Oct. 19, 1937. F. G. HARRIS 2,096,397

METHOD OF AND MEANS FOR HANDLING SOAP PASTE, GREASE, AND OTHER MATERIALS OF LIKE CONSISTENCY

Filed Dec. 2, 1936

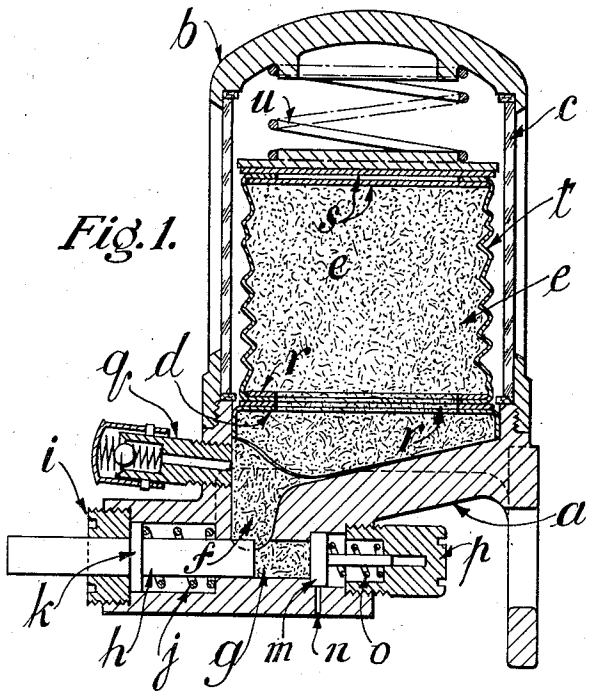


Fig. 1.

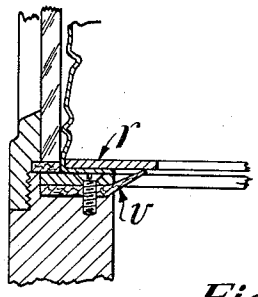


Fig. 3.

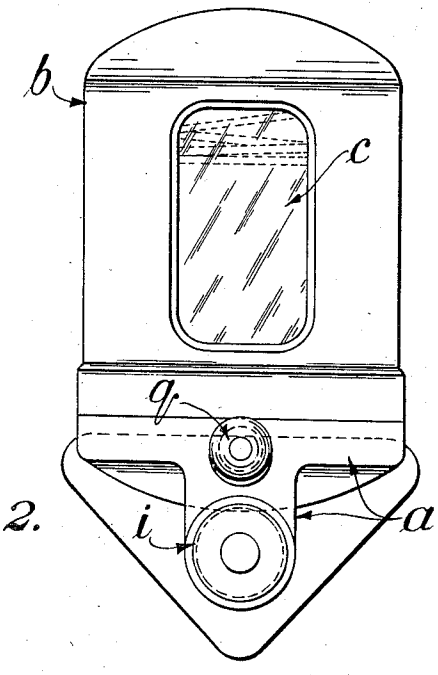


Fig. 2.

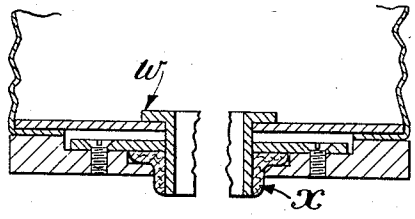


Fig. 4.

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METHOD OF AND MEANS FOR HANDLING SOAP PASTE, GREASE, AND OTHER MATERIALS OF LIKE CONSISTENCY

Frederick George Harris, Lytham-St. Annes, England

Application December 2, 1936, Serial No. 113,855
In Great Britain March 7, 1935

4 Claims. (Cl. 221—102)

This invention relates to an improved method of, and means for, handling soap paste, grease and other materials of a like consistency and in particular in connection with dispensing and other delivery apparatus therefor of the kind having a refillable container.

Hitherto, apparatus with refillable containers for dispensing soap paste, or guns for delivering grease, have been filled or refilled by hand, or by means of a carton or container arranged to simplify the recharging of the apparatus therefrom. In some cases, the carton itself has taken the form of a cartridge fitting into the apparatus, a piston or plunger therein acting to eject the contents when pushed forward by the mechanism of the apparatus.

The object of the invention is a more simple arrangement for dispensing such commodities.

According to the invention apparatus for dispensing soap paste, grease or other materials of a like consistency comprising a refillable container within the apparatus is characterized by means for refilling the collapsible container without removing it from the apparatus.

In the accompanying drawing:—

Fig. 1 is a sectional side elvation of one example of a soap dispensing apparatus made in accordance with the invention.

Fig. 2 is an external front elevation.

Figs. 3 and 4 are detail views of modified constructions to prevent leakage from the container into the body of the apparatus.

As illustrated, the soap dispensing apparatus comprises a base part *a* onto which screws an inverted cover *b* having a window *c*. In the base part is a flange seating *d* on which the bottom of a collapsible container *e* rests. The base part has a tapered recess below the flange seating *d* and an aperture *f* leading therefrom to a cylindrical passage *g* in which is arranged a plunger or piston *h*. The plunger or piston *h* extends through a plug *i* in the base, behind which is a return spring *j* engaging a collar *k* secured to the plunger.

The other end of the passage *g* is enlarged and provided with a piston valve *m* covering an outlet aperture *n*, the valve having a return spring *o* and being held in place and guided by a plug *p*.

At the front of the base and over the plunger *h* is a filling nipple *q* of the usual type onto which a refilling gun may be fitted.

The collapsible container consists of two rigid discs *r* and *s* connected by a flexible wall *t*, the lower of which disc *r* rests on the flange seating *d* and has a central hole. The flexible wall may be made of rubber or other suitable material. Above the container and between the disc *s* and the end of the cover *b* is a light spring *u* of sufficient power to ensure the expression of the contents to recharge the dispensing plunger after each operation thereof.

In use, when the plunger is pressed in it passes the end of the aperture *f* and then further pressure on the plunger forces the soap trapped in the cylinder against the valve *m* causing it to move back and uncover the aperture *n* from which some of the soap is then expressed. When the plunger is released it is returned by its spring *j* and the valve *m* follows it to close the aperture *n*. The spring *j* then forces the plunger back still further causing a partial vacuum corresponding to the quantity of soap which has been expressed through the aperture *n*. When the inner end of the plunger reaches the aperture *f*, the cylinder *g* is refilled, the soap being drawn in by the partial vacuum aided by the pressure of the spring *u*.

To recharge the apparatus when the collapsible container has been exhausted the same may be removed and replaced by a new one which is full. Alternatively, the collapsible container may be filled without removal by means of a refilling gun applied to the nipple *q*. In such latter case means may be provided such as hereinafter described to prevent leakage at the bottom disc.

With the foregoing arrangement, the soap is always effectively retained within the collapsible container *e* and can only leave the same to reach the dispensing cylinder or passage *g*. If the bottom disc *r* of the container is a reasonably good fit on the flange *d* against which it rests, there is no tendency for the soap to be expressed round the end of the container and at any time the cover *b* of the apparatus may be removed without finding that the soap has been expressed from the container on to surrounding parts of the apparatus. Further, to preclude such a possibility, there may be provided a rubber washer *v* as shown in Fig. 3 acting against the bottom disc *r* of the container and preferably shaped with an upward deflection as shown to act as a self-sealing gland packing, or the container may have a tubular extension or nozzle *w* see Fig. 4 fitting into a hat-leather washer *x* in the base of the apparatus, arranged to act as a self-sealing gland packing, yet permitting the said nozzle to be withdrawn if sufficient pull is exerted. Obviously, there are many such ways in which leakage can be prevented, but in actual practice it has not

been found necessary to take any such special measures.

The slight pressure on the collapsible container ensures that the paste reaches the delivery plunger for each operation thereof, which it frequently did not do when gravity alone was relied upon. The inside of the cover and other parts of the dispensing apparatus are kept free from the paste and the process of replacing the collapsible container or recharging the same while in position is both clean and simple.

Dispensing apparatus for shaving soap and like commodities has been proposed comprising a delivery plunger or pump and a collapsible tube or container from which the contents are expressible to the pump by spring pressure acting to distort the tube, but such tubes or containers have hitherto been regarded as not refillable and no suggestion or means has been previously made for refilling the tubes nor for recharging the apparatus other than by the insertion of a new tube.

It has also been proposed in a portable apparatus for delivering measured quantities of oil or other liquids to provide a non-collapsible but refillable measuring chamber from which the contents may be discharged by air pressure or by means of a spring loaded piston.

What I claim is:—

1. Apparatus for dispensing soap paste, grease or other material of a like consistency comprising a casing, a collapsible container in the casing for the said material, pump means for extracting and delivering quantities of the material from the said collapsible container and means on the casing for refilling the said collapsible container in situ.

2. Apparatus for dispensing soap paste, grease or other material of a like consistency comprising a casing, a collapsible container in the casing for the said material, a spring in the casing exerting a light pressure on the container to assist extraction of the material therefrom, pump means for extracting and delivering quantities of the material from the said collapsible container and means on the casing for refilling the said collapsible container in situ.

3. Apparatus for dispensing soap paste, grease or other material of a like consistency comprising a casing, a collapsible container in the casing for the said material, a spring in the casing exerting a light pressure on the container to assist extraction of the material therefrom, pump means for extracting and delivering quantities of the material from the said collapsible container and means on the casing for refilling the said collapsible container, in situ, the said collapsible container having rigid end discs and cylindrical walls of flexible material, the casing having a seating to receive one such end disc in which latter is formed an outlet hole.

4. Apparatus for dispensing soap paste, grease or other material of a like consistency comprising a casing, a collapsible container in the casing for the said material, a spring in the casing exerting a light pressure on the container to assist extraction of the material therefrom, pump means in the casing for extracting and delivering quantities of the material from the said collapsible container and means on the casing for refilling the said collapsible container in situ, the said collapsible container having rigid end discs and a cylindrical wall of flexible material, the casing having a seating to receive one such end disc in which latter is formed an outlet hole, said means for refilling the collapsible container comprising a gun nipple fixed in the casing and a passage therefrom in the casing leading to the outlet of the collapsible container.

FREDERICK GEORGE HARRIS.