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(12) # EUROPEAN PATENT SPECIFICATION

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(54) **Tamperproof keg seal.**

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Description

This invention relates to an 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 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.

French Patent No. 1283258 describes one proposal for apparatus suitable for applying a seal to a container by spraying a film of removable sealing material to the closure member of the container. Such apparatus however is not suitable for the specialised requirements of the on line sealing of beer kegs.

According to the present invention there is provided apparatus for applying a tamper resistant seal to a closure member fitted in a neck portion of a beer keg characterised in that the apparatus comprises:

an input conveyor for kegs to be sealed;

a sealing station;

means at said sealing station for applying a cover member over said keg closure member;

a sprayhead at said sealing station for applying sealing material to said cover member and neck portion of the keg to seal the cover member to the neck portion of the keg;

means for positioning a masking device around said neck portion of the keg so as to prevent sealing material from covering any part of the keg other than the cover member and neck portion; and

an output conveyor for sealed kegs.

Preferably said closure member is a plastics material disc.

The sealing material applied by said sprayhead may be a low melting point thermoplastic material or a water based PVC material.

Preferably also there is included means for applying a security mark to the sealing material after application of the sealing material to the closure member.

An embodiment 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 tamper resistant seal to a closure member fitted in a neck portion (1) of a beer keg (5) characterised in that the apparatus comprises:

an input conveyor for kegs (5) to be sealed;

a sealing station;

means (8) at said sealing station for applying a cover member (2) over said keg closure member;

a sprayhead (11) at said sealing station for applying sealing material (3) to said cover member (2) and neck portion (1) of the keg (5) to seal the cover member (2) to the neck portion (1) of the keg (5);

means (9) for positioning a masking device (10) around said neck portion (1) of the keg (5) so as to prevent sealing material (3) from covering

any part of the keg (5) other than the cover member (2) and neck portion (1); and

an output conveyor for sealed kegs.

2. Apparatus for applying a tamper resistant seal as claimed in Claim 1, wherein said cover member is a plastics material disc (2).

3. Apparatus for applying a tamper resistant seal as claimed in Claim 1 or 2, wherein the sealing material (3) applied by said sprayhead (11) comprises a low melting point thermoplastic material.

4. Apparatus for applying a tamper resistant seal as claimed in Claim 1 or 2, wherein the sealing material (3) applied by said sprayhead (11) comprises a water based PVC material.

5. Apparatus for applying a tamper resistant seal as claimed in any one of the preceding Claims, wherein there is included means for applying a security mark to the sealing material (3) after the application of the sealing material to the cover member (2).

Patentansprüche

1. Vorrichtung zur Anbringung eines Abschlusses gegen unbefugtes Öffnen an einem Verschlußelement, das in einen Halsteil (1) eines Bierfasses (5) eingesetzt ist,

gekennzeichnet durch einen Eingabeförderer für zu versiegelnde Fässer (5);

eine Versiegelungsstation;

Mittel (8) an der Versiegelungsstation zum Aufsetzen eines Deckels (2) auf das Verschlußelement des Fasses;

einen Spritzkopf (11) an der Versiegelungsstation, der Dichtungsmaterial (3) an den Deckel (2) und den Halsteil (1) des Fasses (5) anlegt, um den Deckel (2) an dem Halsteil (1) des Fasses (5) abzudichten;

Mittel (9) zum Ansetzen einer Abdeckvorrichtung (10) um den Halsteil (1) des Fasses (5), die verhindert, daß irgendwelche anderen Partien des Fasses (5) als der Deckel (2) und der Halsteil (1) mit Dichtungsmaterial (3) überzogen sind und

durch einen Ausgabeförderer für versiegelte Fässer.

2. Vorrichtung zur Anbringung eines Sicherheitsverschlusses nach Anspruch 1, bei der das Verschlußelement eine Scheibe (2) aus Kunststoffmaterial ist.

3. Vorrichtung zur Anbringung eines Sicherheitsverschlusses nach Anspruch 1 oder 2, bei der das von dem Spritzkopf (11) aufgebrachte Dichtungsmaterial (3) thermoplastisches Material mit niedrigem Schmelzpunkt enthält.

4. Vorrichtung zur Anbringung eines Sicherheitsverschlusses nach Anspruch 1 oder 2, bei der das von dem Spritzkopf (11) aufgebrachte Dichtungsmaterial (3) PVC-Material auf Wasserbasis enthält.

5. Vorrichtung zur Anbringung eines Sicherheitsverschlusses nach einem der vorangegangenen Ansprüche mit einer Einrichtung zur Anbringung einer Garantie-Kennzeichnung an dem Dichtungsmaterial (3) nach dessen Anlegung an den Deckel (2).

Revendications

1. Appareil pour appliquer un encapsulage inviolable sur un organe de fermeture monté dans un goulot (1) d'un tonnelet de bière (5), caractérisé en ce que l'appareil comprend:

un transporteur d'entrée pour les tonnelets (5) à encapsuler;

une station d'encapsulage;

des moyens (8) prévus à ladite station d'encapsulage pour appliquer un élément de couverture (2) sur ledit organe de fermeture de tonnelet;

une tête de pulvérisation (11) prévue à ladite station d'encapsulage pour appliquer une matière d'encapsulage (3) audit élément de couverture (2) et au goulot (1) du tonnelet (5) de manière à sceller l'élément de couverture (2) au goulot (1) du tonnelet (5);

des moyens (9) pour placer un dispositif de masquage (10) autour dudit goulot (1) du tonnelet (5) de manière à empêcher la matière d'encapsulage (3) de recouvrir une partie quelconque du tonnelet (5) autre que l'élément de couverture (2) et le goulot (1); et

une transporteur de sortie pour les tonnelets encapsulés.

2. Appareil pour appliquer un encapsulage inviolable suivant la revendication 1, dans lequel ledit élément de couverture est un disque (2) en matière plastique.

3. Appareil pour appliquer un encapsulage inviolable suivant la revendication 1 ou 2, dans lequel la matière d'encapsulage (3) appliquée par ladite tête de pulvérisation (11) est une matière thermoplastique à bas point de fusion.

4. Appareil pour appliquer un encapsulage inviolable suivant la revendication 1 ou 2, dans lequel la matière d'encapsulage (3) appliquée par ladite tête de pulvérisation (11) est un chlorure de polyvinyle à l'eau.

5. Appareil pour appliquer un encapsulage inviolable suivant l' une quelconque des revendications précédentes, dans lequel des moyens sont prévus pour appliquer une marque de sécurité à la matière d'encapsulage (3) aprés l'application de la matière d'encapsulage à l'élément de couverture (2).

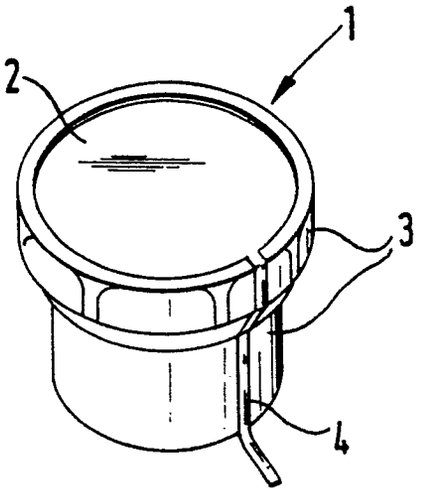

FIG.1.

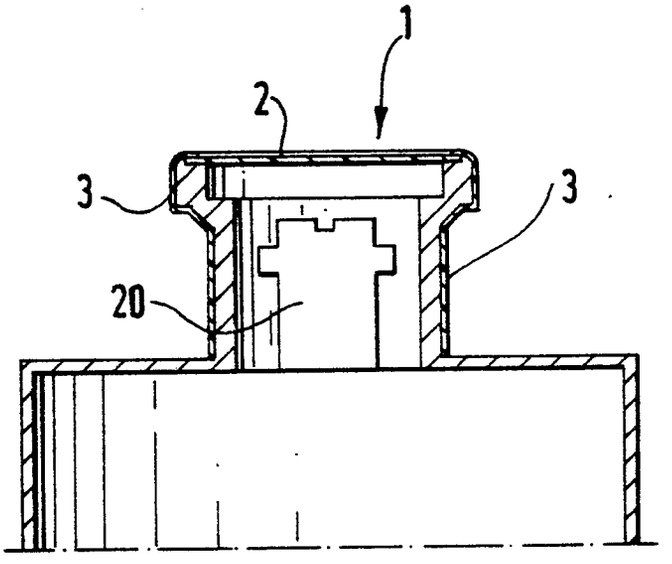

FIG.2.

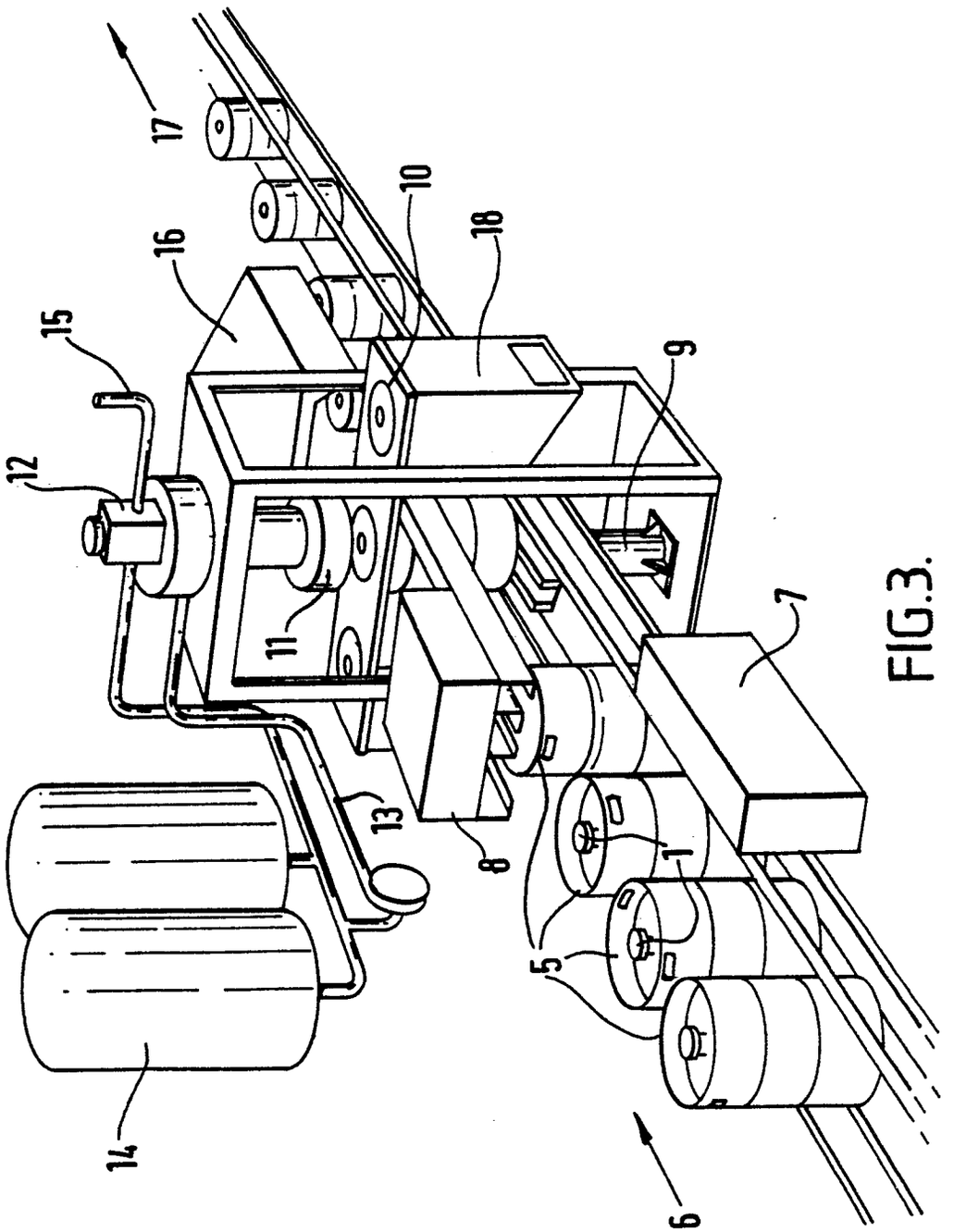

FIG.3.