

Title (en)

Control system for and including a remote-controlled working machine equipped with a manoeuvrable arm

Title (de)

Steuersystem für und mit ferngesteuerter Arbeitsmaschine mit beweglichem Arm

Title (fr)

Système de contrôle pour et avec engin de travaux télécommandé avec un bras amovible

Publication

EP 2508680 A1 20121010 (EN)

Application

EP 12446501 A 20120328

Priority

SE 1150307 A 20110407

Abstract (en)

The invention concerns a control system for a remote-controlled working machine (1) equipped with a manoeuvrable arm (10), in particular a demolition robot for demolition work, that is intended to carry at the free end of its arm a tool (14, 16), whereby the control system comprises a control unit (4) intended for the remote control of the working machine, whereby an operator (3) is in connection, either by cable or wirelessly, with a control computer (25) that is a component of a hydraulic control circuit (22) for the working machine, and which control unit includes a pair of control sticks (4a, 4b) and associated buttons and knobs that through their influence allow the working machine to be switched into different functional or working modes, whereby the manoeuvrable arm can be caused to carry out desired motions through a number of operating means (31, 32, 33, 34) that are driven hydraulically, that are arranged at the manoeuvrable arm, and that can be influenced by means of the said control sticks (4a, 4b). For an improved efficiency and ease of use, the working machine (1) can be switched through the control unit (4) between two different working modes, including: a first mode for manual operation in which the operator (3) controls the motion of the manoeuvrable arm (10) through direct influence of the relevant control sticks (4a, 4b) of the control unit (4), and a second mode for semi-automatic or fully automatic operation in which the operator (3), on influence of any one of the control sticks (4a, 4b), causes the manoeuvrable arm to move following a predetermined course through the synchronised control of at least two of the operating means (31, 32) of the manoeuvrable arm following a valve control curve (26a, 26b) for each one of these and stored as software in the control computer (25).

IPC 8 full level

E02F 3/43 (2006.01); **E02F 3/96** (2006.01); **E02F 9/20** (2006.01)

CPC (source: EP SE)

B66C 23/54 (2013.01 - SE); **E02F 3/43** (2013.01 - SE); **E02F 3/437** (2013.01 - EP); **E02F 3/966** (2013.01 - EP); **E02F 9/2029** (2013.01 - EP); **E02F 9/205** (2013.01 - EP SE); **E02F 9/2228** (2013.01 - SE)

Citation (search report)

- [IY] JP 2008101343 A 20080501 - HITACHI CONSTRUCTION MACHINERY
- [Y] US 2006042240 A1 20060302 - SPORER MARK A [US], et al
- [Y] EP 1375757 A1 20040102 - LIEBHERR HYDRAULIKBAGGER [DE]
- [A] WO 2010085184 A1 20100729 - HUSQVARNA AB [SE], et al
- [A] US 6778097 B1 20040817 - KAJITA SHIGEO [JP], et al
- [A] JP H07166583 A 19950627 - HITACHI CONSTRUCTION MACHINERY

Cited by

WO2017213572A1; DE102017127339A1; WO2019097059A1; CN109072622A; US11686066B2; EP4119491A1; NL2022360B1; EP2957679A1; EP3889007A1; CN113366172A; EP3921476A4; KR20140102370A; EP2957680A4; CN109312555A; EP3469149A4; US11214970B2; US10738442B2; US11643141B2; US11162243B2; AU2018368620B2; AT513585A1; JP2019078133A; AT513585B1; WO2017174576A1; US11505919B2; US11124949B2; US11401699B2; US10422357B2; WO2022026200A1; WO2020145823A1; WO2020162809A1; JP2015031141A; US10920436B2; WO2022256964A1; US11958729B2

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 2508680 A1 20121010; **EP 2508680 B1 20180919**; SE 1150307 A1 20121008; SE 536152 C2 20130604

DOCDB simple family (application)

EP 12446501 A 20120328; SE 1150307 A 20110407