No. 753,805. PATENTED MAR. 1, 1904.

A. OPALLA.

LOOSE LEAF BINDER.

APPLICATION FILED JUNE 20, 1902.

NO MODEL.

Fig. 1.

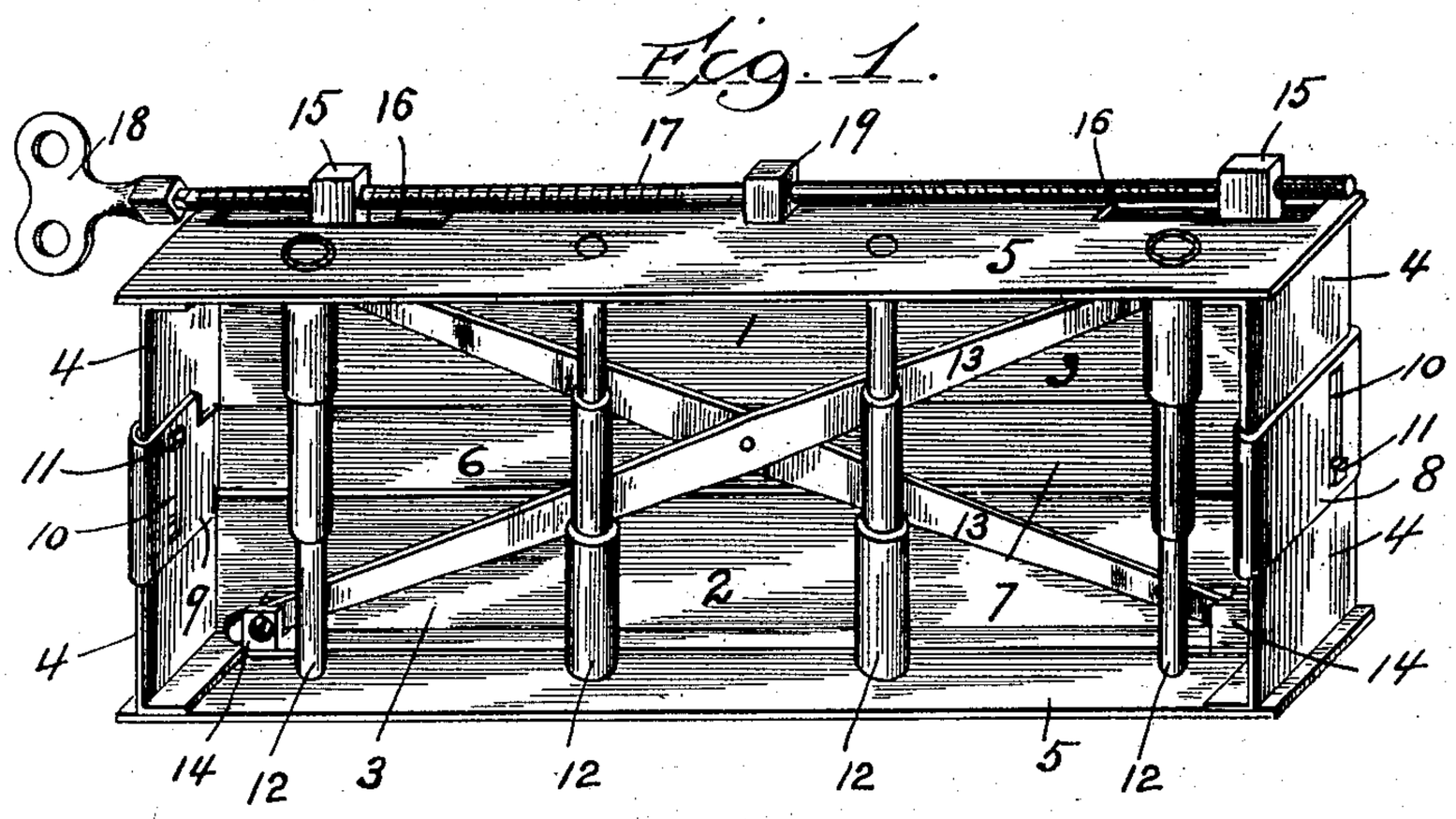


Fig. 2.

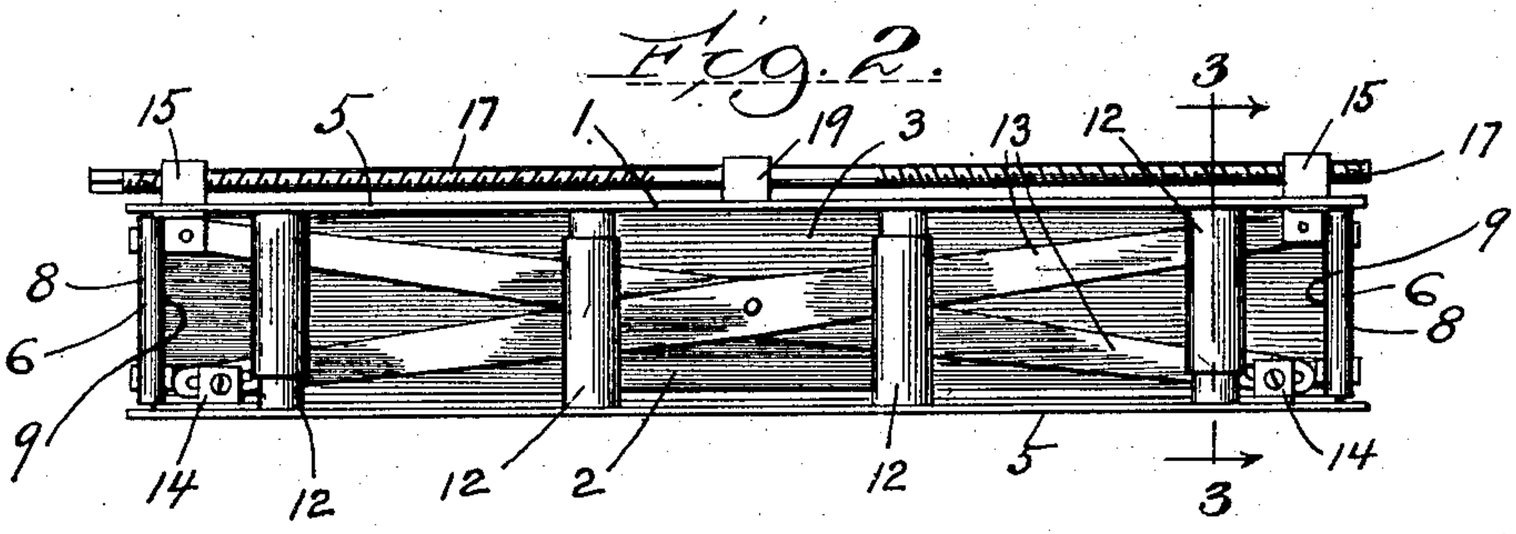


Fig. 3.

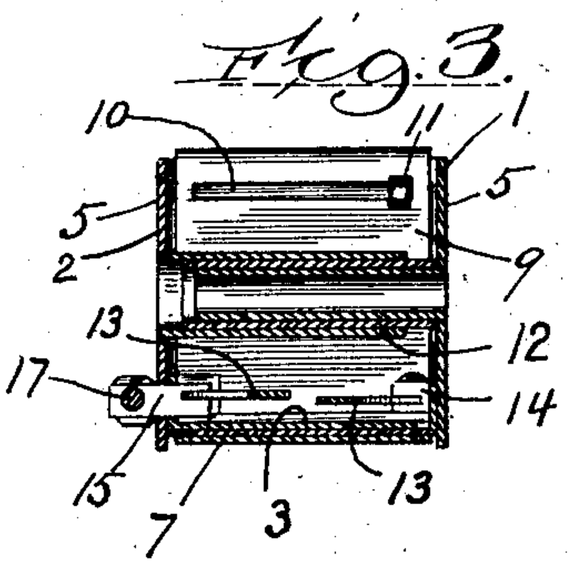


Fig. 4.

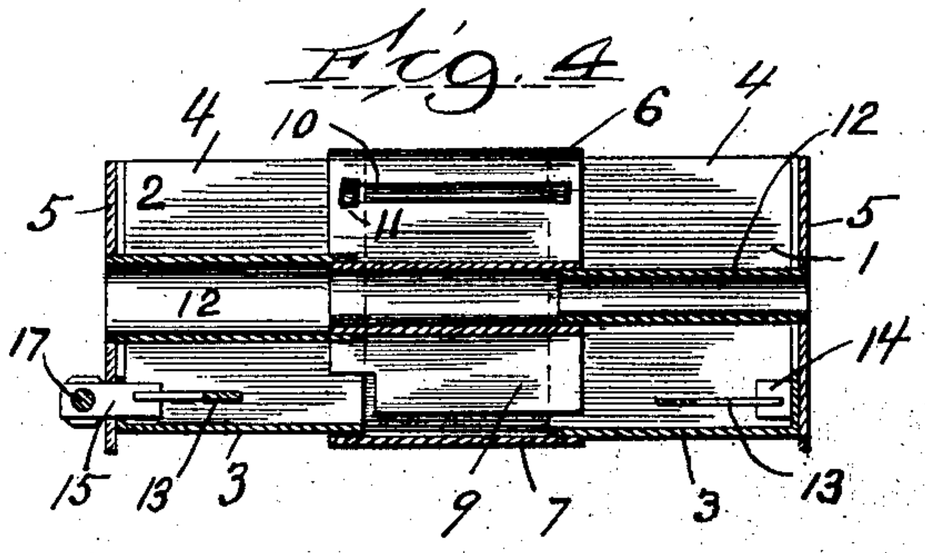
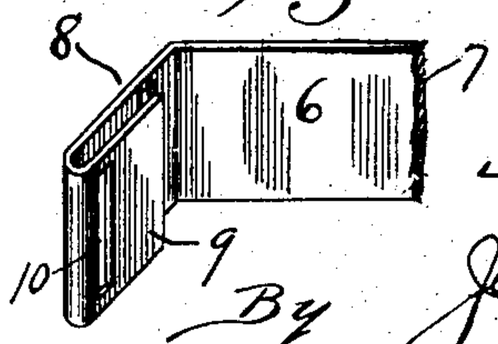


Fig. 5.



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No. 753,805. Patented March 1, 1904.

UNITED STATES PATENT OFFICE.

ARTHUR OPALLA, OF CHICAGO, ILLINOIS.

LOOSE-LEAF BINDER.

SPECIFICATION forming part of Letters Patent No. 753,805, dated March 1, 1904.

Application filed June 20, 1902. Serial No. 112,511. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR OPALLA, a citizen of the United States, residing in the city of Chicago, county of Cook, State of Illinois, have invented a new and useful Improvement in Loose-Leaf Binders, of which the following is a specification.

My invention relates to loose-leaf binders wherein the backs of the cover are expansible; and the object of the invention is to provide means for attaining multiple expansion—that is to say, an expansion such that the distance between the covers when expanded shall be more than twice as great as when completely contracted.

It is also an object of this invention to provide simple, powerful, and positively-acting means for controlling the covers and locking them in the desired position.

I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of the complete binder expanded. Fig. 2 is a front view of the binder in a contracted condition. Fig. 3 is a sectional view of the binder, taken on the line 3 3, Fig. 2. Fig. 4 is a sectional view similar to Fig. 3, but showing the binder expanded. Fig. 5 is a perspective view of a fragment of the connecting-plate.

Similar reference characters denotes similar parts throughout the several views.

The principal cover parts 1 and 2 consist of two box-like members, each composed of a back plate 3, end plate 4, and cover-plate 5. The end and back plates are so constructed as to pass by one another to permit the principal members to contract telescopically, as best shown in Fig. 3.

An intermediate member 6 is designed both to act as a guide for the principal members and to complete the connection therebetween when the latter are expanded. Said member 6 has a back portion 7 corresponding to the back portions 3 of the principal members and is double at the ends, so as to substantially inclose the end plates 3 of the upper and lower members 1 and 2, respectively. Both the outside leaves 8 and inside leaves 9 at the ends of said intermediate member have slots 10 for receiving and guiding the pins 11 on the end plates 4 of the principal members. In the present instance the said guide-pins on upper member 1 are on the inside, so as to travel in the slots upon the inner leaves 9, while the guide-pins on lower member 2 are on the outside, so as to travel in the slots upon the outer leaves 9. Said slots extend almost from top to bottom of the leaves 8 and 9, but are closed at the ends to limit the travel of the pins 11 therein. In the preferred construction the pins 11 on the upper member 1 are located at the lower edge thereof, and the pins on the lower member 2 are located at the upper edge thereof, and the height of the intermediate member is substantially the same as the height of each of the principal members. Under these conditions the binder is capable of an expansion substantially equal to three times its height when contracted.

Each of the binder-posts 12 consists of a plurality of tubes, at least three in number, telescoping one within the other. One tube in each post is secured to the cover-plate 5 in the upper member 1 and another tube to the cover-plate 5 in the lower member 2 in the manner shown. Said binder parts not only serve as means of attachment for the leaves of the ledger, but also act as guides to keep the parts in their proper relative positions.

The controlling devices for contracting, expanding, and locking the binder parts consist of a pair of screw-operated shears, preferably arranged as follows: The shear-bars 13 are each slotted at their lower extremities to receive pins fixed in the blocks 14, said blocks being located near the end plates 4 of the lower member 2. Said shear-bars extend across the device, and each is pivotally attached at its upper extremity to a screw-block 15, mounted so as to travel in the upper member 1. A simple construction is shown in the drawings, wherein the said screw-blocks project upward through the upper cover-plate 5 and are guided by the slots 16 therein. The shear-bars are pivotally connected together at a point between their extremities. One of said blocks has a left-hand and one a right-hand thread for receiving the right-and-left screw 17. Said screw is rotated by means of the

removable key 18, and the block 19, fixed near the middle of the upper cover-plate 5, acts as a brace for preventing the bending of said screw.

The ledger-covers may be attached to the cover-plates 5 in any suitable manner, as will be readily understood by those skilled in the art.

In operation if the binder is contracted, as shown in Fig. 2, and the screw 17 is rotated in the proper direction the right and left threads on said screw will cause the blocks 15 to approach each other. Inasmuch as the bars 13 are pivoted together and are also pivoted to said blocks, the motion of the blocks will cause the bars to rotate, so as to expand the members 1 and 2. After the upper member has risen a distance equal to the height of the lower member the intermediate member will form a connecting-piece, so that there shall be no intervening space. The continued rotation of the screw 17 will cause the binder to expand until the pins 11 come to the extremities of the slots 10. At this time the binder will be approximately three times as high as when contracted. This great expansion is of extreme importance in facilitating the insertion and removal of the loose leaves.

Another advantage of this binder lies in its simplicity of construction and in the fact that the screw 17 forms a lock, so that the members will remain in any desired position.

I do not limit myself to the precise disposition of the different parts as here shown, for other arrangements may readily suggest themselves to those skilled in the art.

What I claim as new, and desire to secure by Letters Patent, is—

1. A loose-leaf binder comprising two principal members each having a back plate and a cover-plate, the back plate of one being offset to telescope past the back plate of the other, and a connecting third member of a height approximately equal to the individual height of each of the principal members and forming a guide and extension for said principal members in their telescoping movement.

2. In a loose-leaf binder the combination of two principal members, each having a back plate and a cover-plate, the back plate of one being offset to telescope past the back plate of the other, a connecting third or central member approximately equal to the individual height of each of the principal members and forming a guide and extension for said principal members in their telescoping movement, and key-controlled mechanism whereby the three members may be expanded to a height greater than the combined height of the principal members, and contracted to a height practically the same as the height of a single one of said members.

3. In a loose-leaf binder the combination of two principal members, each having a back plate and a cover-plate, the back plate of one being offset to telescope past the back plate of the other, a connecting third or central member approximately equal to the individual height of each of the principal members and forming a guide and extension for said principal members in their telescoping movement, key-controlled mechanism whereby the three members may be expanded to a height greater than the combined height of the principal members and contracted to a height practically the same as the height of a single one of said members, and leaf-engaging posts attached to the cover-plates of the principal members.

4. In a loose-leaf binder the combination of two principal members, each having a back plate and a cover-plate, the back plate of one being offset to telescope past the back plate of the other, a connecting third or central member approximately equal to the individual height of each of the principal members and forming a guide and extension for said principal members, means on said third member for limiting the amount of separation of said principal members, and key-controlled means for positively moving said principal members and telescoping them past each other and with the third member.

5. In a loose-leaf binder the combination of two principal members, each having a back plate and a cover-plate, the back plate of one being offset to telescope past the back plate of the other, a connecting third member approximately equal to the individual height of each of the principal members and forming a guide and extension for said principal members, a key-controlled shear-lever system having connections at the free ends with the principal members to close them in or spread them apart, and slot-and-pin connections which determine the relation of the central member to the principal members.

6. In a loose-leaf binder the combination of two principal members, each having a back plate and a cover-plate, the back plate of one being offset to telescope past the back plate of the other, a connecting third member approximately equal to the individual height of each of the principal members and forming a guide and extension for said principal members, a key-controlled shear-lever system extending between the principal members to close them in or spread them apart, sliding connections therefor with said members, and slot-and-pin connections which determine the relation of the central member with the principal members.

7. In a loose-leaf binder the combination of two principal members, each having a back plate and a cover-plate, the back plate of one being offset to telescope past the back plate of the other, a connecting third member approximately equal to the individual height of each of the principal members and forming a guide and extension for said principal members, a

key-controlled shear-lever system having connections at the free ends with the principal members to close them in or spread them apart, slot-and-pin connections which determine the relation of the central member to the principal members, and leaf-engaging posts attached to the cover-plates of the principal members.

8. A loose-leaf binder comprising two principal box-like members, each having a back plate, two end plates, and a cover-plate, the back and end plates of one member being offset to telescope past the back and end plates of the other member, in combination with a connecting third member of a height approximately equal to the individual height of each of the principal members and forming a guide for said principal members.

9. A loose-leaf binder comprising two principal box-like members, each having a back plate, two end plates and a cover-plate, the back and end plates of one member being offset to telescope past the back and end plates of the other member, in combination with a connecting third member of a height approximately equal to the individual height of each of the principal members and forming a guide and extension for the principal members, means on said third member for limiting the amount of separation of said principal members, and key-controlled means for positively moving said principal members and telescoping them past each other and with the third member.

10. A loose-leaf binder comprising two principal box-like members having back plates and end plates offset for telescoping past each other, and cover-plates, in combination with a connecting third member of a height approximately equal to the height of one of the principal members and forming a guide and extension for the principal members, means on said third member for limiting the amount of separation of said principal members, key-controlled means for positively moving said principal members and telescoping them past each other and with the third member, and leaf-engaging posts attached to the cover-plates of the principal members.

11. A loose-leaf binder comprising two principal box-like members having back plates and end plates offset for telescoping past each other, and cover-plates, in combination with a connecting third member substantially equal in height to the individual principal members and forming a guide for the same, and a slot-and-pin connection between said third member and each individual principal member, the travel of said third member relatively to each of said principal members being approximately equal to the height of said third member.

12. A loose-leaf binder comprising two principal box-like members separable from each other and each formed with a cover-plate and having back and end plates offset to telescope past the corresponding back and end plates on the other member, said members thereby closing to a height substantially equal to the height of one of said principal members, in combination with a connecting third member forming a guide for the principal members and having a sliding connection therewith and a motion relative thereto approximately equal to its own height individually compared to each.

13. A loose-leaf binder comprising two principal box-like members separable from each other and each formed with a cover-plate and having back and end plates offset to telescope past the corresponding back and end plates on the other member, said members thereby closing to a height substantially equal to the height of one of said principal members, in combination with a connecting third member forming a guide for the principal members and having a motion relative to each individual thereof approximately equal to its own height, and telescoping binding-posts consisting of at least three parts, one part being attached directly to each of the principal members, and the third part being movable relatively to each of the other two parts.

14. A loose-leaf binder comprising two separable principal members each having end plates and a back plate offset to pass the corresponding plates on the other of said members, and a cover-plate, in combination with a third member forming a guide for said principal members, means on said third member for limiting the amount of separation of said principal members, and a pair of shear-bars for controlling said principal members.

15. A loose-leaf binder comprising two independent box-like principal members each having a back plate, two end plates, and a cover-plate, the back plate and end plates of one member being offset to pass by the corresponding parts of the other principal member, in combination with a third member having a middle portion and folded end portions inclosing and forming guides for the end plates of said principal members, slot-and-pin devices connecting said third member to the principal members, and means for telescoping said members to expand or contract the space inclosed by them.

16. A loose-leaf binder comprising two independent box-like principal members each having a back plate, two end plates, and a cover-plate, the back and end plates of one member being offset to pass by the corresponding parts of the other principal member, in combination with a third member having a middle portion and doubled end portions inclosing and forming guides for the end plates of said principal members, a slot-and-pin device connecting the outside end portions of said third member to the end plates of one of the principal members, and a slot-and-pin device connecting the inside end portions of the

third member with the end plates of the second principal member, the travel of said slot-and-pin devices being substantially equal to the height of said connecting member.

17. A loose-leaf binder comprising two independent box-like principal members, each having a back plate, two end plates and a cover-plate, the back and end plates of one member being offset to pass the corresponding parts of the other principal member, in combination with a third member slidingly connected to said principal members by slot-and-pin connections, a pair of controlling-bars pivoted together, sliding connections between one end of these bars and one of said principal members, the other member having sliding screw-blocks pivotally connected to the other end of said bars.

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Witnesses:
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