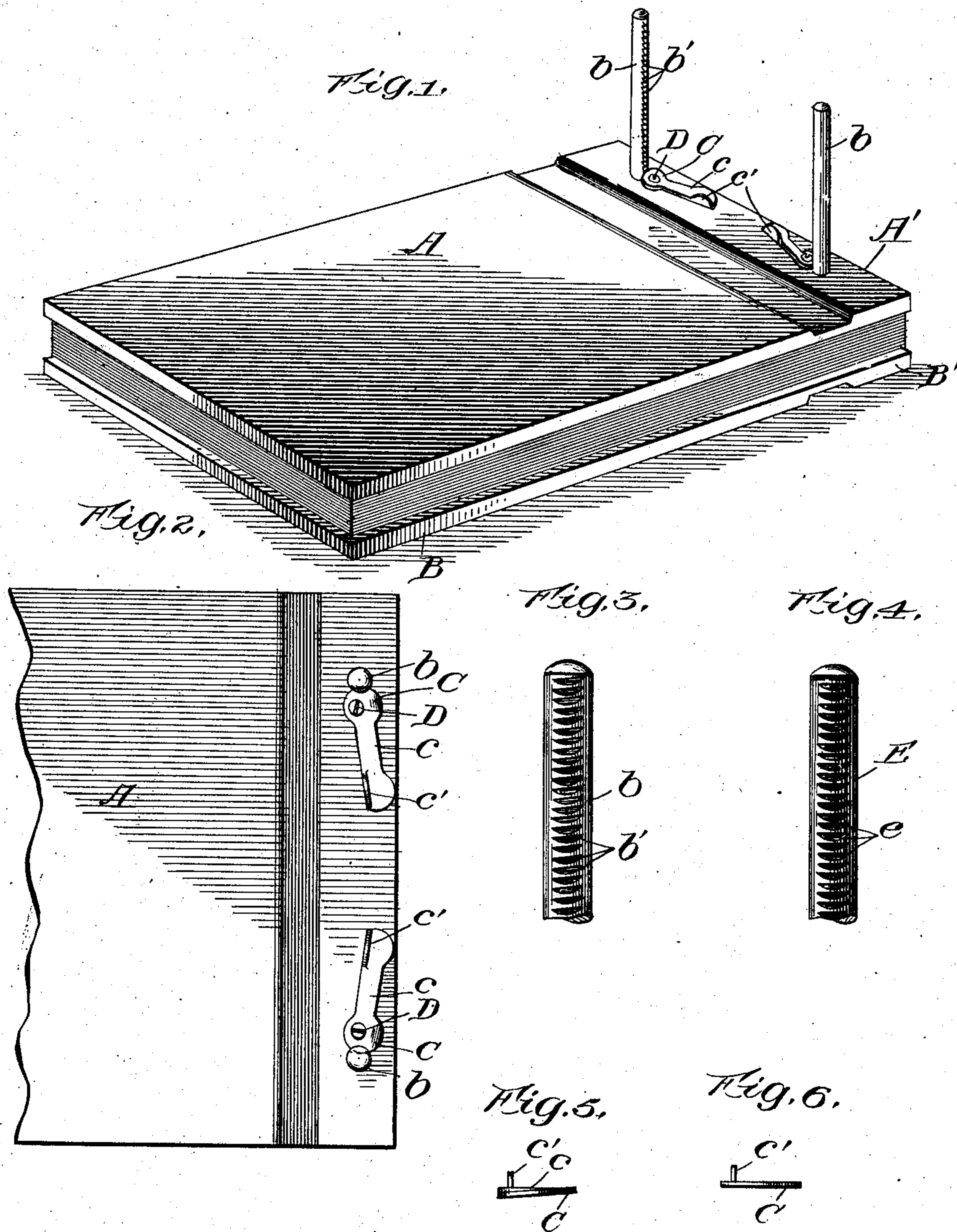


No. 827,461.

PATENTED JULY 31, 1906.

J. S. McDONALD.
LOOSE LEAF BINDER.
APPLICATION FILED JAN. 26, 1905.



Witnesses:
O. M. Heimich
E. K. Lundy.

Inventor:
James S. McDonald.
By Frank D. Thomson
Attys.

UNITED STATES PATENT OFFICE.

JAMES S. McDONALD, OF CHICAGO, ILLINOIS, ASSIGNOR TO J. S. McDONALD COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

LOOSE-LEAF BINDER.

No. 827,461.

Specification of Letters Patent.

Patented July 31, 1906.

Application filed January 26, 1905. Serial No. 242,765.

To all whom it may concern:

Be it known that I, JAMES S. McDONALD, a citizen of the United States, and a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Loose-Leaf Binders, of which the following is a full, clear, and exact specification.

My invention relates to binders adapted to hold together suitable loose sheets of paper, and it is particularly useful in the shipping departments of mercantile establishments where bills, invoices, &c., can be temporarily filed away quickly and neatly and without much trouble.

My improvement permits of the bills or other printed records being removed separately or in numbers from the book and others being inserted *ad libitum* without having to take the book entirely apart, and this is performed entirely by manual effort without the necessity of using screw-drivers, lock-keys, or wrenches, as is the custom in the loose-leaf books now on the market. This I accomplish by the means hereinafter fully described and illustrated, and as more particularly pointed out in the claims.

In the drawings, Figure 1 is a perspective view of my invention, showing the binder in closed position. Fig. 2 is a top plan view of the same. Fig. 3 is a detail view of one of the vertical locking-posts drawn to an enlarged scale. Fig. 4 is a similar view of a modified form of post. Fig. 5 is an end view of the engaging face of a locking-cam used in connection with the post shown in Fig. 3. Fig. 6 is a similar view of a cam used in connection with the post shown in Fig. 4.

Referring to the drawings, A and B represent, respectively, the top and bottom covers of a loose-leaf binder, which are near the back of the book flexibly secured to their respective binding-plates A' and B', which latter are formed of metal and have inserted between them the loose leaves of the matter to be temporarily bound.

Secured to the lower clamping-plate in any suitable manner are two or more vertical posts *b b*, that arise in a plane parallel to each other and at right angles to the bottom plate and are provided with a series of transverse serrations or corrugations *b' b'*, that are arranged, preferably, in a slightly-inclined direction. These posts pass through suitable

guide-openings in the top plate, located in alinement therewith, and extend above said plate a short distance. The loose leaves of matter to be inserted between said clamping-plates are preferably perforated and slotted in the usual manner on their binding edges and are slipped over or on said posts and inserted between said clamping-plates A' and B' and then compressed as far as possible and securely locked between the same by means of suitable cam-locks C C. These cam-locks consist of pivoted circular disks having radial handles *c c*, that are stamped out of the same piece of metal of which the disk is made and a short distance from said disk are provided with a suitable upturned lip *c'*. The disks have eccentrically-arranged pivotal openings therein, through which a suitable pivot-screw D passes and fastens the same to the top of the upper clamping-plate at a point contiguous to the vertical posts and in alinement with a vertical plane struck through the respective centers of posts *b b*. The disk forming these cams is suitably bent or deflected upward at its edge, as shown in Fig. 5 of the drawings, so that the engaging face thereof will come in contact with the inclined serrations at the same angle therewith and force the binding-plates together. As the plates from which the cams are struck will have certain yielding action when forced into engagement with the binding-posts, the force exerted by the slightly-displaced metal will be such as to effectually prevent creeping of the cams when in engagement with the shoulders of the posts. The modified cam shown in Fig. 6 is used in connection with the post illustrated in Fig. 4 and has its surface entirely flat. When the loose leaves have been compressed to their desired position, the handles are turned until the faces of the cams come into contact with and engage the serrations on the vertical posts, and when they have been tightly engaged the clamping-plates will be securely held and prevented from further separation. These serrations being inclined cause the clamping-plates to still further compress and bring the loose matter closer together than could ordinarily be done by manual pressure.

In Fig. 4 I show a modified form of post E which is similar to the post shown in Fig. 3, except that the serrations *e* are arranged in a true horizontal plane. While I do not de-

sire to be limited to any particular form of serration, still I wish it understood that either form may be used without departing from the spirit of my invention.

5 What I claim as new is—

1. A loose-leaf binder comprising top and bottom clamping-plates; vertical posts arising from said bottom plate provided with inclined serrations and passing through open-
 10 ings in said top plate; and a locking-cam for each post comprising eccentrically-pivoted plates having deflected edges rising above the planes of the disks each having a handle projecting therefrom arranged mediate said
 15 posts in the same vertical plane therewith and adapted to come in direct contact with and engage the serrations on said posts and lock the same.

2. A loose-leaf binder comprising top and
 20 bottom clamping-plates; posts arising from said bottom plate provided with inclined serrations; openings in said top plate through which said posts pass; and an eccentrically-pivoted locking-cam for each post arranged
 25 mediate said posts having an inclined engaging edge and adapted to come in direct contact with and engage the serrations on said posts and lock the same.

3. A loose-leaf binder comprising top and
 30 bottom clamping-plates; vertical posts arising from said bottom plate provided with in-

clined serrations and passing through open-
 ings in said top plate; and a locking-cam for
 each post comprising eccentrically-pivoted
 plates having deflected edges rising above the
 35 planes of the disks each having a handle projecting therefrom arranged mediate said
 posts in the same vertical plane therewith
 which handle near its outer end is provided
 with an upturned lip and said cam being
 40 adapted to come in direct contact with and engage the serrations on said posts and lock
 the same, the engaging face of the cam being
 deflected and inclined at an angle to the plane
 of the disk forming said cam.

4. A loose-leaf binder comprising top and
 45 bottom clamping-plates; serrated posts arising from the bottom plate; the said top plate having openings to receive the posts, cams eccentrically pivoted in operative relation to
 50 said posts and comprising plates having deflected edges rising above the planes of the disks and adapted to engage the serrated posts.

In testimony whereof I have hereunto set
 my hand this 20th day of January, A. D.
 1905.

JAMES S. McDONALD.

Witnesses:

FRANK D. THOMASON,
 E. K. LUNDY.