

Title (en)
ROLL CRUSHER OF COOLER DEVICE

Title (de)
WALZENBRECHER FÜR EINE KÜHLERVORRICHTUNG

Title (fr)
CONCASSEUR À CYLINDRES DE DISPOSITIF DE REFROIDISSEMENT

Publication
EP 3345680 B1 20200527 (EN)

Application
EP 16841089 A 20160823

Priority
• CN 201510547111 A 20150831
• JP 2016003831 W 20160823

Abstract (en)
[origin: EP3345680A1] Provided is a roll crusher of a cooler apparatus, the roll crusher being capable of leveling out temporal changes in the roll load. A roll crusher 15 of a cooler apparatus 1 includes a plurality of load-reducing rolls 15a and 15b. The load-reducing rolls 15a and 15b are arranged side by side in a conveying direction such that a gap S1 is formed therebetween, and are rotated about respective rotational axes L1 and L2 by corresponding rotating units to crush cement. The load-reducing rolls 15a and 15b include a plurality of crushing rings 22 and 23 and a plurality of crushing rings 32 and 33, respectively. Crushing teeth 24 and 27 are formed on outer peripheral surfaces of the crushing rings 22 and 23 at a regular pitch p1, and crushing teeth 34 and 35 are formed on outer peripheral surfaces of the crushing rings 32 and 33 at a regular pitch p2. The crushing teeth 27 and 35 are arranged such that they are shifted relative to the adjacent crushing teeth 24 and 34 in a circumferential direction.

IPC 8 full level
B02C 4/08 (2006.01); **B02C 4/30** (2006.01)

CPC (source: EP)
B02C 4/08 (2013.01); **B02C 4/30** (2013.01)

Citation (opposition)
Opponent : IKN GmbH Ingenieurbüro-Kühlerbau-Neustadt
• WO 02087767 A1 20021107 - KRUPP ROERDERTECHNIK GMBH [DE], et al
• EP 0167178 A2 19860108 - MMD DESIGN & CONSULT [GB]
• DE 102013206341 A1 20141016 - TAKRAF GMBH [DE]
• CN 104069913 A 20141001 - TAIYUAN HEAVY INDUSTRY CO LTD
• DE 102005027729 A1 20061228 - KHD HUMBOLDT WEDAG GMBH [DE]
• DE 102011055658 B3 20130328 - ALITE GMBH [DE]
• DE 4334901 A1 19950420 - KLOECKNER HUMBOLDT DEUTZ AG [DE]
• DE 2404086 A1 19740815 - FULLER CO
• DE 2809570 A1 19790920 - PETERS AG CLAUDIUS
• EP 1495812 A1 20050112 - PETERS CLAUDIUS TECH GMBH [DE]
• DE 202006014902 U1 20080207 - THYSSENKRUPP FOERDERTECHNIK [DE]
• US 3240436 A 19660315 - MYLTING LAURITZ E
• US 2014034765 A1 20140206 - LAFOND STEPHEN M [CA], et al
• CN 104014391 A 20140903 - SHENG JINPING
• CN 202962544 U 20130605 - TRIUMPH HEAVY INDUSTRY CO LTD
• CN 203281339 U 20131113 - HUANGLONG CRUSHING CONVEYOR MFG CO LTD
• CN 202290157 U 20120704 - CHENGDU DESIGN INST OF BUILDING MATERIALS INDUSTRY CO LTD
• JP 2004223424 A 20040812 - PLANT GIKEN KK
• EP 1160013 A1 20011205 - NAKAYAMA IRON WORKS LTD [JP]
• US 6312252 B1 20011106 - KLINTWORTH KLAUS [DE]
• DE 2936351 A1 19810312 - WESERHUETTE AG EISENWERK
• DE 1077037 B 19600303 - KLOECKNER HUMBOLDT DEUTZ AG
• CN 104525310 A 20150422 - ANHUI CONCH KAWASAKI EQUIPMENT MFG CO LTD
• CN 203695120 U 20140709 - XUZHOU CHINA UNITED CEMENT CO LTD
• JP S54164054 A 19791227 - PETERS AG CLAUDIUS
• JP 2000005612 A 20000111 - NEC CORP, et al
• JP 2001062320 A 20010313 - SANWA SANGYO KK
• JP 2006312128 A 20061116 - OMICHI SHIGEYOSHI
• JP 2011224475 A 20111110 - SHARP KK
• JP 2015136645 A 20150730 - NIPPON STEEL & SUMITOMO METAL CORP, et al
• JP 3045163 U 19980123
• US 2002166911 A1 20021114 - RAJEWSKI DAVID E [US]
• WEDEL VON K.: "ERFOLGREICHE KLINKERKUEHLUNG AUF PENDELROSTEN.", ZKG INTERNATIONAL, vol. 51., no. 04., 1 January 1998 (1998-01-01), DE, pages 176 - 182., XP000768766, ISSN: 0949-0205
• "Handbuch der mechanischen Verfahrenstechnik. Band 1", 1 January 2003, WILEY-VCH, article SCHÖNERT KLAUS, BAUCKHAGE KLAUS: "5. Zerteilprozesse", pages: 289 - 382, XP055976607
• CARL MITTAG, DIE HARTZERKLEINERUNG, 1953, Berlin Göttingen Heidelberg, pages 1 - 350
• "Mechanische Verfahrenstechnik 2", 1 January 1997, SPRINGER LEHRBUCH, ISBN: 978-3-540-55852-1, article STIESS MATTHIAS: "10. Zerkleinern", pages: 225 - 335, XP055976613
• KARL HÖFFL, ZERKLEINERUNGS- UND KLASSIERMASCHINEN, 1984, Hannover, pages 1 - 548, ISBN: 3-9802106-1-8
• HEINRICH SCHUBERT ET AL., VERFAHRENSTECHNIK EIN LEHRWERK FÜR UNIVERSITÄTEN UND HOCHSCHULEN, 1990, Leipzig, pages 1 - 407, ISBN: 3-342-00381-2
• ROLOFF ET AL., MASCHINENELEMENTE, 2009, pages 1 - 826
• HELMUT WALLIS: "Produktübersicht Klinkerkühler", ZKG INTERNATIONAL, vol. 57, no. 7, 1 January 2004 (2004-01-01), pages 40 - 49, XP055464655
• SEIDEL, HUCKAUF, STARK: TECHNOLOGIE DER BINDEBAUSTOFFE BRENNPROZESS UND BRENNANLAGEN, vol. 3, 1978, Berlin, pages 1 - 235

Cited by
CN112403592A

Designated contracting state (EPC)
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

DOCDB simple family (publication)
EP 3345680 A1 20180711; EP 3345680 A4 20190313; EP 3345680 B1 20200527; EP 3345680 B2 20230524; CN 106475180 A 20170308;
DK 3345680 T3 20200803; DK 3345680 T4 20230612; JP 6886403 B2 20210616; JP WO2017038049 A1 20180614; MY 192199 A 20220805;
TW 201722558 A 20170701; TW I636830 B 20181001; WO 2017038049 A1 20170309

DOCDB simple family (application)
EP 16841089 A 20160823; CN 201510547111 A 20150831; DK 16841089 T 20160823; JP 2016003831 W 20160823;
JP 2017537530 A 20160823; MY PI2018700806 A 20160823; TW 105126754 A 20160822