

Title (en)

Apparatus for loading and/or unloading the shelves of a freeze drying enclosure.

Title (de)

Vorrichtung zum Be- und/oder Entladen der Regale eines Gefriertrocknungsraumes.

Title (fr)

Dispositif de chargement et/ou de déchargement des étagères d'une cuve de lyophilisation.

Publication

EP 0429348 A1 19910529 (FR)

Application

EP 90403256 A 19901119

Priority

- FR 8915167 A 19891120
- FR 9009901 A 19900802
- FR 9012734 A 19901016

Abstract (en)

The bottles (5) are collected and stored on a vibrating table (2) equipped with a movable arm (8) for locking the bottles on at least a part of the surface (3) of the vibrating table. A movable transfer frame (11) bearing retractable boards (15, 16) is capable of being displaced between the plane surface (10) of a movable carriage (1) and the surface (3) of the vibrating table in order to collect and transfer the accumulated bottles. Application in installations for freeze-drying bottles. <IMAGE>

Abstract (fr)

Les flacons (5) sont recueillis et stockés sur une table vibrante (2) équipée d'un bras mobile (8) de blocage des flacons sur au moins une partie du plateau (3) de la table vibrante. Un cadre mobile de transfert (11) portant des volets éclipseables (15,16) est apte à se déplacer entre la surface plane (10) d'un chariot mobile (1) et le plateau (3) de la table vibrante pour recueillir et transférer les flacons accumulés. Application aux installations de lyophilisation de flacons.

IPC 1-7

B65G 65/00; F26B 5/06; F26B 25/00

IPC 8 full level

B65G 27/04 (2006.01); **B65G 67/04** (2006.01); **F26B 5/06** (2006.01); **F26B 25/00** (2006.01)

CPC (source: EP)

F26B 5/06 (2013.01); **F26B 25/003** (2013.01)

Citation (search report)

- [A] GB 2185969 A 19870805 - SHIBUYA KOGYO CO LTD
- [A] EP 0299139 A1 19890118 - GOLDCO INDUSTRIES [US]
- [A] DE 1786486 A1 19720330 - PLATMANUFAKTUR AB
- [AP] EP 0391208 A1 19901010 - LEYBOLD AG [DE]
- [A] EP 0099834 A1 19840201 - USIFROID [FR]
- [A] FR 2528958 A1 19831223 - EDWARDS ALTO VUOTO SPA [IT]
- [A] US 4132305 A 19790102 - MASTAK NED J

Cited by

FR2780148A1; EP0931738A1; CN105775701A; EP0618417A1; CN110498193A; DE102007034197A1; DE102007034197B4; CN113184556A; FR2774080A1; CN115388643A; US6269932B1; US8197171B2; WO2006008006A1; US7836606B2; US6206173B1

Designated contracting state (EPC)

AT BE CH DE FR GB IT LI NL SE

DOCDB simple family (publication)

EP 0429348 A1 19910529; EP 0429348 B1 19940202; DE 69006457 D1 19940317; DE 69006457 T2 19940721; JP 3154718 B2 20010409; JP H03279105 A 19911210

DOCDB simple family (application)

EP 90403256 A 19901119; DE 69006457 T 19901119; JP 31529690 A 19901120