

July 7, 1936.

N. MANOILOVICH ET AL

2,046,395

BOOKHOLDER

Filed Aug. 10, 1933

3 Sheets-Sheet 1

Fig. 1.

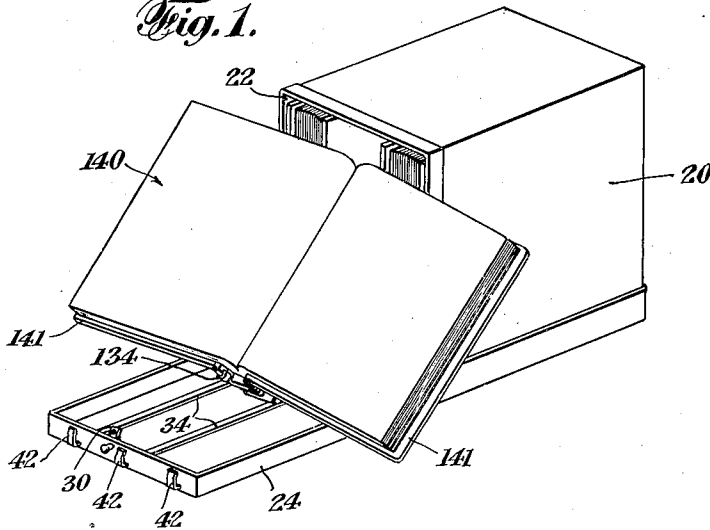
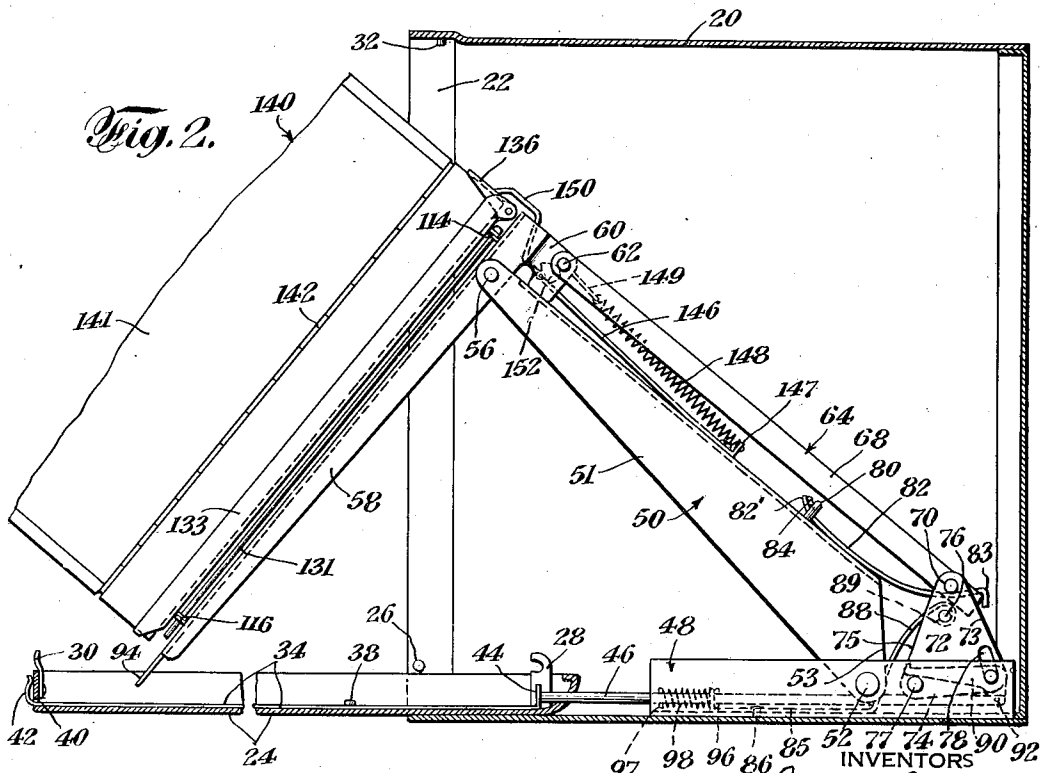


Fig. 2.



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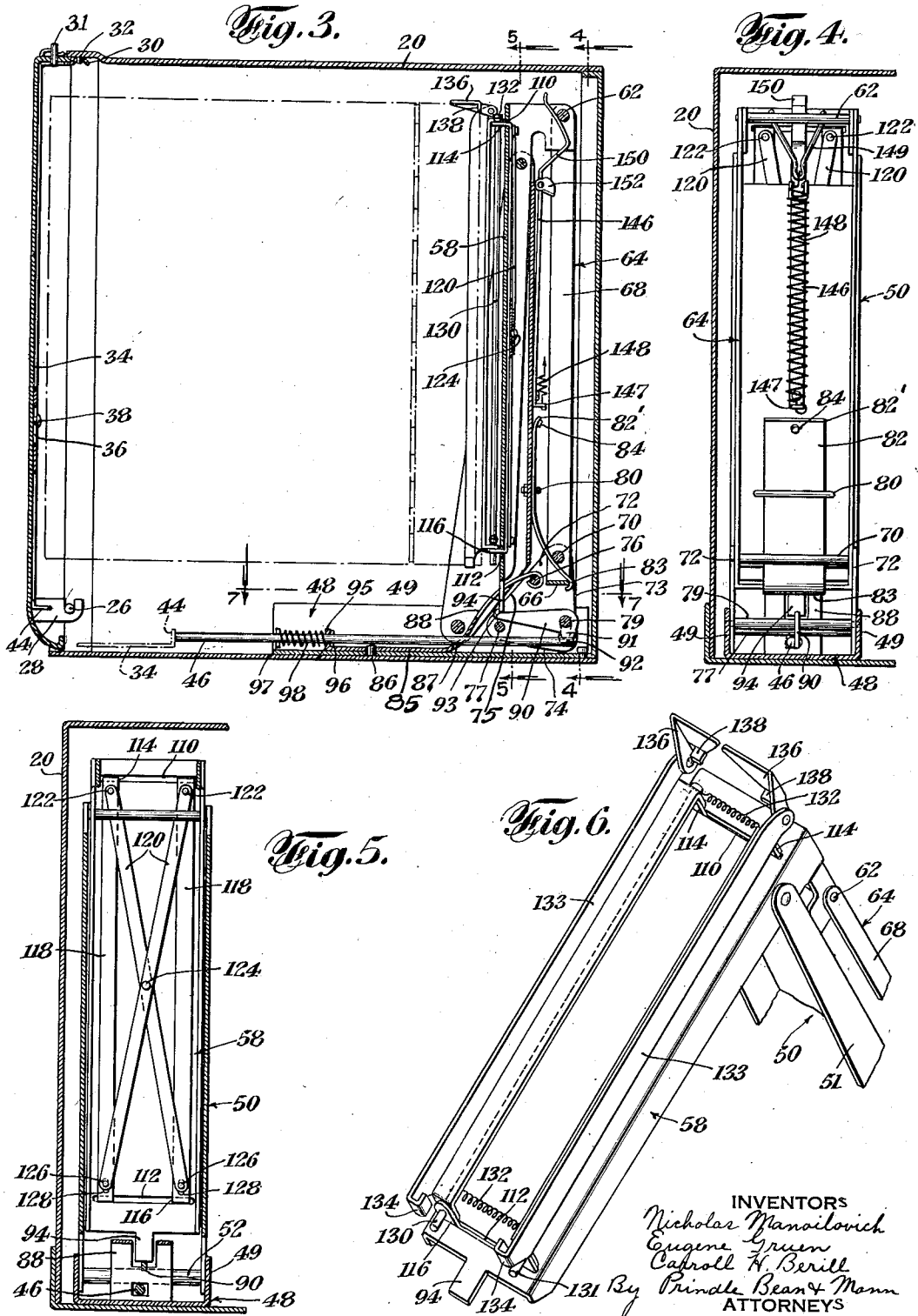
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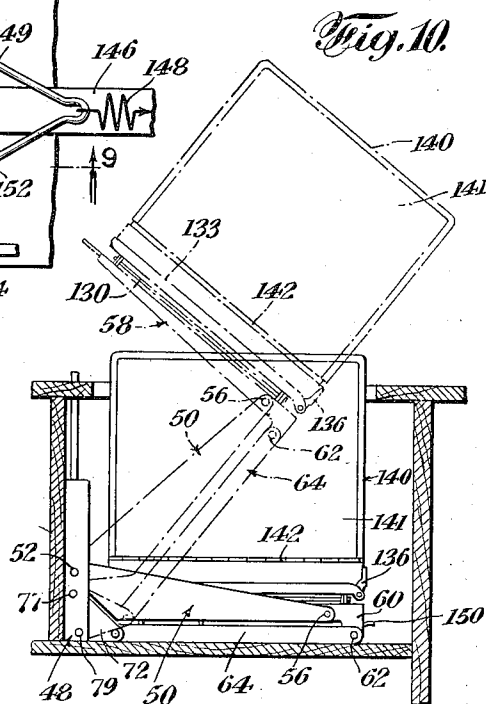
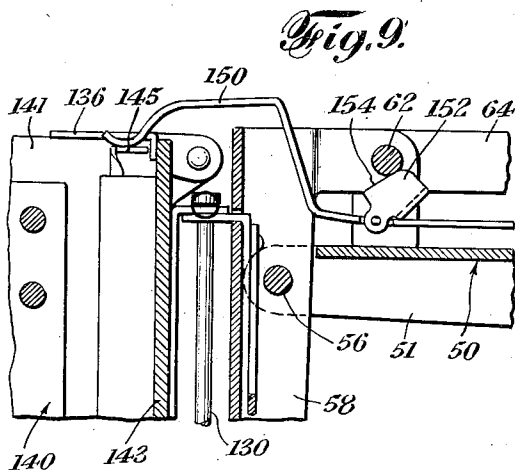
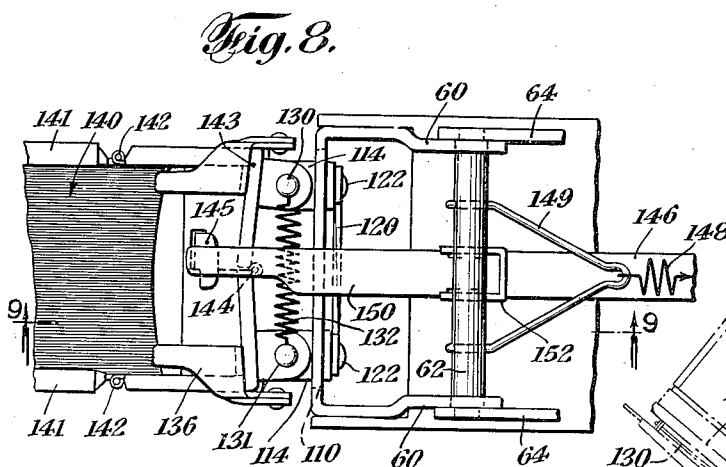
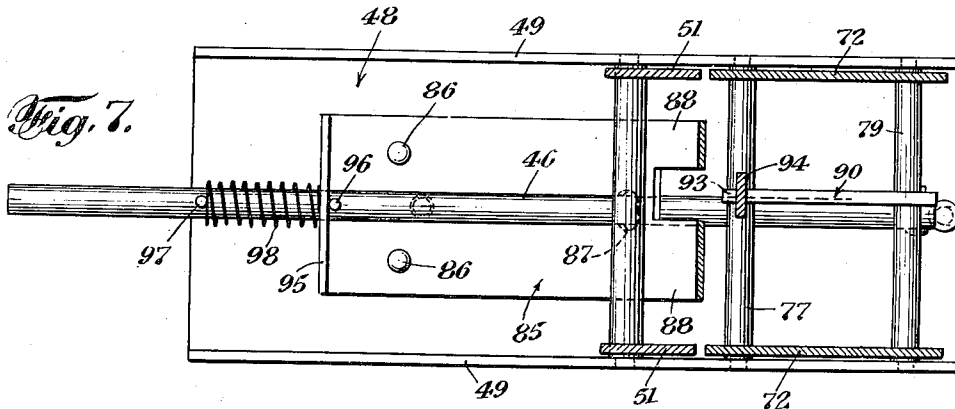
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3 Sheets-Sheet 3



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2,046,395

BOOKHOLDER

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18 Claims. (Cl. 45—85)

This invention relates to holders for books, ledgers and the like.

One object of this invention is to provide a book holder which requires a small space and a minimum of working parts, and which may be used to support a single book or a plurality of books.

Another object of this invention is the provision of a book holding mechanism provided with means for forcing or projecting the mechanism to extended position when released.

A further object of this invention is the provision of an automatic handling mechanism for supporting large and heavy books or the like.

Other objects will be in part obvious and in part pointed out in the following description.

To the accomplishment of the foregoing and such other objects as may hereinafter appear, this invention consists in the construction, combination, and arrangement of parts hereinafter described and then sought to be defined in the appended claims, reference being had to the accompanying drawings forming a part hereof, and which show merely for the purpose of illustrative disclosure, two embodiments of our invention, it being expressly understood, however, that various changes may be made in practice within the scope of the claims without digressing from our inventive idea.

In the drawings:

Fig. 1 represents a reduced perspective view of the invention;

Fig. 2 represents a longitudinal vertical cross section showing the device in extended position;

Fig. 3 represents a longitudinal vertical cross section of the device in closed position with a lid or cover in position;

Fig. 4 represents a partial vertical transverse section taken substantially on line 4—4 of Fig. 3;

Fig. 5 represents a partial vertical transverse cross section taken substantially on line 5—5 of Fig. 3;

Fig. 6 represents a detail of the mechanism for holding the book;

Fig. 7 represents an enlarged horizontal transverse cross section taken substantially on line 7—7 of Fig. 3 illustrating the releasing means for the mechanism;

Fig. 8 represents an enlarged top plan view of a portion of the device shown by the arrow in Fig. 2;

Fig. 9 represents a longitudinal vertical parted cross section taken substantially on line 9—9 of Fig. 8 illustrating the means for releasing the latch of the book; and

Fig. 10 represents a modification of the invention where the back of the book is normally held in a horizontal position and the book may be raised to the position shown in dotted lines in the figure.

Referring now to the drawings, reference character 20 designates a casing or container having a front open end 22 adapted to receive a cover 24 to close the casing or container when the bookholder is not in use. While the casing or container is shown in Figure 1 as containing three books, it is within the contemplation of the invention to increase or decrease this number, and also to use individual containers for individual books. At each side the front open end at its lower portion is provided with a pin 26 which cooperates with the hook members 28 secured to the interior of cover 24 to act as a pivot and securing means when the cover is to be applied to the casing or container as shown in Figure 3. Cover 24 has an apertured spring clip 30 which is adapted to receive pin 32 at the top of the open end of the casing to retain the cover in closed position. Operating member 31 is provided for clip 30. The inside of the cover is provided with a slidable strip 34 having a slot 36 (see Figure 3) to receive headed pin 38, the pin being secured to the inside of the cover 24 and acting as a guide for the strip. The strip projects through opening 40 of the cover and is bent up at its outer end at 42 to form an operating handle. At the other end strip 34 is provided with a flange 44 which cooperates with a rod 46 for operating the book holding mechanism later to be described.

The mechanism for supporting a book and presenting it in the position shown in Fig. 1 comprises a plurality of levers so pivoted that the book in the first part of its movement travels in a substantially straight line so that a casing or container of only slightly greater height than the height of the book is required and a minimum of space is required. Attached to the rear bottom portion of the casing or container 20 is a channeled member 48 having the upstanding sides 49 to which certain of the operating parts are pivoted. An elongated vertical member 50 having the tapering side flanges 51 is pivoted on rod or axle 52 at its lower end where side flanges 51 are greatest in width, to the rear portions of sides 49 of the channeled member 48. The lower rear portion of member 50 is cut at an angle 53 to provide space for other operating parts later to be described.

The upper end of the member 50 where the flanges 51 are smallest in width, is provided with a pin or pivot 55. Pivotaly mounted on the pin or pivot 55 at its upper end is a U-shaped or channeled member 58 narrower in width than the elongated member 50 and adapted to be received therein. It is to be noted that the flanges on the U-shaped member 58 extend rearwardly and the flat bottom portion of the member is presented toward the front of the device. This flat bottom portion is provided with operating parts to receive

a book and will be later described. The top rear portion of member 58 is provided with elongated ears 60 which are adapted to receive rod or pivot 62. Pivoted on this rod or pivot 62 adjacent its top is an elongated U-shaped strip member 64 provided with the flat bottom portion 66 (see Fig. 3) and the elongated upstanding arms 68. Adjacent the bottom portion of U-shaped strip member 64 the member is pivotally mounted on pintle or rod 70 which is connected to triangular members 72.

When the device is in closed position (Figure 3) the flat triangular members are so arranged that the rear side 73 is at an angle and the front side 75 is substantially parallel to the angular cut away portion 53 on member 50. The triangular members are connected by a rod or pin 76. At the front lower corner each triangular member is pivotally connected to the upstanding sides 49 of base member 48 by means of pivot 77 positioned to the rear or pivot 52 of member 50. At the rear lower corner, each triangular member 72 is provided with angular slots 78 which receive rod or axle 79 connected to the rear portion of the flanges or upstanding sides 49 of the base member 48. The slots 78 permit limited rotation of triangular members 72 on pivot or rod 77.

The rear flat portion of elongated channeled member 50 near its lower end is provided with a U-shaped bracket member 80 for guiding and receiving a flat spring member 82. The upper end of the spring member 82 is bent at an angle 82' and is provided with stop member 84 which abuts U-shaped bracket member 80 to limit the movement of the spring member 82. The spring member passes beneath pivot 70 and at its lower end is provided with a bent hook portion 83 to resiliently engage the bottom portion 66 of U-shaped member 64. It is to be understood that the flat springs shown in the preferred embodiment may be replaced by other forms of springs, as for instance, coil springs. When the device is in closed position spring member 82 is under the tension and when the device is released, the spring member forces the device outwardly.

A spring member 85 flat in cross section is secured at one end to the base member 48 as at 86 and is provided with an opening 87 to permit passage therethrough of operating rod 46. The other end of spring member 85 is bifurcated to form arms 88 which are bent to form hook members 89 which engage and are mounted on rod or pin 76. This spring member moves the triangular members 72 about pivot 77 during the first part of the movement of the mechanism to cause the supported book to travel in a substantially horizontal path until it is clear of the casing 20.

Secured to the rod or pin 79 intermediate its ends is a bell crank lever 90 having a depending arm 91 (see Fig. 3) to which operating rod 46 is pivotally connected as at 92. The front end of the lever 90 is provided with a hook member 93 which cooperates with the downwardly extending lip member 94 secured to the bottom portion of member 58. Rod 46 is guided by a flanged member 95 formed on spring member 85. It is to be expressly understood that the flanged member may be a separate element secured to the base member 48. Adjacent its outer end the rod 46 is provided with pin 96 which abuts the inner side of flanged member 95 to limit the outward movement thereof. Between this flanged member and pin 97 on rod 46 and extending around rod 46 is a coil spring 98 adapted to force the rod out-

wardly and maintain hook member 93 in engagement with lip member 94 so as to keep the parts normally in closed position.

The following construction is provided for holding a book in the device. The flat portion of channeled member 58 is provided with horizontal top and bottom slots 110 and 112 (see Figs. 5 and 6) to receive top and bottom supporting flanges 114 and 116 of strips or straps 118, located at the rear of member 58. Connecting the strips or straps 118 are the crossed strips 120, each strip being pivoted at its top to strips or straps 118 as at 122. The crossed strips 120 are pivoted to each other at 124 and at their lower ends are provided with pivots 126 received in slots 128 on strips or straps 118. Connecting the flanges 114 and 116 on strips or straps 118 at the front of member 58 are headed vertical rods 130 and 131. The rods 130 and 131 are slidably mounted in supporting flanges 114 and 116. The rods are resiliently connected by means of springs 132. Pivotally mounted on rods 130 and 131 are elongated angular arms 133 adapted to receive a book. The bottom portions of the arms 133 are bent to form hooks 134 adapted to receive and support the bottom back portion of the book. Pivotally mounted to the top of each arm 133 are the clips 136 provided with vertical arms 138 for engaging the top portion of the back of the book to securely hold it in position.

The invention is especially adapted for books of the construction shown in the drawings (Figure 8) where the book 140 is provided with the side portions 141 pivoted at 142. Books of this character are shown in Patents 1,269,479 and 1,270,246. It is to be expressly understood however, that this invention is not to be restricted to this form of book as it may be used with books generally. The back portion of the book comprises two parts 143 pivoted at 144. The book is provided with a latch member 145 which unlocks the book and permits the two halves of the book to be moved on pivot 144 and also to be relatively moved in a vertical position on members 133 so that pages within the book may be shifted vertically with respect to other pages and provide a marginal portion which is readily seen at the top of the page. To provide automatic means for opening the latch member when it is desired to operate the book to shift pages therein, the following construction is provided. Secured at its one end to the rear of member 50 is a flat strip member 146 having a flange 147 at its lower end. Spring 148 is attached at its one end to flange 147 and at its other end to rod 62 by means of the wire 149. The spring is normally under tension when the device is closed and when the device is released spring 148 functions to assist in forcing the mechanism and the book outwardly beyond the casing or container 20. The main function of spring 148 is to counterbalance the weight of the book. It is to be noted that the tension of this spring may be changed to compensate for books of different weights or other springs may be substituted. The strip member 146 at its other end is provided with a hook or angular member 150. Adjacent this member 150 the strip 146 is provided with a pivoted cam member 152 which is adapted to engage strip member 146. The cam member 152 comprises a U-shaped member pivoted at its ends to the strip member 146 and adapted to have its bottom edge abut member 146. This cam member is provided with a cam surface 154 which abuts rod 62 when the mechanism is being opened to depress strip member 146 and curved member 75

150 to release the latch member 145. After this function has been performed, the cam member is swung into inoperative position shown in dotted lines in Figure 2. When the mechanism is released by operating rod 46, the book and mechanism are forced outwardly and the hooked or curved member 150 forces latch member 145 downwardly so as to release the latch member and unlock the book so that pages therein may be rearranged as desired.

In the modification shown in Fig. 10 the principle of operation is the same as that described in connection with the form shown in the previous figures. However, in this form the books are placed in a vertical position with their backs placed horizontally and at the lower end of the opening in the desk so that when released the book will be presented in the position shown in dotted lines in Fig. 10.

The operation of the device shown in Figs. 1-9 will now be described. With the device in the closed position as shown in Fig. 3, it is first necessary to unlatch cover 24 and rotate it about pivot 25 into the position shown in Fig. 2. The bent portion 42 of flat strip 34 is then moved to force rod 46 inwardly. Movement of rod 46 actuates bell crank lever 90 and releases lip member 94 on member 58. The spring 82, assisted by springs 85 and 148 then moves the book 140 and the book supporting mechanism into the position shown in Fig. 2. It is to be noted that casing 20 is substantially the same height as the book 140 and it is necessary for the book to travel substantially in a horizontal path at the beginning of its movement while it is in the casing in order not to contact the casing 20 in its passage therefrom. After the book has gone a short distance it begins to move angularly and at the end of the movement assumes the angular position shown in Figs. 1 and 2, to facilitate use thereof. To provide this initial horizontal movement and later angular movement the plurality of levers and fulcrums are provided. By providing this mechanism a more compact device is obtained.

The device is especially adapted for use with books of the construction shown in Fig. 8 where the parts of the book are pivotally connected and have latching means for connecting and locking the parts in closed position. When the book is in the position shown in Figs. 1 and 2 it is also desirable to have the parts of the book in unlatched condition. To effect the automatic unlatching or unlocking of the parts of the book, the flat member 146 having an angular portion 150 is provided. At the end of the travel of the book, cam member 152 abutting rod forces the bent portion 150 of strip member 146 and latching means 145 downwardly to unlatch or unlock the parts of the book and pages may be shifted or removed from the book in this position.

The operation of the device shown in Fig. 10 is similar to the operation of the device described. However, in this modification the original position of the book is different from the position shown in Fig. 1 in that the back of the book is in a horizontal position.

What we claim is:

1. In a device of the character described, a base member, lever means pivotally mounted on said base member, a member pivoted to said lever means and provided with arms adapted to support a book, one of said arms being movable longitudinally with respect to said pivoted member, said lever means being provided with means for releasing a latch mechanism on a book.

2. In a device of the character described, a casing, a lever pivoted therein, means for limiting the movement of said lever, book supporting means pivoted to said lever, means for connecting said book supporting means and said limiting means, means for releasably holding said lever and said book supporting means in closed position in said casing, said lever being so pivoted and mounted that a book on the book supporting means travels in a substantially horizontal path for a short distance, and then the book is moved angularly to present the book at an angle.

3. A device of the character described, including a casing for holding a plurality of books, means for releasably holding a book in a vertical position in said casing, said means comprising a lever pivoted in said casing, book supporting means pivotally connected to said lever, a compound lever in said casing and connected to said book supporting means whereby a book being moved from said casing travels in a substantially horizontal path for a short distance and then the book is moved to present the book at an angle, and resilient means for forcing said book supporting means and said pivoted lever outwardly.

4. A device of the character described, including a casing for holding a plurality of books, means for releasably holding a book in a vertical position in said casing, said means comprising a lever pivoted in said casing, book supporting means pivotally connected to said lever, and a compound lever in said casing and connected to said book supporting means whereby when a book is moved from said casing the book travels in a substantially horizontal path for a short distance and then the book is moved to present the book at an angle, said lever being provided with means for releasing a latch on a book in the book supporting means when the book is substantially at the end of its travel.

5. A device of the character described, including a casing, a cover for said casing, means in said casing for supporting a book in a vertical position, said means including resilient means for presenting the book at the front of the casing, said first mentioned means including a plurality of pivoted and associated levers, means for releasably holding said levers within said casing, and means on said cover for releasing said releasable means.

6. In a device of the character described, a casing, a base member secured to the interior of said casing, a lever pivotally mounted on said base member within said casing, book supporting means pivotally mounted on said lever and provided with relatively movable arms for supporting and holding a book, means for releasably holding said lever and said book supporting means within said casing, and resilient means cooperating with said lever and said book supporting means for forcing said book supporting means and said lever outwardly with respect to said casing.

7. In a device of the character described, a casing, a base member secured to the interior of said casing, a lever pivotally mounted on said base member within said casing, book supporting means pivotally mounted on said lever and provided with relatively movable arms for supporting and holding a book, means for releasably holding said lever and said book supporting means within said casing, and resilient means cooperating with said lever and said book supporting means for forcing said book supporting means and said lever outwardly with respect to said casing.

ing, said lever being provided with means for releasing a latch mechanism on a book held in said book supporting means.

8. In a device of the character described, a casing, a base member rigidly secured to the interior of said casing, a lever pivotally mounted on said base member within said casing, book supporting means pivotally mounted on said lever for supporting a book having vertically, relatively movable pivoted parts, said book supporting means being provided with vertically, relatively movable arms for supporting and holding the book whereby the parts of the book may be shifted vertically without removing the book from the device, means pivotally mounted on said base member, and an elongated arm for connecting said last mentioned means to said book supporting means.

9. In a device of the character described, a casing, a base member rigidly secured to the interior of said casing, a lever pivotally mounted on said base member within said casing, book supporting means pivotally mounted on said lever and provided with relatively movable arms for supporting and holding a book, means pivotally mounted on said base member, and an elongated arm for connecting said last mentioned means to said book supporting means, and resilient means between said lever and said elongated arm.

10. In a device of the character described, a casing, a base member rigidly secured to the interior of said casing, a lever U-shaped in cross section and pivoted at its lower end to said base member within said casing, a book supporting member pivoted at its upper end to the other end of said U-shaped lever, and means for releasably holding said lever and said book supporting member within said casing in closed position, said book supporting member being received within said U-shaped lever in such closed position.

11. A device of the character described, including, in combination, a casing, a base member rigidly secured to the interior of said casing, a lever pivoted at one end to said base member, a book supporting member pivoted to the other end of said lever, releasable holding means on said base member, and an extension on said book supporting member and adapted to be releasably held by said releasable holding means for holding said lever and book supporting member within said casing.

12. A device of the character described, including, in combination, a casing, a base member rigidly secured to the interior of said casing, a lever pivoted at one end to said base member, a book supporting member pivoted to the other end of said lever, a second lever pivoted to said book supporting member, and means for pivotally connecting said second lever to said base member whereby a book supported by said supporting member may be removed from said casing, said means including a triangular member pivoted at one corner to said second lever and at another corner to said base member and having a slot and pin connection at its third corner with said base member.

13. A device of the character described, including, in combination, a casing, a base member rigidly secured to the interior of said casing, a lever pivoted to said base member, a book supporting member pivoted to the other end of said lever, means associated with said book supporting member and said base member whereby when a book on said book supporting member is moved from said casing the book travels in a substantially

horizontal path for a short distance and then the book is tilted while being moved further outward to present the book at an angle, and resilient means associated with said book supporting member and said lever for assisting with the movement of said parts during removal of a book from said casing.

14. In a device of the character described, a casing, lever means pivotally mounted therein, means connected to said lever means and adapted to support a book having vertically movable pivoted parts and a latch mechanism for releasably holding the pivoted parts, said supporting means being provided with means adapted to release the latch mechanism on the book so as to permit relative vertical movement of the pivoted parts of the book whereby pages therein may be shifted while the book is supported by the device without removing the book from said supporting means.

15. A device of the character described for holding books and the like, including, in combination, a base member, lever means pivotally mounted on said base member, means pivotally connected to said lever means and adapted to support a book having vertically, relatively movable pivoted parts, said supporting means including vertically, relatively movable arms to permit the relative vertical movement of the pivoted parts of the book whereby pages therein may be shifted while the book is supported by the device without removing the book from said supporting means.

16. A device of the character described for holding books and the like, including, in combination, a casing, means pivotally mounted therein, means connected to said first mentioned means and adapted to support a book having relatively and vertically movable pivoted parts, said supporting means being provided with means to permit the relative vertical movement of the pivoted parts of the book whereby pages therein may be shifted while the book is supported and held by the device without removing the book from said supporting means.

17. A device of the character described for holding books and the like, including, in combination, a base member, book supporting means mounted on said base member for supporting a book having relatively and vertically movable pivoted parts, said supporting means including relatively movable arms to permit the relative movement of the pivoted parts of the book in a vertical direction so that pages in the book may be shifted while the book is supported on the device without removing the book from said supporting means.

18. In a device of the character described, a casing, lever means pivotally mounted therein, means connected to said lever means and adapted to support a book having relatively movable pivoted parts and a latch mechanism for normally releasably holding the pivoted parts of the book in closed position, said supporting means and lever means being provided with means adapted to release the latch mechanism on the book when the book is withdrawn from said casing so that the pivoted parts of the book are in an unlatched condition while the book is supported and held by the device and without removing the book from said supporting means.