AUSTRALIA

PATENTS ACT 1990

NOTICE OF ENTITLEMENT

I, **Frederick J. Sawaya**, the applicant/Nominated Person in respect of Application No. 72439/91 state the following:-

The Nominated Person is entitled to the grant of the patent because the Nominated Person is the inventor.

The Nominated Person is entitled to claim priority from the application listed in the declaration under Article 8 of the PCT because the Nominated Person made the application listed in the declaration under Article 8 of the PCT, and because that application was the first application made in a Convention country in respect of the invention.

DATED this FOURTEENTH day of MAY 1992

a member of the firm of
DAVIES COLLISON
CAVE for and on behalf
of the applicant(s)

(DCC ref: 1492555)

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(19) AUSTRALIAN PATENT OFFICE (10) Acceptance No. 642974

(54) Title
DISPOSABLE SHARP INSTRUMENT CONTAINER

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(56) Prior Art Documents
US 4328904
US 4315592
US 4722472

(57) Claim

1. A device for receiving soiled sharp medical instruments comprising:

a container having longitudinal and lateral walls, a top and a bottom defining a space for receipt of soiled medical instruments;

said top including first and second flaps, an entrance to said space defined between said flaps;

said first flap overlying a portion of said second flap thus normally closing said entrance;

said second flap having a first generally planar portion and a second generally planar portion extending vertically upwardly at an angle from said first portion, said second generally planar portion underlying said first flap.

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(81) Designated States: AT (European patent), AU, BE (European patent), BF (OAPI patent), BJ (OAPI patent), BR, CA, CF (OAPI patent), CG (OAPI patent), CH (European patent), CM (OAPI patent), DE (European patent), DK (European patent), ES (European patent), FI, FR (European patent), GA (OAPI patent), GB (European patent), GR (European patent), IT (European patent), JP, KR, LU (European patent), ML (OAPI patent), MR (OAPI patent), NL (European patent), NO, SE (European patent), SN (OAPI patent), SU, TD (OAPI patent), TG (OAPI patent).

Published
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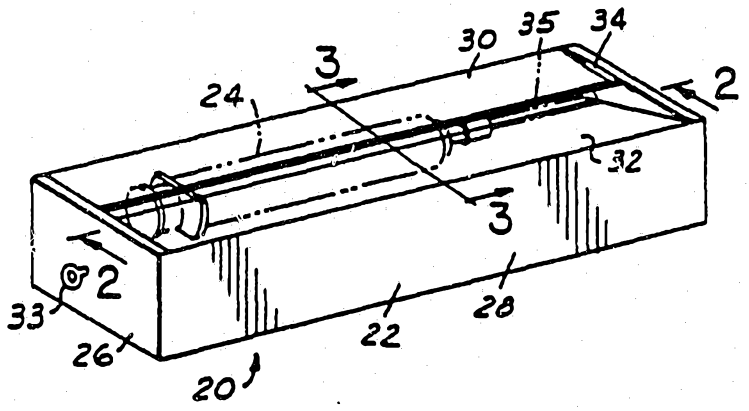
(54) Title: DISPOSABLE SHARP INSTRUMENT CONTAINER



(57) Abstract

The present invention relates to containers for storing soiled sharp medical instruments. In one embodiment, a container (20) has an entrance defined by a pair of flaps (30, 32). A soiled medical instrument (24) is positioned on one of the flaps and pushed downwardly such that the flaps move apart allowing access to the container for storing the medical instrument. The container is preferably formed of a clear plastic material such that medical personnel may count the number of instruments stored within the container. A second embodiment includes a cylindrical member (42) with a plate (46) positioned near one axial end such that an enlarged space (48) and a smaller space (50) are defined. Both embodiments allow entire syringes to be easily stored while still providing safe storage for smaller medical instruments such as suture needles.

DISPOSABLE SHARP INSTRUMENT CONTAINER

~~Background of the Invention~~

The present invention relates to a device for receiving used syringes, suture needles, scalpels and other sharp medical instruments.

In modern medical environments, it is of the utmost importance that medical personnel not be exposed to soiled syringes or other sharp medical instruments which may be contaminated by disease. In the past, medical personnel have been accidentally punctured or cut by these soiled sharp medical instruments.

This problem has become particularly acute with recent concern about such highly contagious and dangerous diseases as the AIDS virus. With all of these concerns, an operating environment still requires that many steps be taken promptly and it is not always possible to keep soiled sharp instruments safely removed from medical personnel. For this reason, the prior art developed containers to receive soiled sharp medical instruments.

Many prior art containers are large central containers disposed on a wall of the operating room. Medical personnel must transport the soiled sharp medical instruments to the wall-mounted container to dispose of them. This leaves the potentially infectious sharp instruments exposed to medical personnel at the operating site until transported to the container. In addition, medical personnel who must transport soiled instruments to the container on the wall are exposed to being punctured or cut by the instruments.

Several smaller disposable needle container have been disclosed in the prior art but are inadequate for a number of reasons.

Many do not provide sufficient room to receive an entire syringe or other elongate instruments, such as scalpels.

Some prior art containers do not smoothly guide sharp instruments into a stored position. With these types of containers, medical personnel may be cut while attempting to dispose of the sharp instruments by placing them in the container.

Several prior art devices are opaque and do not provide medical personnel with the ability to view the interior of the container. The number of instruments within a container cannot be counted. In an operating environment, medical personnel have an accurate idea of the number of instruments that have been utilized. Thus, it is desirable to count the number of instruments received within a container to determine that there are no stray soiled instruments left out and exposed.

It is thus an object of the present invention to disclose an improved container for receiving soiled sharp medical instruments that provides sufficient space such that elongate instruments such as an entire syringe, or a scalpel, can be received within the container.

It is further a preferred ~~an~~ object of the present invention to disclose a container in which soiled medical instruments that are placed in the container are easily guided into the container.

It is further a preferred ~~an~~ object of the present invention to disclose a container in which the number of soiled instruments within the container can be counted.

According to a first aspect of the present invention there is provided a device for receiving soiled sharp medical instruments comprising:

a container having longitudinal and lateral walls, a top and a bottom defining a space for receipt of soiled medical instruments;

said top including first and second flaps, an entrance to said space defined between said flaps;

said first flap overlying a portion of said second flap thus normally closing said entrance;

said second flap having a first generally planar portion and a second generally planar portion extending vertically upwardly at an angle from said first portion, said second generally planar portion underlying said first flap.

When it is desired to place a sharp medical instrument into the container, medical personnel simply place the instrument upon the second flap and push downwardly. The sharp medical instrument is guided along the second flap beneath the first flap and falls into the space within the container.

In a preferred embodiment of the present invention, the flaps are formed integrally with the molded container and are connected to the longitudinal sides through living hinges. At least one wall, and preferably the entire container, is formed of clear plastic such that the interior space may be viewed to allow counting of the number of sharp medical instruments within the container.

In a most preferred embodiment of the present invention, a sterilizing material is disposed within the interior space to decontaminate soiled medical instruments as they are received within the container.

An embodiment of the invention will now be described by way of example only and with reference to the accompanying drawings in which:-

Figure 1 is a perspective view of a first embodiment of the present invention.

Figure 2 is a cross-sectional view along line 2-2 as shown in Figure 1.

Figure 3 is a cross-sectional view along line 3-3 as shown in Figure 1.

Figure 4 is a view similar to Figure 3.

Figure 5 is a cross-sectional view similar to Figure 3 but showing the flap members of the present invention in a non-working position.

A first embodiment 20 of the present invention is illustrated in Figure 1. Container 22 receives sharp medical instruments such as syringe 24. Container 22 may receive any other type of sharp medical instrument such as suture needles, scalpels, or any other type of medical instrument that may be soiled. Container 22 includes lateral walls 26 and longitudinal walls 28. First flap 30 and second flap 32 define a top to container 22. First flap 30 is snapped beneath latch 34 while second

flap 32 is snapped beneath first flap 30. Latch 24 is also above second flap 32 and prevents it from moving too far upwardly should it move past first flap 30. Second flap 32 is normally biased upwardly into first flap 30 such that a normally closed entrance 35 to the interior space within container 22 is defined between first flap 30 and second flap 32.

Eyelet hook, or loop 33 is provided on a lateral wall and receives a strap such that container 22 can be attached to a belt, or any other carrying aid.

As shown in Figure 2, container 22 includes lateral walls 26 and longitudinal walls 28. First flap 30 has end 36 snapped beneath latch 34 at each longitudinal end. Second flap 32 includes a first generally planar portion 38 extending from a longitudinal wall 28 laterally inwardly. A second generally planar portion 40 extends vertically upwardly at an angle from first planar section 38 and underlies first flap 30.

As shown in Figure 3, when it is desired to place sharp medical instruments such as syringe 24 within container 22 it is initially placed upon first planar portion 38 of second flap 32. Medical personnel then push lightly downwardly upon syringe 24 and second flap 32 moves counterclockwise, as orientated in Figure 3, such that syringe 24 is guided onto second portion 40, which provide a ledge to support syringe 24. The second portion 40 helps syringe 24 be smoothly guided in the interior space without twisting or lurching and possibly cutting the medical personnel.

As shown in Figure 4, as second flap 32 moves counterclockwise, entrance 35 opens and allows syringe 24 access to the space within container 22. Syringe 24 is illustrated resting on second portion 40. As second flap 32 continues to move counterclockwise, second

portion 40 begins to guide syringe 24 vertically downwardly into the space within container 22.

A method of storing a smaller sharp instrument, such as suture needles within container 22 will now be explained. The suture needles are grasped by an instrument such as forceps and placed upon second flap 32. The instrument is pushed downwardly against second flap 32 which rotates counterclockwise providing access to the space within container 22. The instrument used to hold the suture needle is now released and the needle falls into container 22.

As shown in Figure 5, container 22 is a one-piece molded item with flaps 30 and 32 being connected to longitudinal walls 28 through living hinges. In a most preferred embodiment of the present invention, at least one wall, and preferably the entire container, is formed of clear plastic such that medical personnel can count the number of soiled medical instruments received within container 22.

THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

1. A device for receiving soiled sharp medical instruments comprising:

a container having longitudinal and lateral walls, a top and a bottom defining a space for receipt of soiled medical instruments;

said top including first and second flaps, an entrance to said space defined between said flaps;

said first flap overlying a portion of said second flap thus normally closing said entrance;

said second flap having a first generally planar portion and a second generally planar portion extending vertically upwardly at an angle from said first portion, said second generally planar portion underlying said first flap.

2. A device according to claim 1, wherein a latch is defined on said container, said first flap being snapped beneath said latch, said second flap being biased upwardly against said first flap.

3. A device according to claim 2, wherein said first and second flaps are connected to said container by integral hinges.

4. A device according to claim 1, wherein said first and second flaps are connected to the longitudinal walls of said container.

5. A device according to claim 4, wherein at least one wall of said container is formed of a clear plastics material affording a view of the interior of said container.

6. A device according to claim 5, wherein a sterilizing material is disposed within said space.

7. A device according to claim 2, wherein said latch extends longitudinally inwardly from each lateral wall, and extends laterally beyond said first flap.

8. A device according to claim 1, wherein said first and second flaps are hinged to said longitudinal walls of said container, said longitudinal walls being longer and the average length of a standard syringe.

9. A device according to claim 8, wherein said first and second flaps are connected to said container by an integral hinge.

10. A device according to claim 1, wherein at least one wall of said container is formed of a clear plastics material.

11. A device according to claim 1, wherein a sterilizing material is disposed within said space.

12. A device for receiving soiled sharp medical instruments substantially as hereinbefore described with reference to the accompanying drawings.

DATED this 30th day of August 1993
Frederick J. Sawaya
By His Patent Attorneys
DAVIES COLLISON CAVE

72439/91

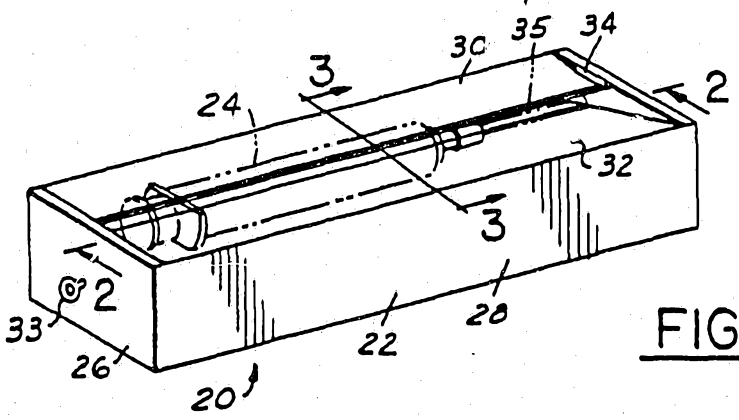


FIG. 1

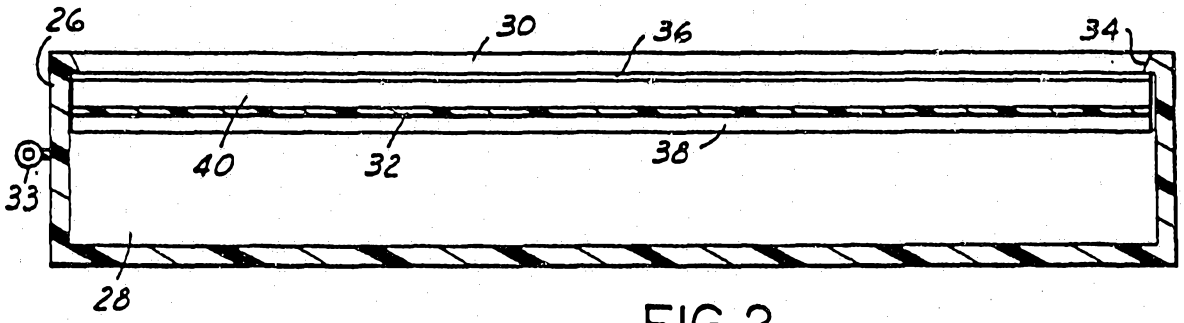


FIG. 2

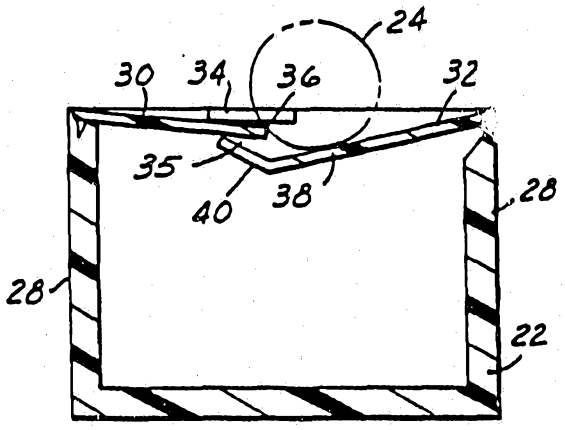


FIG. 3

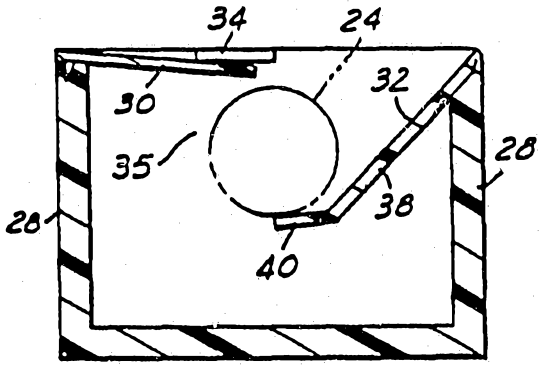


FIG. 4

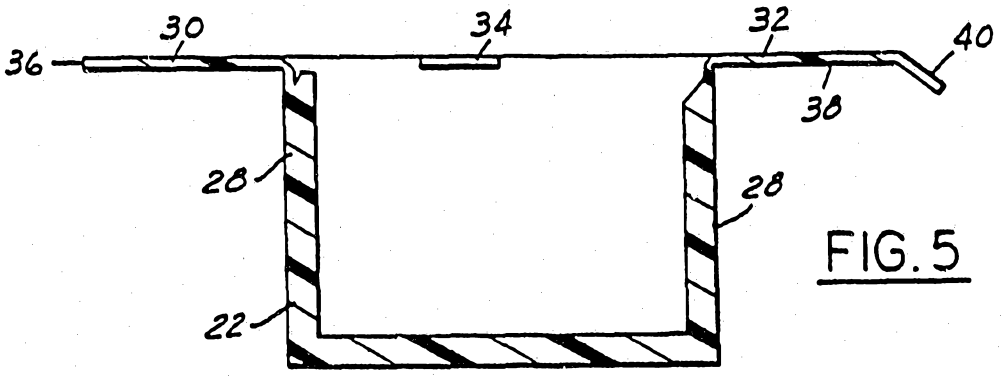


FIG. 5

INTERNATIONAL SEARCH REPORT

International Application No PCT/US91/00423

I. 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

IPC(5): B65D 83/10 U.S. Cl. 206/364

II FIELDS SEARCHED

Minimum Documentation Searched [4]

Classification System	Classification Symbols
US	206/364,206/366,206/370,206/210,220/908,220/229 206/339,229/125.02,229/128,229/907,232/43.1,232/44 232/43.2,232/43.5,232/48

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. [18]
X Y	US, A, 4,121,755 (MESEKE et al.) 24 October 1978 See fig. 7.	1,13,17 16,18
X Y	US, A, 4,679,700 (THARRINGTON et al.) 14 July 1987 See figs. 1-6.	1,13,14 1-4,10-12
X Y	US, A, 4,328,904 (IVERSON) 11 May 1982 See figs. 1,4 and 5.	1,2,13,14 1,2,13-15
Y	US, A, 4,037,754 (WILHELMI et al.) 26 July 1977 See figs. 5 and 6.	1-4,10-12
X	US, A, 1,580,104 (HASSELMANN) 06 April 1926 See fig. 1.	19
Y	US, A, 1,045,607 (PAYNE) 26 November 1912 See fig. 2.	18
A	US, A, 2,435,994 (ZUKERMAN) 17 February 1948	
Y,P	US, A, 4,936,449 (CONARD et al.) 26 June 1990 See fig. 5, #54.	18
Y,P	US, A, 4,900,500 (HONEYCUTT) 13 February 1990 See col. 2, lines 20-35.	16
A	US, A, 4,722,472 (BRUNO) 02 February 1988	

* Special categories of cited documents: [15]

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step

"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.

"&" document member of the same patent family

IV. CERTIFICATION

Date of the Actual Completion of the International Search [1]	Date of Mailing of this International Search Report [1]
15 MARCH 1991	18 APR 1991
International Searching Authority [1]	Signature of Authorized Officer [20]
ISA/US	DAVID T. FIDEI

FURTHER INFORMATION CONTINUED FROM THE SECOND SHEET

A	US, A, 2,971,688 (AKERS) 14 February 1961	
A	US, A, 4,315,592 (SMITH) 16 February 1982	
A	US, A, 3,900,550 (OLIVER et al.) 19 August 1975	

V. ☐ OBSERVATIONS WHERE CERTAIN CLAIMS WERE FOUND UNSEARCHABLE [1]

This international search report has not been established in respect of certain claims under Article 17(2) (a) for the following reasons:

1. ☐ Claim numbers . because they relate to subject matter [1] not required to be searched by this Authority, namely:

2. ☐ Claim numbers , 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 [2], specifically:

3. ☐ Claim numbers_____, because they are dependent claims not drafted in accordance with the second and third sentences of PCT Rule 6.4(a).

VI. ☐ OBSERVATIONS WHERE UNITY OF INVENTION IS LACKING [3]

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 of the international application.

2. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims of the international application for which fees were paid, specifically claims:

3. ☐ 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 claim numbers:

4. ☐ As all searchable claims could be searched without effort justifying an additional fee, the International Searching Authority did not invite payment of any additional fee.

Remark on Protest

☐ The additional search fees were accompanied by applicant's protest.

☐ No protest accompanied the payment of additional search fees.