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(71) Applicant: **IVECO MAGIRUS AG**
D-89079 Ulm (DE)

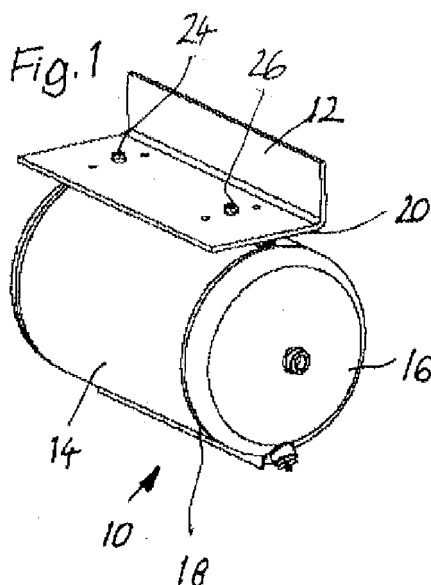
(72) Inventors:
• **Distelrath, Heinz-Peter**
89079 ULM/GOEGGLINGEN (DE)
• **Pohl, Harald**
89155 ERBACH (DE)

(74) Representative: **Borsano, Corrado et al**
Notarbartolo & Gervasi S.p.A.
Corso di Porta Vittoria, 9
20122 Milano (IT)

(54) **Compressed air reservoir**

(57) Compressed air reservoir in the form of a cylindrical body with end caps. Attachment strips (18,20,22,28,36,38,40,42,44,46) are provided on the

outer surface of the compressed air cylinder for the attachment of supplementary elements to the compressed air reservoir and/or for the attachment of the compressed air reservoir to the vehicle.



Description

[0001] The invention concerns a compressed air reservoir in the form of a cylindrical body or any other cross-section with end caps at the ends.

[0002] Compressed air reservoirs of this type are used both for vehicles, especially lorries, as well as for stationary operation, for example for compressors. Compressed air is used in vehicles in activating brakes, for a pneumatic suspension, for ancillary consumers, for assisting gear changing, for the pneumatic suspension of the driver's cabin etc.

[0003] Thus, as a rule, one or more compressed air reservoirs are located on lorries. Generally, a low vehicle weight is aimed at for vehicles, as, above all, vehicle fuel consumption is considerably dependent on the vehicle weight. Thus, basically it is also considered manufacturing compressed air reservoirs out of aluminium or magnesium. In lorries compressed air reservoirs are mostly attached to the main frame or chassis with the aid of suitable mounting arrangements. Tightening straps, brackets, and various mounting fittings have been used up until now for this purpose.

[0004] The underlying objective of the invention is to construct a compressed air reservoir in such a way as to facilitate both the attachment of supplementary elements to the compressed air reservoir as well as the attachment of the compressed air reservoir to the vehicle.

[0005] This objective is achieved according to the invention in that attachment strips are provided on the outer surface of the compressed air reservoir in order to attach ancillary elements to the compressed air reservoir and/or to mount the compressed air reservoir on the vehicle.

[0006] The attachment strip can, for example, have an undercut slot which can be one with e.g. a dove-tailed-slot, a T-slot, or any other shape. This attachment strip will be inserted into the wall of the reservoir, while the reservoir wall is joined on both sides to the attachment strip and the reservoir thus sealed.

[0007] The attachment strips are extruded strips, which can be cut to length according to the reservoir casing.

[0008] Consequently, as undercut dove-tailed, T-shaped or any other shape of slots are provided on the outer surface of the compressed air reservoir, it is possible to attach supplementary parts of any kind to a compressed air reservoir with the aid of slide blocks, bolts, screws etc.. It is also possible to attach the compressed air reservoir itself to the vehicle main-frame or chassis.

[0009] The slot is located, for example, in a longitudinal seam of a cylindrical casing, formed out of sheet metal, of a compressed air reservoir. In practice, the slot, in the form of an extrusion, can be welded between the mating edges of the sheet metal forming the casing. In every case, a slot is located on the surface of the compressed air reservoir.

[0010] Naturally, light metals such as aluminium, magnesium and suchlike are particularly suited for extrusion

of the attachment strips. The specialist will, of course, pay attention, in the choice of materials to be used, to the mutual compatibility in welding and the extrudability.

[0011] The following explain in more detail, with the aid of the attached drawings, preferred examples of embodiments of the invention.

[0012] Fig. 1 shows a compressed air reservoir in a perspective view with an upper longitudinal slot as well as a raised T-section underneath, each in a surface line;

[0013] Fig. 2 illustrates the mounting of two connected compressed air reservoirs;

[0014] Fig. 3 shows the raised T-section on the upper and the longitudinal slot on the lower reservoir in an enlarged view;

[0015] Fig. 4 shows a compressed air reservoir with two parallel attachment slots; and

[0016] Fig. 5 is an enlarged front view of Fig. 4.

[0017] Fig. 1 shows a compressed air reservoir 10, mounted on a bracket 12. The compressed air reservoir has a cylindrical casing 14, on both axial ends of which are located end caps 16. The rear end cap is not visible in Fig. 1. The end caps 16 are domed outwards, as is usual for compressed air reservoirs. Between the front end cap 16, visible in the drawing, and the casing, there is an attachment strip 22, in which is located an undercut slot. The slot 18, which can be, for example, an undercut T-slot, allows the mounting of all types of additional drive systems and assemblies.

[0018] A further slot 20 is located below the bracket 12. This slot 20 is a longitudinal slot which runs along a surface line of the casing 14. The slot 20 lies in a rail 22 which accommodates the cavity of the slot 20. The rail 22 projects slightly beyond the length of the compressed air reservoir as the casing is only relatively thin-walled. The slot 20 in a surface line of the compressed air reservoir accommodates suitable bolts, screws or slide blocks and is attached to the horizontal surface of the L-shaped bracket 12 with the aid of two screws 24, 26.

[0019] Fig. 2 shows the mounting of two compressed air reservoirs 25, 27. The upper reservoir 25 is attached to the horizontal surface of the 12 in the way described, as in Fig. 1, while a connection is made between the lower reservoir 27 and the upper reservoir with the aid of an assembly consisting of a raised T-section as a stud 28 (Fig. 3), provided on the lower side of the upper reservoir 25, and an attachment strip with slot 29 on the upper side of the lower reservoir. This assembly is illustrated in Fig. 3, partially as a perspective view and partially as a front view. The raised T-section 28 on the underside of the upper reservoir 25 is situated between two side walls 30, 32 which serve as stabilisation, but are not necessary in every case.

[0020] Fig. 4 shows a further reservoir 34 which corresponds to reservoir 10 of Fig. 1, but has two parallel slots 36, 38 on the upper side.

[0021] Fig. 5 again shows, on the underside, two rows of raised T-sections as studs 40, 42 running into slots 44, 46 on the upper side of the compressed air reservoir

34, which lie parallel to and at a distance from each. In this way, greater loads can be carried than with only one slot.

[0022] The previously described embodiments initially illustrate the particular case in which compressed air reservoirs should be mounted or attached to parts of a vehicle. The slots can, of course, also be used to attach any components to the compressed air reservoirs.

[0023] The attachment strips running along the surface line have two slots on their base in which both mating edges of bent metal sheet, forming the casing of the compressed air reservoir, are fitted. The join is made by welding. Thus attention must be paid that the sheet metal of the casing is compatible with the material of the attachment strips.

[0024] Two parallel slots naturally allow heavier compressed air filters to be mounted. In manufacturing a casing by welding sheet metal in this embodiment, a sheet metal strip has to be welded between two rails containing a slot and, moreover, the sheet metal of the casing has to be welded to both the slotted strips from the other side.

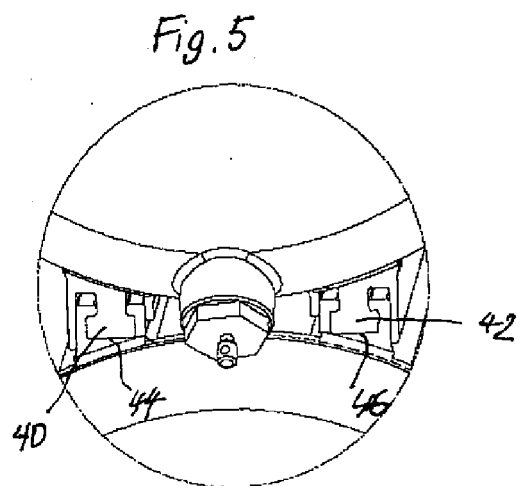
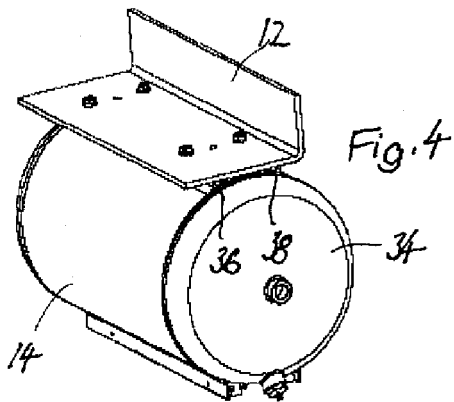
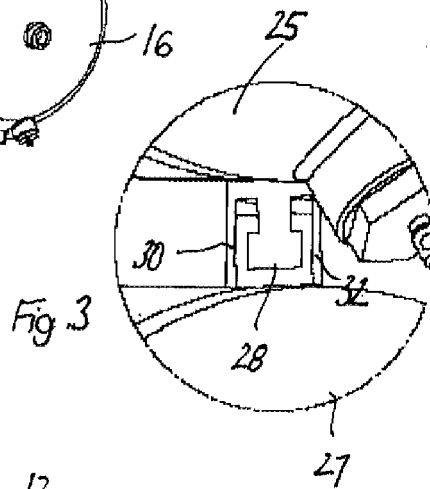
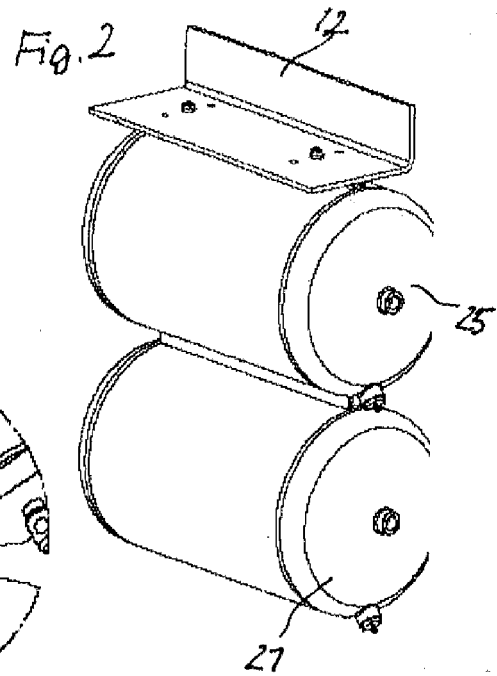
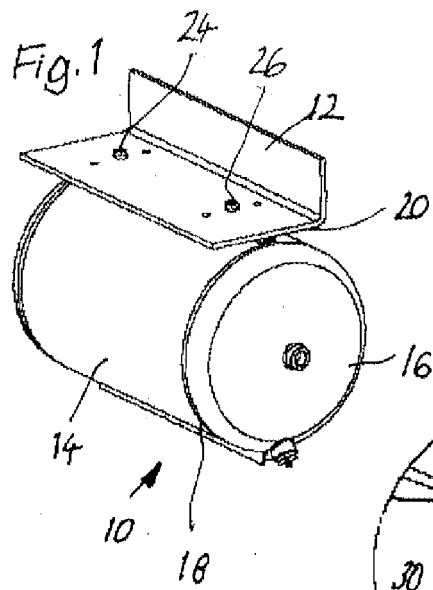
[0025] The attachment strips, particularly those which are provided with a slot, are preferably manufactured by extrusion. According to previous knowledge, light metals such as aluminium, magnesium or their alloys, are above all suited to this method.

[0026] Welding of these attachment strips, for example between two mating edges of the bent sheet metal forming the cylinder, is carried out, for instance, by laser welding.

6. Compressed air reservoir according to one of the Claims 1 to 4, **characterised in that** at least one attachment strip (20) is provided on a surface line of the cylinder.

Claims

1. Compressed air reservoir in the form of a cylindrical body (12) with end caps at the end, **characterised in that** attachment strips (18,20,22,28,36,38, 40,42,44,46) are provided on the outer surface of the compressed air cylinder for the attachment of supplementary elements to the compressed air reservoir and/or for the attachment of the compressed air reservoir to the vehicle.
2. Compressed air reservoir according to Claim 1, **characterised in that** the attachment strip has an undercut slot with a downwards opening.
3. Compressed air reservoir according to Claim 2, **characterised in that** the slots (18,20,36,44) have a T-cross-section.
4. Compressed air reservoir according to Claim 1, **characterised in that** the slots have a dove-tailed cross-section.
5. Compressed air reservoir according to Claim 1, **characterised in that** one attachment strip (20) is provided in the reservoir casing.





European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 07 11 8398

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The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 17 March 2008	Examiner Ott, Thomas
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	

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EPO FORM 1503 03.82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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