

Title (en)  
CRUSHING APPARATUS FOR A STONE-CRUSHING MACHINE

Title (de)  
ZERKLEINERUNGSVORRICHTUNG FÜR EINE STEINBRUCHMASCHINE

Title (fr)  
APPAREIL DE CONCASSAGE DESTINÉ À UNE MACHINE DE CONCASSAGE DE PIERRES

Publication  
**EP 3453457 A1 20190313 (EN)**

Application  
**EP 18193303 A 20180907**

Priority  
IT 201700101037 A 20170908

Abstract (en)  
Crushing apparatus for a stone-crushing machine, comprising a support base (5), at least one tooth (2), provided with a stem (3) inserted within the housing seat (6) of the support base (5), a work head (4); the stem (3) is provided with a retention portion (10), which is extended up to a second end (11), locking means (12) mechanically associated with the retention portion (10) of the stem (3) of the tooth (2) in order to maintain the tooth (2) constrained to the support base (5) comprising a first substantially annular groove (13) obtained on the retention portion (10) of the stem (3) of the tooth (2), a second substantially annular groove (16), facing towards the first annular groove (13) of the stem (3) of said tooth (2), obtained on the support base (5) in proximity to the second edge (20) of the second annular groove (16) opposite the first edge (17), a plurality of locking balls (14) inserted in the first and second annular grooves (13, 16), in order to constrain the stem (3) of the tooth (2) within the housing seat (6) of the support base (5).

IPC 8 full level  
**B02C 4/30** (2006.01); **B02C 21/02** (2006.01); **E21C 35/19** (2006.01)

CPC (source: EP)  
**B02C 4/30** (2013.01); **E21C 35/19** (2013.01); **B02C 2021/023** (2013.01)

Citation (search report)  
• [A] US 2009200855 A1 20090813 - HALL DAVID R [US], et al  
• [A] CN 104564064 A 20150429 - UNIV SHANDONG SCIENCE & TECH  
• [A] US 4026605 A 19770531 - EMMERICH KENNETH C  
• [A] CN 202039850 U 20111116 - YAOCHUAN YE, et al

Cited by  
CN115193537A; CN115254266A

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

Designated extension state (EPC)  
BA ME

DOCDB simple family (publication)  
**EP 3453457 A1 20190313**; IT 201700101037 A1 20190308

DOCDB simple family (application)  
**EP 18193303 A 20180907**; IT 201700101037 A 20170908