

Title (en)
MANIPULATOR FOR THE POSITIONING OF A TUBULAR SONDE

Publication
EP 0045454 B1 19840502 (DE)

Application
EP 81105840 A 19810723

Priority
DE 3029811 A 19800806

Abstract (en)
[origin: ES8206251A1] Manipulator for positioning a tube probe at tube mouths of heat-exchanger tubes by remote-control of the tube probe which is connected to a flexible supply line for inspecting and/or repairing the heat-exchanger tubes, the tube mouths being disposed in a tube sheet and extending over an approximately semicircular tube field defined by a chord, includes at least three clamping devices distributed over the length of a carrying body fixed to the tube sheet and being lockable independently of one another in respective tube mouths of the tube sheet, the clamping devices being formed as insertable and retractable expanding mandrels extending from the carrying body towards and spacing the carrying body from the tube sheet, a boom having a swivel head by which it is fastened to a rotary shaft of a swing drive seated on the bearing surface of a support facing towards the tube sheet, a mouthpiece disposed at a free end of the boom and spaced from the rotary shaft a distance greater than a perpendicular distance of the rotary shaft from the chord defining the approximately semicircular tube field, the mouthpiece being thereby pivotable with the boom into the space between the carrying body and the tube sheet for introducing the tube probe into the respective tube mouths located thereat.

IPC 1-7
B25J 5/00

IPC 8 full level
G21C 17/003 (2006.01); **B25J 5/00** (2006.01); **F22B 37/00** (2006.01); **F22B 37/02** (2006.01)

CPC (source: EP US)
F22B 37/005 (2013.01 - EP US); **Y10S 165/003** (2013.01 - EP US); **Y10T 29/49718** (2015.01 - EP US)

Cited by
FR2585501A1; FR2613652A1; CN112680848A; FR2895791A1; EP0120355A3; EP0077245A1; FR2513927A1; US7896220B2

Designated contracting state (EPC)
CH DE FR GB LI SE

DOCDB simple family (publication)
EP 0045454 A2 19820210; **EP 0045454 A3 19820414**; **EP 0045454 B1 19840502**; DE 3029811 A1 19820218; DE 3163390 D1 19840607; ES 504571 A0 19820816; ES 8206251 A1 19820816; JP S5754090 A 19820331; US 4438805 A 19840327

DOCDB simple family (application)
EP 81105840 A 19810723; DE 3029811 A 19800806; DE 3163390 T 19810723; ES 504571 A 19810805; JP 12236681 A 19810804; US 28915381 A 19810803