Sept. 19, 1967 E. G. HULTGREN ET AL 3,342,190

COMPACT CASE CONSTRUCTION

Filed July 2, 1964

Fig. 1.

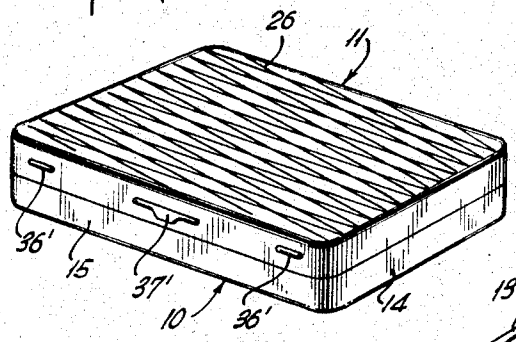


Fig. 2.

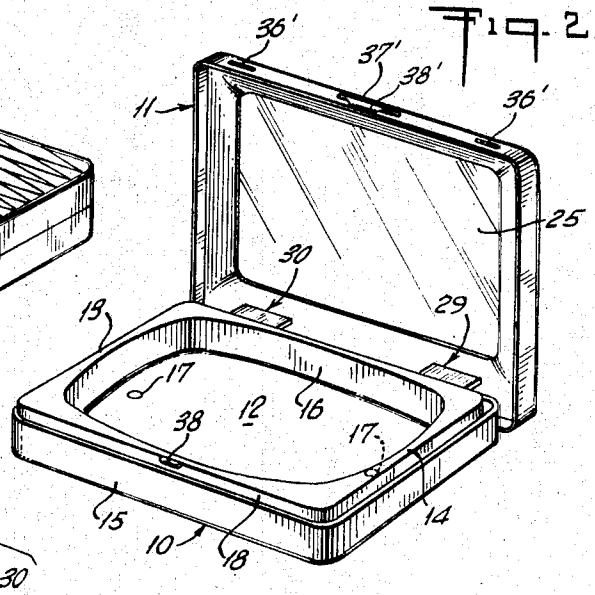


Fig. 3.

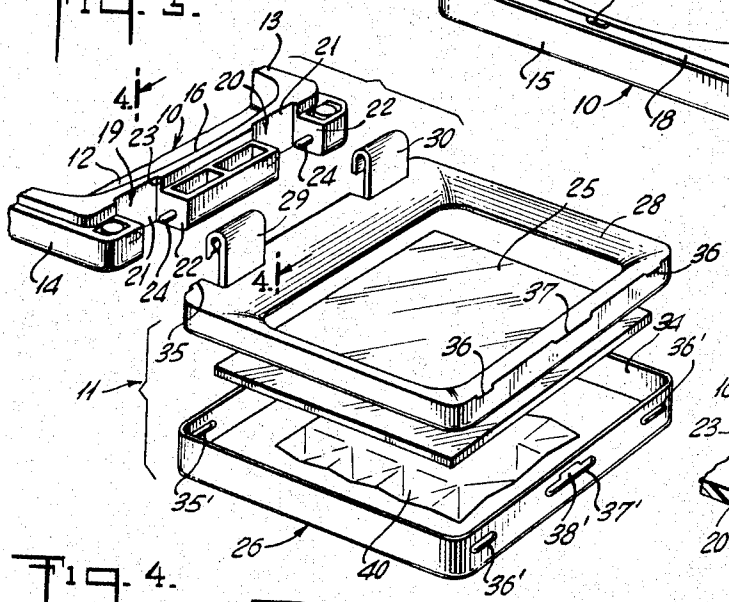


Fig. 9.

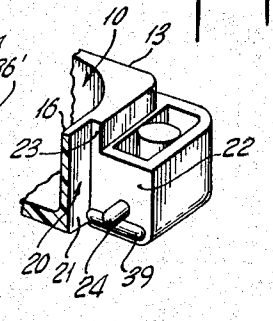


Fig. 4.

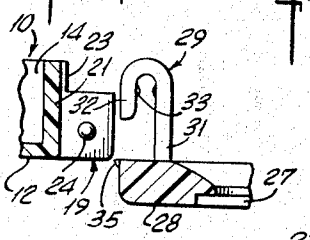


Fig. 5.

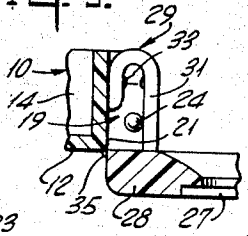


Fig. 6.

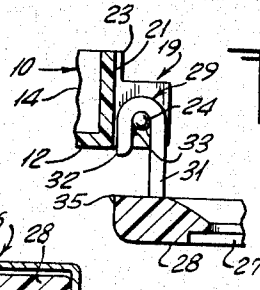


Fig. 7.

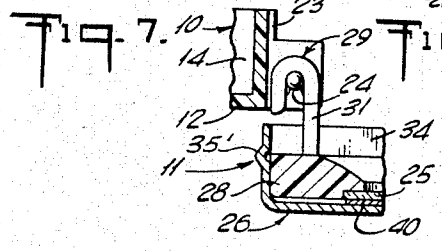
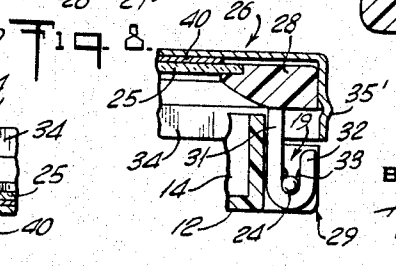


Fig. 8.



INVENTORS
ERIC GEORGE HULTGREN
WILLIAM JAMES LANDEN
BY
Hopgood & Calimafde
ATTORNEYS

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COMPACT CASE CONSTRUCTION

Eric George Hultgren, Westport, and William James Landen, Cheshire, Conn., assignors to The International Silver Company, Meriden, Conn., a corporation of Connecticut

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ABSTRACT OF THE DISCLOSURE

This invention relates to a cosmetic compact case construction featuring ready adaptability to a variety of aesthetically pleasing appearance and embodying a minimum of parts. Molded-plastic parts are extensively utilized and do not require a separate hinge pin or pins; the construction is nevertheless so inherently braced and mutually reinforcing as to be strongly resistive to shock of the hinge axis regardless of abuse and to be self-retaining even when a high-quality separate mirror has been framed in the cover.

Our invention relates to a case construction for a cosmetic compact or the like.

In recent years, competition has forced down the cost and quality of cosmetic compact cases, and this has been particularly true since the advent of plastic components in such articles. A strong demand exists for a case construction which will lend itself to utmost use of plastics, which will have a minimum of parts, which will be inherently rugged, and will be so inherently simple that cost may be held to a minimum.

It is an object of the invention to provide a new and improved case construction which will inherently satisfy the above-noted demand.

A specific object is to achieve the above object with a structure which is self-locking and self-retaining as it is assembled, and without any requirement for permanent deformation of any part, during assembly.

Another specific object is to meet the above objects with a structure inherently lending itself to retention of a high-quality mirror.

A further specific object is to meet the above objects with a basic structure, which, with minimum modification of an externally exposed part can be adapted to the unique esthetic-appearance requirements of each of a plurality of customers.

Other objects and various further features of novelty and invention will be pointed out or will occur to those skilled in the art from a reading of the following specification in conjunction with the accompanying drawings. In said drawings, which show, for illustrative purposes only, a preferred form of the invention:

FIG. 1 is a view in perspective of a compact case of the invention, shown in closed position;

FIG. 2 is a perspective view of the case of FIG. 1, with the cover in open position;

FIG. 3 is an exploded view in perspective to illustrate the relation of parts in the cover, and the relation of hinge parts;

FIG. 4 is an enlarged sectional view, taken in the

plane 4—4 of FIG. 3, and illustrating hinge parts just prior to assembly;

FIGS. 5 and 6 are views similar to FIG. 4 and illustrating successive stages of hinge assembly;

FIG. 7 is a view similar to FIG. 6 and illustrating the assembled parts of the cover;

FIG. 8 is a view similar to FIG. 7 and illustrating the cover swung to closed position; and

FIG. 9 is an enlarged fragmentary perspective view to illustrate a detail of friction action associated with the hinge mechanism.

Briefly stated, our invention contemplates an improved cosmetic or the like compact case construction featuring ready adaptability to a variety of esthetically pleasing appearances and embodying a minimum of parts. Specifically, the invention lends itself to extensive utilization of molded-plastic parts and, while not requiring a separate hinge pin or pins, is nevertheless so inherently braced as to avoid shock to the hinge axis regardless of abuse, as long as the case is closed; in the use of molded plastic for certain parts we presently prefer to employ polypropylene. Once assembled, the parts are self-retaining, even when a high-quality separate mirror has been framed in the cover.

Referring to the drawings, our basic case in a preferred form is seen to include a base **10** and cover assembly **11** hingedly connected along one edge or side-wall portion. The base comprises a closed bottom panel **12** and upstanding side-wall means which, in the rectangular prismatic form shown, involves two short side walls **13–14** and two long side walls **15–16**; hinge action occurs at side wall **16**. The concavity defined by walls **13** to **16**, and bottom **12**, is capacitated to receive cosmetic substance, such as a preformed insert or cake of powder (not shown), which may be adhesively secured in place or which may be "tacked-in" by rivet or the like means anchored to the bottom **12** at one or more suitable small apertures **17** therein. For a smooth flush appearance of a closed case, with a degree of overlap at the fit to the cover **11**, we provide a peripherally continuous set-back or relief of the outer surfaces of side walls **13** to **16**, as best indicated at **18** for the wall **15** in FIG. 2. The upper edges of all side walls **13** to **16** preferably lie in a single plane, parallel to the bottom **12**; this plane or surface is used for referencing certain parts when the cover is closed, as will be explained.

The base **10**, as shown, is a single piece of injection-molded plastic, integrally formed with hinge-pin means for connection to the cover **11**. As bestt shown in FIG. 3, the hinge side wall **16** is thicker than the other side walls and is grooved or slotted at spaced openings **19–20**. The bottom or inner surface **21** of each such slot opening is preferably flat, rectangular, and oriented normal to the aforementioned plane of the upper edges of the side walls **13** to **16**. Lateral walls **22** define opposed sides of the slot openings **19–20**, and these openings are preferably of such depth as to define marginal shoulders **23** which are continuous to the plane of the upper edges of the side walls. The integral hinge-pin means is shown to comprise short studs **24**, projecting along the hinge axis from each one of the lateral walls **22**.

The hinged cover **11** may be formed from a single piece of plastic but in the form shown it is of multiple-

part construction in order to permit incorporation of a high-quality glass mirror **25** therein, and in order to selectively accommodate one of a number of different decorative styles of closure plate **26**, which may be stamped from sheet metal and embossed with the customer's unique decorative motif, suggested by the markings in FIG. 1. The mirror **25** is fitted in the locating recess **27** at the back side of a mirror frame **28** which may also be of molded plastic and is shown formed integrally with two spaced hinge members **29–30** of generally U-shaped cross-section.

As best shown in FIG. 4, each hinge member **29** (**30**) comprises two spaced legs **31–32**, one (**31**) of which is longer than the other (**32**). The longer leg **31** is the means of integral connection to the frame **28** and is of generally rectangular flat configuration, preferably normal to the plane of the mirror frame **28**. The width of leg **31**, and also of the entire hinge member **29** (**30**) is preferably substantially co-extensive with the effective width of the related slot opening **19** (**20**), and the space between legs **31–32** is substantially the extent of the diameter of hinge-pin means **24**.. Finally, the clearance between the short leg **32** and the mirror frame **28** is such as to permit slidable entry of the hinge-pin means **24** under the short leg **32**, when assembling the cover **11** to the base **10**.

In assembling the described parts, the mirror frame **28** and the base **10** are first assembled to each other, in the succession of steps illustrated in FIGS. 4 to 6. This involves first orienting these parts (FIG. 4) in what corresponds to full-open relation (180° removed from closed position). The parts are then laterally shifted to the FIG. 5 position, where pin means **24** has cleared the short leg **32** and has been stopped by the long leg **31**. The hinge members **29** (**30**) are then pressed down so that pin means **24** may be received in the space between legs **31–32**, preferably resting against the bottom of the U-shape, as shown in FIG. 6. We retain this desired position by forming the inner surface of one leg (**32**) with a detent projection **33** which sufficiently narrows the span of the U-shape that pin means **24** must interfere with and snap past the detent **33**. It will be understood that the nature of the U-shaped of hinge members **29–30**, and the material of which they are made, are such as to establish stiffly yielding (i.e., snap) action in the described detent mechanism, and that, once assembled, a hinged relation of the parts is held, in the absence of strong abusive disassembling forces.

Once the hinge assembly is completed, as just described, the remaining cover parts may be assembled. This involves locating mirror **25** in its recess **27** at the inner edges of the opening in frame **28**. The desired decorative closure-plate member **26** is then snapped in place over the back of frame **28** and mirror **25**. For this purpose, closure-plate member **26** is cup-shaped, being formed with a peripherally continuous skirt **34** which conforms to the contour of the side walls **13** to **16**; skirt **34** preferably projects beyond the plane of frame **28** to an extent permitting locating overlap with the peripheral recess or shoulder **18**, near the upper edges of side walls **13** to **16**. In the form shown, snap-retention of the cover parts involves spaced projecting lugs **35–36** along the opposed elongated edges of frame **28**; these lugs are contoured for slight cam action with skirt **34** so that they may snap into small dimples or sockets **35'–36'** in the skirt **34**. If desired, an additional snap lug **37** may be provided on the unhinged elongated side of frame **28**, for snap retention in a suitable socket **37'**. Socket **37'** is shown provided with an enlarged central portion **38'** (FIG. 2) having less-positive snap engagement with a closure-retaining detent projection **38** formed centrally of the overlap shoulder **18**.

In order to give a quality "feel" to the hinge action, we show provision of friction bumps or ridges, as at **39** (FIG. 9) on the lateral walls **22** of the hinge slot openings, and slightly offset from the hinge axis. The projecting extent

of these bumps **39** is such as to establish a slight interference fit with hinge members **29–30**, as the cover **11** is rotated between open and closed positions. It should be noted that in closed position (FIG. 8), the effective depth of the U-shape of hinge members **29** (**30**) with respect to the plane of frame **28** is such, in relation to the offset of hinge-pin means **24** from the plane of the upper edges of side walls **13** to **16**, that closure of the cover **11** inherently clamps frame **28** against side walls **13** to **16**, and that detent-retention at **38–38'** so holds the outer closure member **26** as to thus inherently assure against loss or dislodgment of mirror **25**, as long as the case is kept closed, and no matter what the abusive mechanical shock. To give a more solid feel, and accompanying quiet snap action at **38–38'**, a compressionally compliant member **40**, such as a piece of stiff paper preformed with a relief pattern, may be compressed between mirror **25** and closure **26** upon assembly of the cover parts.

It will be seen that we have described an improved compact-case construction featuring optimized use of plastic parts, and adaptable to a variety of esthetically pleasing outward appearances depending upon the embossing or other decor built into the closure member, which may be of stamped metal or plastic, as occasion may require. No separate pins are needed for assembly, and when the completed case is closed, it offers a maximum assurance of ruggedness and resistance to mechanical shock; for example, in addition to the inherent capacity to retain and protect the mirror **25**, the interfit of hinge legs **31** in laterally supported relation with elongated shoulders **23** assures that these shoulders (rather than the hinge-pin means **24**) sustain any mechanical shocks. Furthermore, once closure **26** is in place, its skirt **34** is so closely related to the bottom plane **12** of the base **10**, even in the full-open position (see FIG. 7), that insufficient clearance is available to dislodge the hinge connection. In satisfying the unique demands of many customers, the cost of special tooling is restricted to the closure member **26** alone, thus effecting great economies.

While we have described the invention in detail for the preferred form shown, it will be understood that modifications may be made without departing from the scope of the invention as defined in the claims which follow.

We claim:

1. A case for a compact or the like, comprising a base with peripherally extending side-wall means defining a concavity adapted to contain cosmetic or the like substance, and a cover hingedly connected to an edge portion of said base; said edge portion including two laterally outward projections having opposed side walls defining a slotted passage therebetween, and hinge-pin means carried by one of said projections and extending at least part of the slot span in the direction of the other projection; said cover comprising an inner frame part and an outer case part and including interengaging means for retaining the assembly of one of said parts to the other of said parts, the body of said frame part when so engaged being contained within said outer-case part with the peripheral wall of said outer-case part having a skirt rising continuously and clear of the body of said frame part, the skirt of said peripheral wall conforming generally to and peripherally overlapping the side-wall means of said base when in closed position; said frame part including a generally U-shaped hinge member projecting away from the general plane of the body of said frame and being of effective width substantially that of the span between said side walls, one of the legs of the U-shape being longer than the other to at least the extent of the maximum offset of said hinge-pin means from the underside of said base, and the extent by which the shorter leg clears the adjacent part of the skirt being less than

the extent of said offset; whereby said frame part may be assembled to said base by way of said hinge member prior to assembly of said outer-case part to said frame part; and further whereby disassembly of the hinge connection is prevented, once said outer-case part has been assembled to said frame part.

2. A case according to claim 1, in which said cover includes a mirror retained between said frame part and said outer-case part upon engagement of said interengaging means.

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RICHARD A. GAUDET, *Primary Examiner.*

G. McNEILL, *Assistant Examiner.*