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(12) # EUROPEAN PATENT APPLICATION

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(54) **Hot air aseptic packaging system.**

(57) Containers (19) (made of, for example, metal, glass, plastic or fiber) are sterilized in a sterilizer (21) of packaging apparatus having a helical or spiral conveyor belt (36) within an insulated casing (31) through which air above atmospheric pressure at to about 500°F (260°C) is circulated by means of a heater (46) and blower (47) in a recirculation path. The containers then travel along a straight-line encased conveyor (22) where sterile air above atmospheric pressure prevents ingress of non-sterile ambient air. During part of the path through the straight-line conveyor, the containers are driven by a helix (71) which forces the containers into close proximity. Pre-sterilized, preferably cooled, product is delivered into the containers preferably through a curtain, slit-type filler (111). The speed of the containers is timed so that the desired product volume is delivered into the containers. Thereafter, filled containers are accepted by a container closing machine (24). Container lids (18) or covers are sterilized in a section of the apparatus where lids are moved along a conveyor and sterile air which has been heated is forced by a blower (161) into the lid sterilizer section. The lids then travel up a tunnel at greater than atmospheric pressure, where they are cooled and delivered to the closing machine. The closing machine applies the sterile lids to the containers at greater than atmospheric

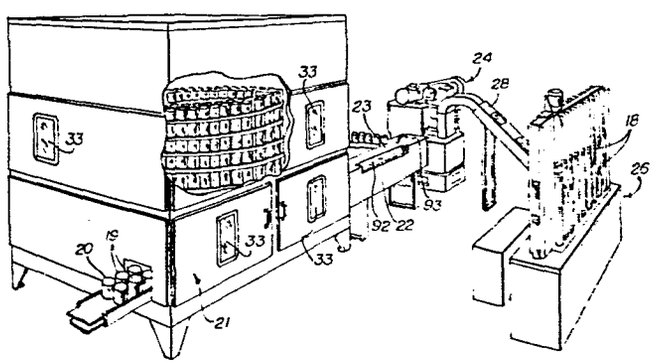

Fig.1

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EUROPEAN SEARCH REPORT

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DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl. ³)
A	GB - A - 978 808 (MARTIN) * Fig. 1,2,4,6-8 * --	1,5,6, 10	B 65 B 55/00 B 65 B 31/02 B 65 B 55/06
A	US - A - 3 744 209 (CONLEY et al.) * Fig. 1,3,4; claim 4 * --	1,6	
D,A	US - A - 3 349 542 (GUCKEL) * Totality * --	1,6	
A X	GB - A - 689 915 (THE SCHWARZ ENGINEERING CO, INC.) * Fig. 1-3,5-7,9-13; claims * --	1,3,5, 6,7,10 8	
D,A	US - A - 2 549 216 (MARTIN) * Totality * --	1,6	
D,A	US - A - 3 348 659 (ROINESTAD) * Fig. 1,5 * --	2	
D,A	US - A - 2 631 768 (MARTIN et al.) * Totality * --	3,5,8	
Y	US - A - 3 828 833 (SMITH et al.) * Fig. 6 * --	10	

TECHNICAL FIELDS SEARCHED (Int. Cl. ³)

B 65 B 3/00
B 65 B 31/00
B 65 B 37/00
B 65 B 39/00
B 65 B 55/00
B 65 B 65/00
B 67 C 7/00

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
VIENNA	30-12-1982	PIPPAN

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
Y : particularly relevant if combined with another document of the same category
A : technological background
O : non-written disclosure
P : intermediate document

T : theory or principle underlying the invention
E : earlier patent document, but published on, or after the filing date
D : document cited in the application
L : document cited for other reasons

& : member of the same patent family, corresponding document

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DOCUMENTS CONSIDERED TO BE RELEVANT			CLASSIFICATION OF THE APPLICATION (Int. Cl. 3)
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	
Y	GB - A - 1 184 883 (SORDI) * Totality * ----	10	
			TECHNICAL FIELDS SEARCHED (Int. Cl. 3)

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