Aug. 31, 1954 P. MENDELEVITCH 2,687,543

DISTRIBUTING STOPPER FOR LIQUID CONTAINERS

Filed Aug. 30, 1950

Fig. 1

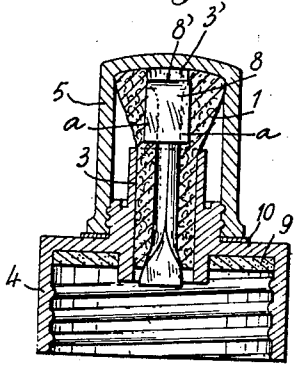


Fig. 2

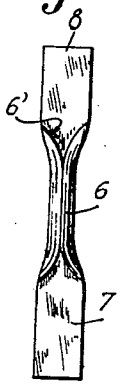


Fig. 3

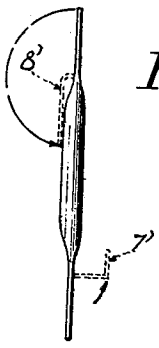


Fig. 4



Fig. 5

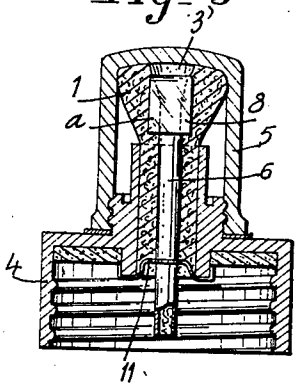


Fig. 6

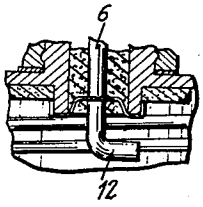


Fig. 7

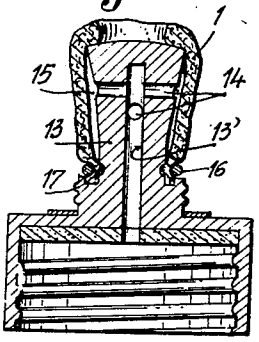


Fig. 8

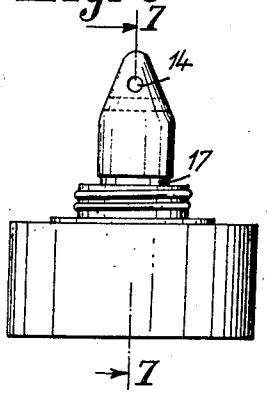
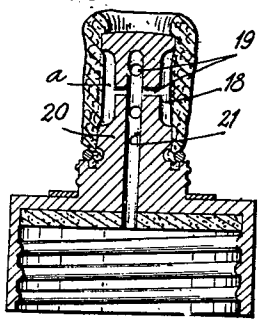


Fig. 9



INVENTOR:
PIERRE MENDELEVITCH
By Richardson, David and Nordon
Attys

Patented Aug. 31, 1954

2,687,543

UNITED STATES PATENT OFFICE

2,687,543

DISTRIBUTING STOPPER FOR LIQUID CONTAINERS

Pierre Mendelevitch, Paris, France

Application August 30, 1950, Serial No. 182,268

Claims priority, application France September 6, 1949

2 Claims. (Cl. 15—134)

1

The present invention relates to stoppers fitted with a distributing wad for use with containers for liquid products, which are dispensed by feeding the wad by gravity upon inversion of the container, and it has for its object to permit a progressive and automatic feeding of liquid to the wad and to prevent the liquid from running freely.

The stopper according to the invention comprises a tubular wad composed of a permeable material, such as woven material, felt or the like, having a central passage opening into the container and in which is arranged a feeder adapted to convey the liquid into contact with the inner lateral wall of the wad and to compel said liquid to percolate through the wad material.

The accompanying drawings illustrate, by way of example, several practical embodiments of the invention.

Fig. 1 is a vertical section of one embodiment of the stopper.

Fig. 2 is an elevational view of the feeder.

Fig. 3 is a side view corresponding to Fig. 2.

Fig. 4 is a plan view of a wad made of a piece of felt.

Fig. 5 is a sectional view of a modified form of stopper.

Fig. 6 is a partial sectional view corresponding to Fig. 5, at right angles to Fig. 5.

Fig. 7 is a section taken along the line 7—7 of Fig. 8 of another embodiment of the stopper.

Fig. 8 is an elevational view corresponding to Fig. 7, the wad being removed.

Fig. 9 is a sectional view of another embodiment of the distributing stopper.

The stopper illustrated in Figs. 1 to 4 comprises a tubular wad 1 (Fig. 4) consisting of a piece of felt or any other similar material, bent and sealed at one side, for example by a seam 2, and engaged over approximately one-half of its length in a sleeve 3 projecting from a threaded stopper 4 of moulded material. The portion of the wad within sleeve 3 takes a substantially cylindrical shape, whereas the free upper portion is more or less flat and covered by a cap 5, which screws on a threaded portion of stopper 4.

Within tubular wad 1 is housed a feeder constituted by a tube 6, ending in two blade portions 7 and 8. Said tube may be wound from a metal foil, as shown, whereby it is split longitudinally. The upper blade portion 8 is then folded over on to the tube 6, as shown at 8', and said tube is cut out obliquely as shown at 6' equal to the length of the down-turned blade 8, whereby the blade 8 bears against the adjacent outer wall

2

of tube 6. This arrangement provides for the egress of liquid through the passage formed between the diverging portion 6' and the bent blade 8 and also laterally along the curved fold 8'. The liquid fills the free space *a* (Figs. 1 and 5) provided in the wad 1 between tube 6, the folded portion 8' of the feeder and the inner walls of the tubular wad, and it can thus be absorbed immediately by the wad by capillarity.

The liquid is unable to flow beyond the lateral outlets of the fold 8' without traversing the wad 1, because the wad 1 is distorted by the blade 8 of the feeder, so as to bring the upper edges of the wad into close contact, as shown at 3', the wad assuming along the bend 8' of the folded blade 8 a progressively flattened shape. The feeder must of course be so arranged as to remain below the level of the end 3' of the wad 1, in order so that the upper edges of the wad should be in close contact above the fold 8', to prevent the free escape of liquid.

After introduction of the wad 1 into sleeve 3, the lower blade 7 of the feeder is upturned into a hook 7', adapted to hold the wad 1 and the feeder 6 in position in sleeve 3, by bending over against the edge of the sleeve.

The wad 1 being fully covered, when not in use, by the cap 5, which is screwed tightly on to the threaded stopper 4 with the interposition of a washer 10, the flow of liquid during transport through the wad is prevented. A washer 9 is disposed within the stopper 4 against the inner upper wall thereof to ensure fluid-tightness between the container and the stopper 4 when the latter is screwed on the former. In use, delivery of the liquid is ensured through the outlet of the feeder 6. The free space *a* between the blade 8' and the inner walls of the felt wad 1 forms a reservoir, the capacity of which is so adjusted as to admit the amount of liquid capable of being readily and integrally absorbed by the wad, which ensures automatic and progressive distribution through the wad 1 of the quantity of liquid to be spread. This amount of liquid can be adjusted according to requirements by decreasing or increasing the size of the bend 8' of the feeder.

For dispensing liquids containing solid substances in suspension, such as liquids for whitening canvas shoes, the feeder 6 projects substantially beyond the bottom of the threaded stopper (Fig. 5), whereby its lower end opens clearly outside of the solid deposit formed in the bottom of the stopper in use. The wad 1 is herein held by a wire 11, which passes through the wad

and is bent over in the form of a hook engaging an inner projection of the stopper.

The lower end of feeder **6** may have an elbow **12** (Fig. 6) so as to prevent the solid particles contained in the liquid from settling at the opening of the feeder and clogging up the same when the container is in the operative position.

In the embodiment illustrated in Figs. 7 and 8, the feeder consists of a molder tip **13** integral with the body of the stopper and having a central duct **13'**. This block **13** has a solid unperforated upper flattened portion, and is provided laterally with a plurality of orifices **14**, for the egress of liquid into the free space **15**, whence it is absorbed by the felt wad **1**. The latter is snugly threaded in place and held on the cylindrical portion of the feeder by a wire or an elastic thread **16** accommodated in an annular groove **17**.

In the embodiment illustrated in Fig. 9, the diffuser **20** is cylindrical over its full height, and is formed in its outer lateral walls with grooves **18** ending at a distance from the top in order to leave a free space *a* between the felt wad **1** and the diffuser **20**. Liquid is fed to space *a* through lateral ducts **19** opening into a central duct **21**.

Having now described my invention what I claim as new and desire to secure by Letters Patent is:

1. A distributing stopper for liquid and semi-liquid containers comprising a tubular wad of flexible and permeable material, a feeder located centrally within said tubular wad for conveying the liquid contained in said container into contact with the inner wall of said wad, said feeder consisting of a hollow member communicating with said container and having lateral orifices opening opposite the lateral walls of the wad, and a folded tongue secured to the hollow member, said tongue being wider than the hollow member and folded back onto the outer wall thereof, the upper end of said wad being formed into a flat portion by contact with the bend of said folded tongue, so as to close the upper end of said wad, the shape of said feeder and wad being such as to leave between them a free space adapted to hold a supply of liquid.

2. A distributing stopper for liquid and semi-liquid containers comprising a tubular wad of flexible and permeable material, a feeder located centrally within said tubular wad for conveying the liquid into contact with the inner wall of said wad, said feeder consisting of a cylindrical tube having at least one end thereof cut on a bevel and extended by a tongue wider than the diameter of said cylindrical tube, said tongue being secured to the tube on the side opposite said bevel and being folded back onto the outer beveled wall of the tube, thereby providing lateral orifices opening opposite the lateral walls of the wad and a free space adapted to hold a supply of liquid, said wad being engaged over the cylindrical part of said tube and the upper end thereof being deformed into a flat portion by contact with the bend of said folded tongue, so as to close the upper end of said wad.

References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
738,230	Overbaugh	Sept. 8, 1903
1,464,214	Ollerenshaw	Aug. 7, 1923
1,600,095	Casaclang	Sept. 14, 1926
1,839,548	Gimonet	Jan. 5, 1932
2,351,476	Borden	June 13, 1944