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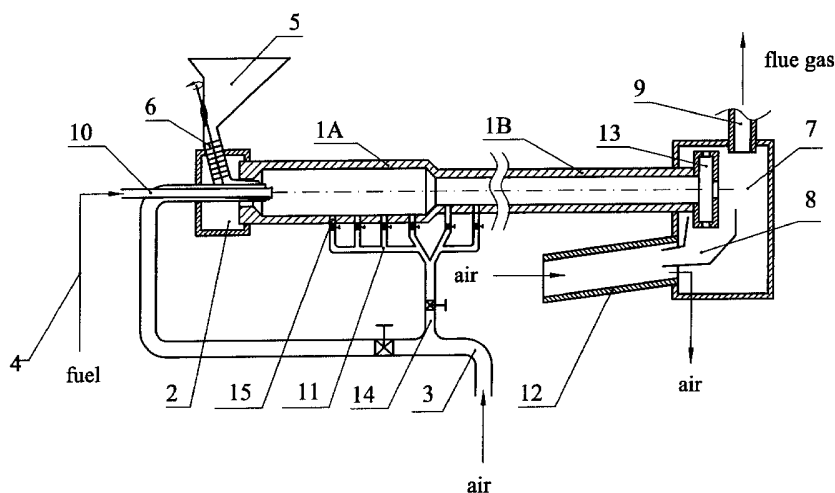
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- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: METHOD FOR MANUFACTURING LIGHT BUILDING AGGREGATE AND A ROTARY FURNACE FOR THE PRODUCTION THEREOF



(57) Abstract: The invention concerns a method for preparing a blend consisting of power station ashes and/or slugs, and/or coal wastes in a quantity of 60-95% by weight, as well as an agglomeration promoting binder, including sewage after-fermentation sludge in a quantity of 5-40% in the dry state, said blend being so prepared that its total moisture contents is below 21%, and while maintaining features of a pourable material it can be homogenized in mixers provided with high speed rotary homogenizing means. After agglomerating said blend is fired in a rotary furnace. A firing method is characterized by that the rotary furnace operates with charge and gas phase moving in the co-current arrangement, what enables almost autothermal process with firing in the same time harmful volatile substances released from a binder. Said autothermal process is also promoted by the double-diameter structure of the furnace (a wider part 1A and a narrow part 1B), by its substantial slope, precise insulated heads 2 and 7, as well as gas ducts 3 and 14, and by dividing the air stream, one part of which is directly supplied through the layer of the material being fired and sintered.

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# INTERNATIONAL SEARCH REPORT

International Application No  
PCT/EP 03/00056

**A. CLASSIFICATION OF SUBJECT MATTER**  
IPC 7 C04B18/02 F27B7/04

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)  
IPC 7 C04B F27B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 01/014276 A (SVEDALA IND INC) 1 March 2001 (2001-03-01) the whole document	1,3
Y	-----	2
X	WO 92/12101 A (WISCONSIN ELECTRIC POWER) 23 July 1992 (1992-07-23) page 2, lines 5-36 page 8, line 1 - page 9, line 17	1
X	EP 0 168 532 A (RANG MARINUS CORNELIS ;SCHENK EUGENE ANTOINE MARIE (NL); SCHOUTEN) 22 January 1986 (1986-01-22) the whole document	1
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Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

° Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

2 October 2003

Date of mailing of the international search report

21. 01. 04

Name and mailing address of the ISA

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## INTERNATIONAL SEARCH REPORT

International Application No

PCT/PL 03/00056

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	WO 95/10489 A (GREENGROVE CORP) 20 April 1995 (1995-04-20) page 4, lines 19-34 page 12, line 35 - page 16, line 32 -----	2
A	EP 0 294 362 A (SIMMERING ENTSORGUNGSBETRIEBE) 7 December 1988 (1988-12-07) the whole document -----	1

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/PL 03/00056

## Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1.  Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
  
2.  Claims Nos.:  
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
  
3.  Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1.  As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
  
2.  As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
  
3.  As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
  
4.  No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1-3

### Remark on Protest

- The additional search fees were accompanied by the applicant's protest.
- No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-3

method for manufacturing lightweight building aggregate comprising homogenizing, agglomerating, drying and sintering a mixture of ash and sewage sludge

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2. claims: 4-9

slightly inclined rotary furnace comprising an upper wide section and a lower narrow section as well as multiple air slots for providing a reducing and an oxidizing atmosphere in the furnace

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## INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/PL 03/00056

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
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