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[Continued on next page]

(54) Title: PLASTIC WIRE CLIPPER/STUFFER

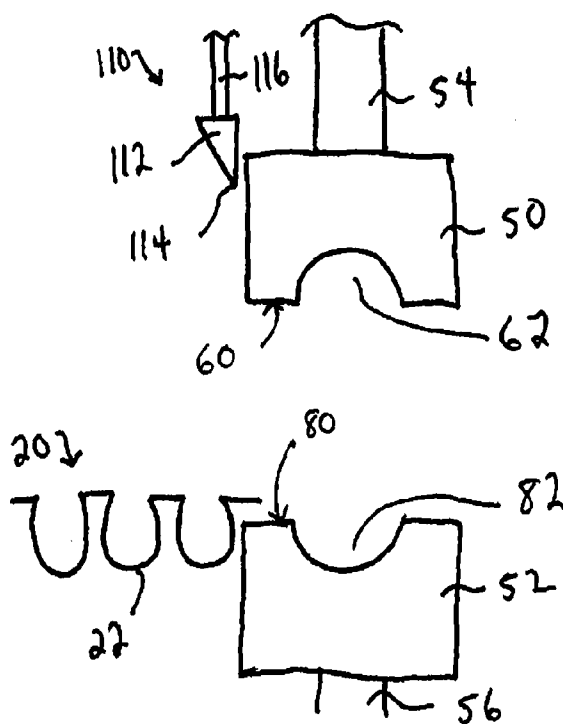


Fig 5

(57) Abstract: A system for applying plastic clips to tubular products is described. In one embodiment, the system comprises a die and a punch. The die has a peripheral face, an arcuate wall in the die peripheral face forming a half-cylindrical bore, the bore separating the die peripheral face into a first side and a second side, and a groove formed in the arcuate wall and the second side, the groove extending from the first side, through the arcuate wall and the second side, and forming a slot in an outer edge of the die. The punch has a peripheral face, an arcuate wall in the punch peripheral face forming a half-cylindrical bore, the bore separating the punch peripheral face into a first side and a second side, and a pair of grooves, the grooves extending from the first side to the second side of the punch peripheral face. The system also has a means for moving at least one of the die and the punch from a first position in which the die peripheral face and the punch peripheral face are adjacent, to a second position in which the die peripheral face and the punch peripheral face are remote.



NO, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 08/77009

A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) - B65B 51/04 (2008.04)

USPC - 53/138.1

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)- B65B 51/04 (2008.04)

USPC- 53/138.1

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

IPC(8)- B65B 51/04 (2008.04)

USPC- 53/138.1, 138.2, 128.1; 452/30

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

PubWEST(USPT,PGPB,EPAB,JPAB); DialogWeb(NPL); Google Scholar. Search terms: plastic, polymer, thermoplastic, resin, clip, manufacture, groove, extrudate, extrusion, vacuum, punch, die, form, interconnect, tool, cool, polypropylene, polyethylene, shape, wire, filament, strip, bend, calibrate, closure, clasp, stick, enter, feed

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 3,793,688 A (KEATING et al.) 26 February 1974 (26.02.1974), col. 2, ln. 65, to col. 3, ln. 39.	1-16
Y	US 3,975,795 A (KUPCIKEVICIUS et al.) 24 August 1976 (24.08.1976), col. 7, ln. 1-10.	3-10
Y	US 6,205,747 B1 (PANIAGUA OLAECHEA) 27 March 2001 (27.03.2001), col. 2, ln. 50-55.	6,9
Y	US 4,571,805 A (NIEDECKER) 25 February 1986 (25.02.1986), col. 1, ln. 5-10.	7,10
Y	US 5,497,645 A (NIEDECKER) 12 March 1996 (12.03.1996), col. 4, ln. 27-35.	11-16
Y	US 2007/0137142 A1 (PINTO et al.) 21 June 2007 (21.06.2007), para. [0045].	12,14,16
Y	US 5,865,357 A (GOODWIN) 2 February 1999 (02.02.1999), col. 2, ln. 49-53.	17
Y	US 6,659,020 B1 (BALL) 9 December 2003 (09.12.2003), col. 10, ln. 17-35.	17
Y	US 2006/0124485 A1 (KENNEDY) 15 June 2006 (15.06.2006), para. [0029].	18
Y	US 5,167,891 A (DIJLMAN, Sr. et al.) 1 December 1992 (01.12.1992), col. 4, ln. 1-32.	18
A	US 5,324,307 A (JARRETT et al.) 28 June 1994 (28.06.1994), col. 13, ln. 33-68.	18

☐ Further documents are listed in the continuation of Box C.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

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10 MAR 2009

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 08/77009

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:
Group I, claims 1-16, drawn to a system for applying plastic clips to tubular products having a die and a punch.
Group II, claim 17, drawn to a method of manufacturing clips using a vacuum calibration station.
Group III, claim 18, drawn to a method of manufacturing clips by extruding a thermoplastic resin into an extrudate.

1. ☒ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying additional fees, this Authority did not invite payment of additional fees.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- ☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- ☒ No protest accompanied the payment of additional search fees.