

Title (en)
Improved method and apparatus for oxygen delignification.

Title (de)
Verfahren und Vorrichtung zur Sauerstoffdelignifizierung.

Title (fr)
Méthode et appareil pour délignification à l'oxygène.

Publication
EP 0106460 A1 19840425 (EN)

Application
EP 83304894 A 19830824

Priority
US 43148682 A 19820930

Abstract (en)
An oxygen delignification method and apparatus is disclosed of the type in which fibrous materials are pumped by a thick stock pump (12) through a conduit (14) to a substantially horizontal tubular reactor tube (18) in which the fibrous materials are mixed with oxygen, steam, and an alkaline solution is improved by the introduction of oxygen to the fibrous materials as they are pumped through the conduit (14) to the horizontal reactor tube (18) and the agitation of the fibrous materials within the conduit to mix the oxygen with the materials as they flow to the reactor tube, thereby initiating an oxygen delignification reaction within the conduit and accelerating the rate of oxygen delignification of the materials within the horizontal reactor tube (18). An alkaline solution and steam are also introduced to the fibrous materials within the conduit (14) and the materials are agitated to effect mixing of the steam and alkaline chemicals with the materials. The mixing of the fibrous materials with oxygen, alkaline solution or steam is effected by an in-line, motionless mixer (44).

IPC 1-7
D21C 9/10

IPC 8 full level
D21C 3/00 (2006.01); **D21C 9/10** (2006.01); **D21C 9/147** (2006.01)

CPC (source: EP KR)
D21C 9/00 (2013.01 - KR); **D21C 9/1068** (2013.01 - EP)

Citation (search report)
• [X] US 2000953 A 19350514 - PAUL HOOKER, et al
• [AD] US 4161421 A 19790717 - SHERMAN MICHAEL I [US]

Cited by
US5164043A; US5211811A; EP0226495A1; US5188708A; US5217574A; US5085734A; US5173153A; EP0167060A1; US5525195A; US5164044A; US5409570A; US5174861A; US5520783A; US5451296A; US5989388A; US5472572A; CN101939086A; US5479792A; EP0295180A3; FR2617877A1; AU613952B2; US5181989A; US5863389A; WO9309391A1; WO2009097877A1; WO2009097878A1

Designated contracting state (EPC)
AT DE FR GB IT SE

DOCDB simple family (publication)
EP 0106460 A1 19840425; BR 8305348 A 19840508; CA 1213104 A 19861028; ES 526161 A0 19850501; ES 8504999 A1 19850501; FI 833514 A0 19830929; FI 833514 A 19840331; JP S5982488 A 19840512; KR 840005846 A 19841119; NO 833033 L 19840402; ZA 835925 B 19840425

DOCDB simple family (application)
EP 83304894 A 19830824; BR 8305348 A 19830929; CA 436078 A 19830906; ES 526161 A 19830930; FI 833514 A 19830929; JP 17785083 A 19830926; KR 830004563 A 19830928; NO 833033 A 19830823; ZA 835925 A 19830811