L. H. HAYS & G. W. JOHNSON.

AUTOMATIC LID SUPPORT.

APPLICATION FILED JULY 30, 1913.

1,137,484. Patented Apr. 27, 1915.

Fig. 1

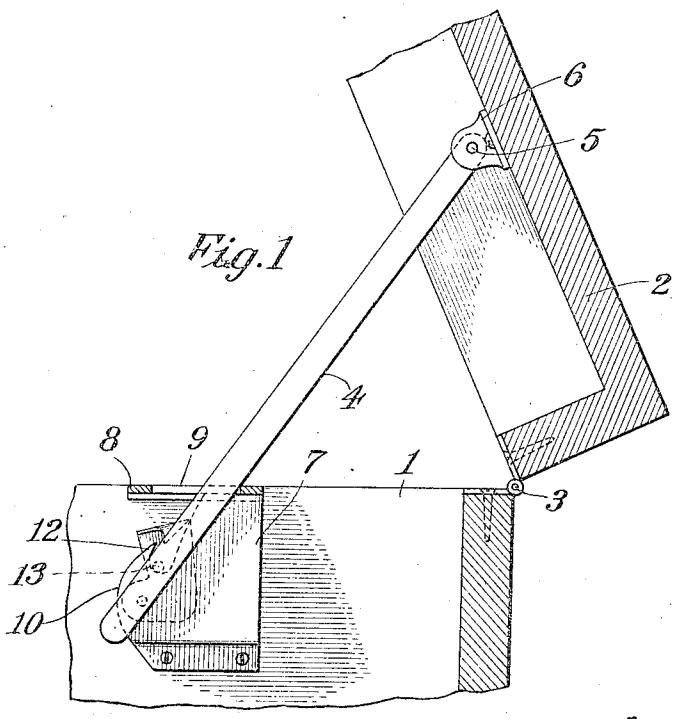


Fig. 2

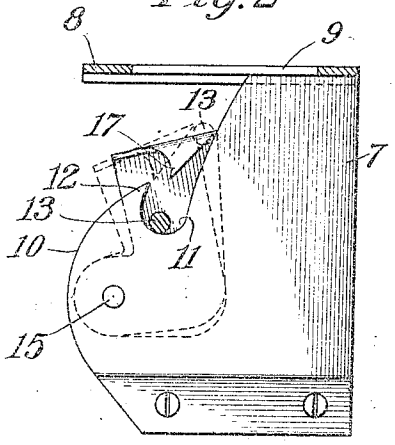
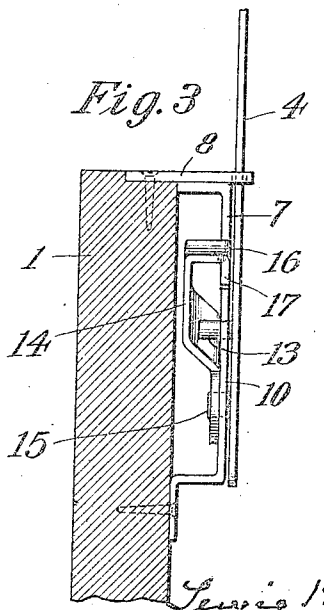


Fig. 3



Witnesses:
I. B. Wegenast.
E. E. Warfield.

Lewis H. Hays
Gustaf W. Johnson
Inventors

By their Attorneys
Munn Cameron Lewis & Massie

UNITED STATES PATENT OFFICE.

LEWIS H. HAYS, OF SPOKANE, WASHINGTON, AND GUSTAF W. JOHNSON, OF MACE, IDAHO, ASSIGNORS TO AMERICAN GRAPHOPHONE COMPANY, OF BRIDGEPORT, CONNECTICUT, A CORPORATION OF WEST VIRGINIA.

AUTOMATIC LID-SUPPORT.

1,137,484. Specification of Letters Patent. Patented Apr. 27, 1915.

Application filed July 30, 1913. Serial No. 782,026.

To all whom it may concern:

Be it known that we, LEWIS H. HAYS and GUSTAF W. JOHNSON, residents of Spokane, Washington, and Mace, Idaho, respectively, (whose post-office addresses are Spokane, Washington, and Mace, Idaho, respectively,) have invented a new and useful Automatic Lid-Support, which invention is fully set forth in the following specification.

Our invention is an automatic lid-support, intended primarily for a box or other receptacle provided with a hinged cover or lid and having a rigid rod or stay-bar pivoted or otherwise mounted upon the lid, and adapted to be temporarily secured at its lower end, for propping the lid open in raised position. In previous devices of this character, the lid-support has been secured in its raised position as by a thumb-screw or similar catch which requires manipulation,—one hand being employed for lifting (or lowering) the lid while the other hand manipulates the catch or other device. And, although spring-catches have been employed for this purpose, automatically locking the lid-support in its raised position, nevertheless they require manipulation in order to lower the lid,—thus also requiring the employment of both hands.

The object of our invention is to provide automatic means for locking and for releasing the lid-support, so that the lid can be raised and lowered by one hand alone.

Our invention comprises the employment of means, such as a projection on the relatively-movable supporting-rod or lid-support, and a relatively-stationary seat for holding the supporting-rod in its raised position, and means, such as a pivoted dog, for guiding and forcing said projection (when used) into said seat (when used), said dog or other device being operated by subsequent upward movement of the supporting-rod so as to permit said projection to ride over the dog in lowering the lid.

Although, as above stated, our invention is primarily intended for use with a box having a hinged lid or cover, yet it is applicable for use with any movable rod or supporting-member. However, for the sake of clearness we shall now proceed to describe our invention, in connection with the annexed drawings, as applied to an ordinary box with a hinged cover.

In these drawings, Figure 1 is a sectional view of a portion of a box or lid, giving a side view, partly in section, of a preferred embodiment of our invention, indicating the lid as held secured in its raised position. Fig. 2 is a side view, on a larger scale, of the dog and a portion of the guide-bracket, with another position of the dog indicated by broken lines. Fig. 3 shows a cross-section of Fig. 2.

Referring to these drawings, 1 represents the side of a box or cabinet or other receptacle or inclosure.

2 represents the lid or cover therefor, shown as hinged to the rear thereof at 3.

4 is the supporting member or rod pivoted at 5 to a bracket 6 secured to the lid, and extending into the interior of the box, adjacent the side-wall 1. A relatively-stationary guide for the movable supporting-rod is secured to the side of the box; and preferably consists of a bracket which comprises the vertical plate 7 secured, as at its lower end, to the inner face of the wall 1 and having the horizontal plate 8 at its top, where it may be secured upon the upper edge of the wall 1; and this bracket is preferably provided with the guide-slot 9 (located in plate 8), through which depends the supporting-rod 4. The plate 7 presents on its front and lower edge the cam-projection 10, and above that the cutaway portion or seat 11 with a slightly rearwardly-turned lip 12. From the lower portion of the supporting-rod 4 a projection 13 extends inwardly toward the adjacent side-wall 1, so that it will impinge upon and ride over the cam 10 when drawn upward by the lifting of the lid 2. The effective length of the supporting-rod 4—that is, the distance between its pivot 5 and its projection 13,—is such that when the lid has been raised to the desired extent, the projection 13 has just engaged the flange 16 and is ready to be dropped back into its seat 11.

The dog 14 is a plate, suitably pivoted as

at 15 on plate 7. At its upper edge the dog is provided with the outwardly-turned horizontal flange 16 that is located just above the seat 11 and in the path of the projection 13; and from the outer edge of this flange depends the nose 17 that curves forwardly and extends into the upper portion of the seat 11 (with clearance at the bottom and on each side). Preferably the dog is so pivoted that normally the rear of its flange 16 rests upon the adjacent edge of plate 7. The raising of lid 2 draws the rod 4 upwardly, through the guide-groove 9, until the projection 13 impinges upon and rides over the cam 10, which causes the projection to engage the under side of flange 16 and enter the reëntrant angle formed by nose 17,—the projection abutting against the forward face of the nose. Thereupon, the parts become locked against further upward movement, and the projection 13 can only drop into the seat 11,—the rod and the lid being thus securely held in raised position. Further lifting of the lid, however, carries the projection 13 behind the rear face of nose 17 (tilting the dog out of the way, as indicated in broken lines in Fig. 2); so that the projection 13 can clear the dog altogether, the latter then dropping back to its normal position, with its deflecting-flange 16 interposed to prevent the projection 13 again entering the seat 11 on its downward course; and consequently the lid can now be freely lowered and the box closed by one hand alone. In short, all that has to be done is to raise the lid as far as it will go, whereupon the projection drops back, by gravity, into its seat 13, and the lid is automatically held securely propped open; thereafter, all that is to be done is to first raise the lid slightly (whereupon the dog tilts by gravity, so that its flange 16 automatically cuts off access to the seat 13) and then lower the lid. If desired there may be a pair of such automatic supporting-means, one on each side of the box or receptacle.

We have thus described in full detail a preferred form of our invention, but only for the sake of clearness, since our invention is not limited to the precise construction and arrangement above set forth.

Having thus described our invention, we claim:

1. An automatic lid-support, comprising a rod adapted to be secured to the lid and having a projection, a relatively-stationary guide for said rod having a cam and a seat for said projection, and a pivoted dog located adjacent said seat and extending above said seat and into the path of said projection.

2. An automatic lid-support, comprising a vertically-movable supporting-member, means for supporting the same in its raised position, a pivoted dog having a flange and nose interposed in the upward path of said member and blocking it against further upward movement beyond its supported position, said dog being deflectable by a succeeding upward movement of said member so as to permit the latter to pass by said dog and then be lowered.

3. An automatic lid-support, comprising a rod having a projection, a stationary seat for said projection, and a pivoted dog extending normally in the path of said projection and normally preventing it from passing upwardly beyond said seat, but tiltable by succeeding upward movement of said projection after first lowering it slightly, so as to permit the latter to pass beyond said dog.

4. An automatic support for the hinged lid of a box or the like, comprising a prop depending from a pivot on the lid and having a projection, a stationary guide for said prop comprising a seat for said projection, and suitable means for preventing said projection being drawn completely through said guide without first being lowered to rest in said seat and thereby support said lid in raised position.

5. An automatic lid-support, comprising a rigid supporting-member, a stationary seat for supporting the same in raised position, and a dog normally preventing the passage of said member beyond the position of being engaged by said seat, said dog being tiltable by a succeeding upward movement of said member after first lowering it slightly and permitting return of the latter.

6. An automatic lid-support, comprising a vertically-movable supporting-member depending from the lid and having a projection, means for supporting the same in its raised position, said means consisting of a stationary guide for said upwardly-moving member having a tortuous passage for said projection, and means to prevent its passage through the same without first seating it in a reëntrant angle of said passage and thereby supporting the lid.

7. An automatic support for the hinged lid or cover of a box or the like, comprising a vertically-movable supporting-member depending from the lid and having a projection, and a guide therefor carried by said box and having a substantially **N**-shaped passageway for said projection, the parts being so arranged that said projection can be passed completely through said passageway only by lowering it slightly while in its intermediate position within said passage and thereby supporting it in a seat in said **N**-shaped passage ready to be subsequently passed upward completely through the same.

8. An automatic support for a cover or lid of a box or the like, consisting of the

combination of a rigid prop depending from said lid, a stationary support upon said box for engaging said prop and holding the lid in raised position when the latter has been opened and then slightly lowered, and means positioned to be moved by further lifting of said lid and preventing engagement between the parts aforesaid so as to permit free lowering of said lid.

In testimony whereof we have signed this specification in the presence of two subscribing witnesses.

LEWIS H. HAYS.
GUSTAF W. JOHNSON.

Witnesses for Hays:
GEO. D. DRYER,
HAROLD HOOKER.
Witnesses for Johnson:
E. DANIELSON,
J. B. OSTRANDER.