COSMETIC CONTAINER WITH SINGLE POST ROTATABLE MOUNTING FOR
PLURAL TRAYS AND BALL SWIVEL MOUNT FOR MIRRORED
LID FOR THE TOP TRAY
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ABSTRACT OF THE DISCLOSURE
A cosmetic kit composed of several shallow open-topped trays pivotally secured to one another for relative rotation into and out of mutual stacked positions about a single post adjacent and parallel to the sides of the trays. The top tray is selectively covered by a lid. The lid is swivelly mounted on a ball which is an upward extension of the single post. The swivel mounting prevents lateral rocking of the lid. A mirror is fixed to the undersurface of the top wall of the lid. Each tray contains solid cosmetics and one or more applicants to aid in placing such cosmetics on a person's face. The applicators are secured to the bottom walls of the trays by "Velcro" fabric couplings.

BACKGROUND OF THE INVENTION
Field of the Invention
A cosmetic container composed of several trays mounted for relative rotation about a single post which enables the trays to be swung from mutually stacked positions to angularly displaced swung apart positions. The top tray is selectively covered by a lid swivelly mounted on a ball carried by an extension of the single post.

Description of the prior art
Various proposals have been made to provide multiple cosmetics in a single kit, but up to now such kits have been bulky, cumbersome, unwieldy and unattractive. Moreover, their structure has been such that the manipulating and assembly costs of the various components was relatively high. Additionally, the mirrors supplied with such multiple cosmetic kits did not have the flexibility necessary for convenient viewing, bearing in mind the fact that the user would employ plural cosmetics from the same kit.

SUMMARY OF THE INVENTION
It is the object of my present invention to provide a multiple cosmetic kit which avoids the foregoing drawbacks. It is another object of my invention to provide a multiple cosmetic kit composed of more than one tray wherein a unique arrangement is employed to permit the trays to be moved between a closed stacked position and an angularly spread apart use position.

It is another object of my invention to provide a multiple cosmetic kit including relatively few and simple parts and which is easy and inexpensive to manufacture and assemble.

It is another object of my invention to provide a multiple cosmetic kit the components of which are so arranged that they are particularly easy for a woman to use.

It is another object of my invention to provide a multiple cosmetic kit having a mirrored lid which is so mounted on the kit that it can be arranged in any desired position necessary for a user to guide herself in the application of any one of the many cosmetics contained in the kit.

More particularly, it is an object of my invention to provide a multiple cosmetic kit of the character described in which the lid is secured above the uppermost tray by means of a joint that permits swivelling in a certain desirable restricted sense.

It is another object of my invention to provide a multiple cosmetic kit wherein the swivel joint between the lid and the kit is such as to minimize entrance of foreign matter into the joint.

It is another object of my invention to provide a multiple cosmetic kit in which the lid is swivelly connected to the kit and wherein a ball joint of unusually simple and inexpensive construction constitutes the swivel connection.

It is another object of my invention to provide a multiple cosmetic kit of the character described employing a novel ball joint to connect the lid to the kit.

Other objects of my invention in part will be obvious and in part will be pointed out hereinafter.

My invention accordingly consists in the features of combination, constructions of elements and arrangements of parts which will be exemplified in the device herein described and of which the scope of application will be indicated in the appended claims.

BRIEF DESCRIPTION OF THE DRAWINGS
In the accompanying drawings in which are shown various possible embodiments of my invention,

FIG. 1 is a perspective view of a cosmetic container constructed in accordance with my present invention, said container being illustrated with its trays swung into mutually angularly spaced position so as to expose the cosmetics contained in the trays and also to expose the cosmetic applicators, the lid being illustrated in a raised angularly displaced position;

FIG. 2 is a perspective view of said container, shown with the lid and trays in closed mutually stacked position;

FIG. 3 is an enlarged vertical central cross-sectional view taken substantially along the line 3--3 of FIG. 2; and

FIG. 4 is a highly enlarged fragmentary sectional view taken substantially along the line 4--4 of FIG. 3 and illustrating the single axis connection for relative rotation of the various trays with respect to one another.

DESCRIPTION OF THE PREFERRED EMBODIMENT
Essentially, my present invention is carried out by providing a cosmetic kit composed of more than one and preferably at least three shallow trays each of which is open-topped. The trays are secured to one another for mutual rotation about a single axis adjacent and parallel to the sides of the trays. This securement is effected by a single post running through aligned bores formed in lugs that extend from side walls of the trays. The upper end of the post has a short extension on which a ball is fixed. The kit also includes a mirrored lid for selectively covering the open top of the uppermost tray. The lid is formed with a lug matching the lugs in the trays. The mirrored lid is slotted and is indented at the side walls of the slot to frictionally grip the ball and thereby form a swivel joint. The upper end of the slot in the lid is covered to enhance the appearance of the kit and to reduce access of foreign matter to the ball connection. The rear edge of the lug is in the shape of a cylinder having its center at the center of the ball and having a radius substantially equal to the distance from the center of the ball to the top of the uppermost tray lug. Thereby, the lid is restrained in its swivelling movement to two types of rotation, one of which is a rotation about the longitudinal axis of the post and the other of which is rotation about an axis perpendicular to the longitudinal axis of the post and parallel to the broad surfaces of the trays, thereby permitting the mirror to be moved to various positions for convenient use by a woman.
but preventing the mirror from being cocked to awkward and inconvenient positions.

Referring now in detail to the drawings, the reference numeral 10 denotes a cosmetic kit constructed in accordance with my invention. Certain details of the kit which do not bear upon the present invention are shown, described and claimed in my co-pending application Ser. No. 640,134, filed May 22, 1967, for "Cosmetic Container including an Internally Disposed Cosmetic Applicator and Means To Readily Detachably Hold the Same in Place."

The cosmetic kit 10 includes a bottom tray 12, an intermediate tray 14, and a top tray 16. All of the trays are of the same dimensions and configurations in plan. As illustrated herein the shape is oval. Each tray includes a bottom wall 18 and a squint continuous erect circumferential side wall 10. Each tray is shallow, that is to say, its height is small compared to its length or breadth. By way of example a suitable height is three-eighths of an inch. The trays (as well as the lid and post soon to be described) are fabricated from a synthetic plastic, as by injection molding. Suitable plastics are polypropylene and a high impact polystyrene (co-polymerized with butadiene).

Each tray is formed with a lug 22 which, for convenience of handling and appearance where the trays are oval, protrudes from one end of the major axis of the tray. The top and bottom surfaces of the lugs are flat and coplanar with the top and bottom surfaces of the tray, as can be readily seen in FIG. 3.

The lugs are apertured to provide straight through bores 24 which are in mutual alignment. A single post 26 snugly extends through the bores 24, the fit being such as to permit rotation of the lugs about the post. Near its upper end the post is formed with a radially extending flange 28 that is seated in a matching well in the upper surface of the lug 22 of the top tray 16. The bottom of the post is hollow and internally tapped to receive the threaded shank of a flat headed screw 30, the head of the screw being located in a well in the lower surface of the lug affiliated with the bottom tray 12. The screw 30 is tightened sufficiently to force the lugs into light frictional engagement with one another which is enough to cause the trays to retain any mutually angularly displaced position to which they were swung, but which is not sufficient to impose a frictional restraint upon relative movement of the trays to make the trays inconvenience to handle. Accordingly, the trays can be moved from a closed mutually stacked position, as shown in FIG. 2, to a swung apart open position, as shown in FIG. 1, in which the intermediate tray easily slides from the bottom tray and the swung out top tray exposes the uppermost portion of the intermediate tray.

Means is included, otherwise than the friction means between the lugs and between the lugs and the post, to positively maintain the trays in closed position (shown in FIG. 2) against accidental displacement thereof. Thus, the intermediate tray 14 is provided on the outer surface of its side wall at a position thereon at the other end of the long axis of the oval tray (opposite the position of the lug) and a pair of vertically registered nibs 32, 34, the nib 32 being the uppermost and the nib 34 the lowermost.

The bottom tray 12 is formed with a protuberance 36 in one piece with the side wall of the tray and located at a point on the tray at the opposite end of the long axis of the oval, that is to say, opposite with which the lug 22 is positioned. Thereby, when the trays are in closed position, as shown in FIG. 2, the protuberance 36 is in vertical alignment with the nibs 32, 34. Said protuberance includes an upstanding cantilevered portion which projects above the upper surface of the tray 12 and overhangs the nib 34, but is shown from the end on which the overhanging portion is formed with a socket, that, when the trays 12, 14 are in closed position, is in positional registration with (overlies) the nib 34. The socket is shaped and dimensioned to snugly receive the nib. The sides of the nib taper to the rounded tip thereof, so that when the trays are swung into vertical registration the nib 34 will cam the cantilevered portions of the protuberance 36 slightly radially outwardly, enough to permit the nib to ride on the inner surface of said portion while said portion is fixed outwardly under stress. As soon as the nib reaches the socket, said portion of the protuberance will spring back against the outer surface of the side wall of the intermediate tray 14, thus latching the tray 12 to the tray 14. However, because the nib is of very tiny height, in the neighborhood for example of 1⁄36 of an inch, only a small manual pressure is required to force the protuberance over the nib and into latching engagement therewith.

The top tray 16 has a similar protuberance 38 which, however, extends downwardly below the bottom wall of said tray 16 and is likewise formed with a socket designed to latch into engagement with the nib 32. The cooperation between the nibs and sockets is best shown in FIG. 3. Means desirably is included to selectively cover the open top of the tray 16 when the cosmetic kit is not in use. Such means includes a lid 40. The lid is of the same configuration and size as the three trays and includes a top wall 42 and a squint peripheral side wall 44.

The lid is connected by a ball joint to the post 26 so as to permit swiveling movement with respect to the top tray 16. The ball joint includes a short upward extension of the post 26 above the flange 28, the tip of the post terminating above the extension in a ball 46. The lid 40 has a lug 48 of the same plane configuration as the lugs 22 and like the lugs 22 is located at an end of the long axis of the oval lid.

The lug 48 is formed with a slot 50 which extends from the rear surface of the lug inwardly so that the slot is open at the rear. The slot is also open at the bottom of the lug. The top of the slot is closed by a roof 52 to partially shield the ball joint and thus reduce access of foreign material thereto. The breadth of the slot is very slightly in excess of the diameter of the post 26 and even may be such that the side walls of the slot very lightly frictionally engage the post extensions.

Moreover, the side walls of the slots are formed with spherical indentations of the same radius as the radius of the ball 46. Lateral portions of the ball are received in the spherical indentations the depths of which are such that the indentations frictionally engage the ball with sufficient force to maintain the lid 40 in any angular position to which it has been moved by a user.

The ball 48 is so constructed that when it is retracted into the indentations simply by forcing the ball into the slot, the edges of the slot spread apart to permit insertion of the ball and snap together when the ball reaches the spherical indentations. The spherical indentations are so located that when the ball is received therein the bottom surface of the lug 48 lightly frictionally engages the upper surface of the uppermost lug 22.

The rear edge of the lug 48 is cylindrically rounded at a radius centering on the center of the ball 46. Such radius is substantially equal to the distance from the center of the ball to the upper surface of the lug 22 of the top tray. This allows the lid to be swung up about an axis perpendicular to the length of the post and parallel to the rounded rear edge, but prevents the lid from being turned (cocked) about an axis perpendicular to the said mentioned axis in the end of the post and this prevents the mirror from being skewed to awkward positions. As the lid is raised or turned the rear edge of its lug brushes lightly on the top surface of the uppermost tray lug 22.

Hence, the lid may be swung from a closed position in which it covers the top of the cute tray 16, as shown in FIG. 2, to a raised position, as shown, for example, in FIG. 1, wherein it exposes the open top of the
top tray and whatever may be located in said top tray. Moreover, the lid can be swung around the longitudinal axis of the post, as, for example, to a position such as shown in Fig. 1, where it may be convenient for the user of the cosmetic kit to look into the mirror while using applicators to transfer cosmetics contained in the trays to her face. The friction between the side walls of the slot 50 and the ball and additionally the friction between the uppermost lug 22 and the rear edge of the lug 48 retain the mirror in any raised position.

A means similar to that heretofore described is employed to hold the lid in closed position against accidental displacement. Said means comprises a nib 54 on the top tray immediately above the protuberance 38 and a protuberance 56 on the lid which extends downwardly below the bottom edge of the lid and overlaps the nib 54 when the lid is closed. Said latter protuberance 56 is formed with a socket that is latchingly cooparable with the nib 54.

It will be observed that all three protuberances 36, 38 and 56 are of matching plan configuration, so that when they are aligned with the trays in closed position, as shown in Fig. 2, they will form a vertical rib of pleasing appearance which balances the rib formed at the opposite end of the tray by the registered lugs 42, 48.

A viewing mirror 58 is affixed to the undersurface of the top wall 42 of the lid 40, so that the mirror faces down into the interior of the top tray 16 when the kit is in its fully closed position of Fig. 2.

The different trays are provided with different solid cosmetics, as shown, each of the trays is provided with one or more solid cosmetics in the form of discs, wafers or cakes which are exposed when the open tops of the trays are uncovered. Any suitable construction may be used to mount such solid cosmetics in the trays and I have shown somewhat different arrangements, by way of example, for the different trays.

The bottom tray 12 is constructed to supply various shades of lipstick, the intermediate tray 14 is constructed to furnish mascara and various shades of eyeshadow, and the top tray 16 is constructed to furnish face powder and a dark powder. The second tray is provided with a cavity in its center portion for the storage of a small sifter. More specifically, the bottom tray 12 contains a metal or plastic filler plate 60 in the form of an oval disc that fits snugly into the interior of the bottom tray, the same providing an elevated surface in which there are formed wells, each well having emplaced therein a disk 62 of lipstick. The filler plate effectively constitutes a part of the bottom tray and is suitably held in place as by adhesive or heat and pressure fusion. In the latter case the plate is formed of a thermoplastic, as is the tray.

Similarly, the intermediate tray 14 is provided with a filler plate 64 having wells in which are emplaced discs 66 of mascara and eyeshadow.

As is customary in the cosmetic industry, each of the discs 62, 66 is replaceable for filling purposes, being held at its bottom to the bottom of the well in the filler plate, as by a pressure sensitive adhesive. The bottoms of the wells, effectively constitute a portion of the bottom walls of the trays.

For the purpose of illustration, the top tray has integrally formed wells 68 therein, the same being provided by transverse unitary upstanding divider ribs 70. In each of the semi-elliptical wells thus fashioned I insert a cake 72 of compressed face powder which is lightly held in place, as by a pressure sensitive adhesive.

For the foregoing, it will be apparent that each tray, which itself constitutes a container, has mounted therein one or more solid cosmetics which can be rendered accessible by uncovering the tray which is closed position of the kit has the open top thereof covered.

Furthermore, I associate with each tray and the cosmetics therein a lipsttick cosmetic applicator. Thus, the bottom tray 12 has mounted therein a lipstick applicator 74 consisting of a handle in the form of a slender cylindrical tube having secured thereto narrow brushes at opposite ends. The intermediate tray has mounted therein a mascara applicator 75 that looks like a tiny toothbrush and an eyeshadow applicator 76 consisting of a handle in the form of a cylindrical tube having a narrow brush at one end. The top tray has mounted therewith face powder applicators 78 each consisting of a short thick handle terminating in a short, broad, soft brush.

Each of the trays includes a well for reception of its affiliated applicator or applicators. The filler plate 60 has an elongated central well 80. The filler plate 64 has an elongated central well 82, and the top tray 12 has a transversely elongated central well 84, constituting the space between the ribs 70. The bottoms of the wells effectively constitute portions of the bottom walls of the trays. The wells are deep enough for the applicator received therein to be wholly contained in their respective trays below the tops thereof.

The bottom wall of each of the wells (effectively the bottom walls of each tray) is covered by one half of a "Velcro" fabric coupling means and there is associated with the handles of the applicator brushes for that well the other half of a "Velcro" fabric coupling means. In each instance any suitable means may be employed to secure the half of the "Velcro" fabric coupling means to its affiliated component. Preferably, an adhesive is employed for this purpose, such, for instance, as a pressure-sensitive adhesive applied in liquid form with a highly volatile fluid carrier which evaporates and leaves a pressure-sensitive film or coating. Similar coatings are applied to the back of each of the coupling means and to the component to which it is to be affixed, so that once the coatings are applied, the halves of the coupling means can be affixed to the component simply by pressure. The coupling means is of the "Velcro" fabric type which is well known to the art and is fully described in United States Letters Patent Nos. 2,717,437 and 2,820,277, as well as Swiss Patents Nos. 295,638 of 1954, 332,759 of 1955 and 333,870 of 1958.

The "Velcro" fabric coupling means consists of two layers of fabric backing each of which supports a different type of raised pile. The pile supported by one fabric backing constitutes an areally distributed multiplicity of closely spaced loops. The pile supported by the other fabric backing constitutes an areally distributed multiplicity of closely spaced hooks or, equivalent, barbed spines. Both piles are fabricated from resilient form-maintaining filamentary material, e.g., nylon, a synthetic polymeric amide. The hooks of the latter pile consist of shanks terminating in retroverted bifurcated metal hooks adapted to be hooked into, i.e., caught or engaged, with the loops of the first pile. The hooks are flexible and therefore the fabric coupling halves may be separated by simply pulling them apart, whereupon the hooks will flex sufficiently to open up and disengage from the loops so as to separate the two fabric coupling halves. After separation, the hooks revert to their original hook shape and are ready to be engaged into the loop fabric again simply by pressing the two coupling halves together.

It thus will be seen that I have provided a cosmetic container which achieves the several objects of my invention and which is well adapted to meet the conditions of practical use.

As various possible embodiments might be made of the above invention and as various changes might be made in the embodiment set forth, it is to be understood that all matter herein described or shown in the accompanying drawings is to be interpreted as illustrative and not in a limiting sense.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. A cosmetic kit comprising:
   (a) several shallow open topped trays vertically stacked and pivotally interconnected by means of a single
pivot post for relative rotation into and out of stacked relation about an axis perpendicular to the plain of trays, each of said trays having snap catch means engaging matching means on the adjacent tray for releasably maintaining the trays in stacked relation;
(b) a lid for the uppermost tray;
(c) a mirror on the undersurface of the lid; and
(d) a ball joint connecting the lid to the tray at a side of the tray.

2. A cosmetic kit as described in claim 1 wherein:
(a) the ball joint is formed by a ball shaped extension of the pivot post which projects above the uppermost tray and engages a socket on the lid; and
(b) the ball joint is restricted for rotation only about a first axis perpendicular to the surface of the tray and at a side of the tray and about a second axis perpendicular to the first axis and parallel to the surface of the tray.

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