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(54) **Insulating board between a winding and a core sheet pack and ballast or transformer provided with said insulating board.**

(57) The invention relates to an insulating board (11) between the winding and core sheet pack of a ballast or transformer, said board being intended to be placed between the inner gable surface (4) of a winding loop (2) and the gable of a core sheet pack extending through the winding loop opening (5). The insulating board is provided with hinge members (13) to carry outer side flaps (12), whose free ends are fitted with catching claws (15) which can be brought into engagement with counter-catch means (14) mounted on the insulating board. Mounted in its position, said insulating board, together with its outer side flaps, surrounds the end sections of surface insulations (3) and holds said surface insulations fixed in position without requiring the use of binding tapes.

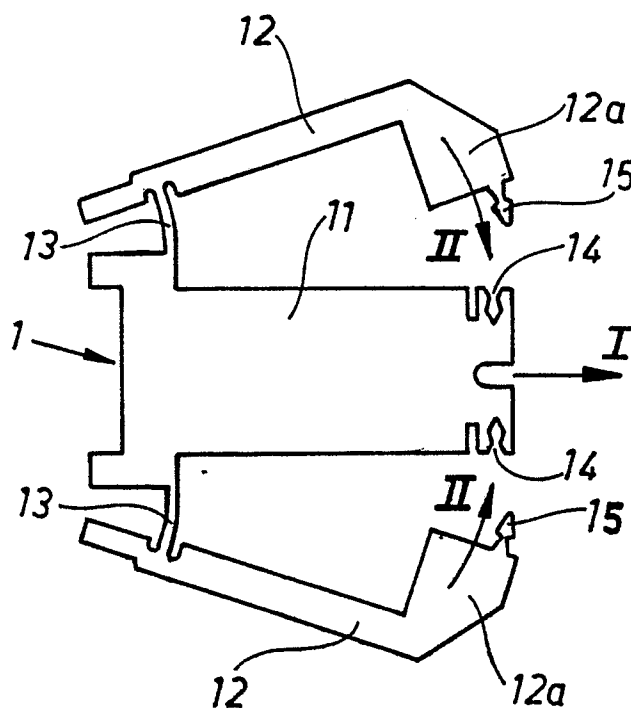


Fig. 2

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Insulating board between a winding and a core sheet pack and ballast or transformer provided with said insulating board

The present invention relates to an insulating board between the winding and the core sheet pack of a ballast or transformer, said board being intended to be placed between the inner surface of the gable of a winding loop and the gable of a core sheet pack extending through the winding loop opening.

The invention also relates to a ballast or transformer provided with said insulating board and the winding loop opening, the winding of the transformer being rectangular when seen in the direction of the winding axis and wherein the longer side runs of the winding are surrounded with separate surface insulations. One problem in manufacturing ballasts or transformers is the fastening of separate surface insulations surrounding the winding by means of binding tapes. The fastening of binding tapes is hitherto performed through manual labour, i.e. causes and requires laborious, monotonous, slow and expensive work which cannot be automated with reasonable arrangements. Another problem in manufacturing ballasts or transformers is the swelling of a winding as a result of the movement of winding threads. This may complicate the fitting of a winding in a core sheet pack, unless the winding windows are dimensioned with sufficiently great tolerances.

It is a major object of the present invention to eliminate the above problems by using a specially designed insulating board between winding and core sheet pack.

The characterizing features of an insulating board of the invention are set forth in the annexed claim 1. Claim 2 discloses the characterizing features of a ballast or transformer provided with an insulating board of the invention, whereas claim 3 reflects a particular form of realization of an insulating board according to the invention.

A particularly appropriate embodiment of the invention will now be described with reference made to the accompanying drawing, in which

Fig. 1 is a plan view of a ballast winding, whose gables are fitted with insulating boards of the invention shown in cross-section,

Fig. 2 is a side view of an insulating board of the invention, and

Fig. 3 is a cross-sectional view of a winding into which an insulating board shown in Fig. 2 is inserted in the direction of an arrow I.

Fig. 1 shows a ballast winding 2 which is rectangular, as seen in the direction of the winding axis. A not shown ballast core sheet pack extends through a winding loop opening 5 and also on the outer faces of winding side runs 6. For insulating

the winding 2 from a core sheet pack, its longer side runs 6 are surrounded with separate surface insulations 3. An insulating board 11 is fitted between the inner surface 4 of winding gable 7 and the core sheet pack extending through opening 5.

The insulating board 11 carries, by way of hinge members 13, outer side flaps 12, whose free ends are provided with catch means 15 that can be brought into engagement with counter-catch means 14 at the corresponding end of insulating board 11. Alternatively, catch means 15 or members 12a can be made so long that said catch means 15 engage with each other. Then, however, the outer side flaps 12 must be bent further aside, so that the insulating board, designed generally by reference numeral 1, can be fitted in position around winding 2. Preferably, this is done immediately after the winding has been wound with the surface insulations 3 fitted in position. Thus, insulating board 11, together with its outer side flaps 12, prevents the swelling of a winding and, at the same time, fastens surface insulations 3 upon the winding. The gap between insulating board 11 and the outer side flaps 12 is dimensioned so as to serve this purpose when catch means 14 and 15 are engaged with each other.

One of the outer side flaps 12 can be provided with winding thread clamping pins or with a groove receiving a clamping rib, the fastening of winding thread outlets being resolved at the same time.

Claims

1. An insulating board (11) between the winding and core sheet pack of a ballast or transformer, intended to be placed between the inner surface (4) of the gable of a winding loop (2) and the gable of a core sheet pack extending through the winding loop opening (5), **characterized in** that said insulating board (11) carries, by way of hinge members (13), outer side flaps (12), whose free ends are provided with catch means that can be brought into engagement either with each other or, preferably, with counter-catch means (14) at the corresponding end of insulating board (11), whereby, with outer side flaps (12) turned into a position in which catch means (14, 15) are in engagement with each other, the take-up openings for winding (2) will be formed between the edges of insulating board (11) and said outer side flaps (12).

2. A ballast or transformer, comprising an insulating board (1) according to claim 1 and a winding (2), whose winding loop opening (5) is

rectangular, when seen in the direction of the winding axis and wherein the longer side runs (6) of said winding are surrounded with separate surface insulations (3), **characterized in** that said insulating board (11), together with its outer side flaps (12), surrounds the end sections of the surface insulations (3).

3. A ballast or transformer as claimed in claim 2, **characterized in** that one of the outer side flaps (12) of the insulating board (1) is provided with clamping pins or with a groove for receiving a clamping rib.

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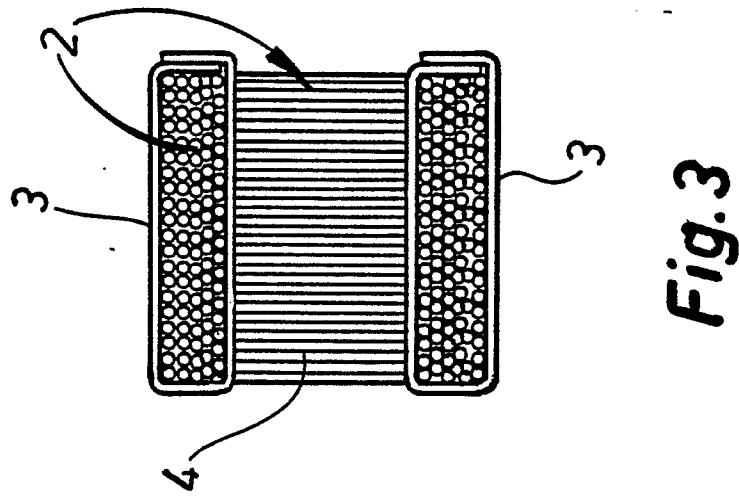
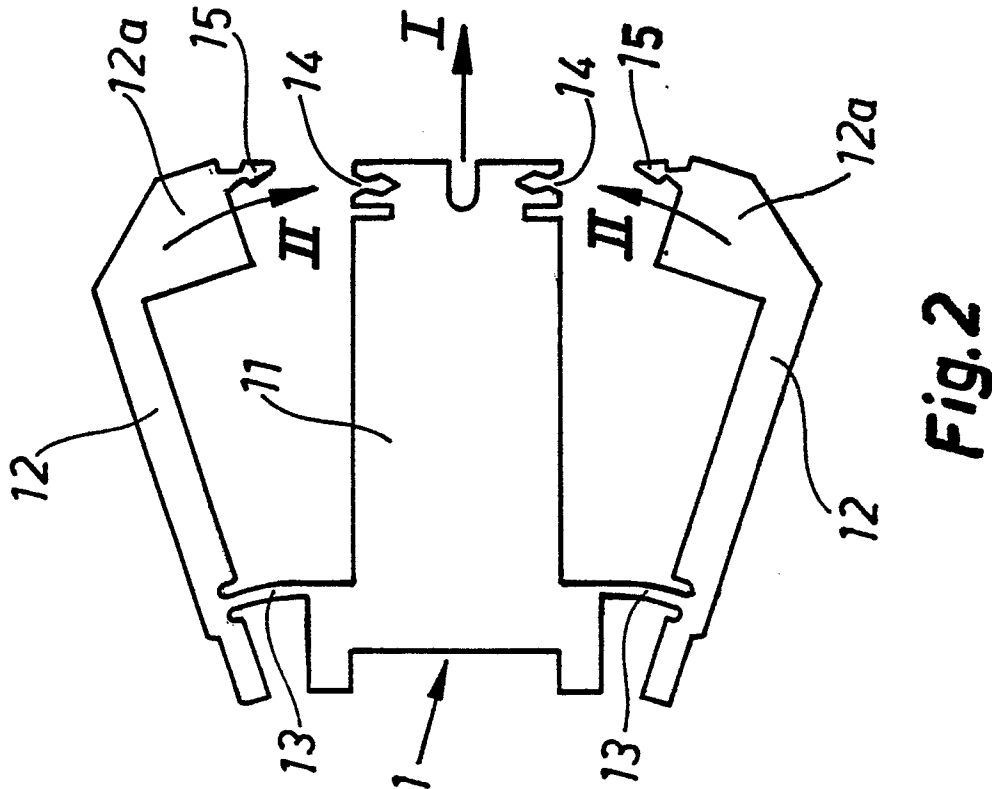
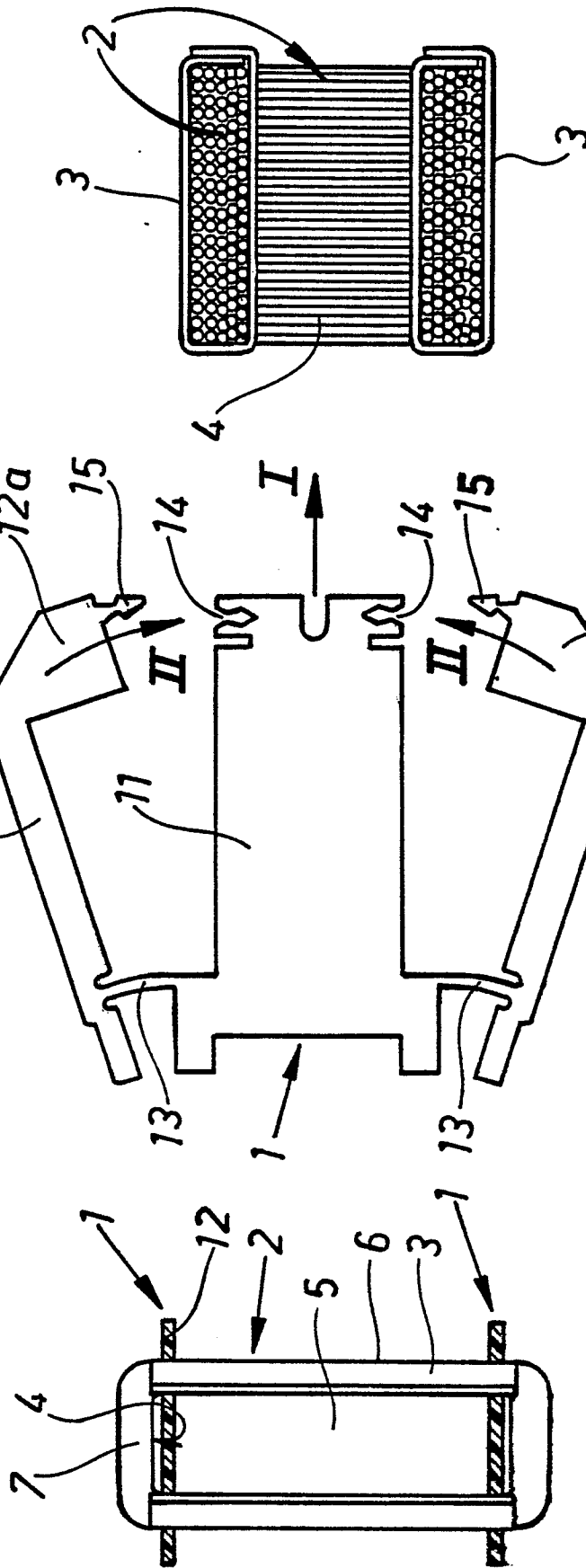
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DOCUMENTS CONSIDERED TO BE RELEVANT			EP 87109312.6
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl. 4)
A	<u>DE - B2 - 2 360 402 (SIEMENS)</u> * Totality * --	1-3	H 01 F 27/28
A	<u>US - A - 3 691 493 (BOYSEN)</u> * Totality * ----	1-3	
			TECHNICAL FIELDS SEARCHED (Int. Cl. 4)
			H 01 F 27/00 H 01 F 5/00 H 01 F 7/00
The present search report has been drawn up for all claims			
Place of search VIENNA		Date of completion of the search 30-09-1987	Examiner VAKIL
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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	