N. C. LUND.

STOP RELEASE COVER SUPPORT.

APPLICATION FILED APR. 1, 1920.

1,362,255. **Patented Dec. 14, 1920.**

Fig. 1

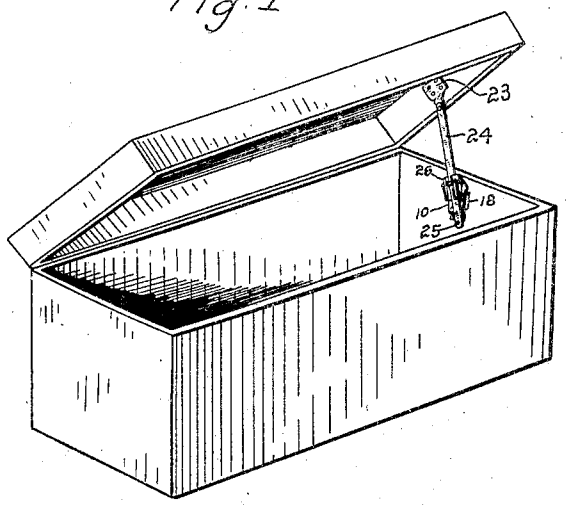


Fig. 2

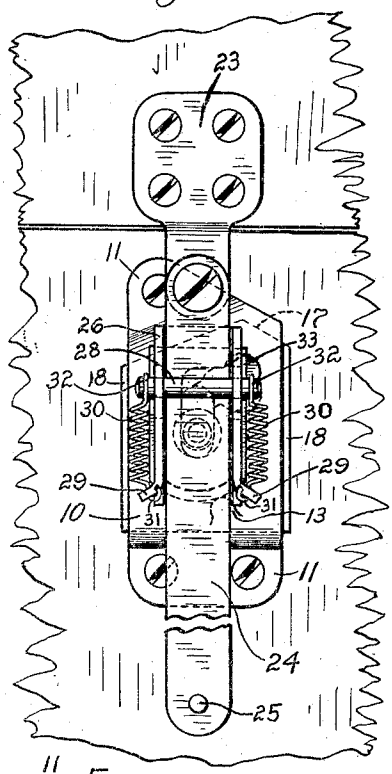


Fig. 4

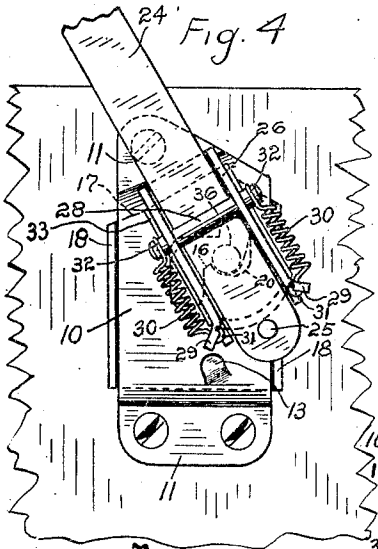


Fig. 3

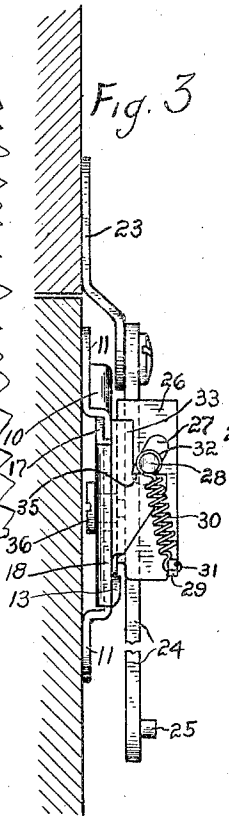


Fig. 5

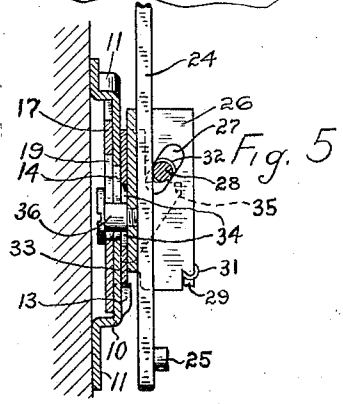


Fig. 6

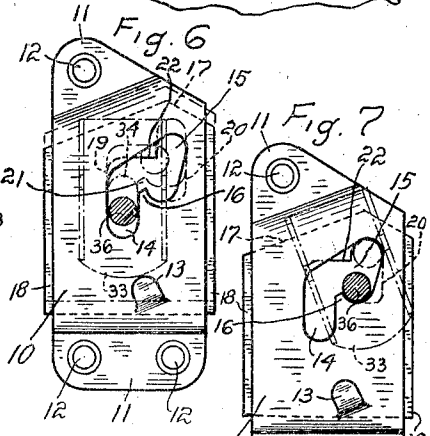


Fig. 7

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STOP-RELEASE COVER-SUPPORT.

1,362,255. Specification of Letters Patent. Patented Dec. 14, 1920.

Application filed April 1, 1920. Serial No. 370,366.

To all whom it may concern:

Be it known that I, NELSON C. LUND, a citizen of the United States, residing at 107 Bartram Ave., Bridgeport, county of Fairfield, State of Connecticut, have invented an Improvement in Stop-Release Cover-Supports, of which the following is a specification.

The present invention provides a support for the lids or covers of boxes, chests, cabinets, and the like, which is adapted to frictionally hold the lids or covers in any desired open position. The lids or covers may be released from the friction holding means and closed from any position to which opened, or may be closed against the friction of the holding means. The releasing means of the support is manipulated by slight movement of the cover.

With the above and other objects in view the invention comprises the construction and arrangement of parts now to be fully described and hereinafter specifically claimed.

In the accompanying drawing forming a part of this specification,

Figure 1 is a perspective view of a box showing the novel support as when holding a cover in an open position;

Fig. 2 a front elevation of the support, showing fragments of a box and cover in closed position;

Fig. 3 an elevation looking from the left in Fig. 2, but showing the box and cover in section;

Fig. 4 a view corresponding with Fig. 2 but showing the support arm as when raised, the support arm being broken away and the lid not shown;

Fig. 5 a detail view showing the pivot bracket and associated parts in section; and

Figs. 6 and 7 are front elevations of the pivot bracket and tripping plate, showing the friction releasing member in dotted lines.

10 denotes a pivot bracket which is offset at both ends as shown at 11, the offset portions being provided with screw holes 12, whereby the pivot bracket may be attached to an end of a box. The pivot bracket is provided with a projection 13 and with a slot consisting of a vertical portion 14 and an offset portion 15 between which is provided a locking shoulder 16. A tripping plate 17 rests beneath the pivot bracket and is adapted to have slight sliding movement thereon, angular guide faces 18 being provided for this purpose, and the sliding movement being limited by offsets 11. The tripping plate is also provided with a slot similar to the slot in the pivot bracket, that is, having a vertical portion 19, an offset portion 20 and a locking shoulder 21. In addition, the slot of the tripping plate is provided with a tripping shoulder 22, the purpose of which will be hereinafter explained. 23 denotes a cover attaching bracket which has pivoted thereto, as at 37, a sliding support arm 24, the lower end of which carries a stop pin 25.

A U-shaped guide 26 having inwardly and downwardly extending slots 27 in its arms is provided and the sliding support arm rests against the base of the U-shaped guide and between the arms carrying the slots. Passing through the slots is a frictional locking pin 28. The lower, outer portions of the arms are struck up to provide lugs 29. Coil springs 30, arranged on the outer sides of the arms of the U-shaped guide have their opposite ends, respectively, connected with the struck up lugs and with the projecting ends of the frictional locking pin, as denoted by 31 and 32. The arrangement is such that the springs exert a downward pull on the locking pin and thus cause it to be forced inwardly and downwardly in the slots in the arms and against the outer face of the sliding support arm to provide frictional holding means for the support arm. 33 denotes a U-shaped friction releasing member, the base of which is provided with an elongated slot, denoted by 34, and the arms of which are provided with shoulders 35. The U-shaped friction releasing member rests beneath the base of the U-shaped guide, its arms extend around the arms of the U-shaped guide, and shoulders 35 are adapted to engage opposite ends of the frictional locking pin. As is clearly shown in Fig. 5, a headed screw 36, passing through the slot in the tripping plate, through the slot in the pivot bracket, through the elongated slot in the friction releasing member, and embedded in the U-shaped guide, holds the parts of the support in operative position.

Assume now that the box is closed and the parts of the cover support are in the posi-

tions shown in Fig. 2. The first movement in lifting the cover, the sliding support arm, as described, being frictionally held in the U-shaped guide, is to cause screw 36 to ride to the top of the vertical portions of the slots in the pivot bracket and in the tripping plate, and to then travel to the top of the offset portions thereof. As the screw is traveling up the inclined edge of the offset portions, see Fig. 6, it will engage tripping shoulder 22 and cause the tripping plate to slide upwardly. As soon as the screw has passed beyond the tripping shoulder, the tripping plate falls by gravity so that the tripping shoulder rests behind the screw. During the remaining upward movement of the cover, the sliding support arm slides upwardly in the U-shaped guide and the screw remains in the extreme upper ends of the offset portions of the slots. See Fig. 7. When now the cover is released, the tripping shoulder prevents the screw from entering the vertical slots, and directs it to fall into a recess back of the locking shoulders. It will be apparent that the cover may be raised to any desired position and that it will stay in that position. As the cover is being raised, the sliding support arm will not be materially retarded in its movement for the reason that the frictional pull on the under side of the locking pin tends to cause said pin to ride toward the upper portions of the slots in the arms of the U-shaped guide. When now the cover is released and screw 36 is resting in the recess of the offset portion of the slots, the sliding support arm cannot move downward unless considerable pressure is applied against its upper end, for the reason that downward movement of said sliding support arm assists the coil springs in forcing the frictional locking pin to ride in the slots, downwardly and inwardly, to exert frictional pressure against the faces of the sliding support arm. However, if desired, the required pressure may be applied to the cover to lower it against the friction of the locking pin. The locking pin may be moved away from the sliding support arm, so that the cover may be freely lowered, in the following manner. The cover may be grasped and slightly raised to lift screw 36 out of the recess in the offset portions. This movement of the screw will cause it to abut the lower face of the tripping shoulder and thus be guided into the vertical portions of the slots so that it may travel downwardly therein. The arrangement is such that when the screw has moved to a position near the bottoms of the vertical portions of the slots, the lower edge of the friction releasing member engages projection 13, see Figs. 3 and 6, and causes shoulders 35 to force the locking pin outward and upward in slots 27, thereby releasing the sliding support arm so that it may freely slide downward in the U-shaped guide. The parts are so proportioned that the weight of the cover counterbalances the action of the frictional engaging means and permits the cover to slowly close without perceptible jar or noise.

What I claim is:

1. In a device of the character described, a bracket, a sliding support arm, a guide member therefor, a friction member for holding the arm in its guide, means for varying the hold of the friction member during movement of the arm in one direction, a friction release member, and means acting on said friction release member during movement of the arm in another direction for releasing the arm from the hold of the friction member thereon, so that the arm moves past the friction member with graduated friction.

2. In a device of the character described, a box, a cover, a support arm for said cover, frictionally engaging means for said arm, a guide for said arm, a slotted pivot bracket, a slotted tripping bracket, means on said guide passing through both brackets and guided in the slots therein, said slot in said pivot bracket having a portion which retains the support arm in raised position, means for reducing the action of the frictionally engaging means during upward movement of the arm and means for varying the action of the frictional engaging means during downward movement of the arm so that it balances the weight of the cover and permits a descent of the arm and cover with smooth action.

3. A device of the character described, comprising a pivot bracket, a guide member pivotally attached thereto, a sliding support arm carried by said guide member, and means for exerting frictional pressure against said support arm to hold it fixed in said guide and for automatically removing said frictional pressure in both up and down movements to allow said support arm to freely slide in said guide.

4. A device of the character described, comprising a pivot bracket, a U-shaped guide member pivotally attached thereto, a sliding support arm carried by said U-shaped guide member and arranged between the arms thereof, a frictional locking pin arranged in downwardly and inwardly extending slots in said arms of the U-shaped guide member and adapted to bear against said sliding support arm, and means for releasing said frictional locking pin from said sliding support arm.

5. A device of the character described, comprising a pivot bracket, a U-shaped guide member pivotally attached thereto, a sliding support arm carried by said U-shaped guide member and arranged between the arms thereof, a frictional locking pin arranged in downwardly and inwardly extending slots in said arms of the U-shaped guide member and

adapted to bear against said sliding support arm to frictionally hold the same, and a friction releasing member arranged to slide on said U-shaped guide member to force said frictional locking pin away from said sliding support arm.

6. A device of the character described, comprising a pivot bracket, a U-shaped guide member pivotally attached thereto, a sliding support arm carried by said U-shaped guide member and arranged between the arms thereof, a frictional locking pin arranged in downwardly and inwardly extending slots in said arms of the U-shaped guide and adapted to bear against said sliding support arm to frictionally hold the same, a U-shaped friction releasing member arranged to slide on said U-shaped guide member and provided with shoulders adapted to bear against said frictional locking pin, and a projection extending from said pivot bracket, whereby when the lower edge of said friction releasing member bears against said projection, said frictional locking pin is forced to ride in said slots and away from said sliding support arm.

7. A device of the character described, comprising a pivot bracket, a sliding support arm, a cover attaching bracket pivoted thereto, a U-shaped guide for said sliding support arm, the arms of said U-shaped guide being provided with inwardly and downwardly extending slots, a frictional locking pin in said slots, springs attached to the ends of said locking pin and to the lower, outer corners of the arms of the U-shaped guide, whereby said locking pin is caused to exert frictional pressure against said sliding support arm, and means carried by said pivot bracket and said U-shaped guide for moving said frictional locking pin from said sliding support arm.

8. A device of the character described, comprising a pivot bracket, a tripping plate slidable thereon and provided with a tripping shoulder, a sliding support arm, and means for exerting frictional pressure against said support arm and for removing pressure therefrom.

9. A device of the character described, comprising a pivot bracket carrying a projection and provided with a slot having a vertical portion, an offset portion and a shoulder between said portions, a tripping plate arranged to slide on the pivot bracket and provided with a like slot and with a downwardly extending tripping shoulder, a sliding support arm, a U-shaped guide which is pivoted to said pivot bracket and tripping plate and in which said support arm is slidable, means for exerting frictional pressure against said support arm and for removing the pressure therefrom, and a screw passing through the slots in said pivot bracket and tripping plate, whereby when said screw is resting in the offset portions of said slots, pressure will be exerted against said sliding support arm, and when said screw is in the vertical portions of said slots, the pressure against said support arm will be relieved.

10. A device of the character described, comprising a pivot bracket carrying a projection and provided with a slot having a vertical portion, an offset portion and a shoulder between said portions, a tripping plate arranged to slide on the pivot bracket and provided with a like slot and with a downwardly extending tripping shoulder, a sliding support arm, a U-shaped guide which is pivoted to said pivot bracket and tripping plate and in which said support arm is slidable, a frictional locking pin carried in slots in the arms of the U-shaped guide, a friction releasing member having sliding movement on said guide and provided with an elongated slot, and a screw passing through the slots in said pivot bracket, said tripping plate, and said friction releasing member, whereby said screw may be made to rest in the offset portions of the slots in the pivot bracket and the tripping plate so that the locking pin exerts pressure against the support arm, or may be made to lie in said vertical portions so that said friction releasing member engages the frictional locking pin and the projection on the pivot bracket and forces the locking pin from the sliding support arm.

11. A device of the character described, comprising a pivot bracket, a tripping plate provided with a tripping shoulder, a sliding support arm and a guide therefor, and a screw by means of which said guide is pivoted to said pivot bracket and said tripping plate, said screw passing through alining slots in said pivot bracket and said tripping plate, and said slots having vertical portions and offset portions extending from the upper ends of the vertical portions and locking shoulders between said portions, whereby said screw may be made to lie in the vertical portions, or to rest in the offset portions, either against the upper walls thereof and back of the tripping shoulder, or against the lower walls thereof and back of the locking shoulders, as fully described.

12. In a device of the character described, a pivot bracket having a slot consisting of a vertical portion, an offset portion, and a shoulder between said portions, and a tripping plate arranged to slide on said pivot bracket and provided with a similar slot and with a tripping shoulder.

13. In a device of the character described, a U-shaped guide, a sliding support arm carried thereby, a frictional locking pin arranged in downwardly and inwardly extending slots in the arms of said U-shaped

guide, and a friction releasing member adapted to engage said frictional locking pin.

14. In a device of the character described, a cover attaching bracket, a sliding support arm attached thereto, and automatic means whereby said support arm may be frictionally held in fixed position, or may be released and allowed to slide downward, as may be desirable.

15. In a device of the character described, comprising a bracket, a sliding support arm, a guide therefor, frictional means controlling the movement of the arm in one direction, positive means on the bracket for holding the arm in raised position, means for controlling the action of the frictional means during the movement of the arm in another direction, said last action of the frictional means being different from the first action thereof.

In testimony whereof I affix my signature.

NELSON C. LUND.