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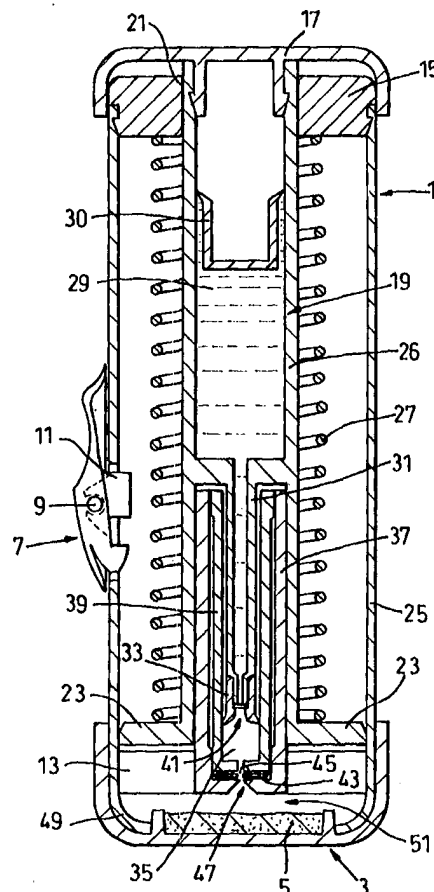
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(54) Title: FLUID DISPENSER

(57) Abstract

There is disclosed a device for applying fluid topically to a patient, the device comprising a housing means with an orifice; the housing means comprising: a piston slidable between a first position and a second priming position; a biasing means acting on the piston to move the piston towards the first position; a releasable locating means to hold the piston in the priming position against the action of the biasing means; a storage chamber storing the fluid, the storage chamber being fluidly connected via a first valve means to a charge chamber fluidly connected via a second valve means to an atomising means fluidly connected to the housing orifice; these components being arranged within the housing such that to prime the device the piston is moved from the first position to the priming position to cause a predetermined volume of the sterile fluid to enter the charge chamber through the first valve and air to enter the housing through the orifice; the piston being held in the priming position against the biasing means by the locating means; and to dispense fluid to the patient the device is placed with the orifice adjacent to the site of application and the locating means is released to allow the biasing means to move the piston from the primed position to the first position which causes the fluid to leave the charged chamber through the second valve means, enter the atomising means where the fluid is mixed with air and be expelled from the orifice. Preferably the device is suitable for applying fluid to the surface of the eye of the patient, the fluid is a sterile fluid suitable for application to the surface of the eye of the patient and the device is capable of expelling the fluid from the orifice as a mist.



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INTERNATIONAL SEARCH REPORT

Interr. nal Application No

PCT/EP 97/05177

A. CLASSIFICATION OF SUBJECT MATTER
IPC 6 A61H35/02 B05B11/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 6 A61H B05B A61F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5 511 538 A (HABER ET AL.) 30 April 1996 see column 4, line 49 - line 63; figures 1-4 ---	1,6-8, 12,15
A	DE 40 15 367 A (ING ERICH PFEIFFER GMBH & CO KG) 14 November 1991 see column 6, line 63 - column 7, line 9; figures ---	1,6-8, 12,15
A	EP 0 348 228 A (PINEWAY UK LTD.) 27 December 1989 see abstract; figures ---	1-3,5, 12,15
A	GB 1 460 064 A (OPTREX LIMITED) 31 December 1976 cited in the application see page 2, line 105 - line 118; figure 1 --- -/--	13

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

° Special categories of cited documents :

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"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

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Date of the actual completion of the international search

6 April 1998

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INTERNATIONAL SEARCH REPORT

Interr. nal Application No
PCT/EP 97/05177

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 4 623 337 A (MAURICE) 18 November 1986 see abstract; figure 1 ---	1
A	US 3 871 554 A (HUCK) 18 March 1975 cited in the application see column 2, line 60 - column 3, line 17; figures -----	1

INTERNATIONAL SEARCH REPORT

International application No.
PCT/EP 97/05177

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.: 14
because they relate to subject matter not required to be searched by this Authority, namely:
Rule 39.1(iv) PCT - Method for treatment of the human or animal body by therapy
2. ☒ Claims Nos.: 11
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
PCT Rule 6.2(a): References to other parts of the international application.
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/EP 97/05177

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