Oct. 5, 1965 H. LUKESCH 3,209,387

CONTAINER WITH AGITATOR FOR NAIL POLISH AND THE LIKE

Filed Nov. 29, 1963 2 Sheets-Sheet 1

FIG. 1

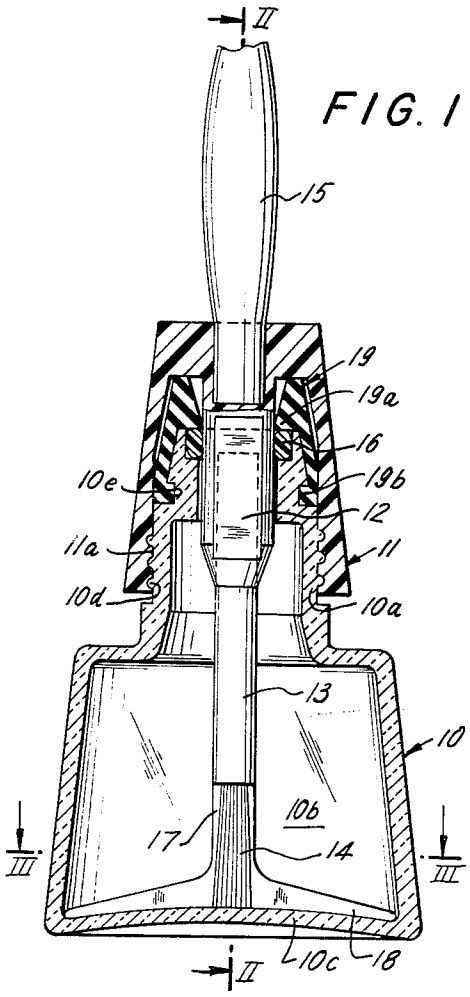


FIG. 2

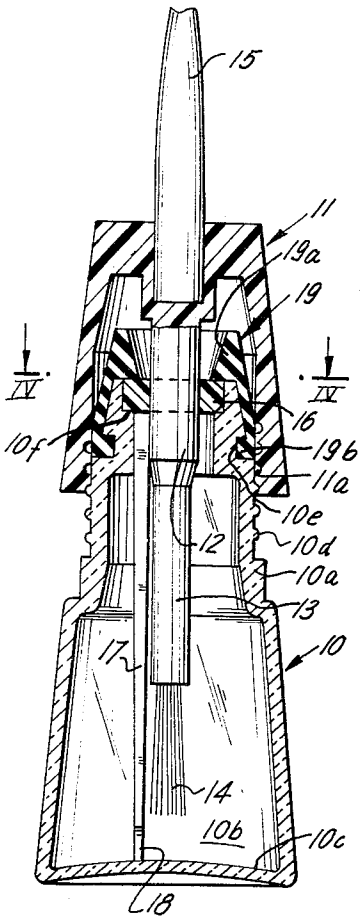
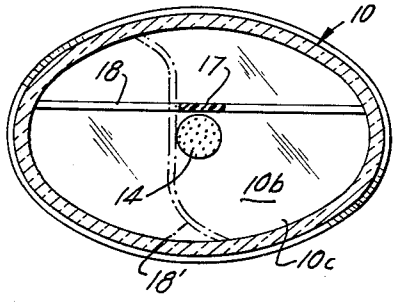


FIG. 3



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CONTAINER WITH AGITATOR FOR NAIL POLISH AND THE LIKE

Filed Nov. 29, 1963 2 Sheets-Sheet 2

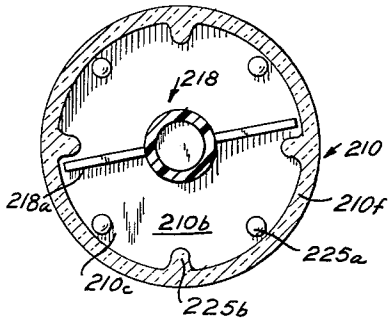
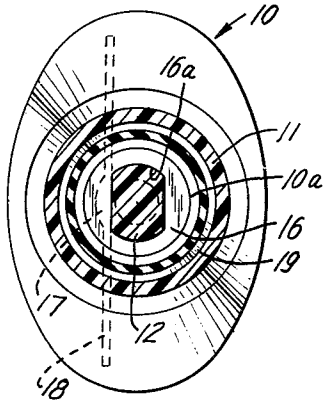


FIG. 6

FIG. 4



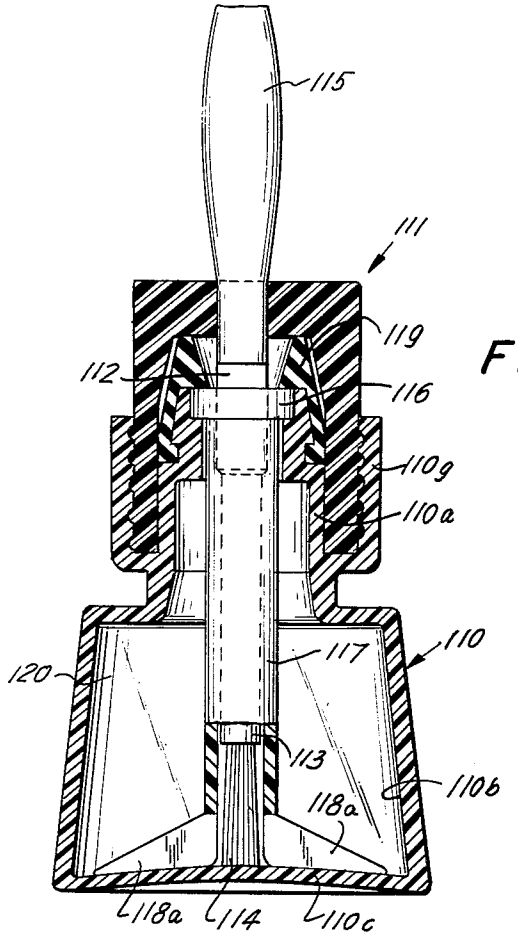


FIG. 5

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CONTAINER WITH AGITATOR FOR NAIL POLISH AND THE LIKE

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21 Claims. (Cl. 15—510)

The present invention relates to a container for nail polish or similar colloidal suspensions wherein solid particles, suspended in a liquid carrier, tend to settle in the absence of periodic stirring.

Attempts are known to avoid sedimentation of solid particles which are suspended in a liquid carrier by distributing the particles in a highly viscous carrier. However, in many instances, a highly viscous carrier is not satisfactory for a given purpose and, furthermore, such solution merely delays sedimentation but cannot prevent settling of solid particles when the suspension is left in storage for extended periods of time. In fact, it happens quite frequently that the solid particles form a solid cake which cannot be redispersed in the carrier, even by lengthy stirring.

Accordingly, it is an important object of the invention to provide a container for nail polish or similar colloidal suspensions which is constructed and assembled in such a way that the suspension is automatically stirred whenever the user withdraws some suspension from the internal chamber of a bottle or another form of receptacle in which the suspension is stored.

Another object of the invention is to provide a container of the just outlined characteristics wherein the stirring action takes place in response to removal or reattachment of a customary closure which normally seals the internal chamber of the receptacle from the surrounding atmosphere so that even a negligent user cannot avoid thorough stirring of the suspension whenever it becomes necessary to withdraw some suspension from the receptacle.

A further object of the invention is to provide an improved motion transmitting device which automatically rotates a stirring device in response to rotation of the closure so that the suspension is agitated at least twice when the container is put to use because the stirring device will agitate the solution when the closure is removed and when the closure is reapplied to the receptacle.

An additional object of the invention is to provide a specially configurated stirring device which may be utilized in a container of the above outlined characteristics and to provide a novel receptacle which insures that its contents are subjected to different stirring actions in response to rotation of the stirring device.

Still another object of the invention is to provide a stirring device which is capable of removing all sediments from an uneven surface so that solid particles which settle in a receptacle having an uneven bottom will be scraped off and redistributed in the liquid carrier.

A concomitant object of the invention is to provide a container for nail polish which may be manufactured at low cost of readily available materials, which is of eye-pleasing appearance, which requires no skill on the part of the user for proper manipulation of the stirring device, and which may be produced in many different sizes and/or shapes to accommodate requisite quantities of a colloidal suspension.

With the above objects in view, one feature of the invention resides in the provision of a container for colloidal suspension, particularly for nail polish or similar cosmetic preparations. The container comprises a bottle or a similar receptacle which defines an internal chamber and which includes a screw-threaded top portion through which a colloidal suspension may be introduced into and withdrawn from the chamber, a rotary screw-threaded closure which may assume the form of a cap and which meshes with the top portion of the receptacle to normally seal the chamber from the atmosphere, a rotary stirring device comprising a stirring member, preferably consisting of elastically deformable material, which extends into the chamber and an upper portion which is supported by the top portion of the receptacle, and motion transmitting means comprising cooperating coupling elements provided on the closure and on the upper portion of the stirring device to rotate the stirring device in response to rotation of the closure whereby a suspension which is contained in the chamber is automatically stirred when the closure is rotated with respect to the receptacle or vice versa.

The novel features which are considered as characteristic of the invention are set forth in particular in the appended claims. The improved container itself, however, both as to its construction and the mode of manipulating the same, together with additional features and advantages thereof, will be best understood from the following detailed description of certain specific embodiments with reference to the accompanying drawings, in which:

FIG. 1 is a central vertical section through a container for nail polish which embodies one form of the invention;

FIG. 2 is a similar vertical section taken in the direction of arrows as seen from the line II—II of FIG. 1 but showing the closure in partly unscrewed position;

FIG. 3 is a horizontal section as seen in the direction of arrows from the line III—III of FIG. 1;

FIG. 4 is a horizontal section as seen in the direction of arrows from the line IV—IV of FIG. 2;

FIG. 5 is a central vertical section through a modified container; and

FIG. 6 is a horizontal section through a third container.

Referring to the drawings, and first to FIG. 1, there is shown a container for nail polish or a similar colloidal suspension wherein solid particles, suspended in a liquid carrier, tend to settle in the absence of periodic stirring. The container comprises a receptacle here shown as a bottle **10** consisting of vitreous material and defining an internal chamber **10***b* which is bounded by walls of non-circular outline, see particularly FIG. 3. The bottom wall **10***c* of the bottle **10** is of concavo-convex shape and the bottle further comprises a tubular top portion **10***a* through which a colloidal suspension may be introduced into and withdrawn from the chamber **10***b*. The top portion **10***a* is provided with external screw threads, as at **10***d*, which normally mesh with internal screw threads **11***a* of a rotary closure here shown as a plastic cap **11**. The number of threads **10***d*, **11***a* is preferably rather large so that the cap **11** must be rotated several times prior to being completely detached from or fully connected with the top portion **10***a* in order to seal the internal chamber **10***b* from the atmosphere.

The cap **11** is provided with an upwardly extending flattened handle **15** which may be grasped by hand when the user desires to unscrew the cap and/or to apply nail polish to her fingernails or toe nails.

In accordance with the present invention, the container comprises a rotary stirring or agitating device including an upper portion **17** which extends into the top portion **10***a* and which is supported by this top portion in such a way that the entire stirring device may rotate with respect to the bottle **10**. The stirring device further comprises a stirring member **18** which extends into the chamber **10***b* and whose vanes or blades (best shown in FIGS.1

and 3) are made of elastic material and come in contact with and sweep the bottom wall **10***c* when the stirring device rotates whereby the vanes cause any solid particles which might have settled to be uniformly distributed in the liquid carrier of the suspension contained in the chamber **10***b*.

The means which transmits motion to the stirring device **17, 18** when the cap **11** rotates comprises a pair of cooperating coupling elements one of which assumes the form of a plunger **12** coaxially connected with the cap **11** and having a noncircular outline (see particularly FIG. 4). The other coupling element assumes the form of an annular member **16** which is rotatably supported by the top portion **10***a* and which is rigid with the upper portion **17** of the stirring device. This annular member **16** is formed with a noncircular opening **16***a* which slidably receives the plunger **12** so that the latter is free to move axially but cannot rotate with respect to the stirring device.

The retaining means which provides a detachable connection between the annular member **16** and the top portion **10***a* of the bottle **10** comprises an elastically deformable sleeve **19** whose upper portion **19***a* forms an annular shoulder which overlaps the peripheral portion of the annular member **16**. The lower portion **19***b* of the sleeve **19** constitutes an inwardly extending annular flange which is snapped into a circumferential groove **10***e* provided in the top portion **10***a*. The upper end face of the top portion **10***a* is formed with an annular depression **10***f* which receives the peripheral portion of the annular member **16** so that the sleeve **19** and the top portion **10***a* cooperate to form an annular recess which receives the peripheral portion of the member **16** in such a way that the latter is free to rotate with respect to the bottle.

The upper portion **17** of the stirring device is eccentric with reference to the plunger **12** and may but need not be integral with the annular member **16**.

The container further comprises an applicator which serves to withdraw a supply of colloidal suspension whenever the cap **11** is unscrewed from the top portion **10***a* of the bottle **10**. This applicator comprises a lower portion here shown as a small brush **14** whose bristles will preferably reach the bottom wall **10***c* when the cap is sealingly connected to the top portion **10***a*, and a stem **13** which carries the brush **14** and whose upper end is rigid with the plunger **12**. The stem **13** may be a cylindrical rod which is coaxial with the top portion **10***a* and cap **11**.

The cap **11**, the applicator **13, 14**, the stirring device **17, 18**, and the motion transmitting means **12, 16** may be made of suitable synthetic plastic material which may be transparent or colored so as to enhance the eye-pleasing appearance and sales appeal of the container as well as to indicate the color of the nail polish which is contained in the chamber **10***b*. The sleeve **19** may consist of rubber or elastic plastic.

When the container is not in use for extended periods of time, the solid particles will settle on the bottom wall **10***c* and, in the absence of vigorous stirring, the quality of the coat which is applied onto a fingernail or toe nail could be quite unsatisfactory. However, even a careless user cannot avoid thorough stirring of the suspension prior to withdrawing the brush **14** because, during opening of the container, the cap **11** automatically rotates the stirring device **17, 18** through the intermediary of the plunger **12** and annular member **16** so that the suspension is stirred in response to withdrawal of the applicator. The same procedure is repeated when the cap is screwed onto the top portion **10***a* and when the cap is thereupon again separated from the bottle. It is of no consequence whether the operator rotates the bottle with respect to the cap or vice versa because the stirring device will rotate with respect to the bottle and the vanes of the stirring member **18** will sweep the bottom wall **10***c* to distribute the solid particles in the liquid carrier.

It will be noted that the width of the stirring member **18** exceeds the smallest transverse dimension of the chamber **10***b* so that the vanes of the stirring member are flexed (see the phantom lines **18'** in FIG. 3) and the stirring member will also remove any solid particles which might have adhered to the side walls of the bottle just above the marginal portions of the bottom wall **10***c*. The width of the stirring member is preferably somewhat less than the largest transverse dimension of the chamber **10***b* so that the vanes (which are flexed in the phantom-line position **18'** of FIG. 3) will be free to return to unstressed position (shown in full lines), and such unflexing of the vanes will produce a vigorous stirring action resulting in the formation of eddy currents and even more satisfactory stirring effect.

Since the stirring member **18** consists of elastically deformable material and since this member actually sweeps the upper side of the bottom wall **10***c*, it will remove from this bottom wall all or nearly all solid particles even if the upper side of the bottom wall is concave, convex or has irregularly distributed protuberances.

FIG. 2 illustrates the cap **11** in partially unscrewed position when the brush **14** is already located at a level above the bottom wall **10***c*. The stirring member **18** cannot follow such upward movement of the cap because the annular member **16** is retained by the sleeve **19**, but the entire stirring device is compelled to rotate with respect to the bottle.

FIG. 5 illustrates a slightly modified container whose receptacle assumes the form of a plastic bottle **110** having a tubular top portion **110***a* which includes an internally threaded collar **110***g*. The closure **111** assumes the form of a plastic cap which is provided with external threads meshing with the threads of the collar **110***g*. The cap **111** carries a concentric plunger **112** of noncircular outline which extends into a complementary opening provided in a rotary annular member **116**. This annular member is connected with a stirring device which includes a stirring member having four radially extending elastic vanes **118***a* (only two shown) and a tubular upper portion **117** which is rigid with the annular member **116**. The plunger **112** carries an applicator including an elongated stem **113** which extends into the bore of the tubular upper portion **117**, and a brush **114** whose bristles extend into the lowermost zone of the chamber **110***b* when the cap **111** seals this chamber from the atmosphere. The four vanes **118***a* will produce a very thorough stirring action when the annular member **116** is rotated by the plunger **112** while the latter moves axially in response to rotation of the cap **111** with respect to the bottle **110** or vice versa. The inner portions of the vanes **118***a* are spaced from the bottom wall **110***c* to permit flow of suspension into contact with the brush **114**.

The retaining sleeve **119** is secured to the top portion **110***a* in the same way as described in connection with FIGS. 1 to 4. If desired, the space between the main part of the top portion **110***a* and the collar **110***g* may receive an annular gasket which is compressed by the cap **111** when the latter is screwed all the way down to insure that the liquid carrier cannot escape from the chamber **110***b*. It is assumed that the suspension **120** is a nail polish.

The cap **111** is connected with a handle **115** whose lower portion may be integral with the plunger **112**.

FIG. 6 shows a portion of a third container whose receptacle **210** is of circular outline and wherein the walls **210***f* and **210***c* are respectively provided with spaced projections **225***a*, **225***b* which extend into the chamber **210***b*. The function of these projections is to flex the vanes **218***a* of the stirring member **218** so that, after passing a given projection **225***a* or **225***b*, the vanes will be free to unflex and will whip the carrier liquid to produce an exceptionally satisfactory stirring effect. If desired, the projections on the bottom wall **210***c* or on the side wall **210***f* may be

dispensed with. These projections reduce the corresponding transverse dimension of the chamber **210***b*.

Similar whipping effect may be produced by utilizing a receptacle of rectangular outline wherein the distance between a pair of opposed corners exceeds the width of a flexible stirring member but wherein the width of the stirring member exceeds the shortest distance between a pair of opposed side walls so that the side walls will flex the vanes but the vanes will be free to unflex while advancing along the corners of the receptacle.

It is to be noted that containers for nail polish or the like with stirring devices are known in the art. However, and insofar as we are informed at this time, all such conventional stirring devices must be manipulated in a separate step which follows or precedes separation of the closure from the receptacle so that a negligent or absent-minded person is likely to remove nail polish without any stirring. Also, the user must spend additional time for manipulation of the stirring device.

Without further analysis, the foregoing will so fully reveal the gist of the present invention that others can, by applying current knowledge, readily adapt it for various applications without omitting features that, from the standpoint of prior art, fairly constitute essential characteristics of the generic and specific aspects of this invention and, therefore, such adaptations should and are intended to be comprehended within the meaning and range of equivalence of the following claims.

What is claimed as new and desired to be secured by Letters Patent is:

1. A container for colloidal suspensions, comprising a receptacle defining an internal chamber of a predetermined cross-sectional dimension and having a bottom wall and a peripheral wall extending upwardly therefrom, and including a top portion through which a colloidal suspension may be introduced into and withdrawn from said chamber; a rotary closure meshing with said top portion to normally seal said chamber from the atmosphere; a rotary stirring device comprising a stirring member extending into said chamber and having an upper portion supported by said top portion and a lower portion extending transversely of said upper portion and having an elongated edge portion abutting at least one of said walls; and motion transmitting means including cooperating coupling elements provided on said closure and on said upper portion to rotate said stirring device in response to rotation of said closure whereby said elongated edge portion of said lower portion sweeps across at least one of said walls so that a suspension contained in said chamber is automatically stirred when said closure is rotated with respect to said receptacle or vice versa.

2. A container for colloidal suspensions, comprising a receptacle defining an internal chamber having a bottom wall and including a screw-threaded top portion through which a colloidal suspension may be introduced into and withdrawn from said chamber; a rotary screw-threaded closure meshing with said top portion to normally seal said chamber from the atmosphere; a rotary stirring device comprising a stirring member of non-metallic material extending into said chamber and having an upper portion supported by said top portion and a lower portion having an elongated edge portion abutting said bottom wall; and motion transmitting means including an annular member rigid with the upper portion of said stirring device and having an opening of noncircular outline, and a plunger of noncircular cross-section rigid with said closure and slidably received in said opening so as to rotate said stirring device in response to rotation of said closure whereby said elongated edge portion of said lower portion sweeps across said bottom wall so that a suspension contained in said chamber is automatically stirred when said closure is rotated with respect to said receptacle or vice versa.

3. A container for colloidal suspensions, comprising a receptacle defining an internal chamber and including a screw-threaded top portion through which a colloidal suspension may be introduced into and withdrawn from said chamber and a bottom wall; a rotary screw-threaded closure meshing with said top portion to normally seal said chamber from the atmosphere; a rotary stirring device comprising an upper portion supported by said top portion and a bottom portion extending into said chamber and into actual engagement with said bottom wall and serving as a stirring member; and motion transmitting means including cooperating coupling elements provided on said closure and on said upper portion to rotate said stirring device in response to rotation of said closure whereby a suspension contained in said chamber is automatically stirred by sweeping of said stirring member across at least the major part of said bottom wall when said closure is rotated with respect to said receptacle or vice versa.

4. A container as set forth in claim **3**, wherein said stirring member comprises at least one vane of elastic material which sweeps said bottom wall in response to rotation of said stirring device.

5. A container for colloidal suspensions, particularly for nail polish or similar substances wherein solid particles which are dispersed in a liquid carrier tend to settle in the absence of periodic stirring, comprising a bottle defining an internal chamber having a bottom wall and including a screw-threaded top portion through which a colloidal suspension may be introduced into and withdrawn from said chamber; a rotary screw-threaded closure meshing with said top portion to normally seal said chamber from the atmosphere; a rotary stirring device comprising an upper portion extending into said top portion and a bottom portion rigid with said upper portion and extending into said chamber, said bottom portion having a stirring member extending substantially normal to said bottom wall thereacross and into abutment therewith; motion transmitting means including an annular member rigid with the upper portion of said stirring device and having an opening of noncircular outline, and a plunger of noncircular cross-section rigid with said closure and slidably received in said opening so as to rotate said stirring device in response to rotation of said closure whereby a suspension contained in said chamber is automatically stirred by sweeping of said stirring member across at least the major part of said bottom wall when said closure is rotated with respect to said bottle or vice versa; retaining means rotatably securing said annular member to said top portion; and an applicator connected with said plunger and having a lower portion extending into said chamber when said closure meshes with said top portion.

6. A container as set forth in claim **5**, wherein the lower portion of said applicator is a brush which dips into a suspension contained in said chamber when said closure seals the chamber from the atmosphere and which withdraws some of such suspension when the closure is unscrewed.

7. A container for colloidal suspensions, comprising a receptacle defining an internal chamber having at least two different transverse dimensions and including a top portion through which a colloidal suspension may be introduced into and withdrawn from said chamber; a rotary closure meshing with said top portion to normally seal said chamber from the atmosphere; a rotary stirring device comprising an elastic stirring member extending in said chamber into abutment with the bottom wall of said receptacle and having a width exceeding the smallest of said cross-sectional dimensions, and an upper portion operatively connected to said top portion; and motion transmitting means cooperating with said closure and said upper portion to rotate said stirring device in response to rotation of said closure whereby said elastic stirring member sweeps up any sediment which has settled in said chamber so that a suspension contained in said cham-

ber is automatically stirred when said closure is rotated with respect to said receptacle or vice versa.

8. A container for colloidal suspensions, comprising a receptacle defining an internal chamber and including a screw-threaded top portion through which a colloidal suspension may be introduced into and withdrawn from said chamber; a rotary screw-threaded closure meshing with said top portion to normally seal said chamber from the atmosphere; a rotary stirring device comprising a stem portion extending into said chamber and a stirring portion extending transversely of said stem portion substantially normal to, and in abutment with the bottom wall of said receptacle, and an upper portion extending into said top portion; motion transmitting means including an annular member rigid with said upper portion and having an opening of noncircular outline, and a plunger of noncircular cross-section rigid with said closure and slidably received in said opening so as to rotate said stirring device in response to rotation of said closure whereby said stirring member sweeps across said bottom wall and a suspension contained in said chamber is automatically stirred when said closure is rotated with respect to said receptacle or vice versa; and retaining means for rotatably connecting said annular member with said top portion.

9. A container for colloidal suspensions, comprising a bottle defining an internal chamber bounded by walls of noncircular outline and including a screw-threaded top portion through which a colloidal suspension may be introduced into and withdrawn from said chamber; a rotary screw-threaded closure meshing with said top portion to normally seal said chamber from the atmosphere; a rotary stirring device comprising a stirring member of elastic material extending into said chamber and having a width exceeding the smallest transverse dimension of said chamber, said stirring device further comprising an upper portion rotatably supported by the top portion of said bottle; and motion transmitting means including cooperating coupling elements provided on said closure and on said upper portion to rotate said stirring device in response to rotation of said closure whereby a suspension contained in said chamber is automatically stirred when said closure is rotated with respect to said bottle or vice versa, said stirring member being automatically deformed by the walls surrounding said chamber when the stirring device is rotated by said closure.

10. A container as set forth in claim 9, wherein the width of said stirring member at most equals the maximum transverse dimension of said chamber so that the stirring member is alternately flexed and unflexed when it rotates with respect to said bottle or vice versa.

11. A container for colloidal suspensions, comprising a bottle defining an internal chamber and including a top portion through which a colloidal suspension may be introduced into and withdrawn from said chamber; a rotary cap meshing with said top portion to normally seal said chamber from the surrounding atmosphere; a rotary stirring device comprising an elastic stirring member extending into said chamber normal to, and in contact with the bottom wall of said chamber, and abutting against one of the walls bounding said chamber, and an upper portion extending into said top portion; and motion transmitting means operatively connected with said upper portion and said cap to rotate said annular member and said stirring device in response to rotation of said cap with respect to said bottle or vice versa whereby said stirring device automatically agitates the suspension in said chamber by sweeping across said bottom wall and said one of the walls bounding said chamber.

12. A container as set forth in claim 11, wherein said top portion is a tube and further comprising an applicator having a stem which is received in said tube when the cap is attached to said top portion, said agitator further comprising a brush connected with the lower end of said stem and dipping into the suspension which is contained in said chamber when the cap is secured to said top portion.

13. A container as set forth in claim 11, wherein said cap is provided with external threads and wherein said top portion comprises a collar having internal threads meshing with said external threads.

14. A container for colloidal suspensions, comprising a receptacle defining an internal chamber having at least two different transverse dimensions and including a screw-threaded top portion through which a colloidal suspension may be introduced into and withdrawn from said chamber; a rotary screw-threaded closure meshing with said top portion to normally seal said chamber from the atmosphere; a rotary stirring device comprising an elastic stirring member extending into said chamber and an upper portion supported by said top portion, the width of said stirring member exceeding the smallest transverse dimension and being at most equal to the maximum transverse dimension of said chamber; and motion transmitting means including cooperating coupling elements provided on said closure and on said upper portion to rotate said stirring device in response to rotation of said closure whereby a suspension contained in said chamber is automatically stirred when said closure is rotated with respect to said receptacle or vice versa.

15. A container as set forth in claim 14, wherein said chamber is of substantially noncircular outline.

16. A container as set forth in claim 14, wherein said receptacle comprises bottom and side walls and wherein at least one of said walls comprises at least one projection extending into and reducing the corresponding transverse dimension of said chamber, said stirring member having at least one portion which is flexed in response to engagement with said projection when said receptacle is caused to rotate with reference to said closure or vice versa.

17. A container as set forth in claim 16, wherein said chamber is of substantially circular outline.

18. A container as set forth in claim 16, wherein at least one of said walls is provided with a plurality of projections and wherein said stirring member comprises a plurality of flexible vanes which are flexed by said projections.

19. A container for colloidal suspensions, comprising a receptacle defining an internal chamber and including a screw-threaded top portion through which a colloidal suspension may be introduced into and withdrawn from said chamber; a rotary-screw-threaded closure meshing with said top portion to normally seal said chamber from the atmosphere; a rotary stirring device comprising an elastic stirring member extending into said chamber and an upper portion extending into said top portion; motion transmitting means including an annular member rigid with said upper portion and having an opening of noncircular outlie, and a plunger rigid with said closure and slidably received in said opening so as to rotate said stirring device in response to rotation of said closure whereby a suspension contained in said chamber is automatically stirred when said closure is rotated with respect to said receptacle or vice versa; and retaining means including a sleeve of elastically deformable material for rotatably connecting said annular member with said top portion, said sleeve and said top portion defining between themselves an annular recess for the peripheral portion of said annular member.

20. A container for colloidal suspensions, comprising a receptacle defining an internal chamber and including a screw-threaded top portion through which a colloidal suspension may be introduced into and withdrawn from said chamber, said top portion being provided with a circumferential groove; a rotary screw-threaded closure meshing with said top portion to normally seal said chamber from the atmosphere; a rotary stirring device comprising an elastic stirring member extending into said

chamber and an upper portion extending into said top portion; motion transmitting means including an annular member rigid with said upper portion and having an opening of noncircular outline, and a plunger rigid with said closure and slidably received in said opening so as to rotate said stirring device in response to rotation of said closure whereby a suspension contained in said chamber is automatically stirred when said closure is rotated with respect to said receptacle or vice versa; and retaining means including a sleeve of elastically deformable material including an annular flange extending into said groove of said top portion for rotatably connecting said annular member with said top portion, said sleeve and said top portion defining between themselves an annular recess for the peripheral portion of said annular member.

21. A container for colloidal suspensions, comprising a receptacle having a neck and a bottom wall; a closure meshing with said neck and rotatable relative thereto; a rotary stirring device disposed in said receptacle and

including a stirring member having a lower edge portion abutting said bottom wall and extending substantially across the entire cross-sectional dimension thereof, said lower edge portion being adapted to sweep at least the major part of said bottom wall; and motion-transmitting means cooperating with said stirring device and said closure so that said stirring member will sweep across said bottom wall whenever said closure is rotated whereby any sediment on and adjacent to said bottom wall is returned into suspension.

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