Jan. 17, 1939. A. T. BRYANT 2,144,481

BOX AND HINGE THEREFOR

Filed May 3, 1935

Fig. 1

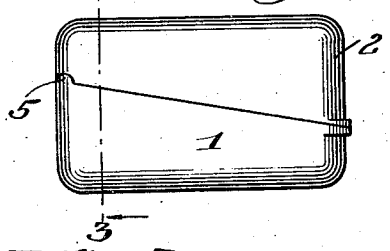


Fig. 2

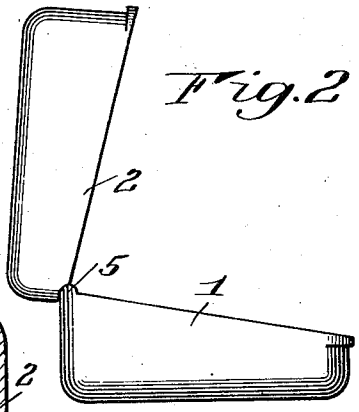


Fig. 3

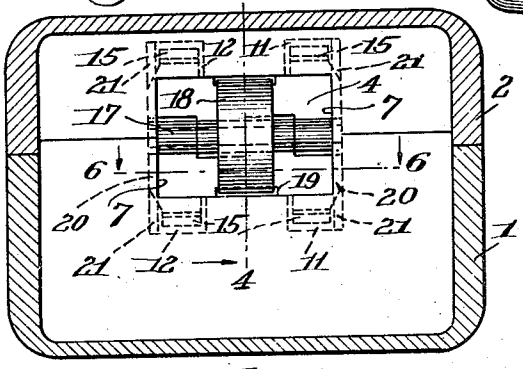


Fig. 6

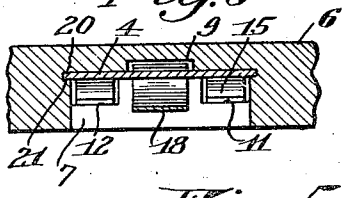


Fig. 7

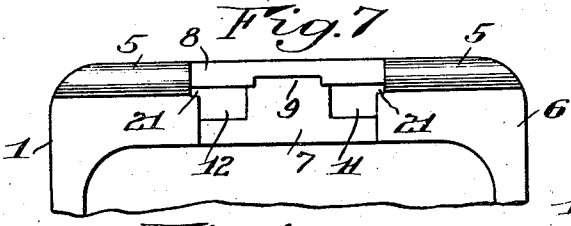


Fig. 5

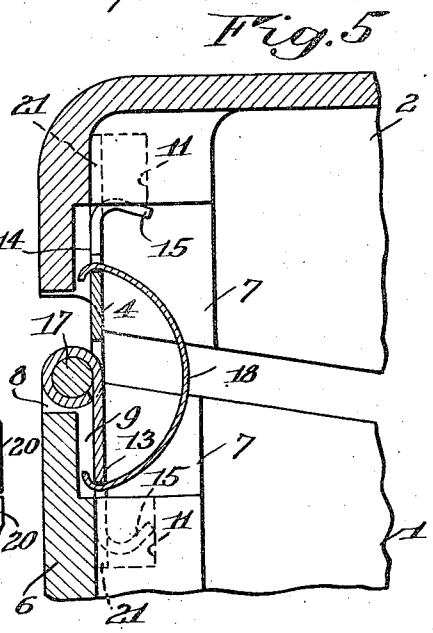


Fig. 4

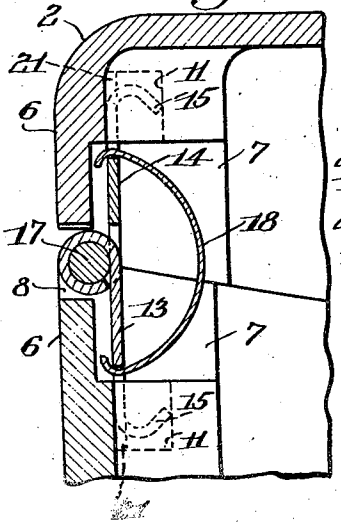
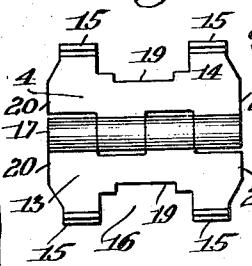


Fig. 8



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BOX AND HINGE THEREFOR

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Application May 3, 1935, Serial No. 19,702

8 Claims. (Cl. 220—31)

This invention relates to boxes or cases and particularly to improvements in the construction of small boxes or cases of the kind used as containers for small articles such as jewelry, spectacles, razors and the like.

Such boxes are usually constructed of two parts, hinged together so that one forms a body and the other a cover therefor. When constructing such boxes of small size and light material, difficulty has been experienced in securing the leaves of the hinge to the parts of the box in a simple, practicable and sightly manner and without defacing the box parts. The principal object of this invention is the provision of simple, inexpensive and efficient means for securing the leaves of a hinge to the parts of a box without the use of cumbersome or unsightly securing devices.

A further object of the invention is the provision of more efficient and inconspicuous means for securing the leaves of a hinge to the complementary parts of a box made of molded plastic material.

To these and other ends the invention resides in certain improvements and combinations of parts, all as will be hereinafter more fully described, the novel features being pointed out in the claims at the end of the specification.

In the drawing:

Fig. 1 is a side elevation of a box illustrating one possible application of the invention;

Fig. 2 is a similar view showing the box open;

Fig. 3 is an enlarged transverse section taken substantially on line 3—3 of Fig. 1 and looking in the direction of the arrows at said line;

Fig. 4 is an enlarged sectional view taken substantially on line 4—4 of Fig. 3, and looking in the direction of the arrows at said line, parts being broken away to conserve space;

Fig. 5 is a view similar to Fig. 4 but illustrating the application of the cover to the hinge;

Fig. 6 is a fragmentary sectional view taken substantially on line 6—6 of Fig. 3, and looking in the direction of the arrows at said line;

Fig. 7 is a fragmentary view of the rear upper side of the body part of the box showing details of construction, and

Fig. 8 is a front elevation of the hinge detached.

Referring particularly to the drawing in which like reference numerals refer to the same parts in all the figures, 1 represents the body part, and 2 the cover part of a box or container, which may be of usual or well known form. These parts are pivotally connected with each other, by means of a hinge generally referred to by the reference numeral 4. The parts of the box may be constructed of any preferred material, that illustrated being formed of moldable material, such as "Bakelite" or other material having similar properties. The body 1 of the box may be made of any preferred size or shape and has a bead 5 extending along the upper edge of its rear wall 6. The upper inner portion of the rear wall is cut away to form the recess 7 intermediate the sides of the box. Communicating with this recess is a recess 8 formed at the top of the rear wall and intersecting the bead 5. Intermediate the sides of the recess 7 a vertical groove or recess 9 is formed which communicates with the bottom of the recess 8 at its upper end. Adjacent the rear wall of the recess 7, pockets or pocket-like recesses 11 and 12 are formed in its bottom on opposite sides of the recess 9 and adjacent its side walls. The pocket-like recesses 11 and 12 are substantially rectangular in horizontal cross section, as indicated in Fig. 7 of the drawing. The rear wall of the cover 2 may be provided with corresponding recesses, except that it has no recess corresponding to the recess 8 in the rear wall of the body, and need not be described in detail.

The above described pockets and recesses provide means for securing the body and cover to a novel type of hinge whereby the cover is pivotally mounted on the body. The hinge 4 is preferably constructed of sheet metal, such as steel, which may be somewhat resilient and comprises the leaves 13 and 14 which are pivotally connected with each other by any well known or preferred means. Each of the leaves has a pair of lugs or projections 15 on its free edge separated from each other to form a recess 16 between them. The free ends of the projections are bent up to substantially U-shape, as best shown in Fig. 5, so as to be inclined upwardly and inwardly away from the plane of the body of the leaves. In the present instance a form of hinge is illustrated in which the leaves are pivoted on a pintle 17 arranged on the back of the hinge when the leaves thereof are arranged in substantially the same plane, and in which the leaves are resiliently connected with each other by means of a leaf spring 18. The spring 18 is provided with hooked portions at its ends adapted to engage the leaves in the recesses 16 or the recesses 19 formed therein and adapted to anchor the spring against lateral movement. The spring thus arranged serves to resiliently retain the cover in its closed or open position.

The spring is, however, well known in the art and forms no part of the present invention.

To secure the hinge to the body and cover parts of the box the bent lugs or projections on the leaves of the hinge are pressed into the pockets or pocket-like recesses 11 and 12 which are provided therefor. By an inspection of Fig. 5, it will be noted that the lugs 15 project from the leaves to an extent greater than the width of the pockets and are so inclined relatively to the plane of the leaf of the spring, that pressure exerted to compress them within the pockets causes them to yield against the walls thereof as they are inserted therein, so that they become wedged or compressed between the front and rear walls of the pockets to connect the leaf of the hinge with its respective part of the box.

By an inspection of Figs. 4, 5, and 6 of the drawing, it will be noted that the leaves of the hinge in the assembled box are arranged in the recesses 7 with their rear surfaces in contact with the rear walls of the recesses, and the lugs obliquely inclined relative to the leaves and to the front walls of the pockets which they resiliently engage. Thus constructed the outer edges of the lugs tend to engage more firmly the walls of the pockets and to bite or cut into said walls when the lugs are compressed within the pockets. When thus assembled, the pintle of the hinge is arranged in rear of the plane of its leaves and occupies a position within the recess 8 of the body part of the box. In order to further secure the hinges against liability of becoming detached from the parts to which they are secured, the leaves may be made to extend laterally from the lugs 15 to provide extensions 20 arranged to engage in slots or recesses 21 formed in the rear walls of the box sections and communicating with the pockets or pocket-like recesses 11 and 12 as shown in Fig. 6. By this arrangement, the leaves of the hinge are anchored against shifting or pivoting relative to the box sections upon which they are secured. The recesses 9 are located behind the leaves of the hinge and serve to provide a clearance for the ends of the spring 18, which project rearwardly from the leaves of the hinge.

It will be noted that by this construction a hinge is provided which is simple in construction, inexpensive to make and attach to the parts of a box or other members to be hingedly connected, and that no securing devices are required to attach the leaves of the hinge to its hinged parts which might injure or destroy the material of which the parts are constructed.

Although only one embodiment of the invention is shown and described herein, it will be understood that this application is intended to cover such changes or modifications as come within the spirit of the invention or scope of the following claims.

I claim:

1. A box comprising top and bottom sections, the rear walls of which are provided with pockets, each of said pockets having oppositely disposed front and rear wall portions forming the sides of the pockets, and a hinge for said sections comprising two pivotally connected leaves each having parts thereof extending respectively within said pockets and frictionally engaging the inner face of one of said wall portions, each of said parts having a resilient offset portion in frictional engagement with the inner face of the opposite wall portion of the pocket, said parts and the resilient offset portions thereon being forced within the pockets under pressure sufficient to tension the resilient offset portions whereby to urge said parts and said offset portions in engagement with the inner faces of said wall portions.

2. A box comprising top and bottom sections, the rear walls of which are provided with pockets having oppositely disposed front and rear wall portions, and a hinge for said sections comprising two pivotally connected leaves formed of resilient material and extending respectively within the pockets of said rear wall portions, said leaves including the offset parts being in frictional engagement with the oppositely disposed wall portions of the pockets and said offset portions being under tension whereby to increase the frictional resistance between said wall portions and said leaves.

3. A box comprising top and bottom sections, the rear walls of which are provided with pockets, each of said pockets having front and rear wall portions, and a hinge for said sections comprising two pivotally connected thin metal leaves each having a laterally projecting resilient part at one side thereof, said leaves extending within said pockets and being secured therein by frictional engagement of said parts each with an inner face of one of said wall portions and by frictional engagement of the portion of the leaf from which said part extends with the inner face of the opposing wall portion of the pocket, said resilient parts being under tension within said pockets and serving to urge the last mentioned portions of the leaves in engagement with the inner faces of the walls of the pockets contacted by said portions.

4. A box comprising top and bottom sections, the rear walls of which are provided with pockets, each of said pockets having oppositely disposed front and rear wall portions, and a hinge for said sections comprising two pivotally connected leaves each having a portion thereof provided with a resilient offset part, said portion and said part each being in frictional engagement with one of the walls of said pockets, said resilient parts being under tension whereby to increase the frictional resistance between said wall portions and the portions of the leaves engaging the same.

5. A box comprising top and bottom sections each including side and rear walls, said rear walls having opposing recesses and each having a concealed pocket communicating with the recess thereof, the pockets being spaced from said side walls, and a unitary hinge for said sections comprising two pivotally connected leaves each lying within the recess of one of said rear walls and fixed relative to said wall, said leaves each having an extension provided with a resilient offset part inclined in the direction of the leaf, each extension and its resilient offset part being forced within one of said pockets with the extension and the offset part in frictional engagement with opposite walls of the pocket, the resilient part of each extension being under tension and serving to urge the extension in engagement with the wall contacted thereby.

6. A box comprising top and bottom sections each including side and rear walls, the rear walls having opposing recesses and each rear wall having a concealed pocket communicating with the recess thereof, the pockets of said walls being spaced from said side walls and each including front and rear walls, and a unitary hinge for said sections comprising two pivotally connected leaves each lying within the recess of one of said rear walls, said leaves each having an extension there-

on within the pocket corresponding to the recess within which the leaf is disposed, said extensions having resilient offset portions, the extensions including the offset portions being forced within the pockets under pressure, and each extension and its offset portion being in frictional engagement with the inner face of one of said walls, said offset portions each being deflected in the direction of the leaf from which it extends by the wall which it contacts during movement thereon.

7. A box comprising top and bottom sections each including side and rear walls, the rear walls having opposing recesses spaced from the side walls of the sections and each rear wall having concealed pockets communicating with the recess thereof, the pockets each being formed in part by front and rear walls, and a unitary hinge for said sections comprising two pivotally connected leaves each lying within the recess of one of said rear walls, said leaves being substantially flat and each having extensions terminating in forwardly projecting resilient portions inclined relative to the leaf corresponding thereto, each of said extensions and its projecting resilient portion being forced within one of the pockets with a portion of the extension in engagement with one of the walls of the pocket and with one edge of the projecting portion in biting engagement with the opposite wall of the pocket.

8. A box comprising top and bottom sections each including side and rear walls, the rear wall of each section having a recess, said recesses being in registry one with another, each of the rear walls having communicating concealed slots and pockets extending from different sides of the recess thereof and communicating with said recess, and a unitary hinge for said sections comprising two pivotally connected leaves each lying within the recess of one of the rear walls, said leaves each having portions thereof disposed within said slots in engagement with opposite walls thereof, and also having parts provided with resilient offset portions, each of said parts and its resilient offset portion being forced within one of said pockets in engagement with the opposite walls thereof and each of the resilient offset portions being deflected by the wall of the pocket contacted thereby during movement of said parts and said offset portions within the pockets.

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