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(12) # EUROPEAN PATENT APPLICATION

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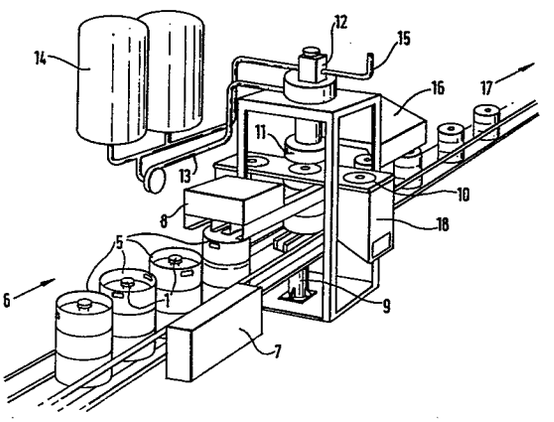
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(54) **Tamperproof keg seal.**

(57) A film of removable sealing material (3) is sprayed onto the closure member of the container. The seal cannot be removed, and the container opened, without destroying the seal.



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Tamperproof Seal

This invention relates to a method of and to apparatus for applying a tamperproof seal to containers such as for example beer kegs.

There is a requirement to provide a tamperproof seal for beer kegs. This is important as the seal should prevent any unauthorised person from removing beer from the keg and replacing the beer with another liquid without damaging the seal. In many other industries there is also a need for a similar type of container seal. Hitherto there have been great difficulties in providing such a tamperproof seal.

According to the present invention there is provided apparatus for applying a seal to a container, comprising a device for spraying a film of removable sealing material to the closure member of the container.

The sealing material may be a low melting point thermoplastic material or a water based PVC material.

Preferably the sealing material is applied by a movable sprayhead.

Preferably also a masking device is positioned between the sprayhead and the container to prevent the sealing material from covering any part of the container other than the closure member.

Preferably also the container to be sealed is a beer keg.

Preferably also a device is provided to position a plastics material disc over the valve of the keg before the sealing material is applied so as to prevent the valve from being blocked with the sealing material.

Preferably also, there is included a device for applying a security mark to said sealing material.

Further according to the present invention there is provided a method of applying a seal to a container comprising spraying a film of removable sealing material to the closure member of the container.

Embodiments of the present invention will now be described by way of example, with reference to the accompanying drawings in which:

Fig. 1 is a perspective view of the neck of a beer keg with a seal applied to it in accordance with the invention;
Fig. 2 is a sectional side view of the beer keg neck of Fig. 1; and
Fig. 3 is a perspective view of a machine for applying a seal to a keg in accordance with the present invention.

Referring to Figs. 1 and 2, a beer keg has a neck 1 which is sealed in accordance with the invention. An adhesive

plastics material disc 2 covers the valve assembly 20 and a peelable plastics material seal 3 extends around the neck 1. The plastics material 3 may be for example a low melting point thermoplastics material or a water based PVC material. The disc 2 serves to prevent the plastics material 3 entering the valve assembly 20. The plastics material 3 may optionally have an embossed security mark applied. A tag 4 on the disc 2 is sealed against the side of the neck 1, by the plastics material 3, and protrudes down below the plastics material 3.

The tag 4 on the disc 2 provides a tear strip for the legitimate opening of the seal. The seal cannot be removed, and the keg opened, without destroying the seal.

Referring now to Fig. 3, this shows apparatus for applying the seal of Fig. 1. A line of kegs 5 enter the machine in the direction of arrow 6 and are halted by a keg escapement gear 7. The kegs 5 are then released by the gear 7 at timed intervals and pass through a disc applicator 8 which applies one of the discs 2 to the top of the neck 1 of the keg 5 to cover the valve assembly 20. The keg 5 then enters the main part of the machine and is pushed by a keg lift 9 upwards so that the neck 1 protrudes through a hole in a masking device 10 positioned below a rotating sprayhead 11 driven by a motor 12. The sprayhead 11 is supplied with the liquid plastics material 3 via pipelines 13 from supply tanks 14 which are pressurised by an air supply 15. The rotatable sprayhead 11 applies the plastics material 3 in liquid form around the neck 1 of the keg 5 so as to seal the disc 2 in position. After application of the plastics material 3 the keg 5 is lowered by the keg lift 9 and then passes beneath a heater 16 which dries the plastics material 3 so that it solidifies to form a peelable seal around the neck 1 of the keg 5. The sealed keg 5 then leaves the machine in the

direction of arrow 17 and is then ready for distribution. A cleaning device 18 is also provided to clean the masking device 10 and prevent a buildup of the plastics material 3. The basic machine can be easily modified so as to be able to apply seals to a wide range of different containers as well as beer kegs. For example similar types of seals can be applied to small containers such as bottles.

CLAIMS

1. Apparatus for applying a seal to a container, comprising a device for spraying a film of removable sealing material to the closure member of the container.

2. Apparatus for applying a seal to a container as claimed in Claim 1, wherein the sealing material comprises a low melting point thermoplastic material.

3. Apparatus for applying a seal to a container as claimed in Claim 1, wherein the sealing material comprises a water based PVC material.

4. Apparatus for applying a seal to a container as claimed in any one of the preceding Claims, wherein the sealing material is applied by a movable sprayhead.

5. Apparatus for applying a seal to a container as claimed in Claim 4, wherein a masking device is positioned between the sprayhead and the container to prevent the sealing material from covering any part of the container other than the closure member.

6. Apparatus for applying a seal to a container as claimed in any one of the preceding Claims, wherein the container to be sealed is a beer keg.

7. Apparatus for applying a seal to a container as claimed in Claim 6, wherein a device is provided to position a plastics material disc over a valve on the closure member of the keg before the sealing material is applied so as to prevent the valve from being blocked with the sealing material.

8. Apparatus for applying a seal to a container as claimed in any one of the preceding Claims, wherein a device is provided for applying a security mark to the sealing material.

9. Apparatus for applying a seal to a container, comprising means for feeding the container to a sealing station, a rotatable spraying head at the sealing station adapted for rotation about the closure member and means for feeding sealing material to the spraying head.

10. A method of applying a seal to a container, comprising spraying a film of removable sealing material to the closure member of the container.

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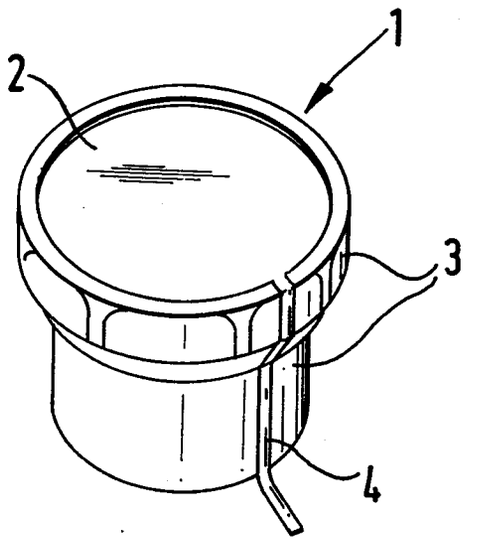


FIG.1.

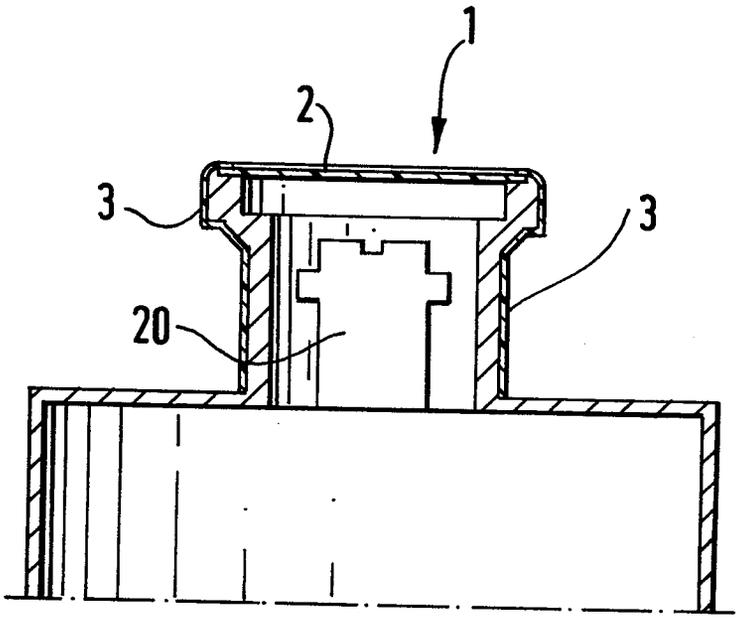


FIG.2.

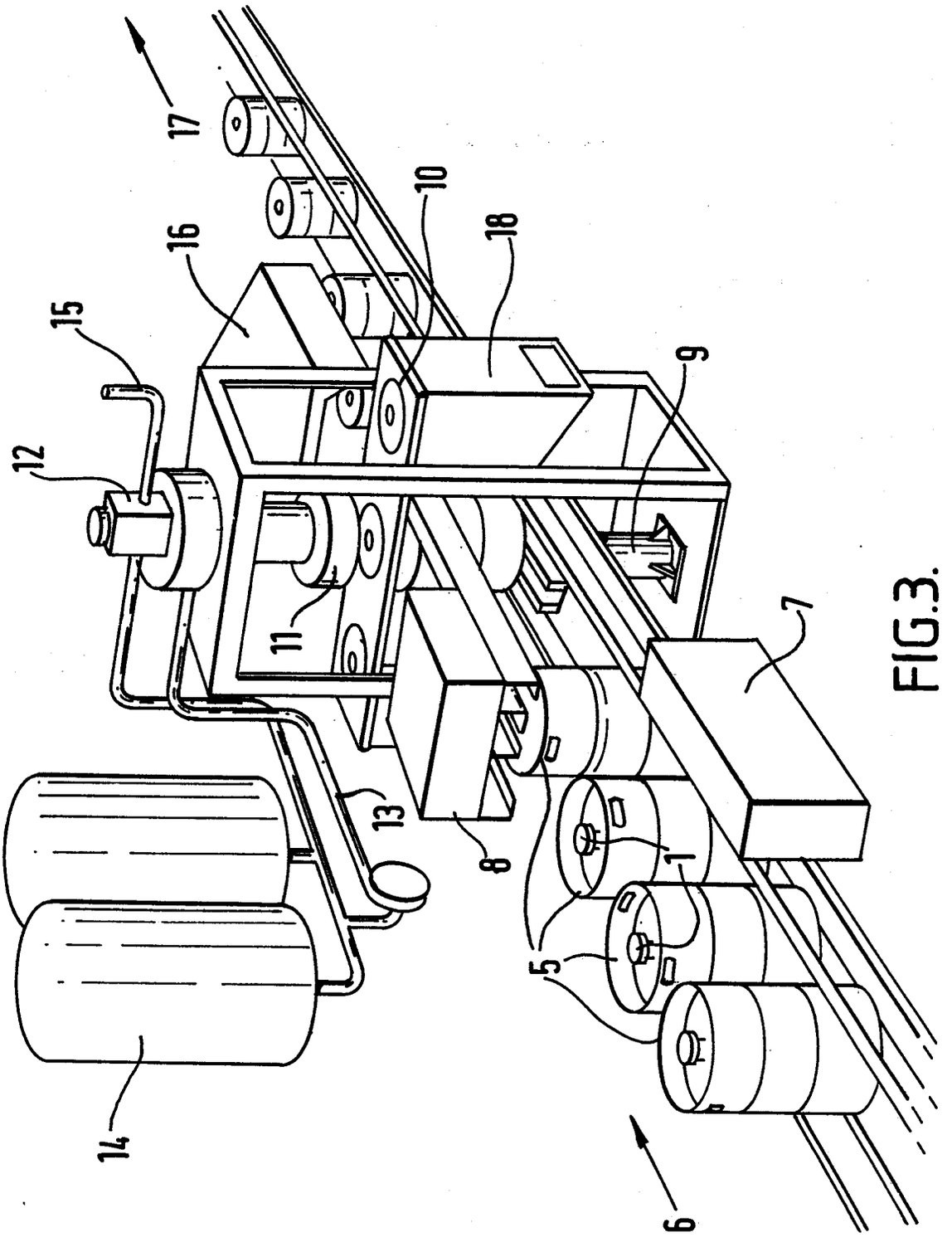


FIG.3.

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EUROPEAN SEARCH REPORT

Application number

EP 84 30 0618

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)
Y	US-A-1 664 635 (MAGILL) * Whole document *	1-3,6, 10	B 65 B 7/28 B 67 B 5/05
Y	FR-A-1 283 258 (SOC. POUR L'UTILISATION RATIONNELLE DES GAZ) * Whole document *	1-3,6, 10	
Y	FR-A-1 176 874 (TITAN) * Whole document *	2,3	
Y	US-A-2 010 109 (RICE) * Page 1, column 2, line 25 - page 2, column 1, line 31; figure 2 *	6	
A		7	TECHNICAL FIELDS SEARCHED (Int. Cl. ³) B 65 B B 67 B B 65 D

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	04-05-1984	CLAEYS H.C.M.

CATEGORY OF CITED DOCUMENTS

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