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(54) Compressed air reservoir

(57) The invention concerns a compressed air reservoir in the form of a cylindrical body (12) with a end cap at the end (14). The cylindrical body (12) is an extrusion which has an attachment strip (22,26,30,40) integrated in the casing, easily accessible from the outside, in at least one surface line.

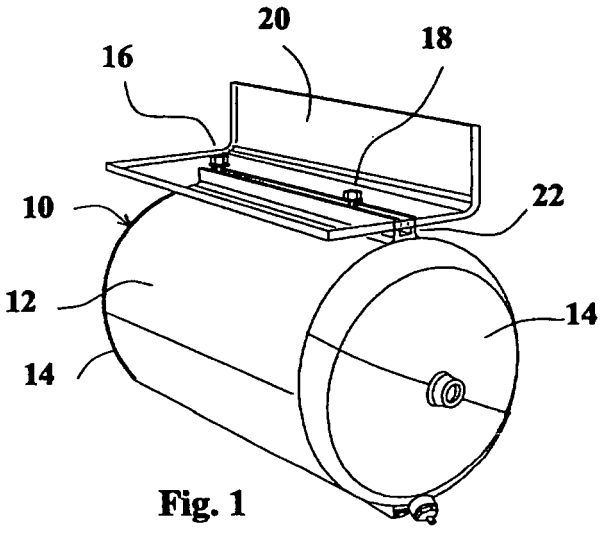

Fig. 1

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Description

[0001] The invention concerns a compressed air reservoir in the form of a cylindrical body with end caps at the ends.

[0002] The invention particularly refers to a compressed air reservoir as used for vehicles, especially lorries. Compressed air reservoirs are also used for stationary operation, for example for compressors. In vehicles, numerous functions are operated by compressed air, for example in activating brakes, for a pneumatic suspension or for ancillary consumers, such as the pneumatic suspension of the driver's cabin etc.

[0003] Thus, as a rule, one or more compressed air reservoirs are located on lorries.

[0004] In vehicle manufacturing, a low vehicle weight is generally aimed at, as, above all, fuel consumption is considerably dependent on the vehicle weight. Thus, in many applications, aluminium, for example, is used. Compressed air reservoirs of aluminium or magnesium are known.

[0005] Compressed air reservoirs are mostly attached to the main frame or chassis with the aid of suitable mounting arrangements. Supporting brackets, tightening straps and various mounting and connecting fittings have been used up until now for this purpose.

[0006] 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.

[0007] To achieve this objective, the compressed air reservoir according to the invention is characterised in that the the cylindrical body is an extrusion, which has an attachment strip integrated in the casing, easily accessible from the outside, in at least one surface line, and that the end caps are welded to the body.

[0008] The attachment strip is preferably furnished with a slot, accessible from the outside. In this respect, the attachment strip does not appear as a physically seperate part, as it is directly integrated in the extruded wall of the compressed air reservoir.

[0009] The end caps are generally welded to the cylindrical body.

[0010] The slot is preferably an undercut slot, e.g. one with a T-section, dove-tailed-section or any other shape. In this way, it is possible to attach supplementary elements to the compressed air reservoir with the aid of bolts, slide blocks or nuts within the slot, or to attach the compressed air reservoir itself to the vehicle. The cylindrical body is not necessarily a circular cylinder. Depending on the available space within the vehicle, something other than a circular cross-section can be desirable. It is often difficult to accommodate a circular cylindrical compressed air reservoir, especially in passenger cars with pneumatic suspensions, so that, for instance, flat, square-cut shaped compressed air reservoirs are considered in this area.

[0011] The attachment strip according to the invention can also be used to connect together two or more compressed air reservoirs.

[0012] The following explain in more detail, with the aid of the attached drawings, preferred examples of embodiments of the invention.

[0013] Fig. 1 shows the mounting of a compressed air reservoir according to the invention to a bracket;

[0014] Fig. 2 illustrates the mounting of two connected compressed air reservoirs;

[0015] Fig. 3 is a detailed view and illustrates the combination of two attachment strips to connect two reservoirs corresponding to Fig. 2;

[0016] Fig. 4 shows a compressed air reservoir with two attachment strips and correspondingly constructed bracket;

[0017] Fig. 5 corresponds to Fig. 2 and shows the mounting of two compressed air reservoirs with the aid of two attachment strips;

[0018] Fig. 6 is a detailed view to illustrate the type of connection of the compressed air reservoirs corresponding to Figs. 4 and 5.

[0019] In Fig. 1, a compressed air reservoir is denoted in its entirety by 10. It comprises a circular cylindrical body 12 and two end caps 14 which seal the cylinder at the front and rear ends.

[0020] The compressed air reservoir is attached to a horizontal flange of a bracket 20 with L-shaped cross-section with the aid of two bolts 16, 18.

[0021] Both bolts 16 and 18 are able to be slid within a slot, denoted by 22. The bolts are fastened to the aforementioned bracket 20, together with the complete reservoir, by means of nuts. The T-slot 22 forms an attachment strip which is used, according to Fig. 1, to mount the compressed air reservoir 10 to the bracket 20. The T-slot is manufactured, together with the cylindrical body 12, by extrusion, particularly out of aluminium or magnesium or their alloys. In this way, the attachment strip with the T-slot is directly integrated in the wall area of the cylindrical body.

[0022] It is also possible to design the attachment strip not as a slot, but as a raised rail with T-shaped cross-section, as shown in Fig. 3. Fig. 3 belongs to the view in Fig. 2 and shows the assembly of two compressed air reservoirs one above the other. The lower compressed air reservoir 24 basically corresponds to the compressed air reservoir 10 according to Fig. 1. An attachment strip which forms a T-slot 26 runs along the upper surface line. This T-slot 26 is extruded together with the cylindrical body and is therefore completely integrated in it. A raised rail 30 with T-shaped cross-section runs on the underside of the upper compressed air reservoir and can be slid along the T-slot 26 provided on the lower reservoir. This raised T-shaped rail likewise produced by means of extrusion together with the cylindrical casing of the upper compressed air reservoir 28 (not shown).

[0023] This T-shaped rail 30 is flanked on both sides by flanges 32,34 which overlap the T-slot section of the

lower reservoir on both sides and in this way provide for greater stability of the assembly. Depending upon the situation, the aforementioned flanges 32,34 can also be omitted.

[0024] Fig. 2 illustrates the mounting of both compressed air reservoirs 24 and 28 below the bracket 20.

[0025] The rail 30 with T-shaped cross-section together with both the side flanges 32 and 34 form an attachment rail according to the present invention.

[0026] Two parallel attachment strips can be provided for particularly heavy compressed air reservoirs or for other especially heavy loading of the mounting of the compressed air reservoir. This is illustrated in Fig. 4. On a bracket 36 is a compressed air reservoir 38 which has T-slots 40,42 on either side of the surface line and which, in this case, is also manufactured by extrusion together with the cylindrical body of the compressed air reservoir 38. These T-slots allow the attachment of the compressed air reservoir 38 to the horizontal flange of the bracket 36 with the aid of bolts 44,46,48,50.

[0027] How this presents itself in detail, emerges from Fig. 6. Here the T-slots 40,42 of the lower reservoir 52 are again shown, in which the raised T-section rails 54,56, located on the underside of the upper reservoir 52, engage, as already shown in principle in and explained in connection with Fig. 3.

[0028] In each case, both the undercut slots 40,42 as well as the raised T-section rails 54,56 of the upper compressed air reservoir together with its cylindrical casing are manufactured by extrusion. Thus, aluminium and magnesium can above all be considered as raw materials. Both the lower slots 40, 42 as well as the upper projecting rails 54,56 are considered attachment strips according to the present invention.

[0029] The embodiments shown and described here correspond to circular cylindrical compressed air reservoirs. However, it is also possible to manufacture compressed air reservoirs with other cross sections.

[0030] Other attachment strips can be used which are also extruded together with the cylindrical casing of the body, for example those which are raised with respect to the compressed air reservoir.

Claims

1. Compressed air reservoir in the form of a cylindrical body (12) with a end cap at the end (14), **characterised in that** the cylindrical body (12) is an extrusion which has an attachment strip (22,26,30,40) integrated in the casing, easily accessible from the outside, in at least one surface line.

2. Compressed air reservoir according to Claim 1, **characterised in that** the attachment strip has a slotted-section.

3. Compressed air reservoir according to Claim 1, **characterised in that** the slot is undercut.

4. Compressed air reservoir according to Claim 1, **characterised in that** the slot has a T-cross-section.

5. Compressed air reservoir according to Claims 1 to 3, **characterised in that** the slot is dove-tailed.

6. Compressed air reservoir according to Claim 1, **characterised in that** the cross-section of the attachment strip has a raised T-section.

7. Compressed air reservoir according to Claim 1, **characterised in that** the cross-section of the attachment strip has a raised dove-tailed-section.

8. Compressed air reservoir according to Claims 1 to 6, **characterised in that** the cylindrical body (12) is made of magnesium.

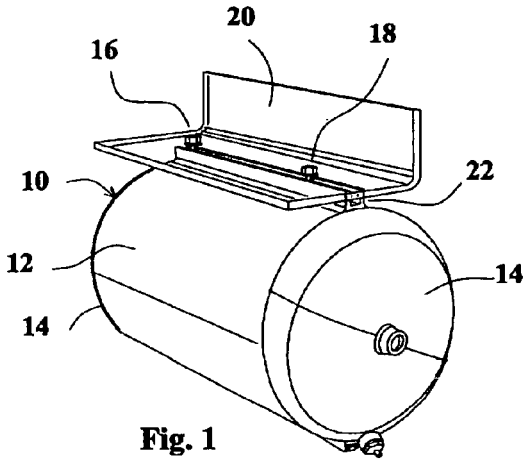

Fig. 1

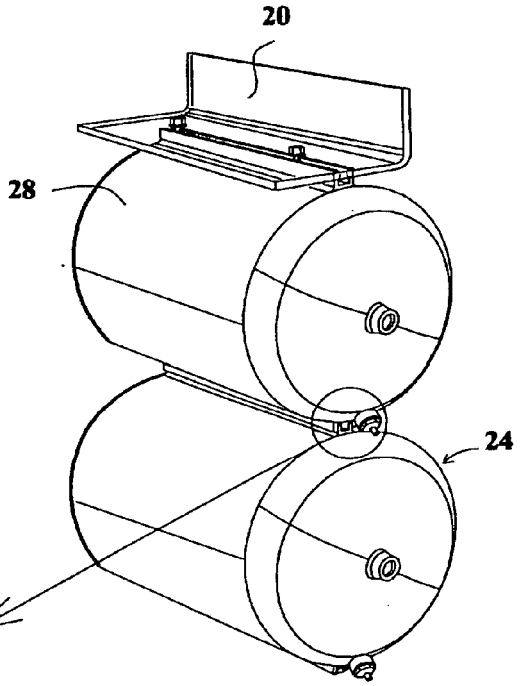

Fig. 2

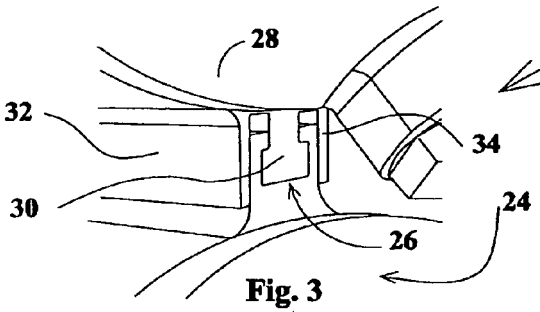

Fig. 3

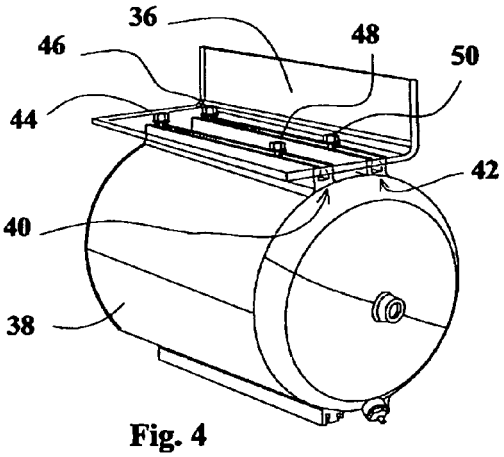

Fig. 4

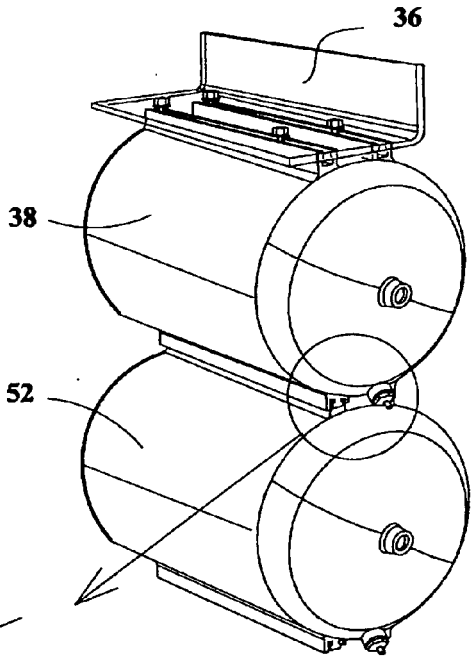

Fig. 5

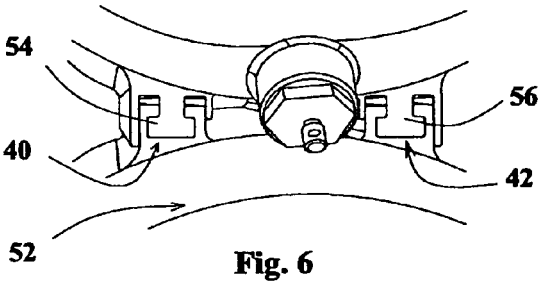

Fig. 6

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EUROPEAN SEARCH REPORT

Application Number
EP 07 11 8395

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
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The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	17 March 2008	Ott, Thomas

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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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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