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(54) Air channel

(57) Air duct (1) for feeding air to a space for conditioning in which the air duct (1) is arranged, comprising a tubular cover (3) of a flexible material, a framework (4) connected to the cover and suspension means (5), wherein the cover (3) is formed by an elongate piece of flexible material which is releasably connected to the framework (4). The cover (3) can be detached from the framework (4) and cleaned separately thereof.

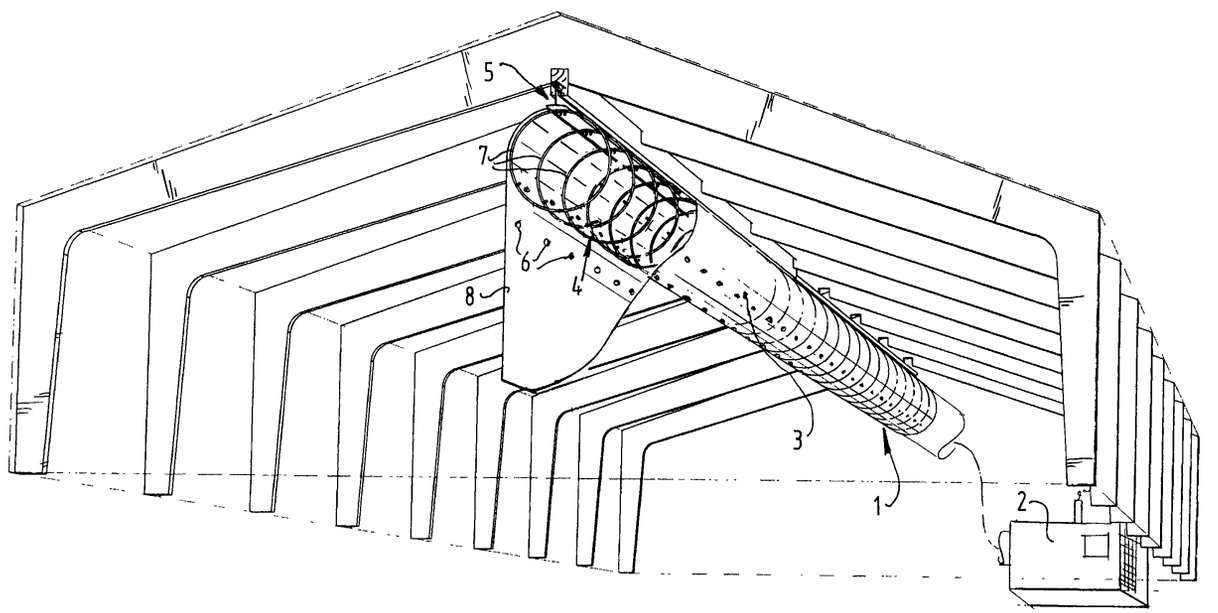

FIG.1

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Description

[0001] The present invention relates to an air duct for feeding air to a space for conditioning in which the air duct is arranged, comprising a tubular cover of a flexible material, a framework connected to the cover and suspension means.

[0002] Such an air duct is applied in for instance tents, swimming pools, factory halls, shops, offices and so on. These flexible air ducts are exceptionally advantageous, particularly for applications in tents, for instance for exhibitions, parties and the like. Because of its flexibility the air duct can be arranged in a space for conditioning and transported in simple manner. The air duct is provided with a framework in order to shape the tubular cover. This prevents noise nuisance as a result of air being carried through a shapeless tube when the conditioning system is started up.

[0003] A drawback of the air duct known from the prior art is that the cover is awkward to clean, since the framework consisting of rings is sewn into the flexible material of the cover and this makes the process of cleaning the cover more difficult. In addition, special wash-resistant rings must be used, which makes the air duct relatively expensive.

[0004] The object of the present invention is to provide an air duct wherein the above stated drawbacks are obviated. For this purpose the air duct according to the present invention is characterized in that the cover is formed by an elongate piece of flexible material which is releasably connected to the framework. The cover can be detached from the framework and cleaned separately thereof. A further advantage is that different covers in different colours and differently printed can be connected to the framework. An air duct can hereby be provided which is adapted to the wishes of the client and which is cheaper than when the framework and the cover are attached to each other as in the prior art.

[0005] The cover is preferably connected releasably to the framework via the suspension means. The cover can hereby be removed while the framework remains connected to the suspension means.

[0006] In a preferred embodiment the suspension means comprise an elongate strip of a flexible material, wherein the longitudinal edges of the strip are releasably attached to the longitudinal edges of the elongate piece of flexible material of the cover, so that the elongate strip forms one whole together with the elongate piece.

[0007] In a particularly advantageous embodiment of the invention the releasable attachment between the suspension means and the cover is formed by a zip fastening. The cover can hereby be attached to the suspension means and released from the suspension means in particularly simple and rapid manner.

[0008] The framework can further be releasably attached to the suspension means so as to also enable cleaning, if necessary, of the elongate strip of the suspension means.

[0009] The present invention will be further elucidated with reference to the annexed drawings. In the drawings:

Figure 1 shows a perspective view of an air duct according to the invention arranged in a tent,
Figure 2 shows a perspective detail view of the air duct shown in figure 1, and
Figure 3 also shows a perspective detail view of the air duct shown in figure 1, seen from another angle.

[0010] Figure 1 shows an air duct 1 arranged in a tent. Air duct 1 is connected to a cooling and/or heating installation 2, preferably disposed on the outside of the tent. The cooling and/or heating installation 2 carries cooled or heated air as required through air duct 1 to the tent for cooling or heating.

[0011] Air duct 1 comprises a tubular cover 3 of a flexible material, a framework 4 connected to cover 3, and suspension means 5. The flexible material of tubular cover 3 is preferably air-permeable. In addition, holes 6 or blow nozzles can be arranged in tubular cover 3, in order to blow air, in particular heated air, into the space for conditioning.

[0012] The framework 4 connected to cover 3 consists of a number of rings 7 arranged at a mutual distance which shape flexible cover 3 into a tube. As shown in figure 1, air duct 1 is suspended in the ridge of the tent by means of suspension means 5.

[0013] Shown clearly in the detail view of figure 2 is that cover 3 is formed by an elongate piece of flexible material 8, which is releasably connected to rings 7 via suspension means 5. Suspension means 5 comprise an elongate strip 9 of a flexible material, the longitudinal edges of which are releasably attached to the longitudinal edges of the elongate piece of flexible material 8 of cover 3. This releasable attachment is formed by a zip fastening 10.

[0014] A second strip 11 with a thickened end 12 is fixed close to the central axis of elongate strip 9 of suspension means 5. The second strip 11 is preferably also manufactured from a flexible material, wherein the thickened portion 12 can be formed by a cable sewn into strip 11. In order to suspend the air duct 1 in the space for conditioning, the thickened portion 12 is pushed into a corresponding groove of a suspension beam 13. Instead of the suspension means 5 shown in the figures, hooks can for instance be fixed to elongate strip 9 in order to hook air duct 1 to a tensioning wire arranged in the space for conditioning.

[0015] Each ring 7 of framework 4 is releasably attached to suspension means 5 by means of strips 14 which are fixed to strip 9 and which are provided on their ends with co-acting press-studs 15. The same method of attachment can be provided between rings 7 and the elongate piece of flexible material 8 of cover 3 in order to fix the rings 7 in longitudinal direction of air duct 1 relative to cover 3.

[0016] Figure 3 shows air duct 1 from another angle. It can be seen even more clearly herein that tubular cover 3 is formed by an elongate piece of flexible material 8, which is releasably attached with its longitudinal edges to elongate strip 9 of suspension means 5 by means of zip fastenings 10. for the purpose of cleaning, the cover 3 is simply unzipped from elongate strip 9, while rings 7 can remain attached to suspension means 5. Together with rings 7, the suspension means 5 form a repeatedly reusable unit, to which can be connected a cover 3 adapted to the wishes of the client. A unit formed by suspension means 5 and framework 4 and a number of different covers 3 of different colours and/or differently printed can suffice for different purposes.

[0017] The installation of an air duct 1 according to the invention in a space for conditioning proceeds as follows. The thickened portion 12 with the cable 16 sewn therein is first pushed into the groove of suspension beam 13. Rings 7 are preferably already attached to the elongate strip 9 of suspension means 5. This is possible because elongate strips 9,11 of suspension means 5 are manufactured from flexible material, whereby the whole can be combined to form a relatively flat package. The one longitudinal edge of cover 3 is then zipped onto the elongate strip 9 of suspension means 5 by means of the one zip fastening 10, cover 3 is wrapped round rings 7 and attached on the other longitudinal edge to the other side of elongate strip 9 by means of the other zip fastening 10.

[0018] During removal of air duct 1 from the space for conditioning the whole air duct 1, thus including cover 3, can be pushed off the support beam 13 to form a relatively flat package. Only if cover 3 has to be cleaned or exchanged for another cover 3, is the cover 3 unzipped from suspension means 5.

[0019] The present invention is not limited to the embodiment shown in the figures. It has already been stated above that other suspension means 5 can be used, and the framework 4 consisting of rings 7 arranged at a mutual distance can also be modified. The invention is therefore limited solely by the content of the appended claims.

Claims

1. Air duct for feeding air to a space for conditioning in which the air duct is arranged, comprising a tubular cover of a flexible material, a framework connected to the cover and suspension means, **characterized in that** the cover is formed by an elongate piece of flexible material which is releasably connected to the framework.

2. Air duct as claimed in claim 1, **characterized in that** the cover is connected releasably to the framework via the suspension means.

3. Air duct as claimed in claim 2, **characterized in that** the suspension means comprise an elongate strip of a flexible material, wherein the longitudinal edges of the strip are releasably attached to the longitudinal edges of the elongate piece of flexible material of the cover.

4. Air duct as claimed in claim 3, **characterized in that** the releasable attachment between the suspension means and the cover is formed by a zip fastening.

5. Air duct as claimed in any of the claims 2-4, **characterized in that** the framework is releasably attached to the suspension means.

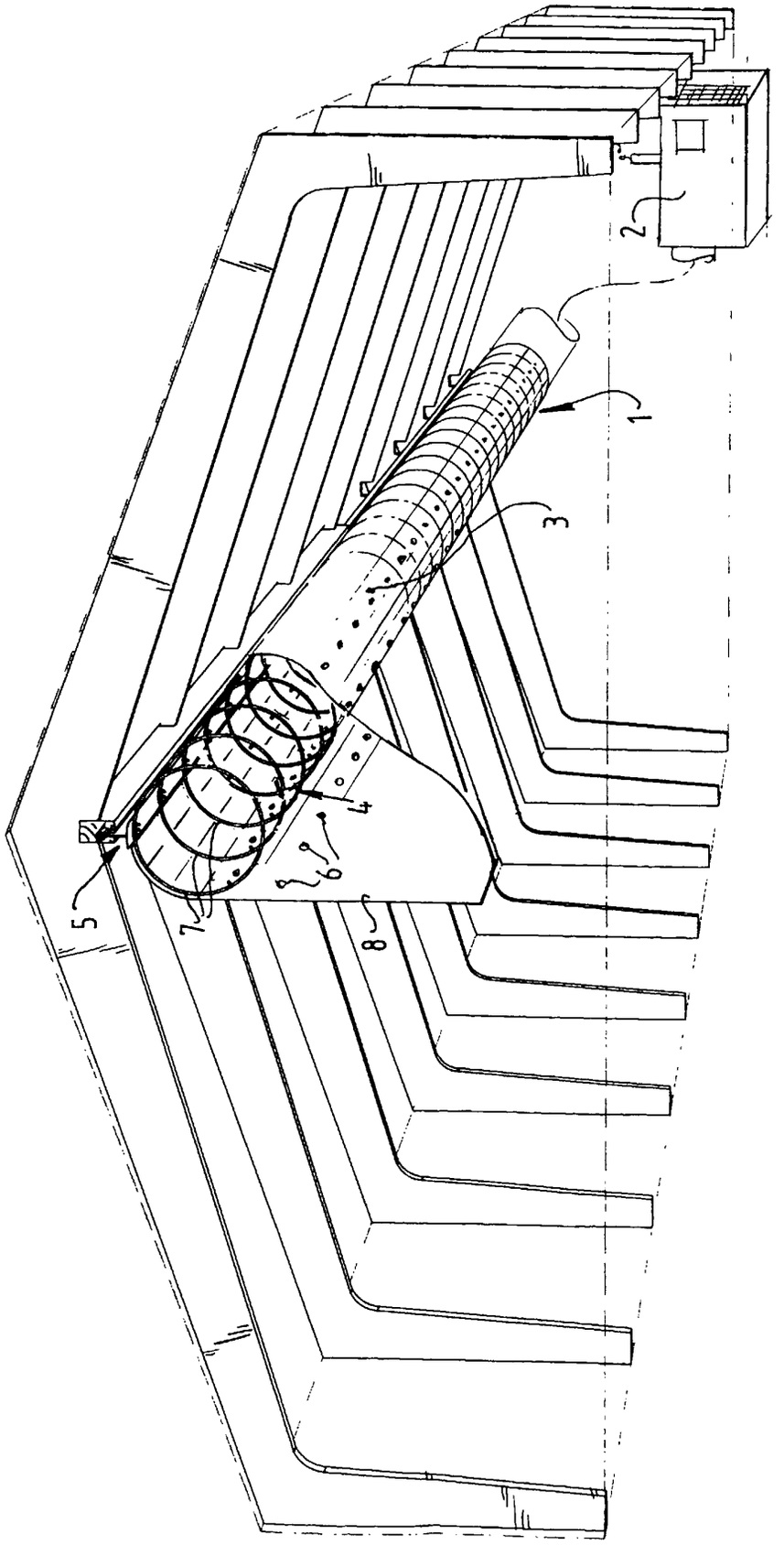


FIG.1

FIG.2

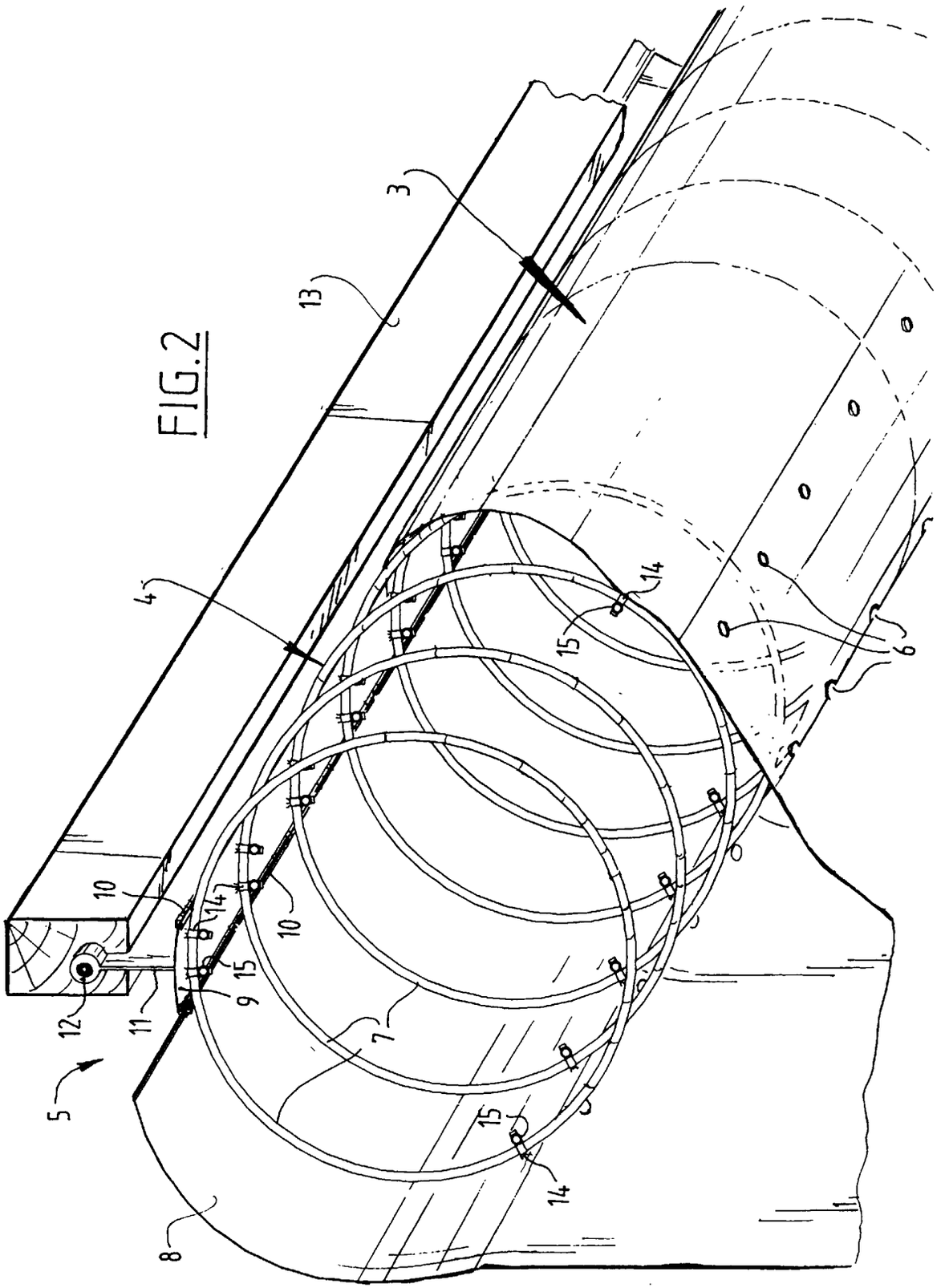
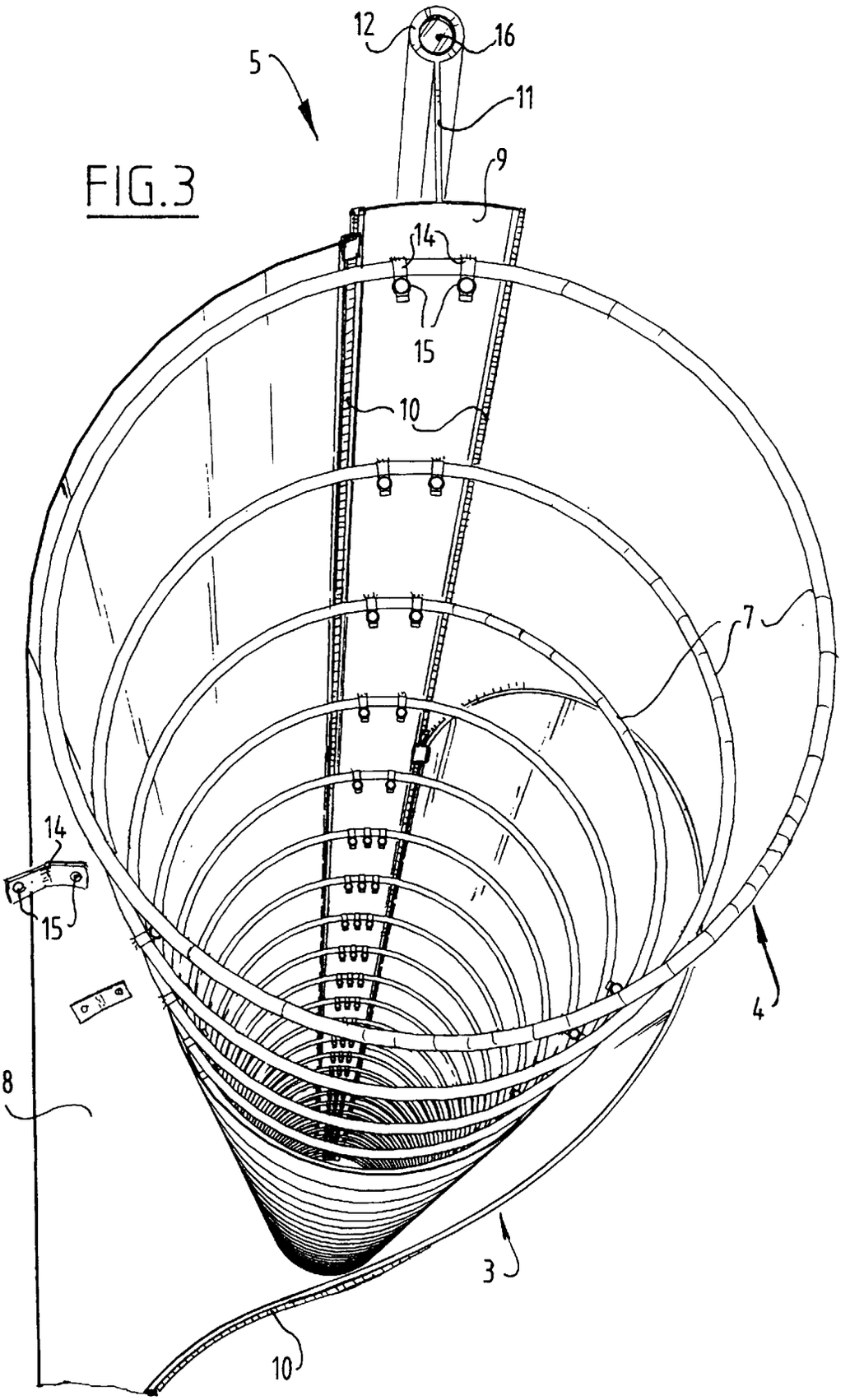


FIG.3



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EUROPEAN SEARCH REPORT

Application Number
EP 00 20 3494

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
X	FR 2 713 317 A (GRIMAUD FRERES) 9 June 1995 (1995-06-09)	1	F24F13/068
A	* abstract * * column 5, line 22 - line 31 * * claim 5 * * figures 1,2 *	2,5	
A	EP 0 899 519 A (ZAMBOLIN MARCO) 3 March 1999 (1999-03-03) * figure 2 *	2	
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TECHNICAL FIELDS SEARCHED (Int.Cl.7)

F24F

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	14 December 2000	De Graaf, J.D.

CATEGORY OF CITED DOCUMENTS

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82