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HOLDER FOR CLOSURES, SUCH AS LIDS, SASHES, DOORS, AND THE LIKE

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Fig. 1.

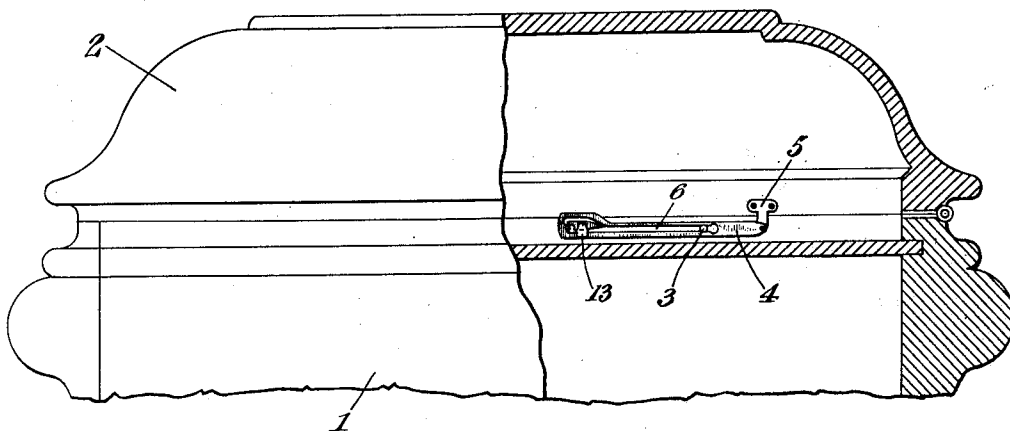


Fig. 2.

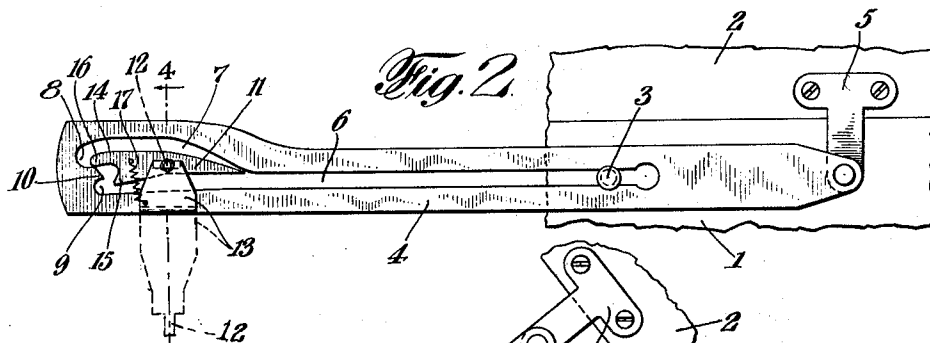


Fig. 4.

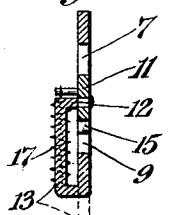


Fig. 3.

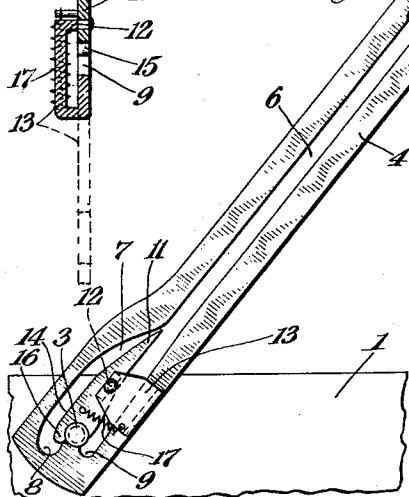


Fig. 5.

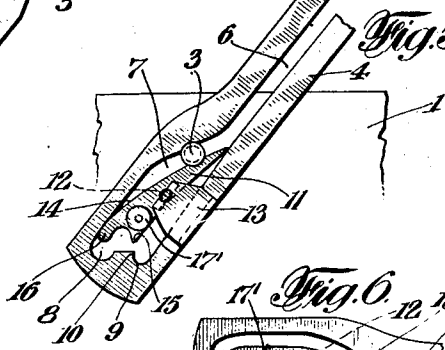
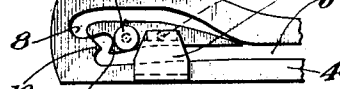


Fig. 6.



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HOLDER FOR CLOSURES, SUCH AS LIDS, SASHES, DOORS, AND THE LIKE.

Application filed May 25, 1927. Serial No. 193,968.

My invention relates to a holder for closures, such as lids, sashes, doors and the like; wherein the closure is movably associated with its cooperating structure, and which may or may not be hingedly attached thereto by means independent of the holder.

An object of the invention is to provide a holder which will positively limit the movement of the closure outwardly with respect to its cooperating structure and maintain it in outward or open position, and which is semi-automatic and positive in its locking and releasing action; and such a holder which is of a simple construction and readily adapted to economical production.

Another and a more specific object is to provide such a holder for use in connection with cabinets, such for example as those containing talking machines; but it is to be understood that the scope of usefulness of my invention is to be as broad as heretofore pointed out.

Numerous devices of this general character have been heretofore disclosed and some of these have been used in practice; but none of these devices has provided a closure means which is positive in its locking and unlocking action and which adequately fulfills the demands for such an article. Furthermore, many of these devices are cumbersome, and the cost of manufacturing the same is prohibitive for this class of article.

In my invention I provide an article which is excellently adapted for economical production, and which is neat in appearance, small in dimensions and light in weight. In general, my device comprises a longitudinal arm which is adapted to be pivotally attached to a closure means adapted for cooperative association with a stud attached to the body carrying the closure means. Upon lifting the closure means, or moving it outwardly with respect to the associated body member carrying the stud, the stud slides outwardly along the arm until it strikes the positive stop forming a part of the arm, and if then the closure means is released, it is held in fixed spaced relation with respect to the body. This action is positive both as to the stop action and the locking action. When it is desired to lower or shut the closure means, the closure is raised slightly from its locked position and then lowered; this action causing a positive unlocking of the stud and allowing it to be

returned along the arm, to thereby allow the closure means to return to its closed position. Alternatively, the arm may be carried on the relatively fixed body, and the stud carried on the closure means as is obvious to those skilled in the art. While the device is primarily adapted to be used on that form of closure means, commonly termed a lid, and which is adapted to be raised and lowered to its respective open and closed position, nevertheless it is also adapted to be used on closures positioned otherwise, as will be more fully pointed out following. It is also adapted to be used on closure means which are not independently hingedly connected to an associated body.

My invention consists in the novel construction, arrangement and combination of parts hereinafter described according to a preferred embodiment thereof. The invention will be more particularly pointed out in the appended claims.

Other objects, features and advantages will appear from the following specification and claims taken in connection with the accompanying drawings.

Referring to the drawings illustrating the present preferred form of the invention:

Fig. 1 is a side elevation of a portion of a talking machine cabinet, with parts broken away, showing the holder of this invention applied thereto,

Fig. 2 is an enlarged side elevation of the holder and portions of the structure to which it is attached, the holder being shown in the relative position assumed when the closure means is in its closed position,

Fig. 3 is a similar view showing the holder in its position assumed when the closure means is in its open position,

Fig. 4 is a section at 4—4 of Fig. 2,

Fig. 5 shows a portion of the holder embodying a modification of the latching mechanism, and

Fig. 6 shows a different position of the modification shown in Fig. 5.

Referring to the drawings: 1 represents a cabinet, such for example as a talking machine cabinet, having a lid 2; such cabinet and lid being representative of a structure comprising a relatively fixed member and a movable member, and in which the movable member will be referred to generally as a closure. 3 represents a projection, such as a

stud or pin, which is rigidly attached to the member 1 and is adapted for slidable engagement with respect to an arm 4 forming a part of the supporting device which is adapted to hold the closure 2 in fixed open position with respect to the body 1; the arm 4 being pivotally attached to the closure 2 by means of a suitable connection such as the bracket 5.

Referring more particularly to Fig. 2, the arm 4 is preferably made of suitable sheet material, such for example as steel, from which it may be die stamped with ease. The arm 4 is provided with a longitudinal slot 6 which terminates adjacent the outer end of the arm in an enlarged recess or opening 7. This opening 7 is formed with an upwardly and outwardly inclined wall portion formed as a continuation of the upper wall of slot 6 and which terminates at 8 in the form of a pocket. The lower wall of slot 6 continues outwardly and terminates in a recess 9 which serves as a seat for engaging the stud 3. A lip 10 is provided between the pocket 8 and seat 9 forming thereby a reentrant portion extending within the recess 7 and provided with a downwardly inclined inner face. The latch 11 is pivotally supported within the recess 7 on the pivot 12 which is carried by the extension 13. The extension 13 is preferably formed as a part of the stamping comprising the arm 4 in the manner indicated in dotted lines in Figs. 2 and 4, which indicate the position which this extension occupies in the flat pattern in the stamping. After the stamping is made, this part is bent up as shown in Figs. 2 and 4 and the pivot 12, which is formed as a part of the extension 13 is bent inwardly and lies within the recess 7. The latch 11 is provided with a tail portion extending inwardly from the end of the arm, and with a head portion extending outwardly toward the end of the arm. The head portion is provided with a recess 14 in which the stud is adapted to be seated during the locked position of the holder. The lower surface of the latch 11 tapers downwardly and between its lower outward edge and the recess 14 is formed a detent 15; the outer edge of this detent being spaced inwardly from the lip 10. The upper edge of the latch 11 projects outwardly near the recess 14 and is provided with a nose 16 which extends adjacent the upper edge of the inclined face of the lip 10. The latch 11 is normally yieldably positioned as shown in Fig. 2, by suitable means such as the spring 17, so that the nose 16 lies closely adjacent to the lip 10; and in this position of the lid 11 the extreme inwardly extending tail of the latch lies adjacent the juncture between the slot 6 and the recess 7. In this position the lower edge of the latch in combination with the upper wall of the slot 6 forms in effect a track upon which the stud 3 is adapted to slide in its outward movement with respect to the arm. Also in the

normal position of the latch the detent 15 is sufficiently close to the lower edge of the slot 6 as to form a yieldable restriction against the outward movement of the stud 3 as will be more apparent from the following description of the operation.

Operation.

With the various members and parts as shown in Figs. 1 and 2, upon raising the lid or closure 2, the arm 4 receives a combined movement to the right and in an anticlockwise direction with respect to and about the stud 3 as a pivot; thus causing the stud 3 to have a relative movement outwardly with respect to the arm 4. As the raising of the lid 2 progresses, the stud 3 slides along the upper wall of the slot 6 and along the under side of the latch 11, the tail of which bridges the upper portion of the enlarged recess 7, and passes outwardly until it reaches the yieldable restriction caused by the detent 15, and upon striking the detent 15 the action of the spring 17 is overcome, thereby causing the latch 11 to rotate in a clockwise direction and allow the stud to pass under the detent 15 outwardly until it reaches the stop recess 9, which stop positively limits the further opening or upward movement of the lid 2. The lid 2 is now released, and upon such release the stud 3 is guided into the recess 14 by the underside of the lip 10 and is prevented from retracing its outward path by means of the detent 15; thereby resulting in the stud 3 being positively positioned within the recess 14 and positively held in this position by means of the front face of the detent 15. It will therefore be seen that this provides a positive locking action which results in locking the holder between the lid 2 and the stud 3 which is attached to the body 1. When it is desired to lower or close the lid 2, the lid is given an upward or outward movement to further open the same, which brings the inclined inner face of the lip 10 into engagement with the stud, thereby forcing the stud upwardly along the incline 10 where it strikes the nose 16 and lifts the same against the action of the spring 17 and passes into the pocket at 8; and upon lowering or releasing the lid 2 the stud passes rearwardly along the upper edge of recess 7 and downwardly until it engages the inwardly extending tail of the latch 11 which yields downwardly allowing the stud to retrace its path along the slot 6 inwardly. It will therefore be seen that by means of the mechanism above described and its mode of operation a positive unlocking means is furnished. Due to the unique construction and disposition of the various parts, the entire locking and unlocking operation is semi-automatic and it is entirely positive in each of its respective movements throughout each cycle of operation; each cycle of operation comprising initially raising the lid to its maximum posi-

tion as limited by the holder and then releasing the same to thereby lock the lid in open position, then further opening the lid at slight distance, to positively release the locking means, and then releasing or moving the lid to its closed position. All of these movements throughout the cycle are effected merely by engagement with the lid itself by means of one hand and after the lid has initially been raised to the limit allowed by the stop it may not again be closed without passing through the remainder of the cycle of operation as above described.

Where the holder is used in the position shown in the drawings, i. e. where the movement of the holder is in a vertical plane, instead of utilizing the spring 17 to normally hold the latch in open position, the modification shown in Figs. 5 and 6 may be utilized. In these figures a similar construction is shown to that above described with the exception that in place of the spring 17 a suitable weight 17' is placed on the outer end of the latch 11 causing it to assume its normal position by gravity.

In the embodiment herein illustrated the holder is supported in such a manner that gravity tends to rotate it in an anti-clockwise direction about the stud 3; but an understanding of its construction and operation will clearly show that it is entirely independent of the force of gravity for its operation, and in this respect it differs essentially from all of the devices of this general character which have heretofore been utilized. A consideration of this feature will make it obvious that the device is adapted to be used on closures which are adapted for vertical movement or horizontal movement. It is likewise obvious that the holder is not restricted to its use in connection with independent hinge means, but is adapted to be used as a holder for any type of structure where it is desired to successively move a part of such structure away from and toward the cooperating structure and to hold the movable structure in locked position with the relatively fixed cooperating structure.

While I have described my invention according to the preferred embodiment of the same it will be obvious to those skilled in the art, after understanding my invention, that various alterations, modifications, and substitutions may be made without departing from the scope of the invention, and I aim in the appended claims to cover all such modifications.

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

1. A closure holder comprising an arm having a stud runway terminating at its outer end in an enlarged recess, and a latch provided with a stud engaging seat and pivotally supported within said recess cooperatively

associated therewith and yieldable about its pivot to permit the stud to be displaced from its seat and to be guided back along the upper wall of the enlarged recess to the said runway.

2. A closure holder comprising an arm having a longitudinal slot adapted to receive a stud slidable therein and enlarged at its outer end to accommodate a latch, a latch pivotally supported in said enlargement, said arm and latch jointly providing a track on which a stud is movable toward the outer end of said slot, said latch being normally yieldably held in the path of movement of said stud in its outward movement and rigidly held in the path of movement of said stud in its inward movement to thereby space a closure attached to said arm from said stud, and a reentrant projection from said arm to release said stud from said latch upon the further outward movement of said closure.

3. A closure holder, comprising an arm having a longitudinal runway adapted for cooperative transitional engagement with a stud and provided with a positive stop to limit the movement of said stud with respect to said arm and an enlarged opening forming a continuation of said runway, a pivoted latch positioned within said enlarged opening and provided with a recess to receive said stud and so formed and positioned with respect to said recess as to cause said stud to be projected into said recess upon opening the closure carrying said arm, to thereby hold the closure in fixed open position with respect to said stud, and upon further opening and closing the closure to project the stud from said recess back to said runway.

4. A closure holder, comprising an arm having a longitudinal runway adapted for cooperative transitional engagement with a stud and provided with a positive stop to limit the movement of said stud with respect to said arm and an enlarged opening forming a continuation of said runway, a pivoted latch positioned within said enlarged opening and provided with a recess to receive said stud and having a dependent portion normally in the path of said stud and adapted to guide said stud from said stop into said recess upon initially opening and releasing the closure carrying said holder to thereby lock said holder and maintain the closure in fixed open position with respect to said stud, and means carried by said arm to cause said stud to move from said recess back to said runway upon further opening and then closing said lid to thereby unlock said holder and release said closure to its closed position.

5. A closure holder for a structure having a movable closure and a stud fixed to the body of the structure, comprising an arm adapted to be pivotally attached to the closure and provided with a longitudinal slot for transitionally accommodating said stud and ter-

- minating in an enlarged end, and a latch pivotally supported in said enlarged end and having a track portion along which said stud is adapted to move toward the end of said slot and terminating at its outer end in a detent lying adjacent the lower side of said slot to form a yieldable restriction to the passage of said stud outwardly but providing a rigid stop against its passage inwardly. 25
- 10 6. A closure holder for a structure having a movable member and a relatively stationary member and stud fixed to one of said members, comprising an arm adapted to be pivotally attached to the other of said members 15 and provided with a longitudinal slot for transitionally accommodating said stud and terminating in an enlarged end, a latch pivotally supported in said enlarged end and having a track portion along which said stud 20 is adapted to move toward the end of said slot and terminating at its outer end in a detent lying adjacent the lower side of said slot to form a yieldable restriction to the passage of said stud outwardly but providing a rigid stop against its passage inwardly, and a release trip adjacent said detent adapted to release said stud from said detent and permit its passage rearwardly over said latch and back along said slot. 30
7. A device of the character described, comprising an arm in the form of a sheet metal stamping having a longitudinal slot terminating in an enlarged opening adjacent the outer end of said arm, a lip formed as an integral part of said stamping and extending inwardly from adjacent one side of said opening to a point opposite the same and having an inturned end portion, and a latch pivotally supported within said opening on said inturned end as a pivot. 35 40
- In testimony whereof I have signed my name to this specification.
- LIONEL B. CORNWELL.