

Title (en)
FASTENER CHAIN FINISHING APPARATUS

Publication
EP 0065318 B1 19860402 (EN)

Application
EP 82104408 A 19820519

Priority
JP 7618481 A 19810520

Abstract (en)
[origin: EP0065318A1] A fastener chain finishing apparatus comprising a stop securing device adapted to secure tops to a fastener chain of indefinite length having a number of connected elements set thereon at predetermined intervals along the length of the chain and a space forming device positioned adjacent the stop securing device for removing selected elements from the fastener chain covering a predetermined distance along the length of the chain is disclosed. The stop securing device includes a bender provided with a forming die, a cutting punch adapted to cut a stop forming wire fed onto the forming die to predetermined length and shape and a forming punch adapted to secure a stop to the fastener chain while forming the stop from the cut stop forming wire. The space forming device includes a spacer punch and a spacer die adapted to cut out the heads of said selected engaging elements from above and below. The bender is provided with an air jet orifice adapted to spout air towards the forming die.

IPC 1-7
B21F 45/18; **B21D 53/56**

IPC 8 full level
A44B 19/42 (2006.01); **A44B 19/58** (2006.01); **A44B 19/60** (2006.01); **B21D 53/56** (2006.01); **B21F 45/18** (2006.01)

CPC (source: EP KR)
A44B 19/58 (2013.01 - EP); **A44B 19/60** (2013.01 - EP KR); **B21D 53/56** (2013.01 - EP); **B21F 45/18** (2013.01 - EP)

Cited by
CN110604374A; EP0981975A3; CN114850362A; US6467159B2

Designated contracting state (EPC)
BE DE FR IT NL

DOCDB simple family (publication)
EP 0065318 A1 19821124; **EP 0065318 B1 19860402**; AU 534298 B2 19840119; AU 8329382 A 19821202; BR 8202985 A 19830503; CA 1188084 A 19850604; DE 3270219 D1 19860507; DE 65318 T1 19830818; ES 512408 A0 19830416; ES 8304780 A1 19830416; FI 77361 B 19881130; FI 77361 C 19890310; FI 821756 A0 19820518; GB 2102062 A 19830126; GB 2102062 B 19850227; HK 62488 A 19880826; JP S57190502 A 19821124; JP S6318482 B2 19880419; KR 830009752 A 19831223; KR 840001392 B1 19840924; MY 8700235 A 19871231

DOCDB simple family (application)
EP 82104408 A 19820519; AU 8329382 A 19820505; BR 8202985 A 19820520; CA 402456 A 19820506; DE 3270219 T 19820519; DE 82104408 T 19820519; ES 512408 A 19820520; FI 821756 A 19820518; GB 8213720 A 19820512; HK 62488 A 19880818; JP 7618481 A 19810520; KR 820002192 A 19820519; MY 8700235 A 19871230