

Title (en)

CLOSING UNIT MADE OF TIN-PLATE, PROCESS FOR MAKING IT AND CONTAINER PROVIDED WITH SUCH A CLOSING UNIT

Publication

**EP 0321394 B1 19920129 (DE)**

Application

**EP 88810796 A 19881121**

Priority

CH 486787 A 19871214

Abstract (en)

[origin: US4915254A] The closure unit can be manufactured in a single deep-drawing operation. During the course of a predetermined stroke of the single deep-drawing operation, such as the downward stroke up to a lower dead-center position, a blank is punched out, a ring or marginal rim and a collar are formed, a central opening is punched out and a section extending peripherally to the cut edge is downwardly extended. During the upward stroke predetermined sections of the extended collar are rolled and subsequently squeezed together.

IPC 1-7

**B21D 51/38**; **B65D 17/50**

IPC 8 full level

**B21D 51/38** (2006.01); **B65D 17/50** (2006.01); **B65D 77/20** (2006.01)

CPC (source: EP US)

**B21D 51/383** (2013.01 - EP US); **B65D 17/502** (2013.01 - EP US); **B65D 2517/0013** (2013.01 - EP US); **B65D 2517/0061** (2013.01 - EP US); **B65D 2517/5013** (2013.01 - EP US); **B65D 2517/5029** (2013.01 - EP US); **B65D 2517/5054** (2013.01 - EP US); **B65D 2517/5083** (2013.01 - EP US); **B65D 2577/205** (2013.01 - EP US)

Cited by

EP0990590A1; EP0808676A1; DE10197223B4; US6601727B2

Designated contracting state (EPC)

AT BE CH DE ES FR GB GR IT LI LU NL SE

DOCDB simple family (publication)

**EP 0321394 A1 19890621**; **EP 0321394 B1 19920129**; AT E72188 T1 19920215; CH 674829 A5 19900731; DE 3868254 D1 19920312; ES 2030898 T3 19921116; GR 3004329 T3 19930331; US 4915254 A 19900410; US 5020955 A 19910604

DOCDB simple family (application)

**EP 88810796 A 19881121**; AT 88810796 T 19881121; CH 486787 A 19871214; DE 3868254 T 19881121; ES 88810796 T 19881121; GR 920400679 T 19920409; US 28030488 A 19881205; US 42320489 A 19891018