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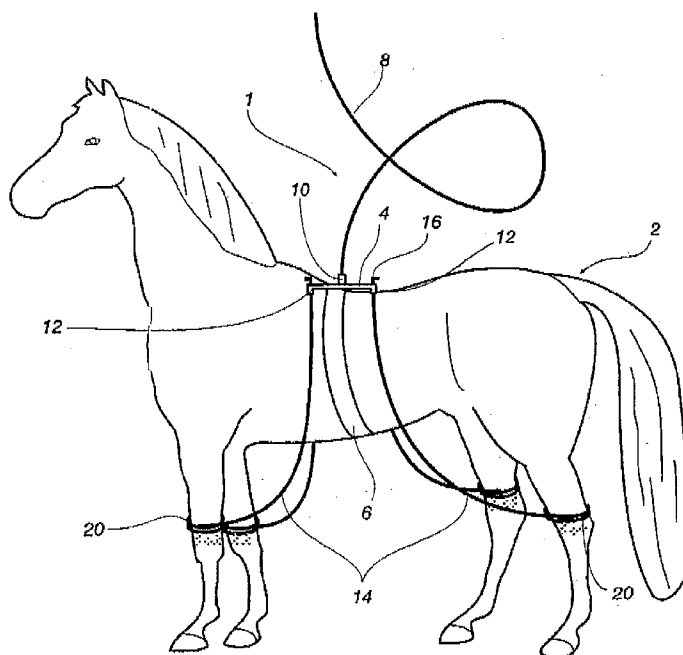
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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: EQUINE RECOVERY AID



(57) Abstract: This invention relates to a treatment and recovery aiding apparatus for, but not limited to the treatment of horses, the apparatus including at least two liquid carrying conduits being supplied water from a reticulated source via a manifold, each liquid carrying conduit being secured to a limb at a position at or toward an upper portion of the limb, and releasing the liquid against a surface of the limb so that this liquid can then flow down the limb thereby providing therapeutic effect to the limb.

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EQUINE RECOVERY AID

TECHNICAL FIELD

The present invention relates to a means and method for aiding the recovery of and treatment of soft tissue injuries in the legs of horses.

- 5 For the purposes of explanation, reference will be made to use of the present invention with respect to horses. It would be understood by those of ordinary skill in the art however that the invention is not limited to use on horses or with respect to legs, its application could potentially extend to use with respect to any limb of an animal or person.

10 BACKGROUND ART

Horses, and especially racehorses, are prone to injuries of the soft tissue in their lower legs, and more particularly the tendons and ligaments.

- The practice of soaking the legs of a horse with cool water after exercise is a recognised technique for both preventing and aiding in the treatment of these
15 soft tissue injuries. This soaking reduces the onset or extent of swelling in the tendons and ligaments.

In practice, this soaking technique involves having someone stand beside the horse with a hose directing a stream of water at its legs for up to twenty minutes per leg. This can be tedious for the person holding the hose.

- 20 It is an object of the present invention therefore to provide a means and method of aiding treatment and recovery that ameliorates the difficulties associated with the aforementioned method, or at the least, provides the public with a useful alternative to the presently used technique.

Other objects and advantages of the present invention will become apparent from the following description, taken in connection with the accompanying drawings, wherein, by way of illustration and example, an embodiment of the present invention is disclosed.

- 5 For the purpose of this specification the word "comprising" means "including but not limited to", and the word 'comprises' has a corresponding meaning.

DISCLOSURE OF THE INVENTION

- 10 In one form of this invention, there is proposed a treatment and recovery aiding apparatus including a liquid carrying conduit secured to a limb at a position at or toward an upper portion of the limb, the conduit releasing the liquid against a surface of the limb so that this liquid can then flow down the limb.

Preferably, the liquid carrying conduit wraps around the limb to a substantial extent.

Preferably, the conduits are flexible coiled hoses.

- 15 Preferably, the conduits are secured to the limb by being coiled around the limb.

Preferably, the rate of flow of liquid down the limb is a trickle.

Preferably, the liquid is water.

Preferably, the liquid carrying conduit accepts water from an external source.

Preferably, external source is a reticulated supply.

- 20 Preferably, the apparatus further comprises a manifold accepting a supply of water from the external source, the manifold distributing this water to at least two liquid releasing conduits, each of which is attached to a different limb.

Preferably, the conduit or conduits are secured to a leg or legs of horse, and the manifold is secured to the body of the horse.

Preferably, the or each conduit includes a water outlet directing water onto a surface of the limb.

- 5 Preferably, the or each conduit includes a plurality of water outlets, these being spaced apart along the length of the or each conduit.

Preferably, these water outlets are small holes or perforations in the or each conduit.

- 10 Preferably, these small holes or perforations are positioned on the inner side of the conduit coil.

Preferably, in an alternative, these outlets are dripper attachments.

Preferably, in an alternative, the conduit is a reservoir.

Preferably the reservoir is a bladder being adapted to release the liquid against a surface of the limb so that this can then trickle down the limb.

- 15 In a further form, the invention may be said to reside in a treatment and recovery aiding apparatus including at least two liquid carrying conduits being supplied liquid from an external liquid source via a manifold, each liquid carrying conduit being secured to a limb at a position at or toward an upper portion of the limb, and releasing the liquid against a surface of the limb so that this liquid
20 can then flow down the limb.

In a further form, the invention may be said to reside in a method of using the above mentioned treatment and recovery aiding apparatus, the method including the steps of securing a liquid carry conduit to a limb at an appropriate height up the limb and effecting a supply of liquid to the conduit.

Preferably, the step of effecting a supply of liquid to the or each conduit involves connecting the conduit to a reticulated supply of the liquid.

In a further form, the invention may be said to reside in a treatment and recovery aiding apparatus comprising a liquid carrying conduit adapted
5 wrapped around a portion of a leg of a horse which is to be cooled, the conduit carrying a recirculated supply of a cooled liquid.

Preferably, the liquid is passed from a cooling means, to the conduit passing around the leg and back to the cooling means again.

Preferably, the cooling means is a refrigerated heat exchanger.

10 BRIEF DESCRIPTION OF THE DRAWINGS

For a better understanding of this invention it will now be described with respect to at least one embodiment which shall be described herein with the assistance of drawings wherein;

Figure 1 is a schematic view of the recovery aid fitted to a horse;

15 Figure 2 is a detailed view of the conduit wrapped around the horse's leg; and

Figure 3 is a detailed view of a recovery aid according to a further form of the invention.

BEST MODE FOR CARRYING OUT THE INVENTION

Referring now to the illustrations, and in particular to Figure 1, where there is
20 illustrated a treatment and recovery aiding apparatus 1 fitted to a horse 2.

The apparatus 1 comprises a manifold 4 that is secured to the animals back by a padded strap 6 passing around its chest. This manifold 4 accepts a supply of water from a reticulated supply via a flexible hose 8 connected to its inlet port

10. The manifold 4 then distributes water via four outlets 12 to a further four flexible hoses 14. Each manifold outlet 12 is fitted with a tap 16, so that flow through any one of these outlets 12 can be restricted or indeed shut off completely

- 5 Each of these four hoses 14 passes water to a conduit 20 securely wrapped around each leg of the horse 1, just above the animal's knee joint. Each conduit 20 is a flexible coiled hose having a series of small holes or perforations therein, these being spaced out along the length of the conduit. Each conduit is attached to its respective supply hose 14 at one end, and blocked off at its other
- 10 end. Each conduit 20 is wrapped around a leg by being coiled around the same, the conduit hose being such that it tends to return to its coiled state.

In use, the apparatus is fitted to the animal in the manner described above. Due to the flexible nature of the hoses 8 and 14, there is minimal restriction to the animal's movements, and the animal 2 can move around within the confines of

15 their stall.

Reticulated water is supplied to the apparatus via the manifold 4, from where it is distributed to each of the conduits 20. This water leaks out of the conduits 20 and trickles down the animal's leg to the ground. The evaporation of this water from the horses skin in conjunction with its cool temperature provides the

20 required soaking and cooling effect which has been found to be so effective in reducing the onset or extent of swelling in the tendons and ligaments of a horse.

Referring now to Figure 3, where there is illustrated a bladder 50 with a closable inlet 52 for the filling thereof, and a plurality of holes 54 which are adapted to

25 permit the gradual release of water placed therein. The bladder 50 is made from a strong but flexible material, and is adapted to be wrapped around the horses' leg just above the knee bone, and fixed in this position. As before, the water bladder leaks a trickle of water down the horses' leg. The main limitation of this embodiment is its limited capacity.

Although the invention has been herein shown and described in what is conceived to be the most practical and preferred embodiment, it is recognised that departures can be made within the scope of the invention, which is not to be limited to the details described herein but is to be accorded the full scope of
5 the appended claims so as to embrace any and all equivalent devices and apparatus.

THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

1. A treatment and recovery aiding apparatus including a liquid carrying conduit secured to a limb at a position at or toward an upper portion of the limb, and release the liquid against a surface of the limb so that this liquid can then
5 flow down the limb.
2. The treatment and recovery aiding apparatus as in claim 1, wherein the liquid carrying conduit wraps around the limb to a substantial extent.
3. The treatment and recovery aiding apparatus as in either one of the preceding claims, wherein the conduits are flexible coiled hoses.
- 10 4. The treatment and recovery aiding apparatus as in any one of the preceding claims, wherein the conduits are secured to the limb by being coiled around the limb.
5. The treatment and recovery aiding apparatus in any one of the preceding claims, wherein the rate of flow of liquid down the limb is a trickle.
- 15 6. The treatment and recovery aiding apparatus as in any one of the preceding claims, wherein the liquid is water.
7. The treatment and recovery aiding apparatus as in any one of the preceding claims, wherein the liquid carrying conduit accepts water from an external source.
- 20 8. The treatment and recovery aiding apparatus as in claim 7, wherein the external source is a reticulated supply.
9. The treatment and recovery aiding apparatus as in any one of claims 7 or 8, wherein the apparatus further comprises a manifold accepting a supply of

water from the external source, the manifold distributing this water to at least two liquid releasing conduits, each of which is attached to a different limb.

10. The treatment and recovery aiding apparatus as in claim 9, wherein, the conduit or conduits are secured to a leg or legs of horse, and the manifold is
5 secured to the body of the horse.

11. The treatment and recovery aiding apparatus as in any one of the preceding claims, wherein the or each conduit includes a water outlet directing water onto a surface of the limb.

12. The treatment and recovery aiding apparatus as in any one of the
10 preceding claims, wherein the or each conduit includes a plurality of water outlets, these being spaced apart along the length of the or each conduit.

13. The treatment and recovery aiding apparatus as in claim 11, wherein these water outlets are small holes or perforations in the or each conduit.

14. The treatment and recovery aiding apparatus as in claim 13, wherein
15 these small holes or perforations are positioned on the inner side of the conduit coil.

15. The treatment and recovery aiding apparatus as in claim 11, wherein these outlets are dripper attachments.

16. The treatment and recovery aiding apparatus as in either one of claims 1
20 or 2, wherein the conduit is a reservoir.

17. The treatment and recovery aiding apparatus as in claim 16, wherein the reservoir is a bladder being adapted to release the liquid against a surface of the limb so that this can then trickle down the limb.

18. A treatment and recovery aiding apparatus including at least two liquid
25 carrying conduits being supplied liquid from an external liquid source via a

manifold, each liquid carrying conduit being secured to a limb at a position at or toward an upper portion of the limb, and releasing the liquid against a surface of the limb so that this liquid can then flow down the limb.

19. A method of using a treatment and recovery aiding apparatus as
5 disclosed in any one of the preceding claims, including the steps of securing a liquid carry conduit to a limb at an appropriate height up the limb and effecting a supply of liquid to the conduit.
20. The method of claim 18, wherein the step of effecting a supply of liquid to
10 the or each conduit involves connecting the conduit to a reticulated supply of the liquid.
21. A treatment and recovery aiding apparatus as described in the specification, with reference to and as illustrated in the accompanying representations.
22. A method of using a treatment and recovery aiding apparatus as
15 described in the specification, with reference to and as illustrated in the accompanying representations.

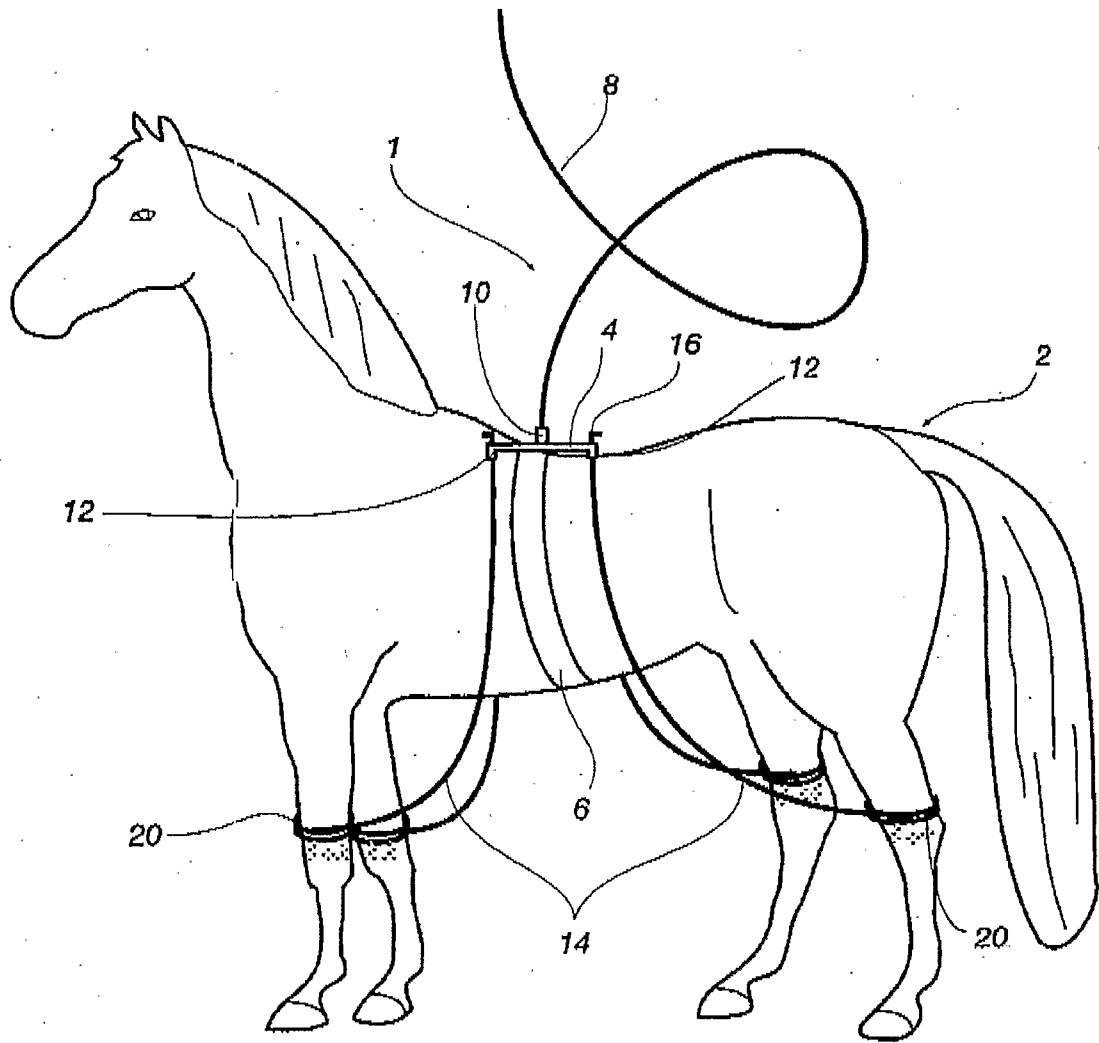


Fig 1

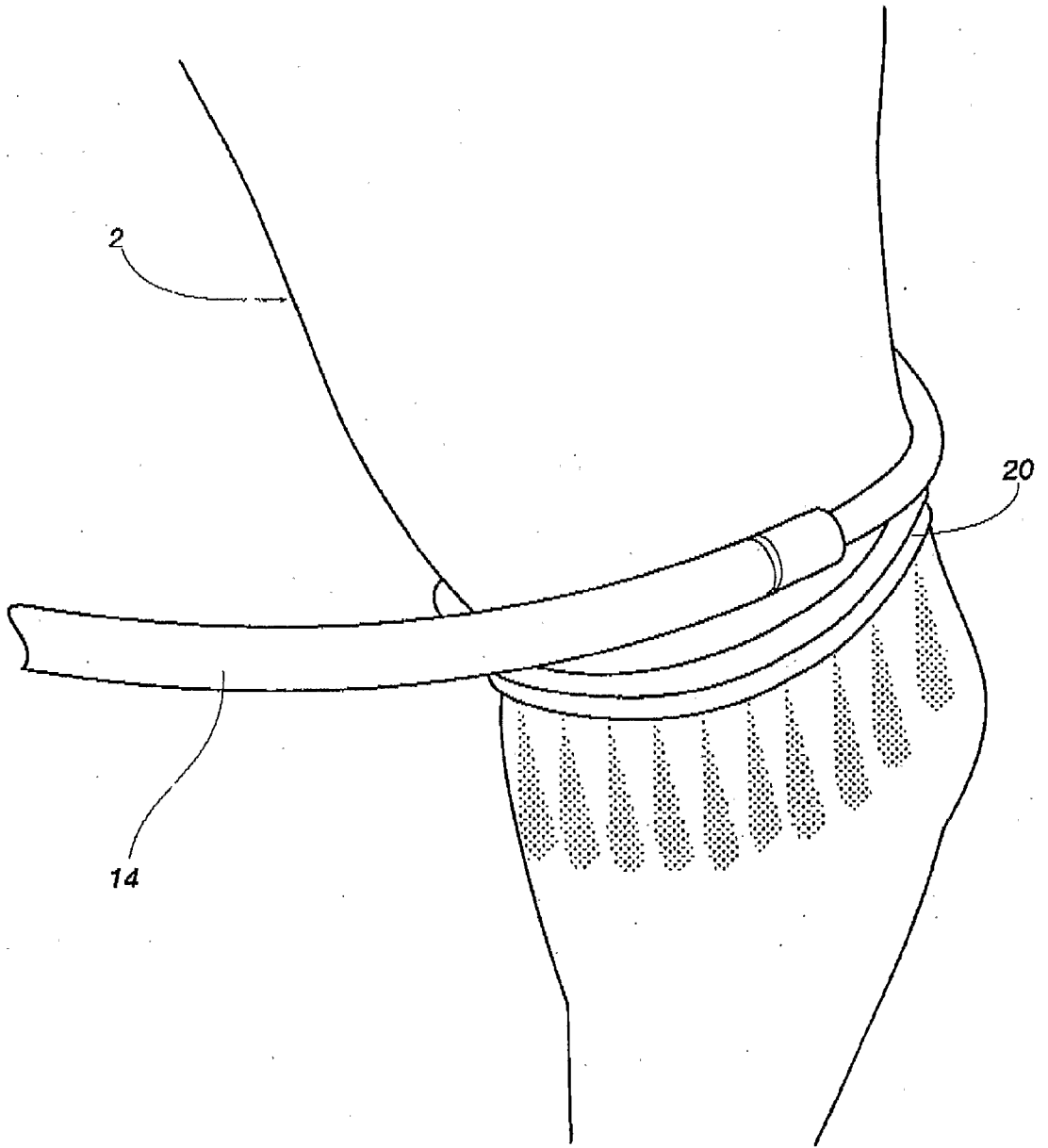


Fig 2

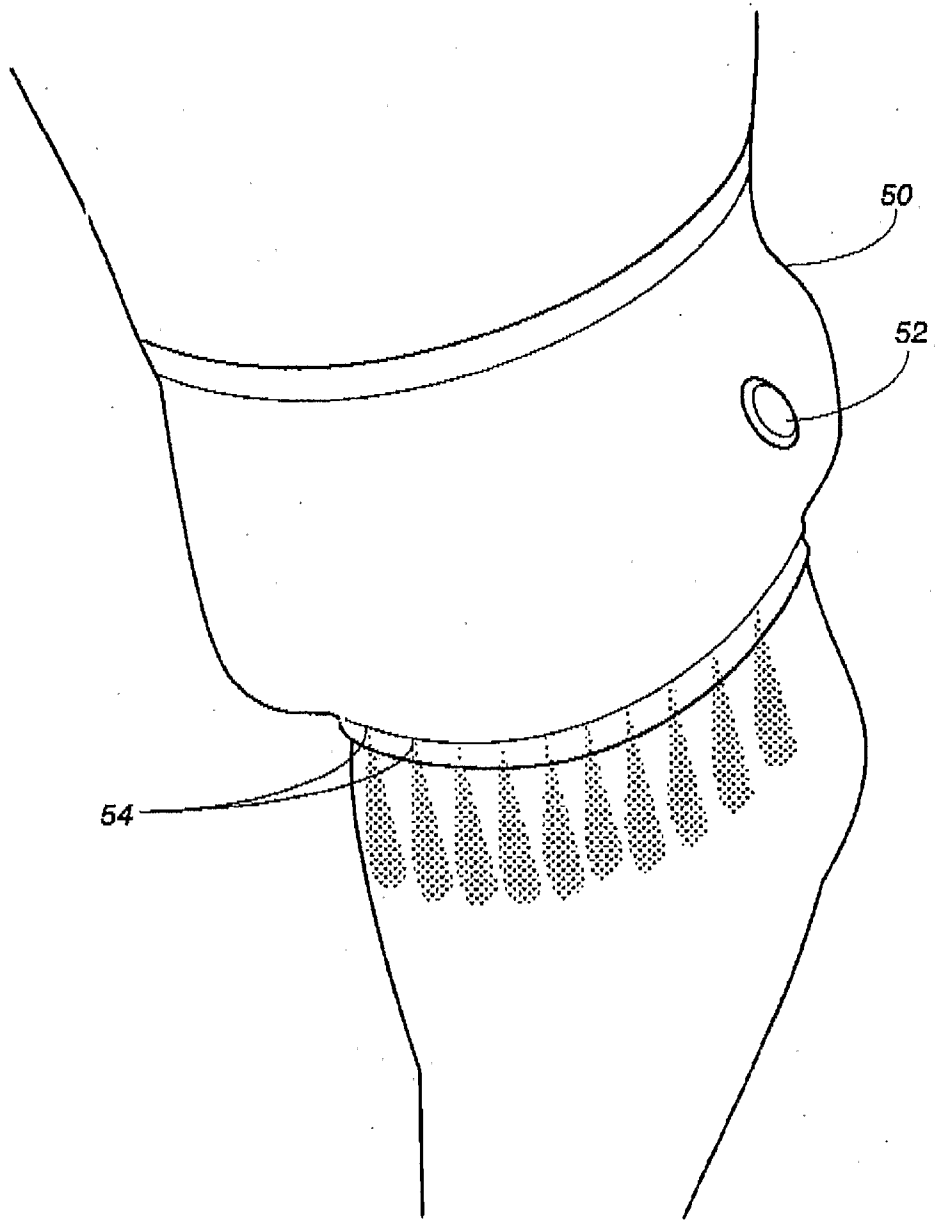


Fig 3

INTERNATIONAL SEARCH REPORT

International application No.

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A. CLASSIFICATION OF SUBJECT MATTER		
Int. Cl.		
<i>A01K 13/00</i> (2006.01)	<i>A61D 11/00</i> (2006.01)	<i>A61H 33/00</i> (2006.01)
<i>A61D 7/00</i> (2006.01)	<i>A61H 9/00</i> (2006.01)	<i>A61H 35/00</i> (2006.01)
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)		
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 practicable, search terms used) DWPI KEYWORDS (leg, limb, arm, foot, feet, joint, tendon, ligament, treat, veterinary, medical, recovery, aid, liquid, water, fluid, H ₂ O, aqua, hose, conduit, pipe, duct, manifold, bladder, trickle, flow, drip, release, soak, stream, injury, swell, bruise)		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6371946 B1 (OSTROW) 16 April 2002 Column 2, line 34 to Column 3, line 20 and Figures 1, 2 and 5	1 to 7, 11, 19, 20
Y		9, 10, 18
X	US 6053898 A (OSTROW) 25 April 2000 Column 2, line 28 to Column 3, line 14 and Figures 1, 2 and 5	1 to 7, 11, 19, 20
Y		9, 10, 18
X	WO 2004/052425 A2 (PURGO CREATIONS, INC) Page 13, line 8 to Page 14, line 4 and figures	1, 2, 4, 5, 16, 17, 19, 20
Y		9, 10, 18
<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C <input checked="" type="checkbox"/> See patent family annex		
* Special categories of cited documents:	"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	
"A" document defining the general state of the art which is not considered to be of particular relevance	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone	
"E" earlier application or patent but published on or after the international filing date	"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	
"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)	"&" document member of the same patent family	
"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		
Date of the actual completion of the international search 27 July 2007	Date of mailing of the international search report	9 - AUG 2007
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INTERNATIONAL SEARCH REPORT

International application No.
PCT/AU2007/000797

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 6086609 A (BUCKLEY) 11 July 2000 Column 4, lines 11 to 24 and Figure 1	9, 10, 18

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/AU2007/000797

This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent Document Cited in Search Report		Patent Family Member					
US	6371946	AU	41409/00	US	6053898	US	6251096
		WO	2001/80938				
US	6053898	AU	41409/00	US	6053898	US	6251096
		WO	2001/80938				
WO	2004/052425	US	7135011	US	2004/111071	US	2004/162534
		US	2005/124945	US	2007/088298		
US	6086609	NONE					
Due to data integration issues this family listing may not include 10 digit Australian applications filed since May 2001.							
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