No. 629,816. Patented Aug. 1, 1899.

E. F. POOLEY.

DESK LID SUPPORT.

(Application filed June 4, 1897. Renewed Jan. 7, 1899.)

(No Model.)

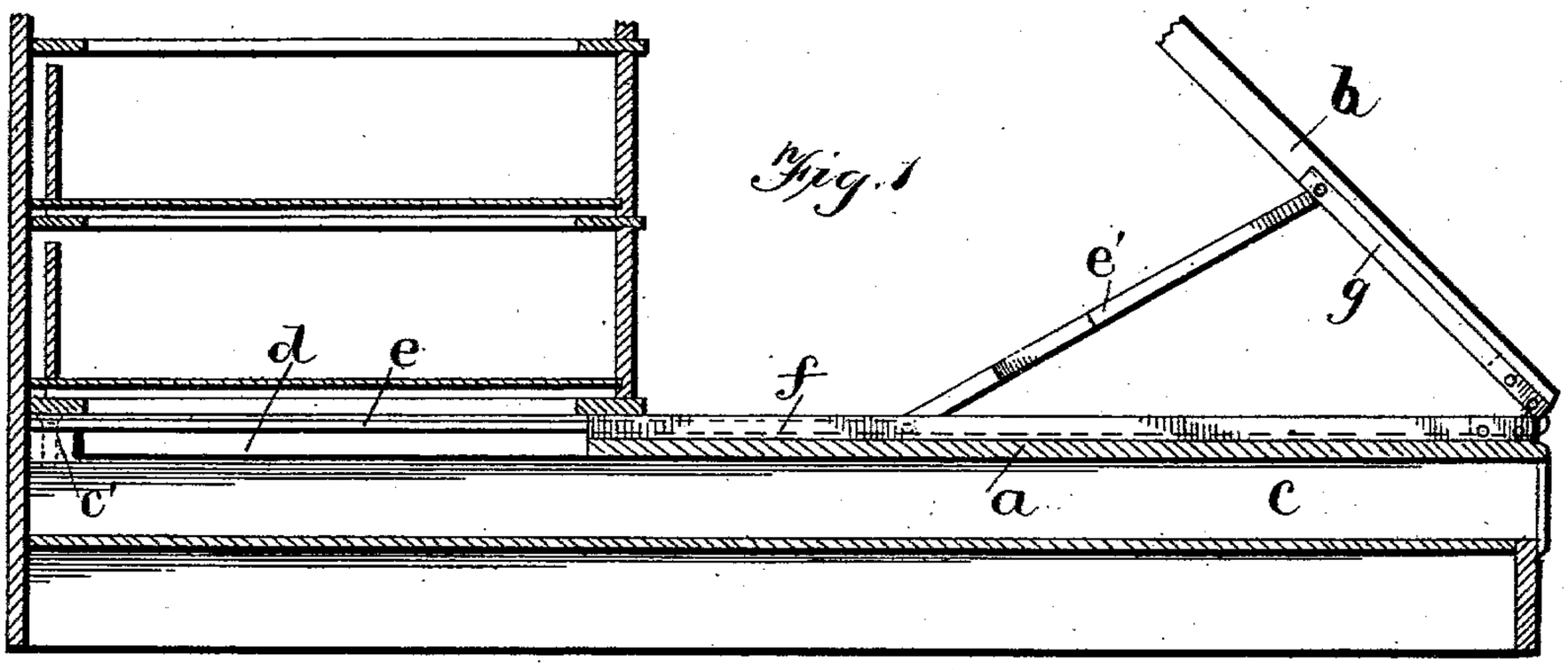


Fig. 1.

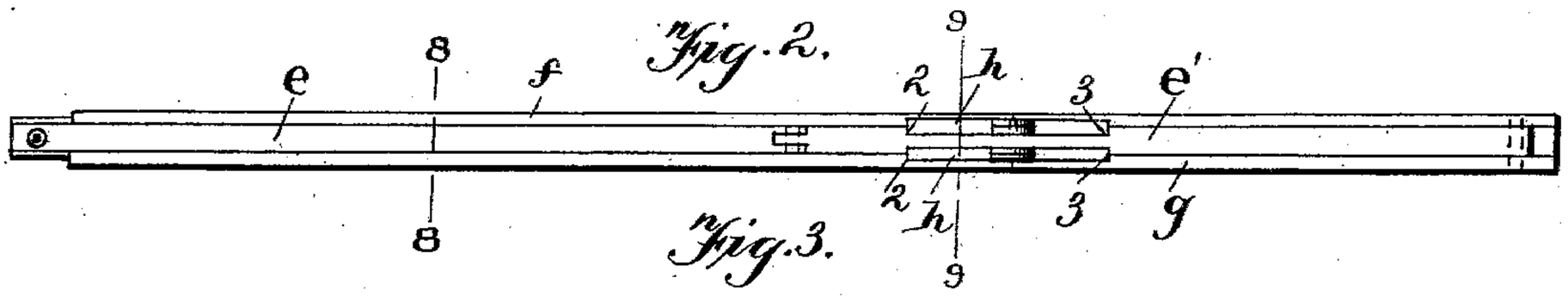


Fig. 2.

Fig. 3.

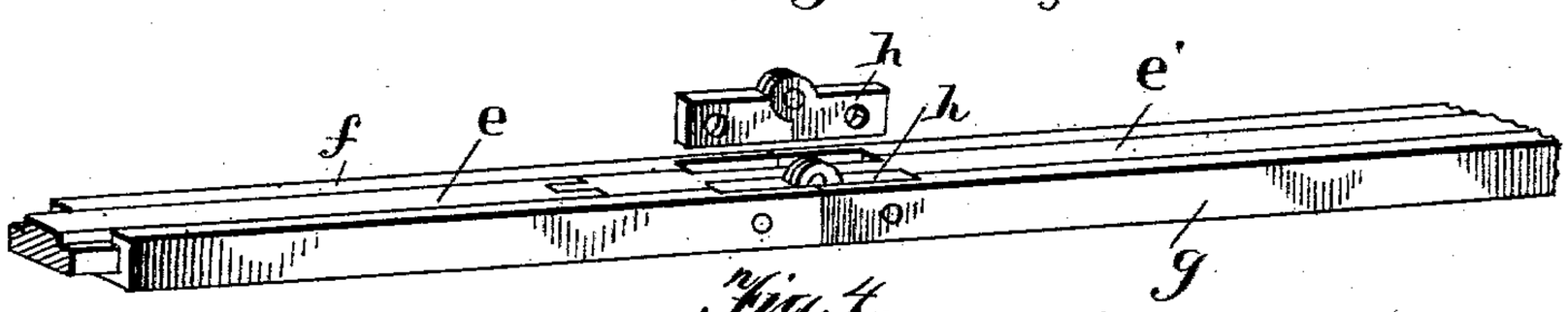


Fig. 4.

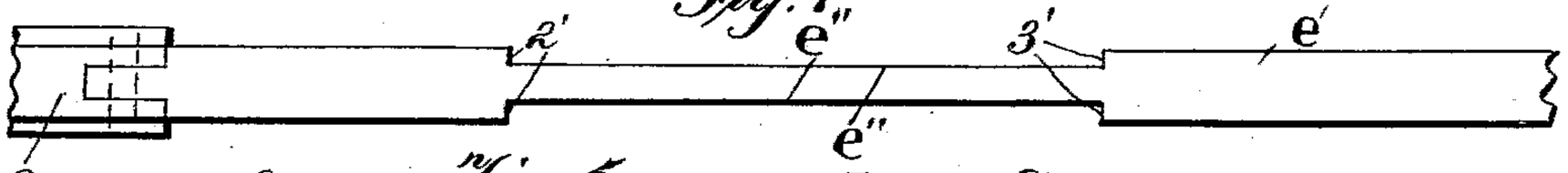


Fig. 5

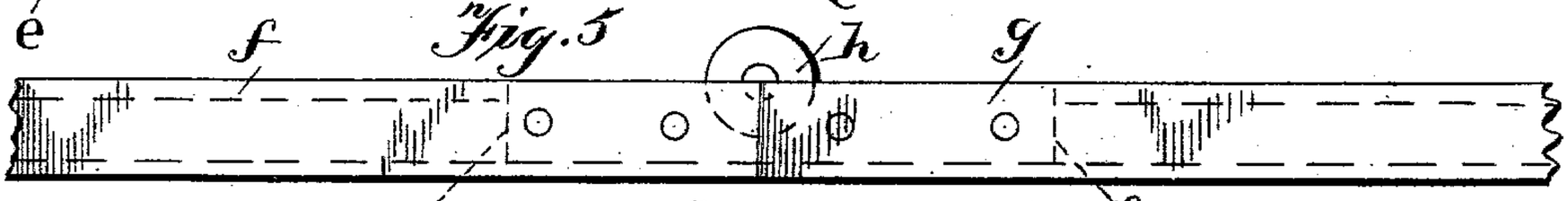


Fig. 6.

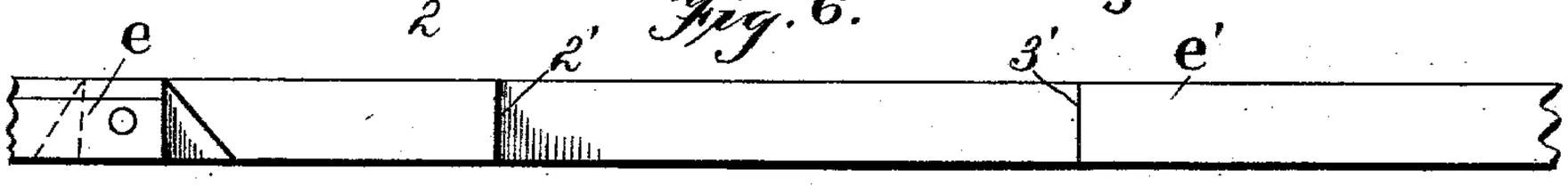


Fig. 7.

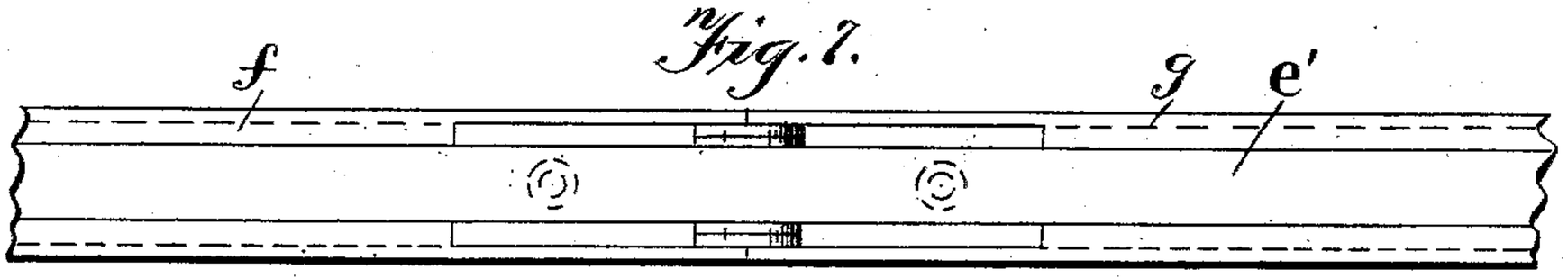


Fig. 8.

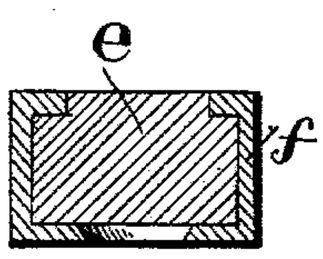
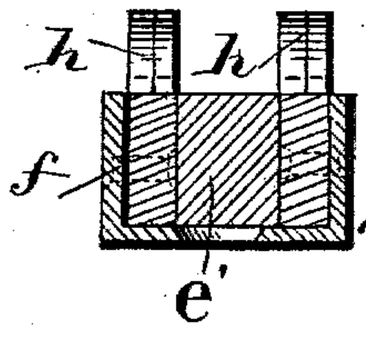


Fig. 9.



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UNITED STATES PATENT OFFICE.

EDWARD F. POOLEY, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO D. G. POOLEY, OF SAME PLACE.

DESK-LID SUPPORT.

SPECIFICATION forming part of Letters Patent No. 629,816, dated August 1, 1899.

Application filed June 4, 1897. Renewed January 7, 1899. Serial No. 701,521. (No model.)

To all whom it may concern:

Be it known that I, EDWARD F. POOLEY, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Desk-Lid Supports; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to certain improvements in lid-supports for drop-lid desks or other articles of approximately like construction.

Heretofore lid-desks have been provided with means for automatically projecting and retracting the lid-supporting slides comprising flanged channel-bars set flush in the lid and desk-shelf and united by hinges which constituted the hinges for the lid and which were secured to both outer sides of each pair of channel-bars, a rod secured to the rear end of the slide reciprocated in the shelf channel-bar, and a link was pivoted to the front end of said rod and to the lid-channel to operate the slide as the lid moved up or down. Such a construction is illustrated in Patent No. 407,415, issued to Frank D. Pooley and myself July 23, 1889; but in the practical manufacture of lid-desks to which lid-supports of such construction are applied it is difficult and expensive to properly form the grooves or recesses to receive the channel-bars and said outside hinges and to fit and apply the channel-bars, because of the side enlargements or projections formed by the hinges on both outer sides of each pair of channel-bars in addition to certain other practical objections caused by said outside hinges.

The invention consists in certain novel features in construction and in combinations and arrangements of parts, as more fully and particularly pointed out and explained hereinafter.

Referring to the accompanying drawings, Figure 1 is a vertical sectional view taken through part of a drop-lid desk, showing the lid-supporting slide and actuating means therefor. Fig. 2 is a top plan view of the channel-bars with the rod and link therein. Fig. 3 is a detail perspective of portions of the channel-bars, showing the link and slide-rod, one of the hinges shown removed, and above the joint between the channel-bars. Fig. 4 is a detail plan of the link, showing a portion of the slide-rod. Fig. 5 is a side elevation of parts of the channel-bars, dotted lines showing the link and slide-rod. Fig. 6 is a detail side elevation of the link and a portion of the slide-rod. Fig. 7 is a top plan view showing a modification. Fig. 8 is a cross-section on the line 8 8, Fig. 2. Fig. 9 is a cross-section on the line 9 9, Fig. 2.

In the drawings, *a* is the shelf of a drop-lid desk having the vertically-swinging lid *b*. The desk is of any ordinary construction and is provided with slides *c c*, arranged in suitable ways or guides beneath the shelf and lid to move out horizontally beneath the lid as the same drops to the horizontal open position, and thus support and uphold the same, and to move back into the desk as the lid is raised to its closed position. Usually two such slides are provided to support the lid at or near its opposite edges, although the drawings show but one such slide, as the slide in itself forms no part of this present invention.

The desk-shelf is slotted (see *d*) at its rear or inner portion over the slide, which is provided with a projection *c'*, extending upwardly in said slot and moving therein as the slide moves in and out. A horizontal rod *e* is at its rear end secured to the upper end of said projection *c'* and from thence extends forwardly over the desk-shelf in a channel-bar *f*, set therein, and a link *e'* is at its rear end pivoted to the front end of said rod, with its outer end pivoted in the outer end of the channel-bar *g*, set down in the lid, so that when the lid is lowered the link draws said rod forward, and hence projects the slide beneath the lid, and when the lid is raised the link forces the rod rearwardly, and hence withdraws the slide into the desk. When the lid is lowered and the slide out beneath the same, the link rests within the channel-bars in continuation of the rod *e* and flush with said bars, which are set in the shelf and lid

flush therewith. The two channel-bars are arranged in the same vertical plane and are usually similar in cross-section with the inturned top flanges, rendering the bars rectangular in cross-section with the top longitudinal opening and the straight parallel sides and bottom. The link *e'* is usually rectangular in cross-section or otherwise formed to close down into the two channel-bars, between the flanges thereof, while the rod is formed inverted-T-shaped, so as to extend beneath the flanges of the channel-bar *f* and held confined therein to slide only. The two channel-bars are arranged in the shelf and lid with their front and rear ends respectively brought together and united by suitable hinges, which also constitute the lid-hinges and the means for uniting the lid and shelf. Two parallel flat leaf-hinges *h h* are employed for this purpose. Each hinge is composed of two rectangular plates arranged vertically on edge, having the overlapping pivoted eyes at their adjoining ends. The height of each plate is about equal to the depth of the groove of the channel-bars, and the top flanges of the channel-bars are cut away on each side a distance equal to the length of each hinge, and the hinges are inserted in the channel-bars and are rigidly secured by rivets or other means against the opposite inner sides of the vertical walls on the channel-bars, so that the pivots of the two hinges will be over the junction between the meeting and abutting ends of the two channel-bars and so that the two hinges will extend into the groove of the channel-bars and form a contracted space between them, with the ends of the hinges forming the rigid shoulders 2 2 and 3 3 facing in opposite directions. The hinges rest on the bottoms or floors of the channel-bars, and hence materially strengthen and brace the joint between the same and render the device otherwise strong and durable. The opposite sides of the link, where it lies between said hinges when the lid is lowered in its horizontal position, are recessed (see *e'' e''*) to fit down into the contracted space between the hinges and to form the oppositely-facing shoulders 2' 2' and 3' 3' to coöperate with and abut against the shoulders 2 2 and 3 3, formed by the ends of the hinges. These abutting shoulders on opposite sides of the hinge-joint greatly strengthen the hinge and relieve the pivots and connections of strain under down pressure on the lid when lowered, whereby a most strong and rigid joint and hinge are provided, capable of resisting great strain and weight even should the supporting-slides be not employed and the link be merely loosely confined to the desk shelf and lid to permit swinging of the link as the lid is raised and closing of the link down into said bars as the lid is lowered.

In preparing the lid and shelf to receive the slide-operating device it is only necessary to place the lid and shelf in a routing or other suitable machine and cut parallel-sided grooves therein of a sufficient depth and size to receive said channel-bars, with the top surfaces thereof flush with the lid and shelf. Each groove can be formed by a single cut of the machine to most accurately receive a channel-bar without fitting or handwork in shaping the groove. This is possible because of the straight parallel sides of the bars throughout their entire lengths, which is attained by locating the hinges entirely within the bars. In the old construction mentioned, where the hinges were located on the outsides of the bars, great difficulty was experienced in properly fitting the hinged bars in the lid and shelf, as offsets had to be cut by hand in the side walls of the grooves to receive the outside hinges, and as these devices are applied to very expensive desks the utmost care and skill was required to make a most accurate and artistic fit and joint between the parts. Considerable time and skilled labor was hence required to properly fit and secure each pair of channel-bars, thereby materially adding to the cost of making the desks, and, furthermore, the hinged joint between the channel-bars was weakened by locating the hinges on the outside, and the general appearance of the device was marred by the very wide joint necessary at the hinge.

In Fig. 7 a modified construction is shown wherein the hinges are so set into the inner faces of the side walls of the channel-bars or are so reduced in thickness as to avoid the necessity of cutting the side recesses in the link opposite the hinges, as in this modified construction the groove of the channel-bars is not reduced between the hinges. However, although this modified structure is clearly within the spirit and scope of my invention, yet I prefer the construction wherein the link abuts against the hinges.

It is evident that various changes and modifications might be made in the forms, constructions, and arrangements of the parts described without departing from the spirit and scope of my invention. Hence I do not wish to limit myself to the constructions as shown and described.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. In a lid-support, the combination of the two channel-bars having the inturned upper flanges, a link pivoted to one bar and loosely confined at its opposite end, said flanges cut away at the adjoining ends of the bars, and vertically-arranged leaf-hinges within the bars and rigidly secured at the inner surfaces of opposite sides of the bars where the flanges are cut away and uniting the bars, substantially as described.

2. In a desk-lid support, the combination of the two channel-bars, leaf-hinges secured on opposite sides of the inner faces of the sides of the bars and forming oppositely-facing shoul-

ders, and a swinging link arranged to close down into the bars and having oppositely-facing shoulders arranged to abut against said shoulders of the two hinges, substantially as described.

3. In a drop-lid desk, the combination of the shelf, the swinging lid, hinges uniting the lid and shelf arranged with the opposite ends forming oppositely-facing shoulders, and a swinging link confined at its opposite ends to the lid and shelf and having oppositely-facing shoulders arranged to abut against the ends of said hinges, substantially as described.

4. In a lid-support, the combination of two channel-bars arranged to be set and secured in grooves of equal width throughout in a lid and shelf, a link pivoted to one bar at one end and loosely confined at its opposite end, and having the intermediate opposite side seats, and the two flat leaf-hinges set vertically and connecting the two channel-bars, said hinges arranged within and secured against the inner sides, respectively, of the bars, whereby the outer faces of the channel-bars are straight throughout, the opposite side seats of said link receiving said two hinges as the same close down into said bars and between the inner sides of the hinges, substantially as described.

5. In a lid-desk, the combination of the desk-shelf, the lid, the transverse grooves in the same of equal width throughout, whereby each groove can be formed by one cut of a routing-tool, a pair of channel-bars flush in said grooves, a pair of flat leaf-hinges within and uniting said bars, said hinges at their lower edges resting on the bottoms of the bars and rigidly secured flat against the inner opposite side faces of the bars, respectively, whereby the hinges brace against the bottoms of the bars and strengthen the bars at the joint between them, and a swinging pivoted link arranged to close down into said bars between said two hinges within the bars, substantially as described.

6. The lid-support comprising the two channel-bars of the same external width throughout, whereby the bars can be secured in grooves of the same width throughout, the swinging pivoted link arranged to close down into the bars, the bars at the adjoining ends thereof, having opposite side seats or recesses for the two connecting-hinges, the connecting-hinges within the bars and secured within the seats of said bars and receiving the link between their separated inner faces, whereby the bars are braced and side projections or enlargements at the end portions of the bar are avoided, substantially as described.

7. A lid-support comprising the two connected channel-bars, the swinging pivoted link arranged to close down in the same, and the two flat leaf-hinges connecting said bars and arranged within and on opposite sides thereof and secured flat against the inner faces of the opposite inner faces of the bar so that said link closes down between the two hinges, each hinge having a shoulder and the link having opposing side shoulders to abut against the same, substantially as described.

8. In a lid-desk, the combination of a desk shelf or top, a lid, channel-bars set in the lid and shelf and pivotally joined to form the lid-hinge connection, said bars having internal shoulders, and a link at one end portion pivotally joined to one bar and loosely confined at its opposite end and having shoulders to receive said shoulders within said bars when the link closes down into the bars and the lid is dropped, substantially as described.

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

EDWARD F. POOLEY.

Witnesses:

FRANK B. STOCKLEY,

EDWIN C. NEVIN.