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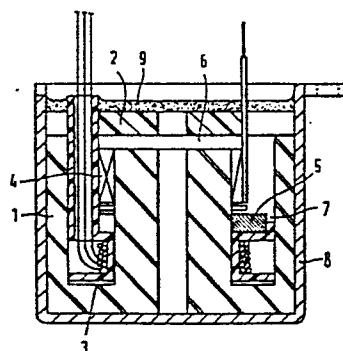
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(54) Leakage transformer with small stray field.

(57) A leakage transformer in which primary coils and secondary coils are mounted on a centre leg of a pot core transformer, which pot core transformer is fully closed apart from one or a few through holes permitting the lead wires for the coils to be fed out. An air gap is provided in the centre leg and a magnetic shut is provided between the primary coil(s) and the secondary coil(s), the air gap and the magnetic shunt together defining the coupling factor between the primary and secondary coils.



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Title: Leakage transformer with small stray field

The invention relates to a leakage transformer with small stray field. A leakage transformer is used, for example, in the D.C.-to-A.C. voltage converter disclosed in applicants' published European patent application 5 83 201 258.7 and in the Series Resonant Power Supply disclosed in, inter alia, "Proceedings of the Second International Power Conversion Conference 1980", pp. 2.8.1 to 2.8.18. A sufficiently high leakage, i.e. a coupling factor of from 60 to 90 percent between primary and secondary 10 coils, can be obtained by winding the primary and the secondary winding on individual spools and mounting these spools each on the centre leg of an E-core half, which halves are separated by an air gap. A drawback inherent in such a structure is the generation of a relatively large 15 stray field liable to cause spurious signals in other circuitry or sensors.

It is an object of the invention to provide such a transformer structure that a leakage transformer with small stray field is achieved.

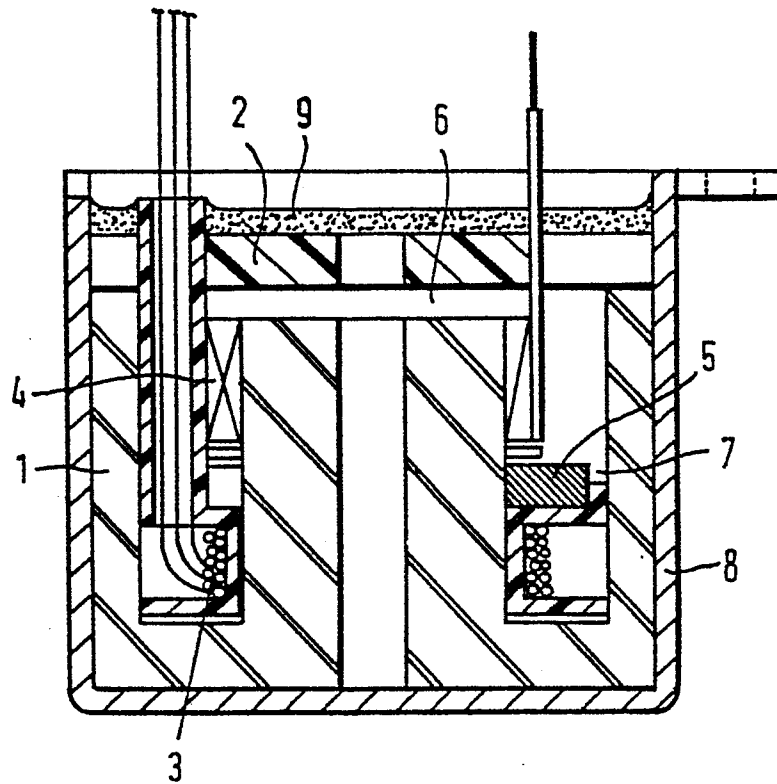
20 An embodiment of the invention is schematically shown in cross-sectional view in the accompanying drawing.

In the drawing, a closed pot core transformer 1 includes a cover disc 2 having two through holes, a primary coil 3, a secondary coil 4 and a magnetic shunt 5 interposed between coils 3 and 4. The air gap 6 is provided in the centre leg. The stray field is now confined in the core, while the coupling factor can be adjusted by varying the ratio between air gap 6 in the centre leg and air gap 7 between shunt and centre leg and/or outer wall. To keep the transformer components together, they can be placed in a housing 8 and fixed by means of a suitable cast mass 9.

* C L A I M *

A leakage transformer which is characterized in that primary coils and secondary coils are mounted on a centre leg of a pot core transformer, said pot core transformer being fully closed apart from one or a few through
5 holes permitting the lead wires for the coils to be fed out, an air gap being provided in the centre leg and a magnetic shunt being provided between the primary coil(s) and the secondary coil(s), said air gap and said magnetic shunt together defining the coupling factor between the
10 primary and secondary coils.

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EUROPEAN SEARCH REPORT

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EP 84 20 1621

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. 4)
Y	EP-A-0 003 396 (IMPERIAL CHEMICAL IND.) * Page 25, lines 27-35; figure 10 *	1	H 01 F 31/06 H 01 F 17/04

Y	DE-A-1 439 441 (RUBINI) * Page 4, lines 12-14; page 7, lines 13,14; figure 1 *	1	

A	US-A-3 480 896 (NEUMAN) * Column 2, lines 10-23; figure 3 *	1	

			TECHNICAL FIELDS SEARCHED (Int. Cl. 4)
			H 01 F 31/00 17/00 21/00 27/00
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 07-02-1985	Examiner BIJN E.
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	