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(54) Title: INFLATABLE FLEXIBLE WATER BAG FOR WATER TANK TRAILER

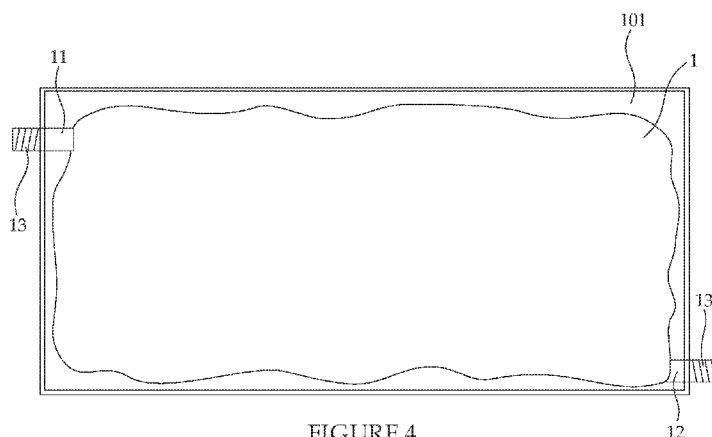


FIGURE 4

(57) Abstract: A water bag for water tank trailer comprises: an inflatable and flexible water bag made of materials that meets the standards for usage with fresh drinking water which includes a water inlet port and water outlet port. Each of these ports ends with connection means which are aimed to be attached and fixed to the inlet and outlet water ports of the water tank trailer. The water bag is aimed to be inserted into the tank of the water tank trailer in a way that the inlet and outlet water ports of the water bag are aimed to be set into the inlet and outlet water port of the tank by using the connecting means.



Inflatable Flexible Water Bag for Water Tank Trailer

Description

TECHNICAL FIELD

The present invention relates to an inflatable flexible water bag that includes inlet and outlet water ports with connection means that is fitted to be inserted inside standard tank of a water tank trailer.

BACKGROUND ART

It is customary to use water tank trailers for mobilizing, storing and supplying fresh drinking water for groups of people while they are in the countryside. Army units use that kind of water tank trailers for these purposes when units are in the field for training or for doing their missions. Such standard army water tank trailers (100), as described in FIG. 1, are usually comprising of a metal or plastic tank (101) (hereinafter "metal tank") with attached line of several faucets (102) and a base that includes chassis mounted on wheels (103) for mobilizing the water tank. The metal tank (101) includes a water inlet port (104) and water outlet port (105) that is connected to the faucets line (102). The usage of these water tank trailers (100) involves problems of chlorinating and cleaning of the metal tank (101) which are both costly and time consuming processes. The present invention aims to provide an effective and efficient solution for this problem.

LIST OF DRAWINGS

The intention of the drawings attached to the application is not to limit the scope of the invention and its application. The drawings are intended only to illustrate the invention and they constitute only one of its many possible implementations.

FIG. 1 describes prior art of the water tank trailer (100) that includes a metal tank (101), a line of several faucets (102), chassis and wheels (103), a water inlet port (104) and water outlet port (105).

FIG. 2 describes the water bag (1) that includes a water inlet port (11), a water outlet port (12) which ends with connection means (13).

FIG. 3 describes part of the water bag (1) with the water inlet port (11) and detailed figurative description of the connection means (13).

FIG. 4 describes a cross section view of the water bag (1) inside the tank (101).

THE INVENTION

The main object of the present invention is to provide an inflatable flexible water bag that includes inlet and outlet water ports that is fitted to be inserted inside standard metal tank (100) and to contain the water.

The inflatable and flexible water bag (1) (hereinafter "the water bag") subject matter of this invention is described in FIG. 2 and is made of materials that meets the standards for usage with fresh drinking water. The water bag (1) can be made of one flexible and inflatable layer of this kind of materials or alternatively it can be made of a relatively tough outer layer and an inner relatively soft layer that meets those standards. The water bag (1) includes a water inlet port (11) and water outlet port (12). Each of these ports (11) (12) ends with connection means (13) as described for example in FIG. 3. The connection means (13) are aimed to be attached and fixed the water ports (11) (12) to the inlet and outlet water ports (104) (105) of the water tank trailer (100). The water bag can be isolated to keep the water from heating.

The usage of the water tank (1): the user should insert the water bag (1) into the metal tank (101) and set the water inlet port (11) of the water bag (1) into the water inlet port (104) of the metal tank (101) by using the relevant connecting means (13) and to do the same with the water outlet ports (12) and (105). It is possible to use a half-rigid cable guide to lead the connection means (13) to the water ports (104) (105). After inserting and connecting the water bag (1) inside the metal tank (101) it is possible to fill the water bag (1) with fresh water whereas the water in fact is not in contact with the metal tank (101) but only with the inner side of the water bag (1). It is preferably that the volume of the water bag (1) is bigger than the volume of the metal tank (101) to prevent water weight pressure onto the water bag (1) layer.

Maintenance and cleaning the water bag (1): first, by reason of the water bag (1) is made by those materials there will be less hygienic problems. Second, instead of cleaning like in the rigid metal tank (101) the water bag (1) is replaced simply by disconnecting the connection means (13), pulling out the water bag (1), and inserting a new one into the metal tank (101). It is also more durable, in a case that the rigid part got punctured (by bullet for example) , replacing the water bag will make the tank operational again.

Claims

What is claimed is:

1. A water bag for water tank trailer comprises: an inflatable and flexible water bag made of materials that meets the standards for usage with fresh drinking water which includes a water inlet port and water outlet port; wherein each of the said ports ends with connection means; wherein the said connection means are aimed to be attached and fixed to inlet and outlet water ports of the said water tank trailer; whereby the said water bag is aimed to be inserted into the tank of the water tank trailer; whereby the said inlet and outlet water ports of the said water bag are aimed to be set into the said inlet and outlet water port of the said tank by using the said connecting means; whereby that after inserting and connecting the said water bag inside the said tank of the said water tank trailer the water bag is ready to be filled with fresh water whereas the water does not contact with the said metal tank.

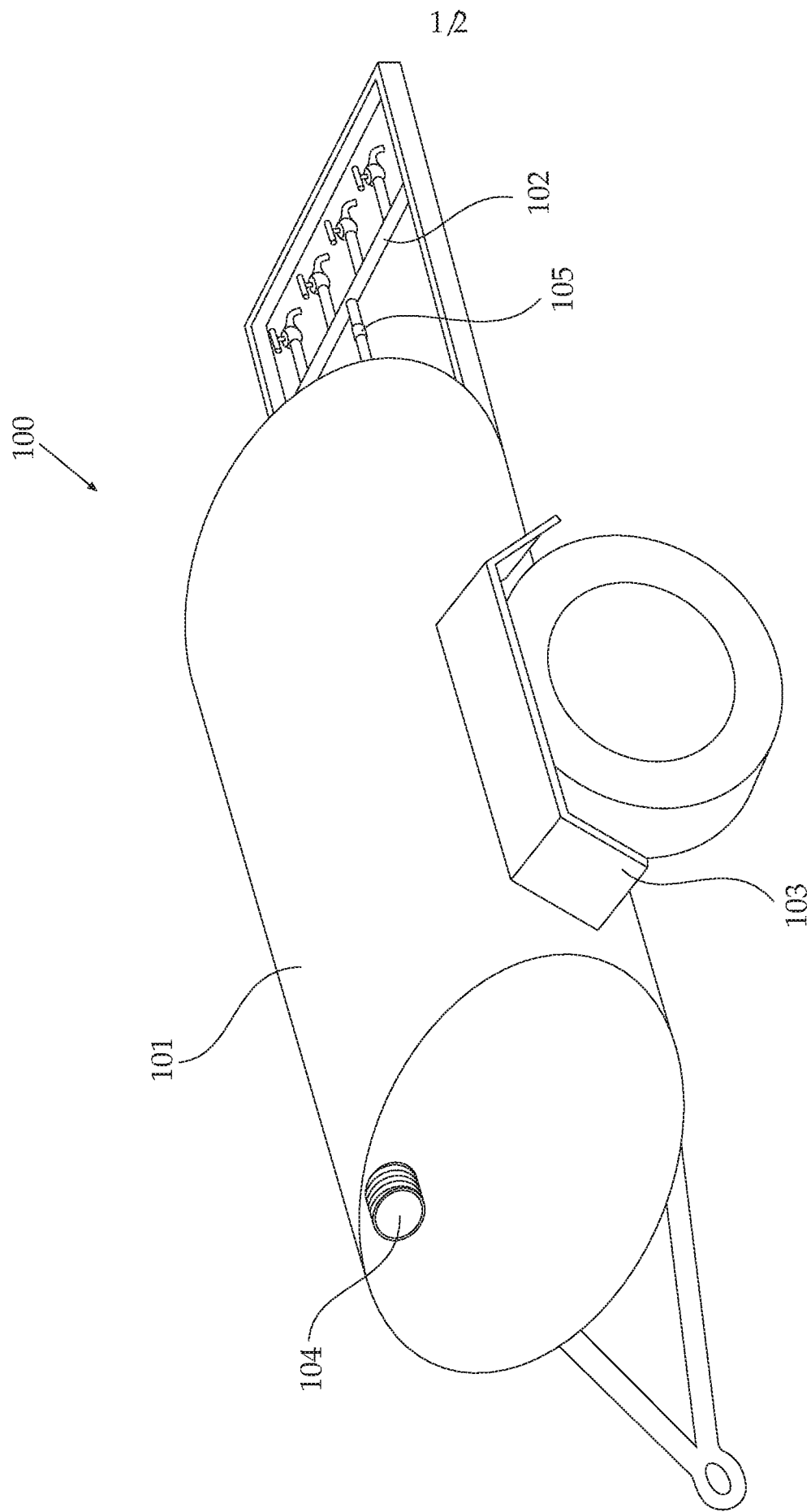
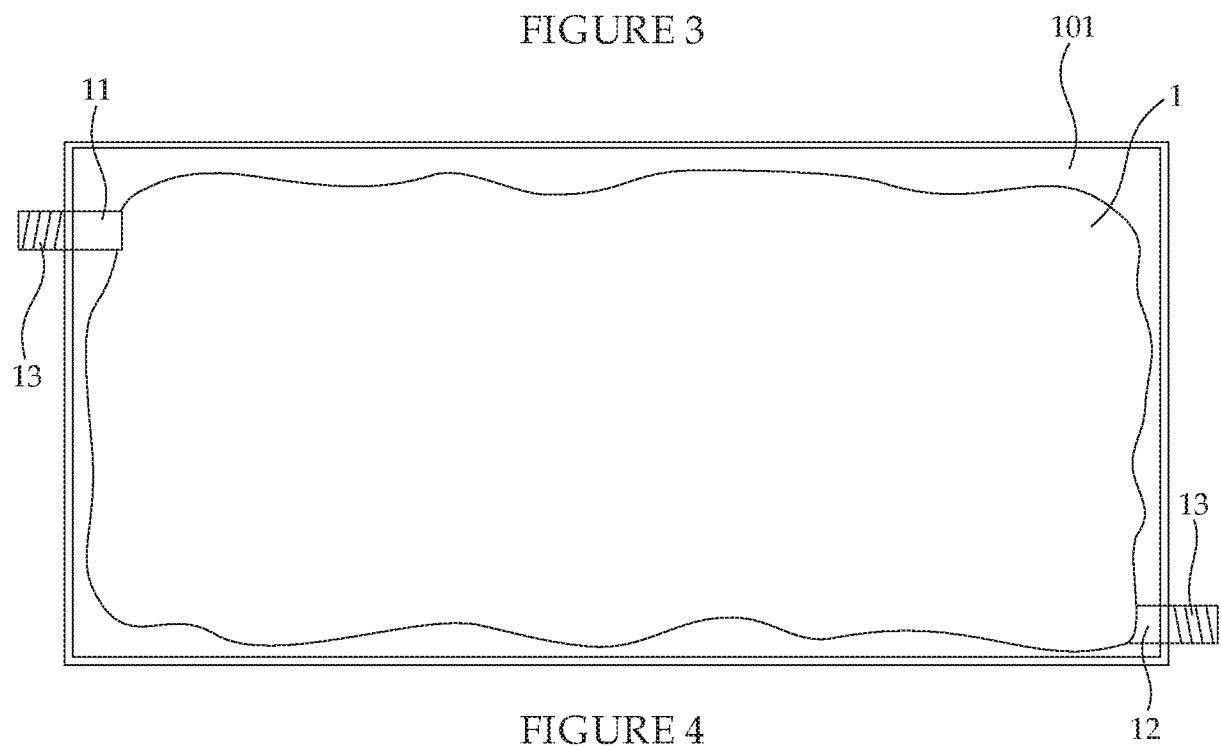
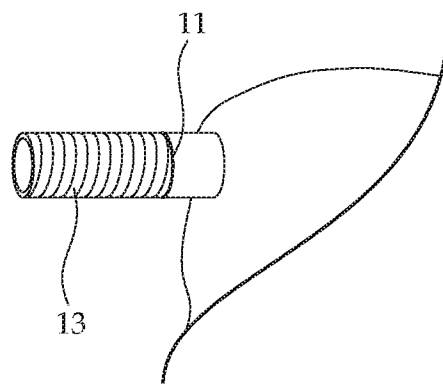
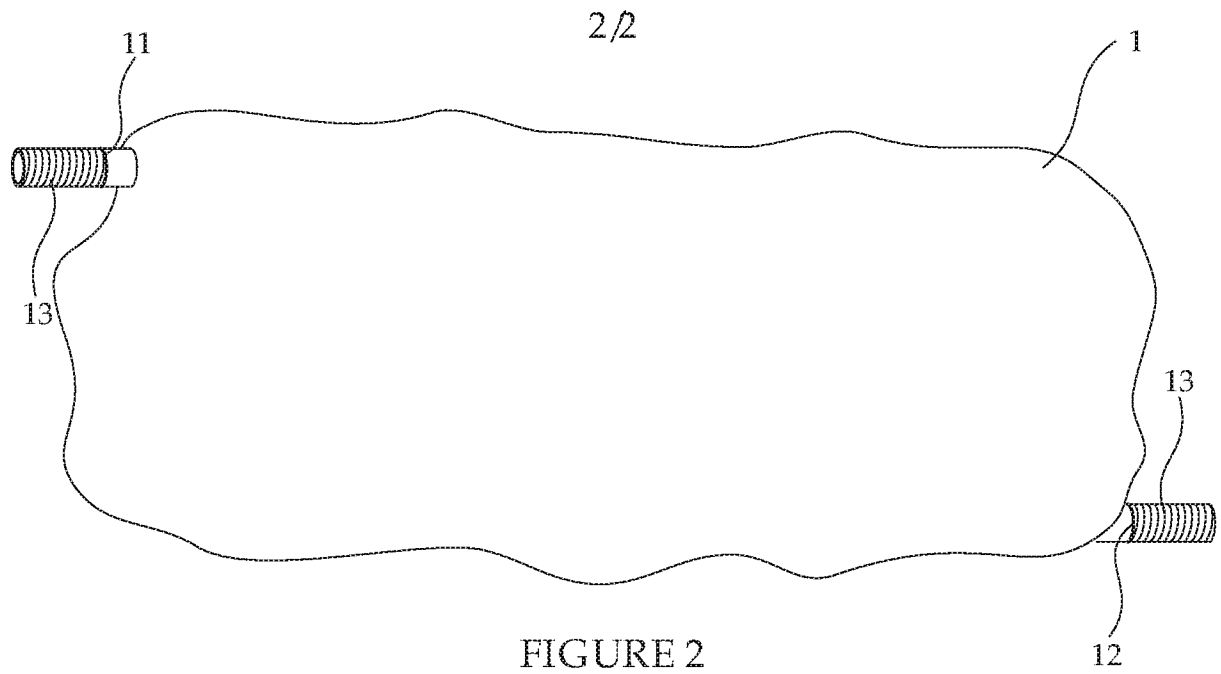


FIGURE 1



INTERNATIONAL SEARCH REPORT

International application No.

PCT/IL2014/050293

A. CLASSIFICATION OF SUBJECT MATTER IPC (2014.01) B65D 90/04, B65D 37/00, B67D 7/02 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 (2014.01) B65D 90/04, B65D 37/00, B67D 7/02 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) Databases consulted: THOMSON INNOVATION, Esp@cenet, Google Patents Search terms used: water, liquid, tank, container, bowser, "bag-in-box", "bag-in-container", liner, bag, bladder, sleeve, flexible, inflatable, insert, trailer, portable, mobile, movable, towable.		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 0100509 A2 GOH, ENG, HOCK et al. 04 Jan 2001 (2001/01/04) Page 15 lines 10-14, page 16 lines 17-34, page 22 lines 28-30, page 32 line 33 - page 33 line 17; Figure 2.	1
Y	US 4942978 A BESSETTE DAVID M 24 Jul 1990 (1990/07/24) Column 1 lines 7-13; Column 3 line 7 - Column 4 line 11; Figure 1.	1
A	US 4875596 A LOHSE JUERGEN 24 Oct 1989 (1989/10/24) Column 1 lines 4-11, Column 3 lines 5-30; Figures 1, 3.	1
A	US 2008257894 A1 PODD STEPHEN D ET AL. 23 Oct 2008 (2008/10/23)	1
A	US 5489037 A INSTA-BULK, INC 06 Feb 1996 (1996/02/06)	1
☐ Further documents are listed in the continuation of Box C. ☒ See patent family annex.		
* Special categories of cited documents: "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier application or patent 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 when the document is taken alone "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		
Date of the actual completion of the international search 29 Jul 2014		Date of mailing of the international search report 31 Jul 2014
Name and mailing address of the ISA: Israel Patent Office Technology Park, Bldg.5, Malcha, Jerusalem, 9695101, Israel Facsimile No. 972-2-5651616		Authorized officer Aamidor Josh Telephone No. 972-2-5651722

INTERNATIONAL SEARCH REPORT
Information on patent family members

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PCT/IL2014/050293

Patent document cited search report			Publication date	Patent family member(s)			Publication Date
WO	0100509	A2	04 Jan 2001	WO	0100509	A2	04 Jan 2001
				WO	0100509	A3	17 May 2001
				AU	1839701	A	31 Jan 2001
				AU	3690300	A	31 Jan 2001
				GB	0201798	D0	13 Mar 2002
				GB	2369098	A	22 May 2002
				WO	0100510	A1	04 Jan 2001
US	4942978	A	24 Jul 1990	US	4942978	A	24 Jul 1990
US	4875596	A	24 Oct 1989	US	4875596	A	24 Oct 1989
				AR	242754	A1	31 May 1993
				AT	57156	T	15 Oct 1990
				AU	589801	B2	19 Oct 1989
				AU	7780387	A	24 Feb 1988
				BR	8707391	A	01 Nov 1988
				CA	1275267	C	16 Oct 1990
				CN	87105139	A	13 Apr 1988
				CN	1009450	B	05 Sep 1990
				DE	3625224	A1	04 Feb 1988
				DE	3625224	C2	18 Aug 1988
				DE	3625244	A1	04 Feb 1988
				DE	3765413	D1	08 Nov 1990
				DK	160988	A	24 Mar 1988
				DK	160988	D0	24 Mar 1988
				EP	0276269	A1	03 Aug 1988
				EP	0276269	B1	03 Oct 1990
				FI	881046	A	07 Mar 1988
				HU	T46281	A	28 Oct 1988
				HU	200302	B	28 May 1990
				JP	H01500421	A	16 Feb 1989

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