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(54) MULTIFUNCTIONAL COMPACT MIRROR CASE

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(57) **ABSTRACT**

A multifunctional compact mirror case which has a transparent case body, a transparent lid, and a mirror frame having a double-sided plane mirror unit and set in the case body, with a convex lens part and a concave lens part formed on opposite outer surfaces of the case body and the lid. The compact mirror case thus provides a convex mirror function formed by a combination of the plane mirror unit and the convex lens part, a concave mirror function formed by a combination of the plane mirror unit and the concave lens part, and a plane mirror function formed by the plane mirror unit. Thus, a user selectively uses the convex mirror function or the concave mirror function while closing the lid on the case body, and uses the plane mirror function after opening lid from the case body. In the multifunctional compact mirror case, upper and lower plane mirrors are set in the mirror frame while overlapping with each other and facing oppositely to form the double-sided plane mirror unit. The case body has the convex lens part on its lower surface, and seats the mirror frame therein, thus providing the convex mirror function. The lid is coupled to the case body at a hinged joint, and has the concave lens part on its upper surface to provide the concave mirror function.

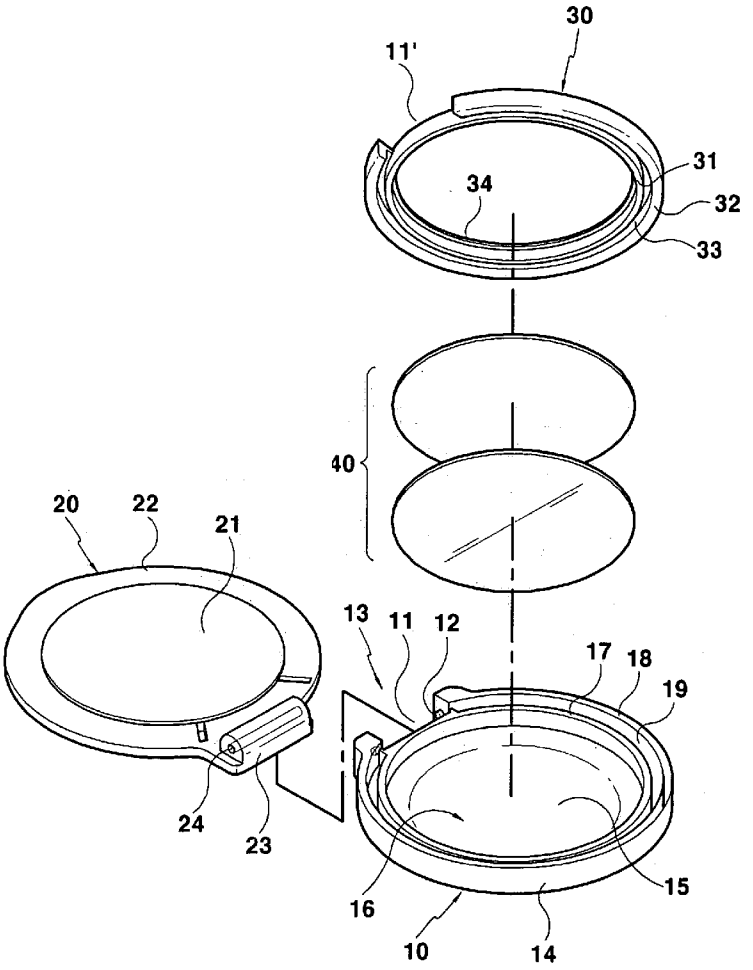


FIG. 1

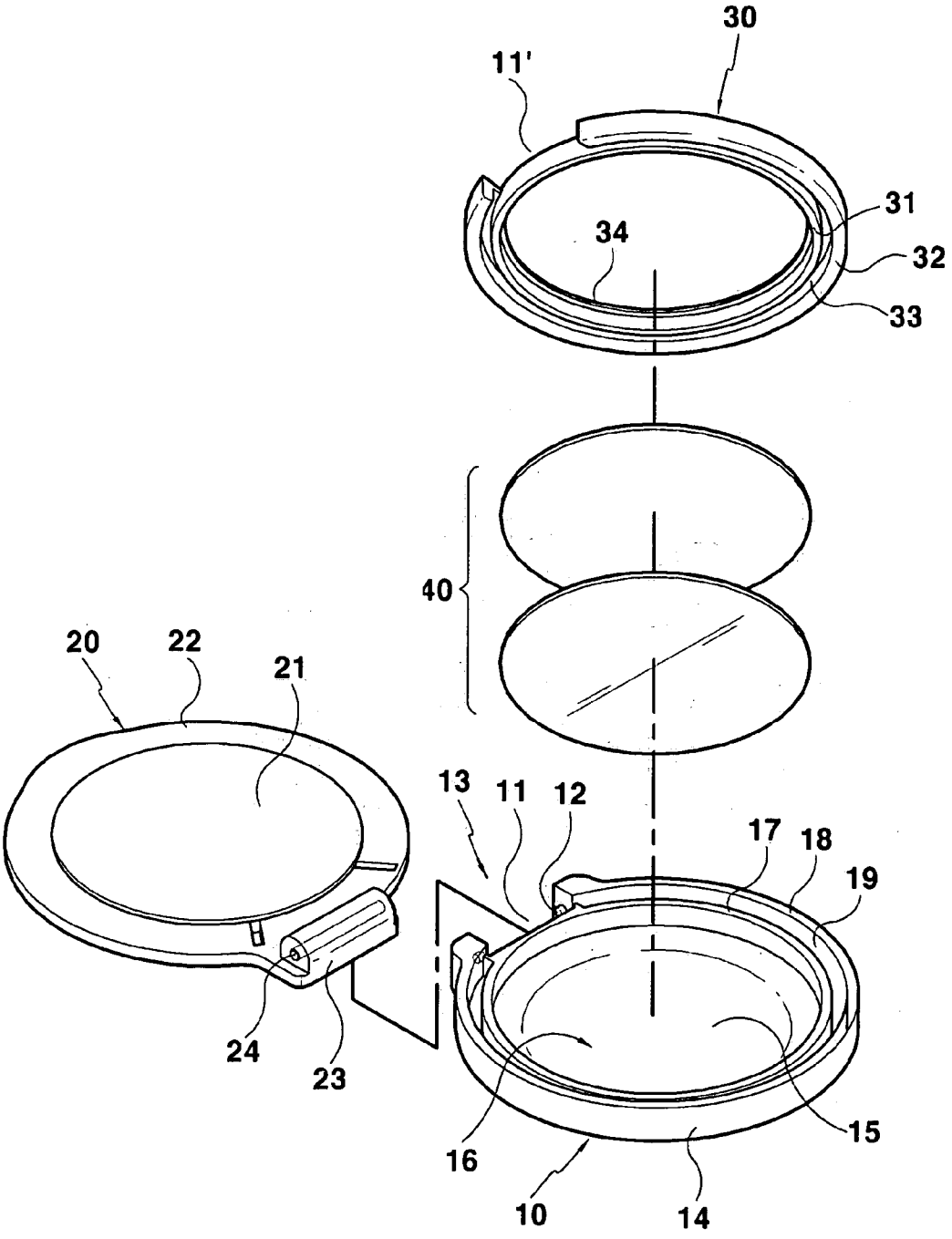


FIG. 2

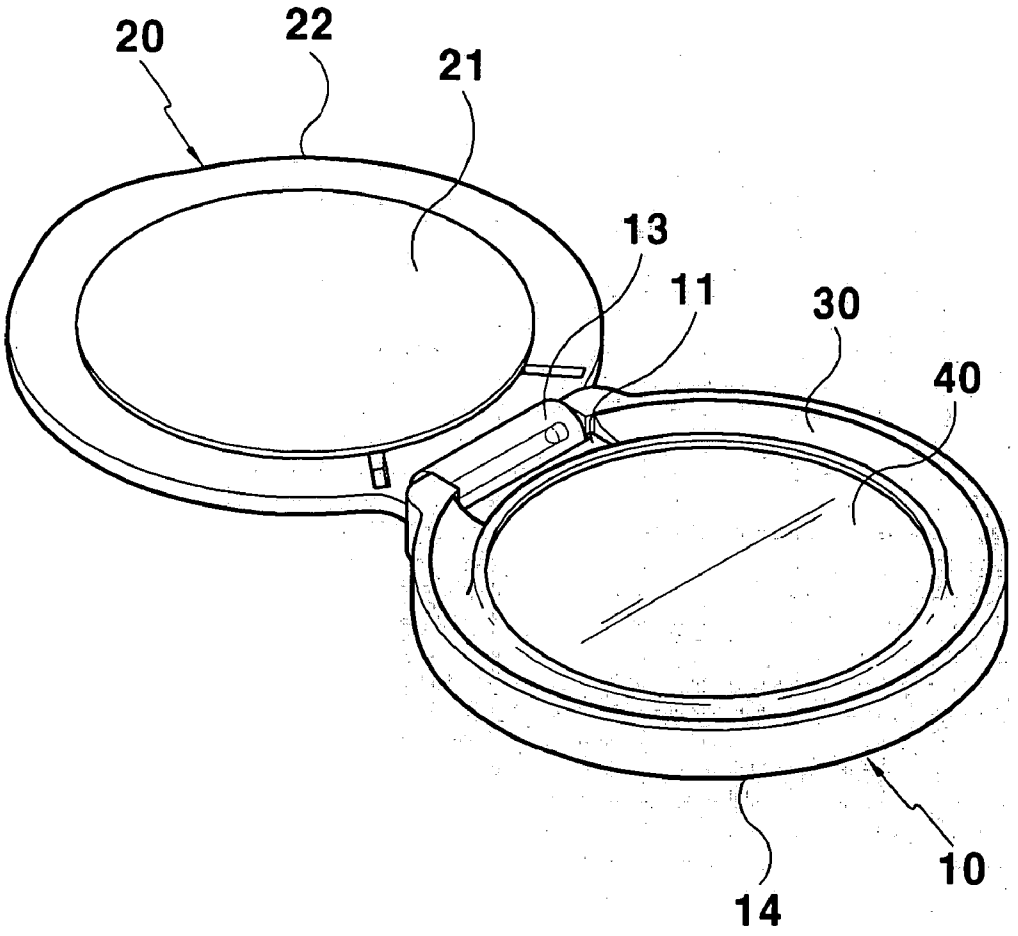


FIG. 3

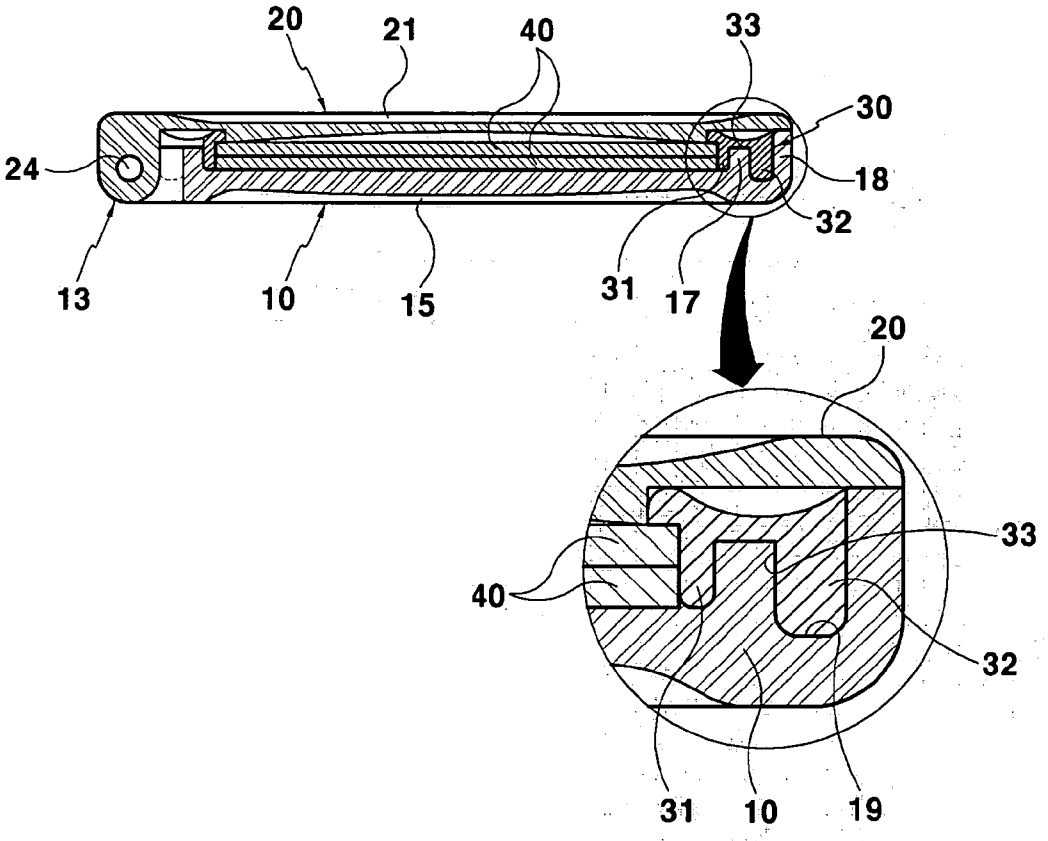
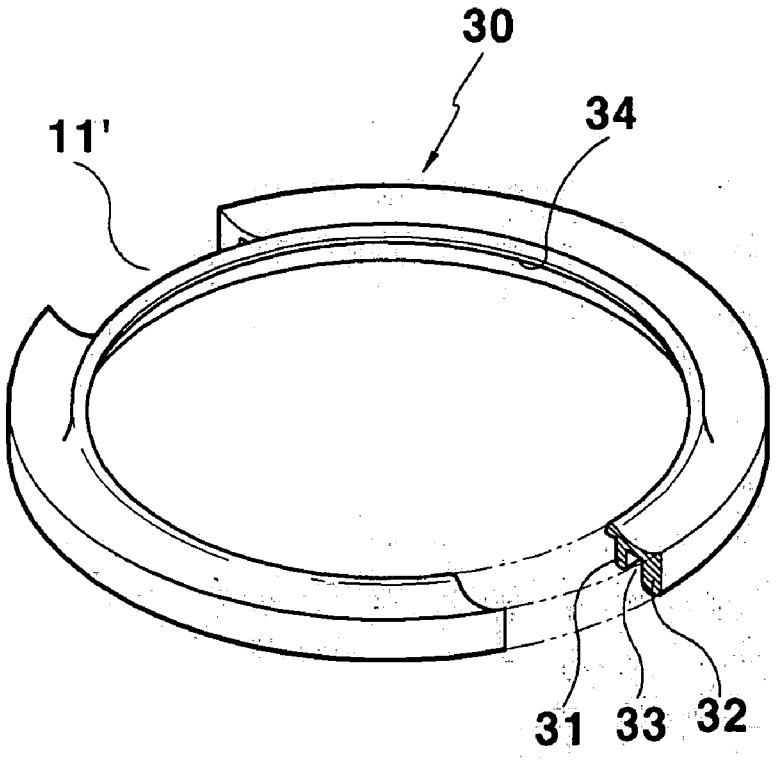


FIG. 4



MULTIFUNCTIONAL COMPACT MIRROR CASE

BACKGROUND OF THE INVENTION

[0001] 1. Field of the Invention

[0002] The present invention relates, in general, to a multifunctional compact mirror case designed to allow a user to easily carry the compact mirror case and to view a partial area of his/her face or the entire face, as desired, and, more particularly, to a multifunctional compact mirror case of which a case body to hold mirrors therein is made of a transparent material, with a lower surface of the case body and an upper surface of a lid being convex and concave to form a convex lens part and a concave lens part, respectively, thus forming a convex mirror function to reflect the partial area of the user's face while magnifying the partial area of the face, and a concave mirror function to reflect the entire face, and the user thereby conveniently using the compact mirror case.

[0003] 2. Description of the Prior Art

[0004] Generally, a portable mirror is a makeup instrument which allows a user, particularly, a woman, views his/her face while making up the face indoors or outdoors, and thereby has a small size to be easily carried by the user within a handbag, a suitcase, or a pocket of a garment.

[0005] When the user needs to view partial areas of his/her face, such as the eyebrows, while magnifying the partial areas of the face during making up the face, the user wants to use a convex mirror. However, the conventional convex mirrors are produced at high costs, thus increasing the production costs of compact mirror cases and/or the cases of a variety of makeup compacts, such as pressed powder compacts, powder blusher compacts, cake mascara compacts, and eyeshadow compacts.

[0006] Furthermore, because the conventional compact mirror cases and the conventional cases of the variety of makeup compacts are small-sized to be easily carried by users and are typically equipped with plane mirrors, the users only view their faces on the limited reflection surfaces of the plane mirrors. Therefore, the conventional compact mirror cases and the conventional cases of the variety of makeup compacts are not multifunctional.

[0007] In a detailed description of the problems experienced in the conventional compact mirror cases and the conventional cases of the variety of makeup compacts, the plane mirrors installed in the conventional compact mirror cases and the conventional cases of the variety of makeup compacts have limited sizes of reflection surfaces, thus forcing a user to place the mirror at a position relatively far away from the user's face when the user needs to view his/her entire face reflected on the mirror. However, the user cannot clearly view the face since the image of the face focused on the mirror is too small.

[0008] In addition, when the user paints and/or powders partial areas of his/her face, such as the eye rims, the eyebrows or the lips, the user needs to view the partial areas of the face on the mirror while magnifying the partial areas to carefully make up the partial areas. In such a case, the user must repeatedly and alternately place the mirror at positions close to a partial area of the face to clearly view the partial area to be painted or powdered and at positions relative far away from the face to view the entire face to check the painted or powdered partial area with the other areas of the face. The conventional compact mirror cases and the conventional cases of the variety of makeup compacts are thus inconvenient to use.

SUMMARY OF THE INVENTION

[0009] Accordingly, the present invention has been made keeping in mind the above problems occurring in the prior art, and an object of the present invention is to provide a multifunctional compact mirror case, of which a case body is made of transparent material and seats, in a frame seating depression thereof, a mirror frame having upper and lower plane mirrors overlapping each other to form a double-sided plane mirror unit, and in which the upper surface of a lid and a lower surface of the case body are concave and convex to form a concave lens part and a convex lens part, or convex or concave to form a convex lens part and a concave lens part, respectively, thus allowing a user to use a concave mirror function formed by both the concave lens part and the double-sided plane mirror unit or a convex mirror function formed by both the convex lens part and the double-sided plane mirror unit when the lid is closed on the case body, and which allows the user to view his/her face on the upper plane mirror when the lid is open from the case body, and which is thus efficiently used by the user outdoors while traveling, such as traveling on business, or indoors, such as in an office room.

[0010] In order to achieve the above object, according to one aspect of the present invention, there is provided a multifunctional compact mirror case, comprising: a mirror frame to support therein upper and lower plane mirrors which overlap with each other while facing oppositely to form a double-sided plane mirror unit; a case body having inner and outer rings to form a fitting groove between the inner and outer rings so as to hold the mirror frame on the, case body; and a lid having a hinge boss which is coupled at both ends thereof to hinge shafts of the case body, thus forming a hinged joint around which the lid is opened or closed relative to the case body.

[0011] The case body may be made of a transparent plastic material, with a lower surface of the case body being depressed at a central area thereof, thus forming a lower depression on the lower surface of the case body and a thick lower rim along an outside edge of the case body, the lower depression of the case body being convex downward on a surface thereof to form a first lens part.

[0012] The case body may have a frame seating depression on the upper surface thereof to seat the mirror frame having the double-sided plane mirror unit, and the thick lower rim formed along the outside edge of the case body, with the inner and outer rings formed along an upper surface of the lower rim and the fitting groove defined between the inner and outer rings to hold the mirror frame on the upper surface of the case body having the frame seating depression.

[0013] The case body may be provided at a side thereof with two hinge holders which are spaced apart from each other to define a space between the two hinge holders, with the hinge shafts provided on the inside surfaces of the two hinge holders to extend toward each other and inserted into both ends of a hinge hole formed in the hinge boss of the lid,

thus forming the hinged joint around which the lid is opened or closed relative to the case body.

[0014] The lid may be made of a transparent plastic material, with an upper surface of the lid being depressed at a central area thereof, thus forming an upper depression on the upper surface of the lid and a thick upper rim along an outside edge of the lid, the upper depression of the lid being concave on the surface thereof to form a second lens part.

[0015] The lid and the case body may be constructed such that the upper surface of the lid forms a concave mirror function and the lower surface of the case body forms a convex mirror function when the lid is closed on the case body.

[0016] The lid and the case body may be constructed such that the upper plane mirror forms a plane mirror function and the lower surface of the case body forms the convex mirror function when the lid is open from the case body.

[0017] The lower surface of the case body may be depressed at the central area thereof, thus forming the lower depression on the lower surface of the case body and the thick lower rim along the outside edge of the case body, the lower depression of the case body being concave on the surface thereof, thus allowing the lower surface of the case body to form the concave mirror function.

[0018] The upper surface of the lid may be depressed at the central area thereof, thus forming the upper depression on the upper surface of the lid and the thick upper rim along the outside edge of the lid, the upper depression of the lid being convex on the surface thereof, thus allowing the upper surface of the lid to form the convex mirror function when the lid is closed on the case body.

[0019] The lid and the case body may be constructed such that the multifunctional compact mirror case have the convex mirror function, the concave mirror function and the plane mirror function, due to the double-sided plane mirror unit which is fabricated by the upper and lower plane mirrors set in the mirror frame that is seated along the fitting groove of the case body.

BRIEF DESCRIPTION OF THE DRAWINGS

[0020] The above and other objects, features and other advantages of the present invention will be more clearly understood from the following detailed description when taken in conjunction with the accompanying drawings, in which:

[0021] **FIG. 1** is an exploded perspective view of a multifunctional compact mirror case, according to a preferred embodiment of the present invention;

[0022] **FIG. 2** is a perspective view of the multifunctional compact mirror case of **FIG. 1**, with the elements of the compact mirror case being completely assembled into a single body and a lid being open from a case body;

[0023] **FIG. 3** is a sectional view of the multifunctional compact mirror case of **FIG. 2**, when the lid is closed on the case body; and

[0024] **FIG. 4** is a partially sectioned perspective view of a mirror frame which is included in the multifunctional compact mirror case of **FIG. 1** to support upper and lower plane mirrors in the compact mirror case.

DETAILED DESCRIPTION OF THE INVENTION

[0025] Reference will now be made in greater detail to a preferred embodiment of the invention, an example of which is illustrated in the accompanying drawings. Wherever possible, the same reference numerals will be used throughout the drawings and the description to refer to the same or like parts.

[0026] **FIG. 1** is an exploded perspective view of a multifunctional compact mirror case, according to a preferred embodiment of the present invention. As shown in **FIG. 1**, the multifunctional compact mirror case comprises a case body **10**, a lid **20**, a mirror frame **30**, and upper and lower plane mirrors **40** which are supported in the mirror frame **30** while overlapping with each other to face oppositely to form a double-sided plane mirror unit.

[0027] **FIG. 2** is a perspective view of the multifunctional compact mirror case of **FIG. 1**, with the elements of the compact mirror case being completely assembled into a single body and the lid **20** being open from the case body **10**. As shown in **FIG. 2**, the upper and lower plane mirrors **40** which overlap with each other while facing oppositely are set in the mirror frame **30**, and the mirror frame **30** having the two plane mirrors **40** is seated in a frame seating depression **16** of the case body **10**. Because the mirror frame **30** having the two plane mirrors **40** which overlap with each other while facing upward and downward to form the double-sided plane mirror unit, is seated in the frame seating depression **16** of the case body **10**, the upper plane mirror **40** forms a conventional plane mirror function when the lid **20** is open from the case body **10**. The lower surface of the case body **10** is constructed to form a first lens part **15** which is a convex lens part as will be described in detail later herein. The lower surface of the case body **10** thus forms a convex mirror function by a combination of the lower plane mirror **40** and the first lens part **15**.

[0028] **FIG. 3** is a sectional view of the multifunctional compact mirror case of **FIG. 2**, when the lid **20** is closed on the case body **10**. As shown in **FIG. 3**, the mirror frame **30** having the upper and lower plane mirrors **40** which overlap with each other to form the double-sided plane mirror, is seated in the frame seating depression **16** of the case body **10**. In addition, the lower surface of the case body **10** forms the first lens part **15**, while the upper surface of the lid **20** forms a second lens part **21**.

[0029] **FIG. 4** is a partially sectioned perspective view of the mirror frame **30** to support the upper and lower plane mirrors **40** in the compact mirror case. The mirror frame **30** is made of a plastic material having elasticity, with the plane mirrors **40** set in the mirror frame **30** to form the double-sided plane mirror unit.

[0030] As shown in **FIG. 4**, the mirror frame **30** has a ring-shaped structure with an opening. A stop flange **34** is formed on an upper surface of the mirror frame **30** around an inside edge of the opening to stop the plane mirrors **40**, thus preventing the plane mirrors **40** from being undesirably removed from the mirror frame **30**. The mirror frame **30** further includes an inner ring **31** and an outer ring **32** to form a fitting groove **33** between the inner ring **31** and the outer ring **32**.

[0031] The mirror frame **30** further has a notch **11'** at a side thereof to correspond to a space **11** which is formed between two hinge holders of the case body **10**.

[0032] To allow the case body **10** to transmit light to the plane mirrors **40** of the mirror frame **30** seated in the frame seating depression **16**, the case body **10** is made of a transparent plastic material. The lower surface of the case body **10** is depressed at a central area thereof, thus forming a lower depression, with a thick lower rim **14** formed along an outside edge of the case body **10**. The lower depression of the case body **10** is constructed to form the first lens part **15** in the lower depression. When the case body **10** is placed on a support surface, the first lens part **15** is spaced apart from the support surface by the lower rim **14**, thus being protected from being scratched or damaged.

[0033] The lower depression of the case body **10**, which is defined inside the lower rim **14**, is convex downward on the surface thereof to form the first lens part **15**. The lower surface of the case body **10** thus forms the convex mirror function by the combination of the lower plane mirror **40** and the first lens part **15**. Therefore, a user can clearly view a partial area of his/her face on the convex lower surface of the case body **10** while magnifying the partial area of the face.

[0034] As best seen in **FIG. 3**, the thick lower rim **14** of the case body **10** protrudes downward lower than the lowermost surface of the first lens part **15**, thus forms a protection rim of the first lens part **15**. Therefore, when the compact mirror case of the present invention is carried by the user within a bag or a pocket, or is placed on a support surface, the first lens part **15** is prevented from contact with another article or the support surface. The first lens part **15** thus maintains its clear state for a lengthy period without being easily scratched or damaged, so that the lens function of the first lens part **15** is not likely to reduce.

[0035] The lid **20** has a profile corresponding to the case body **10**, with a hinge boss **23** formed at a side of the lid **20** and a hinge hole **24** axially formed in the hinge boss **23**. The hinge boss **23** of the lid **20** is coupled at both ends of the hinge hole **24** to hinge shafts **12** of the case body **10**, thus forming a hinged joint **13** around which the lid **20** is opened or closed relative to the case body **10**. The upper surface of the lid **20** is depressed at a central area thereof, thus forming an upper depression, with a thick upper rim **22** formed along an outside edge of the lid **20**. The upper depression of the lid **20** is concave to form the second lens part **21**. In a similar manner to that described for the lower rim **14** of the case body **10**, the thick upper rim **22** of the lid **20** protrudes upward higher than the uppermost surface of the second lens part **21**, thus form a protection rim of the second lens part **21**. Due to the upper rim **22**, the second lens part **21** is protected from being scratched or damaged, thus maintaining its clear state for a lengthy period.

[0036] Due to the above-mentioned construction of the multifunctional compact mirror case, the user views his/her face on either surface of the closed mirror case which forms the convex mirror function or the concave mirror function. That is, when the lid **20** is closed on the case body **10**, the user views his/her face on the upper surface of the lid **20** which forms the concave mirror function, or on the lower surface of the case body **10** which forms the convex mirror function.

[0037] Because the mirror frame **30** with the upper and lower plane mirrors **40** overlapping with each other while facing oppositely to form the double-sided plane mirror unit is seated in the case body **10**, the user can view his/her face on the upper plane mirror **40** after opening the lid **20**. Conventional inexpensive plane mirrors are used as the upper and lower plane mirrors **40** of the double-sided plane mirror unit, thus reducing the production costs of the multifunctional compact mirror case.

[0038] The case body **10** has an inner ring **17** and an outer ring **18** to form a fitting groove **19** between the inner and outer rings **17** and **18**, so that the mirror frame **30** is firmly seated in the case body **10**. The case body **10** is also provided at a side thereof with two hinge holders that are spaced apart from each other to define the space **11** between the two hinge holders. The hinge shafts **12** of the case body **10** are formed on the inside surfaces of the two hinge holders to extend toward each other. When the mirror frame **30** with the upper and lower plane mirrors **40** to form the double-sided plane mirror unit is seated in the case body **10**, the outer ring **32** of the frame **30** is fitted into the fitting groove **19** of the case body **10**. Furthermore, the inner ring **17** of the case body **10** is fitted into the fitting groove **33** of the frame **30**, while the inner ring **31** of the frame **30** comes into close contact with an inside surface of the inner ring **17** of the case body **10**.

[0039] In the above state, the two plane mirrors **40** to form the double-sided plane mirror unit are firmly set in the mirror frame **30** such that the outside edge of the upper plane mirror **40** is supported by the stop flange **34** of the mirror frame **30**, and the lower plane mirror **40** is supported on the bottom surface of the frame seating depression **16** of the case body **10**. Therefore, the two plane mirrors **40** are not undesirably moved in or separated from the mirror frame **30**.

[0040] To assemble the mirror frame **30** having the plane mirrors **40** with the case body **10** into a single body, the mirror frame **30** is forcibly seated in the frame seating depression **16** of the case body **10** by a machine during a process of producing the multifunctional compact mirror case.

[0041] The operation and effect of the multifunctional compact mirror case having the above-mentioned construction will be described in detail herein below.

[0042] When the user needs to clearly view a partial area of his/her face using the mirror case, for example, while painting or powdering the partial area of the face, the user can use the convex mirror function formed by the combination of the first lens part **15** of the case body **10** and the lower plane mirror **40**. That is, because the first lens part **15** formed on the lower surface of the case body **10** is the convex lens part, the first lens part **15** forms the convex mirror function in cooperation with the lower plane mirror **40**, thus allowing the user to clearly view the partial area of his/her face using the convex mirror function while carefully painting or powdering the partial area of the face, such as the eyebrows.

[0043] When the user wants to view his/her entire face to check the painted or powdered partial area with the other areas of the face, the user views his/her face on the second lens part **21** of the lid **20** which is closed on the case body **10**. In such a case, because the second lens part **21** forms the concave mirror function in conjunction with the upper plane

mirror **40**, the second lens part **21** reflects the user's entire face while reducing the size of the image focused thereon. The user thus efficiently finishes the painting or powdering on the partial area of the face, without repeatedly moving the mirror case between positions close to and relative far away from the face.

[**0044**] When the user wants to view his/her face using the plane mirror function of the compact mirror case, the user opens the lid **20** and directly views his/her face on the upper plane mirror **40** of the mirror frame **30** that is seated in the frame seating depression **16** of the case body **10**.

[**0045**] In the above-mentioned preferred embodiment, the first lens part **15** formed on the lower surface of the case body **10** is designed as the convex lens part, and the second lens part **21** formed on the upper surface of the lid **20** is designed as the concave lens part. However, it should be understood that the first lens part **15** formed on the lower surface of the case body **10** may be designed as a concave lens part, and the second lens part **21** formed on the upper surface of the lid **20** may be designed as a convex lens part, without affecting the functioning of the present invention.

[**0046**] In a brief description, the compact mirror case of the present invention provides the convex mirror function, the concave mirror function and a plane mirror function, and allows the user to selectively use the above-mentioned three functions, as desired, while easily carrying the compact mirror case.

[**0047**] Furthermore, to form the convex and concave mirror functions through the first and second lens parts **15** and **21**, the case body **10** and the lid **20** are preferably made of the transparent plastic material. In addition, to improve the appearance of the compact mirror case, the mirror frame **30** is preferably colored such that the color of the frame **30** can be seen through on the outer surfaces of both the transparent case body **10** and the transparent lid **20**.

[**0048**] As apparent from the above description, the present invention provides a multifunctional compact mirror case which has a transparent case body, a transparent lid, and a mirror frame having a double-sided plane mirror unit and set in the case body, with a convex lens part and a concave lens part formed on opposite outer surfaces of the case body and the lid, thus providing a convex mirror function formed by a combination of the plane mirror unit and the convex lens part, a concave mirror function formed by a combination of the plane mirror unit and the concave lens part, and a plane mirror function formed by the plane mirror unit. Thus, a user selectively uses the convex mirror function or the concave mirror function, as desired, while closing the lid on the case body. The user also uses the plane mirror function after opening lid from the case body.

[**0049**] Furthermore, each of the convex mirror part and the concave mirror part is surrounded by a thick protection rim which prevents the convex mirror part or the concave mirror part from contact with another article or a support surface when the compact mirror case is carried by the user or placed on the support surface. The convex and concave lens parts thus maintain their clear states for a lengthy period without being scratched or damaged.

[**0050**] Although a preferred embodiment of the present invention has been described for illustrative purposes, those skilled in the art will appreciate that various modifications, additions and substitutions are possible, without departing from the scope and spirit of the invention as disclosed in the accompanying claims.

What is claimed is:

1. A multifunctional compact mirror case, comprising:

a mirror frame to support therein upper and lower plane mirrors which overlap with each other while facing oppositely to form a double-sided plane mirror unit;

a case body having inner and outer rings to form a fitting groove between the inner and outer rings so as to hold the mirror frame on the case body; and

a lid having a hinge boss which is coupled at both ends thereof to hinge shafts of the case body, thus forming a hinged joint around which the lid is opened or closed relative to the case body.

2. The multifunctional compact mirror case according to claim 1, wherein the case body is made of a transparent plastic material, with a lower surface of the case body being depressed at a central area thereof, thus forming a lower depression on the lower surface of the case body and a thick lower rim along an outside edge of the case body, the lower depression of the case body being convex downward on a surface thereof to form a first lens part.

3. The multifunctional compact mirror case according to claim 1, wherein the case body has a frame seating depression on an upper surface thereof to seat the mirror frame having the double-sided plane mirror unit, and a thick lower rim formed along an outside edge of the case body, with the inner and outer rings formed along an upper surface of the lower rim and the fitting groove defined between the inner and outer rings to hold the mirror frame on the upper surface of the case body having the frame seating depression.

4. The multifunctional compact mirror case according to claim 1, wherein the case body is provided at a side thereof with two hinge holders which are spaced apart from each other to define a space between the two hinge holders, with the hinge shafts provided on inside surfaces of the two hinge holders to extend toward each other and inserted into both ends of a hinge hole formed in the hinge boss of the lid, thus forming the hinged joint around which the lid is opened or closed relative to the case body.

5. The multifunctional compact mirror case according to claim 1, wherein the lid is made of a transparent plastic material, with an upper surface of the lid being depressed at a central area thereof, thus forming an upper depression on the upper surface of the lid and a thick upper rim along an outside edge of the lid, the upper depression of the lid being concave on a surface thereof to form a second lens part.

6. The multifunctional compact mirror case according to claim 1, wherein the lid and the case body are constructed such that an upper surface of the lid forms a concave mirror function and a lower surface of the case body forms a convex mirror function when the lid is closed on the case body.

7. The multifunctional compact mirror case according to claim 1, wherein the lid and the case body are constructed such that the upper plane mirror forms a plane mirror function and a lower surface of the case body forms a convex mirror function when the lid is open from the case body.

8. The multifunctional compact mirror case according to claim 1, wherein a lower surface of the case body is depressed at a central area thereof, thus forming a lower depression on the lower surface of the case body and a thick lower rim along an outside edge of the case body, the lower depression of the case body being concave on a surface thereof, thus allowing the lower surface of the case body to form a concave mirror function.

9. The multifunctional compact mirror case according to claim 1, wherein an upper surface of the lid is depressed at a central area thereof, thus forming an upper depression on the upper surface of the lid and a thick upper rim along an outside edge of the lid, the upper depression of the lid being convex on a surface thereof, thus allowing the upper surface of the lid to form a convex mirror function when the lid is closed on the case body.

10. The multifunctional compact mirror case according to claim 1, wherein the lid and the case body are constructed such that the multifunctional compact mirror case have a convex mirror function, a concave mirror function and a plane mirror function, due to the double-sided plane mirror unit which is fabricated by the upper and lower plane mirrors set in the mirror frame that is seated along the fitting groove of the case body.

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