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(54) Title: PANEL CRIMPING MACHINE WITH CONTROL SYSTEM FOR CONTROLLING TIMING BETWEEN CRIMPING ROLLERS WITH AN ADJUSTABLE SEPARATION

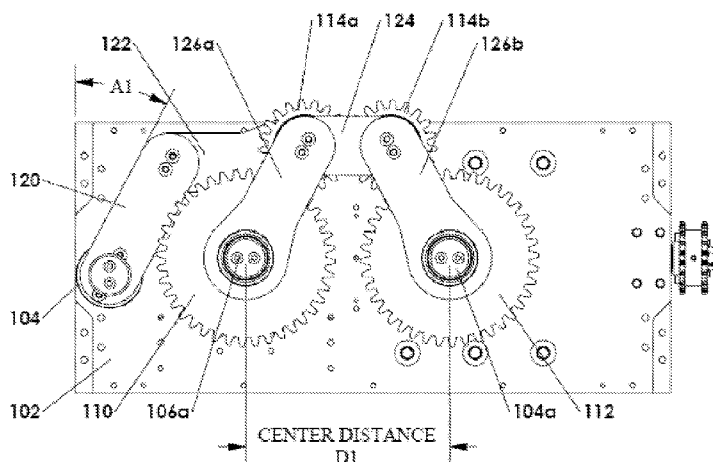


FIG. 8A

(57) Abstract: A panel crimping apparatus comprises a frame, a first crimping roller supported by the frame, the first crimping roller comprising a first shaft, a plurality of first crimping blades, and a first drive gear attached to the first shaft, and a second crimping roller supported by the frame, the second crimping roller comprising a second shaft, a plurality of second crimping blades, and a second drive gear attached to the second shaft. A distance between the first and second shafts of the first and second crimping rollers is adjustable. The apparatus comprises various links, gears and a control linkage configured to maintain timing between the first and second crimping rollers during driving of the first and second crimping rollers over an adjustable range of distance therebetween.



INTERNATIONAL SEARCH REPORT

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International application No.

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A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) - B21D 13/04 (2014.01)

CPC - B21D 13/04

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC(8) - B21D 13/04 (2014.01)

CPC - B21D 13/04

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

IPC(8): B21B 13/10 B21B 13/08 B21B 13/12 B21B 31/24 B21B 31/22 B21B 31/20 E04D 1/00 B21D 13/04 B21D 43/09 B21D 43/08

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Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

PatBase; ProQuest Dialog; Google Patents; Google Web; Google Scholar

Search Terms: crimp% corrug% pleat% fold% roll% transvers% rib% adjust% separat% spac% teeth%

gear% linkag% gap% distanc% roller% spacing spacer control% vary% variable set% fourth pinion% wheel% link% bar% lever%

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X --- Y	CN 203316548 U (Yaocheng). 04 December 2013 (04.12.2013). Figs. 1-4; Abstract; para [0010], [0016], [0018], [0019] of translation. Machine translation by China Patent Information Center, retrieved online 1 October 2014. URL <http://c2e.cnpat.com.cn/Translationtoen.aspx?AppNo=DABAEBDGFAFFICDGGBDHCFGBHDFJBFJCJABIIBFHECBEDAAA&Doc=JBECA^CEH&FileType=TAAA>	1-2, 5-6 ----- 3-4, 7
Y	US 2,777,333 A (Gundlach). 15 January 1957 (15.01.1957). Fig. 1; col 3, ln 22-30, 35-40.	3-4
Y	US 2012/0323354 A1 (Anderson et al.). 20 December 2012 (20.12.2012). Fig. 12; para [0057].	7

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