J. F. LARSEN.

SUPPORT FOR HINGED MEMBERS.

APPLICATION FILED APR. 2, 1919.

1,306,853. Patented June 17, 1919.

Fig. 1.

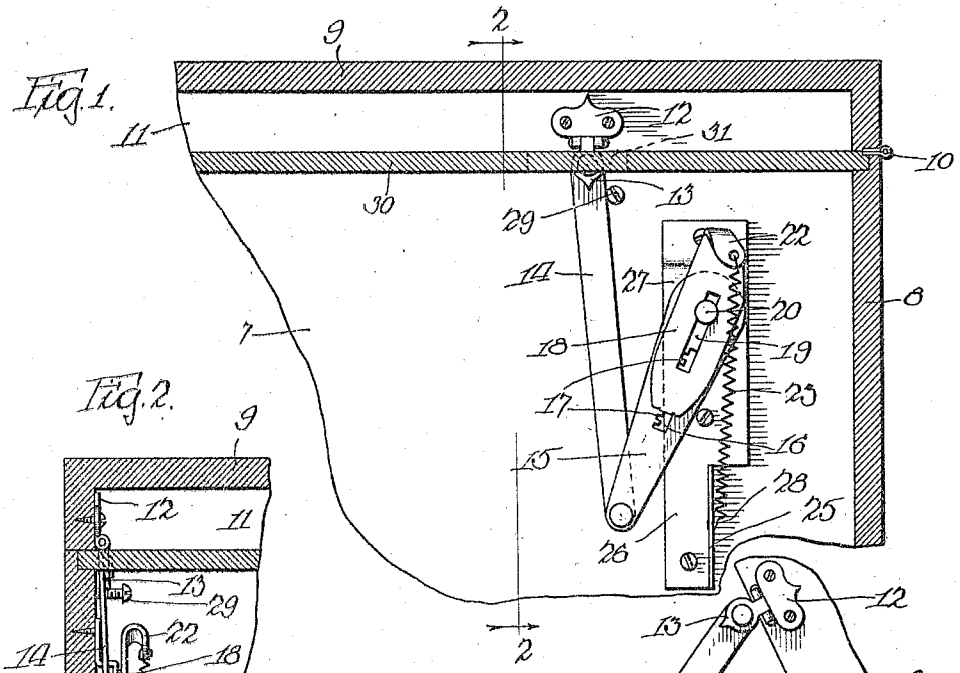


Fig. 2.

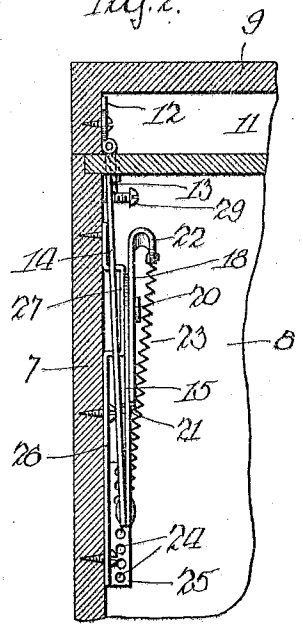


Fig. 3.

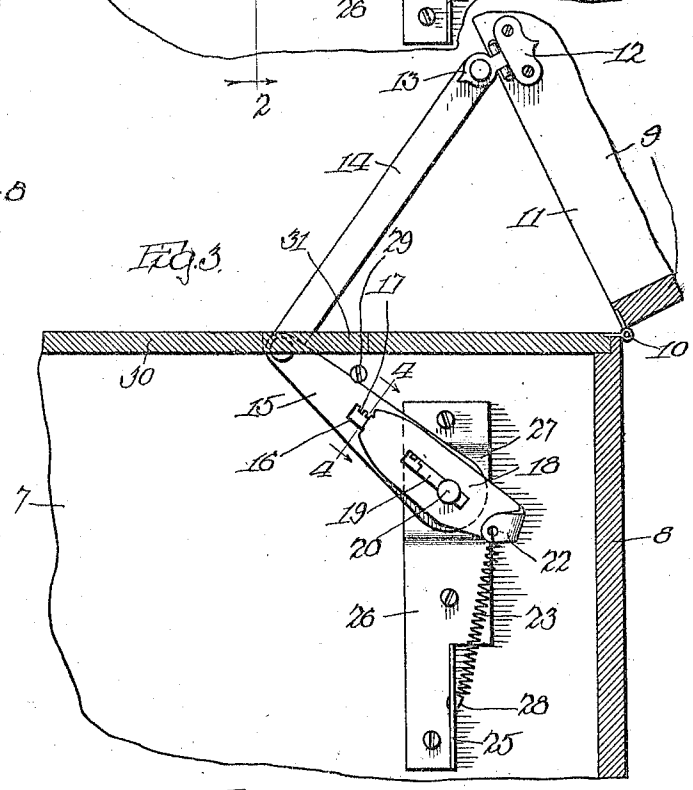


Fig. 4.

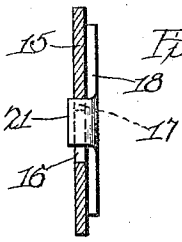
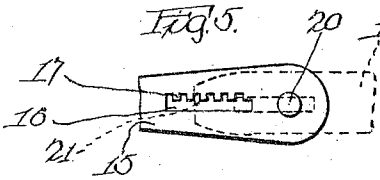


Fig. 5.



Witnesses:

Leo. L. Davis.

Inventor:

Jacob F. Larsen.

By Chas. E. Tillman

Atty.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JACOB F. LARSEN, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF TO JAMES DZIADASZEK, OF CHICAGO, ILLINOIS.

SUPPORT FOR HINGED MEMBERS.

1,306,853. Specification of Letters Patent. Patented June 17, 1919.

Application filed April 2, 1919. Serial No. 286,934.

To all whom it may concern:

Be it known that I, JACOB F. LARSEN, a citizen of the United States, residing at the city of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Supports for Hinged Members, of which the following is a specification.

This invention relates to certain improvements in means for supporting hinged members, especially the lids or covers of phonographs, graphophones, desks, trunks, boxes, pianos, trap doors and the like, when raised or turned on their hinges, to any desired elevation or angle, in such a manner that the supporting action or operation of the device will be automatic and of such a character as to securely hold the members in their tilted or raised position, without accidental lowering or falling of the same, yet so that by the proper manipulation of the cover or member, and by applying slight downward pressure thereto, it can be easily lowered or closed, in which position it will remain until again lifted.

The principal object of the invention is to provide a support of the above named general character, which shall be extremely simple and inexpensive in construction, strong, durable, and effective in operation, and has means whereby the tension of a spring may be adjusted and regulated so that it may be efficiently used in connection with hinged members of varying weights and dimensions.

A further object is to provide a support for hinged members, the parts of which shall be so made and arranged that they can be readily applied or attached to the article and its cover or hinged member, and when in use, will be concealed or protected, when the cover or member is closed. Numerous other objects and advantages of the invention will be disclosed in the subjoined description and explanation.

In the accompanying drawing, which serves to illustrate an embodiment of the invention—

Figure 1 is a fragmental vertical sectional view of a portion of a casing with a support for the lid thereof embodying the invention applied thereto, and illustrating the lid or hinged member in its lowered or closed position;

Fig. 2 is a vertical sectional view taken on line 2—2 of Fig. 1, looking in the direction indicated by the arrows;

Fig. 3 is a similar view to that shown in Fig. 1, but illustrating the lid or hinged member in a raised position, and also showing the positions the parts of the support will occupy under such conditions.

Fig. 4 is an enlarged cross sectional view of the compound lever of the support, and

Fig. 5 is a slightly enlarged face view of a portion of said lever.

Like numerals of reference refer to corresponding parts throughout the different views of the drawing:

The numeral 7 designates one of the walls of the casing, box, trunk or the like, and the numeral 8 another wall thereof, to the upper portion of which the cover 9 or member is secured by means of hinges 10 of the ordinary or any preferred construction. As is well known, the lids or covers of phonographs, graphophones and like casings have at their perimeters downwardly extended portions or flanges 11, which rest on the upper edges of the walls of the box or casing, and thus tightly close the same. To one of these flanges or downwardly extended portions 11 is secured a plate 12, which has hinged thereto a member 13, to which is pivotally secured the upper end of a link 14, the other end of which is similarly secured to one end of a lever 15, which is fulcrumed near its other end to one of the walls 7 of the box or casing. This lever may be called a compound lever, and consists of the member 15, which is provided with a longitudinally extended slot 16, having teeth or serrations 17 in one of its edges, by preference its upper edge, and another member 18, which is provided with a longitudinal slot 19 for the reception of the pivot 20, which provides a fulcrum for both of the members of the compound lever which, as shown, are located one on the other. The member 18 is provided at its end adjacent to the link 14 with a tongue 21, which is narrower than the slot 16 in the member 15, into which slot the tongue is extended and adapted for engagement with the teeth or serrations 17 of

the member 15, which teeth or serrations are for the fine or accurate adjustment of the member 18. At its opposite end from the tongue 21 the member 18 is by preference provided with an inwardly turned or off-set arm 22 which has an opening for the reception of one end of a spring 23, which is used for actuating the compound lever and link so as to counterbalance the weight of the lid or hinged member. The opposite end of the spring 23 is secured to a suitable support on one of the walls 7 of the box or casing located at any suitable point thereon. However, in the present instance said end of the spring 23 is shown as being secured in one of the openings 24 of a flange 25, formed on a bar 26, which is vertically mounted on the inner surface of the walls of the casing at a suitable point in front of the wall 8 thereof to which the member 9 or lid is hinged. This bar 26 is by preference formed or provided near its upper end with an inwardly extended off-set portion 27, which provides a base on which the member 15 of the compound lever may rest and to which it may be fulcrumed as shown. The flange 25 of the bar 26 is provided with a number of spaced apart openings 24, located in a vertical row, and said openings are used in connection with the spring 23 to afford adjusting means for regulating the tension of said spring.

From the foregoing and by reference to the drawing, it will be readily understood and clearly seen, that assuming that the tension of the spring 23 has been regulated so as to accurately counterbalance the weight of the member or lid 9, and that the parts of the support occupy the positions with respect to one another as shown in Figs. 1 and 3 of the drawings, it is obvious that the lid or member 9 may be raised from the horizontal position, as shown in Fig. 1, to any desired inclination between a horizontal plane and a vertical plane, and will be supported in such position by reason of the counterbalancing effect of the spring 23, and its connections with the member or lid. When it is desired to lower or raise the lid or member 9, slight downward pressure may be applied thereto, which will overcome the tension of the spring 23, and permit the lid to be lowered or closed, in which position it will remain until again lifted. In order to accommodate the tension of the spring 23 to lids of different weights or dimensions, it is only necessary to turn the member 18 of the compound lever sufficiently on its fulcrum 20 to cause the tongue 21 which engages the teeth 17 on the member 15 of said lever to be disengaged from the teeth, when it is obvious that the lever 18 may be slid on the pivot or fulcrum 20 in the proper direction so that the tension of the spring 23 will be increased or decreased as may be desired, when the tongue 21 can be caused to engage the teeth 17 and thus hold the member 18 in its adjusted position with respect to the member 15 on which it is mounted.

If rapid or coarse adjustment of the spring 23 is desired, it is obvious that the hook 28 on one end thereof can be removed from one of the openings 24 in the flange 25 and inserted in another one. In order to restrict the upward movement of the member or lid 9, as well as that of the movable parts of the support, a pin or screw 29 may be located in a proper position on the wall 7 of the casing. In some instances the box or casing is provided around the upper edges of its walls with a ledge 30, which may be provided with an opening 31 through which the link 14 may be extended, as is clearly shown in Figs. 1 and 2 of the drawing.

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

1. The combination with a hinged member, of a link pivotally connected at one of its ends thereto at a suitable distance from the hinged portion thereof, a compound lever consisting of a plurality of pieces having a common fulcrum on a support, at least one of said pieces being adjustably movable longitudinally on the other, and a spring to actuate said piece in one direction, the other of said pieces being pivotally connected at one of its ends to said link.

2. The combination with a hinged member, of a link pivotally connected at one of its ends thereto at a suitable distance from the hinged portion thereof, of a lever member fulcrumed on a support and pivotally connected at one of its ends to the link, said lever member having serrations or teeth disposed in a longitudinal row thereon, another lever member slidably mounted on the first named lever member and adapted to engage said teeth, and a spring connected at one of its ends to the opposite end of the slidable member and at its other end to a support.

3. The combination with a hinged member, of a link pivotally connected at one of its ends thereto at a suitable distance from the hinged portion thereof, a lever member fulcrumed on a support and pivotally connected at one of its ends to the link, said lever member having serrations or teeth disposed in a longitudinal row thereon, another lever member slidably mounted on the first named lever member and having means to engage said teeth, and a spring connected at one of its ends to the opposite end of the slidable member and connected for adjustment at its other end to a support.

4. The combination with a hinged member, of a link pivotally connected at one of its ends thereto at a suitable distance from the hinged portion thereof, of a bar verti-

cally supported below the hinged member and having a flange provided with a series of spaced apart openings, a lever member suitably fulcrumed above said perforated member and having a longitudinal slot provided with teeth or serrations in one of its edges, said member pivotally connected at one of its ends to the said link, another lever member slidably mounted on the first named lever member and having a tongue extended into the slot of the latter to engage the teeth thereof, and a spring connected at one of its ends to the opposite end of the slidable member and detachably connected at its other end to the perforated flange or member.

JACOB F. LARSEN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."