

(19)



Europäisches Patentamt
European Patent Office
Office européen des brevets



(11) Publication number:

0 413 655 A3

(12)

EUROPEAN PATENT APPLICATION(21) Application number: **90630138.7**(51) Int. Cl.⁵: **H01R 43/28, H01R 43/00,
H01R 43/052, H01B 13/00**(22) Date of filing: **14.08.90**

(30) Priority: **17.08.89 US 395372**
17.08.89 US 395373
17.08.89 US 395374
17.08.89 US 395378
17.08.89 US 395384

(43) Date of publication of application:
20.02.91 Bulletin 91/08

(84) Designated Contracting States:
DE ES FR GB GR IT

(88) Date of deferred publication of the search report:
03.02.93 Bulletin 93/05

(71) Applicant: **MECANISMOS AUXILIARES
INDUSTRIALES S.A. M.A.I.S.A.**
Passeig de l'Estacio, 14
E-43800 Valls, Tarragona(ES)

(72) Inventor: **Aligue, Jordi Casas**
Cami de l'Aleixar 42-5 -1a
Reus(ES)
Inventor: **Vazquez, Manuel Arevalo**
Calle San Rafael 6
Albiol, Tarragona(ES)
Inventor: **Vives, Jordi Bigorra**
Passeig de l'Estacion 29
32 Valls, Tarragona(ES)
Inventor: **Hernandez, Jaime Ulloa**
Calle Robert Aguilo 43
2, 4, Tarragona(ES)
Inventor: **Verge, Ramon M. Vidal**
Calle Abat Llort 19
9, 1, Valls, Tarragona(ES)

(74) Representative: **Schmitz, Jean-Marie et al**
OFFICE DENNEMEYER S.à.r.l. P.O. Box 1502
L-1015 Luxembourg(LU)

(54) **Wire harness manufacture.**

(57) Wire harnesses are assembled by preparing wires in a first region (11) and assembling the harnesses in a second region (12). The harnesses are assembled in the second region by conveying the harnesses from one end of a conveyor (23) to the other, by providing multiple work stations (15) along the conveyor for manual work functions, by providing local supplies (32) of wires at some work stations, by providing local supplies (40) of connectors at some work stations, and by connecting some of the wires to some of the connectors at some of the work stations and integrating them into a wire harness (8). The local supplies of wires at some work stations are provided by transporting the wires from the first region to the work stations. The conveyor is incremented periodically and the work functions at the various work stations are preselected to require substantially equal time to perform. The prepared wires for the harnesses are stored in channel trays (20) and may be transported and supported on mobile

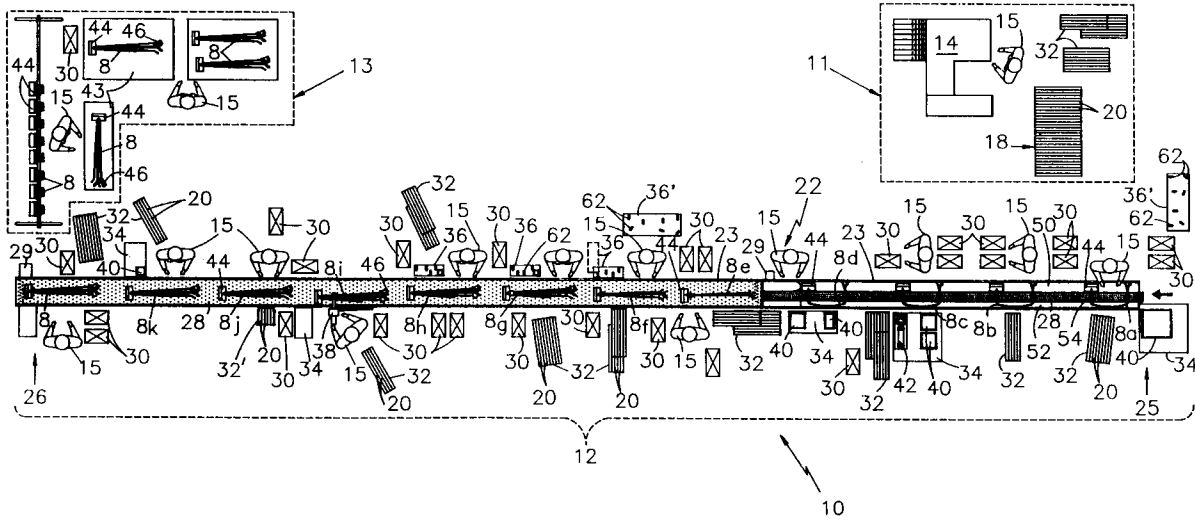
carriages. The channel trays are U-shaped and may be oriented horizontally or vertically. The conveyor includes, near its upstream end, a trough (50, 52) along one or both sides to permit the embryonic harness to be arranged transversely of the conveyor with portions hanging and/or supported in the trough(s). The harness may be carried by fingers on the conveyor and in which the harness is placed. Some loom tables (36) are provided adjacent respective ones of the work stations. Some of those loom tables are pivotally mounted for rotation between operating and idle positions to facilitate assembly operations at the work stations. A taping arrangement adjacent the mechanized conveyor provides a taping machine (38) which is mounted for convenient manual displacement. The machine may be on a pivotable platform which also includes a clamp mechanism for supporting and tensioning a wire harness for taping. The machine is constructed to fully enclose the harness being taped, and includes a two-piece hous-

EP 0 413 655 A3

ing which may be opened and closed and a similar two-piece orbiting plate which moves within and opens and closes with the housing. A terminal assembling tool (42) connects multiple terminated wires with a common bus connector. The tool includes first and second jigs which pre-position the

wires and the connector and are movable between a load/unload position and a connecting position. The jig for the connector includes a retainer member which interacts with the connector to assist in removing the terminated wires from the other jig following connection.

FIG. 1





European Patent
Office

EUROPEAN SEARCH REPORT

Application Number

EP 90 63 0138

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
Y A	US-A-3 930 307 (SCHOTTHOEFER ET AL.) * column 3, line 53 - column 7, line 3; figures 1-7 * ---	1 12,21,26	H01R43/28 H01R43/00 H01R43/052 H01B13/00
Y A	EP-A-0 290 641 (THE BOEING COMPANY) * column 3, line 29 - column 12, line 16; figures 1-9 * ---	1 21	
A	DE-A-2 507 384 (SHIN MEIWA INDUSTRY CO. LTD.) * page 6, last paragraph - page 22; figures 1-22 * ---	1,4-6	
A	DE-A-3 327 583 (BACH GMBH & CO.) * page 6 - page 23; figures 1-14 * ---	4-7	
A	US-A-4 679 805 (CUNNINGHAM) ---	12,13	
A	EP-A-0 167 985 (INARCA S.P.A.) * page 1 - page 16; figures 1-7 * ---	43	
A	MATERIALS HANDLING NEWS no. 294, May 1982, DUNSTABLE, BEDFORDSHIRE, GB page 234 'automation, are you flexible?' * the whole document * -----	1,2	TECHNICAL FIELDS SEARCHED (Int. Cl.5) H01B H01R B65G B62B
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 08 DECEMBER 1992	Examiner TAPPEINER R.
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons ----- & : member of the same patent family, corresponding document			