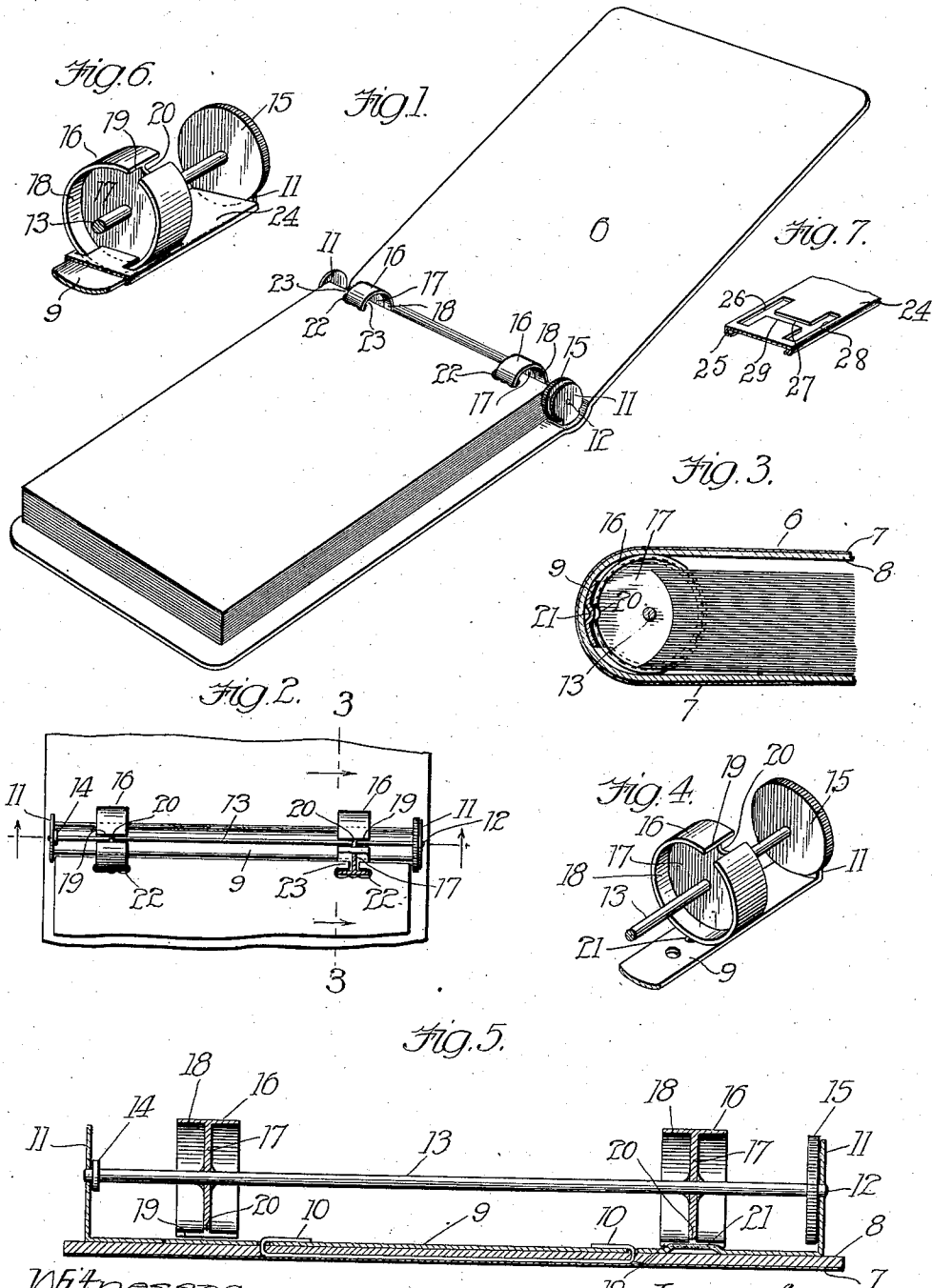


E. E. BUCHAN.
 LOOSE LEAF BINDER.
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1,027,523.

Patented May 28, 1912.



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UNITED STATES PATENT OFFICE.

ELMER E. BUCHAN, OF CHICAGO, ILLINOIS.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ELMER E. BUCHAN, a citizen of the United States, residing at Chicago, county of Cook, State of Illinois, have invented certain new and useful Improvements in Loose-Leaf Binders, of which the following is a specification.

My invention has in view more especially memorandum and similar smaller books which may be carried in the pocket, but, as will appear from the following specification, it is not limited thereto, but is applicable to a large variety of books, varying greatly in size and use. Books of this character consist of a cover or binder and a sheaf or packet of leaves provided with perforations or slits which are engaged by retaining means usually secured to the back of the cover. Difficulty has been experienced heretofore either in inserting the leaves in the retainer and securing them in position or in holding them in position after they have been engaged by the retaining means, and at the same time providing for their ready removal either in regular order, as for filing, or singly as occasion may require.

It is the object of my invention to provide a simple device of this character in which the above difficulties are met and overcome, and which may be manufactured at moderate cost.

With this object in view, my invention consists in the construction set forth in the following claims, and a preferred form of which is shown in the accompanying drawings and described in the specification. It will be understood, however, that the specific disclosure is for the purpose of illustration only, and the invention is not limited thereto, as many modifications will suggest themselves which come within the scope of the claims.

In the accompanying drawings illustrating the preferred form of embodiment,—Figure 1 is a perspective of a loose leaf binder with cover in open position; Fig. 2 is a fragmentary view in plan, one of the securing devices being shown partially in section; Fig. 3 is an enlarged section on the line 3—3 of Fig. 2; Fig. 4 is an enlarged perspective of a detail; Fig. 5 is a central section of the retaining device; Figs. 6 and 7 are perspective fragmentary views illustrating a slight modification.

The cover or binder 6 may be of any usual

or preferred form, and, as shown, consists of a facing 7 and a stiffening member 8. To the latter is secured a sheet metal strip 9 by means of a staple 10. At either end the sheet metal strip is bent up to form a standard 11 of substantially circular form, which is perforated at 12 to receive the end of a shaft or rod 13, the outer ends of which may be slightly upset to secure it against displacement. At one end the rod is provided with a small collar or annulus 14 rigidly secured thereto, and at the other with a small finger wheel or disk 15, the edge of which is knurled to facilitate its rotation by the fingers. At suitable points along the rod or shaft are arranged the retaining members proper, and in the present instance I have shown two such members 16, 16 consisting each of a central disk or web 17, 17 surrounded by a ring or annulus 18, 18 which preferably extends equally upon opposite sides of the disk, though this is not essential. Each ring is split or open at one point in its periphery, as at 19, for the insertion of the loose leaves, and the web is slightly notched, at 20, in registry with the slit to facilitate this operation. The web forms a support for the flange, and, as shown, is imperforate, but obviously may be of skeleton or other suitable form. Opposite or in register with one of the retaining devices a rib 21 is struck up from the support 9, and is adapted to enter the slit in the ring when the latter is turned to bring the slit and rib opposite each other. The structure is sufficiently resilient to permit the ring to be turned notwithstanding this engagement, when sufficient force is brought to bear by the fingers turning the disk 15. During this rotation the rib acts as a brake to hold the ring in any position to which it may be adjusted.

The loose sheets are provided at suitable points along one edge with slits 22, 22 for receiving the flanges of the retaining devices from the slits to the edge of the paper to accommodate the central disks or webs. It will be obvious that in order to insert the sheets in the binder, the openings in the flanges, which, it should be stated, are in alinement with each other, are turned away from the support which normally closes them, and the leaves inserted therein, a number of leaves being inserted at the same time, depending upon the width of the slot or opening. When a sufficient pack

of leaves has been engaged by the flanges, the retaining devices are turned until the rib upon the support engages the slot in the flange which is in register therewith. The retaining devices are thus secured with the openings closed by the support, and the binder is then ready for use. The leaves will be firmly held in position as long as required, yet they may be easily removed, either singly or in groups, by turning the retainers to open position. If it is desired to remove a single leaf located intermediate the top or bottom of the pack, it may be readily detached by a pull, the retaining ears of the sheet in engagement with the flanges yielding for this purpose.

In the modification shown in Figs. 6 and 7 the support 9, shaft 13, retaining member 16, and manipulating disk 15 are as described in connection with the form of device shown in the remaining figures. I have added, however, a cover strip 24 which is superposed upon the strip 9, and the edges of which are turned down and under, as shown at 25 (Fig. 7) to embrace the lateral edges of the strip 9. The cover strip is cut out in the form of the letter H, as at 26 (see particularly Fig. 7), to receive the retaining members, the webs of which occupy the transverse slots 27, and the flanges the side slots 28, as will be readily understood from an inspection of Fig. 6. The package of leaves rests upon this cover plate when in use, and the tongues 29 of the latter extend within the flanges and cover the slots therein when the latter are in the closed position.

What I claim is:

1. In a loose leaf binder, a support, a rotary shaft, a ring axially mounted thereon and having a slit for engaging loose leaves, and means engaging in the slit for locking the ring against rotation.

2. In a loose leaf binder, a support, a ring rotatively mounted in the support, and having a slit to receive loose leaves, and a web within the ring.

3. In a loose leaf binder, a support, a disk mounted thereon for rotation, an annular member surrounding the disk and having an opening for the insertion of loose leaves.

4. In a loose leaf binder, a sheet metal support, a disk rotatively mounted thereon

and having a slotted flange, and a rib struck up from the support to engage the slot in the flange.

5. In a loose leaf binder, a sheet metal support adapted to be secured to the back thereof, end standards struck up from the support, a shaft journaled in the standards, disks mounted upon the shaft, annular flanges surrounding the disks and provided with openings for the insertion of loose leaves.

6. In a loose leaf binder, a sheet metal support, end standards struck up therefrom, a shaft journaled in the standards, a finger wheel for rotating the shaft, a plurality of disks rigidly secured to the shaft, annular flanges surrounding the disks and projecting on opposite sides thereof and having openings for the insertion of leaves.

7. In a loose leaf binder, a support, a disk revolubly mounted thereon, a flange on the disk having a transverse opening therein, a series of leaves each having a slot and a notch receiving the flange and disk respectively.

8. In a loose leaf binder, a supporting strip 9 having standards at the ends thereof, a shaft journaled in the standards, disks upon the shaft having transversely slitted flanges, a cover plate secured to the strip 9 and projecting within the flanges on the disks to cover the slots therein when the retainers are in closed position.

9. In a loose leaf binder, a support, a shaft rotatively mounted thereon, a ring having an opening for the insertion of the leaves and rigidly mounted on the shaft in combination with leaves each having a slot and a notch from the slot to the margin of the leaf, the slots being positioned to engage the ring and the notches to receive the connection from the ring to the shaft whereby the ring may be completely rotated notwithstanding the presence of the leaves.

10. In a loose leaf binder, a support, a rotary shaft mounted thereon, split rings carried by the shaft, and means connected to the support and bearing upon one of the rings and adapted to secure the latter against accidental displacement.

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