

Title (en)

LARGE MANIPULATOR WITH VIBRATION DAMPER

Title (de)

GROSSMANIPULATOR MIT SCHWINGUNGSDÄMPFER

Title (fr)

MANIPULATEUR DE GRANDE TAILLE COMPRENANT UN AMORTISSEUR DE VIBRATIONS

Publication

**EP 3759294 A1 20210106 (DE)**

Application

**EP 19708414 A 20190221**

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- EP 2019054392 W 20190221

Abstract (en)

[origin: WO2019166330A1] The invention relates to a large manipulator for concrete pumps with a distributor boom (20). The distributor boom (20) comprises an articulated boom (32), which is mounted on the boom pedestal (30), is made up of multiple boom arms (44, 46, 48, 50, 52) connected to one another in an articulated manner and having a boom tip (64) and multiple joints (34, 36, 38, 40, 42) for pivoting the boom arms (44, 46, 48, 50, 52) with respect to the boom pedestal (30) or an adjacent boom arm (44, 46, 48, 50, 52), and includes a control device (86) for controlling the movement of the articulated boom (32) with the aid of drive-unit actuating elements for drive units (26, 68, 78, 80, 82, 84) respectively assigned to the articulated joints (34, 36, 38, 40, 42). According to the invention, the large manipulator includes a device (102) for determining the vertical speed  $v_{II}$  and/or horizontal speed  $v_I$  of a boom arm location on at least one boom arm (44, 46, 48, 50, 52) in a system of coordinates (104) based on the frame (16) for reference. It also has a device for determining the articulating angle (116) of the joints (34, 36, 38, 40, 42). The control device (86) controls the movement of the articulated boom (32) by providing positioning manipulated variables  $SD_i$  for the actuating elements (90, 92, 94, 96, 98, 100) of the drive units (68, 78, 80, 82, 84), which depend on a vertical speed  $v_{II}$ , determined by means of the device (102) for determining a vertical speed  $v_n$  of a boom arm location and/or horizontal speed  $v_I$  of the boom arm location and on articulating angles  $\epsilon_i$  of the joints (34, 36, 38, 40, 42), determined by means of the device (116) for determining the articulating angles of the joints (34, 36, 38, 40, 42) and/or on an angle of rotation  $\epsilon_{18}$  of the boom pedestal (30) about a vertical axis (18), and also on control signals  $S$  for adjusting the distributor boom (20), generated by means of a control unit (87) that can be operated by a boom operator.

IPC 8 full level

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CPC (source: EP KR US)

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Citation (search report)

See references of WO 2019166330A1

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