Aug. 8, 1950 A. R. HENDRY ET AL 2,517,663

CONTAINER-SCREW CAP AND BRUSH HANDLE SEAL

Filed Dec. 28, 1946

Fig. 1.

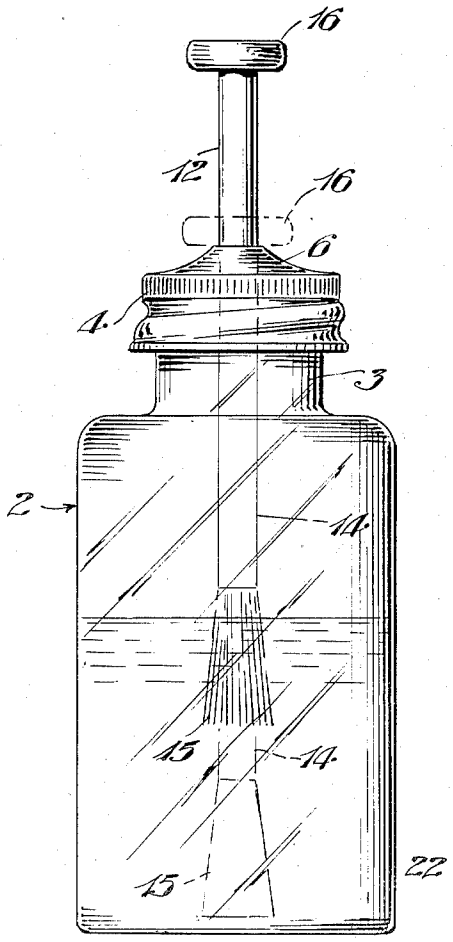


Fig. 2.

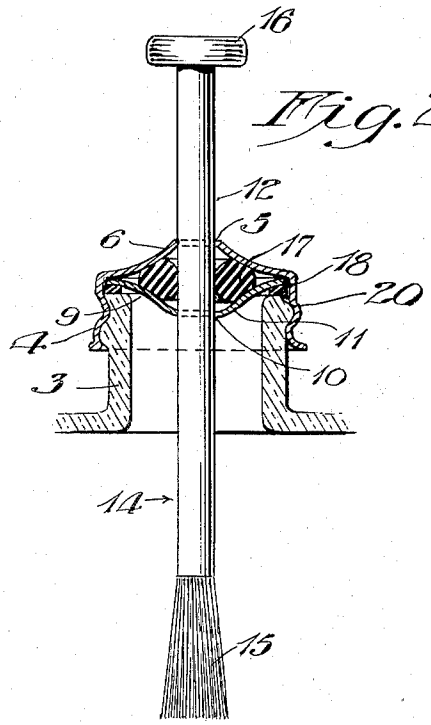


Fig. 5.

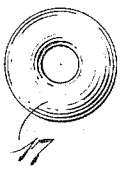


Fig. 3.

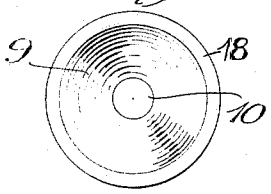


Fig. 4.



INVENTOR.
Adolph R Hendry and
Norman A. Hendry
BY Scott R. Norvil,
attorney.

Patented Aug. 8, 1950

2,517,663

UNITED STATES PATENT OFFICE

2,517,663

CONTAINER SCREW CAP AND BRUSH HANDLE SEAL

Adolph R. Hendry and Norman A. Hendry,
Phoenix, Ariz.

Application December 28, 1946, Serial No. 718,996

4 Claims. (Cl. 15—140.4)

1

This invention relates to brush seals for containers.

The containers particularly concerned are those in which viscous liquids having volatile solvents are kept and the brushes referred to are those held by the container cap so that they are immersed in the liquid in the container when the cap is in place on the container.

One of the objects of the invention is to provide a container having a screw cap thru which an applicator brush extends, these parts being arranged so that the brush is sealed fluid tight in the cap when the cap is tightened on the container top.

Another object is to provide a container having a threaded top opening and a sealing cap threaded thereon together with a liquid applying brush having a cylindrical handle inserted thru said cap and vertically positioned by a rigid compression piece held within the lower inner part of the cap, and a ring of resistant material compressed between the cap top and the compression piece so that the brush handle is sealed fluid tight in the cap and so that viscous substances clinging to said brush handle will be scraped off when the brush handle is drawn upward thru the cap.

Another object is to provide a container with a screw top and a brush inserted therethru arranged so that the brush may be drawn upward thru the cap and will be retained at any desired vertical position relative to the cap.

Still another object is to provide a screw cap for a container having a conical protrusion surrounding a brush handle hole in its top, and a rigid compression piece fitted in the under side of the cap held by a sealing washer and having a conversely extending conical protrusion surrounding a similar hole, with a ring of resilient material positioned between the cap top and said compression piece; all being adapted to screw, fluid tight, on a container top and to receive and retain a brush having a handle extending thru the holes in said cap and retainer so that it will be free to move axially but will be retained, fluid tight, in any desired longitudinal or rotative position.

Other objects will appear hereinafter.

We attain the foregoing objects by means of the devices and construction shown in the accompanying drawings in which:

Figure 1 is an elevational view of a container embodying our cap and brush holder;

Figure 2, a vertical section of the top portion thereof;

2

Figure 3, a plan view of the rigid retainer contained within the cap;

Figure 4, a side elevation thereof, and

Figure 5, a plan view of the resilient sealing ring held within the cap.

Similar numerals of reference indicate similar parts in the several views.

The container 2, which in this example is a bottle, is provided with a threaded neck top 3. A cap of metal or other suitable rigid material 4 screws onto this neck top. The top of this cap is pierced by a centrally positioned hole 5 and the material surrounding the hole is pressed upward forming a conical protrusion 6. Within the cap body is a rigid retainer disc 9. This is centrally pierced at 10 and the material surrounding the hole depressed to form a conical protrusion 11.

The handle 12 of brush 14 is inserted thru holes 5 and 10 with bristles 15 depending in the fluid substance within the container, and a knob or disc 16 at its top. A sealing ring 17 of resilient material, such as rubber or other similar composition surrounds brush handle 12 and is held between the lower face of the cap top and the upper face of the retainer disc. These parts are proportioned and arranged so that normally the rim 18 of disk 9 is held away from contact with the bottom of the inner face of the cap by ring 17, and these parts do not contact until the cap is screwed down on the container neck. When this is done, however, the ring 17 is compressed and its inner annular surface tightly grips the outer surface of the brush handle. At the same time the outer surface of ring 17 is tightly pressed against the adjacent inner surfaces of the conical protrusions, and in this way, a complete seal made around the brush handle.

A washer 20 of resilient material is fitted into the cap beneath the rim of the rigid retainer disc 9 so that it expands against the inner walls of the cap to secure retention. This forms a seal beneath the under face of the outer rim portion of disc 9 and the top edge of the bottle neck 3, and aids in holding the parts in position when the cap is removed from the bottle.

The device is primarily intended for use with containers containing viscous fluids which are to be applied by a brush; particularly those containing a volatile solvent, such fluids include, for example, rubber cement. The container is filled in the usual manner, and the cap screwed onto the neck with the brush extending into the bottle almost to the bottom as indicated in dotted lines 22, Fig. 1, and the knob 16 substantially

flush with the cap top. The filled containers are packed in this condition. When it is desired to open and use a container, the brush handle is first drawn up to the position shown by solid lines, Fig. 1.

The conical portion 11 of disc 9 acts as a scraper and removes fluid from the brush handle as this is done. The handle is sealed in the cap at all times. The cap may then be unscrewed and the liquid applied by the brush. Since the brush dips only slightly in the liquid there is no excess clinging to it and the amount absorbed by the brush can be regulated by the extent to which the brush bristles are immersed. After use the cap is replaced and the bristles are maintained immersed at the depth desired as the liquid is consumed. Due to the fact that the bottle is completely sealed when the cap is in place there is no thickening of liquid by evaporation and hardened cement does not cake up around the neck.

While we have illustrated and explained but one exemplary form of the device it is to be understood that the construction applies equally well to cans and all other types of containers.

Many other types of brushes and liquids can be used, and still remain within the spirit of the invention. As above explained, the novelty includes the container, the cap, and the brush sealed in the cap but held so that adjustments can be made. The disc 9 acts in a dual capacity as a solid compression element against the sealing ring 17 and as a scraper to remove liquid from the brush handle as it is drawn up thru the cap.

In view of the foregoing we wish to be limited only by the following claims.

We claim:

1. A brush holding and sealing cap for containers of viscous substances including volatile solvents, comprising in combination with a container having a threaded neck, a brush having a cylindrical handle, tufts on its lower end, and a finger disk at its upper end; a cap having a top with a conical upward protrusion provided with a central opening and a threaded rim adapted to screw on said threaded container neck; a rigid retainer and scraper disk having a rim fitted into said threaded cap rim, and a depressed conical protrusion having a central opening; a rubber sealing ring having a round radial section and a central opening, adapted to compressably receive said brush handle, fitted between said cap top and said retainer disk and normally separating the rim of said retainer disk from contact with the rim of the under face of said cap top; a washer of resilient material fitted within a rim of said cap to hold said retainer disk in place and form a seal between the rim thereof and said container top; said brush handle extending through the central openings in said cap and retainer disk and the center of said sealing ring, and said ring being compressed between said cap top and said retainer disk when said cap is screwed onto said container neck so that it is compressed radially inward against said brush handle in fluid tight relation therewith.

2. A container brush holding and sealing closure for containers having threaded necks, comprising in combination, a threaded cap having a top with a conical upward protrusion provided with a central hole therein, a rigid retainer disk provided with a depressed conical protrusion having a central hole therein and a rim, fitted into said cap, an applicator brush having a cylindrical handle provided with bristles at the bottom and a finger disk at the top inserted through the hole in said cap top and the hole in said retainer disk, a sealing ring of resilient material fitted over said brush handle and compressed between said cap top and said retainer disk into sealing engagement with said brush handle when said cap is screwed onto the neck of a container, and a resilient washer compressed in said cap below said retainer disk and adapted to seal said retainer disk to the neck of said container.

3. A closure for containers holding viscous fluids to be applied with a brush including, in combination with a container having a neck threaded at the top, a threaded cap having a top with a conical upward protrusion provided with a central opening; a rigid retainer disk fitted into said cap provided with a depressed conical protrusion having a central opening, and an annular rim; a sealing ring of resilient material, having a normally circular section, disposed between said cap top and said retainer disk; an applicator brush having bristles at the bottom, a gripping disk at the top and a cylindrical handle inserted through said cap top, said sealing ring and said retainer disk; and a washer of resilient material fitted into said cap to bear on the lower face of the annular rim of said retainer disk; said parts being arranged so that, when said cap is threaded onto said container neck said sealing ring is compressed between the conical protrusion of said cap top and the conical protrusion of said retainer disk and deformed so that it presses around said brush handle in sealing engagement therewith, and said washer is compressed between said retainer disk and said container neck in sealing relation therewith.

4. A brush holding and sealing cap for a container, comprising in combination with a container having a threaded neck, a brush having a cylindrical handle, a screw cap top threaded on said container neck, having a conical upward protrusion provided with a central opening, a rigid retainer and scraper disk fitted within the underside of said cap provided with a depressed conical protrusion having a central opening, and a sealing ring of resilient material having a round radial section and a central opening compressed between said cap top and said scraper disk, said brush handle being inserted through the openings in said cap top, said retainer and scraper disk and through the central opening of said sealing ring whereby, when said cap is screwed on the neck of said container, the inner annular surface of said sealing ring is compressed into sealing engagement with said brush handle.

ADOLPH R. HENDRY.
NORMAN A. HENDRY.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
565,328	Buhler	Aug. 4, 1896
599,461	Thomas	Feb. 22, 1898
1,186,115	Miller	June 6, 1916
1,562,867	Bush	Nov. 24, 1925
1,734,444	Paulson	Nov. 5, 1929