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- (54) **Title:** FULLY AUTOMATED TOWING, ALIGNMENT AND HANGAR SYSTEM AND METHOD FOR OFFSHORE OPERATION HELICOPTER

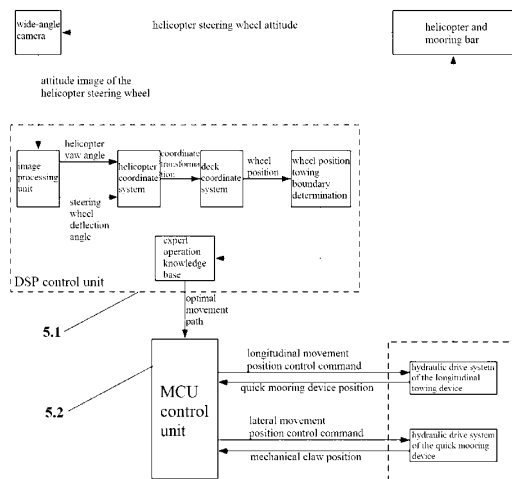


Fig 5

- (57) **Abstract:** A fully automated towing, alignment and hangar system suitable for an offshore operation helicopter includes a quick mooring device, a wide-angle camera installed on a rear wall of the quick mooring device, a longitudinal towing device, a DSP control unit, an MCU control unit, a helicopter and a mooring bar thereof. An alignment method based on above system includes following steps of acquiring an attitude image of a steering wheel, calculating a helicopter yaw angle and a steering wheel deflection angle, calculating position coordinates of the steering wheel, a first wheel and a second wheel in a deck coordinate system, judging boundaries relative to a towing indication line, extracting an optimal path suitable for the movement of the helicopter, calculating lateral and longitudinal movement position control commands, driving the movement of the helicopter, and repeating the above operations until the automated towing, alignment and hangar are completed. The method provided by the present disclosure does not need human intervention in the whole process, and thereby reducing operation difficulty, improving transshipment efficiency, and ensuring the safety of auxiliary personnel and equipment on the ship, and having an important practical value in the fields of ships, military industry and the like.