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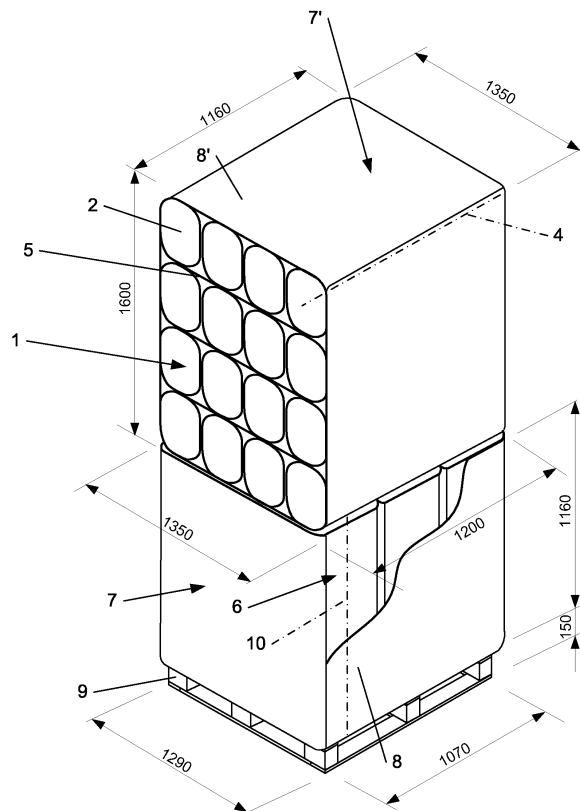
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(54) **Assembly of stacked rolls or slabs of compressible insulation material**

(57) Assembly of stacked rolls (1) or slabs of compressible insulation material (2) having an axial direction wherein the axial direction (4) of one portion of said rolls or slabs is horizontal and the axial direction (10) of another portion of said rolls or slabs is vertical.



**Fig. 2**

## Description

**[0001]** The present invention relates to an assembly of stacked rolls or slabs of compressible insulation material having an axial direction.

**[0002]** Such assemblies, as well as their method of manufacturing, are known from a long time (see for example EP-A-0220980, EP-A-1321382, DE-A-10026269 and W02004/103821).

**[0003]** In these prior documents all the rolls or slabs of an assembly have either a vertical axis direction or a horizontal axis direction.

**[0004]** The object of the present invention is to improve the loadability of the vehicles provided for transporting said assemblies, particularly the trucks.

**[0005]** In order to solve this problem it is provided according to the invention an assembly of stacked rolls or slabs of compressible insulation material having an axial direction wherein the axial direction of one portion of said rolls or slabs is horizontal and the axial direction of another portion of said rolls or slabs is vertical.

**[0006]** Advantageously each roll or slab is wrapped in a compressed state within a wrapping film. Several wrapped rolls or slabs are preferably fastened side by side so as to form modular elements wherein rolls or slabs have parallel axial directions, one portion of said modular elements having in the assembly rolls or slabs with a horizontal axial direction and another portion of said modular elements having in the assembly rolls or slabs with a vertical axial direction. Preferably said several wrapped rolls or slabs are fastened side by side, at a compressed state, by means of a packaging film in order to form said modular elements.

**[0007]** According to an advantageous embodiment of the invention, several fastened modular elements are arranged side by side so as to form groups of stacked modular elements wherein rolls or slabs have parallel axial directions, at least one first group of modular elements having in the assembly rolls or slabs with a horizontal axial direction and at least one second group of modular elements having in the assembly rolls or slabs with a vertical axial direction. Preferably said several fastened modular elements are bound side by side, at a compressed state, by means of an enveloping film in order to form said groups.

**[0008]** According to a preferred embodiment of the invention, said at least one first group of modular elements and said at least one second group of modular elements are stacked and tied to each other. Further the assembly may comprise a pallet on which the stacked groups of modular elements are supported.

**[0009]** Advantageously, said stacked groups of modular elements are tied to each other, optionally also with a pallet on which said stacked groups are supported, by means of a covering bag.

**[0010]** According to an improved embodiment of the invention, the assembly comprises a lower group of modular elements wherein the rolls or slabs have a vertical

direction and a higher group of modular elements wherein the rolls or slabs have a horizontal axial direction. Preferably, each modular element comprises four rolls or slabs, the lower group of modular elements comprises three modular elements and the higher group of modular elements comprises four modular elements.

**[0011]** According to the invention, the compressible insulation material is preferably made of glass fibres or mineral fibres.

**[0012]** Other details of the invention will result from the following description of a non-limitative method for manufacturing an assembly according to the invention.

**[0013]** Fig. 1 shows schematically the steps followed for producing groups of stacked modular elements intended to form an assembly according to the invention.

**[0014]** Fig. 2 shows an embodiment of assembly according to the invention obtained with the groups of stacked modular elements produced on Fig. 1.

**[0015]** The illustrated method for manufacturing an assembly according to Fig. 2 is only given as example. Other methods of manufacturing are obviously possible, for example according to the teaching of the above mentioned prior documents.

**[0016]** Rolls 1 are made while winding a strip of compressible insulation material, for example of glass fibre 2. Each roll 1 has an axial direction 4, here horizontal, and is compressed within a wrapping film 3. The rolls have a diameter after compression of approximately 400-440 mm.

**[0017]** Thereafter the rolls 1 are fastened side by side with their axial horizontal direction 4 in a parallel arrangement by means of a packaging film 5. The rolls are compressed perpendicularly to their axial directions 4 and form a modular element 6. The illustrated modular element 6 comprises four rolls and has a length of 1300 mm and a width of 1160 mm.

**[0018]** Thereafter several modular elements 6 are stacked in two different groups 7 and 7' wherein the rolls have parallel axial directions 4. The group 7 comprises three stacked modular elements 6 and the group 7' four stacked modular elements 6.

**[0019]** These groups are again compressed according to a vertical direction and the modular elements are bound side by side by means of an enveloping film in the form of a sleeve 8 and respectively 8'. The group 7 comprises three modular elements 6 and has a length of 1350 mm, a width of 1160 mm and a height of 1200 mm. The group 7' comprises four modular elements 6 and has a length of 1160 mm, a width of 1350 mm and a height of 1600 mm.

**[0020]** As illustrated on Fig. 2 the group 7 of stacked modular elements is rotated so as the rolls which had a horizontal axial direction 4 receive a vertical axial direction 10. This rotated group 7 of modular elements has now a length of 1350 mm, a width of 1200 mm and a height of 1160 mm. The rotated group 7 is then deposited on a pallet 9 having a length of 1290-1300 mm, a width of 1100-1130 mm and a height of 120-150 mm.

**[0021]** Thereafter the group 7' is stacked as such on the rotated group 7 while maintaining the axial horizontal direction 4 of the rolls.

**[0022]** The arrangement of the group 7 with rolls having a vertical direction at the bottom is preferable for improving the stability of the whole assembly on the wood pallet.

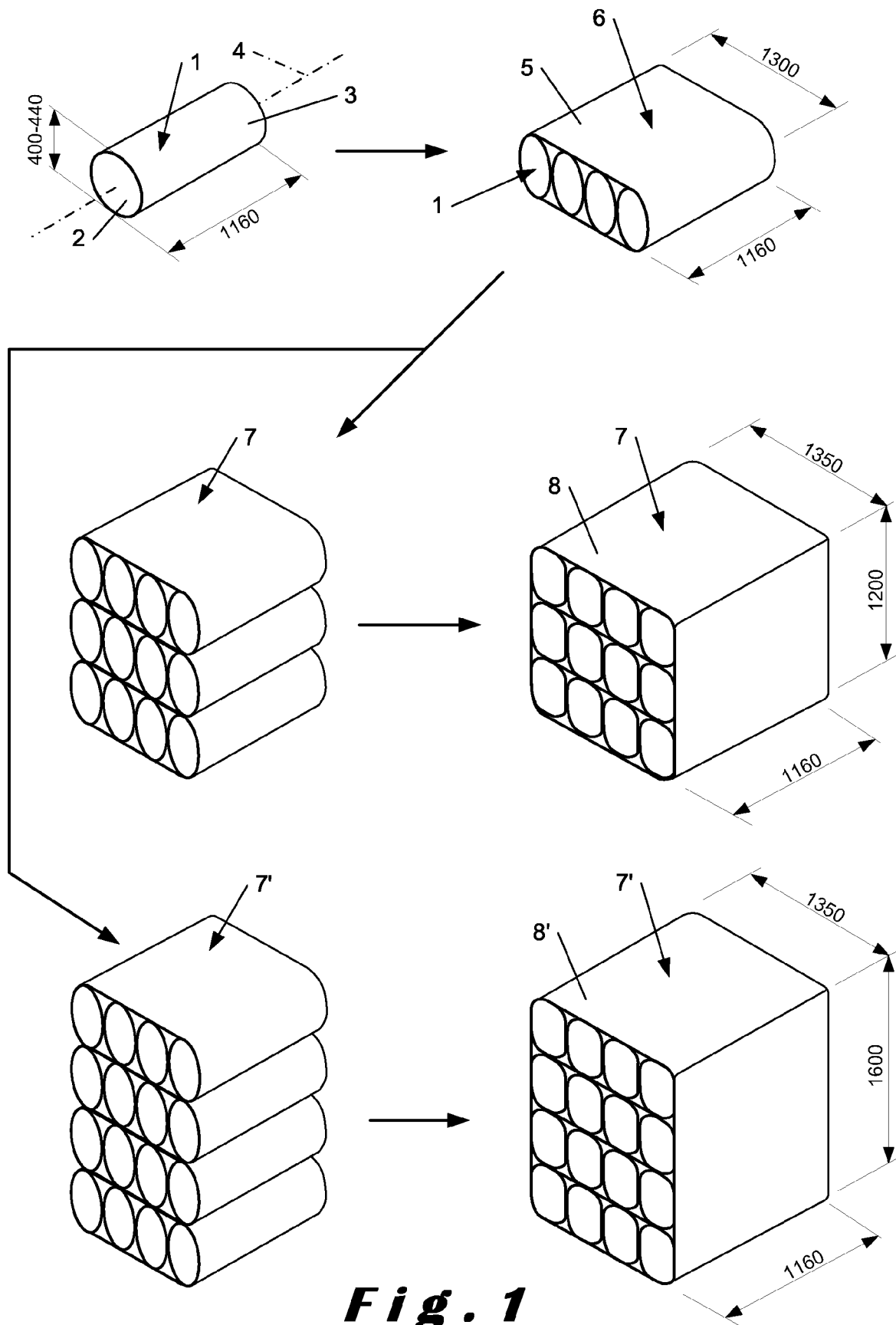
**[0023]** A covering bag may envelop the complete assembly optionally with the pallet.

**[0024]** It is obvious that the present invention is not limited to the illustrated and disclosed embodiment and that several modifications may be envisaged within the scope of the appended claims.

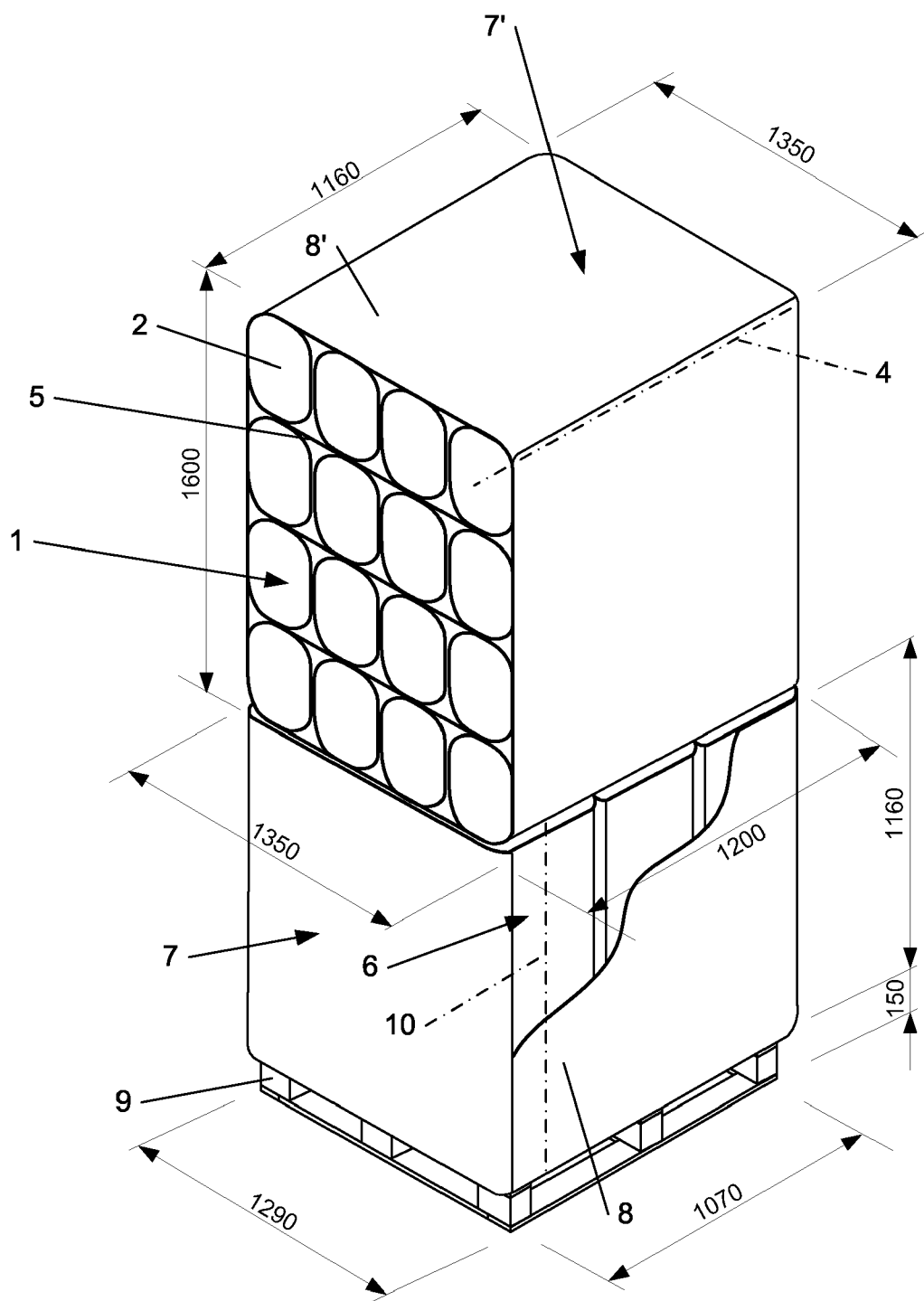
**[0025]** The disclosed example concerns rolls but obviously could relate to stacking of slabs.

### Claims

1. Assembly of stacked rolls (1) or slabs of compressible insulation material (2) having an axial direction wherein the axial direction (4) of one portion of said rolls or slabs is horizontal and the axial direction (10) of another portion of said rolls or slabs is vertical. 20
2. Assembly according to claim 1, wherein each roll (1) or slab is wrapped in a compressed state within a wrapping film (3). 25
3. Assembly according to claim 2, comprising several wrapped rolls (1) or slabs fastened side by side so as to form modular elements (6) wherein rolls or slabs have parallel axial directions, one portion of said modular elements having in the assembly rolls or slabs with a horizontal axial direction (4) and another portion of said modular elements having in the assembly rolls or slabs with a vertical axial direction (10). 30 35
4. Assembly according to claim 3, wherein said several wrapped rolls (1) or slabs are fastened side by side, at a compressed state, by means of a packaging film (5) in order to form said modular elements (6). 40
5. Assembly according to claim 3 or 4, comprising several fastened modular elements (6) arranged side by side so as to form groups (7, 7') of stacked modular elements wherein rolls or slabs have parallel axial directions, at least one first group (7') of modular elements having in the assembly rolls or slabs with a horizontal axial direction (4) and at least one second group (7) of modular elements having in the assembly rolls or slabs with a vertical axial direction (10). 45 50
6. Assembly according to claim 5, wherein said several fastened modular elements (6) are bound side by side, at a compressed state, by means of an enveloping film (8, 8') in order to form said groups (7, 7'). 55
7. Assembly according to claim 5 or 6, wherein said at least one first group (7') of modular elements and said at least one second group (7) of modular elements are stacked and tied to each other. 5
8. Assembly according to claim 7, comprising a pallet (9) on which the stacked groups (7, 7') of modular elements are supported. 10
9. Assembly according to claim 7 or 8, wherein said stacked groups (7, 7') of modular elements are tied to each other, optionally also with a pallet (9) on which said stacked groups are supported, by means of a covering bag. 15
10. Assembly according to anyone of claims 7 to 9, comprising, as lower group, one of said at least second group (7) of modular elements and, as higher group, one of said at least first group (7') of modular elements.
11. Assembly according to claim 10, wherein each modular element (6) comprises four rolls (1) or slabs, the lower group (7) of modular elements comprises three modular elements (6) and the higher group (7') of modular elements comprises four modular elements (6).
12. Assembly according to any one of claims 1 to 11, wherein the compressible insulation material (2) is made of glass fibres or mineral fibres.



**Fig. 1**



**Fig. 2**



European Patent  
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Application Number  
EP 05 10 9666

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			TECHNICAL FIELDS SEARCHED (IPC)
			B65D
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 19 April 2006	Examiner Augustin, W
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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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