June 22, 1926. 1,590,041

D. C. LAMB

LID SUPPORT

Filed Nov. 23, 1925

Fig. 1.

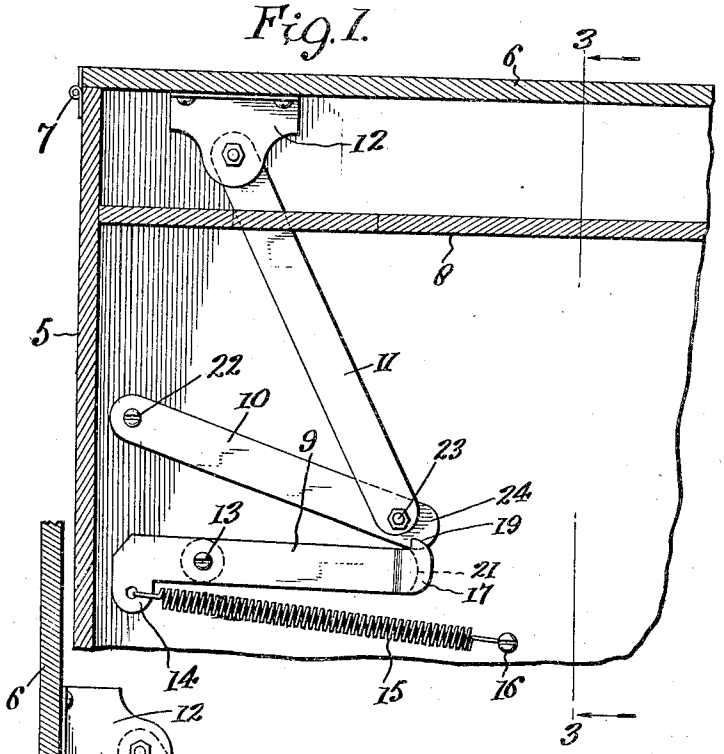


Fig. 3.

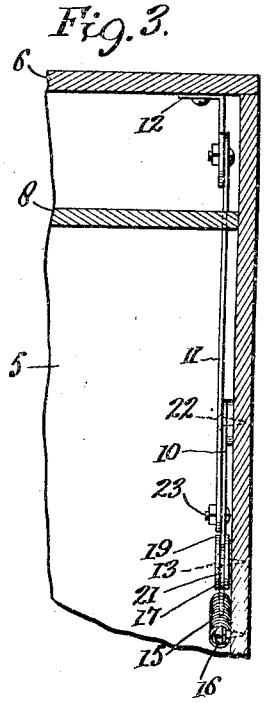
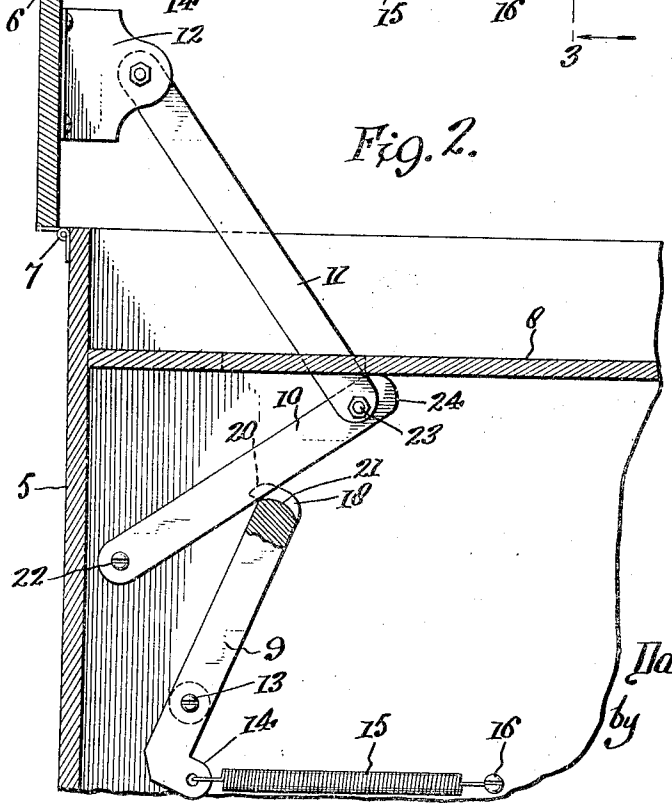


Fig. 2.



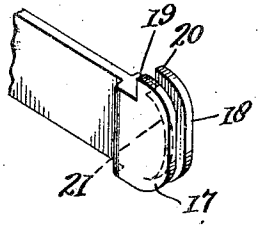


Fig. 4.

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UNITED STATES PATENT OFFICE.

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LID SUPPORT.

Application filed November 23, 1925. Serial No. 70,987.

The present invention relates to improvements in lid supports and refers more particularly to a device for holding a hinged lid in any desired angular position while not interfering with the fully opened or fully closed position of the lid.

Another object of the invention resides in providing a lid support which will counter-balance the lid and assist in the opening and closing movement thereof, aiding the operator in this respect.

The device will be found particularly applicable for use in connection with phonograph and radio cabinets, cedar and like chests, while it will also be useful in connection with door transoms, swinging cellar doors, swinging shelves, and other objects swinging about a horizontal axis.

With the foregoing and other objects in view, the invention will be described more particularly in connection with the accompanying drawings and will be more particularly pointed out in the attached claims.

In the drawings, in which like parts are denoted by similar reference characters throughout the several views,

Figure 1 is a fragmentary vertical section taken through a cabinet showing the lid in closed position with the improved lid support in elevation,

Figure 2 is a similar view, showing the open position of the lid,

Figure 3 is a vertical section taken on the line 3—3 in Figure 1, and

Figure 4 is a fragmentary perspective view of one end of the lever.

Referring more particularly to the drawings, 5 designates a phonograph or radio cabinet having the lid 6 hinged thereto as indicated at 7. At 8 is indicated the false bottom or plate of the cabinet which conceals the mechanism and above which is disposed the control parts of the apparatus which require manual attention.

It will be understood that although the device is shown and described in connection with such a cabinet, that it may be used in various other connections, as above indicated.

The improved device consists of a lever 9 positioned and arranged to act on an arm 10 to which is coupled a link 11 also having a pivotal connection with the lid 6 as by the use of an appropriate bracket 12 fastened to the under side of the lid 6, in this case near the hinged point 7.

The lever 9 is fulcrumed at 13 to the side of the cabinet as by screw, rivet, or other fastening passing through an intermediate portion of the lever preferably nearer to the end thereof which is provided with the perforated depending ear 14 for receiving one end of the coil spring 15. The other end of this coil spring is anchored as indicated at 16 to a fixed point; for instance, to a screw secured in the cabinet wall.

The other end of the lever 9 or the end remote from the fulcrum point is enlarged and forked or bifurcated as indicated in Figure 4 to produce the spaced flanges 17 and 18 having lateral extensions 19 and 20 projecting beyond the plane of the lever 9 and upwardly beyond the upper longitudinal edge thereof. Between the flanges 17 and 18 is a curved bearing nose 21 adapted to come into contact with the lower longitudinal edge of the arm 10 which is pivoted as indicated at 22 to the side wall of the casing or other appropriate part. The curved nose 21 frictionally engages said lower longitudinal edge of the arm 10 and resists the relative movement of these two parts. Moreover, the side flanges 17 and 18 frictionally engage the opposite side surfaces of the pivoted arm 10 and they further bind upon the arm and increase the total friction resultant.

The pivot point 23 which attaches the pivoted arm 10 to the lower end of the link 11 is set inwardly from the free end of the arm 10 leaving a projecting portion 24 of the arm for the engagement of the laterally extending parts 19 and 20 of the lever 9, whereby to act as a guide for maintaining the pivoted arm 10 at all times between the flanges. The lower end of the link 11 is also so arranged and disposed that a substantial portion of the lower edge of the pivoted arm 10 will project below the same to permit the projecting flange parts 19 and 20 to pass beneath the link 11 without causing disengagement of the lever and pivoted arm.

In the operation of the device, the spring 15 is drawn out or put under tension in the closed position of the lid 6 as shown in Figure 1. The perforation in the ear 14 and

the pivot point 13 of the lever 9 are so disposed as to form a substantial lock in the closed position of the lid so that the lid may be maintained tightly closed and in this position unaffected by the action of the spring 15. However, upon raising the lid 6 through a small angular distance the activity of the spring 15 will be felt in the other parts of the device. As the lid is raised, the lever 9 will follow beneath the pivoted arm 10, being urged by the spring 15 so to do, and the spring will assist this raising movement of the lid. The flanges 17 and 18 will gradually move up about the arm 10 and progressively increase the friction area on the sides of said arm 10. This friction will oppose the action of the coil spring 15 and these two forces acting on opposite ends of the lever 9 will tend to balance the lever and to consequently make only a very light touch necessary in moving the lid 6. When the lid is in a fully opened position the projecting end 24 of the pivoted arm 10 will strike beneath the false bottom or plate 8 of the cabinet and act as a stop. This stop arrangement might, however, be left out or provided by some other agency as particular requirements dictate.

In lowering the lid 6, the weight of the lid will of course, assist in this movement and this weight will be counter-balanced by the necessity for distending the spring 15 and moving the parts of the lever 9 and arm 10 frictionally upon one another. As a consequence, the lid may be maintained in any angular position and it can be shifted upon the lightest touch.

It is obvious that various changes and modifications may be made in the details of construction and design of the above specifically described embodiment of this invention without departing from the spirit thereof, such changes and modifications being restricted only by the scope of the following claims:—

What is claimed is:—

1. A lid support for cabinets and the like comprising a lid stay secured to the cabinet and to the lid, and lid-counterbalance means independent of said lid stay and acting frictionally and resiliently on said stay to assist in raising the lid and for holding the lid in adjusted position.

2. A lid support for cabinets and the like, comprising a lid stay coupled to the lid and to the cabinet, and a spring-pressed lever sliding directly and frictionally against said stay for facilitating the opening and closing movement of the lid and for retaining the lid in adjusted position.

3. A lid support for cabinets and the like, comprising a lid stay coupled to the cabinet and to the lid, a lever in said cabinet having an end frictionally sliding in contact with the edge of said stay, and means acting on said lever to cause the same to frictionally follow the movement of the stay in the act of raising and lowering the lid.

4. A lid support for cabinets and the like, comprising a lid stay coupled between said cabinet and the lid, a lever in said cabinet having a bifurcated end adapted to frictionally embrace said lid stay, and means acting on said lever for urging the same to follow the stay in its movement consequent upon the opening and closing of the lid.

5. A lid support for cabinets and the like, comprising a lid stay coupled to said lid and to the cabinet, a lever fulcrumed in the cabinet and having a forked end forming spaced flanges for frictionally grasping the lid stay, said flanges having lateral extensions.

6. A lid support for cabinets and the like, comprising a lid stay coupled to said cabinet and to the lid, and a lever fulcrumed in said cabinet and having a rounded nose for engaging an edge of said lid stay and with flanges for frictionally engaging adjacent edges of said stay, and means acting on said lever for urging the same constantly against said stay.

7. A lid support for cabinets and the like, comprising a lid stay coupled to said cabinet and to the lid, said lid stay comprising an arm pivoted to the cabinet and a link pivoted to said arm and to the lid, the point of connection of said arm and link being inwardly of the free end of said arm to leave a portion projecting beyond the link, and a lever fulcrumed in the said cabinet and resiliently pressed against said arm and adapted to engage the projecting end of the arm in the lowered position of the lid whereby the application of the resilient pressure through said lever will be initially developed in alinement with the long axis of said link to assist in overcoming the inertia of the lid in moving it from its closed position.

8. A lid support for cabinets and the like, comprising an arm pivoted in the cabinet, a link coupled to said arm and to the lid, said link in the lowered position of the lid extending above the lower longitudinal edge of the arm, and a lever fulcrumed in the cabinet below the arm and yieldably pressed against the arm, said lever having portions adapted to engage the side surfaces of the arm and to pass beneath the link in the lowered position of the lid.

9. In combination with a cabinet having a slotted false bottom and a hinged lid, a lid support comprising an arm pivoted in the cabinet, a link pivotally attached to said lid and to the arm inwardly of the free end of the latter and above the lower longitudinal edge of said arm, a lever fulcrumed in said cabinet beneath said arm and having a

rounded nose to frictionally engage the under longitudinal edge of the arm and also having flanges with upper lateral extensions adapted to frictionally engage the side portions of the arm, said lever having an ear, and spring means attached to said ear for pressing the curved nose of the lever gainst the arm, the point of attachment of the spring to the said ear and the fulcrum point of said lever lying substantially in alignment with the direction of force of said spring means during the closed position of the lid.

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