

Title (en)
Insertion aid for filling needle plates

Title (de)
Einführhilfe zur Bestückung von Nadelbrettern

Title (fr)
Dispositif d'insertion pour le garnissage de planches à aiguilles

Publication
EP 2233626 A1 20100929 (DE)

Application
EP 09156528 A 20090327

Priority
EP 09156528 A 20090327

Abstract (en)

The insertion device with a needle board (10) for mutual insertion of needles (41, 44) into the needle board, where the needles are clamped in multiple clamping claws (40) and the needle board has multiple holes for receiving needles, comprises three recesses for receiving one of the needles, a removable guiding section (32), a strip, which is fixed to a needle board reception of a mounting apparatus, extends itself in a longitudinal direction and has an adjustment unit that enables an adjustment in x-direction, and an retaining arm, at which the strip is kept. The insertion device with a needle board (10) for mutual insertion of needles (41, 44) into the needle board, where the needles are clamped in multiple clamping claws (40) and the needle board has multiple holes for receiving needles, comprises three recesses for receiving one of the needles, a removable guiding section (32), a strip, which is fixed to a needle board reception of a mounting apparatus, extends itself in a longitudinal direction and has an adjustment unit that enables an adjustment in x-direction, and an retaining arm, at which the strip is kept and which extends in a transverse direction right-angled to the longitudinal direction. The recesses are arranged, so that they are used for guiding the tips of the respective needle into the corresponding holes, where the guiding section has a front surface. The recesses are equidistantly arranged from each other in the longitudinal direction with a distance, which corresponds to a division of the holes of the needle board. The recess is formed as groove, which is formed on a surface of the insertion device and extends up to an edge, where several grooves (51) run parallel to each other. The width and depth of the groove reduce along its progression to the edge. A cross-section of the groove narrows into the depth originating from the surface of the insertion device, and is in trapezoid- or triangular form. The removable guiding section is adapted to the needle board and has same suitable recesses to the holes, is arranged to the strip and is kept relative to the strip in a height-adjustable manner. The strip is adjustable related to the retaining arm in the transverse direction and is fixable in its position by a clamping device. The retaining arm is adjustable related to the mounting apparatus in the longitudinal direction and is fixable in its position.

Abstract (de)

Es wird eine Einführeinrichtung (20) geschaffen, die es einem Bediener erleichtert, viele in einer Mehrfachspannzange (40) eingespannte Nadeln (41, 44) auch bei gewissen Lageabweichungen gleichzeitig in die zugehörigen Bohrungen (11) eines Nadelbrettes (10) einzusetzen. Die Einführeinrichtung (20) weist einen Führungsabschnitt (32) mit vielen parallelen Nuten (51) auf, die im Abstand der Bohrungen (11) angeordnet sind und jeweils die Spitze (45) einer Nadel (41, 44) aufnehmen und zu der zugehörigen Bohrung (11) führen können. Dabei helfen die Nuten (51), die einzelnen Nadeln (41, 44) auf die Bohrungen (11) auszurichten, indem sie etwaige Lageabweichungen durch geringfügige Biegung der Nadeln (41, 44) korrigieren. Die Einführeinrichtung (20) ist an einem Bestückungsautomaten (1) angebracht und bezogen auf ein in diesem aufgenommenes Nadelbrett (10) verstellbar und arretierbar.

IPC 8 full level
D04H 18/00 (2012.01)

CPC (source: EP US)
D04H 18/00 (2013.01 - EP US); **D04H 18/02** (2013.01 - EP US); **Y10T 29/53** (2015.01 - EP US); **Y10T 29/53091** (2015.01 - EP US); **Y10T 29/53961** (2015.01 - EP US)

Citation (applicant)

- DE 8512596 U1 19850605
- DE 1923665 U 19650916 - DILO KG OSKAR [DE]
- US 6393693 B1 20020528 - FINOCCHI PAOLO LODOVICO [IT]
- DE 8329050 U1 19840105
- EP 07002360 A 20070202

Citation (search report)

- [X] DE 8512596 U1 19850605
- [X] DE 1923665 U 19650916 - DILO KG OSKAR [DE]
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- [A] DE 8329050 U1 19840105
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- [A] SU 412325 A1 19740125
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- [X] GB 1296725 A 19721115
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CN105683435A; US9549492B2; US9909242B2; WO2015063328A1; TWI476424B

Designated contracting state (EPC)
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 SE SI SK TR

Designated extension state (EPC)
AL BA RS

DOCDB simple family (publication)

EP 2233626 A1 20100929; EP 2233626 B1 20111130; AT E535637 T1 20111215; BR PI1000596 A2 20110621; CN 101844302 A 20100929; CN 101844302 B 20130206; ES 2374615 T3 20120220; JP 2010229615 A 20101014; JP 5653641 B2 20150114; KR 101182120 B1 20120913; KR 20100108235 A 20101006; PL 2233626 T3 20120531; RU 2010111775 A 20111010; RU 2435883 C1 20111210; TW 201104033 A 20110201; TW I431176 B 20140321; US 2010242266 A1 20100930; US 8353099 B2 20130115

DOCDB simple family (application)

EP 09156528 A 20090327; AT 09156528 T 20090327; BR PI1000596 A 20100326; CN 201010149433 A 20100326; ES 09156528 T 20090327; JP 2010073605 A 20100326; KR 20100026068 A 20100324; PL 09156528 T 20090327; RU 2010111775 A 20100326; TW 99109001 A 20100326; US 72969110 A 20100323