Jan. 5, 1926. 1,568,403

H. J. HOLST

LOOSE LEAF BINDER

Filed Dec. 24, 1923

Fig. 1.

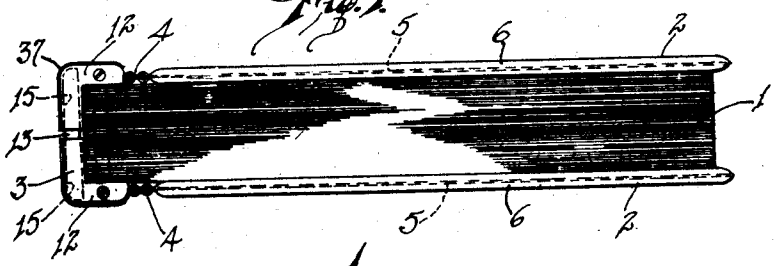


Fig. 2.

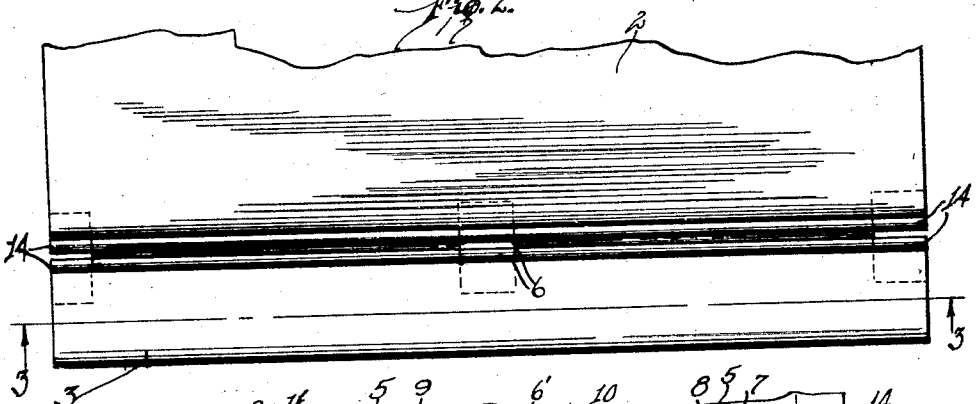


Fig. 3.

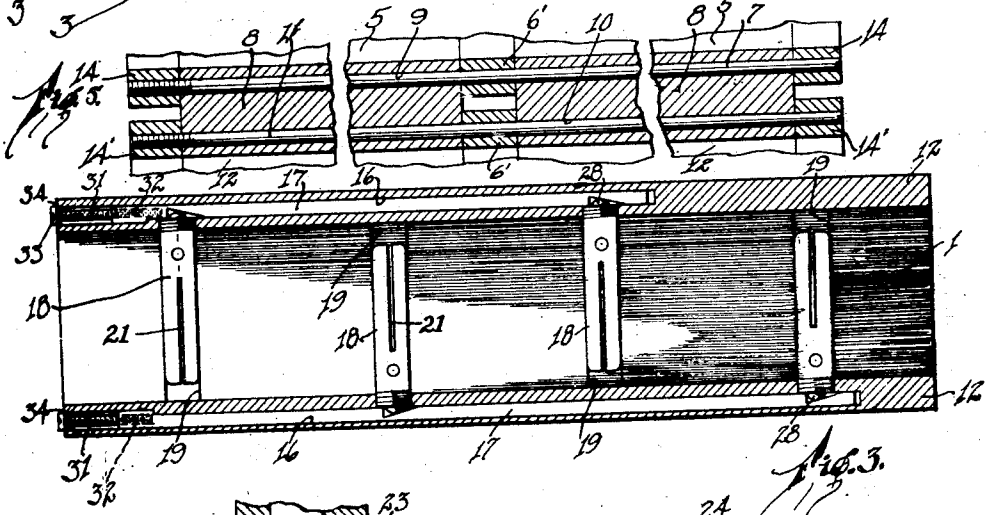
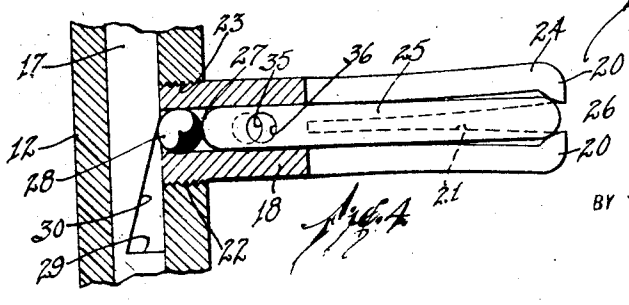


Fig. 4.



INVENTOR
H. J. Holst
BY Munn & Co.
ATTORNEYS

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UNITED STATES PATENT OFFICE.

HANS J. HOLST, OF HILDRETH, NEBRASKA.

LOOSE-LEAF BINDER.

Application filed December 24, 1923. Serial No. 682,452.

To all whom it may concern:

Be it known that I, HANS J. HOLST, a citizen of the United States, and a resident of Hildreth, in the county of Franklin and State of Nebraska, have invented a new and useful Improvement in Loose-Leaf Binders, of which the following is a full, clear, and exact description.

My invention relates to improvements in binders, and it consists in the combinations, constructions, and arrangements herein described and claimed.

An object of my invention is to provide a binder in which the covers are secured to the back by a double hinge, thereby permitting the covers to assume a flat position when opened.

A further object of my invention is to provide a binder which has novel means for gripping each separate leaf in the binder, whereby the leaves are held in adjusted position.

A further object of my invention is to provide a device of the type described which has novel means for securing the covers to the leaves, this same means engaging with the separate leaves so as to secure them in adjusted position.

A further object of my invention is to provide a device of the type described in which the cover may be readily removed without the use of a key so as to permit new leaves to be added to the device.

A further object of my invention is to provide a binder in which the back is telescopic so as to automatically fit the ledger whether it has a large number of leaves or a small number.

A further object of my invention is to provide a device of the type described in which the covers and the back are provided with a material that will not scratch the surface upon which the book is placed, such as a desk or the like.

Other objects and advantages will appear in the following specification, and the novel features of the invention will be particularly pointed out in the appended claims.

My invention is illustrated in the accompanying drawings, forming part of my invention, in which—

Figure 1 is an end elevation of the device,

Figure 2 is a plan view of a portion of the device,

Figure 3 is a section along the line 3—3 of Figure 2,

Figure 4 is an enlarged sectional view of one of the leaf engaging members, and

Figure 5 is an enlarged sectional view of a portion of the hinge.

In carrying out my invention I provide a loose leaf binder which consists of a number of leaves 1, covers 2, a back 3, and hinges 4. The covers 2 comprise a plate 5 that is covered with a rubberized composition 6 that may be molded upon the plate 5 while in its plastic state. The plate 5 carries three sleeves, 6 and 14—14 (see Figure 5) which are adapted to receive a screw 7. Double sleeves 8 extend between the sleeves 6 and 14—14. One of the bores 9 of these sleeves receives the screw 7, while the other bore 10 receives a screw 11. The back 3 consists of angle-shaped members 12 and a plate 13. The angle-shaped members 12 carry sleeves 6′ and 14′ that are disposed opposite from the sleeves 6 and 14 and are adapted to receive the screw 11. It will appear from this construction that the cover 2 has a double hinge connection with the angle plates 12. The cover 2 can therefore assume a flat position when opened. I have found that in a single hinge connection between the cover and the back, that the cover is not likely to assume a flat position when opened.

The backing 3 as heretofore stated, consists of angle plates 12 and a plate 13. It will be noted from Figure 1 that the angle plates 12 have recesses 15 therein, these recesses receiving the plate 13. The plate 13 is adapted to extend between the angle plates 12 even though the angle plates are disposed a considerable distance from each other.

The angle plates 12 also carry the locking means which secures the covers to the leaves 1 and which also engages with each leaf so as to hold it in position. Figures 3 and 4

clearly show this means and it will be noted from Figure 3 that the angle plates 12 have bores 16 therein in which bars 17 are slidably disposed. The bars 17 are identical with respect to each other except that one of the bars is longer than the other. Binding posts 18 are carried by the angle plates 12, two being carried by one plate and two by the other, in the present showing of the device. It is obvious that as many of the posts 18 as desired may be used. The posts 18 that are secured to one of the angle plates 12 are staggered with respect to the posts that are carried by the other angle plate 12. The leaves 1 of the ledger have openings 19 therein that receive the posts 18 therein.

In Figure 4 I have shown an enlarged sectional view of one of the posts. It will be noted from this figure that the post 18 is cut at 20 and 21, these cuts being disposed at right angles to each other and extending the greater part of the length of the posts. The lower end of the post is threaded as shown at 22 and is received in a threaded bore 23 of the angle plate 12. In this way, the post is rigidly secured to the angle plate 12.

The cuts 20 and 21 provide the post 18 with fingers 24 that are adapted to be sprung outwardly so as to engage with the wall of the openings 19 in the leaves 1. The means for springing the fingers 24 outwardly consists of a rod 25 that is rounded at its ends 26 and 27. A ball bearing 28 is disposed in the bore of the post 18 and bears against the inner end of the rod 25. It will be noted that the rods 17 have recesses 29 therein, these recesses having cam edges 30. In Figure 3 I have shown the rod 17 disposed in such a manner with respect to the posts 18 that the balls 28 are received in the recesses 29. In Figure 4, however, I have shown the rod 17 moved so as to dispose the ball 28 in the bore of the post 18 instead of the recess 29. When the ball 28 is moved from the recess 29 into the bore of the post 18, it moves the rod 25 so as to cause the rod to spring the fingers 24 outwardly.

In Figure 3 I have shown the means for actuating the rods 17. This means consists of screws 31 that are received in threaded bores 32 of the rods 17. The screws have an annular groove 33 which receives an inwardly extending flange 34 of the angle plates 12. The flange 34 prevents longitudinal movement of the screw 31 with respect to the angle plate 12. It will therefore be apparent that a rotation of the screw 31 will move the rod 17.

From the foregoing description of the various parts of the device, the operation thereof may be readily understood. It will be noted that the posts 18 are removably secured to the angle plates 12. The posts 18 are provided with openings 35 and the rods 25 are provided with openings 36. When the rods are in their normal position, the openings 35 and 36 are aligned with each other, whereby a nail or other small instrument may be inserted through the openings and turned so as to screw the posts 18 into place. If the number of leaves in the ledger are increased, longer posts may be provided. In this manner the thickness of the binder may be increased at will.

When it is desired to insert a number of leaves into the binder, or remove a number, it is merely necessary to actuate the screws 31 so as to release the posts 18, whereupon either of the covers may be removed from the binder. The additional leaves may now be disposed in place, and the posts of the removed cover again inserted in the openings. A rotation of the screws 31 will now cause the fingers 24 to engage with the walls of the openings 19 in the leaves, whereupon the leaves are held in adjusted position and the cover is also secured to the binder. The binder may be enlarged as much as the plate 13 will permit. If it is desired to enlarge the ledger beyond this point, it is merely necessary to provide a plate 13 of a greater width and to provide longer posts 18.

The construction of the cover 2 and the provision of a leather backing 37 to the back 3 prevents the book from scratching the surface upon which it is disposed. It will be seen from a binder of this kind that new leaves may be added to the binder and old leaves removed therefrom in a very short time, and it will also be noted that the posts 18 provide a novel means for engaging with all of the leaves of the binder. The posts 18 not only hold the leaves of the binder in place but also secure the covers 2 to the leaves. The device is extremely simple in operation, and is not likely to get out of order easily.

I claim:

1. A loose leaf book comprising a plurality of leaves having aligned openings therein, covers having posts adapted to enter said openings, and means for causing said posts to grip said leaves, whereby the leaves are held together and the cover is secured to the leaves.

2. A loose leaf book comprising a plurality of leaves having aligned openings therein, covers having posts that are split at their ends, and means for flaring the split portions of said posts outwardly so as to grip the leaves.

3. In a device of the type described a leaf-gripping member comprising a split body portion, means slidably disposed in said body portion for expanding said body portion, and manually controlled means for actuating said first named means.

4. In a device of the type described a leaf-gripping member comprising a split body portion, an expanding member slidably disposed in said body portion and adapted when moved in one direction to expand the body portion, and manually controlled means for moving said expanding member so as to cause said member to expand the body portion.

5. A loose leaf book comprising covers, loose leaves disposed between said covers, said leaves having aligned openings therein, binding posts carried by said covers and being received in the aligned openings, and means for causing said posts to engage with said leaves to secure the covers to the leaves, whereby the covers and the leaves are secured together as a unit.

HANS J. HOLST.