Nov. 24, 1931. M. L. RATHBUN 1,833,305

BOX OR CASE

Filed March 3, 1931

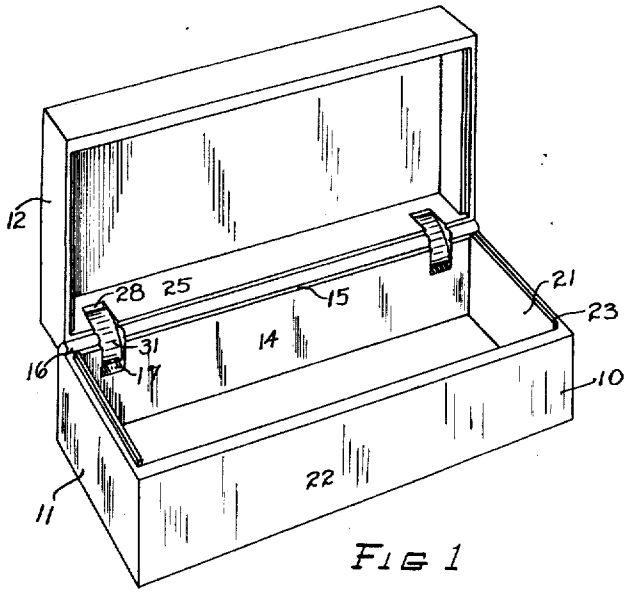


FIG 1

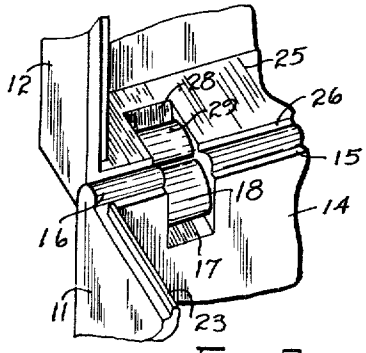


FIG 2

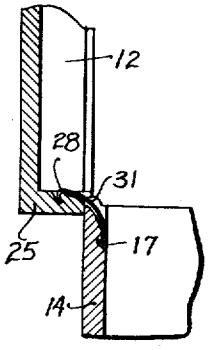


FIG 3

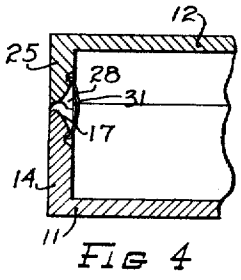


FIG 4

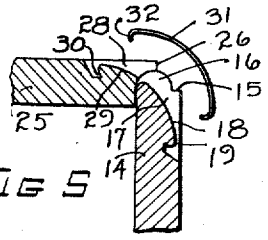


FIG 5

Inventor

MERRILL L. RATHBUN

By Richmond S. Hayes

His Attorney

Patented Nov. 24, 1931

1,833,305

UNITED STATES PATENT OFFICE

MERRILL L. RATHBUN, OF LOCKPORT, NEW YORK

BOX OR CASE

Application filed March 3, 1931. Serial No. 519,726.

This invention relates to covered boxes or cases and more particularly to an improvement in the hinge and spring structure thereof.

The common practice in the manufacture of small boxes or cases for use as container for jewels, powder, razors, watches, candy, etc., is to pivotally join the cover and container through the use of one or more hinge members. To retain the cover in closed position a latch or lock is often added. Small locks or latches have been found to be disproportionately costly to make and install, consequently, spring means has therefore been substituted by which to retain the cover in open or closed position as desired. While the inclusion of a spring of this type eliminates the necessity of providing latching means, one or more hinges is also needed to support the cover on the box.

The present invention discloses a box or case having structure which makes use of a spring by which to retain the cover in pivotal or hinge-like engagement with the box and also to cause said cover to remain in open or closed position. The box or case, shown in the instant disclosure as formed from a moldable substance such as rubber, bakelite, or other analogous material, may be produced in wood, metal or in fact any material from which cases of this class may be made. Regardless of the kind of material from which the case is produced, it is possible to eliminate all hinge members through the use of one or more properly formed and located springs which serve the duel purpose of pivotally engaging the cover with the box and retaining said cover in either open or closed position.

The principal object of the invention lies in the provision of a box or case, the cover of which is held in pivotal engagement with the case through spring means.

Another object of the invention lies in the provision of a case in which the rear wall and cover of the case are constructed to pivotally interengage each other, being so held through the use of spring means engaged with both case elements.

A further object of the invention lies in the provision of a case and cover, the adjacent rear walls of which are pivotally engaged, being so held through the use of spring means which while preventing misalignment of the cover relative to the case also causes said cover to remain in either open or closed position.

Other and further objects of the invention will be more clearly understod from a consideration of the following specification which is taken in conjunction with the accompanying drawings, and in which

Fig. 1 is a perspective view of one modification of this invention, showing the cover in open position;

Fig. 2 is a fragmentary view showing the aligned recesses of the case and cover with the spring removed;

Fig. 3 is a vertical sectional view, taken substantially on the line 3—3 of Figure 1, showing the location of the spring when the cover is open;

Fig. 4 is a view similar to Figure 3, showing the position of the spring when the cover is closed; and

Fig. 5 is an enlarged fragmentary sectional view with the cover opened and the spring about to be inserted.

Referring to the drawings the invention, generally indicated by the reference numeral 10, is comprised of a body portion or container 11 and cover 12. The body portion of the case is provided with a rear wall 14, along the upper edge 15 of which is formed a rolled or bead-like portion 16 which extends from one end of the wall to the other, being interrupted by two recesses or slots 17. These recesses are located adjacent the ends of the rear wall 14. Each recess is cut through the bead 16, the base wall 18 thereof starting at the rear of the bead and projecting downwardly and forwardly and again inwardly and upwardly to form a shoulder 19. The side walls 21 and front wall 22 of the body portion are optionally formed with or without projecting edges or recesses with which to engage the cover in order to provide some measure of seal when the cover is closed down on the container. In the present showing, upstanding flanges 23 are formed on the side walls 21 for the purpose of engaging

corresponding reversely disposed flanges in the cover 12.

The rear wall 25 of the cover 12 is formed with a longitudinal downwardly projecting portion 26. The inner wall of this portion is defined by the inner edge of the wall 25. The outer wall, however, is formed with a curvature which conforms to that of the bead 16 on the container 11. In this connection it is pointed out that while the cover is shown with a downwardly projecting portion 26, it is contemplated to provide a curved longitudinally extending recess in the cover within which to receive the bead 16. Such structure in the cover would necessitate cutting away a portion of the upper edge 15 of the wall 14 along the outside of the bead 16. Inasmuch as there may be many variations in pivotally engaged elements of this type, only one modification is shown and described. Cut into the portion 26, and so located as to align with the recesses 17 formed in the container 11, are recesses 28. The base wall 29 of each recess starts from the curved wall, which defines one side of the portion 26, being projected inwardly and upwardly and thence downwardly to form a shoulder 30. The purpose of shoulders 19 and 30 and the particular curvature of base walls 18 and 29 may be more clearly understood from a description of the assembly and operation of the device.

When the cover 12 is mounted on the container 11 flanges 23 engage corresponding flanges in the cover. The bead-like portion 16 engages the curved wall which defines one side of the downwardly projecting portion 26. The portion 26 rests upon the edge 15 of the wall 14. When the cover is open to a position substantially at right angles to the container, the curved base walls 18 and 29 of the container and cover respectively form a continuous curved wall which terminates in shoulders 19 and 30. A spring clip 31, having claw ends 32, engages these shoulders. The body of the clip is of a curvature adapted to conform substantially to that of the walls 18 and 29. When the curved wall of the clip engages the curved portion formed by walls 18 and 29, further opening of the case is prevented. It will be noted that by reason of the recesses in which the spring clips are mounted, said clips, when the case is closed, do not project beyond the rear wall and therefore cannot reduce or limit the interior capacity of said case. Each clip is of a width to closely engage the side walls of the recesses 17 and 28 and when in place with the claws 32 engaging shoulders 19 and 30, prevents lateral movement of the cover relative to the container. Engagement of the clips is such that they are placed under extreme tension when the cover is half way between opened and closed position. Moving the cover one way or the other causes this tension to be somewhat released. The cover therefore will remain either in opened or closed position. Inasmuch as the clips 31 are under tension at all times, the rear wall of the cover can not become disengaged from the bead-like portion 16 of the container and, as pointed out above, since said clips lie within aligned recesses in said container and cover, there can be no relative lateral movement of the elements of the case.

While applicant has shown and described a combined hinge and spring structure for use in connection with molded boxes or cases, it is apparent that cases formed from other materials such as wood or metal are subject to the arrangement disclosed and, further, that the rolled edge of the container and the engagement therewith by the cover, as well as the location and number of springs used, may be modified or their form somewhat altered without departing from the spirit and scope of the invention as defined in the hereunto annexed claims.

Having thus set forth my invention what I claim as new and for which I desire protection by Letters Patent is:

1. A receptacle body portion and cover, complementary pivotal means formed integral with said body portion and said cover, and spring means preventing disengagement of said pivotal means.

2. A receptacle body portion and cover, mutually engageable pivotal means on said body portion and said cover, and spring means engaged tension with both elements of said case, said means serving to prevent disengagement of said pivotal means and to effect the holding of said cover in opened or closed position.

3. A receptacle body portion and a cover, the rear wall of the cover and the rear wall of the body having parts each formed with recesses which are disposed between the inner and outer side faces of said parts, said recesses having angular ends forming hook-like projections, and the side walls of the recesses defining spaced shoulders that extend transversely of the body and cover, and combined spring means having hook-like ends engaged with the respective hook-like projections of the body and cover so as to solely pivotally connect the cover and body and to tension the cover and having sides engaged by the transverse shoulders so as to restrict movement of the spring means longitudinally of the body and cover.

4. A receptacle body portion and a cover, a rear wall of the body and of the cover being formed with complementary interengaged portions so as to enable the cover to have pivotal movement relative to the body, said walls further having recesses, the inner ends of which extend at an angle to form hook-like projections which latter are disposed inwardly of the adjacent parts of said

walls in which the recesses are formed and a spring device having parts engaged with the hook-like projections and constituting means for solely retaining said complementary parts in engagement with each other in all positions which the cover may assume.

5. A receptacle body portion and a cover, complementary means at the rear portions of the body and cover for mounting the cover for pivotal movement relative to the body, a spring device constituting the sole means for holding said complementary means in engagement in all positions of the cover, and means for connecting the spring device to both the body and cover, said connecting means being located between the inner and outer faces of those portions of the body and cover adjacent to the connecting means.

6. In a receptacle body portion and a cover, complementary means carried by the rear portions of and integral with the body and cover to enable the cover to have pivotal movement relative to the body, a spring device constituting the sole means for holding said complementary means in engagement, and means independent of the complementary means and integral with the body and cover for connecting the spring device to the body and cover.

In testimony whereof I have affixed my signature.

MERRILL L. RATHBUN.

walls in which the recesses are formed and a spring device having parts engaged with the hook-like projections and constituting means for solely retaining said complementary parts in engagement with each other in all positions which the cover may assume.

5. A receptacle body portion and a cover, complementary means at the rear portions of the body and cover for mounting the cover for pivotal movement relative to the body, a spring device constituting the sole means for holding said complementary means in engagement in all positions of the cover, and means for connecting the spring device to both the body and cover, said connecting means being located between the inner and outer faces of those portions of the body and cover adjacent to the connecting means.

6. In a receptacle body portion and a cover, complementary means carried by the rear portions of and integral with the body and cover to enable the cover to have pivotal movement relative to the body, a spring device constituting the sole means for holding said complementary means in engagement, and means independent of the complementary means and integral with the body and cover for connecting the spring device to the body and cover.

In testimony whereof I have affixed my signature.

MERRILL L. RATHBUN.

CERTIFICATE OF CORRECTION.

Patent No. 1,833,305. **Granted November 24, 1931, to**

MERRILL L. RATHBUN.

It is hereby certified that error appears in the printed specification of the above numbered patent requiring correction as follows: Page 2, line 100, claim 2, before the word "tension" insert the word under; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 9th day of February, A. D. 1932.

M. J. Moore,
Acting Commissioner of Patents.

(Seal)

CERTIFICATE OF CORRECTION.

Patent No. 1,833,305. Granted November 24, 1931, to

MERRILL L. RATHBUN.

It is hereby certified that error appears in the printed specification of the above numbered patent requiring correction as follows: Page 2, line 100, claim 2, before the word "tension" insert the word under; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 9th day of February, A. D. 1932.

(Seal)

M. J. Moore,
Acting Commissioner of Patents.