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(54) **Device for dosed pumping of viscous products.**

(57) The invention relates to a device for dosed pumping of viscous products, such as mayonnaise, ketchup or kebab sauce, comprising a pump (5) which is connected to a reservoir (3) of flexible material arranged in a holder, (6) wherein the pump is a suction pump, the suction side (12) of which is connected to an outlet piece (4) placed close to the bottom of the reservoir arranged in the holder and the delivery side of which has a discharge nozzle (22).

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DEVICE FOR DOSED PUMPING OF VISCOUS PRODUCTS

The invention relates to a device for dosed pumping of viscous products, such as mayonnaise, ketchup or kebab sauce, comprising a pump which is connected to a reservoir of flexible material arranged in a holder.

Such devices are for instance known from the British patent application GB 2,155,117.

The drawback of these known devices is that only a fixed quantity of product can be dosed each time pumping takes place. The known devices are moreover difficult to clean because of their construction.

The invention has for its object to provide a device for pumping viscous products which does not have these drawbacks.

This is achieved by the invention in that the pump is a suction pump, the suction side of which is connected to an outlet piece placed close to the bottom of the reservoir arranged in the holder, and the delivery side of which has a discharge nozzle. Using the piston of the suction pump it is possible to dose a desired amount of product. The placing of the suction pump close to the bottom of the reservoir ensures almost complete emptying. Under the influence of the underpressure built up in the reservoir by the dosing, this will contract whereby the contents are pressed to the low positioned outlet piece. Furthermore, the product will likewise collect in the bottom of the reservoir due to (the force of) gravity.

According to a preferred embodiment the suction side of the pump is placed on the outlet piece by means of a snap connection. In this way the pump can be quickly coupled and uncoupled. To increase operational reliability the suction side of the pump is further preferably connected to the outlet piece of the reservoir by means of a bayonet fitting.

The device is placed at a practical working height through positioning in a stand. The pump is coupled to the stand by means of connection means. This construction moreover provides sufficient support to the device. According to the invention a reservoir of flexible material is arranged in the holder, which reservoir is provided with an outlet piece, the passage opening of which is closed by a breakable membrane, and the wall of the holder has a passage allowing through the outlet piece. For breaking through the membrane in order to take the reservoir into use, the suction side of the pump is preferably chamfered.

In a preferred embodiment of the invention the discharge nozzle is embodied in a colour which corresponds, in accordance with a colour code, with the contents of the reservoir. In order to make

the interior of the pump accessible for cleaning, the discharge nozzle is connected to the delivery side through a releasable cap and the cylinder space is closed off by a releasable cap on the side of the piston facing the piston rod.

Further details and special features will be elucidated in the description of the annexed drawings, wherein:

Fig. 1 shows a partially cut away perspective view of the device according to the invention, placed in the stand;

Fig. 2 shows a view of the device in partial section along line II-II from fig. 1;

Fig. 3 is a partially cut away perspective view of the device in disconnected state;

Fig. 4 shows a partially cut away perspective view of the device in coupled state; and

Fig. 5 shows a perspective view of a preferred embodiment of the stand in combination with the holder according to the invention.

Fig. 1 shows an embodiment of the invention. Placed in the stand 1 is the holder 2 having therein a number of reservoirs of flexible material for the product 3 (also known as bag-in-box packaging). The size of the reservoirs can vary. The reservoirs 3 are each coupled to a pump 5 by means of an outlet piece 4. A preferably metal bracket 6 falls into two slots 7 in order to couple the device to the stand 1.

Fig. 2 shows a sectional view of the device according to the invention. The pump 5 comprises a cylinder space 8, a suction side 9 and a delivery side 10. The suction side is formed by two partly concentric parts 11 and 12 which co-act with the outlet piece 4 to form a snap connection. The outer part 11 is provided with a chamfered opening 13 and the inner part 12 contains hooks 14 for a bayonet fitting. The cylinder space 8 is closed off by a releasable cap 15 which is provided with an opening 16 for passage of the piston rod 17 and a small bleed hole 18. The delivery side is provided with a releasable cap 19 having therein a spring 20 for locking a pressure valve 23. A discharge nozzle 21 is placed over the cap 19. The discharge nozzle 21 can be embodied in various colours which correspond with the product in the reservoir 3 in accordance with a colour code. The diameter of the spout 22 of the discharge nozzle 21 depends on the viscosity of the product. The pump is furthermore provided with a piston 24 which is connected to a handle 25 through the piston rod 17. In the closed position a spherical suction valve 26 closes off the connecting passage 27 between the suction side 9 and the cylinder space 8. In the open position the suction valve 26 lies against a locking

pin 28. The position of a pressure valve 23 is controlled by the spring 20. In the outward sprung position of spring 20 the pressure valve 23 closes off the delivery passage 29 between the cylinder space 8 and the delivery side 9. When the spring is in the compressed position the delivery passage 29 is open. When the piston 24 is moved in the direction of the cap 15 the suction valve 26 is opened by the underpressure in the cylinder space 8 and the product is sucked via the suction side 9 into the cylinder space 8. By moving the piston 24 in the opposite direction the suction valve 26 is closed and the pressure valve 23 opened. The product is hereby pressed outward through delivery passage 29 via the delivery side 10.

Fig. 3 shows a partly broken away view of the device according to the invention in disconnected position. The suction side of the pump 5 is pushed over the outlet piece 4. The chamfered inner part 13 of the suction side breaks through a membrane 30 closing off the passage opening 31 of the outlet piece 4. The hooks 14 on the outer part 11 of the suction side of the pump fall into recesses 32. By means of a turning movement of the pump the hooks 14 are secured in the recesses 32.

Fig. 4 shows how the reservoir 3 continues to contract during the pumping of the product until the reservoir 3 is completely empty. The spout 22a of the discharge nozzle 21a has a diameter different from the spout 22 of discharge nozzle 21.

Fig. 5 shows a preferred embodiment of the device according to the invention. Placed in the stand 1 are two reservoirs 3, the discharge nozzles 4 of which are placed in the respective openings 33 and 35. For taking into use, a passage 36 is first broken through in the holder 2. The discharge nozzle is pulled outside through the thus created opening. One holder 2 can also be placed in the stand 1. The outlet piece 4 hereof falls into opening 34 of the fixing means 37. The outlet pieces are clamped fixedly by means of a movable bracket 38 which is attached to a fixed bracket 40 by means of a hinge 39. Situated in the holder is a bottom 41 sloping in the direction of the outlet piece.

Claims

1. Device for dosed pumping of viscous products, such as mayonnaise, ketchup or kebab sauce, comprising a pump which is connected to a reservoir of flexible material arranged in a holder, **characterized in that** the pump is a suction pump, the suction side of which is connected to an outlet piece placed close to the bottom of the reservoir arranged in the holder and the delivery side of which has a discharge nozzle.

2. Device as claimed in claim 1, **characterized in that** the suction side of the pump is placed on the outlet piece by means of a snap connection.

3. Device as claimed in claim 2, **characterized in that** the suction side of the pump is further connected to the outlet piece of the reservoir by means of a bayonet fitting.

4. Device as claimed in claim 1, **characterized in that** the outlet piece of the reservoir has connecting means for coupling to a stand.

5. Device as claimed in claims 1-4, **characterized in that** the passage opening of the outlet piece of the reservoir is closed by a breakable membrane and that the wall of the holder has a passage allowing through the outlet piece.

6. Device as claimed in claims 1-5, **characterized in that** the holder has a bottom sloping towards the outlet piece.

7. Device as claimed in claims 1-6, **characterized in that** the suction side of the pump is chamfered for piercing a membrane of the holder.

8. Device as claimed in claims 1-7, **characterized in that** the discharge nozzle is embodied in a colour which corresponds with the contents of the reservoir in accordance with a colour code.

9. Device as claimed in claims 1-8, **characterized in that** the discharge nozzle is connected to the delivery side through a releasable cap.

10. Device as claimed in claims 1-9, **characterized in that** the pump is provided with a piston intended to generate the suction force and delivery pressure and that the cylinder space on the side of the piston facing the piston rod is closed off by a releasable cap.

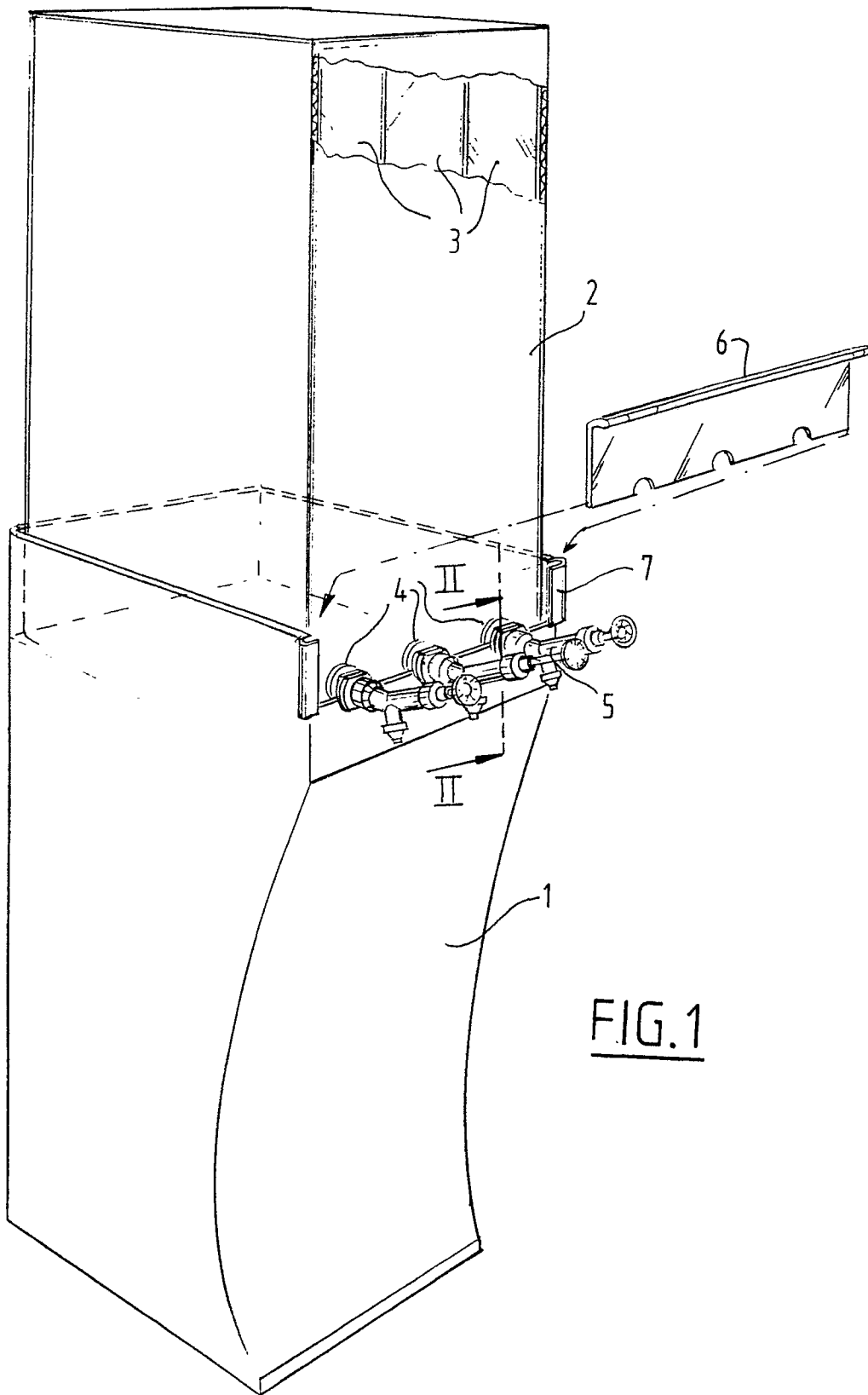
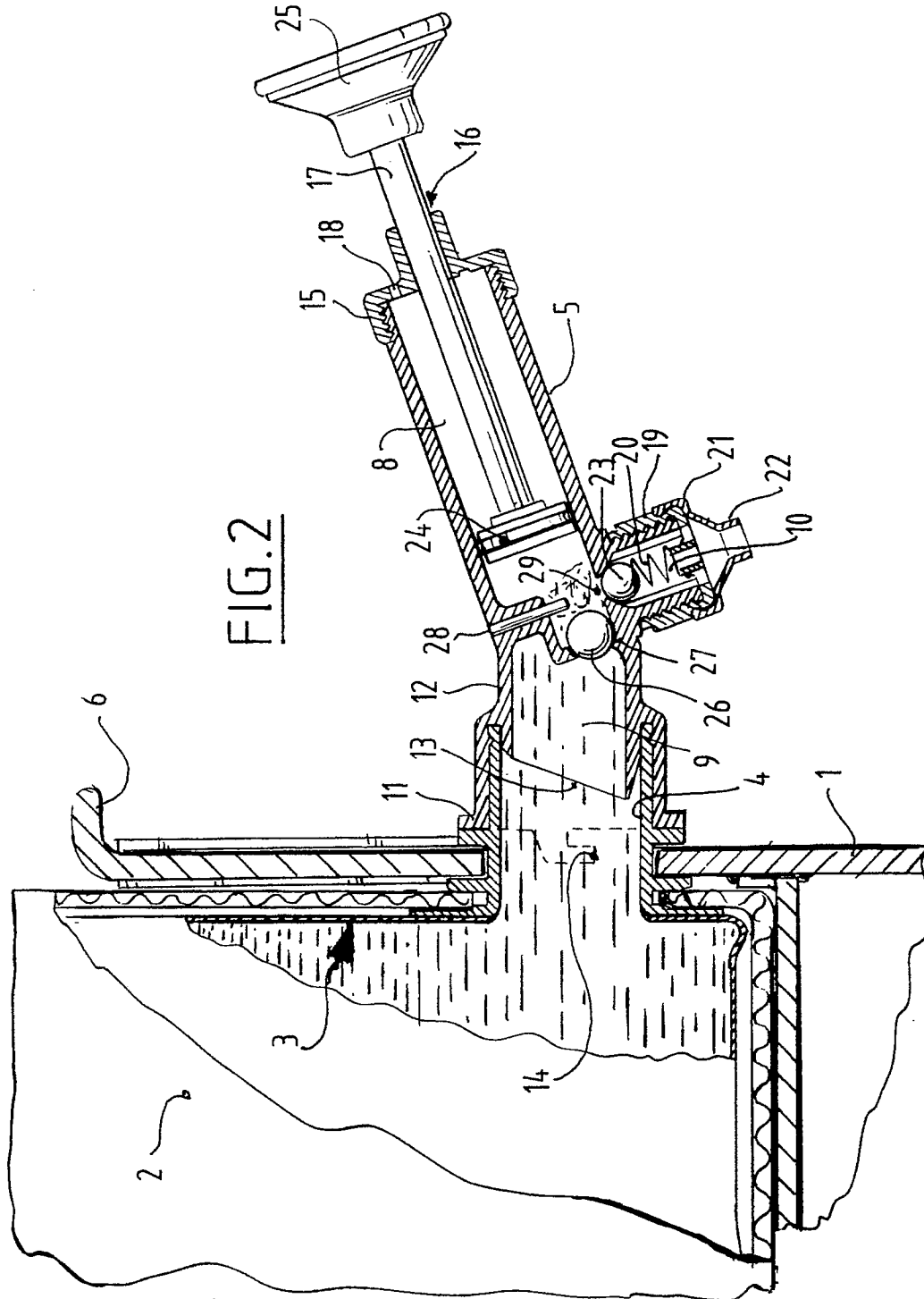
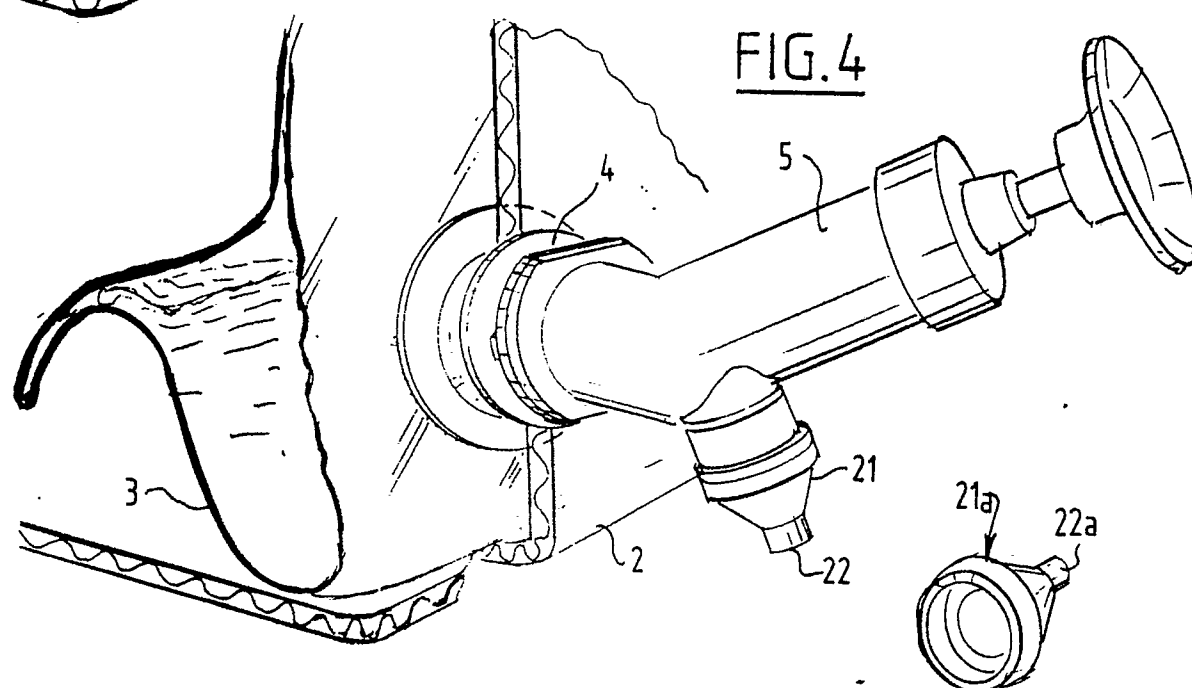
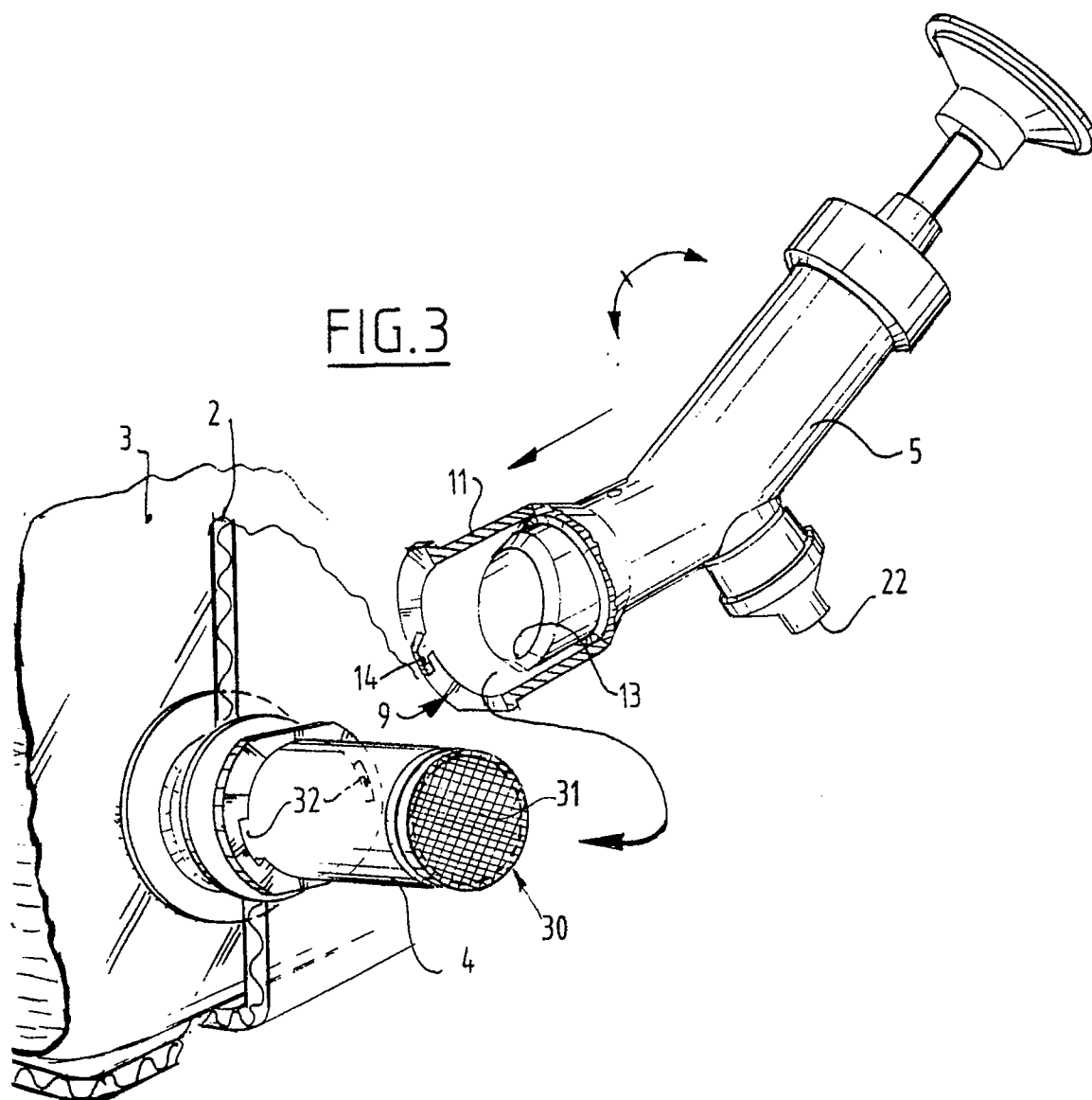


FIG.1





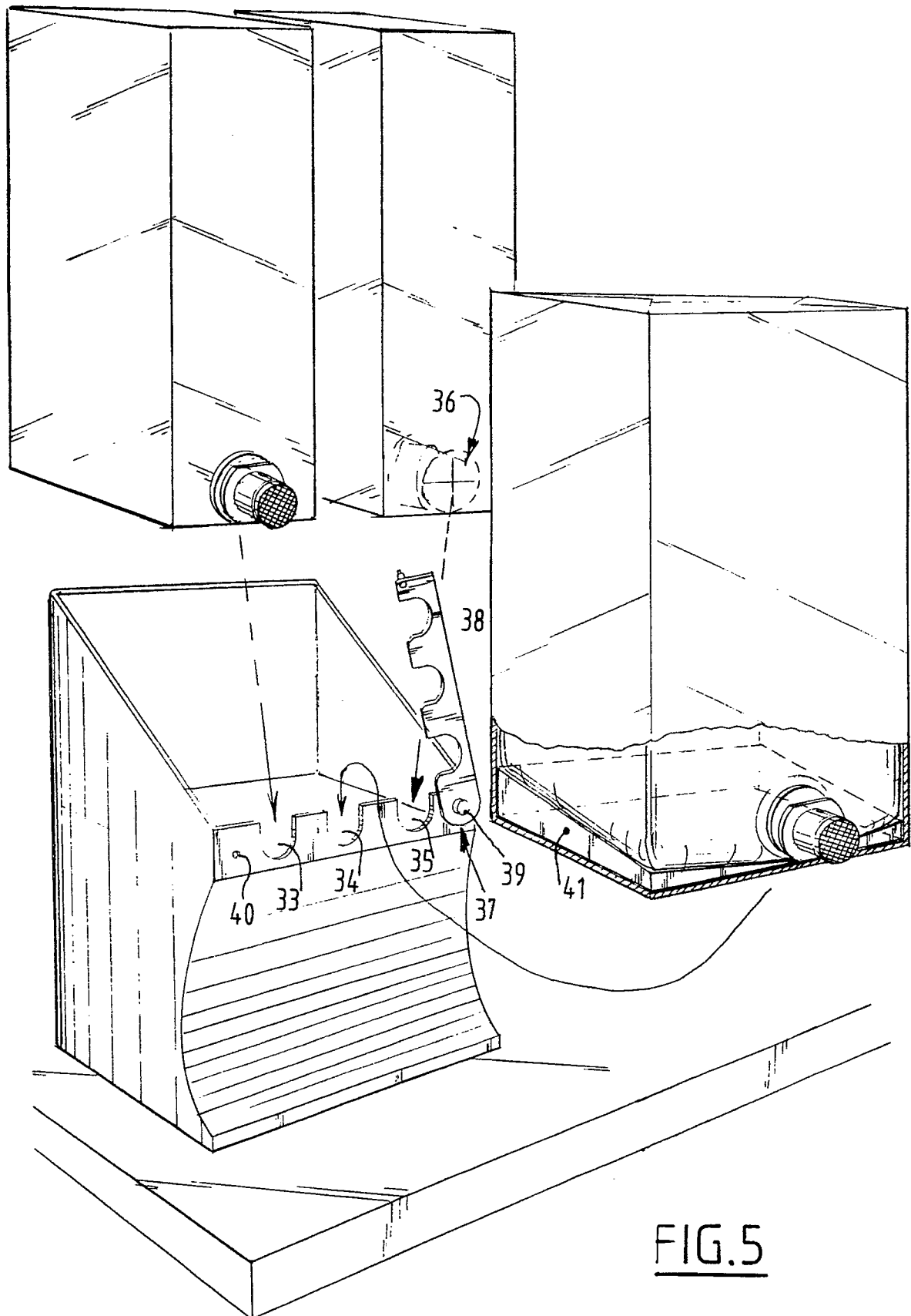


FIG.5



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EUROPEAN SEARCH REPORT

Application Number

EP 90 20 3267

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.5)
D,X	GB-A-2 155 117 (BEARDSLEY & SPENCER) * Figures 1-3; page 1, lines 59-124 * - - - -	1-3	B 67 D 5/02
X	FR-A-2 252 074 (JACOT) * Figure 3; page 2, line 31 - page 3, line 31 * - - - -	1,7	
X	FR-A-7 442 53 (SERRE) * Figure 1; page 2, line 78 - page 3, line 8 * - - - -	1 3,9,10	
Y		4,5,6	
Y	GB-A-2 154 991 (BCL LTD) * Figures 1,3; page 1, lines 101-126 * - - - -	4,5	
Y	EP-A-0 330 833 (SESAR) * Figures 1,2 * - - - -	6	
A	FR-A-2 275 971 (SA DE CONDITIONNEMENT ET PRO- DUCTION ACEP) - - - - -		
			TECHNICAL FIELDS SEARCHED (Int. Cl.5)
			B 67 D B 65 D A 47 K
The present search report has been drawn up for all claims			
Place of search		Date of completion of search	Examiner
The Hague		05 March 91	DEUTSCH J.P.M.
CATEGORY OF CITED DOCUMENTS			
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