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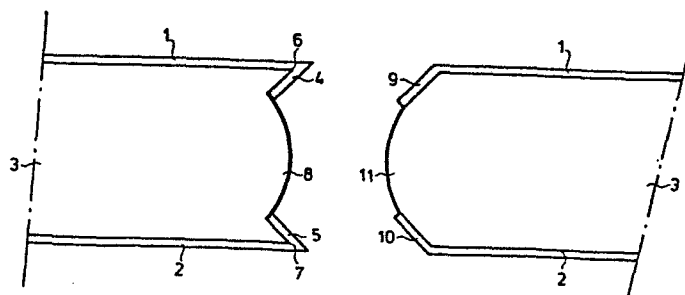
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84 Panel.

57 The invention relates to a panel for building up a wall, a ceiling or the like comprising a core (3) of mineral wool or suchlike insulating material and boards (1,2) located on both sides of said core having their rims (4,5;9,10) inwardly bent over on at least two sides of the panel whereby on one side of the panel the rims (9,10) are bent over through an angle of less than 90° with respect to the plane of the boards concerned, whereas on the other side of the panel the rims (4,5) are bent over through an angle of more than 90° with respect to the plane of the boards concerned so that owing to bending over the rims the sandwiched, insulating material is densified in the area of the rims and at least partly pressed outwards from between the rims.



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PANEL

The invention relates to a panel for the manufacture of a wall, ceiling or the like comprising a core of mineral wool or suchlike insulating material and boards on both sides of said core, the ends on
5 at least two sides of which are inwardly bent over.

Such a panel is known from Dutch Patent Application 7705382. In this known panel the material of the core near the sides of the panel has greater density than the material of the medium part of the core, whilst for the mutual joint of the panels the core material has grooves
10 near the sides for receiving a tie member. Therefore, this known construction is expensive in manufacture and mounting.

The invention has for its object to provide a panel of the kind set forth having a simple configuration and yet ensuring a satisfactory joint between the panels.

15 According to the invention this can be achieved by bending over the rims on one side of the panel through an angle of less than 90° with respect to the plane of the boards concerned, whereas on the other side of the panel the rims are bent over through an angle of more than 90°

with respect to the plane of the boards concerned so that as a result of the bending of the rims the sandwiched, insulating material is densified in the area of the rims and is pressed at least partly outwards from between the rims. Since by bending over the boards the sandwiched, insulating material is automatically slightly densified and the material bulges out slightly from between the bent-over rims, a satisfactorily sealing joint between the panels will be obtained when positioning the panels side by side in contact with one another to form a wall or the like.

It should be noted that from Austrian Patent Specification 300,289 a panel is known which is provided at one edge with a groove bounded by relatively parallel board parts and at the opposite edge with a spring also bounded by relatively parallel board parts.

Between the boards is sandwiched hard foam which is permoulded at the location of the groove and the spring respectively for obtaining a vaulted, protruding boundary face. This requires pretreatment of the hard foam before it is arranged between the boards. Densification and protrusion of the insulating material by bending over the rims during the manufacture of the panel are, however, not known from said publication.

The invention will be described more fully hereinafter with reference to the accompanying drawing showing a schematic plan view of the proximal sides of two panels of identical design.

From the Figure it will be apparent that each panel comprises two relatively parallel coating sheets 1 and 2, usually made from metal, between which is located a core 3 of mineral wool or similar insulating material.

Near one side of a panel the rims 4 and 5 of the coating sheets 1 and 2 are bent over in the embodiment shown through an angle of 135° around folding lines 6 and 7 respectively. In general, the rims will first be bent over at right angles and subsequently the insulating material 3 will be sandwiched between the sheets 1 and 2 so that it is firmly pressed against the rims bent over at right angles. Then the rims 4 and 5 are further bent over inwardly. This results in that when bending over the rims 4 and 5 the insulating material is densified to a given extent in the area of the side concerned of the panel and will form, in addition, a part 8 slightly bulging outwards between the proximal ends of the rims 4 and 5.

Near the other side of the panel the rims 9 and 10 of the sheets

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are inwardly bent over through an angle of 45° prior to the disposition of the sheets on the insulating material. The core 3 of insulating material is proportioned so that it extends in the unloaded state up to the free ends of said rims. Therefore, also in this case when the bent-over rims 9 and 10 are pressed against the insulating material a certain degree of densification of the insulating material will occur, whilst at the same time the material will form an outwardly bulging part 11 between the proximal ends of the bent-over rims 9 and 10.

In order to build up a wall, a ceiling or a similar partition such panels will be arranged in a conventional manner side by side and be pressed one against the other so that the bent-over parts 5 and 10 and the bent-over parts 4 and 9 firmly contact one another, thus ensuring a satisfactorily relative alignment of the panels. When the panels as well as a satisfactory mutual fixation of the panels as well as a satisfactory relative alignment of the panels. When the panels are pressed one against the other the bulging parts 8 and 11 of the insulating material will be depressed so that at the same time a satisfactorily sealing joint between the insulating cores of the panels is obtained, whilst a heat transferring bridge is avoided, since the proximal ends of the bent-over rims 4, 5, 9 and 10 are separated from one another by the insulating material. Since, moreover the sides of the panels engage one another no chink will be formed at right angles to the plane of the ready wall or the like.

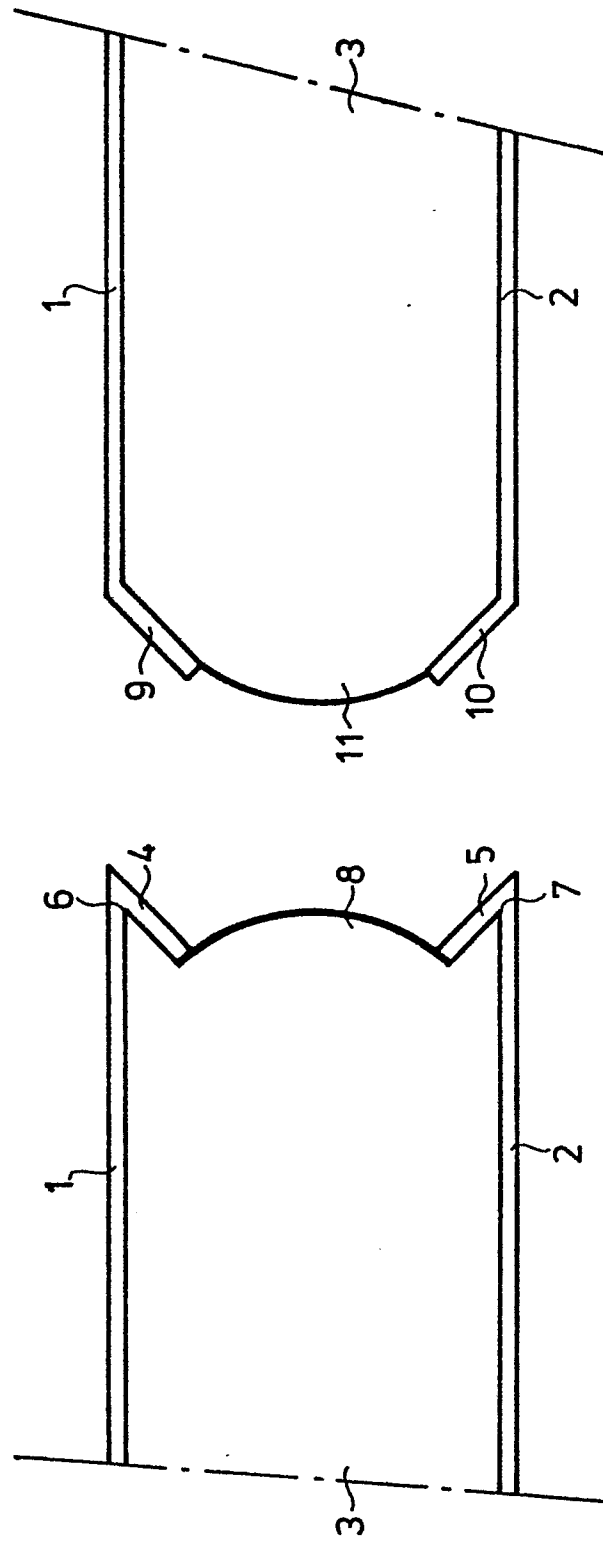
The figures used in the claims are only meant to explain more clearly the intention of the invention and are not supposed to be any restriction concerning the interpretation of the invention.

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CLAIMS

1. A panel for building up a wall, a ceiling or the like comprising a core of mineral wool or suchlike insulating material and boards located on both sides of said core and having their rims inwardly bent over on at least two sides of the panel characterized in that on one side of the panel the rims are bent over through an angle of less than 90° with respect
5 to the plane of the boards concerned, whereas on the other side of the panel the rims are bent over through an angle of more than 90° with respect to the plane of the boards concerned so that owing to bending over the rims the sandwiched, insulating material is densified in the area of
10 the rims and at least partly pressed outwards from between the rims.
2. A panel as claimed in Claim 1 characterized in that the bent-over rims are at an angle of 45° and 135° respectively to the further parts of the boards.
3. A panel as claimed in anyone of the preceding Claims characterized
15 in that the core is proportioned so that at the board rims bent over through an angle of more than 90° the core extends in the undeformed state up to near the folding lines along which the boards are bent over.

4. A panel as claimed in anyone of the preceding Claims characterized in that the core is proportioned so that at the board rims bent over through an angle of less than 90° the core extends in the undeformed state up to the outer side of the boards.





European Patent
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EUROPEAN SEARCH REPORT

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Application number

EP 82 20 1413

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl. ³)
A	--- US-A-3 466 831 (LENOIR) *Column 2, lines 69-73; column 4, lines 1-9; figures*	1,2	E 04 C 2/26
D,A	--- AT-B- 300 289 (FREISLER) *Page 2, lines 38-52; figures* -----	1	
			TECHNICAL FIELDS SEARCHED (Int. Cl. ³)
			E 04 C
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 23-02-1983	Examiner VANDEVONDELE J.P.H.
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			