

BOOK SUPPORTING DEVICE.

Patented Jan. 3, 1911.

4 SHEETS—SHEET 1.

Fig. 1.

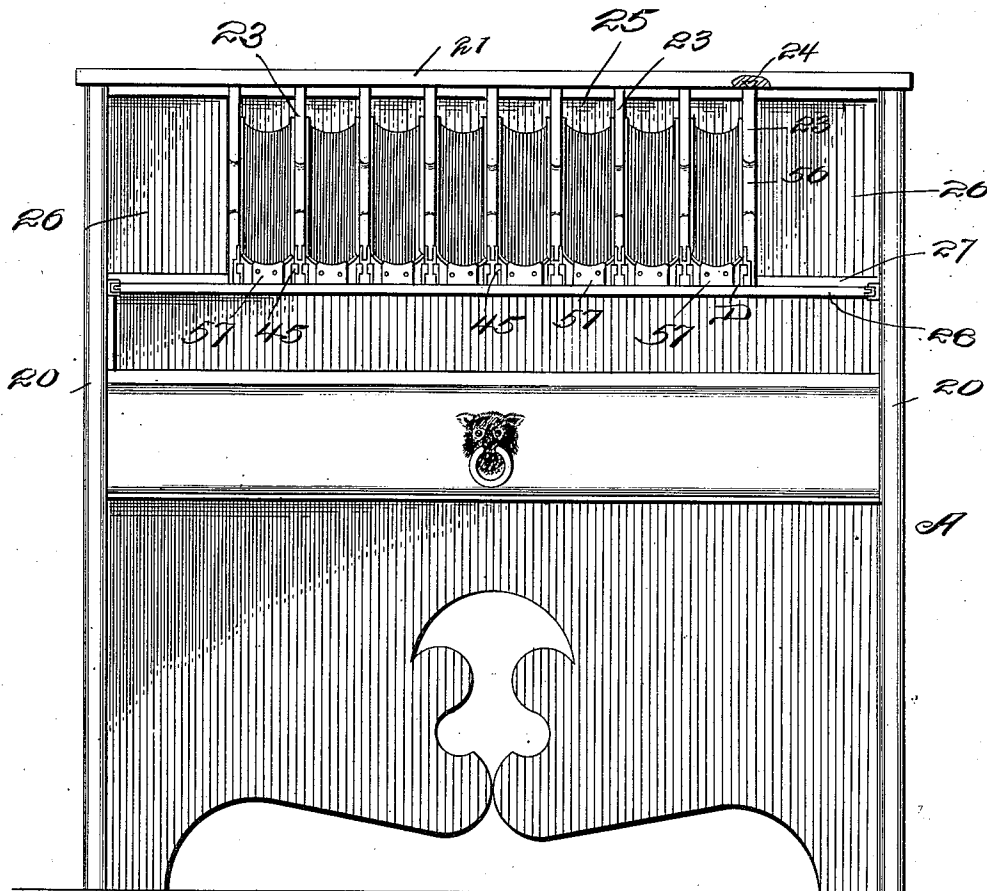
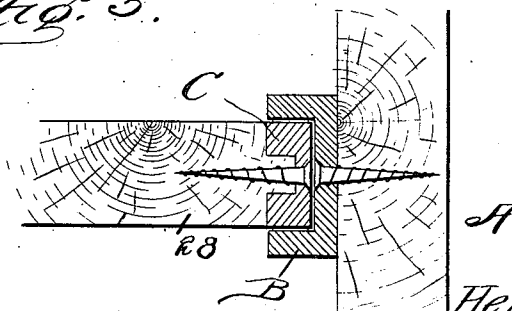


Fig. 5.

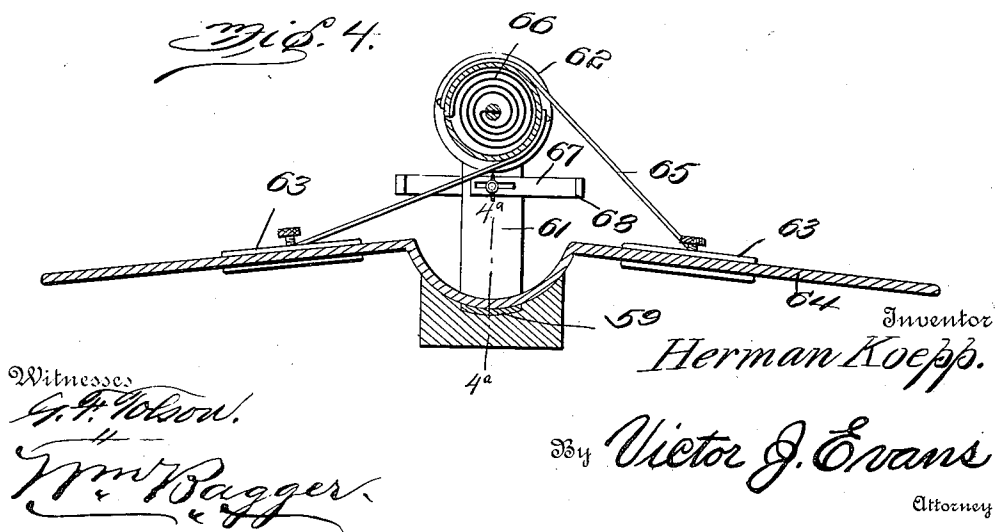
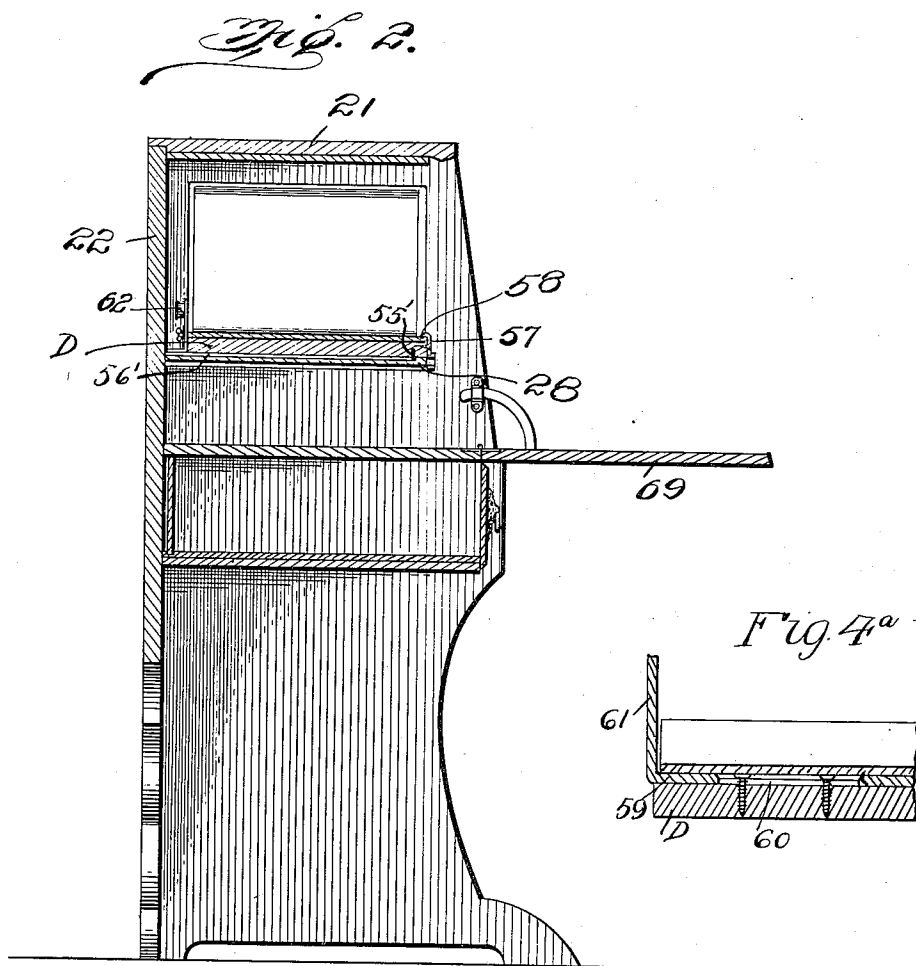


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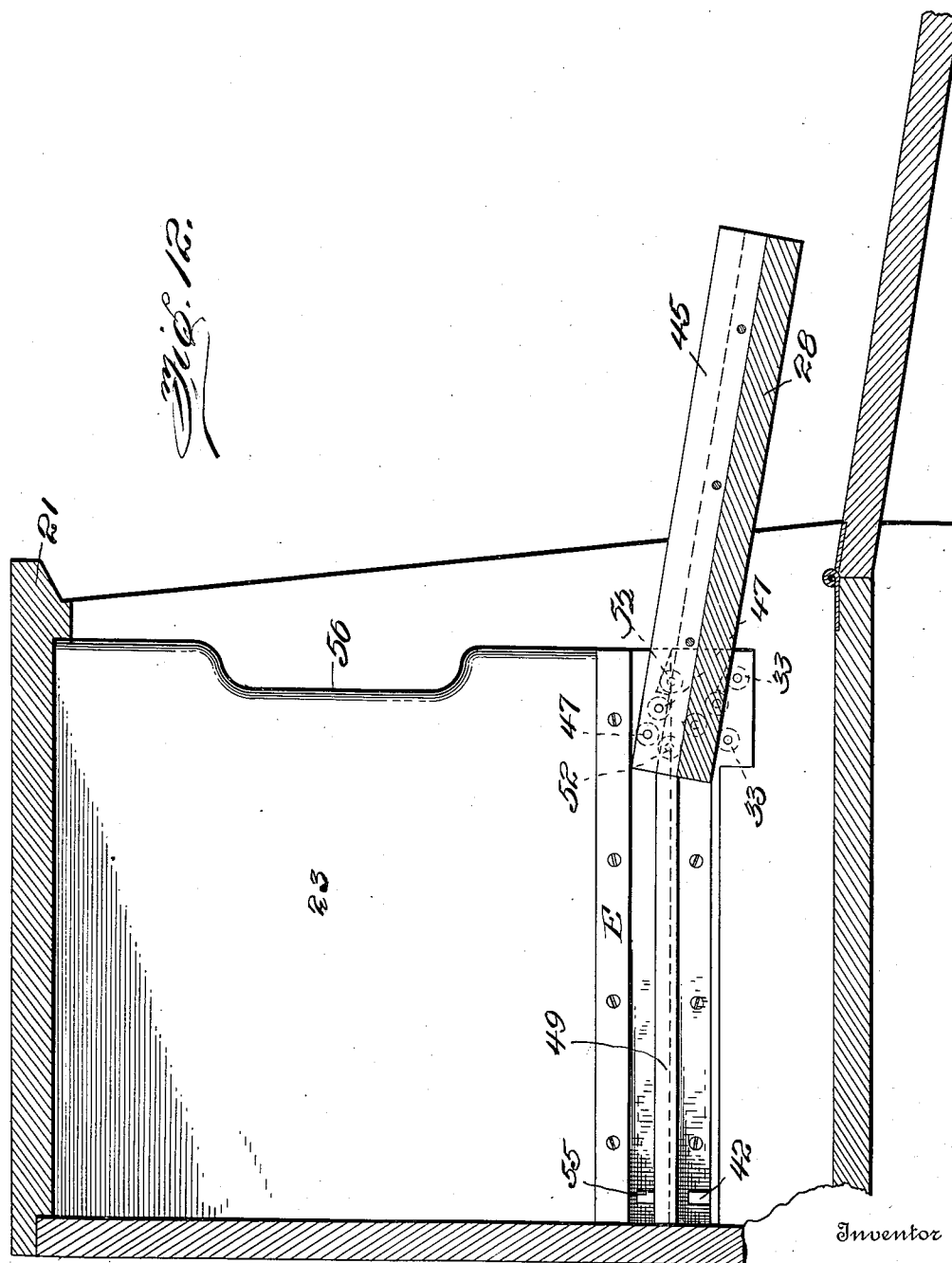
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4 SHEETS—SHEET 4.



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BOOK-SUPPORTING DEVICE.

980,796.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, HERMAN KOEPP, a citizen of Germany, residing at Sacramento, in the county of Sacramento and State of California, have invented new and useful Improvements in Book-Supporting Devices, of which the following is a specification.

This invention relates to an improved book supporting device adapted to be used in connection with desks, book cases, racks and stands or with auxiliary supporting means of any convenient character; the object of the invention being to provide a device whereby ledgers and other books of entry, reference books, or heavy books of any description may be supported in such a manner as to be very conveniently accessible for use.

A further object of the invention is to provide a device whereby a book may be supported while resting upon its back so that it may be conveniently opened for use.

A still further object of the invention is to provide a slidable book supporting device or carrier which may be readily moved to a position that will enable the book to be opened for use.

A still further object of the invention is to provide a movably supported book supporting carrier upon which a book may rest upon its back so as to be conveniently opened for use.

A still further object of the invention is to provide a simple and effective book closing device adapted to be used in conjunction with such carrier.

Still further objects of the invention are to simplify and improve the general construction and operation of this class of devices.

With these and other ends in view which will readily appear as the nature of the invention is better understood, the same consists in the improved construction and novel arrangement and combination of parts which will be hereinafter fully described and particularly pointed out in the claims.

In the accompanying drawings has been illustrated a simple and preferred form of the invention; it being however understood that no limitation is necessarily made to the precise structural details therein exhibited, but that changes, alterations and modifications within the scope of the claims may be resorted to when desired.

In the drawings: Figure 1 is a front ele-

vation showing a desk structure equipped with the improved book supporting device. Fig. 2 is a vertical transverse sectional view of the same. Fig. 3 is a front end view, enlarged, showing one of the book supporting carriers and related parts. Fig. 4 is a vertical transverse sectional view of one of the book supporting carriers, showing in connection therewith the book closing device and the cover of a book from which the leaves have been removed. Fig. 4^a is a sectional detail view taken on the line 4^a—4^a in Fig. 4. Fig. 5 is a vertical sectional detail view showing a portion of the wall of the desk structure and a portion of the slidable shelf supported thereby. Fig. 6 is a side elevation of one of the carriage supporting tracks. Fig. 7 is a side elevation of one of the carriage rails, the rail shown being adapted for use at the side opposite to the track member shown in Fig. 6. Fig. 8 is a side elevation of one of the shelf supporting track members. Fig. 9 is a side elevation of one of the shelf supporting track engaging rails or members. Fig. 10 is a transverse sectional view taken on the plane indicated by the line 10—10 in Fig. 6. Fig. 11 is a transverse sectional view taken on the plane indicated by the line 11—11 in Fig. 8. Fig. 12 is a vertical sectional view enlarged of the improved book supporting device showing the carrier and the supporting shelf in an advanced and tilted position.

Corresponding parts in the several figures are denoted by like characters of reference.

Referring to the drawings A designates the frame of a desk structure which has been equipped with the invention; it being understood that the desk structure *per se* forms no essential part of the invention but has been illustrated simply to show the application of the latter which requires supporting means such as will be afforded by the side walls 20 and the top or cap piece 21 of the desk. Firmly connected with the cap piece 21 and with the back wall 22 of the desk structure are a plurality of partition walls 23, the upper edges of which are preferably provided with dove-tails 24 engaging correspondingly shaped grooves in the cap piece 21 with which the partition walls are thus firmly and securely connected in such a manner as to be capable of sustaining the weight which will be imposed thereupon as will be presently described. The spaces between the partition walls form the

book receiving compartments 25; and auxiliary compartments 26 for general purposes may be formed between the side walls 20 and the proximate partition 23, the lower edges of which may be connected with said side walls by shelves 27; it will be understood however, that the entire space between the side walls 20 may be occupied by book receiving compartments if so desired.

Supported between the side walls 20 adjacent to the lower edges of the partition walls 23 is a slidable shelf 28 the same being firmly supported by means of interengaging tracks or guide members B and C which are firmly secured respectively upon the inner faces of the side walls and upon the end edges of the shelf. The guide members B are provided adjacent to their upper edges with overhanging guide flanges 29 and adjacent to their lower edges with supporting flanges 30, the latter being heavily reinforced at their front ends as at 31, said reinforced portions being downwardly beveled upon their upper edges and provided with slots 32 wherein rollers 33 are supported for rotation. The guide members C upon the end edges of the shelf each consist of an elongated bar having a groove 34 the bottom of which is apertured as at 35 for the passage of fastening members such as screws, the heads of which may be accommodated within the groove. The member C is provided near its rear end with slots 36 and 37 formed respectively in the upper and lower edges of the bar for the accommodation of rollers 38—39 projecting slightly beyond the upper and lower edges of the bar and adapted to engage the flanges 29—30 of the guide member B. It will be readily seen that under this construction the shelf is capable of being moved in an approximately horizontal plane when it is moved in an outward or forward direction and that when it approaches the outward limit of its movement it will be tilted downwardly until it rests upon the downwardly beveled reinforced portions of the guide members B. Said reinforced portions are provided with inclined notches 40 adapted for engagement with reversely inclined notches 41 formed in the under edges of the guide members C, said notches serving by interlocking engagement to prevent the entire withdrawal of the shelf when the forward portion of the latter has been tilted downwardly. The guide members B are provided adjacent to their rear ends with lugs 42 lying in the path of the members C for the purpose of arresting the inward movement of the shelf at the proper point. The disposition of the rollers 33, 38 and 39 is such that they will support the weight of the shelf in any position to which the latter may be adjusted, thus avoiding friction and enabling the shelf to be readily moved

to any desired position without regard to the weight of any load that may be supported thereon.

Supported in the spaces or compartments 25, adjacent to the lower end edges of the partition walls 23 are the book supporting carriers D each of which consists of a block of suitable dimensions having a concavely grooved upper face adapted to receive the back 43 of the binding of the book 44 to be supported thereon. Each carrier D is supported between two partition walls 23 by means of interengaging tracks or guide members E and F secured respectively upon the partition walls and upon the side edges of the carrier. The track members F are provided with overhanging flanges 45 having slots 46 wherein rollers 47 are supported for rotation; the flanges 45 are adapted to operate in grooves 48 in the track members E; the side walls 49 adjacent to the front ends of the grooves being beveled downwardly as shown at 50 and provided with slots 51 wherein rollers 52 are supported for rotation. The rollers 47 and 51 are so disposed as to support the carrier in any position to which it may be moved, and in such a manner that undue friction will be avoided at all points. The beveled portion of the side wall 49 is provided with an inclined notch 53 adapted for interlocking engagement with a similar notch 54 formed in the overhanging flange 45 of the track member F; said notches serving by their interlocking engagement to prevent the complete withdrawal of the carrier when tilted downwardly at the forward limit of its movement owing to the downward bevel of the forward end of the wall member 49 of the track member E. The latter is also provided adjacent to its rear end with a stop lug 55 lying in the path of the guide member F.

It will be seen from the construction herein set forth that the carrier D is virtually suspended between the partition walls 23 in such a manner that it may be readily moved in a forward direction and its forward end will then tilt or gravitate downwardly at the forward limit of its movement while the carrier itself will still be securely retained in position. The book supported upon the carrier may thus be moved to a position where it will be confined in one of the compartments bounded by the partition walls 23, the cap piece 21 and the back wall 22; or it may be moved outward from said compartment; and it may then be readily opened for inspection at any desired point while still resting upon the carrier. It will further be seen that the slidable shelf 28 which is supported adjacent to the underside of the latter will serve very materially to assist in supporting the weight imposed upon the carrier when the latter and the shelf have been moved outwardly to the out-

ward and forward limit of their respective movements. It is preferred to provide the carrier with a projecting member, such as a pin or dowel, 55', adapted to engage the shelf, so that the latter will inevitably be moved forward by the forward movement to the carrier, while the latter and the shelf may be slid or moved rearward independently of each other, the shelf may also be moved forward at any time independently of the book supporting carriers. This is a very advantageous feature of the invention, inasmuch as the shelf is always needed to support the load of the book supporting carriers, while at times it may be desired to use the shelf alone. The shelf has been shown as provided with a groove 56', to accommodate the engaging member, but said groove may be omitted by so arranging the engaging member as to engage the rear edge of the shelf. By this construction, when the carrier has been moved forward for inspection of the book supported thereon, the shelf will then be in position to partially support the weight of the carrier and of the book supported thereon so that the guide members supporting the carriers will be relieved of a great portion of the strain to which they would otherwise be subjected.

It will be noted that the forward edges of the partition walls 23 are provided with recesses 56 to enable the forward end of the book accommodated between the walls to be grasped when it is desired to move it forward for inspection.

The carrier D is provided at its front end with a guard plate 57 having an overhanging hook-shaped flange 58 adapted to catch over the forward edge of the back 43 of the book cover. Suitably supported upon the carrier adjacent to the rear end thereof is a plate 59 having an upright 61 adapted to engage the rear edge of the back of the book cover: said plate 59 being preferably longitudinally adjustable, as by fastening screws operating through a slot 60 therein, to provide for the securement of books of various dimensions. The upright 61 supports a spring barrel 62. Suitably constructed clamps 63 are mounted upon the side members 64 of the book cover, and said clamps are connected by flexible elements such as straps 65 with the spring barrel 62 upon which they are adapted to be wound by the tension of the spring 66 within the barrel, the tendency of which will thus be to close the book with the side members of the cover of which the straps 65 are connected. Adjustably mounted upon the upright 61 are flanged bracket members 67, the flanges 68 of which lie in the path of the cover members 64 to receive the impact of the latter when they are closed or folded toward each other by the means set forth.

The book closing device of the invention

may be omitted when desired, and it is not considered an absolutely necessary feature unless the books supported by the device are exceptionally heavy when the work of manipulating such books will be materially facilitated thereby.

It is obvious that the spring 66 should be so tensioned that it will be wound by the opening of the book cover, but its tension should be insufficient to close the book without manual assistance in order that the book may be laid open for inspection against the tension of the spring.

As has already been stated, the desk structure is not an essential feature of the invention with the exception of that part thereof comprised by the side walls, the back wall, the top piece or cap and the slidable supporting shelf; the back wall may be omitted when desired. It follows that any structure comprising side walls and a cap or top piece will be sufficient for the purposes of the invention which is thus applicable to book cases, stands, racks, shelves and other structures.

From the foregoing description, taken in connection with the drawings hereto annexed, the operation and advantages of this invention will be readily understood.

The construction is simple and inexpensive and it comprises in its essential parts members which may be readily duplicated.

By this device books of entry works of reference and heavy books of every description may be safely and conveniently stored in such a manner as to be readily accessible at all times. If the device is made of sufficient dimensions, two or more books may be made accessible at one time.

The desk structure shown in the accompanying drawings has been equipped with a hinged lid or flap 69 capable of being moved to any approximately horizontal position beneath the sliding and tiltable shelf 28, thus affording space upon which writing materials and the like may be conveniently supported.

Having thus described the invention, what is claimed is—

1. A suitably supported cap piece, a plurality of partition members firmly connected with said cap piece along their upper edges and having free lower edges, a plurality of book supporting carriers tiltably and slidably supported between the partition members, and auxiliary supporting means tiltably and slidably supported below and adjacent to the carriers.

2. A pair of side walls, a cap piece supported thereby, partition members firmly connected with said cap piece along their upper edges and having free lower edges, a book supporting carrier, interengaging tracks upon the partition members and the carrier whereby the latter is slidably and

tiltably supported, a shelf, and interengaging tracks upon the shelf and the side walls whereby the shelf is slidably and tiltably supported adjacent to the underside of the carrier.

3. In a device of the character described, a pair of wall members, a book supporting carrier, interengaging tracks upon the wall members and the carrier whereby the latter is slidably supported, the tracks upon the wall members being downwardly beveled at their outer ends, anti-friction rollers upon the track members, and stop lugs upon the wall track members lying in the path of the track members upon the carrier, said track members being provided with interengaging notches to limit the movement of the carrier in an outward direction.

4. In a device of the character described, a slidably and tiltably supported book supporting carrier, a shelf supported slidably and tiltably adjacent to the underside of the carrier to assist in supporting the latter, anti-friction rollers connected with the sup-

porting means of the carrier and the shelf, and stop means upon the supporting means of the carrier and the shelf to limit the movement of said carrier and shelf in both directions.

5. In a device of the character described, a book supporting carrier, book clamping means connected therewith, an upright supported upon the carrier, and a book closing device including a spring barrel supported for rotation upon the upright, cover engaging clamps, and flexible elements connecting said clamps with the spring barrel.

6. A slidably and tiltably book supporting carrier, slidably and tiltably auxiliary supporting means for the same, and engaging means upon the carrier to actuate the auxiliary supporting means.

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

HERMAN KOEPP.

Witnesses:

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WILLIAM F. EVANS.