

Title (en)  
AN ENERGY EFFICIENT CRANE, AND A METHOD OF THE CRANE

Title (de)  
ENERGIEEFFIZIENTER KRAN UND VERFAHREN DES KRANS

Title (fr)  
GRUE À FAIBLE CONSOMMATION D'ÉNERGIE ET SON PROCÉDÉ

Publication  
**EP 4086215 A1 20221109 (EN)**

Application  
**EP 21171987 A 20210504**

Priority  
EP 21171987 A 20210504

Abstract (en)  
A crane (2) mounted on a vehicle (4) comprising a boom, hydraulic actuators arranged to apply movements to the crane boom system in response to received driving instructions (14); a sensor system (16) configured to monitor current positions of the crane components and to generate sensor signals (18). A control interface (20) is provided arranged to receive a set of operating instructions, a crane controller (24) configured to generate driving instructions (14) and configured to estimate a pressure level of a required working pressure of the hydraulic pump (12) and a required flow level of each of the hydraulic actuators for the wanted movements of boom, and to estimate a waste contribution measure for the wanted movements boom, based on the difference between the working pressure of a hydraulic pump (12) and the estimated pressure levels and further the estimated required flow level, of each of the hydraulic actuators for the wanted movements of the crane components (6), and also to compare the estimated waste contribution measure to a predetermined level. If the estimated waste contribution measure is larger than the predetermined level, the crane controller (24) is configured to determine and generate one driving instruction (14) to reduce the estimated required flow level of at least one of the hydraulic actuators for the wanted movements of the boom.

IPC 8 full level  
**B66C 13/40** (2006.01); **B66C 13/20** (2006.01); **B66C 23/00** (2006.01); **B66C 23/68** (2006.01)

CPC (source: EP)  
**B66C 13/20** (2013.01); **B66C 23/54** (2013.01)

Citation (applicant)  
• US 2019308851 A1 20191010 - GUSTAFSSON PER [SE], et al  
• US 2014060030 A1 20140306 - MA PENGFEI [US], et al  
• WO 2019206774 A1 20191031 - PUTZMEISTER ENGINEERING GMBH [DE]  
• US 2017268541 A1 20170921 - SHAN ZENGHAI [CN], et al

Citation (search report)  
• [AD] WO 2019206774 A1 20191031 - PUTZMEISTER ENGINEERING GMBH [DE]  
• [AD] US 2017268541 A1 20170921 - SHAN ZENGHAI [CN], et al  
• [AD] US 2019308851 A1 20191010 - GUSTAFSSON PER [SE], et al  
• [AD] US 2014060030 A1 20140306 - MA PENGFEI [US], et al

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

Designated validation state (EPC)  
KH MA MD TN

DOCDB simple family (publication)  
**EP 4086215 A1 20221109; EP 4086215 B1 20231115; EP 4086215 C0 20231115**

DOCDB simple family (application)  
**EP 21171987 A 20210504**