F. E. LEVANSELER.

SUPPORT FOR HINGED COVERS OR MEMBERS.

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1,324,600. Patented Dec. 9, 1919.

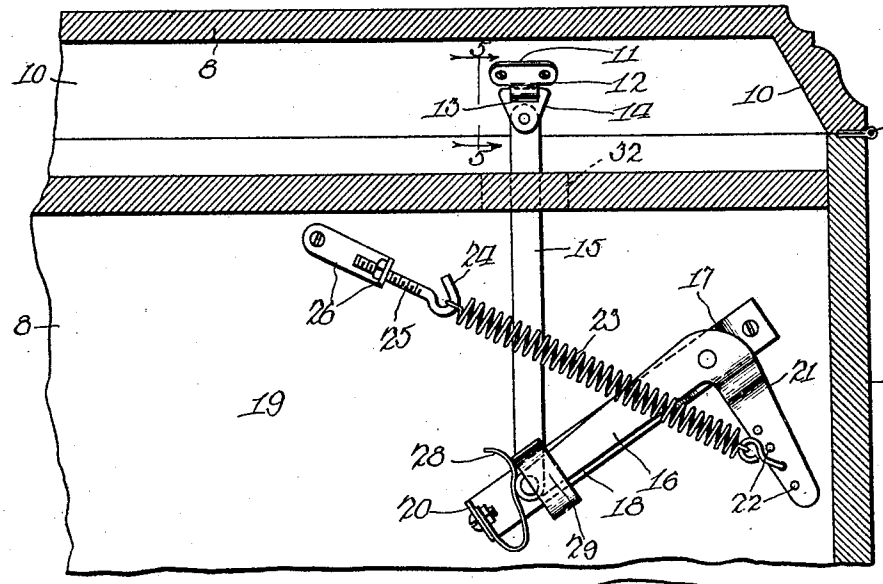


Fig. 1.

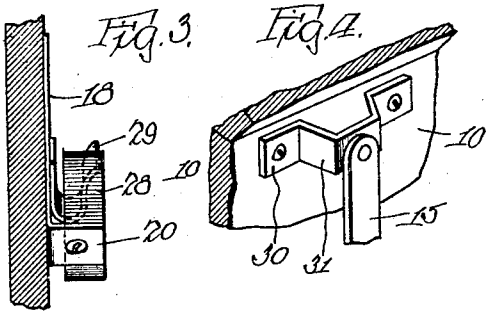


Fig. 3.

Fig. 4.

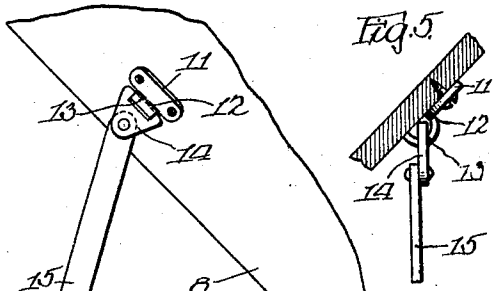


Fig. 5.

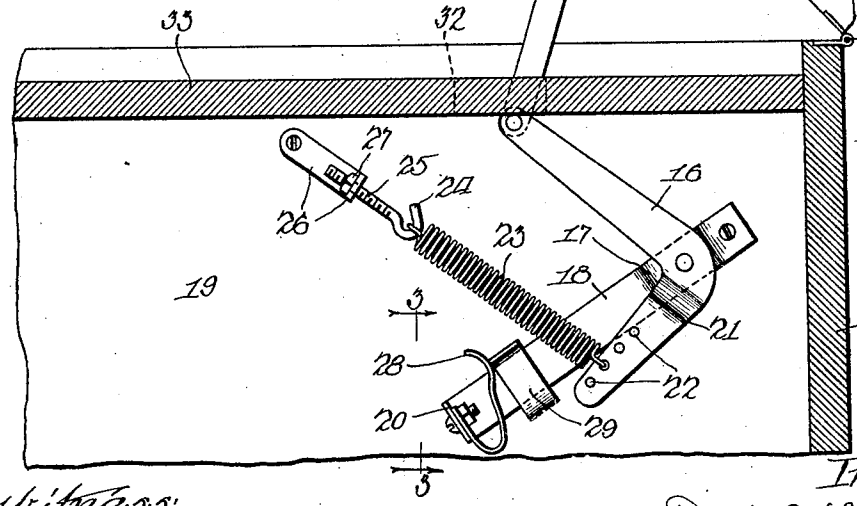


Fig. 2.

Witnesses:

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UNITED STATES PATENT OFFICE.

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SUPPORT FOR HINGED COVERS OR MEMBERS.

1,324,600. Specification of Letters Patent. Patented Dec. 9, 1919.

Application filed April 7, 1919. Serial No. 288,102.

To all whom it may concern:

Be it known that I, FRANK E. LEVANSELER, 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 Covers or Members, of which the following is a specification.

This invention relates to certain improvements in means for supporting the hinged lids or covers of phonographs, graphophones, desks, trunks, boxes, pianos, 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 lids, covers or members in their tilted or raised position against 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, with its parts so made and arranged that they can be easily applied or attached to the article and its cover, and when in use, will be concealed or protected, when the cover or member is closed. 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 vertical sectional view of a portion of a casing such as a phonograph or graphophone case or a box or trunk with its lid closed, showing one form of the support in position ready for use;

Fig. 2 is a similar view of like parts, showing the cover or lid raised or tilted and illustrating the position the parts of the support will assume;

Fig. 3 is a slightly enlarged view partly in section and partly in elevation taken on line 3—3 of Fig. 2, looking in the direction indicated by the arrows;

Fig. 4 is a fragmental perspective view of a portion of the lid or cover showing a modification in the means of connecting the supporting link thereto, and

Fig. 5 is a cross sectional view taken on line 5—5 of Fig. 1 looking in the direction indicated by the arrows.

Like numerals of reference refer to like parts throughout the different views of the drawing.

The reference numeral 7 designates the casing or box and the reference numeral 8 a portion of the lid thereof, which is secured by hinges 9 to the upper edge of one of the walls of the box or casing. As is well known and as shown in Fig. 1 of the drawing, the lids 8 are frequently provided at their perimeter with downwardly and outwardly inclined portions 10 to rest on the upper edge of the box or casing, and these downwardly inclined portions assume various angles with respect to the flat or upper portion of the lid, however, in some instances these downward portions of the lid occupy vertical planes, as shown in the modified construction illustrated in Fig. 4. In order to operatively and loosely connect the supporting link of the device to the portion 10 of the lid under the angular variations thereof, as above stated, I employ a plate 11 having an extension 12 provided with an inturned hook 13 and secure the said plate to the inner surface of the downturned portion 10 at one of the walls of the lid and at a suitable distance in front of the hinged portion thereof. The hook 13 of the plate 11 engages an opening in a member 14 to which the upper end of the supporting link 15 is pivotally secured, as is clearly shown in Figs. 1 and 2 of the drawing. By this arrangement it is apparent that the member 14 will be held in a vertical position by means of the hook 13, no matter at what angle the part 10 is inclined. Fulcrumed to the inner surface of the wall of the box or casing adjacent to the portion 10 of the lid to which the plate 11 is secured by means of screws or otherwise, is a bell crank lever 16 which is usually mounted at its fulcrumed portion on an outwardly extended portion 17 of a bar 18 which is secured in a slanting position on the inner surface of the wall 19 of the box, and has at its lower end an inwardly extended lug 20 The supporting link 15 is pivotally secured at its lower end to the longer arm of the bell crank lever, and the shorter arm of said lever is by preference formed with an in-

wardly extended off-set portion 21 to position said arm in a different plane from the longer arm of said lever, for the purpose to be presently mentioned. The shorter arm of said lever is provided with a series of openings 22 arranged in a longitudinal row near the front edge of said arm for the purpose of coarsely regulating the tension of a coiled spring 23 which is detachably secured at one of its ends in one of said openings, and has its other end secured to a hook 24 on an adjusting screw 25, which screw is extended through an opening in a bracket 26 secured to the wall 19 of the box or casing, and can be adjusted by means of a nut 27 for the fine adjustment of the tension of the spring 23. Mounted on the inwardly extended lug 20 of the bar 18 and secured thereto, is an upwardly extended spring 28, which, when the cover and the supporting link and lever 16 are in their lowermost positions, as shown in Fig. 1, will rest against the link 15 and the lever 16 at their juncture, and thus hold the lid in its closed position, but as soon as the lid is raised slightly the said link and lever will be freed from the spring 28, thus permitting the spring 23, through its connections with the lid to counterbalance the weight of the latter. Secured to the bar 18 near the extension 20 thereon, and extended across the same, is a substantially U-shaped bracket 29, which acts as a stop for the spring 28, as well as a guide for the longer arm of the bell crank lever. While I have shown said lever mounted on the inwardly extended portion 17 of the bar 18 and have also illustrated the spring 28 as being secured to the extension or lug 20 on said bar, yet it is evident that said bar may be omitted and that the bell crank lever 16 may be otherwise suitably mounted and fulcrumed on the wall 19 of the casing, and that the spring 28 can be suitably secured at one of its ends thereto, and that the U-shaped bracket 29 or stop for the spring 28 may be omitted without departing from the spirit of the invention.

In Fig. 4 is illustrated a modification in the means for securing the upper end of the supporting lever to the vertical portion 10 of the lid, which consists in employing a bracket 30 which is secured to the inner surface of the portion 10 of the lid, and is provided with an inward extension 31, to which the upper end of the link 15 is pivotally connected.

From the foregoing and by reference to the drawing, it will be readily understood and clearly seen that the tension of the spring 23 can be regulated by means of the openings 22 in the shorter arm of the bell crank lever, which openings are engaged by one end of said spring, and by means of the adjustable rod 25 which engages the other end of the spring, so that the weight of the lid or cover will be counterbalanced, and that by raising the cover or member 8 from the position shown in Fig. 1 to that shown in Fig. 2 of the drawing, the link 15 and lever 16 will be moved upwardly from out of engagement with the spring 28, thus holding the cover at any desired inclination or elevation until it is desired to lower the same, when, by a slight downward pressure on the lid, the same will be lowered gradually until it rests on the top of the casing, box, trunk, or desk, in which position it will be held by the action of the spring 28 engaging the end of the longer arm of the lever 16 and the lower portion of the link 15 which connects it to the cover or member. By employing the hooked plate 11 and apertured member 14 engaged by the hook of said plate, it is apparent that said member can be placed in a vertical position and so held by the hook irrespective of the inclination of the wall 10 of the cover or member. The link 15 is shown as extending through a suitable opening 32, provided in a horizontally extended cleat 33 on the inner surface of the wall 19 of the casing, with which cleats the casings are sometimes equipped. By providing the shorter arm of the bell crank lever 16 with the inwardly extended offset portion 21, it is apparent that the arms of said lever will move in different planes thus permitting the spring 23 to be supported in the movement of the plane of the shorter arm of the lever without interference therewith by the other arm.

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

1. The combination with a hinged cover or member, of a link pivotally connected at one of its ends thereto at a suitable distance from its hinged portion, a suitably fulcrumed spring-actuated bell-crank-lever pivotally connected at one of its ends to the other end of the link, and a spring mounted across the path of the lever to engage the longer arm of the same when in its lowermost position.

2. The combination with a hinged cover or member, of a link pivotally connected at one of its ends thereto at a suitable distance from the hinged portion thereof, a suitably fulcrumed bell-crank-lever pivotally connected at one of its ends to the link, a spring connected at one of its ends to a point near the end thereof opposite the link and at its other end to a suitable support, and a spring mounted across the path of the lever to engage the same when in its lowermost position.

3. The combination with a hinged cover or member, of a plate secured to the cover or member and having a laterally curved hook extended therefrom, a member having an opening engaging said hook and held

thereby for lateral movement only, a link pivotally connected at one of its ends to said member, and a suitably fulcrumed spring-actuated bell-crank-lever pivotally connected at one of its ends to the other end of the link.

4. A device of the character described including in combination, a hinged cover or member, a hooked plate secured to the cover or member, a member having an opening engaging said hook and held thereby for lateral movement only, and a link pivotally connected at one of its ends to said member.

5. The combination with a hinged cover or member, of a hooked plate secured to the cover or member, a member having an opening engaging said hook and held thereby for lateral movement only, a link pivotally connected at one of its ends to said member, a suitably fulcrumed bell-crank-lever pivotally connected at one of its ends to the link, a spring connected at one of its ends to a point near the end thereof opposite the link and at its other end to a suitable support, and a spring mounted across the path of the lever to engage the same when in its lowermost position.

6. The combination with a hinged cover or member, of a link pivotally connected at one of its ends thereto at a suitable distance from the hinged portion thereof, a suitably fulcrumed bell-crank-lever pivotally connected at one of its ends to the link, the arms of said lever being off-set with respect to each other so as to move in different planes, a spring adjustably connected at one of its ends to a point on the lever near the end thereof opposite the link and adjustably connected at its other end to a suitable support, a spring mounted to engage said lever when in its lowermost position, and a stop for the last named spring and guide for the lever mounted near said spring.

FRANK E. LEVANSELER.