

## Title (en)

WORKING MAST, IN PARTICULAR FOR LARGE MANIPULATORS AND MOVABLE CONCRETE PUMPS

## Title (de)

ARBEITSMAST, INSBESONDERE FÜR GROSSMANIPULATOREN UND FAHRBARE BETONPUMPEN

## Title (fr)

MAT OPERATIONNEL DESTINE NOTAMMENT A DES MANIPULATEURS DE GRANDES DIMENSIONS ET A DES POMPES A BETON MOBILES

## Publication

**EP 1937913 A1 20080702 (DE)**

## Application

**EP 06806319 A 20061017**

## Priority

- EP 2006009983 W 20061017
- DE 102005050134 A 20051018

## Abstract (en)

[origin: WO2007045426A1] The invention relates to a working mast, in particular for large manipulators and concrete pumps comprising a rotatable head (21) mounted on a frame (11) in such a way that it is pivotable about a vertical axis (13), a first mast arm (1) pivotable in a limited manner about a horizontal articulation axis (A) in front of the rotatable head (21) by means of a drive unit (22) and at least one other mast arm (2, 3, 4) which, is longitudinally displaceable along a thrust axis and/or rotatable about a horizontal articulation axis (B, C, D) with respect to the adjacent mast arm with the aid of a drive unit (23, 24, 25). In addition, a control, preferably a remotely controlled, device enables the mast to be displaced by means of actuators associated with different drive units. The actuators are substantially embodied in the form of adjusting valves which make it possible to control the drive units (23, 24, 25) embodied in the form of hydraulic cylinders. A path and/or angle measuring sensor (54) is placed on at least one mast arm, thrust and/or articulation axis, the vertical axis (13) and/or drive units (23, 24, 25). The control device comprises a safety routine responsive to output data items received from the sensors. Pressure and force sensors (42, 44) are arranged on the bottom and rod sides of at least one drive unit embodied in the form of a hydraulic cylinder (22), whereas the safety routine comprises an evaluating part (56) responsive to the output data of the pressure and force sensors. In order to improve the use of kinematics during the articulated mast movement, the safety routine is provided with a data memory for recording a data field which is analytically predefined or presented in the form of tables and contains the pressure or force threshold values corresponding to at least one path and/or angle measured value assigned to the mast arm. The evaluating part (56) comprises a comparator supplied with output data of the pressure or force sensors (42, 44) or the associated path or angle sensors (54) or else with quantities derived therefrom in order to compare them with the associated threshold values obtained from the data field and to generate a signal when said threshold value data items are exceeded or fallen below.

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## Citation (search report)

See references of WO 2007045426A1

## Citation (examination)

- US 2003090384 A1 20030515 - NISHIMURA SATORU [JP], et al
- WO 02064912 A1 20020822 - PUTZMEISTER AG [DE], et al

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