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[Continued on next page]

(54) Title: FAST PYROLYSIS CATALYTIC CRACKING PIPE FOR PRODUCING BIO-OILS

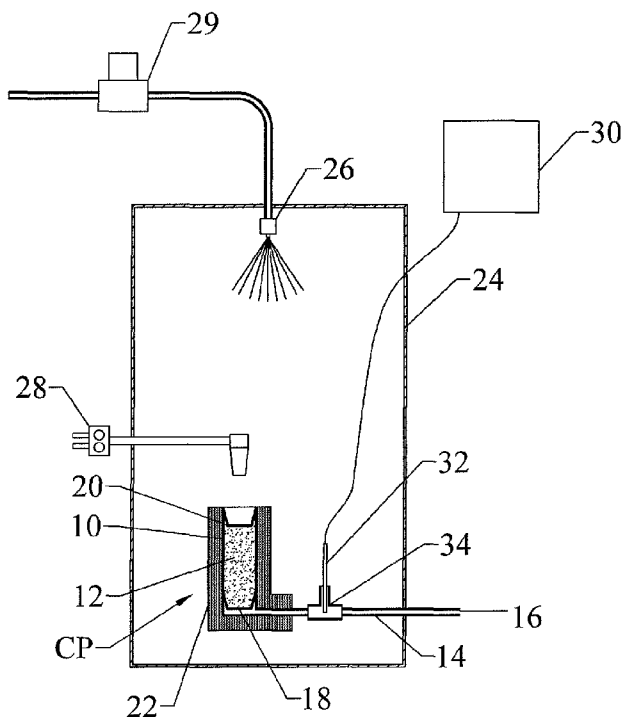


FIG. 1

(57) Abstract: A pyrolyzer apparatus (i.e. a "cracking pipe") comprises a first screen, a second screen, and a catalyst material positioned between the first and second screens. The pyrolyzer is structured so that feedstock is pyrolyzed and pyrolyzer-generated gas is drawn through the first screen, through the catalyst material, and then through the second screen in series. The gas may then be directed to other processing equipment so that bio-oil is extracted from the gas.



SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

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INTERNATIONAL SEARCH REPORT

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PCT/US2012/029795**A. CLASSIFICATION OF SUBJECT MATTER***C10G 3/00(2006.01)i, C10L 1/02(2006.01)i, B09B 3/00(2006.01)i, C10B 53/00(2006.01)i*

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)

C10G 3/00; F23G 5/12; C10L 3/00; C10J 3/00; C10B 1/00; C10J 3/02; C01B 3/38; C12M 3/00

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

Korean utility models and applications for utility models

Japanese utility models and applications for utility models

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

eKOMPASS(KIPO internal) & Keywords: pyrolysis, cracking, catalyst, screen, pipe, condenser, gasification, biomass

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	JP 60-081002 A (TOYOTA MOTOR CORPORATION) 09 May 1985 See abstract, pages 1-3, figures 1-2	1-20
Y	US 2010/0323435 A1 (BOATENG, AKWASI A. et al.) 23 December 2010 See abstract, paragraphs [0006]-[0015], [0017], [0019], [0023], [0026]-[0027], claims 1, 4, 7, 9, 12-20	1-20
Y	US 4584947 A (CHITTICK, DONALD E.) 29 April 1986 See abstract, column 2, lines 4-28, column 3, line 33-column 4, line 50	1-5,8,13,20
Y	US 2009/0165378 A1 (AGBLEVOR, FOSTER A.) 02 July 2009 See abstract, paragraphs [0034]-[0038], claims 1, 20	1-5,8,13,20
A	JP 2009-197073 A (TOKYO INSTITUTE OF TECHNOLOGY et al.) 03 September 2009 See abstract, paragraphs [0026]-[0029], [0036], [0040]-[0041]	1-20

☐ Further documents are listed in the continuation of Box C.☒ See patent family annex.

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INTERNATIONAL SEARCH REPORT

Information on patent family members

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