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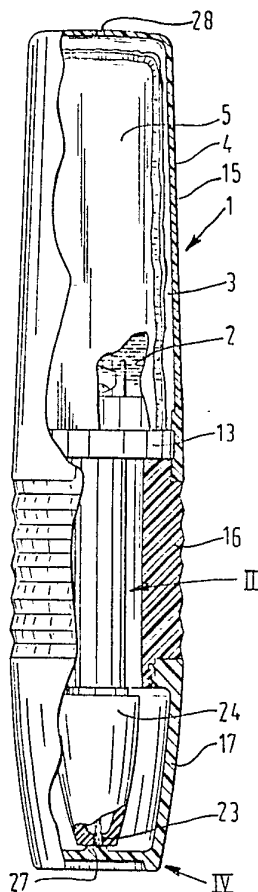
INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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(21) International Application Number: PCT/NL80/00035 (22) International Filing Date: 24 October 1980 (24.10.80) (31) Priority Application Number: 7907879 (32) Priority Date: 26 October 1979 (26.10.79) (33) Priority Country: NL (71) Applicants; and (72) Inventors: REUCHLIN, Johan, George [NL/NL]; Oude Maasdijk 1, NL-6621 AA Dreumel (NL). DEKKER, Willem, Alexander [NL/NL]; Rijdsdijk 37, NL-3161 HL Rhoon (NL). (74) Agents: KONINGS, Lucien, Marie, Cornelis, Joseph et al.; Octrooibureau Arnold & Siedsma, Sweelinckplein 1, NL-2517 GK, The Hague (NL).		(81) Designated States: AT (European patent), AU, BR, CH (European patent), DE (European patent), DK, FR (European patent), GB (European patent), JP, LU (European patent), NL (European patent), SE (European patent), US. Published <i>With international search report</i>

(54) Title: FLUID RECIPIENT

(57) Abstract

In order to avoid leakage of fluid through the outlet (7), the recipient (1) comprises a bag (5) picking up fluid which is arranged in a strong envelope (4) in which prevails the same pressure as on the outer side of the fluid outlet.



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Fluid recipient.

The invention relates to a fluid recipient, comprising a fluid reservoir accommodated in an inner space of a strong envelope and a fluid outlet provided with dosing means.

5 Such a recipient is known from German Patent Application No. 2,425,062 laid up for public inspection for dispensing polish, particularly nail polish. The dosing means may be of various types and may comprise a spreading member of rubber or a pencil. A recipient of the kind set forth is
10 furthermore known as a fountain-pen holder. Particularly in those cases, in which the amount of fluid to be dosed is small and rapidly hardens and/or dries up, it is quite troublesome, when the fluid emerges in an excessive amount and/or at inconvenient instants and/or dries up in the fluid
15 outlet or hardens in any other way. The problem of correct dosing is particularly serious in those cases in which the recipient forms a dispensable packing and the dosing means have to be composed at low cost.

The invention solves the above mentioned problems
20 in that the fluid reservoir is formed by a bag and in that the same pressure prevails in the inner space of the envelope as on the outer side of the fluid outlet. The invention is based on the recognition of the fact that the emergence of the fluid at an inconvenient instant and/or beyond the desired
25 extent is frequently due to a pressure difference between the pressure prevailing in the reservoir and that outside thereof, which disturbs the operation of the dosing means. The steps taken in accordance with the invention ensure that the fluid in the reservoir is subjected to atmospheric pressure.
30

The invention is particularly important when the dosing means comprise a spreading member which is movable between a rest position, in which it is drawn into the fluid outlet and a working position, in which it is exposed out of
35 the fluid outlet. The fluid, for example, glue or polish, particularly nail polish at the spreading member, particularly a pencil, cannot harden or dry up in the said rest position so that the spreading member remains satisfactorily

usable.

The invention will be described more fully herein-
after with reference to a drawing by way of example.

The drawing shows in:

5 figs. 1 and 7 each a side elevation partly broken
away of a different embodiment of a polish recipient in
accordance with the invention,

 fig. 2 a side elevation partly broken away of
detail II of fig. 1,

10 fig. 3 a sectional view taken on the line III-III
in fig. 2,

 fig. 4 detail IV of the polish recipient of fig. 1
in its working position,

 fig. 5 on an enlarged scale detail V of fig. 3, and
15 fig. 6 a sectional view of a fountain-pen holder in
accordance with the invention.

The recipient 1 of fig. 1, particularly intended
for dispensing doses of polish 2, particularly nail polish
comprises a fluid reservoir arranged in an inner space 3 of
20 an envelope 4 and a fluid outlet 7 provided with dosing means
6.

According to the invention the fluid reservoir is
formed by a soft bag 5. It has two flanks 8, which are pre-
ferably thermally welded to outer sides 9 of a shoulder piece
25 10 connected with the fluid outlet 7 and having an eye-shaped
cross-section (fig. 3), the two outer sides 9 of which en-
close two acute eye-corners 11. Preferably, these outer sides
9 extend substantially towards the interconnected parts 12 of
the bag flanks 8 extending beyond the shoulder piece 10. The
30 shoulder piece 10 together with an appreciable portion of the
fluid outlet 7 and a collar 13 is made in the form of a
single spray-casting 14 of synthetic resin, preferably
polyacrylonitril, which can satisfactorily adhere by hot-
welding to the inner sides of the bag flanks 8 of the same
35 synthetic resin.

The envelope 4 may be formed by a shell 15, a neck
16 screwed thereon with the interposition of the collar 13
and a locking cap 17 screwed to the latter.

The dosing means 6 arranged in the tubular fluid
40 outlet 7 extending through the collar 13 and the shoulder

piece 10 comprise a steel ball 18 and a pencil 19. The pencil 19 has a metal stem 20 in which axial fluid channels 21 are provided and pencil hairs 22 extending in a central orifice 23 of an outlet cap 24 of the fluid outlet 7. In the case of 5 a round stem such fluid channels can be made in the inner bore of the spray-casting 14. The outlet cap 24 of elastic synthetic resin engages by a snap-rim 25 a collar 26 of the spray-casting 14.

In the stored state an inwardly directed protuberance 27 hermetically closes the preferably circular orifice 23.

When the closing cap 17 is removed, the dosing means 6 are axially movable downwards in the fluid outlet 7 and thus the spreading member formed by a circular bunch of 15 pencil hairs 22 moves from the rest position indicated by solid lines in fig. 1 into a position of exposure out of the fluid outlet 7 as shown in fig. 4, in which case the rim 91 of the pencil 19 is in sealing relationship with the elastic closing cap 17 of synthetic resin. In the rest position the 20 bunch of pencil hairs 22 closes the orifice 23 substantially completely. Moreover, the ball 18 is in sealing relationship with its seat 100 so that the entire outlet 7 remains filled with polish 2 and the pencil hairs 22 remain dipped in the polish 2. When the recipient is turned into the position 25 shown in fig. 2, the pencil 19 operates, so as to say, like a pump dispensing an amount of polish equal to the previously emerging volume of the pencil hairs 22. Since the inner space 3 communicates through an orifice 28 with the atmosphere, the polish 2 is not pressed outwards by a pressure difference out 30 of the bag 5 through the fluid outlet 7. Neither is air sucked in, which might give rise to hardening or drying of the polish 2.

As is shown in fig. 5, the bag flanks 8 may consist each of a lamina of two foils 29 and 30, for example, of a foil 35 30 directed to the shoulder piece 10 and made from material satisfactorily adhering to the material of the shoulder piece 10. The foil 30, like the shoulder piece 10 may consist of polyacrylonitril, which is satisfactorily resistant to acetone of nail polish, whereas the outer foil 29 may consist of 40 polyester, which is less expensive, but strong. A bag formed

by such a lamina is strong and yet supple and is capable of reliably storing lacquer for nail polish for a long time. Because the foils 29 and 30 are transparent, the quantity 5 remaining in the reservoir 5 can be constantly checked.

The recipient 1 according to the invention is particularly suitable for holding nail polish, other lacquers and glue and particularly in situations in which the recipient is held in the hand or warmed in a different way and/or 10 is carried in an aeroplane in a pocket or handbag.

The application of the present invention is furthermore interesting for a fountainpen holder 31 as shown in fig. 6, in which ink 32 is contained in a soft bag 35 hot-welded to a shoulder piece 40. The bag 35 filled with ink 32 15 with the shoulder piece 40 constitutes a closed, exchangeable disposable packing. The shoulder piece 40 has a collar 43 and a front wall 39 to be perforated. The fountain-pen holder 31 comprises an envelope 34 having an orifice 58 and an ink outlet 37 provided with dosing means 36. The dosing means 36 are 20 formed by the pen 49 of known kind and a capillary channel 51, the end of which (48) perforates by its sharp tip the wall 39 of an inserted, new filling, when the collar 43 thereof is clamped between the shoulder 55 and the outlet 37 by screwing the envelope 45 onto the outlet 37. The orifice 25 58 may, if desired, be replaced by an ample screwthread joint 59 allowing air to pass from the inner space of the envelope 45 to the atmosphere and conversely.

It should be noted that the term "strong envelope" is to be understood as a rigid, for example, sheet-iron recipient but also a strong envelope of a synthetic resin, which 30 can be deformed, for example, by pinching it. It is then incidentally possible to shut the hole in the strong synthetic resin envelope by a finger and to pinch the envelope by hand in order to raise the pressure in the interior of the 35 envelope, which higher pressure contributes to the expulsion of an additional quantity through the outlet.

The recipient 61 of fig. 7 only differs from the recipient 1 in that the orifice 28 is replaced by an air passage 62 through the collar 13 for establishing a communi-



cation between the inner space 3 via the space 63 between the spray-casting 14 and the neck 16 and the atmosphere or, if the closing cap 17 is present, the inner space 64 thereof. In the case of a closing cap 17 with, for example, a sealing ring 65, the same pressure will prevail on the outer side of the orifice 23 as in the inner space 3 as long as the closing cap 17 is in its sealing position, so that leakage through the orifice 23 is avoided. Moreover, when the bag 5 is accidentally perforated, the fluid cannot emerge further than the cap 17.

CLAIMS

1. A fluid recipient, comprising a fluid reservoir accommodated in an inner space of a strong envelope and a fluid outlet provided with dosing means, characterized in that the fluid reservoir is formed by a bag and in that the same pressure prevails in the inner space of the envelope as on the outer side of the fluid outlet.

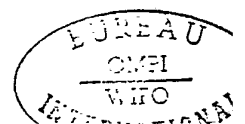
2. A recipient as claimed in claim 1, characterized in that the dosing means comprise a spreading member which is movable between a rest position in which it is drawn into the fluid outlet and a working position of exposure out of the fluid outlet.

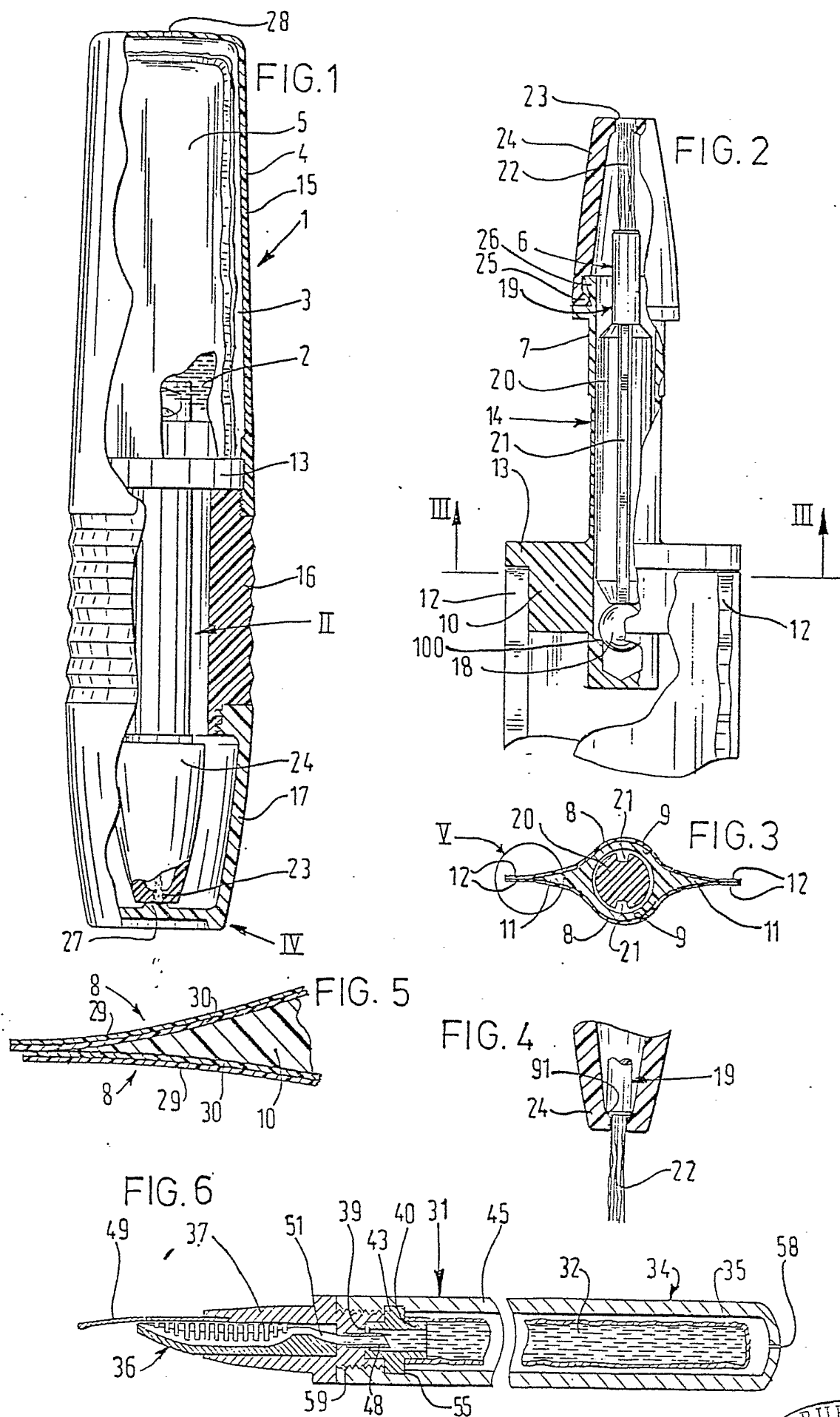
3. A recipient as claimed in claim 1 or 2, characterized in that the bag has two flanks fixed to the outer sides of a shoulder piece joining the fluid outlet.

4. A recipient as claimed in claim 3, characterized in that the shoulder piece has an eye-shaped cross-section, the two outer sides of which enclose two acute eye-corners.

5. A recipient as claimed in claim 4, characterized in that at the eye-corners the two outer sides of the shoulder piece are directed substantially towards the interconnected parts of the bag flanks extending beyond the shoulder piece.

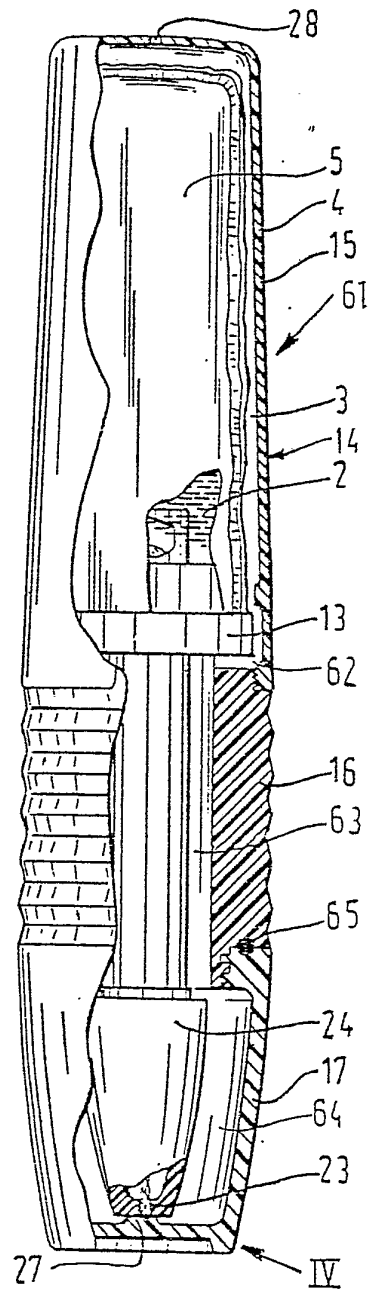
6. A recipient as claimed in claim 3, 4 or 5 characterized in that like the inner side of the bag the shoulder piece is made from polyacrylonitril.





$$^H 2/2 ^H$$

FIG. 7



INTERNATIONAL SEARCH REPORT

International Application No PCT/NL 80/00035

1. CLASSIFICATION OF SUBJECT MATTER (if several classification symbols apply, indicate all) 3

According to International Patent Classification (IPC) or to both National Classification and IPC

Int.Cl.³: B 65 D 83/00; A 45 D 40/26; B 43 K 5/04

II. FIELDS SEARCHED

Minimum Documentation Searched 4

Classification System

Classification Symbols

Int.Cl.3

B 43 K 5/00; B 43 K 7/00; B 43 K 8/00; B 65 D 83/00;
B 65 D 83/14; B 65 D 33/38; B 65 D 35/10;
B 65 D 35/12; A 45 D 40/26; A 45 D 34/04; B 05 B 9/047

Documentation Searched other than Minimum Documentation
to the Extent that such Documents are Included in the Fields Searched 5

III. DOCUMENTS CONSIDERED TO BE RELEVANT 14

Category *

Citation of Document, ¹⁶ with indication, where appropriate, of the relevant passages ¹⁷

Relevant to Claim No. 13

X

FR, A, 1314002, published January 4, 1963,
see claims 1,9, page 3, column 1, line
47 to column 2, line 2, Bouet
corresponding to:
NL, A, 285893
US, A, 3223289

1,3

US, A, 2944274, published July 12, 1960,
see column 2, lines 5 to 17, Hopkins

2

US, A, 2908926, published October 20, 1959,
see column 2, line 60 to column 3, line
58, Jockers

2

US, A, 4063829, published December 20, 1977,
see column 2, lines 4 to 28, La Mura
corresponding to:
FR, A, 2349511
GB, A, 1558212

2

DE, A, 1586740, published June 25, 1970,
see figure 3, page 3, lines 23 to 24,
Institut für Milchwissenschaft der DDR

4,5

• / •

* Special categories of cited documents: 15

"A" document defining the general state of the art

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"X" document of particular relevance

IV. CERTIFICATION

Date of the Actual Completion of the International Search :

January 6, 1981

Date of Mailing of this International Search Report :

January 14, 1981

International Searching Authority 1

European Patent Office

Signature of Authorized Officer :0

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III. DOCUMENTS CONSIDERED TO BE RELEVANT (CONTINUED FROM THE SECOND SHEET)		
Category *	Citation of Document, ¹⁶ with indication, where appropriate, of the relevant passages ¹⁷	Relevant to Claim No ¹⁵
	DE, A, 2720907, published November 24, 1977, see page 23, lines 20 to 33, claims 1,12,13, Rondo ---	4,5
	US, A, 3938706, published February 17, 1976, see column 2, lines 15 to 26, Cohen ---	6
	US, A, 3157314, published November 17, 1964, see the whole document, Nadler ---	1
	US, A, 2525272, published October 10, 1950, see claims 1,4, Rhoton -----	6