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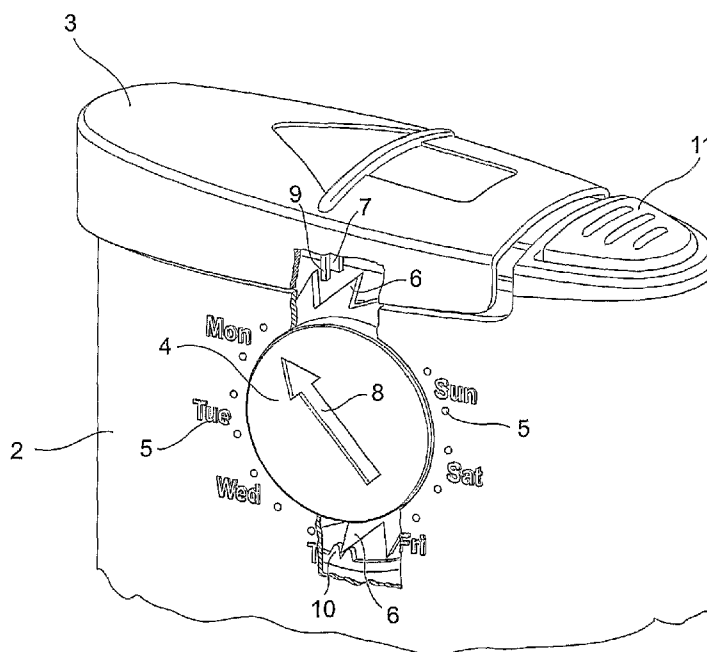
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(54) Title: A CONTAINER WITH AN AID DEVICE FOR INDICATING THE TIME AT WHICH THE LAST DOSE WAS TAKEN OR WHEN THE NEXT DOSE IS DUE.



(57) Abstract: The present invention relates to a container for solids or liquids, comprising a hollow body which holds the content, a closure which cooperates with the body to close the container and a compliance aid device arranged on the container for indicating the time at which the last dose was taken or when the next dose is due. The compliance aid comprises a movable first part and a fixed second part provided on the hollow body, wherein the first part is automatically moved to a new indicating position in relation to the second part upon moving the closure in relation the hollow body. Fig. 1

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## NEW CONTAINER 389

Technical Field

The present invention relates to a container which can hold tablets or liquids, for example,  
5 for use in the pharmaceutical industry and in particular to a compliance aid device arranged  
on such a container for indicating the time at which the last dose was taken or when the  
next dose is due.

Background of the Invention

10 Most medications, whether prescribed by a physician or an over the counter (OTC)  
medicine, are more effective when taken at the right times as recommended or prescribed  
by the doctor, pharmacist, and/or the pharmaceutical company. Compliance with these  
instructions allows the patient the best opportunity for the medication to have its full  
desired effect. Many medicines which are prescribed have a reduced effectiveness if they  
15 are not taken at specific, regular intervals or if taken other than prescribed. However, the  
people for whom such medicines are prescribed may, for one reason or another, be  
uncertain as to when they last took the medicine or when to take the next dose. If the  
patient is not sure about a dose of medication, then he/she may be afraid to take another  
dose because they fear either overmedication or undermedication. This problem can be an  
20 annoyance or it can be a serious concern depending on the medication involved.

US 6,152,067 A1 and WO2005/023173 A1 represent two prior art medication dosage  
reminder devices to be attached to a medication container. These are typically separate  
articles made of for example paper, cardboard or a plastic sheet material that are to be  
25 mounted on or attached to a container. This fastening procedure incorporates an extra  
procedure which has to be made in either the packaging and/or labelling process or by the  
patient himself. Further, due to the material used and that the device is attached on the  
outside of the container the device can be harmed in normal handling of the container, for  
example in a handbag or in a user's pocket. Accordingly, the construction of the above  
30 known devices are not particularly robust and comprises small details to be handled that

has been proven difficult to deal with especially for elderly patients or patients suffering from rheumatoid arthritis, osteoarthritis or some other kind of hand impediments.

US 2,636,469 A relates to a capsule dispenser and particularly for a dispenser for recording  
5 the last dispensing there from. The dispenser is divided into two compartments, one compartment being of relatively large size for containing the material to be dispensed and a second compartment of relatively narrow dimensions used to shield and protect one or several gradated wheels. The patient compliance aid constitutes of a wheel that carries certain data which should be periodically produced in a window visible from the outside if  
10 the dispenser. A drawback with this solution is that it requires a complicated construction of the dispenser comprising several parts and which will involve a number of assembling steps. A further drawback is that different dispensers have to be made depending on the prescribed dose intervals as the dose intervals are provided on the wheel itself.

#### 15 The Object of the Invention

An object of the present invention is to provide a container that overcomes or alleviates the drawbacks of the known devices and which provides a container with a compliance aid device that has a simple but effective means for providing an indication of the time at which the last dose was taken or when the next dose is due. Such compliance aid devices  
20 are especially important for the elderly patient with failing memory or the patient who takes a large number of different medications.

A further object of the present invention is to provide a robust and senior friendly compliance aid device which is easy to handle and operate especially by elderly patients as  
25 well as by patients suffering from some kind of hand impediment.

#### Summary of the Invention

The above mentioned object is achieved by providing a container for solids or liquid comprising a hollow body which holds the content and a closure which cooperates with the  
30 body to close the container and a compliance aid device arranged on the container for

indicating the time at which the last dose was taken or when the next dose is due. The compliance aid further comprises a movable first part and a fixed second part provided on the hollow body. The first part is automatically moved to a new indicating position in relation to the second part upon moving the closure in relation the hollow body.

5

The main advantage with the invention is that it provides a container with a compliance aid that is robust and easy to handle as it is automatically moved to a new indicating position in relation to the second part.

10 According to at least one embodiment of the invention, the first part is automatically moved to a new indicating position in relation to the second part upon opening or closing of the container closure. In this way, the patient need not remember to move the first part of the compliance aid device which is an advantage in particularly for the elderly.

15 According to at least one embodiment of the invention, the second part is a time indicia means for indicating the time at which the last dose was taken or when the next dose is due.

20 According to at least one embodiment of the invention, the time indicia means of the second part is integrated in the hollow body.

According to at least one embodiment of the invention, the second part is a relief in the surface of the hollow body.

25 According to at least one embodiment of the invention, the second part is a label provided on the hollow body, said label carrying a time indicia means for indicating the time at which the last dose was taken or when the next dose is due. By providing the second part as a label on the hollow body the time indicia means can be chosen among a broad range of different time and/or dose indicia to be used for the same container construction.

30

According to at least one embodiment of the invention, the second part has signs indicating days and/or hours.

According to at least one embodiment of the invention, the second part has signs indicating  
5 morning and/or evening.

According to at least one embodiment of the invention, a portion of the first part is arranged on the inside of the hollow body. As a portion of first part of the compliance aid device being arranged on the inside of the hollow body makes the device robust and  
10 reliable in use. There is also less risk that the device is tampered with.

According to at least one embodiment of the invention, a portion of the first part is arranged through the wall of the container such that it becomes exposed to the user.

15 According to at least one embodiment of the invention, the first part is provided with an indicator on the portion arranged through the hollow body for pointing at the intended time indication of the second part.

According to at least one embodiment of the invention, the first part is provided with  
20 means for engaging with a part of the closure for moving the first part to a new indicating position upon opening or closing of the container closure. This arrangement allows the first part to be automatically moved to a new indicating position.

According to at least one embodiment of the invention, the first part is a circular indicator  
25 wheel provided with a plurality of teeth around its complete circumference.

According to at least one embodiment of the invention, there is provided a compliance aid device for a container or the like comprising a movable first part and a fixed second part for indicating the time at which the last dose was taken or when the next dose is due,

wherein the first part is automatically moved to a new indicating position in relation to the fixed second part upon moving the closure in relation the hollow body.

#### Brief Description of the Drawings

5 The present invention will now be described, for exemplary purposes, in more detail by way of embodiments and with reference to the enclosed drawings, in which:

Figure 1 illustrates a perspective view of a container provided with the compliance aid device,

10 Figure 2 shows a perspective view of a container provided with the compliance aid device according to a further embodiment,

Figure 3 shows an embodiment of the first part of the compliance aid device, and

Figure 4 shows a perspective view of the container having a piece of the lid as well as a piece of the hollow body cut out showing details on the compliance aid device.

#### 15 Detailed Description of Preferred Embodiments

Figure 1 shows an embodiment of the container for solids or liquids provided with a compliance aid device according to the present invention. The container 1 comprises a hollow body 2 which holds the content, a closure 3 which cooperates with the body to close the container and a compliance aid device 4, 5 for indicating the time at which the  
20 last dose was taken or when the next dose is due. The compliance aid device comprises a movable first part 4 and a fixed second part 5 provided on the hollow body. The first part 4 is in one embodiment of the invention partly arranged on the inside of the hollow body 2 and partly through the wall of the container such that it becomes exposed to the user. The first part 4 is movable in relation to the hollow body. The second part 5 of the compliance  
25 aid device is a time indicia means and can be an integrated part of the container or hollow body. The second part is normally positioned in the vicinity of the first part. The second part 5 of the compliance aid device can also be a means provided onto the container or hollow body, such as for example a label. In Fig. 1 the second part can be seen as a relief sign in the material of the hollow body indicating the days of the week and markings in  
30 between the days indicating different times of the day, i.e. morning, afternoon or evening.

In Fig. 2, a further embodiment of the second part 5 is shown and it is in the form of a label on the surface of the hollow body 2. The label is provided with signs indicating the time which the last dose was taken or when the next dose is due, i.e. days and/or hours or the like. Further, the second part 5 may also show size of the dose to be taken, i.e. number of tablets. Providing the second part as text, numerals or signs on a label to be attached on the container wall has several advantages. Firstly, suitable time indicia means, e.g. dose intervals may be chosen from a great number of possibilities. Secondly, one single container can be used for different products, i.e. medicines and an appropriate label is chosen to fit the dose intervals of a specific product and/or patient in question. The second part 5 can also be a combination of indicia means integrated in the hollow body and a label provided with the time indicia means.

Fig. 3 shows an embodiment of the first part in which the first part 4 is a circular indicator wheel with a plurality of teeth 6 arranged around its circumference. The portion of the indicator wheel 4 exposed to the user is further provided with an indicator 8 for pointing at the intended time indication provided on the second part. The indicator 8 is an arrow or other appropriate symbol provided in the material of the indicator wheel, for example as a groove in the material, a projection in the material or a printed symbol. The shape, size and positioning of the teeth 6 depends of course on the form and size of the container onto which the first part is to be placed.

In Fig. 4 the first part 4 of the compliance aid device is shown in more details through openings cut out from the container material. The periphery portion 6, i.e. the teeth of the indicator wheel 4 is arranged on the inside of the hollow body 2 to engage with a protruding member 9 underneath the closure 3 and the central portion of the indicator wheel is arranged through the wall of the container such that it becomes exposed to the user. The indicator wheel 4 is arranged and mounted through the wall of the container 1 such that the wheel is slid into an integrated slot in the moulded hollow body. The slot has an opening in the top through which the wheel is inserted. The exact positioning of the

wheel is given by an indentation in the hollow body. The central portion of the wheel protruding through the hollow body is slightly convex and has a relatively snug fit into the indentation but which fit allows it to rotate and move into new indicating positions. The central portion of the indicator wheel further functions as the wheels rotation axis and enables for a more integrated design with few number of components and more effective assembly process as only a small number of components are involved. In the vicinity of the protruding member 9 a support member 7 is provided also underneath the closure. A reverse block 10 is provided in the hollow body to ensure that the indicator wheel can move in only one direction. If for some reason the compliance aid device has been moved to a new indication position by mistake, or if there is a need to reset the indicator, the user can correct this by moving the first part to the correct position manually, i.e. by hand when the closure is in an open position.

The function of the compliance aid device will now be described with reference to Fig. 4. The closure 3 of the container is opened by pressing the button 11 on top of the container and simultaneously sliding the closure in the direction of the arrow seen on the top of it and then flipping up the closure. The protruding member 9 located underneath the closure engages with a tooth 6 of the indicator wheel 4. As the closure is slid out the protruding member 9 pushes the tooth and thus the wheel is in the shown embodiment moved anti-clockwise a certain distance to a new indicating position. The support member 7 stabilises and supports the protruding member 9 as it engages with a tooth 6 of the indicator wheel for pushing the wheel forward. The container is now ready to be flipped opened and the user can take out a dose. Upon closing the container, the protruding member 9 will again engage with a tooth 6 of the indicator wheel. The protruding member will bend slightly to be able to pass the tooth 6 when the closure is moved back to a closed position. The indicator wheel will remain its position gained when the closure was opened as it is locked by a reverse block 10 provided in the hollow body. Thus, the wheel is only free to move in one direction. In the shown embodiments, the first part of the compliance aid device is moved upon opening of the closure. However, it will be understood that the first part of

the compliance aid device can also be arranged to instead be moved upon closing of the container closure.

Further, it will be understood that the present invention is not limited to the described  
5 embodiments but can be modified in many different ways without departing from the  
scope of the appended claims.

## CLAIMS

1. A container for solids or liquids, comprising a hollow body which holds the content, a closure which cooperates with the body to close the container and a compliance aid device arranged on the container for indicating the time at which the last dose was taken or when the next dose is due, the compliance aid comprises a movable first part and a fixed second part provided on the hollow body, wherein the first part is automatically moved to a new indicating position in relation to the second part upon moving the closure in relation the hollow body.
2. A container according to claim 1, wherein the first part is automatically moved to a new indicating position in relation to the second part upon opening or closing of the container closure.
3. A container according to claim 1 or 2, wherein the second part is a time indicia means for indicating the time at which the last dose was taken or when the next dose is due.
4. A container according to claim 3, wherein the time indicia means of the second part is integrated in the hollow body.
5. A container according to claims 3, wherein the second part is a relief in the surface of the hollow body.
6. A container according to claim 3, wherein the second part is a label provided on the hollow body, said label carrying time indicia means for indicating the time at which the last dose was taken or when the next dose is due.
7. A container according to any of claims 3 to 6, wherein the time indicia means of the second part has signs indicating days and/or hours.

8. A container according to any of claims 3 to 6, wherein the time indicia means of the second part has signs indicating morning and/or evening.
- 5 9. A container according to claim 1 or 2, wherein a portion of the first part is arranged on the inside of the container.
10. A container according to claim 1 or 2, wherein a portion of the first part is arranged through the wall of the container such that it becomes exposed to the user.
- 10 11. A container according to claim 10, wherein the first part is provided with an indicator on the portion arranged through the hollow body for pointing at the intended time indication of the second part.
- 15 12. A container according to any of claims 1 to 2, wherein the first part is provided with means for engaging with a part of the closure for moving the first part to a new indicating position upon opening or closing of the container closure.
- 20 13. A container according to any of claims 12, wherein the first part is a circular indicator wheel provided with a plurality of teeth around its complete circumference.
- 25 14. A compliance aid device for a container or the like comprising a movable first part and a fixed second part on the container for indicating the time at which the last dose was taken or when the next dose is due, wherein the first part is automatically moved to a new indicating position in relation to the fixed second part upon moving the closure in relation the hollow body.

Fig.1 1/2

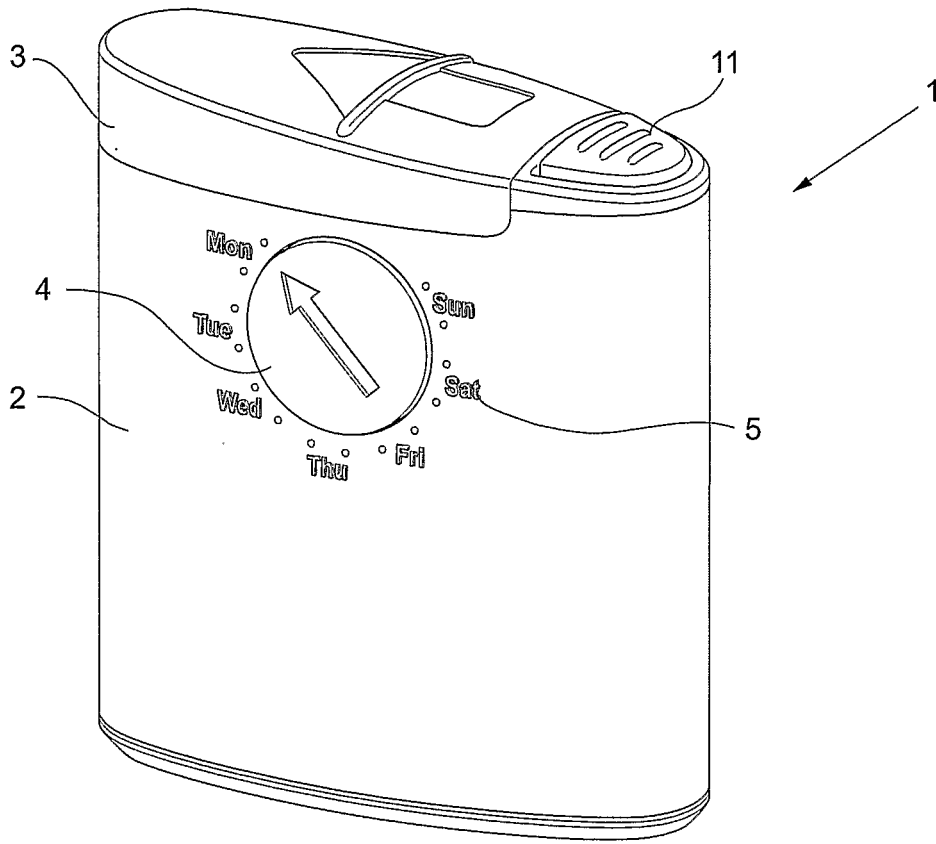


Fig.2

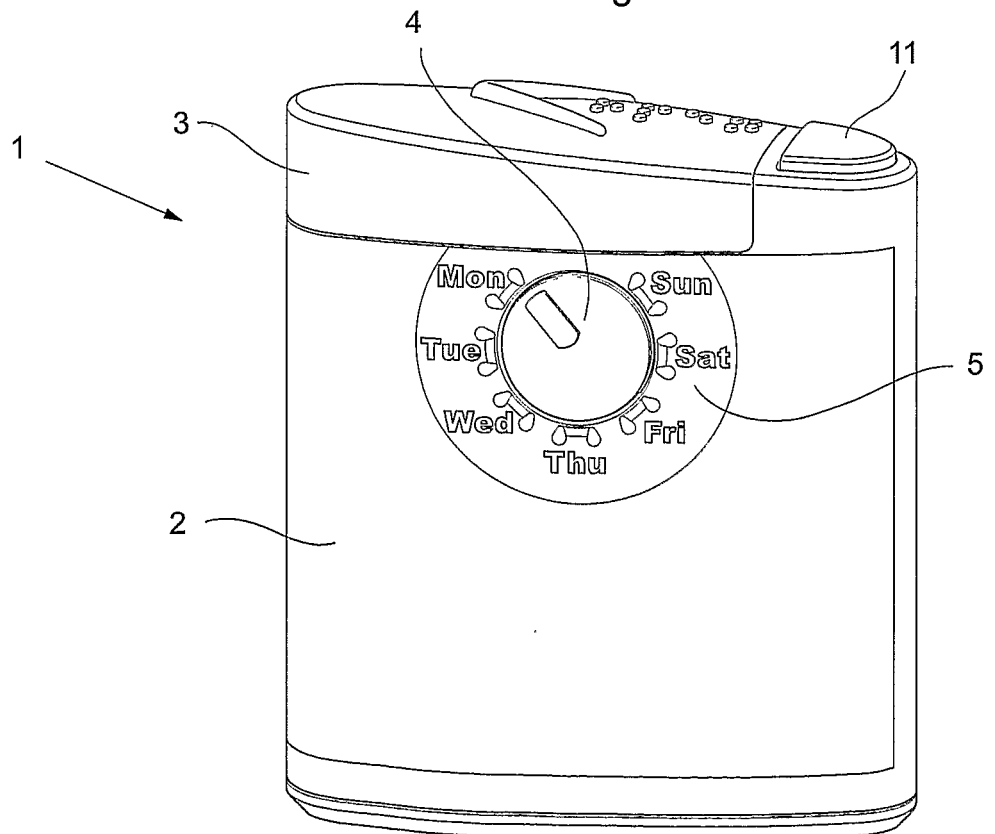


Fig.3

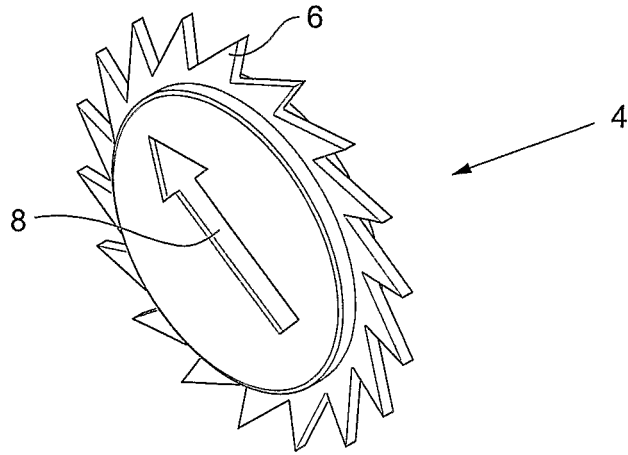
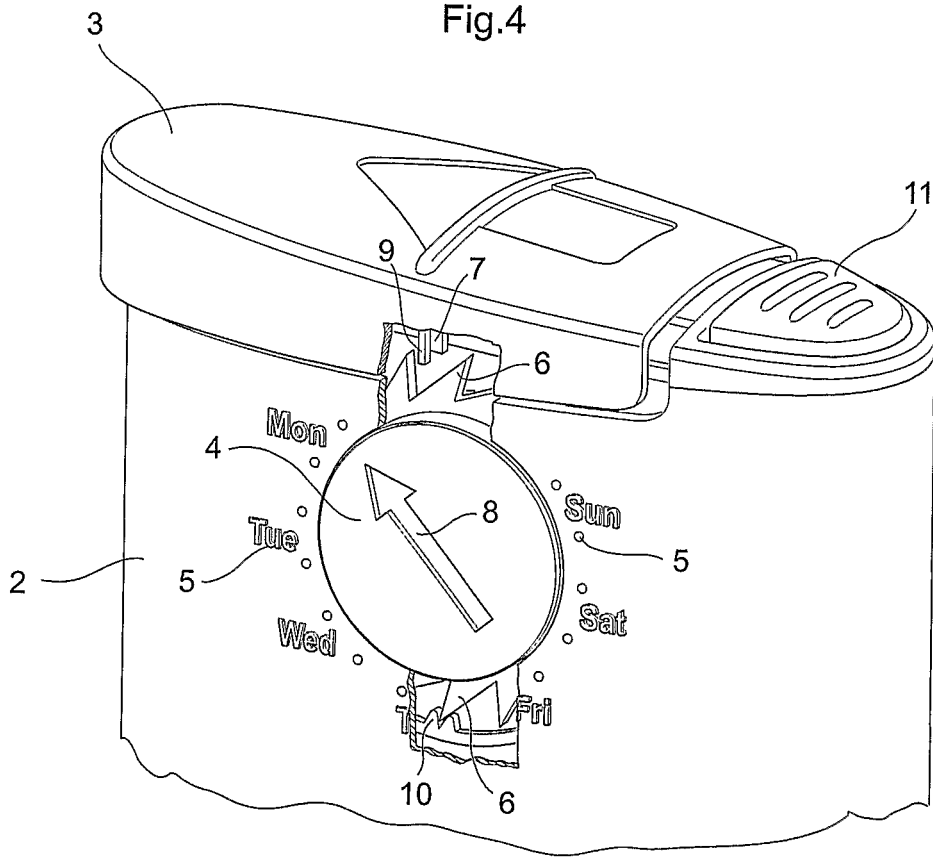


Fig.4



## INTERNATIONAL SEARCH REPORT

International application No.

PCT/SE2007/000494

## A. CLASSIFICATION OF SUBJECT MATTER

IPC: see extra sheet

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: A61J

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

SE,DK,FI,NO classes as above

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

EPO-INTERNAL, WPI DATA, PAJ

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2636469 A1 (MCKAY, H.C.), 28 April 1953 (28.04.1953), column 1, line 1 - line 17; column 2, line 13 - line 38; column 2, line 49 - column 3, line 22, figure 3 --	1-14
A	GB 998148 A (LIVINGSTONE, R.J.), 14 July 1965 (14.07.1965), figure 9 --	1-14
A	US 191503 A1 (WISEMAN, P.S.), 29 May 1877 (29.05.1877), column 2, line 13 - line 18 --	1-14
A	US 20060124501 A1 (MCNEELY), 15 June 2006 (15.06.2006) --	1-14

 Further documents are listed in the continuation of Box C.
  See patent family annex.

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INTERNATIONAL SEARCH REPORT

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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 3735099 A1 (HERR), 22 May 1973 (22.05.1973), figure 2  -- -----	1-14

**International patent classification (IPC)****A61J 7/04** (2006.01)**Download your patent documents at [www.prv.se](http://www.prv.se)**

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Cited literature, if any, will be enclosed in paper form.

**INTERNATIONAL SEARCH REPORT**

Information on patent family members

01/09/2007

International application No.

PCT/SE2007/000494

US	2636469	A1	28/04/1953	NONE		
GB	998148	A	14/07/1965	DE	1276294 B	29/08/1968
US	191503	A1	1818	NONE		
US	20060124501	A1	15/06/2006	US	D529640 S	03/10/2006
US	3735099	A1	22/05/1973	NONE		