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(54) Title: A PLUMBING CONNECTION HUB

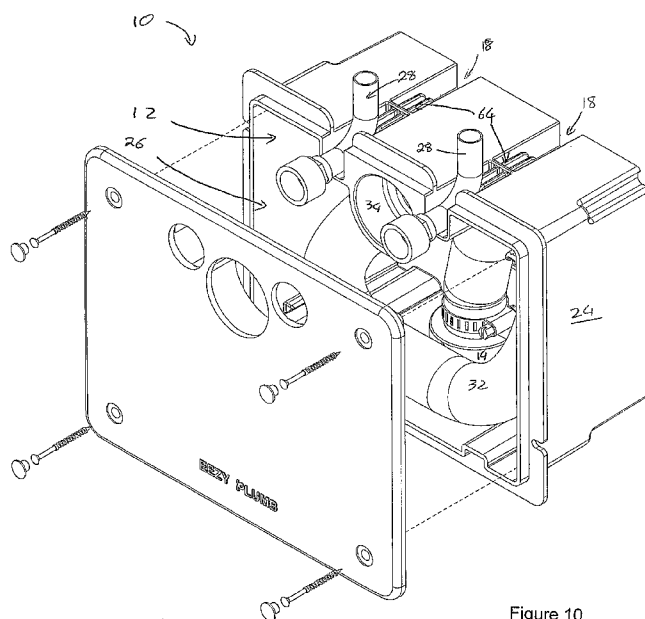


Figure 10

(57) Abstract: The invention provides a plumbing connection hub for connecting household plumbing to appliances or basins. The hub includes an open-sided container (10) to be built into a wall. The hub further includes a drain outlet (14) leading out of the container and connectable to the sewage system of a house and a water connection elbow pipe location means (18.1, 18.2) for locating a water connection elbow pipe inside the container with one end of the pipe extending through a hole defined in a wall of the container and the other end extending through the open side. A lid (46) covers the piping inside the hub.

A PLUMBING CONNECTION HUB

Technical field of the invention

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This invention relates to a hub for plumbing. More particularly, it relates to a hub for connecting the plumbing connections of basins and appliances such as a dishwasher or washing machine to the plumbing connections of a home.

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Background to the invention

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The applicant is aware that the plumbing connections of appliances such as dishwashers and washing machines normally need to be connected to municipal water system of a house and to a sewage system of a house. These connections of a house are usually solely functional, low cost and not aesthetically pleasing. These connections are usually visible especially if the appliance is not connected. The connections may sometimes also be out of reach of the piping of the appliance. It is an object of this invention to provide a convenient and aesthetically pleasing means for connecting such appliances.

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The applicant is also aware that modern basins are often mounted on a vanity top instead of a vanity cupboard, which leaves the plumbing exposed, visible and in the way, even if it is hidden in a cupboard. It is a further object of this invention to provide a convenient and aesthetically pleasing means for connecting such basins.

General description of the invention

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According to a first aspect of the invention there is provided a plumbing connection hub, which hub includes:

an open-sided container;

a drain outlet leading out of the container and connectable to the sewage system of a house; and

5 a water connection elbow pipe location means for locating a water connection elbow pipe inside the container with one end of the pipe extending through a hole defined in a wall of the container and the other end extending through the open side.

The open side of the container is the operatively front side of the container.

10

The hub may include drain piping with a drain outlet.

15 With regard to the water connection elbow pipe location means, the end extending through the open side, in use, is connectable to a water intake of an appliance or tap of a basin and the end extending through the hole defined in a wall of the container is connectable to the household water supply of a house.

20 The container is dimensioned and configured to be built into a wall and the end of the connection elbow pipe extending through a hole would then be connected to plumbing inside the wall, when finished. The dimensions of the hub may correspond to that of two bricks.

25 The drain outlet leading out of the container may lead to an operatively bottom wall of the container to be connected to a sewage system of a house in a wall when installed.

30 The hub may include two water connection elbow pipe location means, one water connection may be for cold water and the other water connection for warm water. The hub may include an indication means for indicating which water connection is for cold water and which water connection is for warm water.

The water connections may be provided with valves or stoppers in order to close the connections when the connections are not in use.

5 The hub may also include also include drain piping provided with an S-trap to prevent sewage odours from escaping past the drain outlet. The S-trap piping may be inside the container with one end, the inlet, leading to an operatively upper part of the open side of the container and the other end, the outlet, leading to an operatively bottom wall of the container.

10 The drain piping may preferably be integrally formed with the container to minimise piping connections and lessen the possibility of leaks.

15 The inlet may extend to the outside of the container and may be provided with thread for attachment to a complementary threaded drain outlet piping from an appliance or a basin.

 The operatively bottom part of the S-trap may be provided with a closable inspection hole.

20 The middle portion of the S-trap piping may be provided with a widening portion. The widening portion acts as a buffer for high outflow of drainage water.

25 The container may include a brace for supporting the inlet end of the piping, leading to an operatively upper part of the open side of the container. The brace may preferably be integrally formed with the container.

30 The water connection elbow pipe location means may be complementary cross-sectionally u-shaped channels integrally formed with the container wherein the connection elbow fits, in use.

 The open-sided container may be provided with a lid with holes defined therein for receiving the piping or connections there through. The lid may be

dimensioned to be longer and wider than the open side of the container to hide plastering imperfections, in use.

5 The hub may include locating formations extending transversely from the operatively front part of side walls of the container for locating the hub at a predetermined depth in a wall.

The back and/ or side walls may include gripping formations formed thereon for gripping cement when built into a wall.

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The lid and container of the hub may include complementary holes for receiving screws for attaching the lid to the container. It will be appreciated that the lid can be crewed to the container until the lid is stopped by plaster or the edge of the side walls. It will be appreciated that the lid can be unscrewed and slid along the connected piping to provide access to the inspection hole in the S-trap.

15

It will be appreciated that the container of the hub can be installed countersunk in a wall of a house with its connections connected to the corresponding connections of the house on the outside of the container and with the open side of the container providing access to the inspection hole. The drain, S-trap and tap fittings are hidden from view, in use, to provide an easy to install, convenient and aesthetically pleasing plumbing connection hub.

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Detailed description of the invention

The invention is now described by way of example with reference to the accompanying drawings.

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In the drawings:

Figure 1 shows a top view of a plumbing connection hub, in accordance with the invention;

Figure 2 shows a plan view of the plumbing connection hub;

Figure 3 shows a bottom view of the plumbing connection hub;
 Figure 4 shows a front plan view of the plumbing connection hub partly installed; and
 Figure 5 shows a plan view of the plumbing connection hub fully installed.

5

Referring now to the drawings, the plumbing connection hub, in accordance with the invention, is generally indicated by reference numeral 10. The plumbing connection hub 10, includes an open-sided container 12 and a drain outlet 14 leading out of the operatively lower wall of the container 12 and connectable to the sewage system 16. The hub 10 further includes a pair of water connection elbow pipe location means 18 in the form of cross-sectionally u-shaped channels for locating a hot and cold water connection elbow pipe 20 inside the container with one end of the pipe extending through a hole 22 defined in a wall 24 of the container 12 and the other end extending through the open side 26, the operatively front side. The end of the pipe 20 extending through the open side 26 is connectable to a water intake of an appliance or tap of a basin and the end extending through the hole 22 defined in a wall 24 of the container 12 is connectable to the household water supply 28 of a house outside the container 12. The container 10 is dimensioned and configured to be built into a wall in the space of two standard bricks 30.

The hub 10 also includes drain piping 32 provided with an S-trap to prevent sewage odours from escaping past the drain outlet. The S-trap piping is located inside the container 12 with one end, the inlet 34, leading to an operatively upper part of the open side 26 of the container and the other end, the outlet 36, leading to an operatively bottom wall 38 of the container. The drain piping is integrally formed with the container 12 to minimise piping connections and lessen the possibility of leaks. The inlet 24 is provided with thread for attachment to a complementary threaded drain outlet piping from an appliance or a basin. The operatively bottom part of the S-trap is provided with a closable inspection hole 40. The middle portion of the S-trap piping 32 may be provided with a widening portion 42. The widening portion 42 acts as a buffer for high outflow of drainage water.

The container 12 includes a brace 44 for supporting the inlet 34 end of the piping, leading to an operatively upper part of the open side of the container. The brace 44 is integrally formed with the container 12.

- 5 The water connection elbow pipe location means 18 are u-shaped channels integrally formed with the container 12.

10 The open-sided container 12 is provided with a lid 46 with holes defined therein for receiving the piping or connections there through. The lid 46 is dimensioned to be longer and wider than the container 12 to hide plastering imperfections, in use.

15 The hub 10 further includes locating formations 48 extending transversely from the operatively front part of side walls of the container 12 for locating the hub at a predetermined depth in a wall.

 The back wall 50 includes gripping formations 52 formed thereon for gripping cement when built into a wall.

20 The lid 46 and container 12 of the hub 10 includes complementary holes 54 and 56 for receiving screws for attaching the lid to the container to allow the lid to be crewed to the container until the lid is stopped by plaster or the edge of the side walls.

25 In use, a person would build the hub 10 into a wall and install elbow connections and connect them to a house water supply piping chased into the wall. The open end of the elbow connections will then be sealed before the water pressure is turned on. The drain pipe is connected to the sewerage piping of the house, also chased into the wall and the open end is sealed with
30 a screw on cap. The wall is then plastered and the lid screws on. When needed the hub can be connected to a basin or an appliance.

 It shall be understood that the example is provided for illustrating the invention further and to assist a person skilled in the art with understanding

the invention and is not meant to be construed as unduly limiting the reasonable scope of the invention.

Claims

1. A plumbing connection hub, which hub includes:
 - an open-sided container;
 - 5 a drain outlet leading out of the container and connectable to the sewage system of a house; and
 - a water connection elbow pipe locating means for locating a water connection elbow pipe inside the container with one end of the pipe extending through a hole defined in a wall of the container and the other end extending
 - 10 through the open side.
2. A hub as claimed in Claim 1, wherein the container is dimensioned and configured to be built into a wall.
- 15 3. A hub as claimed in Claim 1 or Claim 2, with an end of a connection elbow pipe extending through a hole formed in an operatively upper wall of the container, in use.
4. A hub as claimed in any one of the previous claims, which includes two
- 20 water connection elbow pipe locating means and indication means for indicating one for cold water and one for warm water.
5. A hub as claimed in any one of the previous claims, which includes drain piping provided with an S-trap.
- 25 6. A hub as claimed in Claim 5, wherein the drain piping is inside the container with one end, the inlet, leading to an operatively upper part of the open side of the container and the other end, the outlet, leading to an operatively bottom wall of the container.
- 30 7. A hub as claimed in any one of Claim 5 and Claim 6, wherein the drain piping is integrally formed with the container.

8. A hub as claimed in any one of claims 5 to 7, wherein the middle portion of the S-trap piping is provided with a widening portion.

5 9. A hub as claimed in any one of claims 6 to 7, wherein the container includes a brace for supporting the inlet end of the piping.

10 10. A hub as claimed in any one of the previous claims, wherein the water connection elbow pipe location means is a complementary cross-sectionally u-shaped channel integrally formed with the container wherein the connection elbow fits, in use.

15 11. A hub as claimed in any one of the previous claims, which includes a lid with holes defined therein for receiving the piping or connections there through.

20 12. A hub as claimed in any one of the previous claims, which includes locating formations extending transversely from the operatively front part of side walls of the container for locating the hub at a predetermined depth in a wall.

13. A hub as claimed in any one of the previous claims, wherein the back and/ or side walls include gripping formations formed thereon for gripping cement when built into a wall.

25 14. A plumbing connection hub substantially as described herein with reference to the accompanying drawings.

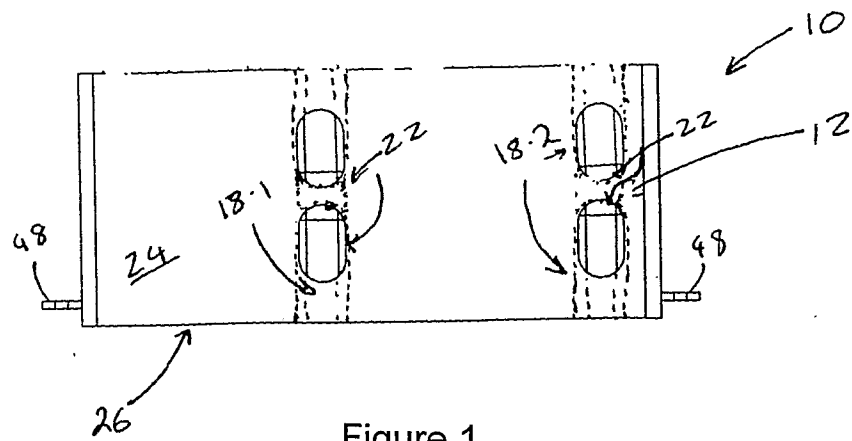


Figure 1

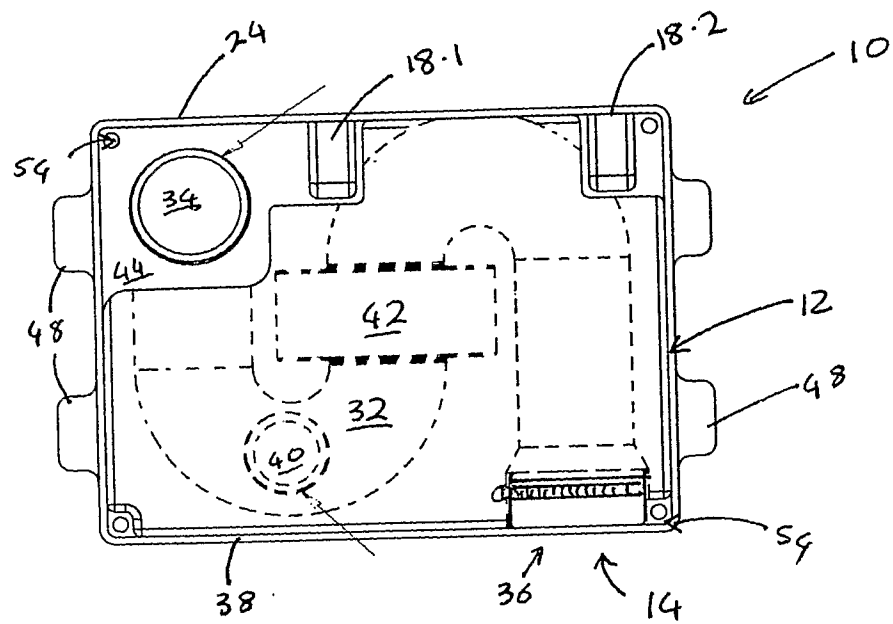


Figure 2

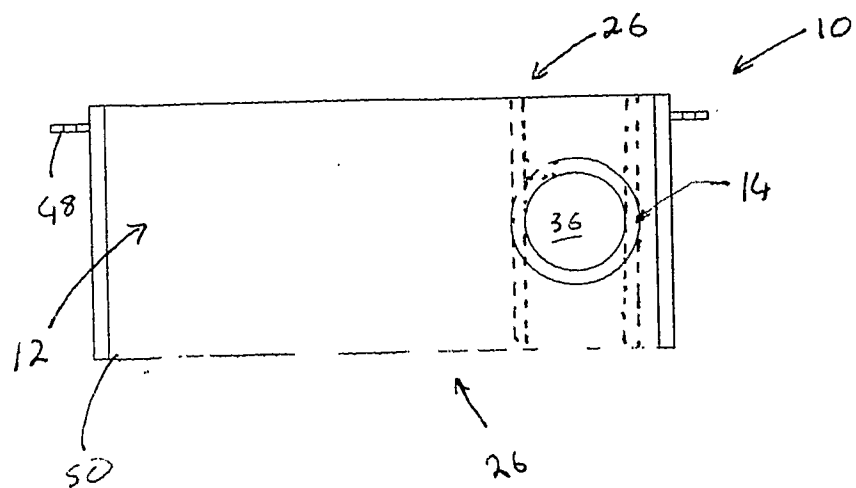


Figure 3

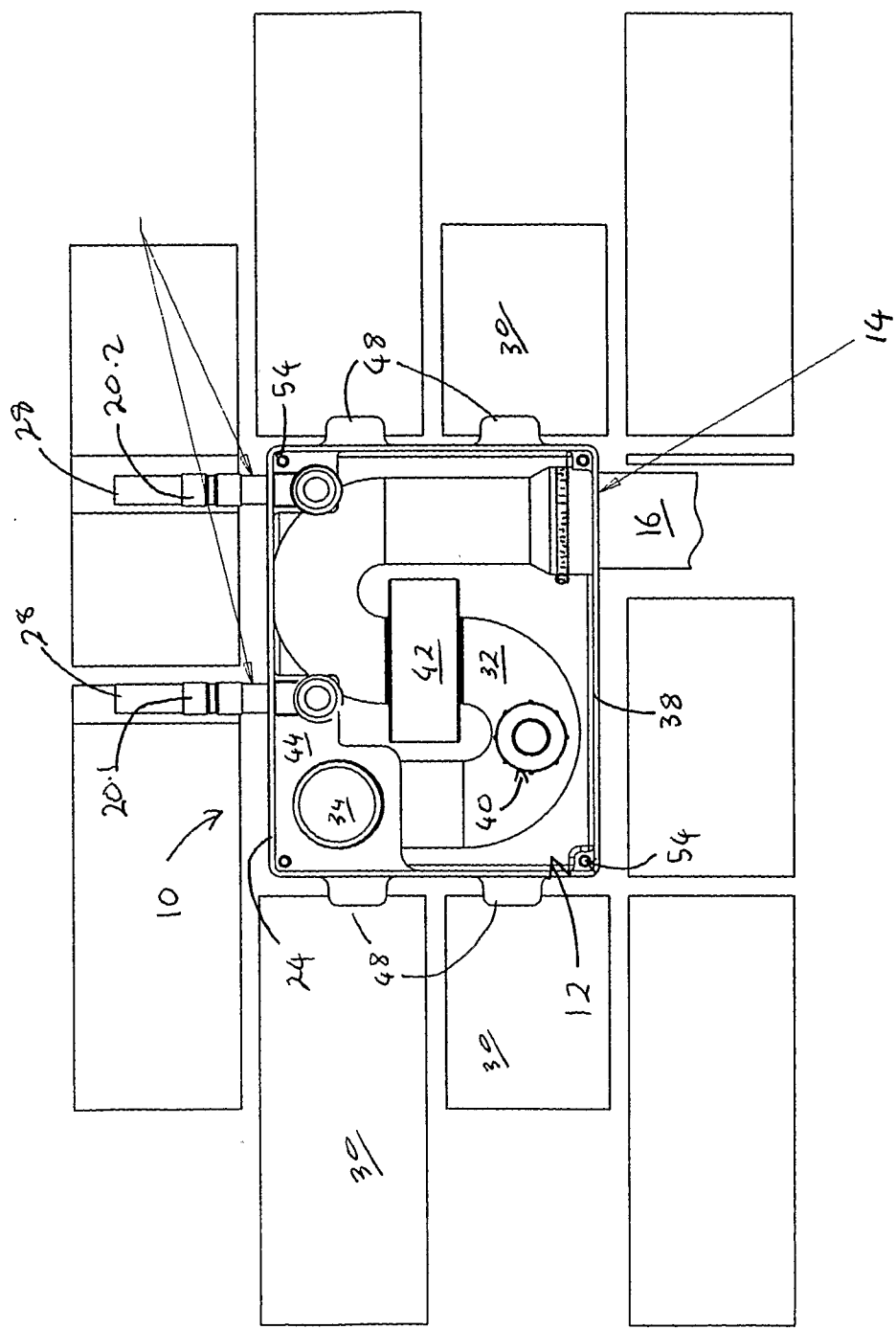


Figure 4

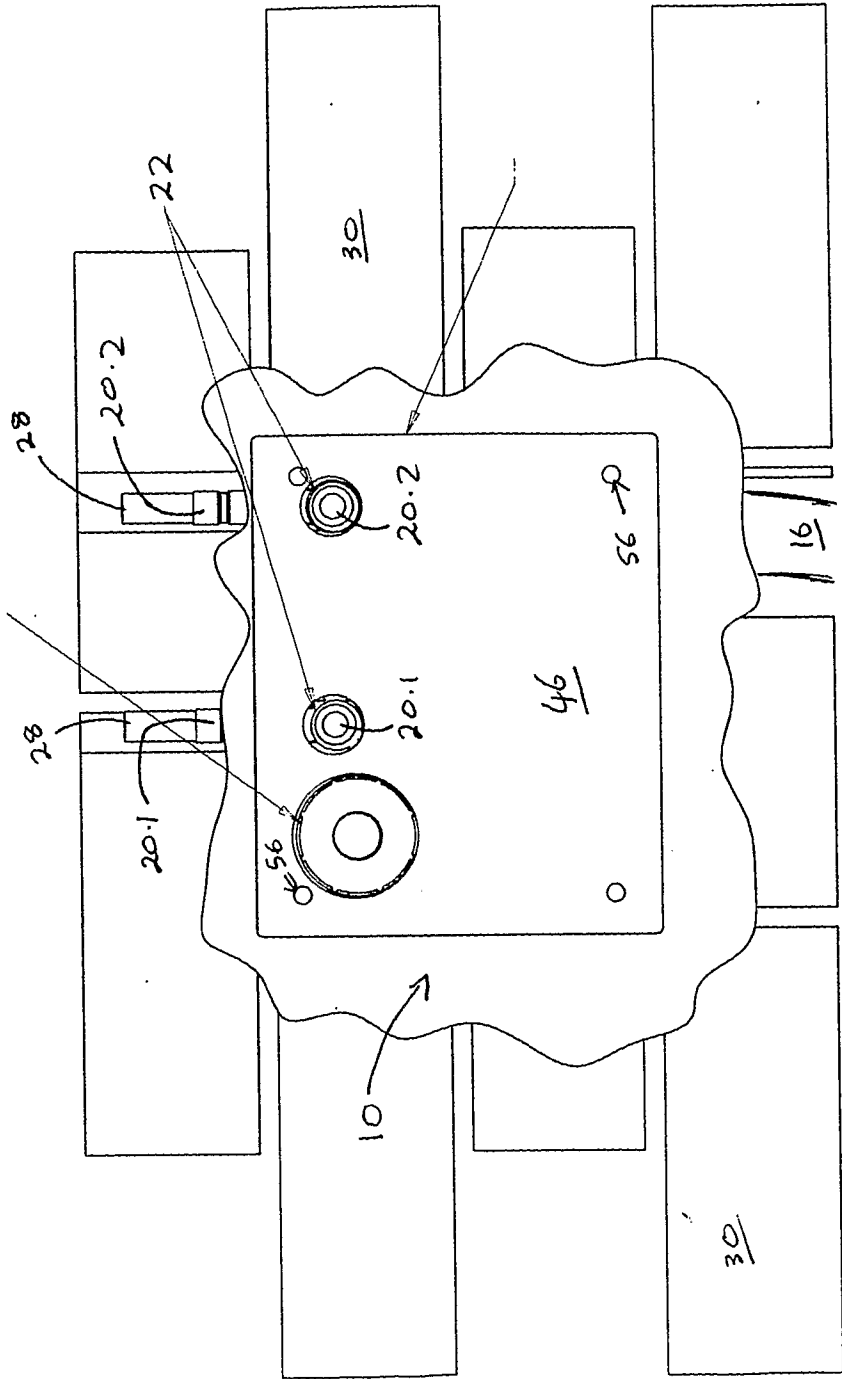


Figure 5

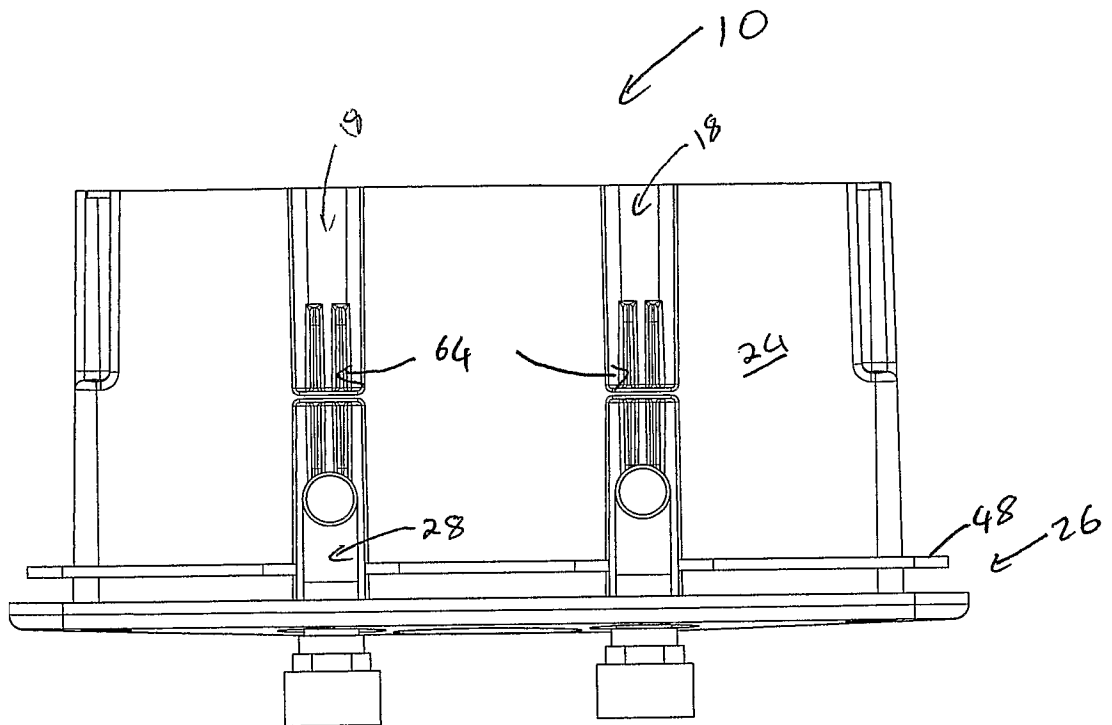


Figure 6

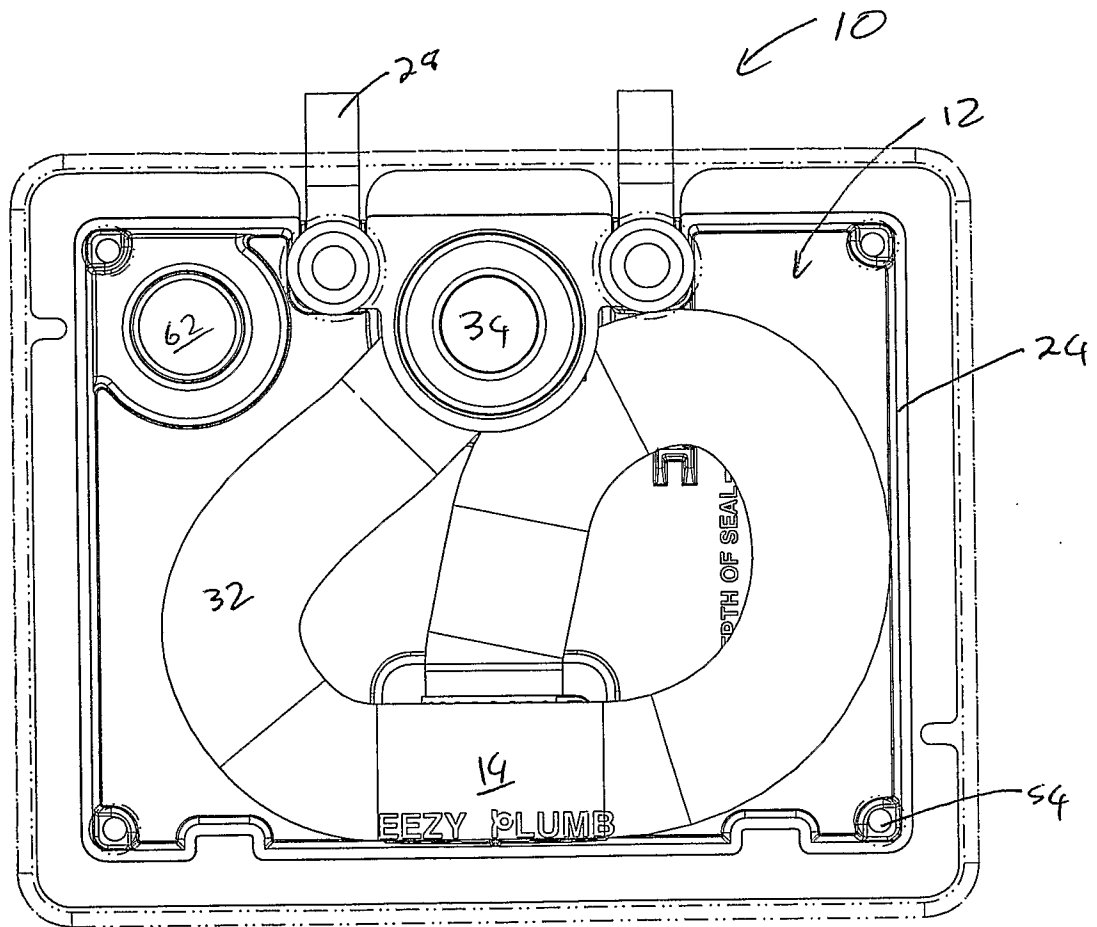


Figure 7

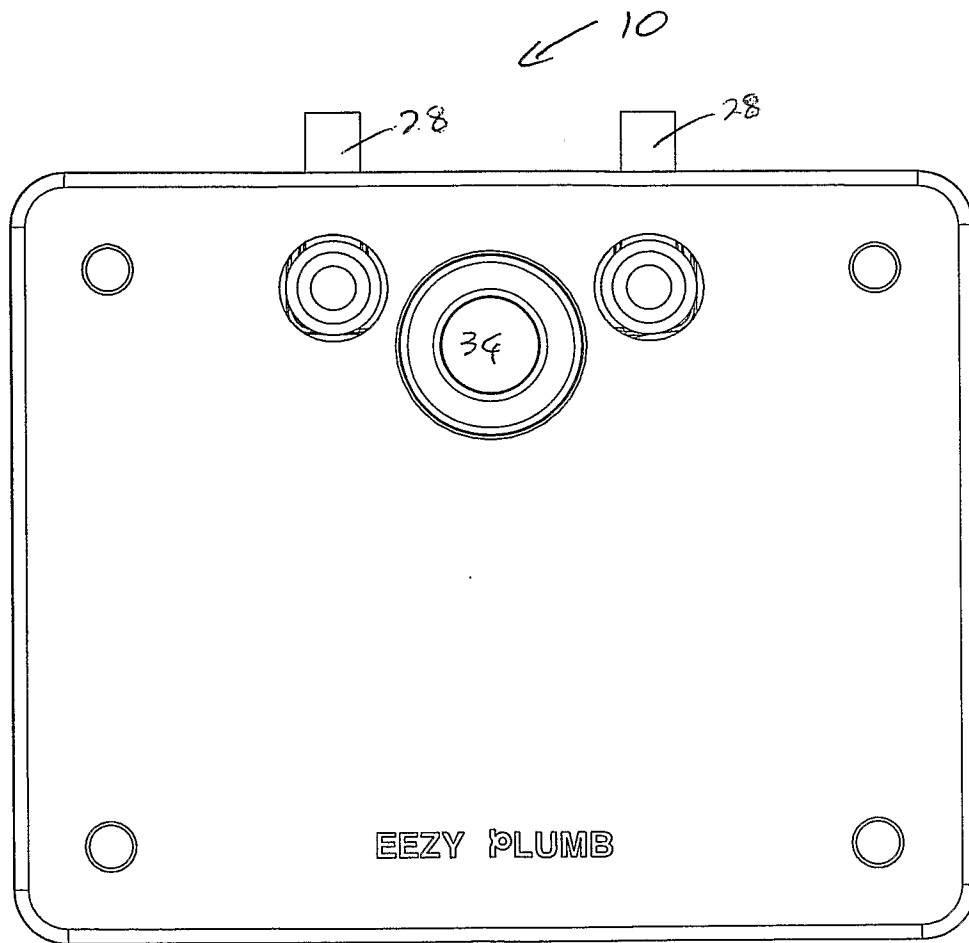


Figure 8

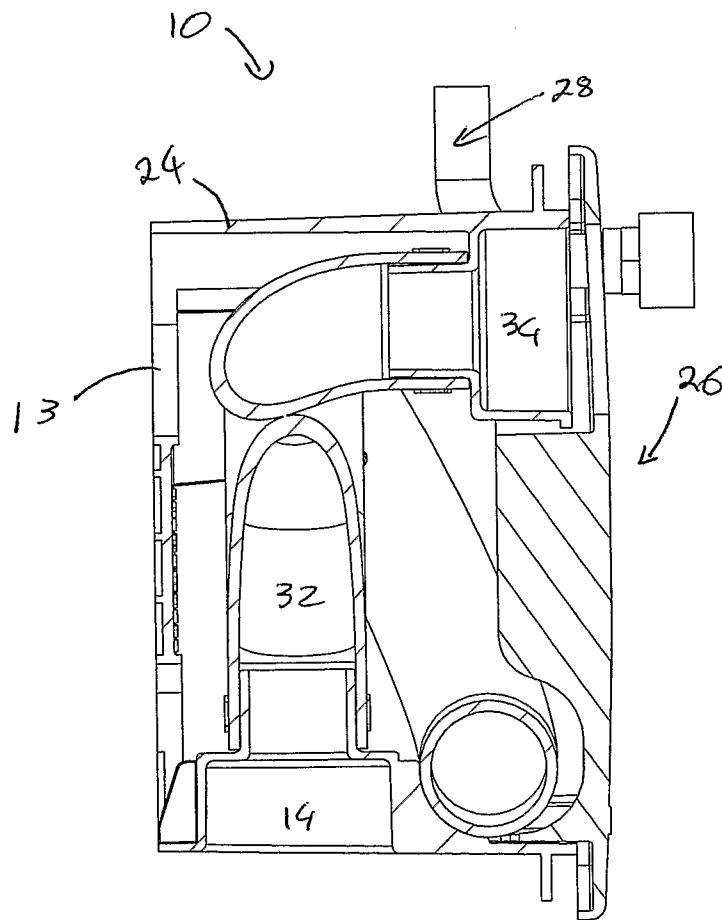


Figure 9

SECTION A-A
SCALE 1:2

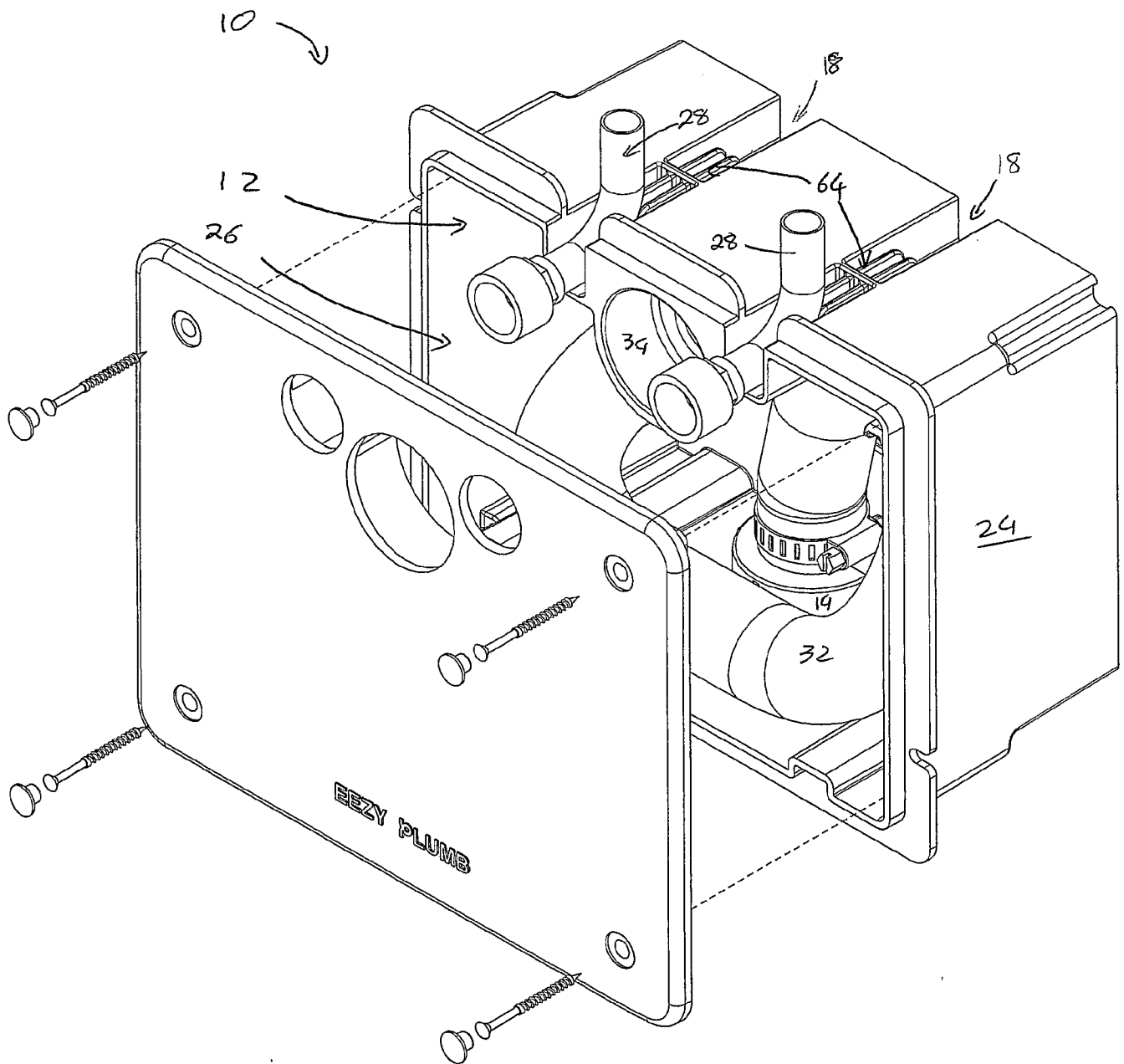


Figure 10

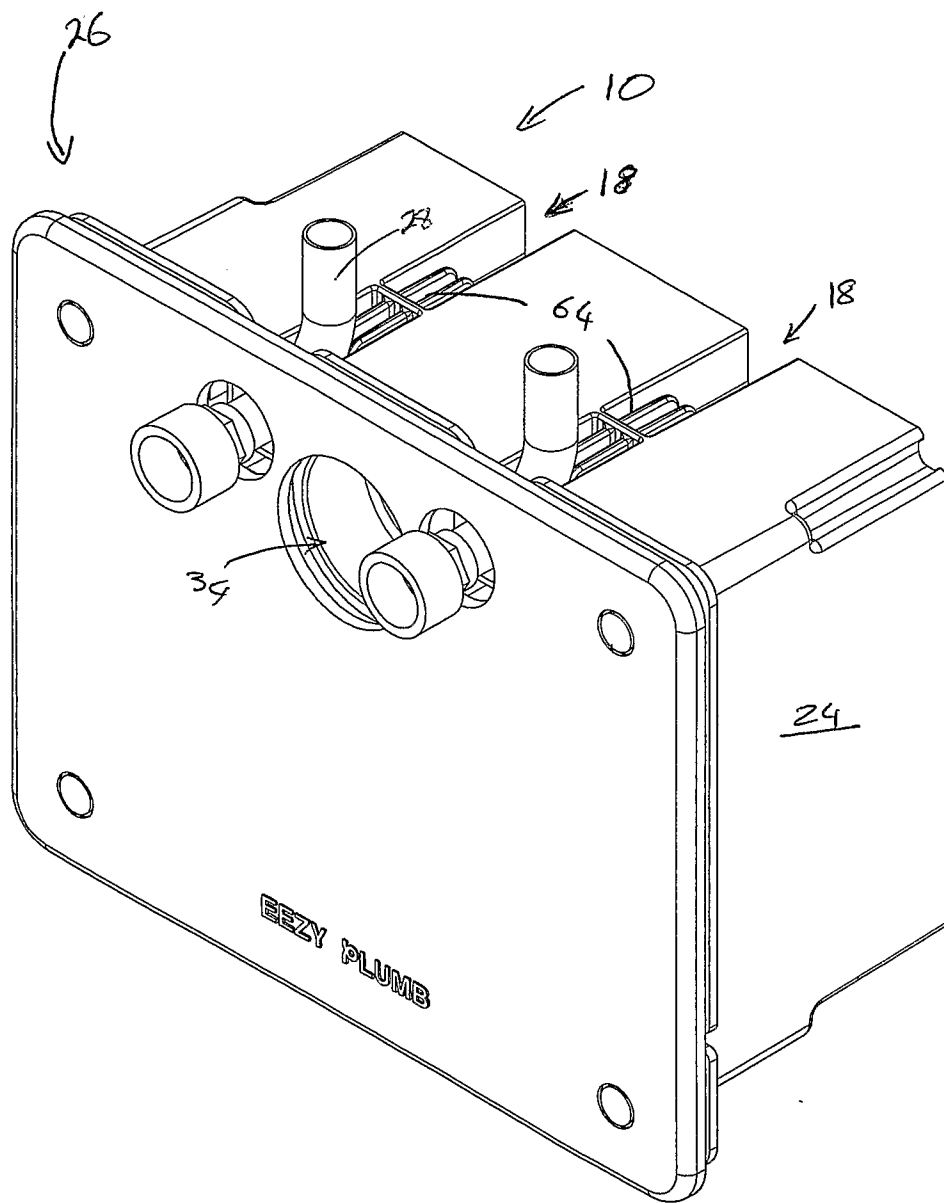


Figure 11

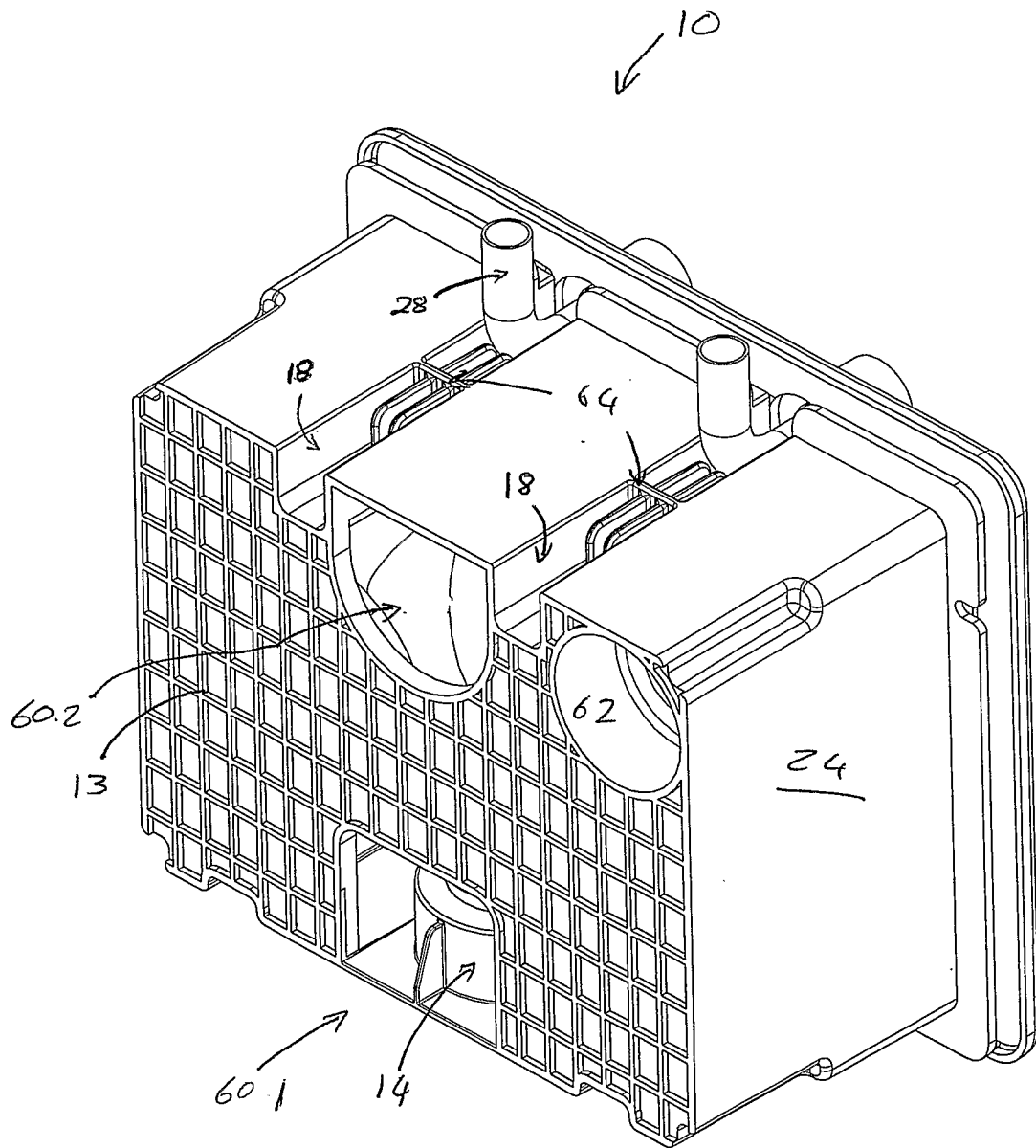


Figure 12

INTERNATIONAL SEARCH REPORT

International application No

PCT/ZA2008/000005

A. CLASSIFICATION OF SUBJECT MATTER

INV. E03C1/02

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)

E03C

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)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6 129 109 A (HUMBER JEFFREY A [US]) 10 October 2000 (2000-10-10) figures 4,5b -----	1-3,9-13
X	GB 2 243 422 A (SAGE PASSANT PETER) 30 October 1991 (1991-10-30) figure 2 -----	1-3,5,7, 9-11
X	EP 0 664 362 A (SAGE PASSANT PETER [GB]) 26 July 1995 (1995-07-26) figure 1 -----	1,5,6,8, 9
X	US 5 653 254 A (CONDON DUANE R [US] ET AL) 5 August 1997 (1997-08-05) figures 2,3,8,9,11 ----- -/-	1-3,5

☒ 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 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 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

20 June 2008

Date of mailing of the international search report

01/07/2008

Name and mailing address of the ISA/

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Authorized officer

Flygare, Esa

INTERNATIONAL SEARCH REPORT

International application No

PCT/ZA2008/000005

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages.	Relevant to claim No.
P,X	WO 2007/038809 A (CRONJE JOHANNES [ZA]; CRONJE LOUISE [ZA]; REINECKE PIETER ALBERTUS [ZA] 5 April 2007 (2007-04-05) the whole document -----	1-13
A	DE 42 43 737 C1 (HANSA METALLWERKE AG [DE]) 17 March 1994 (1994-03-17) figure 1 -----	1,4,10

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box II.2

Claims Nos.: 14

The subject-matter of claim 14 is not clearly disclosed (Article 6 PCT). Additionally, claim 14 refers to drawings, contrary to Rule 6.2(a) PCT.

The applicant's attention is drawn to the fact that claims relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure. If the application proceeds into the regional phase before the EPO, the applicant is reminded that a search may be carried out during examination before the EPO (see EPO Guideline C-VI, 8.2), should the problems which led to the Article 17(2)PCT declaration be overcome.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/ZA2008/000005

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 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.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☒ Claims Nos.: 14
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:
see FURTHER INFORMATION sheet PCT/ISA/210
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 No. III Observations where unity of invention is lacking (Continuation of item 3 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 allsearchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of additional fees.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search reportcovers 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 and, where applicable, the payment of a protest fee.
- ☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- ☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/ZA2008/000005

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 6129109	A	10-10-2000	NONE	
GB 2243422	A	30-10-1991	NONE	
EP 0664362	A	26-07-1995	DE 69501902 D1 DE 69501902 T2	07-05-1998 17-09-1998
US 5653254	A	05-08-1997	NONE	
WO 2007038809	A	05-04-2007	NONE	
DE 4243737	C1	17-03-1994	NONE	