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(54) A machine for packing in single-dose containers

Maschine zum Abpacken in Behälter für Einzelmengen

Machine de conditionnement en récipients à dose unique

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Description

[0001] The object of the present invention is a machine for packing wine in single-dose containers.

[0002] The existing norms for road use require, for vehicle drivers, a very limited level of blood alcohol. The maximum level permitted, in many cases, can be exceeded even when drinking little more than a glass of wine during a meal, i.e. assuming a quantity of wine of hardly more than 10-15 ml.

[0003] The considerable strictness in the limits and the punishments imposed in case of excess of alcoholic level in the blood have led to a considerable reduction in quality wine consumption in restaurants. This is because while the consumer willingly accepts consumption based on a glass-measurement for medium- and low-quality wines, i.e. it is generally accepted that a medium- and low-quality wine can be served from a previously-opened bottle, drinking of good-quality wine requires a closed bottle which must be opened only at the moment of consumption.

[0004] In many cases the quantity of wine contained in a bottle (normally 750 ml) is excessive in view of the maximum limits allowed for alcoholic levels in the blood. If for example the number of people sharing the bottle does not exceed four or five, the quantity of wine contained in the bottle might lead, in all probability, to exceeding the alcoholic level allowed by the law for someone about to drive a vehicle. As high-quality wines have high costs, what often happens is that as the whole content of a high-quality bottle cannot be entirely consumed, and the consumer therefore prefers to choose lower-quality wines, with which a glass-measured consumption is tolerable.

[0005] A solution for giving incentives for the consumption of high-quality wine in restaurants might be found by offering the wine in single-dose containers more-or-less corresponding to a glass capacity (10-15 ml). The single-dose pack would offer the guarantee of a perfect state of conservation of the wine, equal to a bottle, and would offer the possibility of acquiring only the quantity of wine which it is intended to consume.

[0006] Single-dose wine packs are already known, typically taking the form of containers of a prismatic shape provided with an upper sealed opening which is opened at the moment of consumption. The containers of known type are however normally associated to low-quality wines, mainly used for cooking and/or dressing foods and meals. They also exhibit a non-particularly pleasant form which, above all, exhibits a not-inconsiderable size in terms of waste disposal of empty containers. Furthermore, often the containers of known type do not provide sufficient conservation guarantees of the aesthetic and gustatory properties of high-quality wines.

[0007] The aim of the present invention is to provide a machine for rapidly and efficiently packing wine in single-dose containers.

[0008] This aim is achiveved by the machine according to claim 1.

[0009] Further characteristics and advantages of the present invention will better appear from the description that follows of a preferred embodiment of the invention, given purely by way of non-limiting example and illustrated in the accompanying figures of the drawings, in which:

figure 1 is a schematic view of a container ;
figure 2 illustrates an alternative version of the container of figure 1;
figure 3 is a schematic view of the machine for packing wine of the present invention;
figures 4, 6, 8, 10 show respective operating stages of some devices of the machine;
figures 5, 7, 9, 11 show respective sectioned views of figures 4, 6, 8, 10.

[0010] With reference to the figures of the drawings, the single-dose container 100 for packing wine is a stand-up container, preferably made of plied paper material. This material, in the shape of a sheet, comprises an external layer, an internal layer and one or more intermediate layers, coupled on one another. The external layer of material, i.e. the layer destined to form the external surface of the container 100, is made of paper. The paper external layer offers the advantages of giving a certain rigidity to the material and is particularly appropriate to be printed on. The internal layer of the material, which is the one destined to form the internal surface of the container and to enter into contact with the product, is made of polythene. As is known, the internal layer is also the layer which enables heat-welding two layers of material together, by placing the two layers in contact at the internal layer and subjecting the two layers to localised pressure and heating.

[0011] The container 100 comprises two main folds 101, 102, opposite one another and welded at the edges 103. A bottom fold 104 is conjoined to the main folds and folded between the two main folds along a median line 105. The conjoining zones 104a, 104b between the bottom fold 104 and the main folds 101, 102 exhibit respective heat-weldings. An opening 106 is arranged between the two main folds in opposite positions with respect to the bottom fold 104. When the container is empty, the two main folds can be neared to one another and the bottom fold 104, folded at the median line 105 into two folds, is arranged between the two main folds 101, 102. In this way, the container 100 exhibits a very contained size.

[0012] The openings 106 of the container 100 can be arranged between two flaps 101a, 102a of the main folds 101, 102 which project upwards and can advantageously be shaped attractively, for example in a bottle-cork shape.

[0013] The projecting shape of the two flaps 101a, 102a facilitates pouring of the wine, as it prevents the formation of drops along the edge of the container, and gives the container an overall appearance which is de-

cidedly different to the usual prismatic containers used.

[0014] The opening 106 can be closed either by welding the two flaps 101 a, 102a of the main folds 101, 102, or by means of a cap 107. With respect to the welding between the flaps 101, 102a, which requires a tearing in order for the container to be opened 100, the predisposing of a cap makes the container 100 easy to open. The cap 107 can be housed internally of a seating joined at the two flaps 101a, 102a of the main folds 101, 102. Once the cap has been removed, the seating facilitates pouring of the wine. The cap 107 can advantageously be shaped as a common stopper for a wine bottle, and can even be made of cork, such as to give the container 100 a very original appearance.

[0015] An opening tool 108 can be combined with the container to facilitate removal of the cap 107. The opening tool 108 can be shaped similarly to a corkscrew, with an elongated portion having a helical development. The cap 107 can be provided with a seating predisposed to house the elongate portion of the opening tool 108. For example the elongate portion of the opening tool 108 can be inserted in the seating predisposed on the cap 107 with a screwing movement. The removal of the cap can be done by means of traction of the opening tool 108. In this way, the consumer can use the opening tool 108 in a way that is extremely similar to a normal corkscrew.

[0016] The machine for packing wine of the present invention comprises means for realising, starting from a continuous sheet 99 of multi-ply paper, of a container 100 of a stand-up type as described herein above.

[0017] The containers 100 are realised in a known way, starting from a single continuous sheet 99 of multi-ply paper which is unwound from a reel through a group of horizontal rollers 2 arranged in space in a predetermined way. In exit from the horizontal roller group 2, the continuous sheet 99 is forced to fold into two main folds 101c, 102c which are side-by-side and pass through a flanked pair of vertical rollers 3. The continuous sheet 99 is guided in its folding by a shaped surface 4 located upstream of the vertical rollers 3. During the folding of the continuous sheet 99 into the two main folds, a shaped element, not visible in the figures as it is a component of known type, pushes an intermediate portion of the continuous sheet 99 upwards, forcing it to fold between the two main folds along a median line of the continuous sheet 99 such as to define a bottom fold 104c. The main folds 101, 102 and the bottom fold 104 of the container 100 originate from the mains folds 101c, 102c, and the bottom fold 104c of the continuous sheet 99.

[0018] Thereafter, the continuous sheet 99 is subjected to a process of localised heat-welding along determined lines, separating the containers 100 from one another. The heat-welding process is preferably performed by a plurality of welding devices 5a, 5b, 5c, each of which is formed by a pair of presser elements, heated to a determined temperature, which are activated to distance from one another and to squeeze together in a predetermined temporal cycle. When they squeeze together, the presser elements exert a pressure which compresses the two main folds 101, 102 into contact with one another. During the compression of the two main folds 101, 102, by effect of the heat and pressure transmitted to the folds by the presser elements, a heat-welding is produced between the two main folds along an edge 103 which separates two containers 100 from one another. As the multiply paper material exhibits a not-inconsiderable thickness, the heat-welding of each edge 103 is sub-divided into several stages, each actuated by a welding device 5a, 5b, 5c. The various welding devices are arranged in succession and a distanced from one another by a step corresponding to the distance separating the edges 103 of two consecutive containers 100.

[0019] The continuous sheet 99 is cyclically halted in positions in which the edges 103 of the various containers 100 are at the welding devices. In this way the edges 103 can be heat-welded in brief cyclical pauses of the continuous sheet 99. At least a welding device 5d, similar to the ones described herein above, is predisposed blow the continuous sheet 99 to realise heat-welding at the conjoining zones 104a, 104b between the bottom fold 104 and the main folds 101, 102. This last welding device 5d also enters into action during the cyclical pauses of the continuous sheet 99.

[0020] Downstream of the welding devices 5a, 5b, 5c, 5d, the continuous sheet 99 is cut at the edges 103 which separate the containers 100, such that the container 100 are separate from one another. The cutting of the continuous sheet 99 along the edges 103 is performed by a cutting device 6 of known type (not illustrated in detail), comprising a blade and a counter-blade which cyclically squeeze together to perform the cut. The cutting operation performed by the cutting device 6 is performed together with a halting stage of the continuous sheet 99, contemporaneously with the stage of welding performed by the welding devices.

[0021] Following the cutting of the continuous sheet 99, the containers 100 are separated from one another. At the moment of separation, the containers 100 are closed along the whole perimeter thereof, with the exception of the opening 106 at which no heat-welding is performed.

[0022] The continuous sheet 99 is advancingly translated up to the cutting device 6 by a first advancing device 13 which comprises pliers which are mobile alternatingly between a first position, in which they squeeze the continuous sheet 99, and a second position, advanced with respect to the first position by a predetermined step, in which they release the continuous sheet. In the displacement from the first to the second position, the pliers advance the continuous sheet 99 by a step. After having released the sheet, the pliers newly retreat to the first position, in which they squeeze the continuous sheet at a different zone from the first position, and displace once more from the first position to the second position, advancing the continuous sheet 99 by a further step.

[0023] The wine is introduced internally of each con-

tainer 100 through the opening 106 by means of an injector 10 predisposed to be introduced at least partially internally of the container 100 through the opening 106. The injector 10 comprises a tubular element provided with a spindle-shaped end portion 10a such as to facilitate passage through the opening 106. At the other end the injector 10 is connected to a conduit through which the wine is supplied by means of a pump (not illustrated). The containers 100 are halted below the injector 10 in order to receive a determined quantity of wine. The injector 10 is vertically mobile between an upper position, in which it does not interfere with the containers 100 which can transit below the injector 10, and a lower position, in which at least the end portion 10a of the injector can be introduced into the opening 106 of a container 100 which stations below the injector 10.

[0024] In order for the injector 10 to be correctly introduced into the containers 100, it is necessary to widen the opening 106 of the containers before the injector is brought into the lower position.

[0025] As already mentioned, the material the containers 100 are made of is a multi-ply paper material. The material exhibits a thickness and a rigidity which are such that the applicant has been led to develop a special widening device 7, 8 for enabling the opening 106 of the containers 100 to be widened before the descent of the injector 10.

[0026] To this end, the machine of the present invention is provided with a constricting device 7 (figures from 4 to 11), predisposed to exert an action which nears the lower ends 103a, 103b of the container 100 to one another such as to broaden the bottom flap 104 of the container 100 in a transversal direction with respect to the main flaps 101, 102. The constriction device 7 comprises two jaws 7a, 7b which are nearingly and distancingly mobile between a first position (figures 4 and 10), in which they are at a greater reciprocal distance, and a second position, in which they are at a smaller reciprocal distance (figures 6 and 8). The constriction device 7 is further mobile between a lower position (figures 4 and 10), in which it cannot interact with an overlying container 100, and an upper position (figures 6 and 8), in which it can interact with an overlying container 100.

[0027] The constriction device 7 is operatingly synchronised with the transport motion of the containers 100. Each container 100 is halted for a determined time interval above the constriction device 7. With the jaws 7a, 7b initially in the first position (figure 4), the constriction device translates from the lower position to the upper position such as to reach the upper position when the container 100 halts. Thereafter the jaws 7a, 7b near one another, reaching the second position (figure 6). During the reciprocal nearing, the jaws 7a, 7b of the constriction device 7 enter into contact with the lower ends 103a, 103b of the container 100, nearing them to one another along the median line 105 of the bottom fold 104. The nearing of the lower ends 103a, 103b leads to a separating of the conjoining zones 104a, 104b between main folds 101, 102 and the bottom fold 104, and a separating between the main folds 101, 102.

[0028] At the same time that the constriction device 7 is operating, a tractor device 8 is also functioning (figures from 4 to 11), predisposed to distance the two main folds 101, 102 of the container 100 from each other. The tractor device 8 comprises two traction elements 8a, 8b predisposed each to connect to one of the two main folds 101, 102. The two traction elements 8a, 8b are arranged on opposite sides of the container 100, such that each of them is facing one of the main folds 101, 102. The traction elements 8a, 8b are provided with means for connecting to the main folds 101, 102, preferably comprising one or more suckers.

[0029] The two traction elements 8a, 8b are mobile in distancing and nearing between a first position (figures 7 and 9), in which they are at a smaller reciprocal distance, and a second position (figures 5 and 11), in which they are at a greater reciprocal distance.

[0030] The tractor device 8 preferably functions in a work cycle that is overall synchronised to the work cycle of the constriction device 7. During the halt interval of a container 100, while the constriction device 7 nears the lower ends 103a, 103b of the container to one another, the two traction elements reach the first position (figure 7) in which they connect with the main folds 101, 102 and are brought back into the second position (figure 9), in which they are more distant from one another, and thus distance the main folds 101, 102 from one another.

[0031] The combined action of the constriction device 7 and the tractor device 8 enables the main folds 101, 102 to be widened such as to widen the opening 106 of the container 100. After the widening of the opening 106, the injector 10 can easily insert through the opening 106 itself (figure 9) in order to introduce the wine during the halt interval of the container.

[0032] A second injector 11 is preferably arranged downstream of the wine container 10. After introducing the wine, the second injector 11 is predisposed to introduce a determined quantity of nitrogen internally of the container 100 in order to create internally of the containers 100 a substantially inert atmosphere with contributes to maintaining the aesthetic and gustatory qualities of the wine intact. The presence of the second injector 11 is not necessary in a case in which the creation of an inert atmosphere internally of the container 100 is not considered to be indispensable.

[0033] Downstream of the injector 10, and of the second injector 11 if present, closing means 12 are arranged, predisposed to close the opening 106 of the containers 100. The closing means comprise a welding device, similar to the above-described welding devices 5a, 5b, 5c, 5d, predisposed to perform a heat-welding of the edges of the flaps 101a, 102a of the main folds 101, 102, which delimit the opening 106 of the containers 100. The welding device of the closing means 12 can be conformed such as to follow the possibly-shaped profile of the flaps 101a, 102a of the main folds 101, 102 of the containers

100.

[0034] A shaping device 14 can be positioned downstream of the closing means 12 in order to shape the flaps 101 a, 102a of the main folds 101, 102. The shaping device 14 comprises a cutting device which is similar to the cutting device 6 described herein above which separates the containers 100 from one another. Differently to the cutting device 6 separating the containers 100, which is provided with a substantially straight blade, the cutting device of the shaping device 14 is provided with a cutting blade shaped such as to provided the flaps 101a, 102a of the main folds 101, 102 with a desired shape, for example the shape of a cap or a stopper.

[0035] A second advancing device 15 is arranged downstream of the cutting device 6 which separates the containers 100. The second advancing device 15 preferably comprises mobile pliers which are predisposed for contemporaneously gripping several containers 100. The mobile pliers comprise a first place, a last place and one or more intermediate places 15a, 15b...15d, separated by a determined step, at which the pliers can grip a container 100. The mobile pliers of the second advancing device 15, similarly to the first advancing device 13, are mobile alternatingly between a first position, in which they squeeze the containers 100, and a second position, advanced with respect to the first position by a determined step, in which the pliers release the containers 100. In full working conditions of the machine, in the first position the pliers grip a container 100, coming from the cutting device 6, in the first position. One or more containers 100, previously positioned at the various devices of the machine which follow the cutting device 6, are gripped by the mobile pliers in the intermediate places and the last place. In particular, the containers that are gripped in the first position of the mobile pliers are: the container coming from the cutting device 6, the container arranged at the filling device 7, 8, 10, the container arranged at the second injector 11 (if present), the container arranged at the closing means 12 and the container arranged at the shaping device 14.

[0036] By displacing from the first position to the second position, the second advancing device 15 advances the containers 100 to the following device. When the second position has been reached, the mobile pliers of the second advancing device 15 release the containers 100 at the following device. The container 100 released by the last place is distanced from the machine.

[0037] After having released the containers 100, the pliers newly retreat to the first position, in which they grip a new container 100 coming from the cutting device 6 and the other containers 100 arranged at the various devices, and displaces newly to the second position, advancing the containers 100 by the determined step.

[0038] Temporary closing pliers 16 can be located between the second injector 11, if present, and the closing means 12. The closing pliers 16 are predisposed to grip the containers 100 in proximity of the opening 106 such as to retain the nitrogen internally of the containers 100. The closing pliers 16 are solidly associated to the mobile pliers of the second transport device 15, such as to act in synchrony therewith. In substance, the amount by which the mobile pliers squeeze in the first position in order to grip the containers 100 is the same amount by which the closing pliers 16 grip the container 100 at the second injector 11. The closing pliers 16 release the container 100 when the mobile pliers release the containers 100 in the second position.

Claims

1. A machine for packing wine in single-dose containers, comprising:

   starting from a sheet of multilayer paper material, means (2-16) for realising a container (100) of a stand-up type comprising two main folds (101, 102), opposite one another and welded at edges thereof, a bottom fold (104) conjoined to the main folds and folded between the two main folds along a median line (105), and an opening (106), arranged between the two main folds (101, 102) in an opposite position with respect to the bottom fold (104); a filling device (7, 8, 10) predisposed for introducing a determined quantity of wine into the container (100); closing means (12), predisposed for closing the opening (106) after introduction of the wine; **characterised in that** the filling device (7, 8, 10) comprises a constricting device (7), predisposed for exerting an action which reciprocally nears bottom ends (103a, 103b) of the container (100) such as to extend the bottom fold (104) in a transversal direction with respect to the median line (105), and a tractor device (8), predisposed for reciprocally distancing the main folds (101, 102) of the container (100).

2. The machine of claim 1, wherein: the constricting device (7) comprises two jaws (7a, 7b) which are mobile in nearing and distancing between a first position, in which the two jaws (7a, 7b) are at a greatest reciprocal distance, and a second position, in which the two jaws (7a, 7b) are at a smaller reciprocal distance; the jaws (7a, 7b) being arranged such that during the reciprocal nearing thereof they enter into contact with the bottom ends (103a, 103b) of the container (100), nearing the bottom ends (103a, 103b) to one another along the median line (105) of the bottom fold (104).

3. The machine of claims 1 or 2, wherein the constricting device (7) is mobile between a lower position, in which it cannot interact with an overlying container (100), and an upper position, in which it can interact with an overlying container (100).

4. The machine of one of the preceding claims, wherein the tractor device (8) comprises two traction elements (8a, 8b) predisposed each to connect to one of the two main folds (101, 102).

5. The machine of claim 4, wherein the traction elements (8a, 8b) are distancingly and nearingly mobile between a first position, in which they are at a smaller reciprocal distance, and a second position, in which they are at a greater reciprocal distance.

6. The machine of claims 2, 3 and 5, wherein the filling device (7, 8, 10) of the containers (100) is predisposed to fill a container (100) during a determined stop interval of the container (100), the constricting device (7) and the tractor device (8) being synchronised such that during the stop interval of a container (100) the jaws (7a, 7b) of the constricting device (7) near the bottom ends (103a, 103b) of the container (100) to one another and the traction elements (8a, 8b) of the tractor device (8) distance the main folds (101, 102) from one another.

7. The machine of claim 6, wherein the filling device (7, 8, 10) comprises an injector (10) predisposed to be introduced at least partially internally of the container (100) through the opening (106), the injector (10) being vertically mobile between an upper position, in which it does not interfere with the containers (100) which can transit below the injector (10), and a lower position, in which at least a portion of end (10a) of the injector can be introduced into the opening (106) of a container (100).

8. The machine of claim 7, wherein a functioning of the injector (10) is synchronised with functioning of the constricting device (7) and the tractor device (8) such that the injector (10) reaches the lower position thereof following a reaching of the second position of the jaws (7a, 7b) of the constricting device (7) and a reaching of the second position of the traction elements (8a, 8b) of the tractor device (8).

9. The machine of claim 7 or 8, comprising a second injector (11) which is arranged downstream of the injector (10) and is predisposed for introducing a quantity of an inert gas internally of the container (100), following an introduction of wine therein.

10. The machine of one of the preceding claims, wherein the closing means (12) comprise a welding device formed by a pair of presser elements, heated to a determined temperature, which are activated to distance from and to near to one another according to a predetermined time cycle, which presser elements are predisposed, when closed together, to exert a pressure which compresses the main folds (101, 102) contactingly to one another in proximity of the opening (106) such as to close the opening (106).

11. The machine of one of the preceding claims, comprising a shaping device (14), arranged downstream of the closing means (12), which is predisposed to shape flaps (101a, 102a) of the main folds (101, 102) in proximity of the opening (106) of the container (100).

Patentansprüche

1. Maschine zum Abpacken von Wein in Behälter für Einzelmengen, umfassend: von einem Blatt Mehrschichtpapiermaterials ausgehend, Mittel (2-16) zur Herstellung eines Behälters (100) vom Stand-Typ, umfassend zwei Hauptlagen (101, 102), die einander gegenüberliegen und an den Kanten verschweißt sind, eine untere Lage (104), die mit den Hauptlagen verbunden und zwischen den beiden Hauptlagen entlang einer Mittellinie (105) gefaltet ist und eine Öffnung (106), die zwischen den beiden Hauptlagen (101, 102) in einer im Bezug auf die untere Lage (104) gegenüberliegenden Position angeordnet ist; eine Füllvorrichtung (7, 8, 10), die dazu ausgelegt ist, eine festgelegte Menge Wein in den Behälter (100) einzuführen; Verschlussmittel (12), die dazu ausgelegt sind, die Öffnung (106) nach der Einführung des Weines zu schließen; **dadurch gekennzeichnet, dass** die Füllvorrichtung (7, 8, 10) eine Verengungsvorrichtung (7) umfasst, die zum Ausüben einer Wirkung ausgelegt ist, welche die unteren Enden (103a, 103b) des Behälters (100) so reziprok annähert, dass die untere Lage (104) in einer im Bezug auf die Mittellinie (105) transversale Richtung ausgestreckt wird sowie eine Zugvorrichtung (8), die zum reziproken Beabstanden der Hauptlagen (101, 102) des Behälters (100) ausgelegt ist.

2. Maschine nach Anspruch 1, wobei die Verengungsvorrichtung (7) zwei Backen (7a, 7b) umfasst, die beim Annähern und Beabstanden zwischen einer ersten Position, in der die beiden Backen (7a, 7b) in einem größten reziproken Abstand liegen und einer zweiten Position, in der die beiden Backen (7a, 7b) in einem kleineren reziproken Abstand liegen, beweglich sind, wobei die Bakken (7a, 7b) so angeordnet sind, dass sie während des reziproken Annäherns in Kontakt mit den unteren Enden (103a, 103b) des Behälters (100) kommen, indem die unteren Enden (103a, 103b) entlang der Mittellinie (105) der unteren Lage (104) einander angenähert werden.

3. Maschine nach den Ansprüchen 1 oder 2, wobei die Verengungsvorrichtung (7) zwischen einer unteren Position, in der sie nicht mit einem darüberliegenden Behälter (100) interagieren kann, und einer oberen

Position, in der sie mit einem darüberliegenden Behälter (100) interagieren kann, beweglich ist.

4. Maschine nach einem der vorangehenden Ansprüche, wobei die Zugvorrichtung (8) zwei Zugelemente (8a, 8b) umfasst, die jeweils dazu ausgelegt sind, sich mit einem der beiden Hauptlagen (101, 102) zu verbinden.

5. Maschine nach Anspruch 4, wobei die Zugelemente (8a, 8b) beabstandend und annähernd zwischen einer ersten Position, in der sie in einem kleineren reziproken Abstand liegen, und einer zweiten Position, in der sie in einem größeren reziproken Abstand liegen, beweglich sind.

6. Maschine nach den Ansprüchen 2, 3 und 5, wobei die Vorrichtung (7, 8, 10) zum Füllen der Behälter (100) dazu ausgelegt ist, einen Behälter (100) während eines festgelegten Anhalteintervalls des Behälters (100) zu füllen, wobei die Verengungsvorrichtung (7) und die Zugvorrichtung (8) so synchronisiert sind, dass die Backen (7a, 7b) der Verengungsvorrichtung (7) während des Anhalteintervalls eines Behälters (100) die unteren Enden (103a, 103b) des Behälters (100) einander annähern und die Zugelemente (8a, 8b) der Zugvorrichtung (8) die Hauptlagen (101, 102) voneinander beabstanden.

7. Maschine nach Anspruch 6, wobei die Füllvorrichtung (7, 8, 10) einen Injektor (10) umfasst, der dazu ausgelegt ist, zumindest teilweise in den Behälter (100) durch die Öffnung (106) eingeführt zu werden, wobei der Injektor (10) vertikal zwischen einer oberen Position, in der er die Behälter (100), die sich unter den Injektor (10) verschieben können, nicht behindert, und einer unteren Position, in der zumindest ein Endabschnitt (10a) des Injektors in die Öffnung (106) eines Behälters (100) eingeführt werden kann, beweglich ist.

8. Maschine nach Anspruch 7, wobei der Lauf des Injektors (10) so mit dem Lauf der Verengungsvorrichtung (7) und der Zugvorrichtung (8) synchronisiert ist, dass der Injektor (10) die untere Position erreicht, nachdem die Backen (7a, 7b) der Verengungsvorrichtung (7) die zweite Position erreicht haben und die Zugelemente (8a, 8b) der Zugvorrichtung (8) die zweite Position erreicht haben.

9. Maschine nach den Ansprüchen 7 oder 8, umfassend einen zweiten Injektor (11), der dem Injektor (10) nachgeordnet und dazu ausgelegt ist, eine Menge eines Inertgases in den Behälter (100) einzuführen, nachdem Wein darin eingeführt wurde.

10. Maschine nach einem der vorangehenden Ansprüche, wobei die Verschlussmittel (12) eine Schweißvorrichtung umfassen, die aus einem Paar Presselemente gebildet werden, die auf eine festgelegte Temperatur erwärmt werden, die aktiviert werden, um sich nach einem festgelegten Zeitzyklus von einander zu beabstanden und einander anzunähern, wobei die Presselemente, wenn sie zusammengeschlossen sind, dazu ausgelegt sind, einen Druck auszuüben, der die Hauptlagen (101, 102) in Kontakt zueinander in der Nähe der Öffnung (106) so komprimiert, dass die Öffnung (106) geschlossen wird.

11. Maschine nach einem der vorangehenden Ansprüche, umfassend eine Formvorrichtung (14), die den Verschlussmitteln (12) nachgeschaltet angeordnet ist, die dazu ausgelegt ist, Laschen (101a, 102a) der Hauptlagen (101, 102) in der Nähe der Öffnung (106) des Behälters (100) zu formen.

Revendications

1. Machine de conditionnement de vin en récipients à dose unique, comprenant : des moyens (2-16) pour confectionner, avec une feuille de matériau multicouche en papier, un récipient (100) d'un type stand-up avec deux plis principaux (101, 102), en face l'un de l'autre et soudés au niveau des bords, un pli de fond (104) uni aux plis principaux et replié entre les deux plis principaux le long d'une ligne médiane (105), et une ouverture (106) située entre les deux plis principaux (101, 102) dans une position opposée par rapport au pli de fond (104) ; un dispositif de remplissage (7, 8, 10) pouvant introduire une quantité déterminée de vin dans le récipient (100) ; des moyens de fermeture (12) pouvant fermer l'ouverture (106) après l'introduction du vin ; **caractérisée en ce que** le dispositif de remplissage (7, 8, 10) comprend un dispositif d'étranglement (7) pouvant exercer une action qui rapproche réciproquement des extrémités de fond (103a, 103b) du récipient (100), de sorte à allonger le pli de fond (104) dans une direction transversale par rapport à la ligne médiane (105), et un dispositif de traction (8) pouvant éloigner réciproquement les plis principaux (101, 102) du récipient (100).

2. Machine selon la revendication 1, **caractérisée en ce que** : le dispositif d'étranglement (7) présente deux mors (7a, 7b) qui se rapprochent et s'éloignent entre une première position, dans laquelle les deux mors (7a, 7b) se trouvent à une distance réciproque la plus grande, et une seconde position, dans laquelle les deux mors (7a, 7b) se trouvent à une distance réciproque plus petite ; les mors (7a, 7b) étant placés de sorte que, pendant leur rapprochement réciproque, ils entrent en contact avec les extrémités de fond (103a, 103b) du récipient (100), rapprochant les extrémités de fond (103a, 103b) l'une de l'autre,

le long de la ligne médiane (105) du pli de fond (104).

3. Machine selon les revendications 1 ou 2, **caractérisée en ce que** le dispositif d'étranglement (7) se déplace entre une position inférieure dans laquelle il ne peut pas interagir avec un récipient superposé (100), et une position supérieure dans laquelle il peut interagir avec un récipient superposé (100).

4. Machine selon l'une des revendications précédentes, dans laquelle le dispositif de traction (8) comprend deux éléments de traction (8a, 8b) pouvant chacun se raccorder à l'un des deux plis principaux (101, 102).

5. Machine selon la revendication 4, **caractérisée en ce que** les éléments de traction (8a, 8b) s'éloignent et se rapprochent entre une première position, dans laquelle ils se trouvent à une distance réciproque plus petite, et une seconde position dans laquelle ils se trouvent à une distance réciproque plus grande.

6. Machine selon les revendications 2, 3 et 5, dans laquelle le dispositif de remplissage (7, 8, 10) des récipients (100) peut remplir un récipient (100) pendant un intervalle d'arrêt déterminé du récipient (100), le dispositif d'étranglement (7) et le dispositif de traction (8) étant synchronisés de sorte que, pendant l'intervalle d'arrêt d'un récipient (100), les mors (7a, 7b) du dispositif d'étranglement (7) rapprochent les extrémités de fond (103a, 103b) du récipient (100) l'une de l'autre et les éléments de traction (8a, 8b) du dispositif de traction (8) éloignent les plis principaux (101, 102) l'un de l'autre.

7. Machine selon la revendication 6, **caractérisée en ce que** le dispositif de remplissage (7, 8, 10) comprend un injecteur (10) pouvant être introduit au moins partiellement à l'intérieur du récipient (100) par l'ouverture (106), l'injecteur (10) se déplaçant verticalement entre une position supérieure, dans laquelle il n'interfère pas avec les récipients (100) qui passent sous l'injecteur (10), et une position inférieure, dans laquelle au moins une partie d'extrémité (10a) de l'injecteur peut être introduite dans l'ouverture (106) d'un récipient (100).

8. Machine selon la revendication 7, **caractérisée en ce qu'**un fonctionnement de l'injecteur (10) est synchronisé avec le fonctionnement du dispositif d'étranglement (7) et du dispositif de traction (8), de manière que l'injecteur (10) atteint la position inférieure après une mise des mors (7a, 7b) du dispositif d'étranglement (7) dans la seconde position et après une mise des éléments de traction (8a, 8b) du dispositif de traction (8) dans la seconde position.

9. Machine selon les revendications 7 ou 8, comprenant un second injecteur (11) situé en aval de l'injecteur (10) et pouvant introduire une quantité d'un gaz inerte à l'intérieur du récipient (100), après une introduction de vin à l'intérieur.

10. Machine selon l'une des revendications précédentes, **caractérisée en ce que** les moyens de fermeture (12) comprennent un dispositif de soudage composé d'une paire d'éléments presseurs, chauffés à une température déterminée, qui s'activent pour s'éloigner et pour se rapprocher l'un de l'autre selon un cycle temporel prédéterminé, lesdits éléments presseurs pouvant, une fois fermés, exercer une pression qui comprime les plis principaux (101, 102) et les met en contact à proximité de l'ouverture (106) de sorte à fermer l'ouverture (106).

11. Machine selon l'une des revendications précédentes, comprenant un dispositif de façonnage (14), situé en aval des moyens de fermeture (12), pouvant façonner des rabats (101a, 102a) des plis principaux (101, 102) à proximité de l'ouverture (106) du récipient (100).

Fig. 1

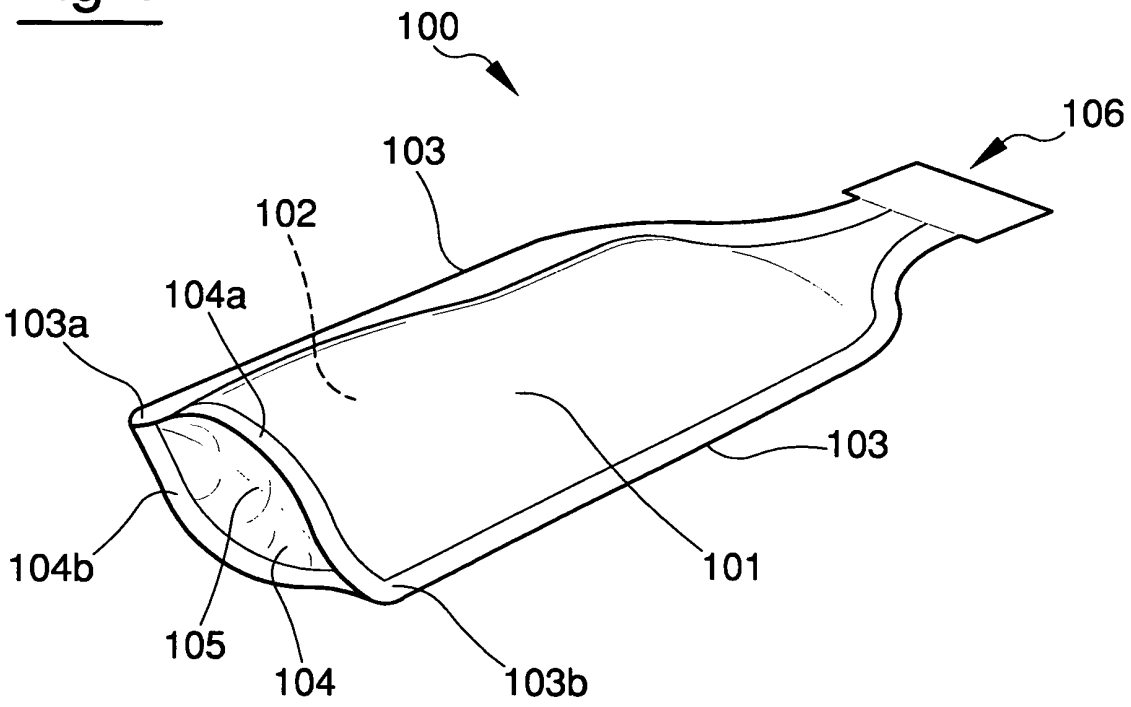
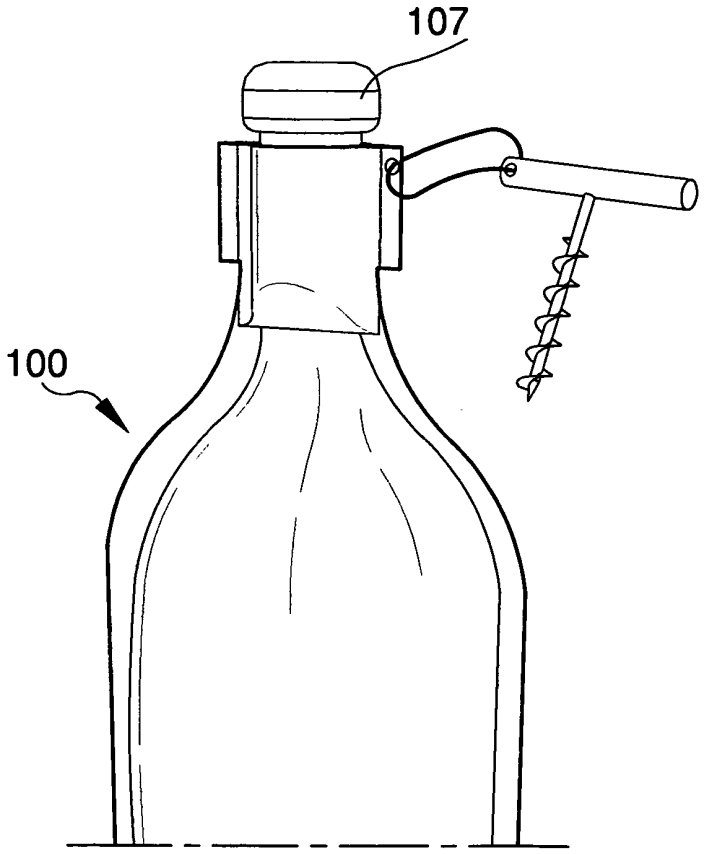


Fig. 2



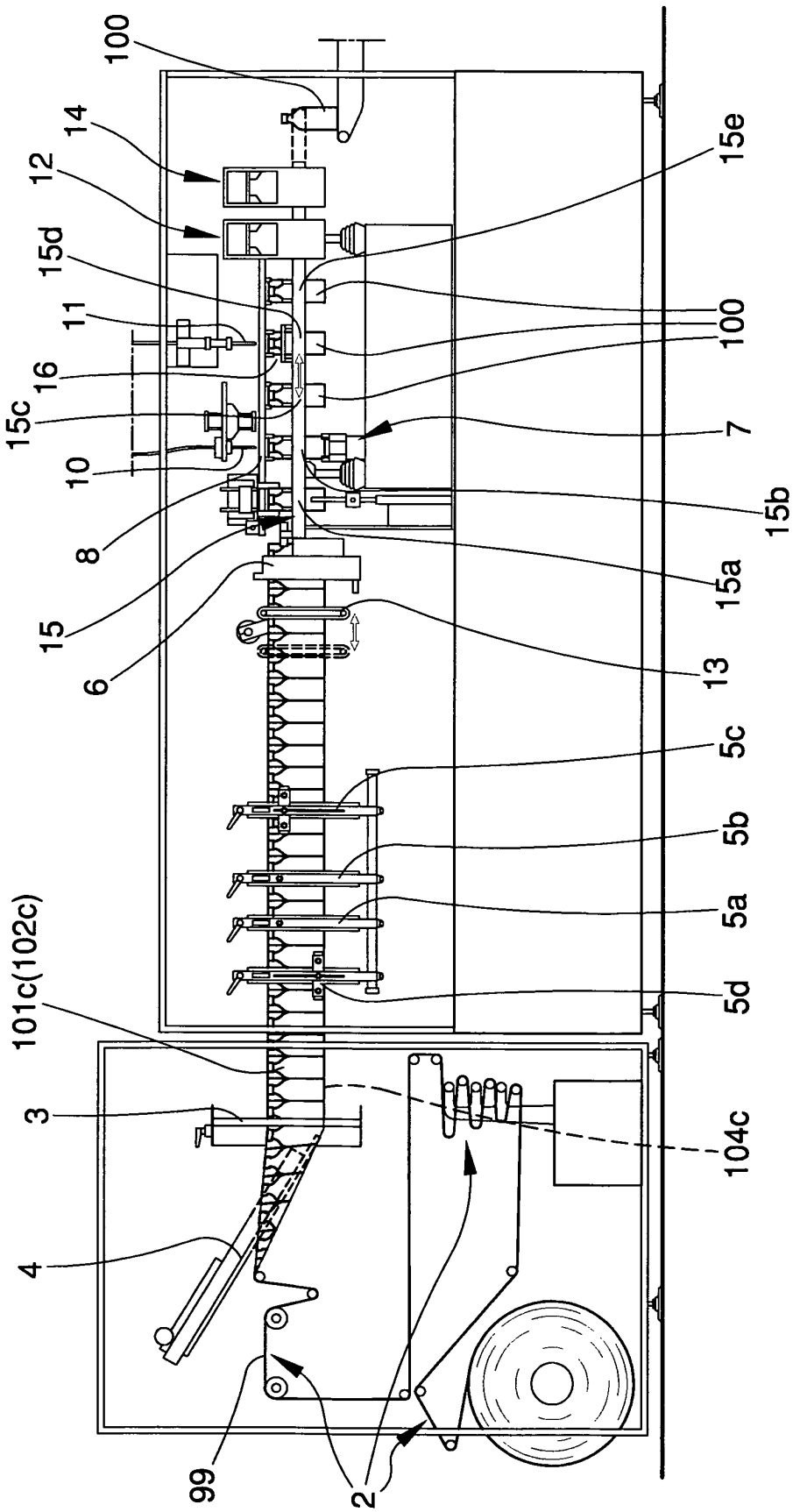

100
14
12
15d
11
16
15c
10
8
15
6
15e
100
7
15b
15a
13
5c
5b
5a
5d
101c(102c)
3
4
104c
99
2

Fig. 3

Fig. 4

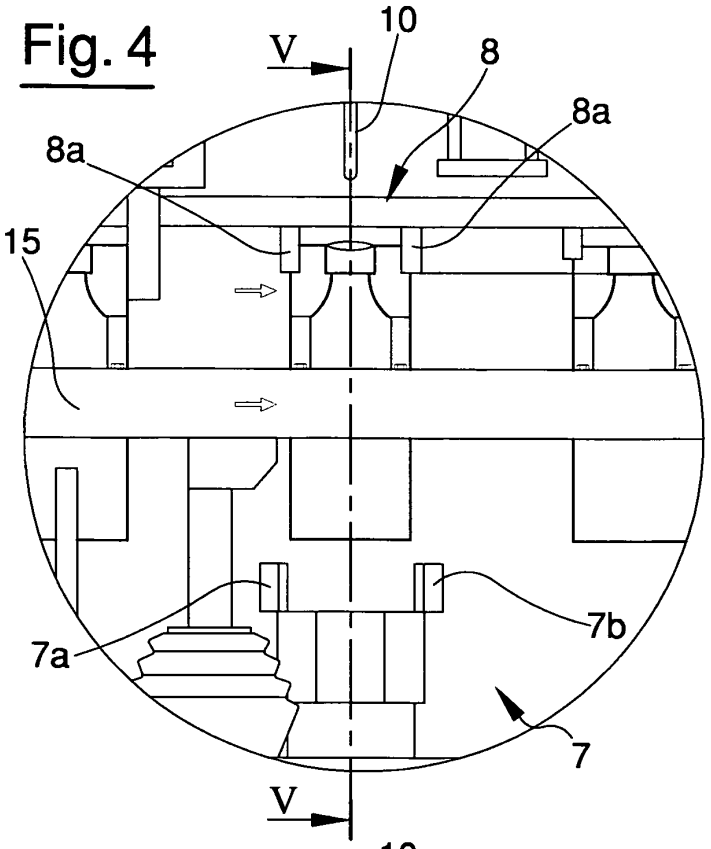


Fig. 5

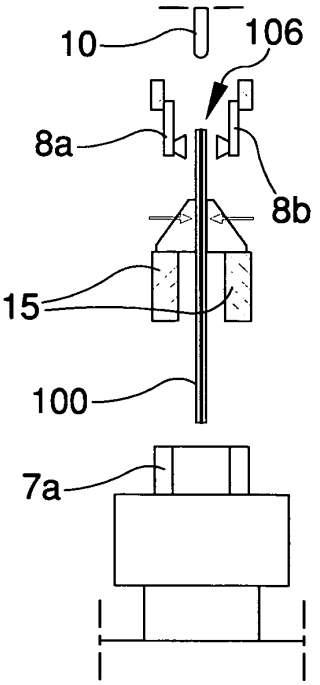


Fig. 6

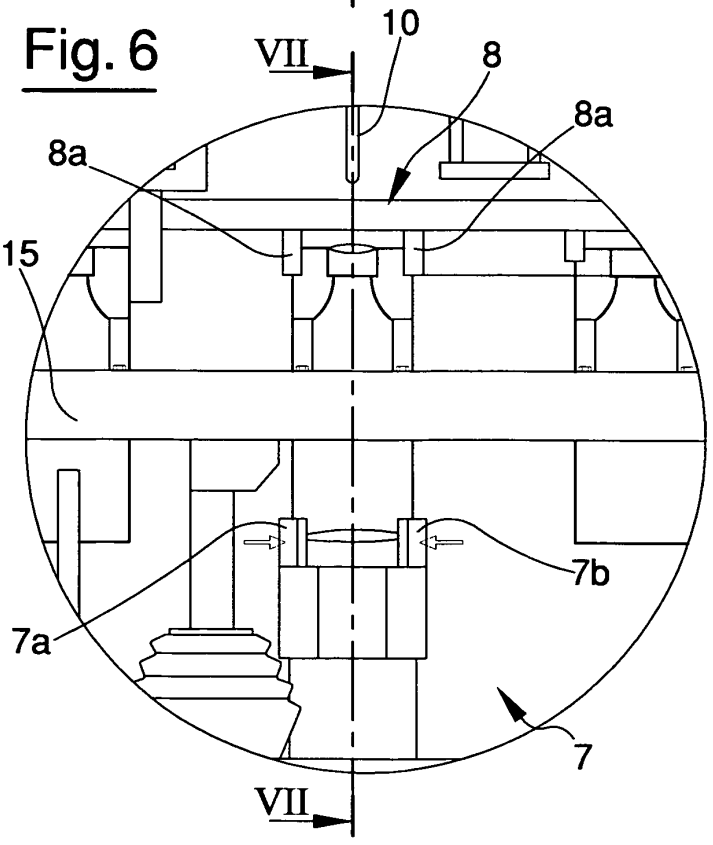


Fig. 7

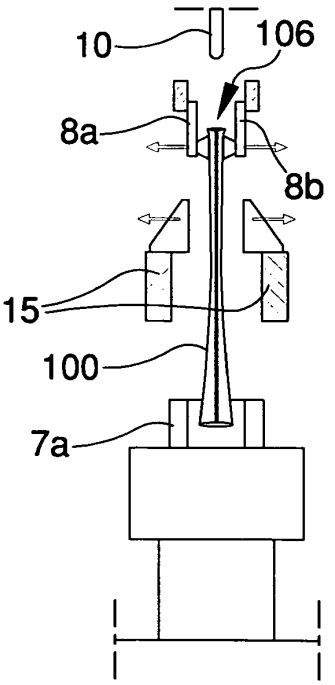


Fig. 8

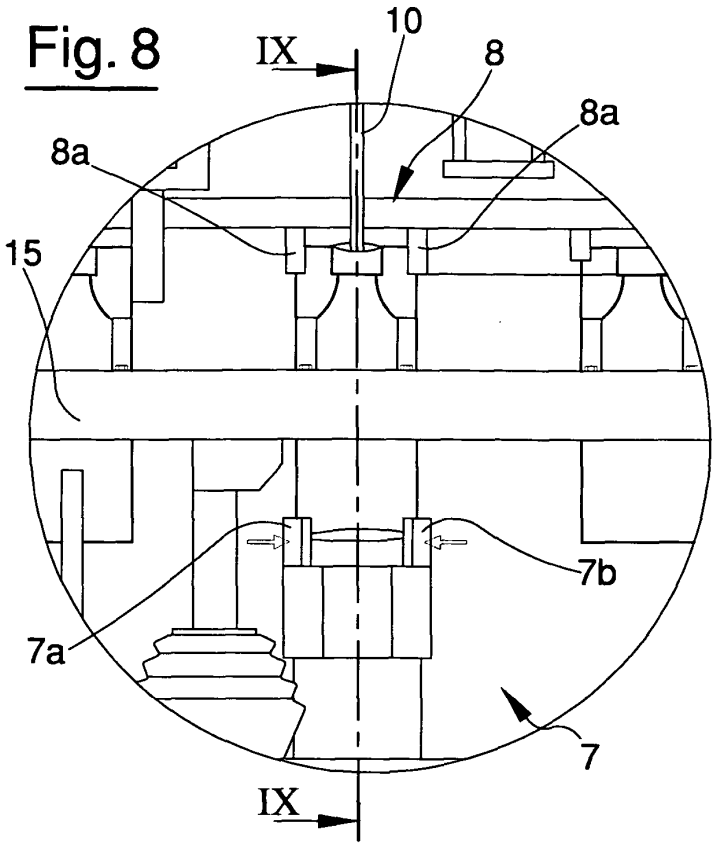


Fig. 9

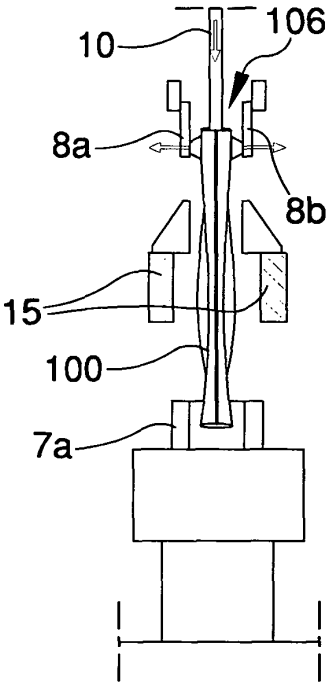


Fig. 10

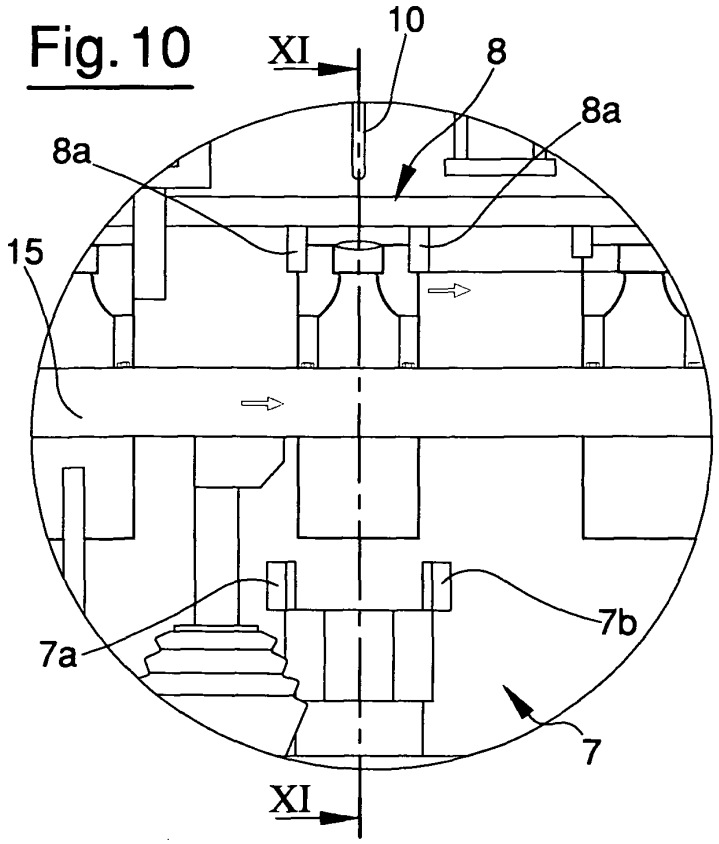


Fig. 11

