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(54) **A conduit device.**

(57) The invention relates to a device for conducting a fluid, for example liquid state freon or other liquid, comprising a conduit (3) through which the fluid is conducted in order to be heated or cooled by means of a medium flowing around the conduit.

In order to improve the heat transmission from the medium flowing around the conduit to the conduit there is according to the invention positioned an elongated, for example thread shaped, element (4) which helically extends around the conduit with the windings spaced from each other in order to bring the medium flowing around the conduit to perform a circulating motion.

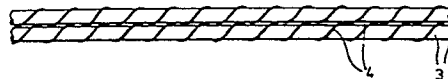


Fig. 2.

The present invention relates to a device for conducting a fluid, for example liquid state freon or another liquid, comprising a conduit through which the fluid is conducted in order to be heated or cooled by means of a medium flowing around the conduit.

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Devices of this kind are used in for example heating systems for pre-heating the heat carrier liquid.

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The object of the invention is to provide a device of the kind described above, in which the heat transmission between the fluid which is conducted through the conduit and the medium flowing around the conduit is better than in the devices previously known.

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In order to comply with this object the device according to the present invention is characterized in that a longitudinal, for example thread shaped, element is helically positioned around the conduit with the windings spaced from each other in order to bring the medium flowing around the conduit to perform a circulating motion around the conduit.

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In a preferred embodiment of the invention the device comprises at least two conduits each provided with a helical element, the conduits being positioned adjacent each other in parallel relationship while maintaining a distance between the conduits by means of the helically extending elements in order to allow the flowing medium to circulate between the

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It is suitable that the conduits positioned together in parallel with each other are provided in an outer pipe, through which the flowing medium is conducted, and that said outer pipe and the conduits

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positioned therein extend helically.

By means of the device according to the invention there is provided a more effective heat transmission between the outer side of the conduit
5 and the medium flowing around the conduit. The conduits can be positioned close to each other inside the outer pipe without causing the outer surfaces of the conduits to contact each other and thereby to obstruct the flowing of the medium outside the conduits.

10 Because of the fact that the flowing medium is brought to perform a circulating motion and the heat transmission to the conduits is thereby improved it is possible to reduce the dimensions of the device.

An embodiment of the invention is described in the following with
15 reference to the accompanying drawing.

Fig. 1a is a side view of a device according to the invention.

Fig. 1b is a section on an enlarged scale showing a portion of the
20 device according to Fig. 1a.

Fig. 1c is a section on an enlarged scale showing another portion of the device according to Fig. 1a.

25 Fig. 2 shows two conduits forming a part of the device according to the invention.

A freon liquid is fed in the direction of the arrow 13 through an expansion valve 7 and a distribution head 8 to pipes 5 and conduits 3
30 connected therewith. A helically extending element 4, preferably consisting of copper wire, extends around each of the conduits 3. The windings of the elements 4 are spaced from each other. The conduits 3 extend in common into a wider outer pipe 2 preferably consisting of polyethylene and extending as a helix 1. The lower end of the helix 1
35 is connected with a pipe section 15, by means of a hose clamp 14, the pipe section 15 having an outlet 10 for a medium, preferably water, which is supplied to the outer pipe 2 at the upper end thereof. Inside the pipe section 15 the pipes 5 extend through a sealed end portion 6

and into the conduits 3.

The upper end of the helix 1 is connected with a pipe section 9 by means of a hose clamp 14, the pipe section 9 having an inlet 12 for
5 a hot medium, preferably water, and an outlet 10 for the heated freon liquid, the pipes 3 being fixed by means of a seal end portion 6.

The invention can be modified within the scope of the following claims.

C L A I M S

1. A device for conducting a fluid, for example liquid state freon or another liquid, comprising a conduit through which the fluid is
5 conducted in order to be heated or cooled by a medium flowing around the conduit, c h a r a c t e r i z e d in that an elongated, for example thread shaped, element (4) is helically positioned around the conduit(3)with the windings spaced from each other in order to bring the medium flowing around the conduit to perform a circulating motion.
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2. A device as claimed in claim 1, c h a r a c t e r i z e d in that it comprises at least two conduits (5) each provided with a helically extending element (4), said conduits (5) being positioned together in parallel with each other while maintaining a distance
15 between the conduits by means of the helically extending elements in order to allow the flowing medium to circulate between the conduits.
3. A device as claimed in claim 2, c h a r a c t e r i z e d in that the conduits (5) positioned in parallel with each other are
20 provided in an outer pipe (2) through which the flowing medium is conducted.
4. A device as claimed in claim 3, c h a r a c t e r i z e d in that the outer pipe (2) and the conduits (5) positioned therein
25 extend as a helix (1).

Fig. 1a.

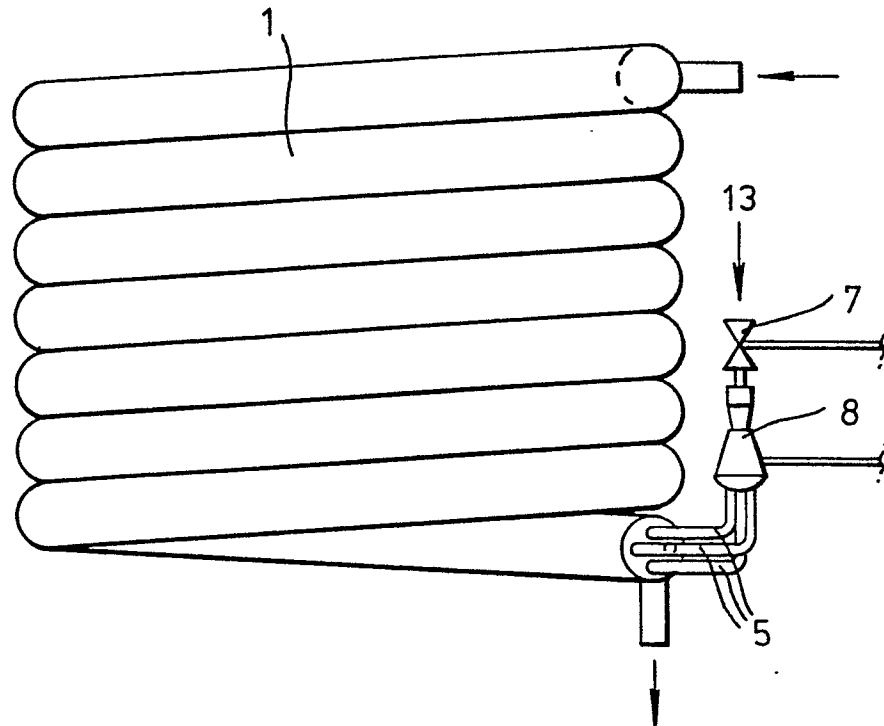
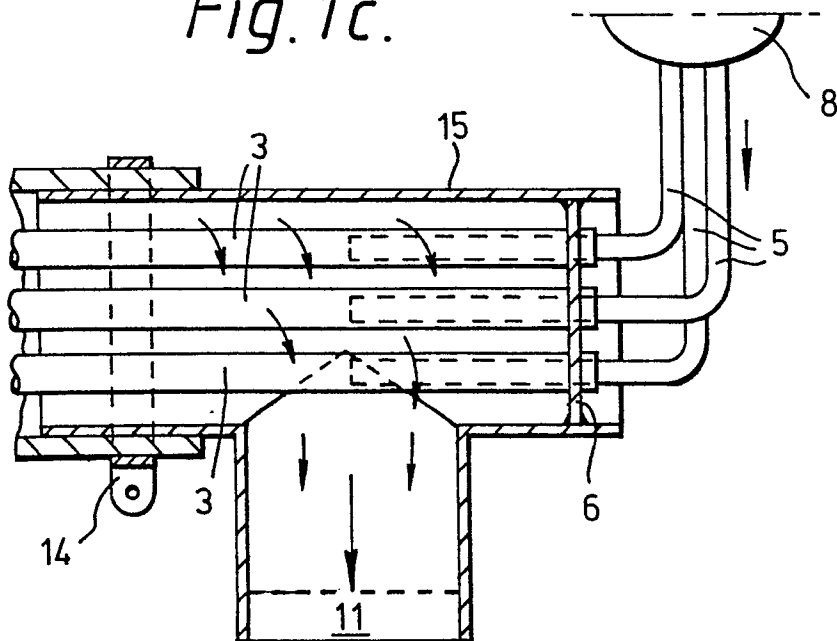
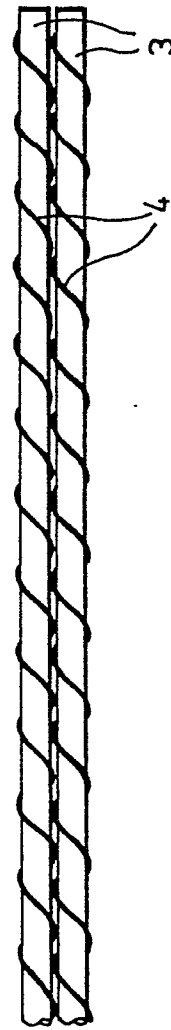
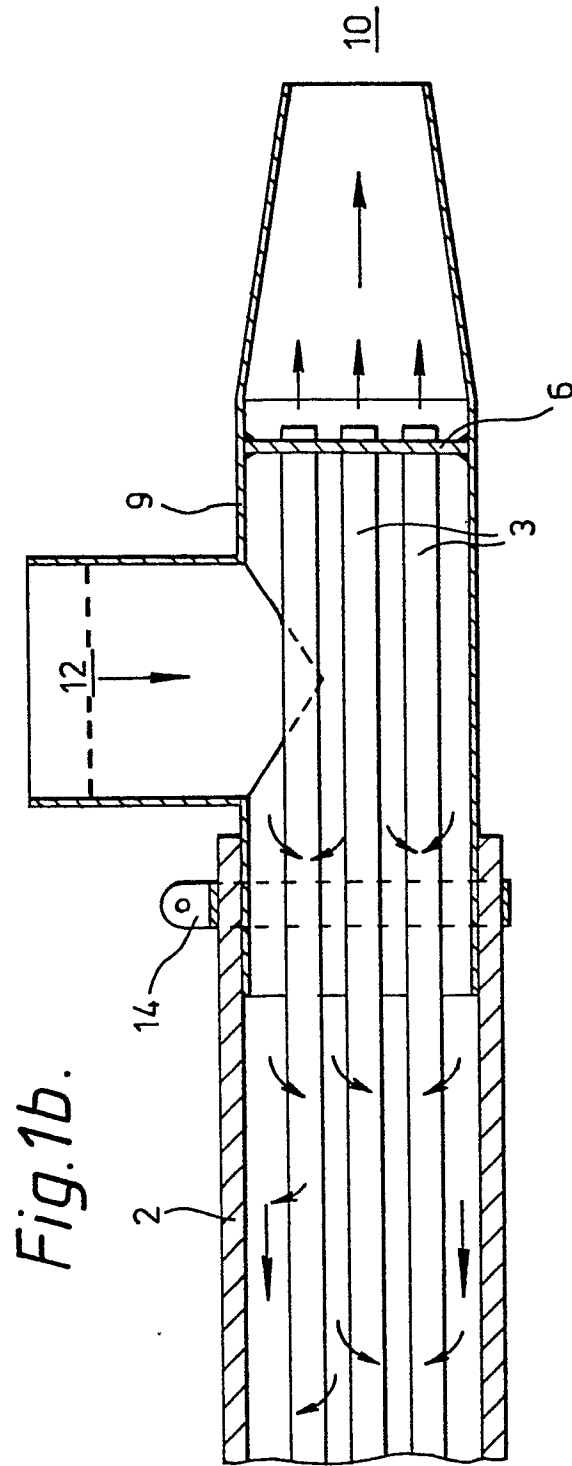


Fig. 1c.



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*Fig. 2.*



European Patent
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EUROPEAN SEARCH REPORT

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Application number

EP 81 85 0068.8

DOCUMENTS CONSIDERED TO BE RELEVANT			CLASSIFICATION OF THE APPLICATION (Int. Cl. ³)
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	
X	<u>DE - U1 - 7 818 067</u> (SCHMÖLE METALL- WERKE) * complete document * --	1-4	F 28 F 1/36 F 28 D 7/10 F 28 D 7/14 F 24 H 1/00
X	<u>DE - A - 1 501 573</u> (MECANO BUNDY GMBH) * page 3, paragraph 2 * --	1	
X	<u>US - A - 3 856 079</u> (GEPPELT) * claim 1 * -- Patents Abstracts of Japan Vol. 4, No. 29, 14 March 1980 page 19M2 & JP - A - 55 - 3502 -- <u>FR - A - 2 169 742</u> (DAMOIS) * page 2, lines 2 to 8 * ----	1 2,3 3,4	TECHNICAL FIELDS SEARCHED (Int. Cl. ³) F 24 H 1/00 F 28 D 7/00 F 28 F 1/00 F 28 F 13/00
			CATEGORY OF CITED DOCUMENTS
			X: particularly relevant A: technological background O: non-written disclosure P: intermediate document T: theory or principle underlying the invention E: conflicting application D: document cited in the application L: citation for other reasons
			&: member of the same patent family, corresponding document
<div><input checked="" type="checkbox"/> The present search report has been drawn up for all claims</div>			
Place of search Berlin		Date of completion of the search 26-11-1981	Examiner PIEPER