

Title (en)
Improvements to trigger sprayers

Title (de)
Verbesserungen an Spender

Title (fr)
Améliorations portant sur des dispositifs à gachette.

Publication
EP 2020264 A3 20090225 (EN)

Application
EP 08252628 A 20080804

Priority
GB 0715121 A 20070803

Abstract (en)
[origin: EP2020264A2] A method of manufacturing a trigger sprayer in which the spray head (2) is supported by the plunger (12) instead of the dip tubes (14) during movement of the spray head to the filling point so that the dip tubes do not become damaged during manufacture. The trigger sprayer may also be provided with a closure mechanism (fig. 9-11) which improves orientation of the spray head with respect to the container.

IPC 8 full level
B05B 11/00 (2006.01)

CPC (source: EP)
B05B 11/0029 (2013.01); **B05B 11/1049** (2023.01); **B05B 15/30** (2018.01); **B05B 15/68** (2018.01); **B05B 11/1045** (2023.01); **B05B 11/1057** (2023.01); **B05B 15/652** (2018.01)

Citation (search report)

- [AYX] JP 2001315707 A 20011113 - LION CORP
- [Y] DE 202004003671 U1 20050721 - OPHARDT HYGIENE TECHNIK GMBH & [DE]
- [X] WO 2007065066 A2 20070607 - MEADWESTVACO CORP [US], et al
- [X] EP 1254722 A1 20021106 - SAINT GOBAIN CALMAR INC [US]
- [XY] EP 0653359 A1 19950517 - INNOCOS GMBH [DE]
- [X] US 2005061834 A1 20050324 - GARCIA FIRMIN [FR], et al
- [Y] FR 2891533 A1 20070406 - VALOIS SAS [FR]
- [A] WO 2004043613 A2 20040527 - EMSAR INC [US]
- [A] US 6364172 B1 20020402 - MAAS WILHELMUS JOHANNES [NL], et al
- [A] JP H02241565 A 19900926 - SHIBUYA KOGYO CO LTD
- [A] EP 0097094 A2 19831228 - VALVE PRECISION SARL [FR]
- [A] GB 692254 A 19530603 - NEW HYGIENE LTD

Cited by
US2012234870A1; US2012234872A1; US9827581B2; US10124357B2; CN110461480A; EP3509755A4; US11247221B2; WO2012035445A1; US8870033B2; US8931668B2; US9919326B2; US11571703B2; US10646888B2; US10870122B2; US11406996B2; US11648575B2

Designated contracting state (EPC)
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MT NL NO PL PT RO SE SI SK TR

Designated extension state (EPC)
AL BA MK RS

DOCDB simple family (publication)
EP 2020264 A2 20090204; EP 2020264 A3 20090225; GB 0715121 D0 20070912

DOCDB simple family (application)
EP 08252628 A 20080804; GB 0715121 A 20070803