

Description

BACKGROUND OF THE INVENTION

Field of the Invention

The present invention relates generally to product packaging, particularly to a product packaging method, and more particularly to a method of assembling a package suitable for protectively enclosing a photosensitive product.

Description of the Prior Art

Various methods for protectively packaging a product are known in the prior art. Pertinent examples may be found in the following documents:

U.S. Patent No. 4,702,383 (Wender) - Discloses a tamper-evident package comprising a jar with a circular opening, a circular cap that is closely mateable with the opening, and an annular connecting member on the cap with diametrically opposed, frangible tabs extending downwardly therefrom and secured to correspondingly opposite sides of the jar, to seal the jar closed and to evidence tampering by breaking or tearing apart whenever the cap is moved relative to the opening.

Jap. Patent Pub. No. 1-113237 (Fuji) - Discloses a film package comprising a plastic cylindrical can with an open end and an end cap removably attached thereto by a disposable sealing tape that extends across the cap and down onto opposite sides of the can, for protectively containing a 35mm film cartridge.

U.K. Published Patent Application No. GB-2,213,135-A (Fuji) - Discloses a film package comprising a plastic container with an open end or side and a removable or hinged cap, for opening and closing the container around a 35mm film cartridge, wherein an information-displaying label may be attached to the container's outer surface, a seal may extend from the container to the cap to indicate whether the package has been opened, and a nub or tab may project from an edge of the cap to facilitate opening.

While product packaging methods such as those indicated above may have sufficed for their intended purposes, there is now an increasing need for a more efficient and reliable method of assembling a highly useful and protective product package. That need heretofore has not been satisfactorily met.

FR-A-864 046 describes a method for applying a label directly onto a clip of a bottle which serves to attach a cap onto the opening of the bottle. The label covers the clip in order to indicate whether the bottle has been opened.

US-A-3 292 807 discloses a cap for closing a bottle having an outwardly projecting tab for facilitating the opening of the bottle.

It is the object of the present invention to provide a method of assembling a package which is composed of a container and a cap and onto which a label is attached such that the label is located in a predetermined position relative to the package.

A method according to the present invention solving this technical problem is described in claim 1. Preferred embodiments of said method are described in the dependent claims.

This invention, and its objects and advantages, will become more apparent in the detailed description of the preferred embodiment thereof presented hereinbelow.

BRIEF DESCRIPTION OF THE DRAWINGS

In the detailed description of the preferred embodiment of this invention presented below, reference is made to the accompanying drawings, wherein like reference characters denote like elements, and wherein:

Fig. 1 is an exploded perspective view of a package constructed and configured, in accordance with the preferred embodiment of this invention, to protectively enclose a cartridge of photographic roll film;

Fig. 2 is an assembled perspective view of the film package shown in Fig. 1;

Fig. 3 is a side-elevational view, partially broken away, of the film package shown in Fig. 2;

Fig. 4 is a top-plan view of the film package shown in Fig. 3, illustrating an outer top label thereon being peeled away and revealing part of an inner top label thereunder;

Fig. 5 is a top-plan view similar to Fig. 4, somewhat enlarged and depicting the inner top label remaining after the outer top label has been removed;

Fig. 6 is a perspective view of the film package shown in Fig. 5, illustrating an outer side label thereon being peeled back and revealing an inner side label thereunder;

Fig. 7 is an enlarged fragmentary view of the circled portion of Fig. 6 but depicting a modification of the side labels there shown;

Fig. 8 is a perspective view of a device constructed and configured to display and dispense a plurality of product packages such as the film package shown in Figs. 1-7;

Fig. 9 is an enlarged, partial, front-elevational view of the displaying and dispensing device illustrated in Fig. 8;

Fig. 10 is a cross-sectional view, taken along line 10-10 in Fig. 9, showing internal details of

the device there depicted; and Fig. 11 is an enlarged, partial, top-perspective view of the device illustrated in Fig. 8, showing further details thereof.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Because certain parts of product packaging arrangements, methods of assembling them, and devices for displaying and dispensing them, are well known, the following description is directed in particular to those elements and steps forming, cooperating directly with, or relating especially to, this invention. Elements and steps not specifically shown or described herein are selectable from those known in the pertinent art.

Fig. 1 illustrates, via an exploded perspective view, a package P constructed and configured, in accordance with the preferred embodiment of this invention, to protectively enclose a cartridge C of photographic roll film F, such as color print film in the popular 35mm size.

Package P comprises a substantially cylindrical, or can-shaped, container 10 having a closed bottom end 12, an exterior sidewall surface 14, and an open top end 16, through which film cartridge C is insertable and removable. Attachable to and detachable from end 16, to respectively close and open container 10, is a closure in the form of a mating end cap 18, which fits closely over and around end 16 in a light-tight manner. Container 10 and cap 18 are both made of an opaque plastic material, such as polyethylene, which is readily recyclable. Cap 18 has a substantially round exterior end wall surface 20 and a peripheral exterior sidewall surface 22 depending therefrom as shown in Figs. 2-4. Projecting radially outward from one side of peripheral sidewall surface 22 is a thumb tab 24 to facilitate pushing cap 18 away from end 16, and to serve other important purposes to be discussed hereinbelow.

A first label 26, mainly round in configuration, has a pair of elongate, flexible, and readily tearable tab portions 28 extending respectively from opposite sides thereof and bent downwardly therefrom as shown in Fig. 1. Label 26 is adhesively secured to the exterior end wall surface 20 of cap 18, while tab portions 28 are wrapped over and secured to respective sides of the exterior sidewall surface 22 of cap 18. With the cap firmly attached to the container top end 16, the tab portions 28 are then tautly secured to corresponding opposite sides of the exterior sidewall surface 14 of container 10 as shown in Fig. 3. Each tab portion 28 is provided with a small slit 30 at approximately the location thereon where the tab portion leaves the cap, as shown in Figs. 2 and 3, to render the tab

portion more easily tearable whenever the cap is pushed upwardly to open the container. Fig. 6 illustrates one of the tab portions having been so torn.

A second label 32, basically rectangular in shape, is adhesively secured to the exterior sidewall surface 14 of container 10, over the tearable tab portions 28, thereby further securing the tab portions to the container sidewall. Label 32 comprises substantially coextensive and registered inner and outer sheet-like portions 34 and 36 respectively. Inner portion 34 has first and second ends 34a and 34b respectively, an inner surface 34i facing toward and adhesively secured to sidewall surface 14, and an outer surface 34o facing away from surface 14. Superposed outer portion 36 has corresponding first and second ends 36a and 36b respectively, an inner surface 36i facing toward and separably adhered to inner-portion outer surface 34o, and an outer surface 36o facing away from the inner portion. The inner-portion outer surface 34o and the outer-portion inner and outer surfaces 36i and 36o all have product information thereon. Such information presented on outer surface 36o is fully visible when the inner and outer portions are registered as shown in Figs. 2 and 3. To render such information on surfaces 34o and 36i viewable, outer portion 36 is at least partially separable from inner portion 34. Thus, starting at its first end 36a, outer portion 36 is readily peelable away from inner portion 34 toward its second end 36b, but is firmly secured to the inner portion at its second end to prevent the outer portion from being removed entirely. Figs. 6 and 7 illustrate the outer portion 36 peeled back from inner portion 34 almost to their registered second ends 34b and 36b. Consistent with the purpose of keeping the outer portion on the container, its inner surface 36i is adapted to be separably re-adhered to surface 34o when superposed thereupon again after being peeled away to view the product information thereon. Preferably, label 32 is formed as two distinct, coextensive, sheet-like elements comprising its inner and outer portions 34 and 36 brought together in registered face-to-face relation as aforesaid and firmly secured at their second ends 34b and 36b. Alternatively, label 32 could be formed as a unitary sheet-like element folded over upon itself at a medial fold line thereon defining the joined second ends 34b and 36b of its coextensive, registered inner and outer portions, as illustrated partially in Fig. 7.

A third label 38, also mainly round, is separably adhered to the top surface of first label 26. With the help of a peripheral pull tab 40, label 38 is readily peelable away from label 26, as illustrated in Fig. 4, and is re-adherable to another surface, such as an exterior surface on the user's camera,

for reference in reminding the user of the particular product removed from the container. As depicted in Figs. 4-6, removal of label 38 leaves label 26 remaining on cap 18. The now-exposed top surface of label 26 may provide information relating to the product, such as the status of an exposed film cartridge returned to the container, as well as spaces wherein the user can record his own information.

An especially advantageous feature of all three of labels 26, 32, and 38 is that they are made of recyclable plastic material that is recyclably compatible with the recyclable plastic material, such as polyethylene, of which the container and cap are made. This feature extends as well to the adhesives used on their adhering surfaces, and to the inks used on their information surfaces. With this feature, the entire package (without the product therein) can be recycled as a whole, without first having to remove the labels.

In assembling the package P just described, after film cartridge C has been fully inserted into container 10 through open top end 16 thereof, and cap 18 is first attached to end 16 to close container 10. Using the outwardly projecting thumb tab 24 as an orienting guide, the joined container and cap are then placed in a predetermined angular position relative to their longitudinal axis A.

Next, with the container and cap held in that position, the first label 26 is adhesively secured to the cap exterior end wall surface 20, and its oppositely extending tearable tab portions 28 are then folded downwardly over corresponding opposite portions of cap exterior sidewall surface 22 and container exterior sidewall surface 14, and are tautly secured thereto, so that label 26 and tab portions 28 are secured in a preselected angular orientation relative to thumb tab 24. In the preferred embodiment illustrated, that orientation is such that at least a principal part of the information borne by label 26 is readily viewable from a direction substantially opposite to the direction in which tab 24 projects outwardly from surface 22, and tab portions 28 are substantially equally spaced peripherally from tab 24, i.e., tab 24 is peripherally midway between tab portions 28. With that orientation, any upward force exerted upon tab 24 to remove cap 18 results in substantially equal upward tearing forces on tab portions 28 at the locations thereon where those portions have been weakened by the small slits 30.

The next step, with the container and cap still held in the aforementioned predetermined position, is to secure the second label 32 to the container exterior sidewall surface 14 over the depending tab portions 28 already secured thereto, and in the aforementioned angular orientation wherein at least a principal part of the information borne by label 32

is viewable from a direction substantially opposite to that in which tab 24 projects.

Assuming such information to be symmetrically displayed on label 32, this orientation would place the vertical centerline of label 32 diametrically opposite tab 24. As previously mentioned, applying label 32 over tab portions 28 further secures them to the container sidewall.

The final step, still with the container and cap in their predetermined position, is to separably adhere the third label 38 to the upward-facing exterior surface of first label 26, again in the aforementioned angular orientation, so that at least a principal part of the information borne by label 38 is viewable from the aforementioned direction opposite that in which tab 24 projects. With label 38 so oriented, according to the preferred embodiment depicted in Fig. 4, pull tab 40 projects radially outward approximately midway peripherally between thumb tab 24 and the closer one of tab portions 28.

With all three of labels 26, 32, and 38 applied in the same preselected angular orientation relative to thumb tab 24, when container 10 and cap 18 are held in the desired predetermined angular position relative to their longitudinal axis A, at least the principal part of the information visible on each label can be viewed from a side of the package which is substantially diametrically opposite thumb tab 24. A particularly useful advantage of this arrangement will become readily apparent in the following description of a cooperating device for displaying and dispensing a plurality of such film packages.

Fig. 8 illustrates, in perspective, a point-of-sale device D constructed and configured to display and dispense a plurality of product-enclosing packages such as the film package P described above with reference to Figs. 1-7.

In its illustrated embodiment, the device D comprises a plurality of upstanding tubes 50, each having upper and lower open end portions 52 and 54, respectively, and a substantially cylindrical sidewall 56 with a longitudinal slot 58 therein extending between the two end portions. Each tube 50 is configured to slidably receive therein a plurality of film packages P for successive gravity feeding from upper end portion 52 to lower end portion 54. Each package is received through the open end of portion 52 in such orientation that its end cap 18 faces upward, its thumb tab 24 projects radially in a first direction d1 into slot 58, and at least a principal part of visible information on its label 32 faces outwardly in a second direction d2 generally opposite the first direction d1 in which tab 24 projects.

The device D also comprises means 60 for supporting each tube 50 in an orientation wherein

the second direction d2 coincides substantially with a display direction dd suitable for viewing. As depicted in Fig. 8, such means is provided by a partial enclosure 62 having opposing sidewalls 64 and 66, a rear wall 68, a short front panel 70 at its upper end, a front brace 72, and a bottom wall 74. Thus, as oriented by enclosure 62, the second direction d2 coincides with the desired display direction dd, which extends forwardly from each tube 50 while the tab-receiving slot 58 is disposed rearwardly therein. Also as oriented by enclosure 62, each tube is tilted so that its upper end portion 52 is slightly rearward of its lower end portion 54.

In the preferred embodiment illustrated, the cylindrical sidewall 56 of each tube is substantially transparent, so that at least the forward-facing portion of the label 32 on each package in the tube can be viewed therethrough.

As can be seen in Figs. 8 and 11, the slot 58 in each tube is widened, or flared as at 76, at its open end in upper end portion 52 to facilitate receiving the package thumb tabs 24 therein.

Device D further comprises means 78 adjacent to the lower end portion 54 of each tube for supporting the lowermost one of the packages therein in such a way as to render that package accessible for convenient removal. As depicted in Figs. 8 and 9, such means is provided by a substantially U-shaped shelf 80 disposed immediately under the open end of each lower end portion 54 and projecting forwardly therefrom. In supporting the lowermost package, shelf 80 of course serves to support all other packages stacked above that one. It will be noted that the front half of each lower end portion 54 is cut away to a height that permits the lowermost package to be readily grasped and removed, after which the next package above that one simply slides downward to take its place.

In the illustrated embodiment, the displaying and dispensing device D comprises a cluster of eight closely arranged tubes, including front and rear rows of four tubes each, disposed in side-by-side relation. It will be seen that the U-shaped shelves 80 under the four tubes in each row are joined together as one integrally formed piece. Also, it will be seen that the rear row of tubes extends to a lower level than the front row. Thus both the lower end portions 54 of the rear tubes and the joined shelves 80 thereunder are sufficiently below their front-row counterparts to render the lowermost packages in the rear row fully accessible for removal.

While the present invention has been described in detail with particular reference to its preferred embodiment illustrated herein, it should be understood that variations and modifications can be effected within the scope of this invention as defined by the following claims.

Claims

1. A method of assembling a package (P) for protectively enclosing a product (C), the package (P) including a substantially cylindrical container (10) having an open end (16) through which the product (C) is insertable into and removable from the container (10), an end cap (18) matably attachable to and detachable from said end (16) to close and open the container (10) respectively, the cap (18) having a thumb tab (24) projecting therefrom to facilitate opening the container (10), and an information-bearing label (32 or/and 26) applied to at least one (10 or/and 18) of said container (10) and cap (18) without the label touching the thumb tab (24), said method comprising the steps of:
 - attaching said cap (18) to said end (16) to close said container (10);
 - using said tab (24) to place said container (10) and cap (18) in a predetermined position; and
 - applying said label (32 or/and 26) to said at least one (10 or/and 18) of said container (10) and cap (18) when in said position, so that said label (32 or/and 26) is applied in a preselected orientation relative to said tab (24).
2. A method as claimed in Claim 1 wherein said applying step includes applying said label (32 or/and 26) so that a principal part of the information borne thereby is viewable from a direction substantially opposite to that in which said tab (24) projects from said cap (18).
3. A method as claimed in Claim 2 further characterized by the step of securing at least one tamper-evident tearable strip (28) to both (10 and 18) of said container (10) and cap (18) when in said position, so that said at least one strip (28) is secured thereto (10 and 18) in a particular orientation relative to said tab (24).
4. A method as claimed in Claim 3 wherein said applying step includes applying a first label (26) to said cap (18) and a second label (32) to said container (10); and wherein said securing step includes securing at least one tamper-evident tearable strip (28) extending from said first label (26) on said cap (18) to said container (10) under said second label (32).
5. A method as claimed in Claim 4 wherein said securing step includes securing a spaced-apart plurality of tamper-evident tearable strips (28) extending from said first label (26) on said cap (18), in spaced relation to said tab (24), to said container (10) under said second label (32).



the second direction d2 coincides substantially with a display direction dd suitable for viewing. As depicted in Fig. 8, such means is provided by a partial enclosure 62 having opposing sidewalls 64 and 66, a rear wall 68, a short front panel 70 at its upper end, a front brace 72, and a bottom wall 74. Thus, as oriented by enclosure 62, the second direction d2 coincides with the desired display direction dd, which extends forwardly from each tube 50 while the tab-receiving slot 58 is disposed rearwardly therein. Also as oriented by enclosure 62, each tube is tilted so that its upper end portion 52 is slightly rearward of its lower end portion 54.

In the preferred embodiment illustrated, the cylindrical sidewall 56 of each tube is substantially transparent, so that at least the forward-facing portion of the label 32 on each package in the tube can be viewed therethrough.

As can be seen in Figs. 8 and 11, the slot 58 in each tube is widened, or flared as at 76, at its open end in upper end portion 52 to facilitate receiving the package thumb tabs 24 therein.

Device D further comprises means 78 adjacent to the lower end portion 54 of each tube for supporting the lowermost one of the packages therein in such a way as to render that package accessible for convenient removal. As depicted in Figs. 8 and 9, such means is provided by a substantially U-shaped shelf 80 disposed immediately under the open end of each lower end portion 54 and projecting forwardly therefrom. In supporting the lowermost package, shelf 80 of course serves to support all other packages stacked above that one. It will be noted that the front half of each lower end portion 54 is cut away to a height that permits the lowermost package to be readily grasped and removed, after which the next package above that one simply slides downward to take its place.

In the illustrated embodiment, the displaying and dispensing device D comprises a cluster of eight closely arranged tubes, including front and rear rows of four tubes each, disposed in side-by-side relation. It will be seen that the U-shaped shelves 80 under the four tubes in each row are joined together as one integrally formed piece. Also, it will be seen that the rear row of tubes extends to a lower level than the front row. Thus both the lower end portions 54 of the rear tubes and the joined shelves 80 thereunder are sufficiently below their front-row counterparts to render the lowermost packages in the rear row fully accessible for removal.

While the present invention has been described in detail with particular reference to its preferred embodiment illustrated herein, it should be understood that variations and modifications can be effected within the scope of this invention as defined by the following claims.

Claims

1. A method of assembling a package (P) for protectively enclosing a product (C), the package (P) including a substantially cylindrical container (10) having an open end (16) through which the product (C) is insertable into and removable from the container (10), an end cap (18) matably attachable to and detachable from said end (16) to close and open the container (10) respectively, the cap (18) having a thumb tab (24) projecting therefrom to facilitate opening the container (10), and an information-bearing label (32 or/and 26) applied to at least one (10 or/and 18) of said container (10) and cap (18) without the label touching the thumb tab (24), said method comprising the steps of:
 - attaching said cap (18) to said end (16) to close said container (10);
 - using said tab (24) to place said container (10) and cap (18) in a predetermined position; and
 - applying said label (32 or/and 26) to said at least one (10 or/and 18) of said container (10) and cap (18) when in said position, so that said label (32 or/and 26) is applied in a preselected orientation relative to said tab (24).
2. A method as claimed in Claim 1 wherein said applying step includes applying said label (32 or/and 26) so that a principal part of the information borne thereby is viewable from a direction substantially opposite to that in which said tab (24) projects from said cap (18).
3. A method as claimed in Claim 2 further characterized by the step of securing at least one tamper-evident tearable strip (28) to both (10 and 18) of said container (10) and cap (18) when in said position, so that said at least one strip (28) is secured thereto (10 and 18) in a particular orientation relative to said tab (24).
4. A method as claimed in Claim 3 wherein said applying step includes applying a first label (26) to said cap (18) and a second label (32) to said container (10); and wherein said securing step includes securing at least one tamper-evident tearable strip (28) extending from said first label (26) on said cap (18) to said container (10) under said second label (32).
5. A method as claimed in Claim 4 wherein said securing step includes securing a spaced-apart plurality of tamper-evident tearable strips (28) extending from said first label (26) on said cap (18), in spaced relation to said tab (24), to said container (10) under said second label (32).



6. A method as claimed in Claim 4 wherein said securing step includes securing a pair of tamper-evident tearable strips (28) extending respectively from opposite sides of said first label (26) on said cap (18), in substantially equally spaced relation to said tab (24), to said container (10) under said second label (32).
7. A method as claimed in Claim 4 further characterized by the step of separably adhering a third label (38) to said first label (26) on said cap (18) so that said third label (38) is readily peelable therefrom for separate reference after the product (C) has been removed from said container (10).

Patentansprüche

1. Verfahren zum Zusammensetzen einer Verpackung (P) zum schützenden Umschließen eines Produkts (C), wobei die Verpackung (P) einen im wesentlichen zylindrischen Behälter (10) aufweist mit einem offenen Ende (16), durch das das Produkt (C) in den Behälter (10) einführbar und aus ihm herausnehmbar ist, einem Enddeckel (18), der passend am Ende (16) anbringbar und von diesem abnehmbar ist, um den Behälter (10) zu verschließen bzw. zu öffnen, wobei der Deckel (18) einen von ihm hervorstehenden Daumenvorsprung (24) hat, um ein Öffnen des Behälters (10) zu erleichtern, und mit einem informationstragenden Etikett (32 oder/und 26), das auf zumindest dem Behälter (10) oder dem Deckel (18) angebracht ist, ohne daß das Etikett den Daumenvorsprung (24) berührt, wobei das Verfahren die Schritte aufweist:

Anbringen des Deckels (18) am Ende (16) zum Schließen des Behälters (10);

Verwenden des Vorsprungs (24) zum Platzieren des Behälters (10) und des Deckels (18) in eine vorbestimmte Stellung, und

Aufbringen des Etiketts (32 oder/und 26), wenn die Stellung erreicht ist, auf zumindest den Behälter (10) oder den Deckel (18), so daß das Etikett (32 oder/und 26) mit einer vorgeählten Ausrichtung bezüglich des Vorsprungs (24) aufgebracht wird.

2. Verfahren nach Anspruch 1, bei dem der Aufbringungsschritt einschließt, daß das Etikett (32 oder/und 26) so aufgebracht wird, daß ein Hauptteil der auf ihm enthaltenen Information aus einer Richtung erkennbar ist, die derjenigen, in der der Vorsprung (24) vom Deckel (18) hervorsticht, im wesentlichen gegenüberliegt.

3. Verfahren nach Anspruch 2, ferner gekennzeichnet durch den Schritt des Befestigens zumindest einer manipulationsanzeigenden, zerreißbaren Lasche (28) am Behälter (10) und am Deckel (18) wenn die genannte Stellung erreicht ist, so daß zumindest eine Lasche (28) in einer bestimmten Ausrichtung bezüglich des Vorsprungs (24) an ihnen (10 und 18) befestigt wird.

4. Verfahren nach Anspruch 3, bei dem der Aufbringungsschritt einschließt das Aufbringen eines ersten Etiketts (26) auf den Deckel (18) und eines zweiten Etiketts (32) auf den Behälter (10), und bei dem der Befestigungsschritt einschließt das Befestigen von zumindest einer manipulationsanzeigenden, zerreißbaren Lasche (28), die sich vom ersten Etikett (26) auf dem Deckel (18) zu dem Behälter (10) unter dem zweiten Etikett (32) erstreckt.

5. Verfahren nach Anspruch 4, bei dem der Befestigungsschritt einschließt das Befestigen einer Vielzahl voneinander beabstandeter manipulationsanzeigender, zerreißbarer Laschen (28), die sich vom ersten Etikett (26) auf dem Deckel (18) mit Abstand vom Vorsprung (24) zu dem Behälter (10) unter dem zweiten Etikett (32) erstrecken.

6. Verfahren nach Anspruch 4, bei dem der Befestigungsschritt einschließt das Befestigen eines Paares manipulationsanzeigender, zerreißbarer Laschen (28), die sich je von gegenüberliegenden Seiten des ersten Etiketts (26) auf dem Deckel (18) mit im wesentlichen gleichem Abstand vom Vorsprung (24) zu dem Behälter (10) unter dem zweiten Etikett (32) erstrecken.

7. Verfahren nach Anspruch 4, ferner gekennzeichnet durch den Schritt des lösbaren Anbringens eines dritten Etiketts (38) auf dem ersten Etikett (26) auf dem Deckel (18), so daß das dritte Etikett (38) als separates Merkzeichen einfach davon abziehbar ist, nachdem das Produkt (C) aus dem Behälter (10) entnommen worden ist.

Revendications

1. Procédé d'assemblage d'un emballage (P) pour renfermer en le protégeant un produit (C), l'emballage (P) comprenant un conteneur sensiblement cylindrique (10) ayant une extrémité ouverte (16) à travers laquelle on peut insérer le produit (C) dans le conteneur (10) et l'enlever de celui-ci, un bouchon d'extrémité (18) que l'on peut emboîter sur et déboîter de