No. 776,703. PATENTED DEC. 6, 1904.

F. M. TURCK.

LOOSE LEAF BINDER.

APPLICATION FILED APR. 14, 1903.

NO MODEL. 2 SHEETS—SHEET 1.

Fig. 1.

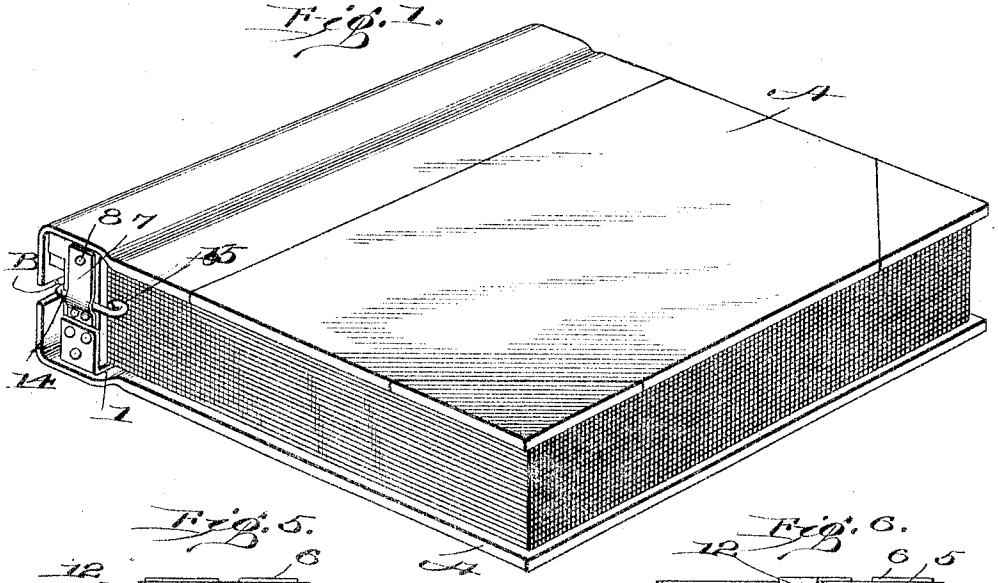


Fig. 5.

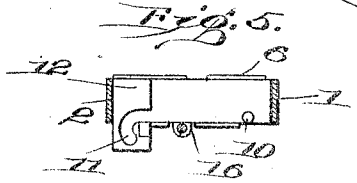


Fig. 6.

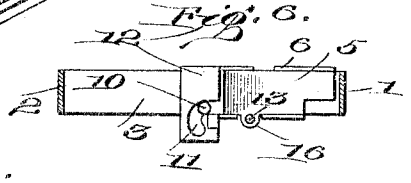


Fig. 2.

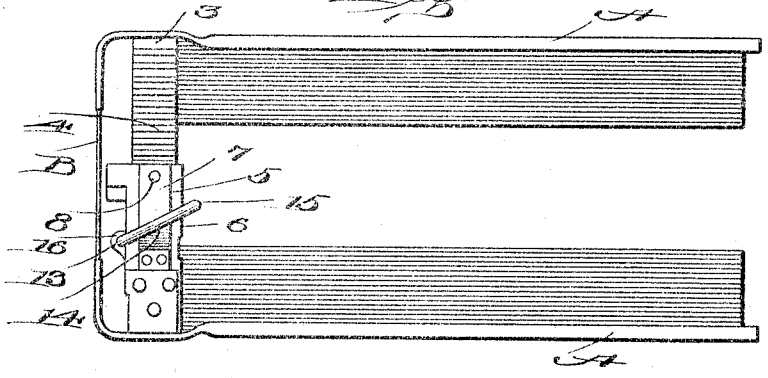
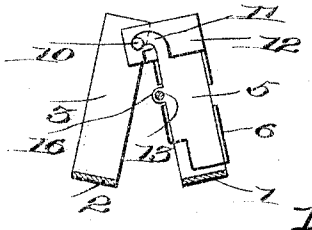


Fig. 7.



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No. 776,703. PATENTED DEC. 6, 1904.

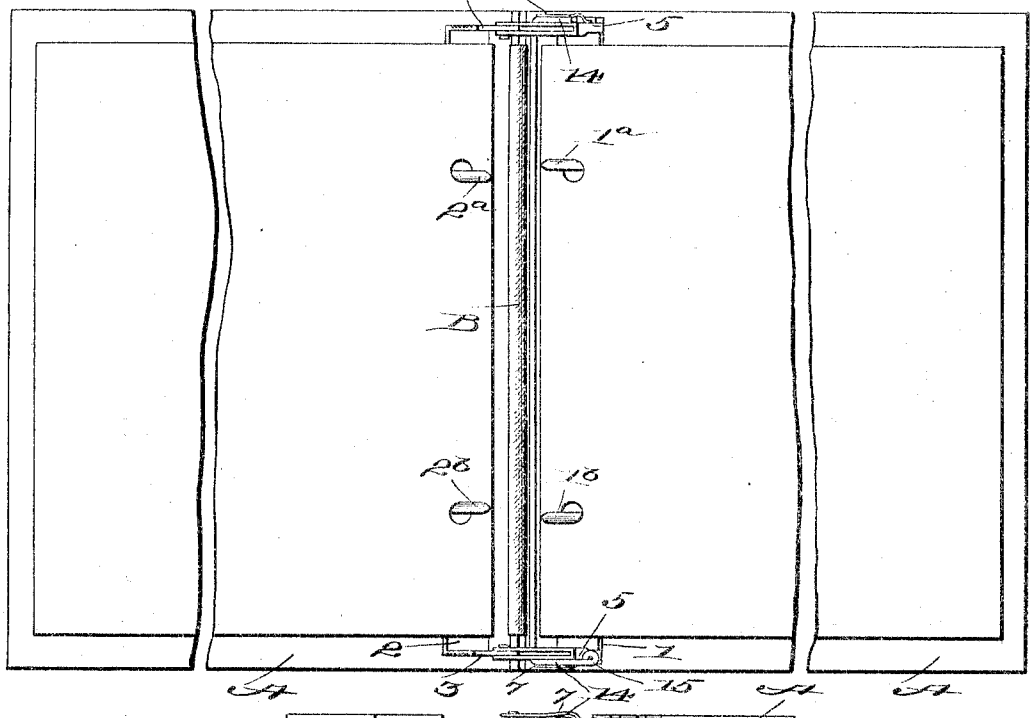
F. M. TURCK.

LOOSE LEAF BINDER.

APPLICATION FILED APR. 14, 1903.

NO MODEL. 2 SHEETS—SHEET 2.

Fig. 3.



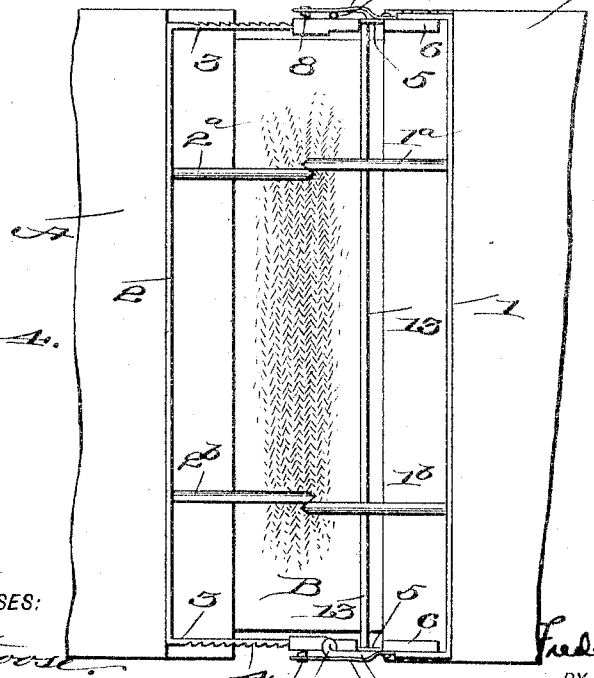


Fig. 4.

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No. 776,703. Patented December 6, 1904.

UNITED STATES PATENT OFFICE.

FREDERICK M. TURCK, OF NEW YORK, N. Y.

LOOSE-LEAF BINDER.

SPECIFICATION forming part of Letters Patent No. 776,703, dated December 6, 1904.

Application filed April 14, 1903. Serial No. 152,508. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK M. TURCK, residing in the borough of the Bronx, city of New York, in the county of Westchester and State of New York, have invented certain new and useful Improvements in Loose-Leaf Binders, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to loose-leaf ledgers or binders of the class in which the leaves or sheets are held in a binding-frame in such manner as to permit removal of a leaf or leaves and the addition of others, as desired; and its object is to increase the simplicity and efficiency of binders of this class.

The invention accordingly consists in the features of construction, combinations of elements, and arrangement of parts, which will be hereinafter fully set forth, and the novel features thereof pointed out in the claims.

In the accompanying drawings, which illustrate an embodiment of my invention, Figure 1 is a view in perspective of a ledger or book constructed in accordance with my invention. Fig. 2 is a side elevation of the same, showing the parts therein in different adjustment from that of Fig. 1. Fig. 3 shows the book open with the ends of the binding-posts free, so as to permit of ready removal or addition of leaves. Fig. 4 is a plan of the framework in one of its adjusted positions with the leaves removed. Figs. 5, 6, and 7 are sectional details of the framework, showing various positions assumed by the parts thereof during the manipulation of the binder in opening the same and throwing it to the position shown in Fig. 3.

Similar reference characters refer to similar parts throughout the several views.

The framework of the binder, to which are preferably attached the covers A A, said covers being connected by a collapsible or flexible back piece B, is composed of the longitudinal strips 1 and 2. Integral with the ends of the longitudinal strip 2, or attached thereto in any suitable way, are the arms 3 3, provided at their outer sides with teeth or corrugations 4. Suitably attached to the ends of the longitudinal strip 1, as shown, or integral therewith, if desired, are the arms 5 5, which are, as shown, provided with flanges 6, thus forming guides within which the arms 3 slide and by which the proper sliding engagement of the respective arms is assured. Thus the arms 3 and 5 form cross members of the frame. The character of these flanges is not important so long as the proper relative movement of the opposing arms of the frame is secured. This movement may be secured either by flanging one arm to provide guides for the other, telescoping one arm within the other, or in various other readily-suggested ways. Carried by each arm 5 is a bent spring-plate 7, which is fastened at one end to the arm, then bent first outwardly and then back toward the arm to a point where it is provided with a locking lug or projection 8, adapted to pass through an aperture in the arm and to engage one of the teeth or corrugations 4 on the arm 3, connected to the other member of the frame. As shown in Figs. 5, 6, and 7, the arms of one of the frame members, as the ones designated 3, are provided with pins 10, which are adapted in certain positions of the frame members to enter and be guided in curved slots 11, provided in plates 12, connected to the arms 5. Extending between the arms 5 5 on opposite ends of the frame is a rock-shaft 13, which carries at its end arms 14 14, adapted in one position of the rock-shaft to rest beneath the outwardly-bent portion of the spring-plates 7 and in another position to be moved along beneath the spring-plates, carrying them outward and disengaging the locking-teeth 8 from the teeth 4. To permit of ready manipulation of this shaft and its arms, one of the arms may be provided with a projection or handle 15, by which it may be readily rocked. This rocking shaft may be held to position in any desired way, preferably being supported in lugs 16, connected to the arms 5.

In use it will be seen that the arms of the frame members may be pushed together as far as they will go, making thereby a comparatively thin book, as in Fig. 1, or they may be drawn away from each other until prevented by the contacting of the pin or stop 10 with the rear wall of slot 11, in either of

which positions they may be locked by the engagement of the teeth 8 and 4. A side view of the book in the second of these positions is shown in Fig. 2, thus illustrating the increased capacity of the book or the additional number of leaves which may be inserted in such adjusted position. With the frame members of the book in any desired adjusted position, as in Figs. 1 and 2, and locked to such adjusted position the book may be opened and used as any ordinary bound book. If it is desired to remove any of the leaves held in the book, which leaves are, as in the usual manner, perforated for the reception of binding-posts 1^a, 1^b, 2^a, and 2^b, as in Fig. 3, or if it is desired to break the back of the book or open it, so that the leaves may lie flat for greater convenience in use, the locking-teeth 8 are released from their engagement with the teeth 4 by turning the rock-shaft 13 through the handle 15, so as to force the arms 14 beneath the downward portions of the springs which carry the teeth 8. The two frame members are then drawn apart to the position shown in Fig. 4 and illustrated also in Fig. 6, and they may then be hinged or swung relatively to each other, bringing the arms of the frame members into the position shown in Fig. 7 and the book into the position shown in Fig. 3, with the leaves laid out flat and free for removal from the binding-posts. In closing the book the operations are performed in the reverse order, and when the parts are in the desired position they are locked therein by turning the rock-shaft 13.

An important part of my invention resides in the fact that I provide split binding-posts which extend inwardly from the frame members, two of which together constitute a single binding-post adapted to pass through one of the perforations in the pile of sheets. These posts have their outer sides rounded and their inner sides flattened, so that the flat sides fit together and provide a firm round post, while at the same time when the book is open in the position shown in Fig. 3 each section of the binding-posts fills only a part of the perforation through the pile of papers, and the leaves may be removed therefrom very conveniently.

Further advantages of this invention in providing a simple compact binder or holder for loose leaves, which holder may be readily adjusted and held in various adjusted positions to vary the capacity or number of leaves which may be held therein and which at the same time may be readily opened to free the leaves from the binder and closed again with as many leaves as desired therein, will be readily understood.

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

1. In a device of the class described, in combination, a frame having longitudinal members provided with suitable binding-posts, cross members adapted for sliding engagement with relation to each other, spring-plates carrying catch-pins, each adapted to catch a set of cross members together, a rock-shaft having arms controlling all of said spring-plates, and a handle whereby such rock-shaft may be manipulated.

2. In a device of the class described, in combination, a frame provided with means for securing and holding a pile of loose sheets, arms projecting inwardly from the members of said frame and adapted for sliding engagement with relation to each other, means for preventing longitudinal separation of said arms, and means whereby said frame members and arms may be given a hinging or swinging movement relatively to each other.

3. In a device of the class described, in combination, a frame having members adapted for securing and holding a pile of sheets, arms projecting inwardly from members of said frame and adapted for sliding engagement with each other, a pin on one of said arms, the other of said arms being provided with a curved slot, said pin being adapted in certain positions of said arms to engage said slot and prevent longitudinal separation of the two arms, the curve of said slot permitting a hinging or swinging movement of the arm and frame members relatively to each other.

4. In a device of the class described, in combination, a frame provided with sectional binding-posts for securing and holding a pile of sheets, arms projecting inwardly from the members of said frame and adapted for sliding engagement with each other, a pin on one of said arms, the other of said arms being provided with a curved slot, said pin being adapted in certain positions of said arms to engage said slot and prevent longitudinal separation of the two arms, the curve of said slot permitting a hinging or swinging movement of the arm and frame members relatively to each other.

5. In a loose-leaf binder, frame members adapted to be moved toward and from each other, a pin carried by one frame member, adapted to engage a curved slot in connection with the other frame member, whereby said frame members may be drawn apart until said pin engages said slot and may then be swung with relation to each, the pin following the slot.

6. In a loose-leaf binder, in combination, a frame provided with members adapted for movement toward and from each other, and for swinging movement with relation to each other, and binding-posts connected to said members adapted for sliding engagement with relation to each other whereby said binding-posts are adapted to pass in opposite directions through the same perforations in the pile of loose sheets.

7. In a device of the class described, in combination, a frame having members adapted

for relative movement, binding-posts connected to each of the members of said frame and projecting inwardly, means for adjusting the distance between said frame members, and means for swinging said frame members relatively to each other whereby the binding-posts may be separated from each other with their inner ends free.

8. In a device of the class described, a frame comprising two members, an adjustable connection between said members, said connection comprising a plurality of parts pivotally connected in such manner as to be adapted to permit said members to be swung about said pivotal connection.

9. In a device of the class described, a plurality of supporting members, an adjustable connection between said members, said connection comprising a plurality of parts pivotally connected in such manner as to be adapted to permit said members to be swung about said pivotal connection.

10. In a device of the class described, a frame comprising two members, a connection between said members, said connection comprising a plurality of parts pivotally connected in such manner as to be adapted to permit said members to be swung about said pivotal connection and one of said parts being adjustable in length.

11. In a device of the class described, a plurality of supporting members, a connection between said members, said connection comprising a plurality of parts pivotally connected in such manner as to be adapted to permit said members to be swung about said pivotal connection and one of said parts being adjustable in length.

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

FREDERICK M. TURCK.

Witnesses:
H. M. SEAMANS,
J. B. KNOX.