



(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
21.01.2015 Bulletin 2015/04

(51) Int Cl.:
B67D 1/04 (2006.01)

(21) Application number: **13176529.9**

(22) Date of filing: **15.07.2013**

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR
Designated Extension States:
BA ME

(72) Inventor: **The designation of the inventor has not yet been filed**

(74) Representative: **Budde Schou A/S**
Hausergade 3
1128 Copenhagen K (DK)

(71) Applicant: **Carlsberg Breweries A/S**
1799 Copenhagen V (DK)

(54) **A beverage dispensing system**

(57) A beverage dispensing system comprises a housing defining a horizontal base and an enclosure extending upwardly from the base. The beverage dispensing system further comprises a tapping rod including a tapping device. The tapping rod is pivotably attached to the enclosure of the housing and is pivotable between a beverage dispensing position and a non-beverage dispensing position. Still further, the beverage dispensing system comprises a container holder for accommodating

a collapsible beverage container. The container holder defines an opening, a rear wall opposite the opening and a side wall interconnecting the opening and the rear wall. The container holder is pivotably attached to the housing and defines a first position in which the opening is covered and closed by the enclosure of the housing, and a second position in which the opening is exposed relative to the enclosure of the housing.

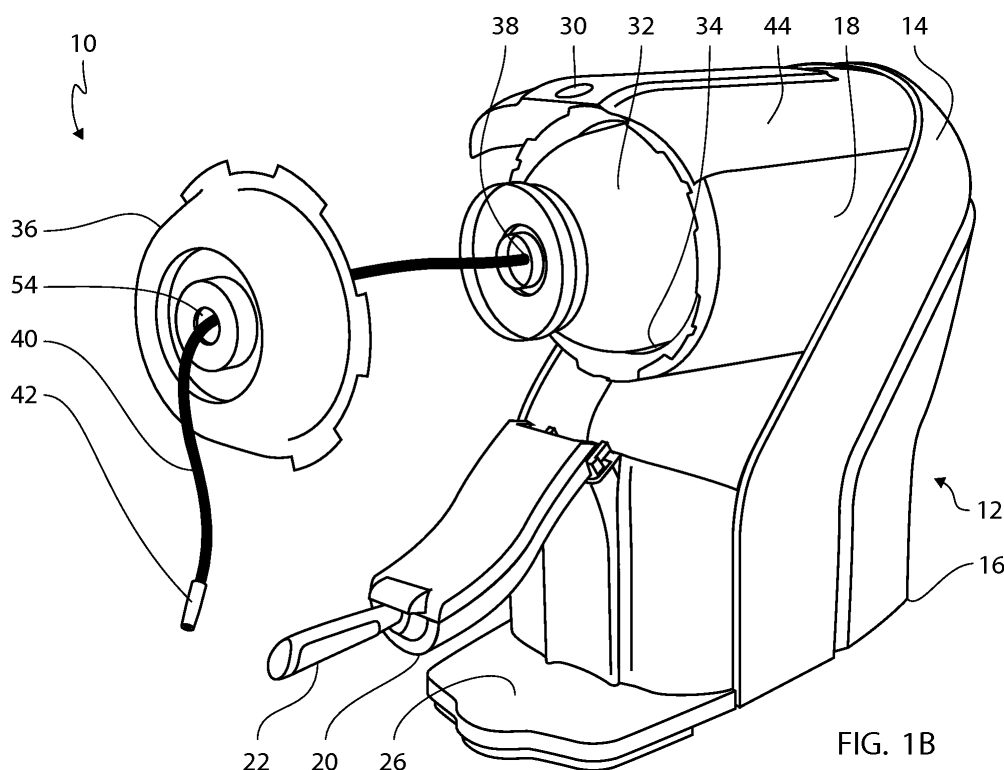


FIG. 1B

Description

[0001] The present invention relates to a beverage dispensing system and a method of exchanging beverage container in a beverage dispensing system.

Background

[0002] Beverage dispensing systems are used in many establishments to provide beverages such as draught beer. Such beverage dispensing systems are mostly used for professional establishments such as in bars or restaurants, however, increasingly also for private users such as in private homes. In many beverage dispensing systems such as e.g. the DraughtMaster™ produced by the applicant company, the beverage is typically provided in a plastic or metallic beverage container or keg. The beverage container is typically positioned upright, i.e. the container outlet is facing upwardly, and the beverage is drawn from the beverage container through an ascending pipe. The beverage is usually expelled from the beverage container to a tapping head by a pressure fluid, typically compressed gas. To avoid direct contact between the pressure fluid and the beverage, a collapsible beverage container may be used. The use of collapsible beverage containers usually including pre-carbonated beverage is well-known in the art of beverage dispensing. When using a collapsible beverage container, the pressure fluid acts on the outside of the beverage container, decreases the volume of the beverage container and thereby forces the beverage out of the beverage container. The upright position in connection with an ascending pipe will not constitute any problem in connection with rigid containers, however, when using collapsible beverage containers, there may be a risk that the beverage container may collapse into the ascending pipe during dispensing. If the beverage container collapses into the ascending pipe, the ascending pipe may break or jam during dispensing and as a result leave residual beverage inside the beverage container. Such residual beverage constitutes a loss, since the beverage container must then be disposed of and replaced. Further, the walls of the beverage container may rupture when rammed by the ascending pipe. Such rupture may cause leakage of beverage into the beverage dispensing system, escape of pressure fluid and occasionally explosion. Thus, ascending pipes in connection with collapsible beverage containers constitute a problem.

[0003] The problem in connection with ascending pipes may be solved by dispensing the beverage having the beverage container arranged in an upside down position, i.e. having the container outlet facing downwards. By positioning the beverage container in an upside down position in the beverage dispensing system, the ascending pipe may be excluded. Thereby the risk of leaving any residual beverage in the beverage container is eliminated since the beverage container may collapse completely without blocking the container outlet.

[0004] Collapsible beverage containers used for the beverage dispensing purpose are typically blow-moulded in one piece from a pre-form. The shape of the mould largely determines the shape of the beverage container.

Typically, the shape of the beverage container is cylindrical and any edges are typically rounded, e.g. to form a substantially circular cross section. Such containers have been described in e.g. WO2004/099060, filed by the applicant company and disclosing a method for dispensing a beverage from a collapsible container by using an increased pressure.

[0005] Most of the beverages intended to be dispensed by using a beverage dispensing system as described above are to be served cold. Examples of such beverages include beers, soft drinks, carbonized wine, ciders and energy drinks. The flavour of such beverage is significantly influenced by the temperature of the beverage. As an example, many kinds of beer develop the most enjoyable taste when served at a temperature around 2°-4°C. Additionally, many beverages, including most beers, must be stored in a cold environment to remain fresh for longer time periods extending e.g. one day, at least when the container has been opened and some air has been allowed to enter the container. For instance, beer will spoil very quickly when stored at room temperature, but may possibly be stored for more than 50 days in case it is stored at around 2°-4°C.

[0006] In professional as well as private beverage dispensing systems, including the previously mentioned DraughtMaster™ system, the beverage container is therefore stored in a compartment which is pressurized and chilled for the beverage to remain fresh and carbonated for an extended period of time, such as at least 30 days. Beverage dispensing systems including a cooling chamber are known in the prior art. WO2007/019853, filed by the applicant company, discloses an assembly for dispensing beverage, the assembly including a pressurized and cooled chamber. The cooling effect is enhanced by means of ventilators, which cause an additional cooling effect by forced convection. WO02/30807 discloses a juice dispenser having a thermoelectric device. By using a chilled compartment as described above, the beverage container and the beverage therein are kept within an air volume which is constantly kept at a proper low temperature. The beverage dispensing system may include a thermostat to account for external temperature variations to keep the temperature low and constant inside the compartment and in the beverage. In WO 2006/103566, the dispensing line is cooled by a separate cooling system for achieving a cooling of the beverage which is about to be dispensed. The drawback of such system is the possibility of insufficient cooling in case beverage is dispensed at a high flow rate.

[0007] A beverage dispensing system which is capable of installing the beverage container in a correct upside down position and allowing the beverage to be rapidly cooled has been developed by the applicant company and described in the following two international applica-

tions.

[0008] In WO2011/061343 a method of rapid cooling of a beverage container has been described. The method involves the use of a cooling element comprising a contact cooling surface having a curvature corresponding to the curvature of the beverage container and contacting at least 10% of the beverage container. In this way, the cooling of the beverage is improved compared to standard convective cooling.

[0009] WO2011/061344 describes a method of ergonomically installing a collapsible beverage container in a beverage dispensing system. The beverage dispensing system comprises an open upwardly facing curved rim defining a contact surface and an inner concave surface between the rim and said closed end defining a slope. The collapsible beverage container defines a convex shaped first end defining a first contact area and a convex shaped second end defining a second contact area. The second contact area has a curvature corresponding to the curvature of the contact surface.

[0010] The above mentioned beverage dispensing systems typically use smaller beverage containers of about 5-10 litres of beverage. The beverage dispensing systems are consequently of a smaller size in order to be positioned e.g. on a table or on a bar counter. Such systems may be considered to be at least semi portable, i.e. will still require access to AC power for driving the pressurization and cooling units. The systems must not be fixedly attached to e.g. the bar counter, but may be moved when required. Thus, there is a need for a compact system which does not require too much table top space, and advantageously the system is an all in one system, i.e. the tapping device and the container holder are preferably interconnected into a common housing.

[0011] The drawback of the above mentioned system is, however, the fact that the position of the beverage outlet of the beverage container will, when installed in the beverage dispensing system, be located opposite the tapping device, i.e. far from the user. During installation, the user may thus have difficulties in reaching the beverage outlet for connecting the tapping line. It may be possible to install the beverage container from the rear of the beverage dispensing system, i.e. from opposite the tapping device, however, in a bar environment, this would require the user to carry the beverage container to a position opposite the bar counter. This would be inconvenient. Further, a very long tapping line will be difficult to guide and align inside the housing, and there is a risk of bending or jamming the tapping line.

Summary of the invention

[0012] The object of the present invention is thus to provide a beverage dispensing system in which the dispensing line may be kept short, the need of an ascending pipe is avoided, and which allows a new beverage container to be easily installed into the beverage dispensing system without the need for the user to carry the beverage

container a long distance.

[0013] The above need and the above object together with numerous other needs and objects, which will be evident from the below detailed description, are according to a first aspect of the present invention obtained by a beverage dispensing system comprising:

a housing, the housing defining a horizontal base and an enclosure extending upwardly from the base, a tapping rod including a tapping device, the tapping rod being pivotably attached to the enclosure of the housing, the tapping rod being pivotable between a beverage dispensing position and a non-beverage dispensing position, and

a container holder for accommodating a collapsible beverage container, the container holder defining an opening, a rear wall opposite the opening and a side wall interconnecting the opening and the rear wall, the container holder being pivotably attached to the housing, the container holder defining a first position in which the opening is covered and closed by the enclosure of the housing, and a second position in which the opening is exposed relative to the enclosure of the housing.

[0014] The base of the housing should be horizontal in order for the beverage dispensing system to be able to be placed on a table top or bar counter. The enclosure should be extending vertically from the base in order to be able to hold the tapping rod and the container holder. The expressions "horizontal" and "vertical" should be interpreted according to the normal operational orientation of the beverage dispensing system.

[0015] By allowing the container holder to pivot, the container holder may in the first position, which is the operational position, be orientated such that the beverage container is having its outlet facing downwardly and towards the user. In this way, the tapping line may be kept short and the installation may be simplified. The short tapping line will be less likely to bend or jam inside the housing, and the user will not have to reach far into the housing to reach the beverage outlet of the container. The outlet of the beverage container will thus also have a position which avoids the use of an ascending pipe. In the first position the opening is covered and closed by the enclosure by which is meant that the opening cannot be reached when the container holder is in the first position.

[0016] When the container holder is pivoted into the second position, which is the container exchange position, the opening of the container holder will be facing the user, and the installation will be very simple and ergonomically beneficial for the user, i.e. the user has only to lift and carry the full beverage container a very short distance. The opening will be exposed relative to the enclosure, i.e. allowing the user to access the opening without any obstructions from the enclosure. The user may also be able to use the rim of the opening in order to

install the beverage container as described in the above mentioned prior art document WO2011/061344.

[0017] The purpose of the tapping rod is to provide an elevated position for the tapping device during dispensing. Such position will typically mean that the tapping rod is facing the user. During exchange of beverage container, the tapping rod will thus block or at least obstruct the access to the opening of the container holder in the second position. By allowing the tapping rod to pivot, it may be ensured that the tapping rod will not be blocking the access to the opening of the container holder when the new beverage container is to be installed. For beverage dispensing, the tapping rod may be pivoted back to its original position.

[0018] The tapping device is located in the tapping rod. The tapping device is preferably connected to a tapping handle for controlling the tapping of beverage via a tapping valve which is connected to the tapping line. Typically, the tapping line is connected to the beverage container at one end and a tapping valve at the other end. The tapping line and the tapping valve are normally provided together with the beverage container, and the tapping valve is installed into the tapping device. When the tapping device is operated, the beverage will be dispensed, provided the container holder is pressurized.

[0019] The container holder is typically pressure proof and connected to a pressurization device which in the operational position i.e. the first position, pressurizes the container holder, and thereby the beverage container, to a pressure of about 1,5-2 bar in order to achieve a driving pressure for the beverage and prevent loss of carbonization of the beverage. When the tapping device is operated, the tapping valve will open and allow beverage to flow from the beverage container to the outside due to the pressure difference between the container holder and the outside. The beverage is typically a collapsible beverage container which will be compressed as the beverage is being dispensed. Before the container holder is pivoted to the second position, the pressure may be released e.g. by pushing a pressure release button. The beverage dispensing system may also include a cooling system which provides cooling to the container holder.

[0020] According to a further embodiment of the first aspect of the present invention, the container holder and the tapping rod are interconnected by a linking mechanism, the linking mechanism causing the container holder to pivot from the first position to the second position when the tapping rod is being pivoted from the beverage dispensing position to the non-beverage dispensing position. In order to simplify the exchange of beverage container further, the linking mechanism may cause the container holder to pivot between the first and second positions as the tapping rod is pivoted between the beverage and non-beverage positions. In this way the user has to perform only one operation, namely pivoting of the tapping rod, instead of two operations, namely first pivot the tapping rod and subsequently pivot the container holder, or vice versa. The leverage of the tapping rod thus assists

in the pivoting and lifting of the container holder. Linking mechanism should in the present context be understood to encompass any mechanical connection such as a member, a chain, a belt, a cogwheel or a lever.

[0021] According to a further embodiment of the first aspect of the present invention, the linking mechanism being fixedly connected to the tapping rod, and being rotatably and slidably connected to the side wall of the container holder. In a preferred embodiment, a lever is used for translating the rotational movement of the tapping rod to a rotational movement of the container holder. For this purpose, a fixed connection to the tapping rod and a movable connection to the container holder is preferred, as will be described in more detail in connection with the detailed description of the figures.

[0022] According to a further embodiment of the first aspect of the present invention, the linking mechanism comprises a first member, a second member and a third member, the first member having a first end fixedly connected to the tapping rod and a second end connected to a second member and a third member, the second member being slidably and rotatably connected to a first connection point of the side wall of the container holder, and the third member being slidably and rotatably connected to a second connection point of the side wall of the container holder, the first connection point being located opposite the second connection point. The above described linking mechanism, which will have the shape of a Y, constitutes a very robust mechanical solution which will reduce the amount of space required for the linking mechanism. Preferably, the first and second connection points define a horizontal line between themselves. Further explanations are given below in connection with the figures.

[0023] According to a further embodiment of the first aspect of the present invention, the linking mechanism defines a friction force sufficient for compensating the gravitational force of the container holder in the second position. In this way, no locking mechanism is required for holding the container holder in the second position. Preferably, the friction force is sufficient for holding the container holder including a filled beverage container, while the friction force still being low enough such that the linking mechanism may be operated by hand.

[0024] According to a further embodiment of the first aspect of the present invention, the linking mechanism comprises an electrical, pneumatically or hydraulic mechanism. In a broader sense, the linking mechanism may be considered to also encompass electrical, pneumatically and hydraulic mechanisms.

[0025] According to a further embodiment of the first aspect of the present invention, the container holder and the housing are interconnected by a gas cylinder or spring for simplifying the pivoting of the container holder from the first position to the second position. When the container holder is shifted from the first position to the second position, the center of gravity of the container holder is also typically shifted. A gas cylinder or spring may help

the user to overcome the work required for shifting the container holder from the first position to the second position.

[0026] According to a further embodiment of the first aspect of the present invention, the tapping rod includes a locking mechanism for locking the tapping rod in the beverage dispensing position. Since the beverage dispensing is typically controlled by a pivoting handle on the tapping rod, and the pivoting movement of the handle may be the same as the pivoting movement of the tapping rod, it may be beneficial to be able to lock the tapping rod in its beverage dispensing position, in order to avoid that the tapping rod is shifted to the non-beverage dispensing position while operating the dispensing handle.

[0027] According to a further embodiment of the first aspect of the present invention, the locking mechanism is released by linearly shifting the tapping rod before pivoting the tapping rod. By requiring the user to linearly shift the tapping rod, e.g. upwardly, before pivoting, the above described unintentional shifting of the tapping rod from the beverage dispensing position to the non-beverage dispensing position may be avoided.

[0028] According to a further embodiment of the first aspect of the present invention, the container holder comprises a removable pressure lid for covering the opening and the housing comprises a pressurization device for pressurizing the container holder. In order to ensure a fully pressure tight container holder, a pressure lid may be applied over the opening of the container holder in the second position after the new beverage container has been installed, and before the container holder is pivoted back to the first position. The fully pressure tight container holder is pressurized by a pressurization device such as a compressor integrated in the housing.

[0029] According to a further embodiment of the first aspect of the present invention, the tapping rod is openable for introducing a tapping valve and a tapping line into the tapping rod. The tapping rod includes a tapping device which is receiving the tapping valve of the tapping line of the container. The tapping device is connected to a tapping handle for easy dispensing of the beverage. In order to have an easy accessible tapping device, the back part of the tapping rod may be openable in order for the user to be able to install the tapping valve and the tapping line correctly.

[0030] According to a further embodiment of the first aspect of the present invention, the vector between the opening and the rear wall of the container holder in the first position defines an angle relative to the horizontal base of between 10 and 80 degrees, preferably between 20 and 70 degrees, more preferably between 30 and 60 degrees, most preferably between 40 and 50 degrees, such as 45 degrees. The applicant has found out that it is advantageous to position the outlet of the beverage container on a low position and towards the user. In order to combine these two advantageous properties, any of the above mentioned angles of the container holder will be suitable.

[0031] According to a further embodiment of the first aspect of the present invention, the tapping device of the tapping rod in the non-beverage dispensing position being located adjacent the base, and the tapping device of the tapping rod in the beverage dispensing position being located above the base. In order to allow the opening of the container holder to be unobstructed, the tapping rod should preferably be pivoted to such an extent that the tapping device is located adjacent the base. In some cases a drip tray is used which may be considered the lowest possible point for the tapping rod. In this way the tapping rod will be least obstructive. During dispensing, a beverage glass or pitcher must fit below the tapping device, and there must be sufficient space between the table or drip tray and the tapping device.

[0032] According to a further embodiment of the first aspect of the present invention, the container holder defines a horizontal pivot axis at the side wall, preferably adjacent the rear wall. The pivoting of the container holder preferably occurs along a horizontal pivot axis. In case the pivot axis extends through the center of gravity of the container holder, the work needed for performing the pivoting will only correspond to overcoming frictional forces. In case the pivot axis is located adjacent the rear wall, the work needed for pivoting will additionally include elevating the centre of gravity, however, the opening will be allowed to travel a further distance.

[0033] According to a further embodiment of the first aspect of the present invention, the tapping rod preventing when in said beverage dispensing position the container holder from being shifted from the first position to the second position. Preferably, the container holder cannot be pivoted to the second position while the tapping rod is in the beverage dispensing position. This can be achieved by a simple locking mechanism, e.g. a locking peg. In this way it is prevented that the beverage holder is pivoted by mistake.

[0034] The above need and the above object together with numerous other needs and objects, which will be evident from the below detailed description, are according to a second aspect of the present invention obtained by a method of exchanging a beverage container in a beverage dispensing system, the beverage dispensing system comprising:

a housing, the housing defining a horizontal base and an enclosure extending upwardly from the base, a tapping rod including a tapping device, the tapping rod being pivotably attached to the enclosure of the housing, and

a container holder defining an opening, a rear wall opposite the opening and a side wall interconnecting the opening and the rear wall, the container holder being pivotably attached to the housing, the method comprising the steps of:

pivoting the tapping rod from a beverage dispensing position to a non-beverage dispensing

position,
 pivoting the container holder from a first position in which the opening is covered and closed by the enclosure of the housing to a second position in which the opening is exposed relative to the enclosure of the housing,
 inserting a collapsible beverage container into the container holder via the opening,
 pivoting the container holder from the second position in which the opening is exposed relative to the enclosure of the housing to the first position in which the opening is covered and closed by the enclosure of the housing, and
 pivoting the tapping rod from the non-beverage dispensing position to the beverage dispensing position.

[0035] The method according to the second aspect of the present invention is preferably used together with the system according to the first aspect. It is evident that the system used for performing the method may include any of the above mentioned features relating to the system.

Brief description of the drawings

[0036]

FIG. 1 is a perspective view of a beverage dispensing system.

FIG. 2 is a side view illustrating the method of exchanging beverage container.

FIG. 3 is a side view of a beverage dispensing system having a linking mechanism.

FIG. 4 is a side view of a system for a beverage container having an integrated lid.

FIG. 5 is a side view of a system in which the entire enclosure is pressurized.

FIG. 6 is a side view of a system having a gas cylinder for lifting the container holder.

FIG. 7 is a side view of a beverage dispensing system having a locking mechanism.

Detailed description of the drawings

[0037] FIG. 1A shows a perspective view of a beverage dispensing system 10 during the first step of installing a beverage container 32. The beverage dispensing system 10 comprises a housing 12 which is suitable for being placed on a table top or on a bar counter (not shown). The housing 12 comprises an enclosure 14 and a horizontal base 16. The beverage dispensing system 10 further comprises a container holder 18 which is pivotably connected to the enclosure 14. In the present embodiment the container holder 18 is pressure proof and may be pressurized by a pressurization unit (not shown). The beverage dispensing system 10 further comprises a tapping rod 20 which also is pivotably connected to the enclosure 14. The tapping rod 20 comprises a handle 22

for controlling beverage dispensing. Below the tapping rod 20 a drip tray 26 is located.

[0038] In the present view, the container holder 18 has been pivoted to a second position which is different from the operational position described in connection with fig. 4D and designated the first position. The container holder 18 comprises a button 30 which may be pushed in order to release the pressure in the container holder before the beverage container is to be exchanged. The second position allows access to an opening 34 of the container holder 18. The opening 34 may be covered by a removable pressure lid 36. The beverage container 32 is collapsible and preferably made of a flexible plastic material. The beverage container 32 features an outlet (presently covered by a removable tap) which is coupled to a tapping line 40 having a tapping valve 42 opposite the outlet. The container holder 18 has an overall cylindrical shape and features a side wall 44 corresponding to the beverage container 32. In the present view, in order to be able to insert the beverage container 32 into the container holder 18 via the opening 34, the tapping rod 20 has been pivoted to a non-beverage dispensing position in which the opening is accessible. No beverage glass will thus fit between the drip tray 26 and the tapping rod 20.

[0039] FIG. 1B shows a perspective view of a beverage dispensing system 10 during the second step of installing a beverage container 32. In the present view the tapping line 40, extending from an outlet 38 of the beverage container 32, and the tapping valve 42 connected to the tapping line 40, is being led through a channel 54 in the pressure lid 36.

[0040] FIG. 1C shows a perspective view of a beverage dispensing systems 10 during the third step of installing a beverage container 32. In the present view, a closure 52 of the tapping rod 20 is being opened and the tapping valve 42 of the tapping line 40 is being installed in a tapping device 43 of the tapping rod 20. The tapping device communicates with the handle 22 for opening and closing the tapping valve 42.

[0041] FIG. 1D shows a perspective view of a beverage dispensing system 10 when operational. In the present view, the beverage is dispensed via a beverage outlet 24 into a glass 28. Below the beverage opening 24 a drip tray 26 is located. The beverage glass 28 fits between the drip tray 26 and the beverage opening 24. In the present view, the tapping rod 20 assumes a beverage dispensing position and the container holder 18 assumes an operational first position. In the following fig. 2 the pivoting of the container holder 18 and the tapping rod 20 will be explained in more detail.

[0042] FIG. 2A shows a side view of the beverage dispensing system 10 in its operational position, i.e. the tapping rod 20 is in the beverage dispensing position and the container holder 18 is in the first position.

[0043] FIG. 2B shows a side view of the beverage dispensing system 10 when the tapping rod 20 is released. In order to prevent that the tapping rod 20 will pivot when the beverage handle 22 is operated, the tapping rod 20

is locked in its beverage dispensing position. In order to release the tapping rod 20, the tapping rod 20 is lifted as shown by the arrow. In this way an insert 50 of the tapping rod 20, which is preventing the pivot movement, is disengaged from the enclosure 14 and the tapping rod 20 is free to pivot. The enclosure 14 features a first pivot axle 46 in relation to the container holder 18 and a second pivot axle 48 in relation to the tapping rod 20.

[0044] FIG. 2C shows a side view of the beverage dispensing system 10 when the tapping rod 20 has been pivoted about the second pivot axle 48 as shown by the long arrow to the non-beverage dispensing position of the tapping rod 20. Thereafter, the pressure within the container holder 18 may be released by pressing the button 30 as shown by the short arrow. A small portion of the tapping line is now visible.

[0045] FIG. 2D shows a side view of the beverage dispensing system 10 when the container holder 18 has been pivoted about the first pivot axle 46 as shown by the arrow to the second position of the tapping rod 20. The opening 34 of the container holder 18 is now exposed, i.e. not obstructed by the enclosure 14 or the tapping rod 20. The opening 34 is still closed off by the pressure lid 36

[0046] FIG. 2E shows a side view of the beverage dispensing system 10 when the collapsed empty beverage container 32' is removed from the container holder 18 after the pressure lid 36 has been removed as shown by the arrows. The tapping valve 42 and tapping line 40 are removed from the tapping device (not shown) within the tapping rod 20 by opening the closure 52 of the tapping rod 20.

[0047] FIG. 2F shows a side view of the beverage dispensing system 10 when the new filled beverage container 32 is installed into the container holder 18 via the opening 34 as shown by the arrow. The tapping valve 42 and the tapping line 40 are led through the pressure lid 36 via a channel 54 as shown by the arrow.

[0048] FIG. 2G shows a side view of the beverage dispensing system 10 when the tapping valve (not shown) and the tapping line 40 are installed in the tapping device (not shown) inside the tapping rod 20. Thereafter, the closure 52 of the tapping rod 20 is closed.

[0049] FIG. 2H shows a side view of the beverage dispensing system 10 when the container holder 18 and the tapping rod 20 are pivoted back to the respective beverage dispensing position and first position as indicated by the arrows.

[0050] FIG. 3A shows a side view of the beverage dispensing system 10' being identical to the previous beverage dispensing system 10 except that beverage dispensing system 10' features a linking mechanism 56. The purpose of the linking mechanism is to cause the container holder to pivot from the first position to the second position when the tapping rod 20 is pivoted from the beverage dispensing position to the non-beverage dispensing position.

[0051] FIG. 3B shows a side view illustrating the func-

tional principle of the beverage dispensing system 10'. When the tapping rod 20 is pivoted as shown by the arrow, the linking mechanism 56, which comprises a member 58 which is fixated to the tapping rod 20, will rotate about the second pivot axle 48 with the same angular distance. The member 58 of the linking mechanism 56 has the shape of a Y and is rotatably and slidably connected to opposite connection points 60 of the side wall 44 of the container holder 18. The connection points 60 are located between the opening 34 and the first pivot axle 46. The member 58 of the linking mechanism 56 defines a cavity 62 which may slide and rotate in relation to the connection points 60.

[0052] FIG. 3C shows a side view of the beverage dispensing system 10' when the collapsed empty beverage container 32' is removed from the container holder 18 as shown in fig 2E. The container holder 18 is held in place by the linking mechanism 56.

[0053] FIG. 3D shows a side view of the beverage dispensing system 10' when the new filled beverage container 32 is installed into the container holder 18 as shown in fig 2F.

[0054] FIG. 4A shows a side view of an alternative embodiment of the beverage dispensing system 10". In the alternative embodiment, the pressure lid 36' is disposable and forms part of the beverage container 32. This has the advantage of reducing the number of accessories which potentially may be lost.

[0055] FIG. 4B shows a side view of an alternative embodiment of the beverage dispensing system 10" when the beverage container (not shown) has been installed, and the container holder 18' has been pivoted back to the first position, i.e. the operational position.

[0056] FIG. 5A shows a side view of an alternative embodiment of the beverage dispensing system 10"". In the present embodiment, the beverage holder 18' is formed as a cage, i.e. not pressure proof. The beverage holder 18' merely has the purpose of holding the beverage container 32.

[0057] FIG. 5B shows a side view of an alternative embodiment of the beverage dispensing system 10"" when the beverage container 32 has been installed and the container holder 18' has been pivoted back to the first position, i.e. the operational position. In the present embodiment, the complete enclosure 14 is pressurized. In this way, no pressure lid is needed.

[0058] FIG. 6A shows a side view of a further alternative embodiment of the beverage dispensing system 10^{IV}. The present embodiment includes a gas cylinder 64 interconnecting the container holder 18 and the base 16. The gas cylinder has the same effect as a loaded spring, i.e. it forces the beverage holder towards the second position. In this way, the user must not use an excessive force for moving the container holder 18 from the first position to the second position. In the present view the gas cylinder 64 is expanded and at least partly deenergized, and the beverage holder 18 assumes the second position. In the present context, it is contemplated

that the gas cylinder 64 may during the pivoting of the container holder 18 from the first position to the second position receive pressurized gas from the container holder 18 and/or pressurization system (not shown) in order to simplify the pivoting of the beverage holder 18.

[0059] FIG. 6B shows a side view of the alternative embodiment of the beverage dispensing system 10^{IV} when the beverage holder has been pivoted from the second position to the first position. At the same time the tapping rod 20 has been pivoted from the non-beverage dispensing position to the beverage dispensing position. The gas cylinder 64 has been compressed and thus re-energized.

[0060] FIG. 7A shows a side view of a further alternative embodiment of the beverage dispensing system 10^V. The embodiment of fig 7 is similar to the previous embodiments and includes both the linking mechanism 56 and the gas cylinder 64.

[0061] The present embodiment further includes an optional locking device 66 which is presently unlocked but capable of cooperating with a pin 68 of the enclosure 14.

[0062] FIG. 7B shows a side view of the further alternative embodiment of the beverage dispensing system 10^V when the beverage holder 18 has been pivoted from the second position to the first position. At the same time the tapping rod 20 has been pivoted from the non-beverage dispensing position to the beverage dispensing position and the locking device has been attached to the pin 68 in order to prevent pivoting the beverage holder 18 by mistake when operating the handle 22 for dispensing beverage.

List of parts with reference to the figures

[0063]

- 10. Beverage dispensing system
- 12. Housing
- 14. Enclosure
- 16. Base
- 18. Container holder
- 20. Tapping rod
- 22. Handle
- 24. Beverage opening
- 26. Drip tray
- 28. Beverage glass
- 30. Button
- 32. Container
- 34. Opening
- 36. Pressure lid
- 38. Outlet
- 40. Tapping line
- 42. Tapping valve
- 43. Tapping device
- 44. Side wall
- 46. First pivot axle
- 48. Second pivot axle

- 50. Insert
- 52. Closure
- 54. Channel
- 56. Linking mechanism
- 58. Member
- 60. Connection point
- 62. Cavity
- 64. Gas cylinder
- 66. Locking device
- 68. Pin

Claims

1. A beverage dispensing system comprising:

a housing, said housing defining a horizontal base and an enclosure extending upwardly from said base,
 a tapping rod including a tapping device, said tapping rod being pivotably attached to said enclosure of said housing, said tapping rod being pivotable between a beverage dispensing position and a non-beverage dispensing position, and
 a container holder for accommodating a collapsible beverage container, said container holder defining an opening, a rear wall opposite said opening and a side wall interconnecting said opening and said rear wall, said container holder being pivotably attached to said housing, said container holder defining a first position in which said opening is covered and closed by said enclosure of said housing, and a second position in which said opening is exposed relative to said enclosure of said housing.

2. The beverage dispensing system according to claim 1, wherein said container holder and said tapping rod are interconnected by a linking mechanism, said linking mechanism causing said container holder to pivot from said first position to said second position when said tapping rod is being pivoted from said beverage dispensing position to said non-beverage dispensing position.

3. The beverage dispensing system according to claim 2, wherein said linking mechanism being fixedly connected to said tapping rod, and being rotatably and slidably connected to said side wall of said container holder.

4. The beverage dispensing system according to claim 3, wherein said linking mechanism comprises a first member, a second member and a third member, said first member having a first end fixedly connected to said tapping rod and a second end connected to a second member and a third member, said second

member being slidably and rotatably connected to a first connection point of said side wall of said container holder, and said third member being slidably and rotatably connected to a second connection point of said side wall of said container holder, said first connection point being located opposite said second connection point.

5. The beverage dispensing system according to any of the claims 2-4, wherein said linking mechanism defines a friction force sufficient for compensating the gravitational force of said container holder in said second position. 10
6. The beverage dispensing system according to any of the preceding claims, wherein said linking mechanism comprises an electrical, pneumatically or hydraulic mechanism. 15
7. The beverage dispensing system according to any of the preceding claims, wherein said container holder and said housing are interconnected by a gas cylinder or spring for simplifying the pivoting of said container holder from said first position to said second position. 20 25
8. The beverage dispensing system according to any of the preceding claims, wherein said tapping rod includes a locking mechanism for locking said tapping rod in said beverage dispensing position. 30
9. The beverage dispensing system according to claim 8, wherein said locking mechanism is released by linearly shifting said tapping rod before pivoting said tapping rod. 35
10. The beverage dispensing system according to any of the preceding claims, wherein said container holder comprises a removable pressure lid for covering said opening, and said housing comprises a pressurization device for pressurizing said container holder. 40
11. The beverage dispensing system according to any of the preceding claims, wherein said tapping rod is openable for introducing a tapping valve and a tapping line into said tapping rod. 45
12. The beverage dispensing system according to any of the preceding claims, wherein the vector between the opening and the rear wall of said container holder in said first position defines an angle relative to said horizontal base of between 10 and 80 degrees, preferably between 20 and 70 degrees, more preferably between 30 and 60 degrees, most preferably between 40 and 50 degrees, such as 45 degrees. 50 55

13. The beverage dispensing system according to any

of the preceding claims, wherein said tapping device of said tapping rod in said non-beverage dispensing position being located adjacent said base, and said tapping device of said tapping rod in said beverage dispensing position being located above said base.

14. The beverage dispensing system according to any of the preceding claims, wherein said container holder defines a horizontal pivot axis at said side wall, preferably adjacent said rear wall.
15. The beverage dispensing system according to any of the preceding claims, wherein said tapping rod preventing when in said beverage dispensing position said container holder from being shifted from said first position to said second position.
16. A method of exchanging a beverage container in a beverage dispensing system, said beverage dispensing system comprising:

a housing, said housing defining a horizontal base and an enclosure extending upwardly from said base,

a tapping rod including a tapping device, said tapping rod being pivotally attached to said enclosure of said housing, and

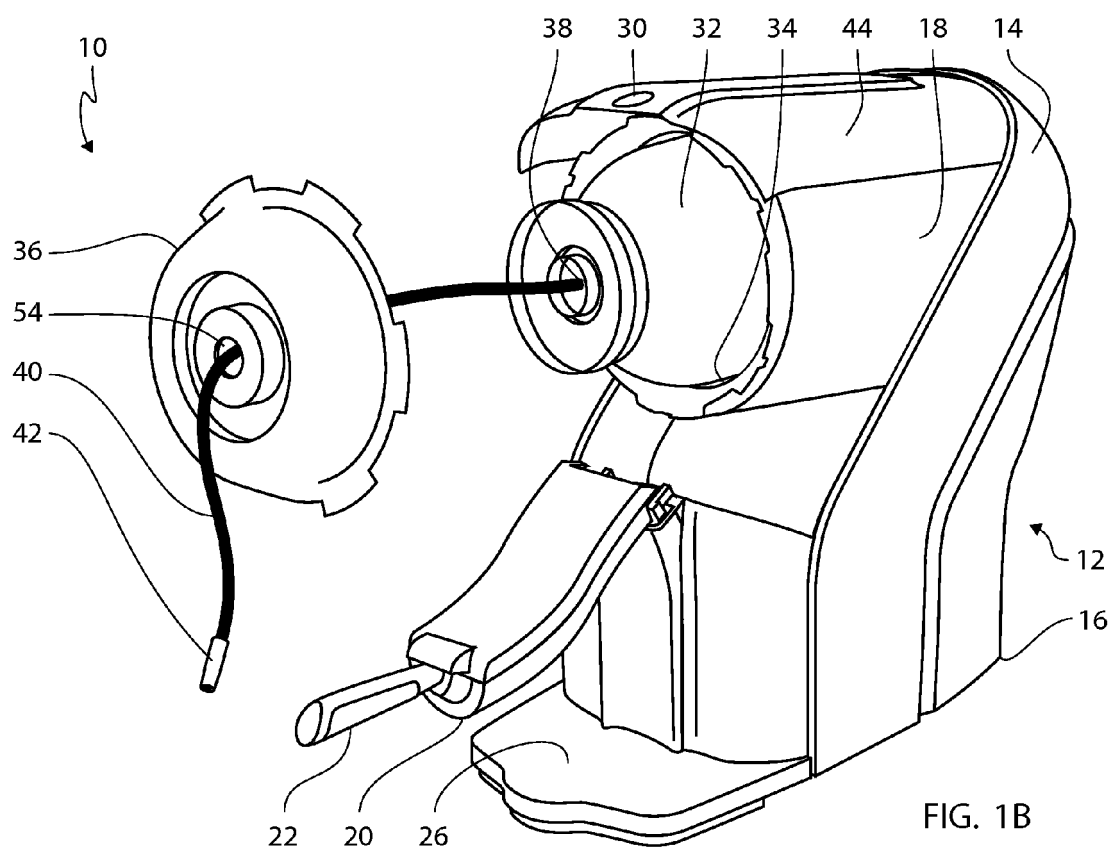
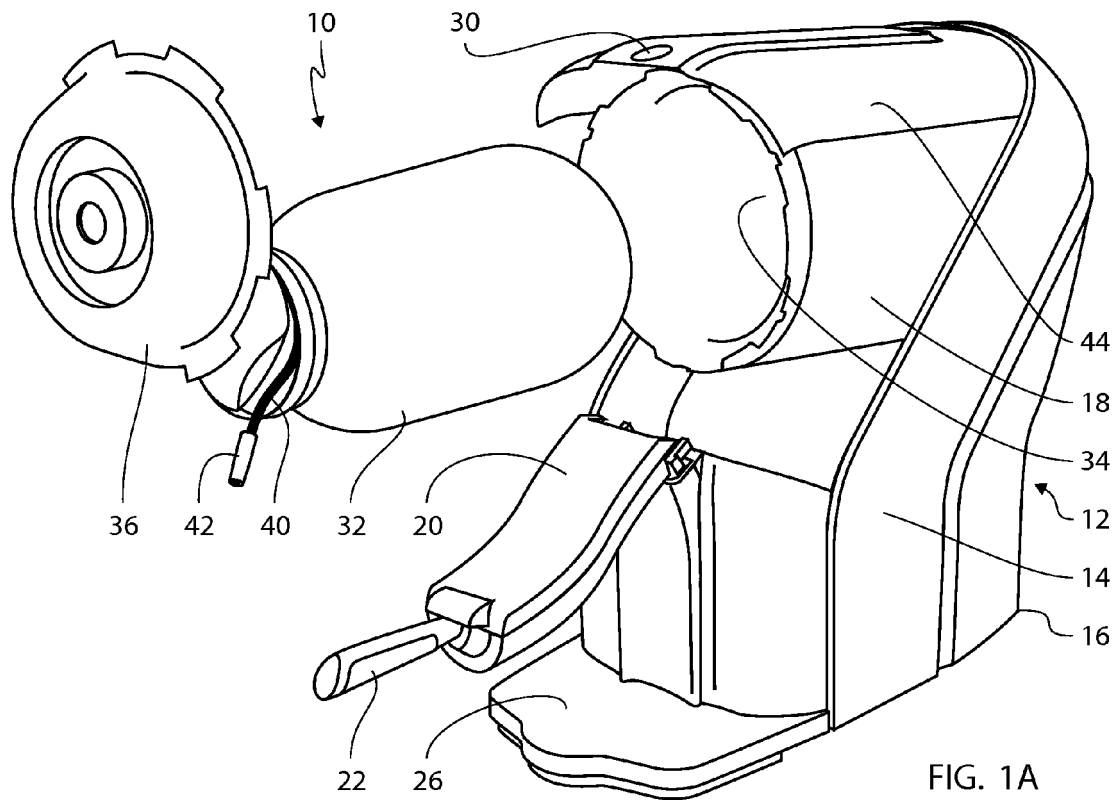
a container holder defining an opening, a rear wall opposite said opening and a side wall interconnecting said opening and said rear wall, said container holder being pivotably attached to said housing, said method comprising the steps of:

pivoting said tapping rod from a beverage dispensing position to a non-beverage dispensing position,

pivoting said container holder from a first position in which said opening is covered and closed by said enclosure of said housing to a second position in which said opening is exposed relative to said enclosure of said housing,

inserting a collapsible beverage container into said container holder via said opening, pivoting said container holder from said second position in which said opening is exposed relative to said enclosure of said housing to said first position in which said opening is covered and closed by said enclosure of said housing, and

pivoting said tapping rod from said non-beverage dispensing position to said beverage dispensing position.



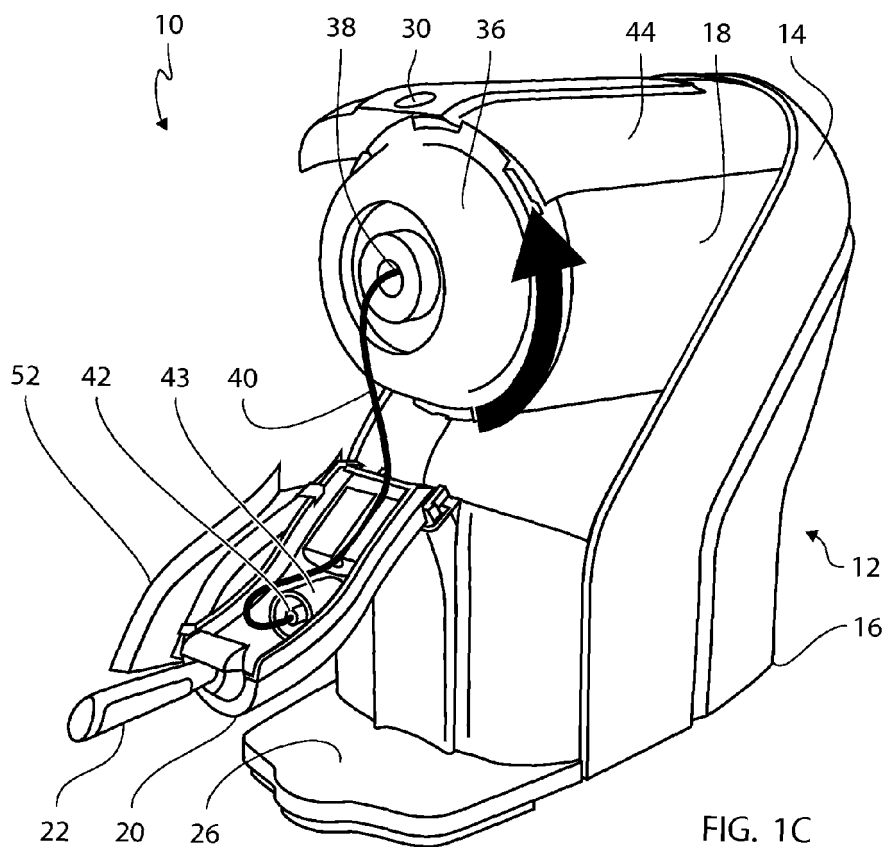


FIG. 1C

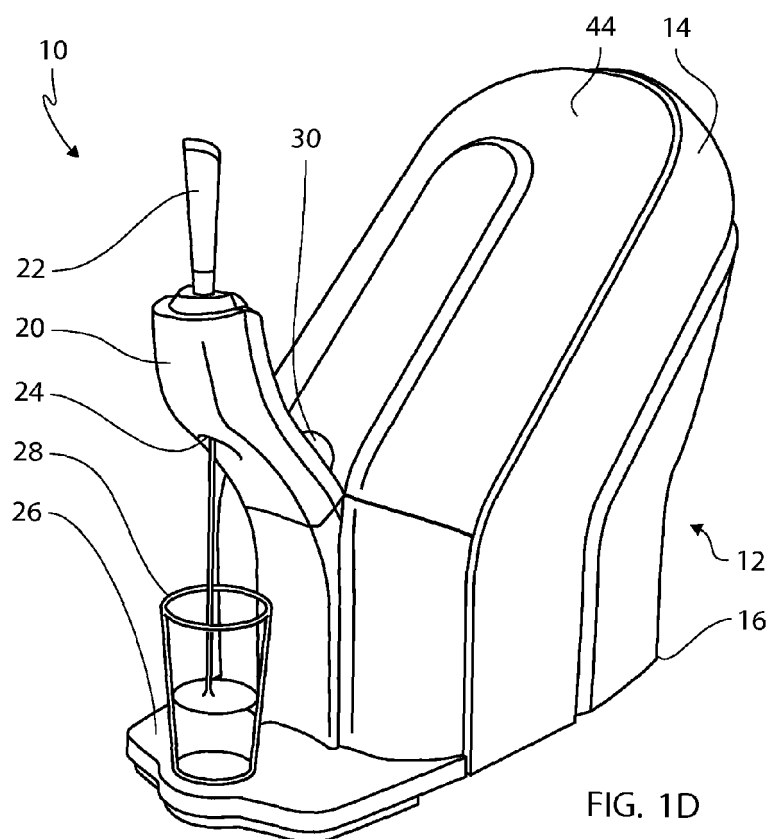


FIG. 1D

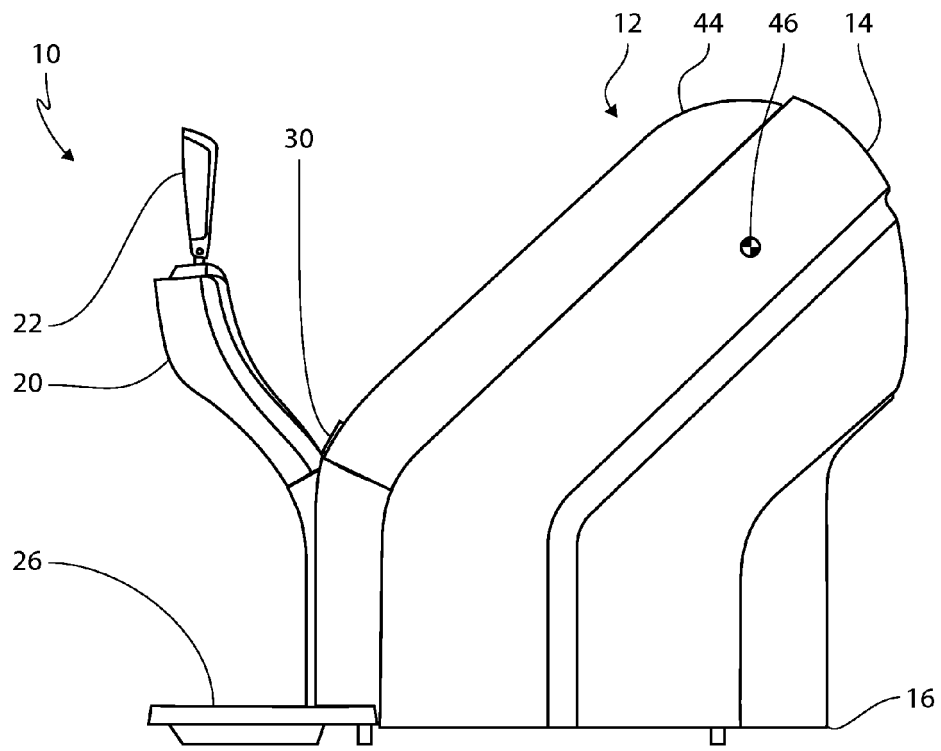


FIG. 2A

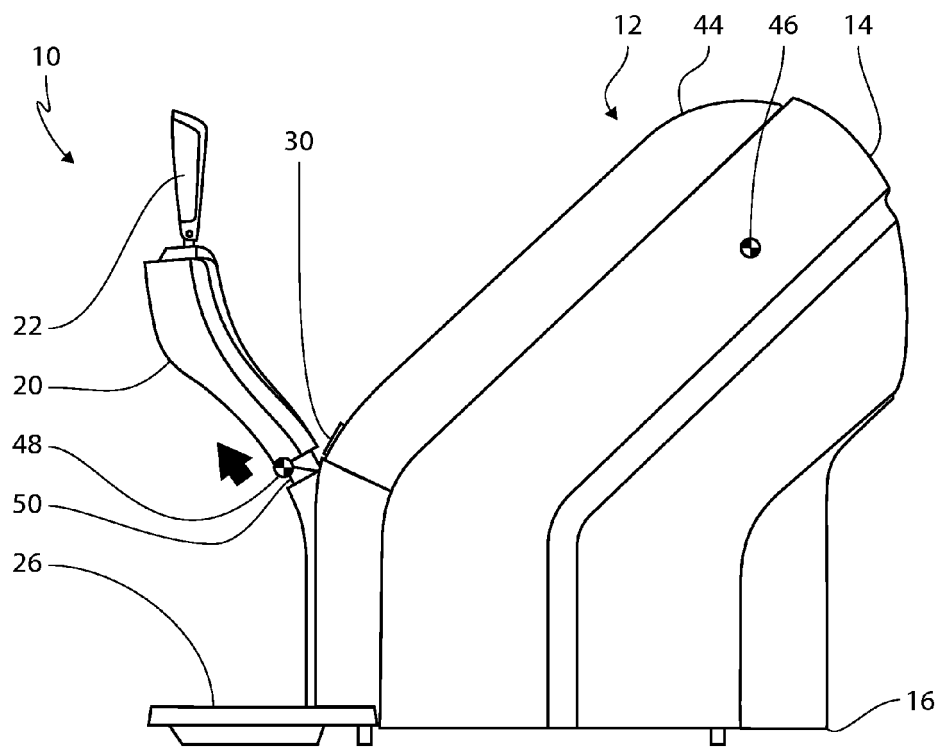


FIG. 2B

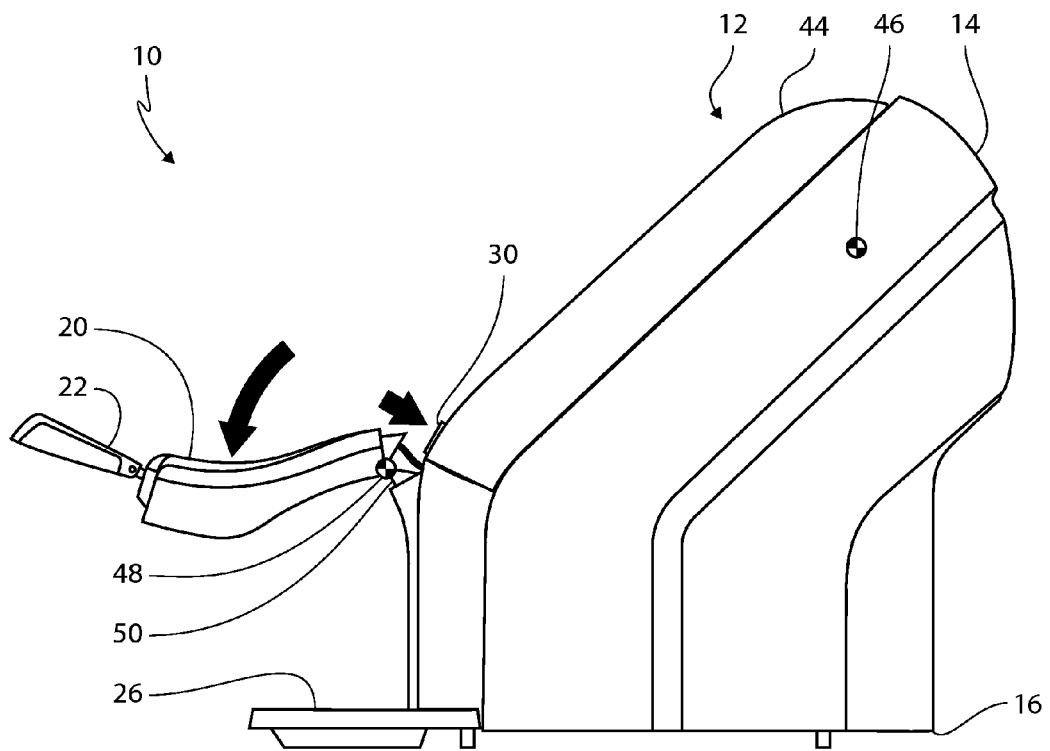


FIG. 2C

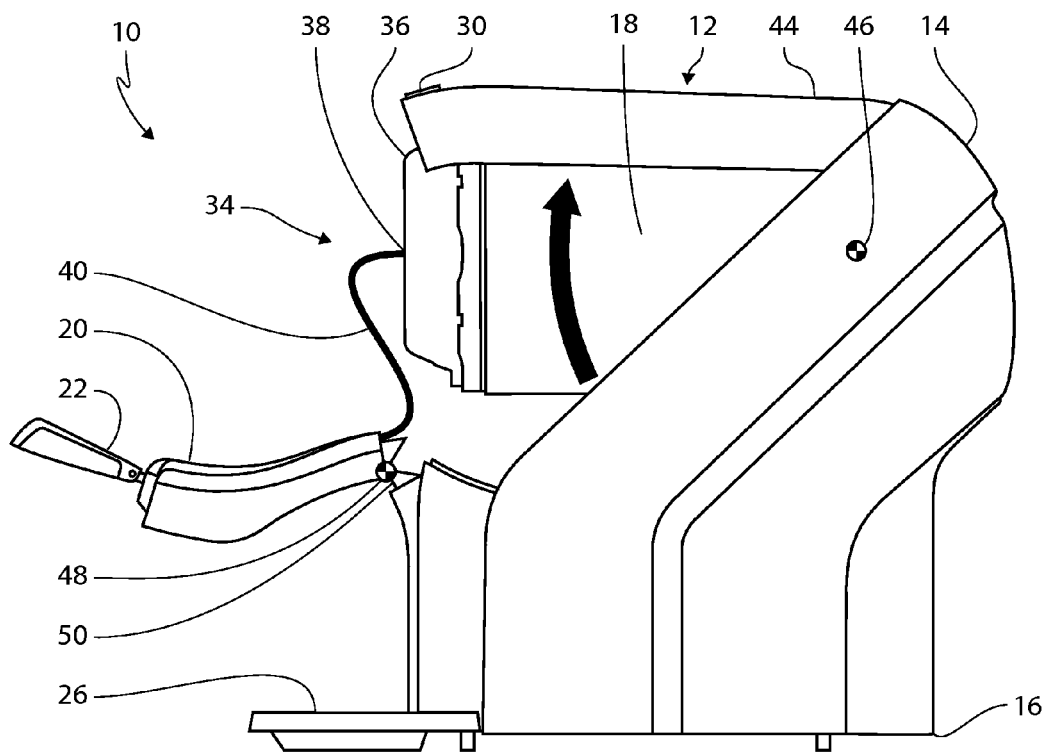


FIG. 2D

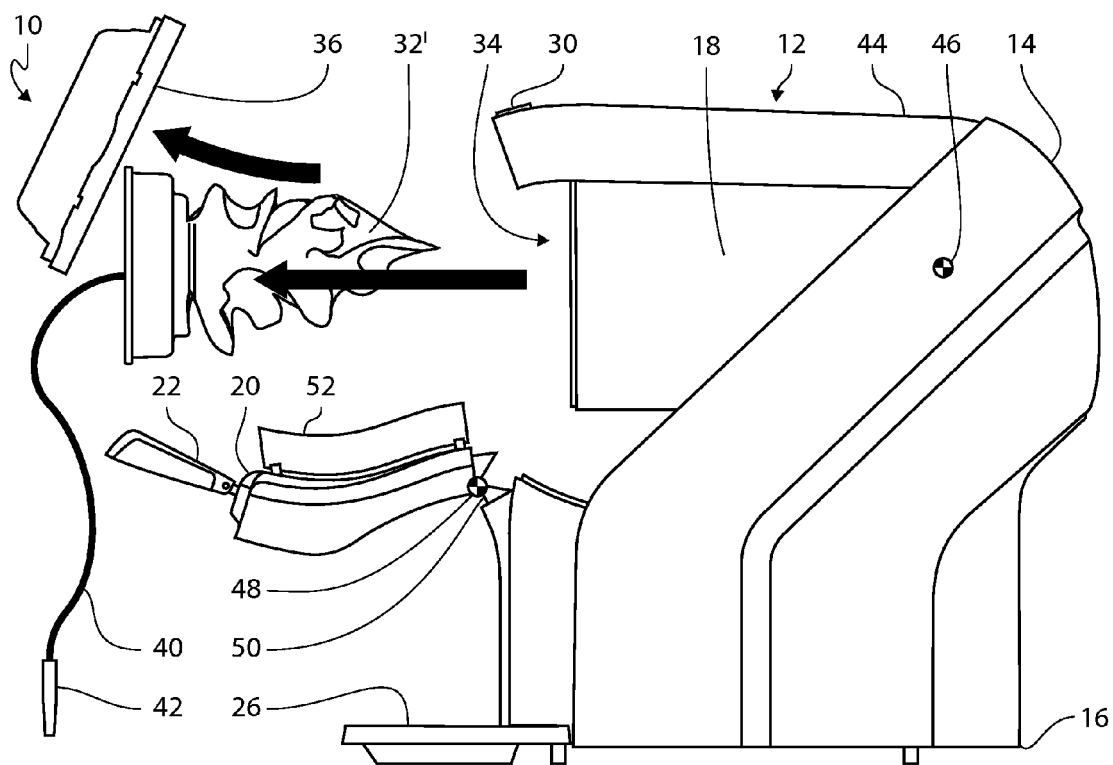


FIG. 2E

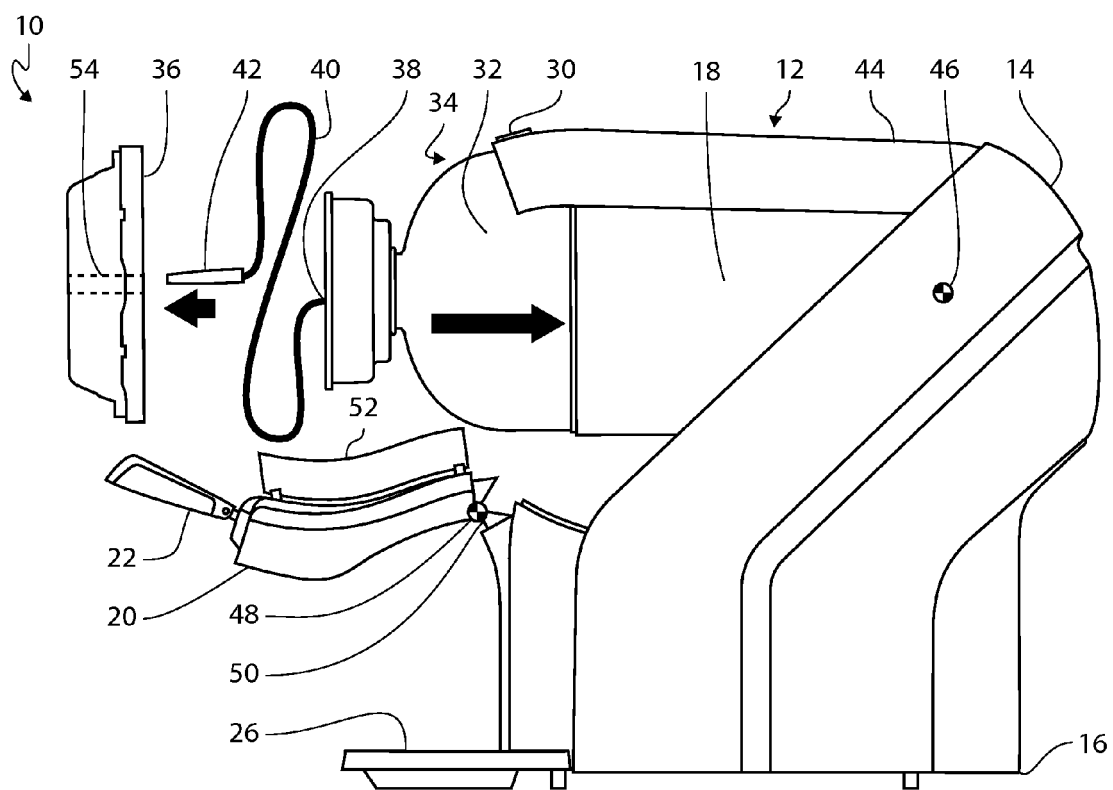


FIG. 2F

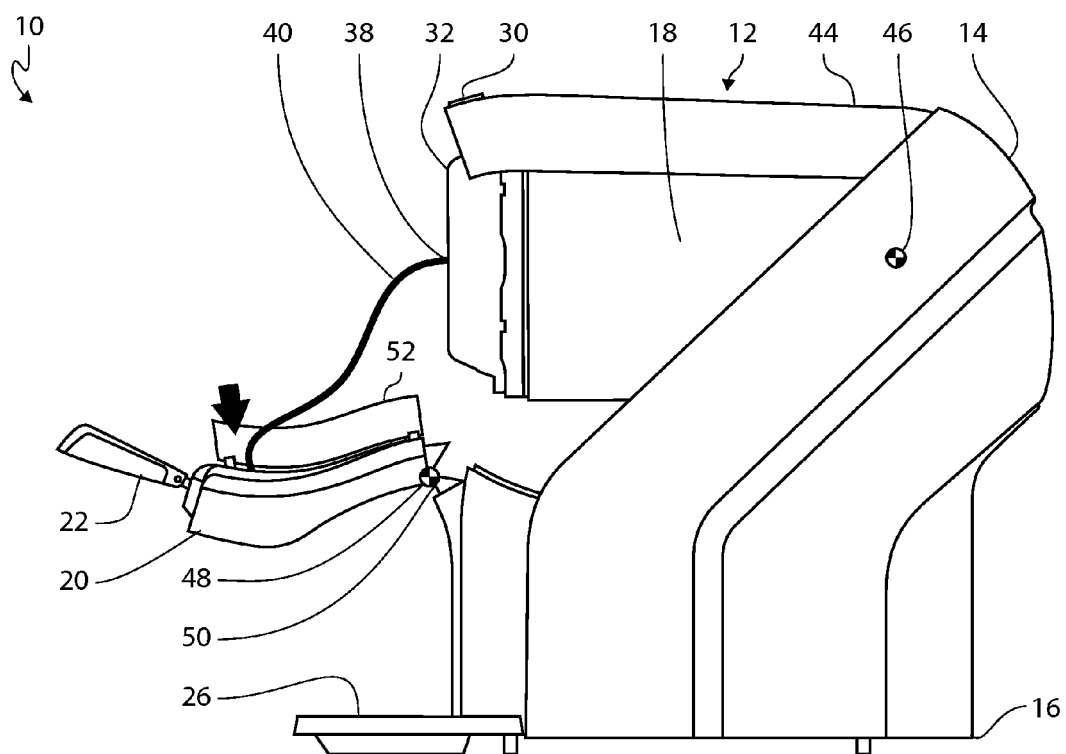


FIG. 2G

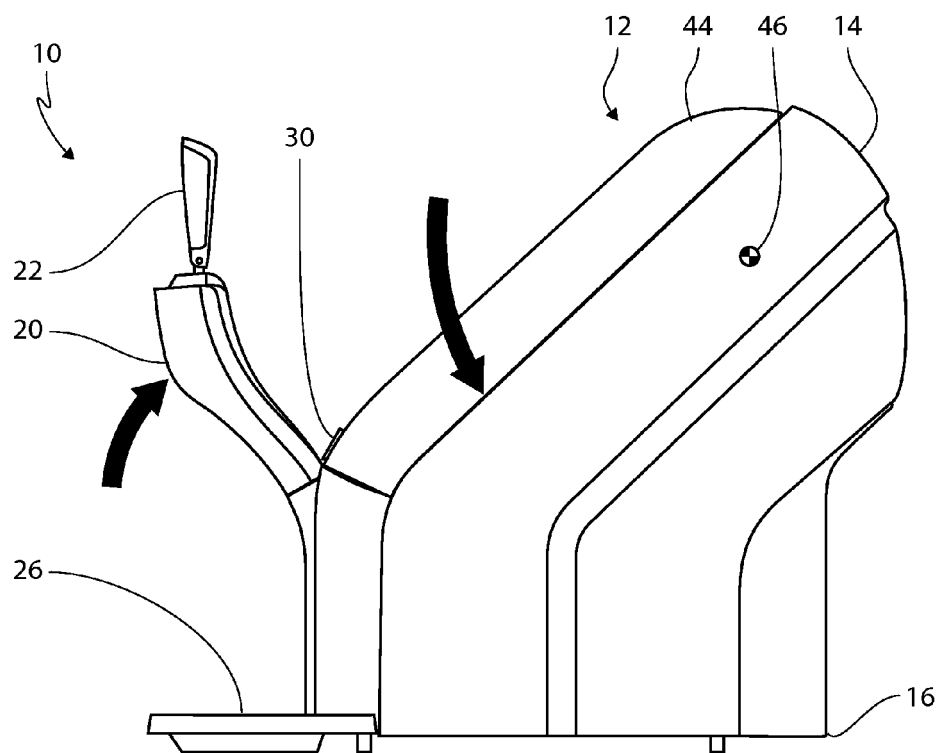


FIG. 2H

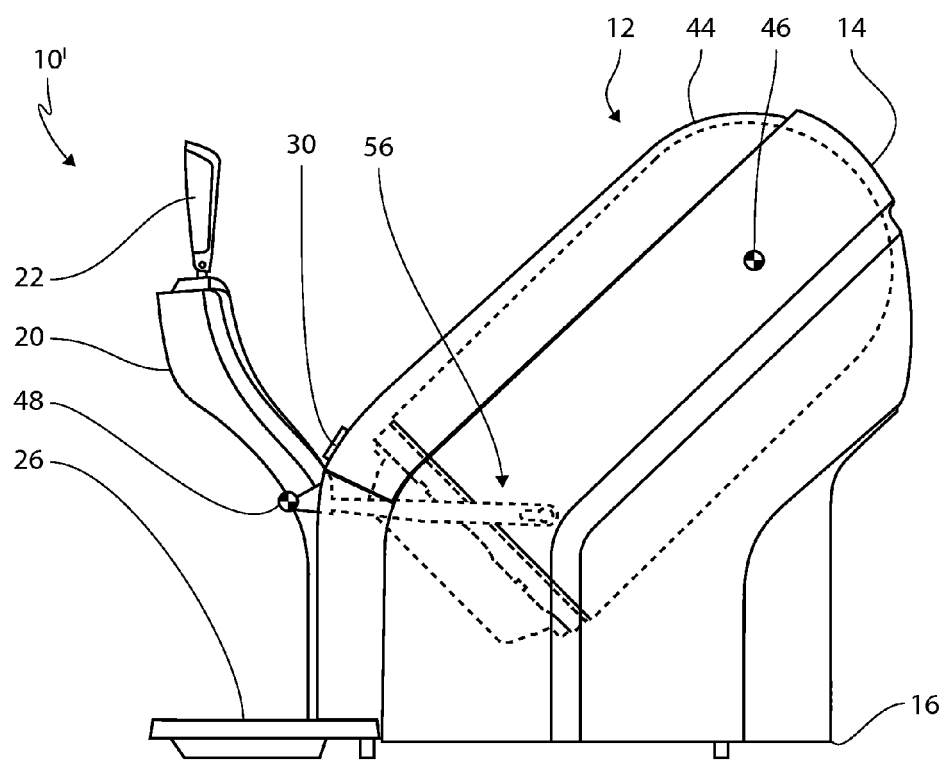


FIG. 3A

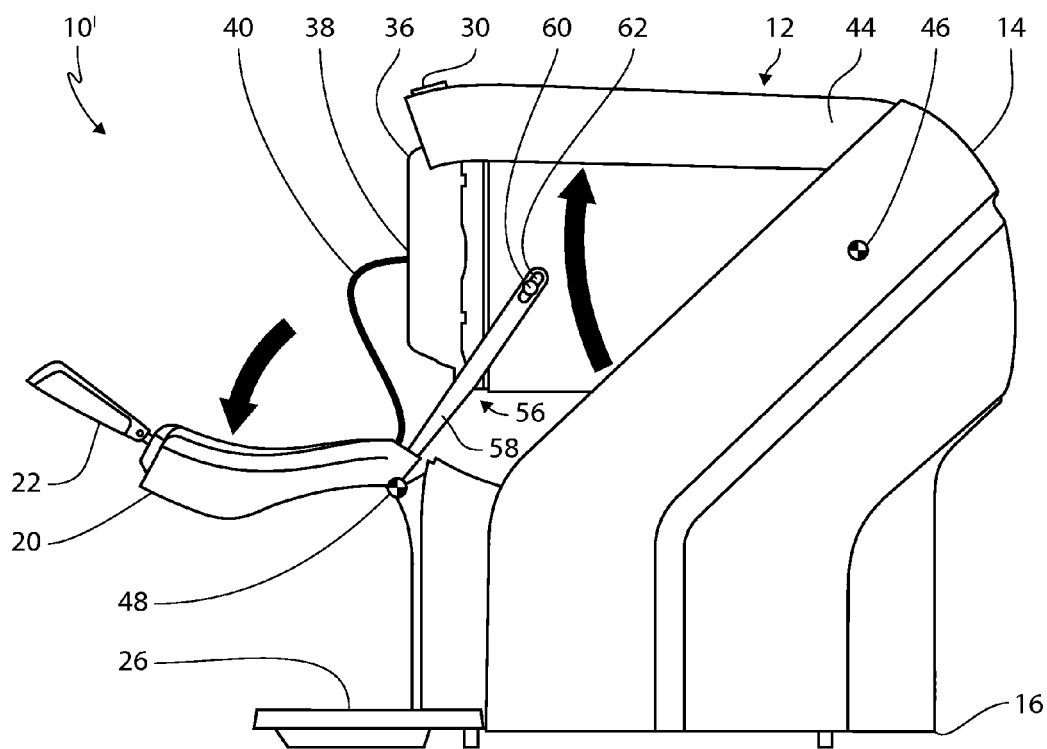


FIG. 3B

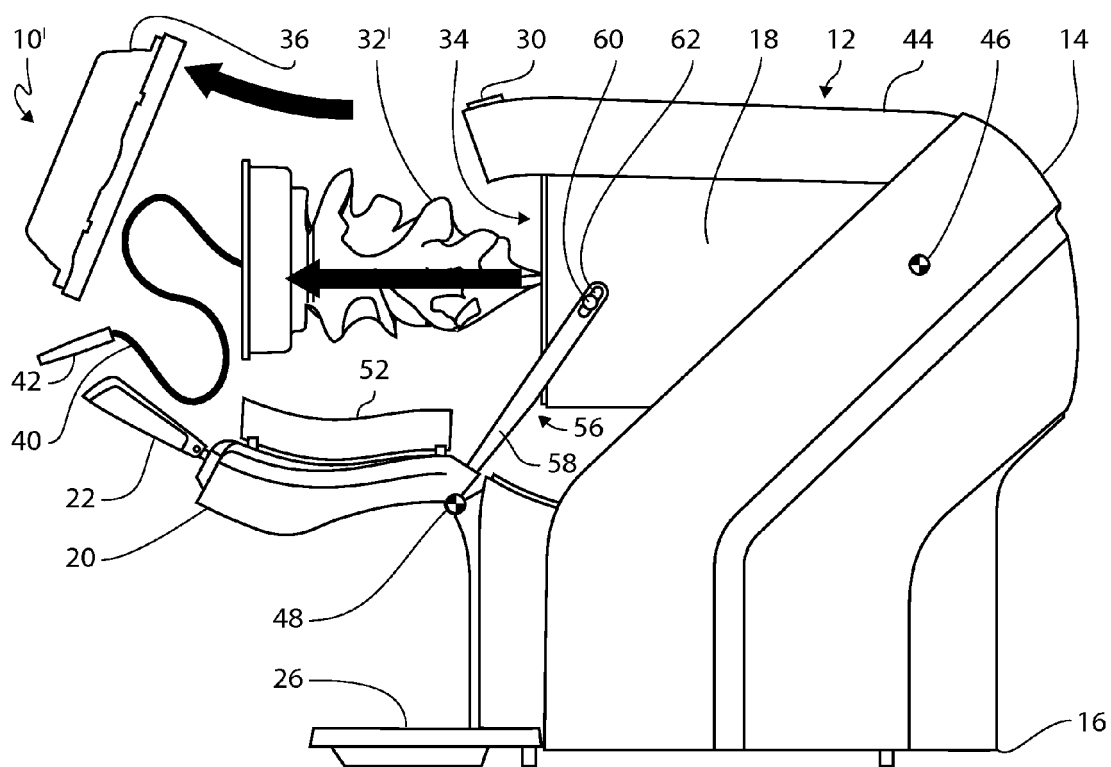


FIG. 3C

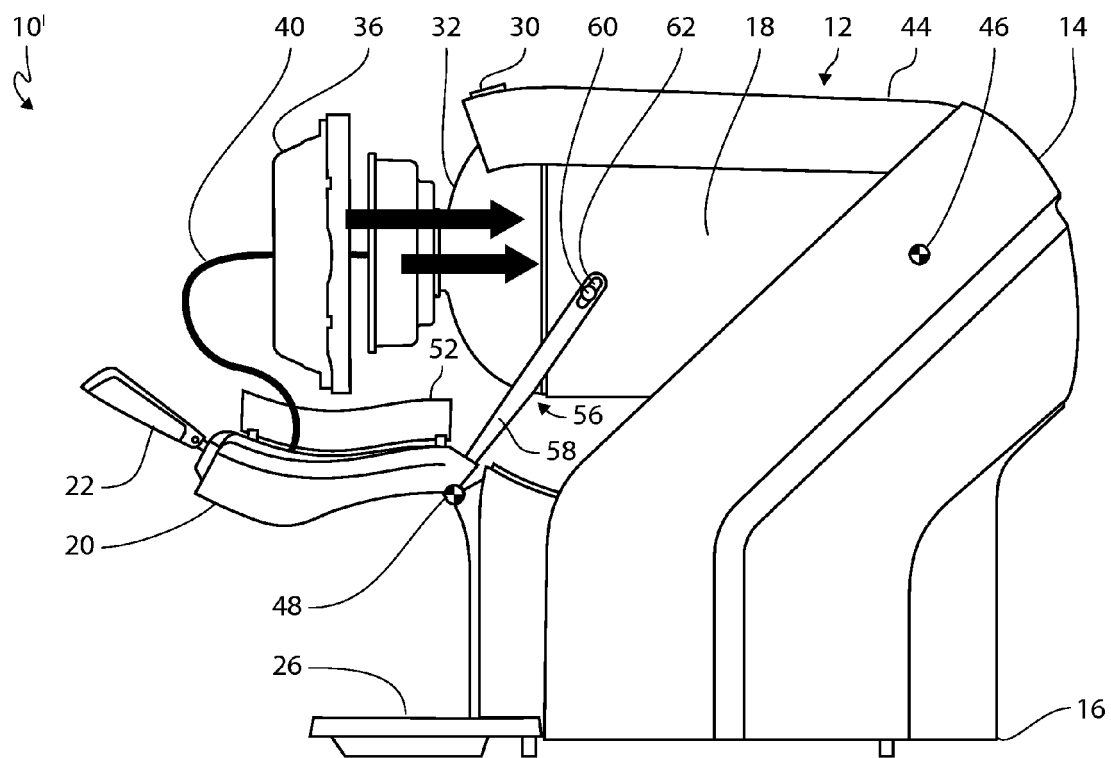


FIG. 3D

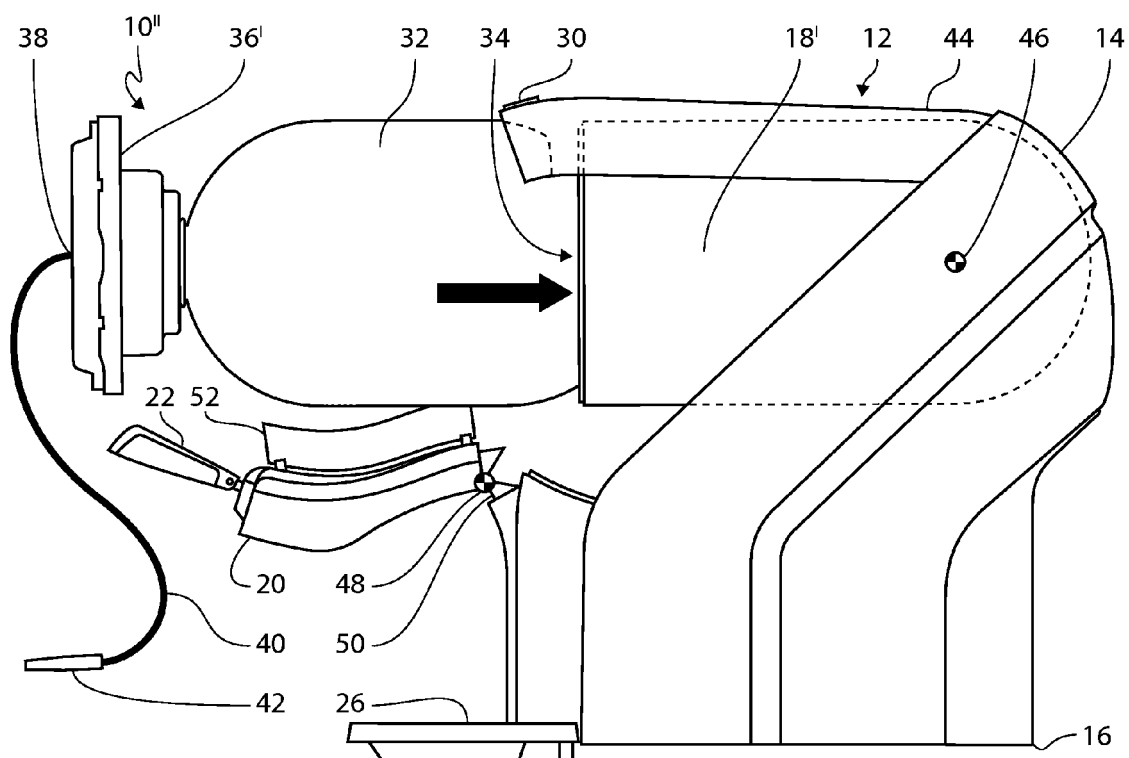


FIG. 4A

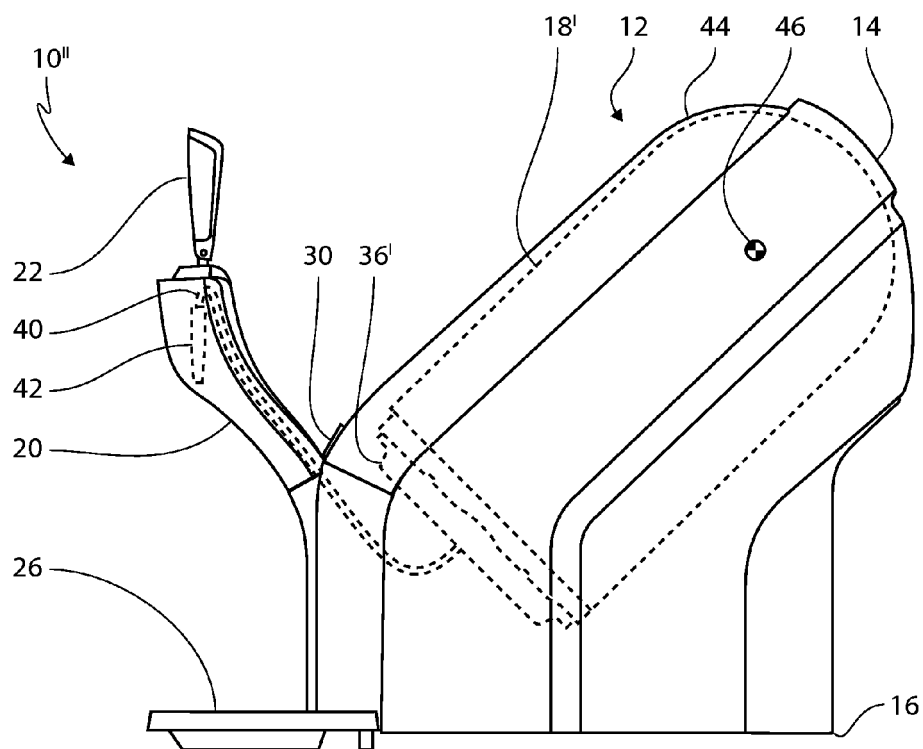


FIG. 4B

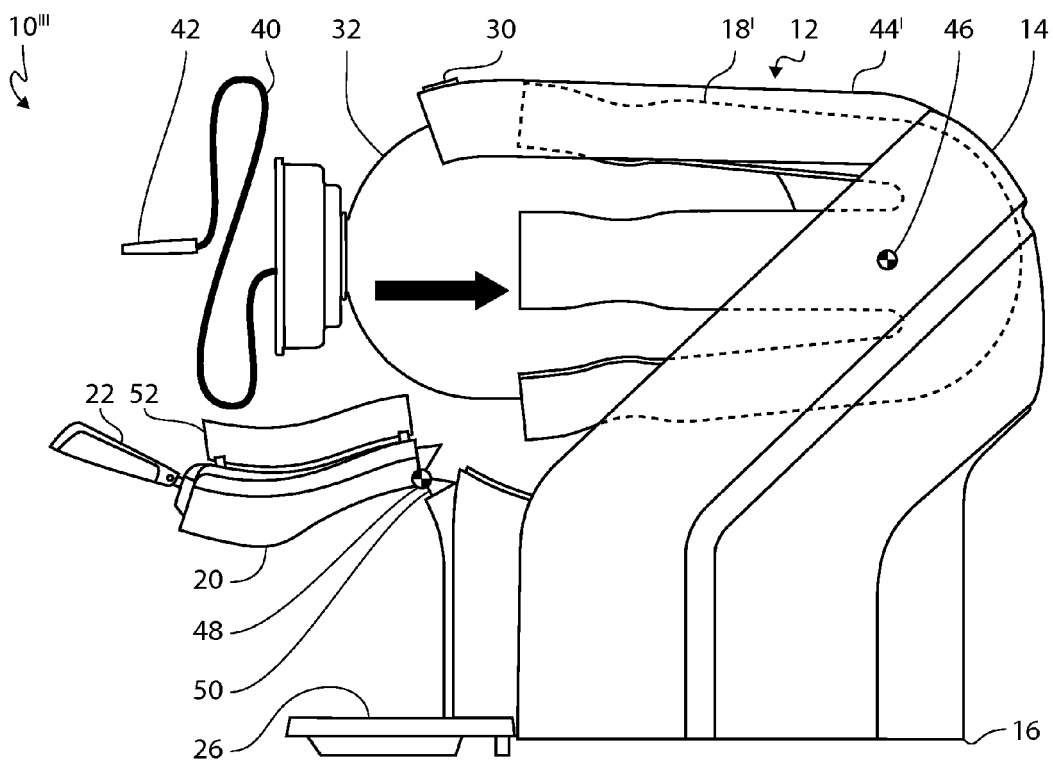


FIG. 5A

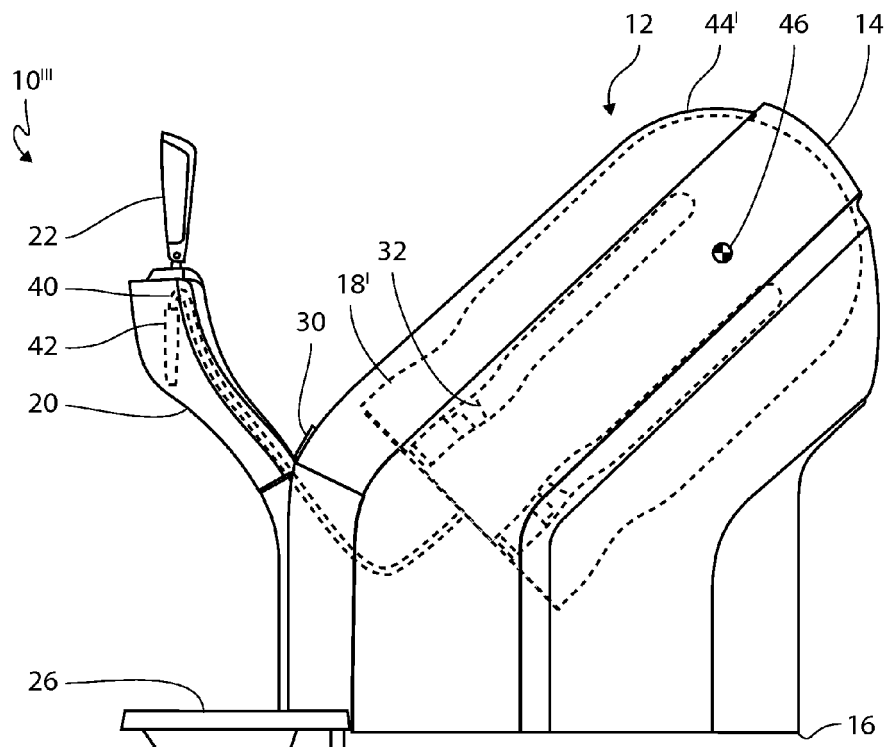


FIG. 5B

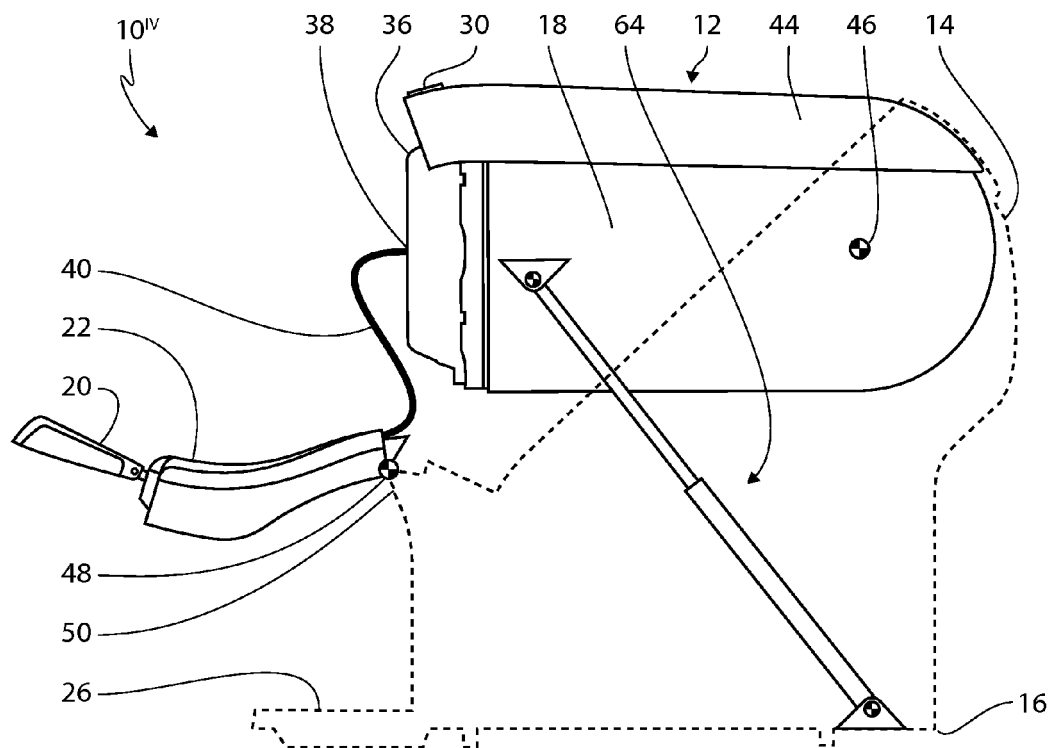


FIG. 6A

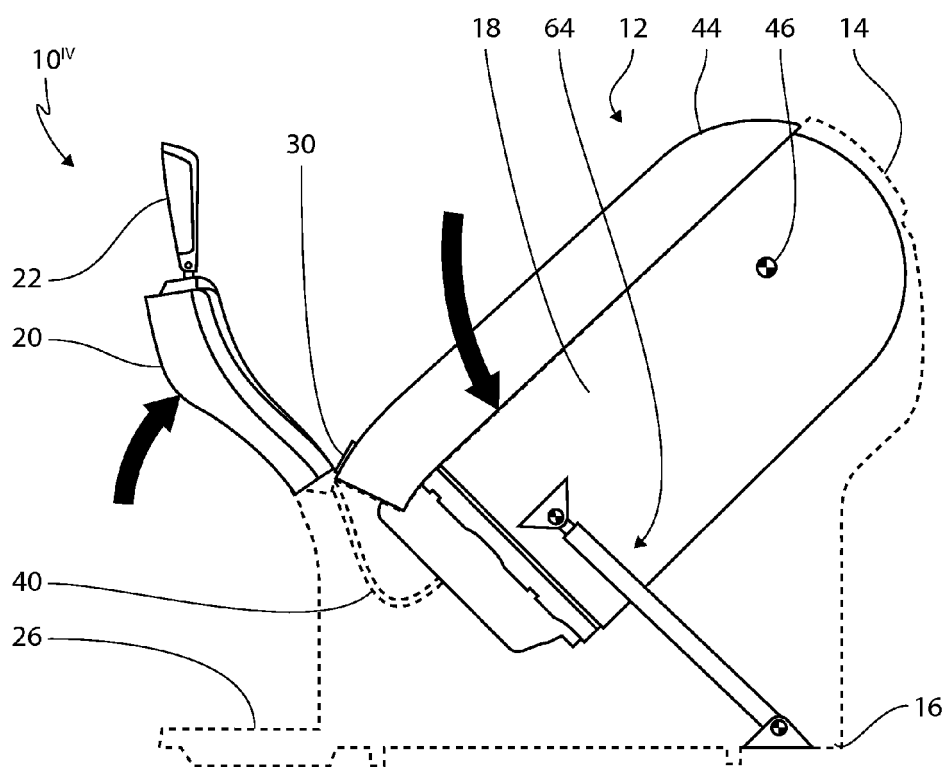


FIG. 6B

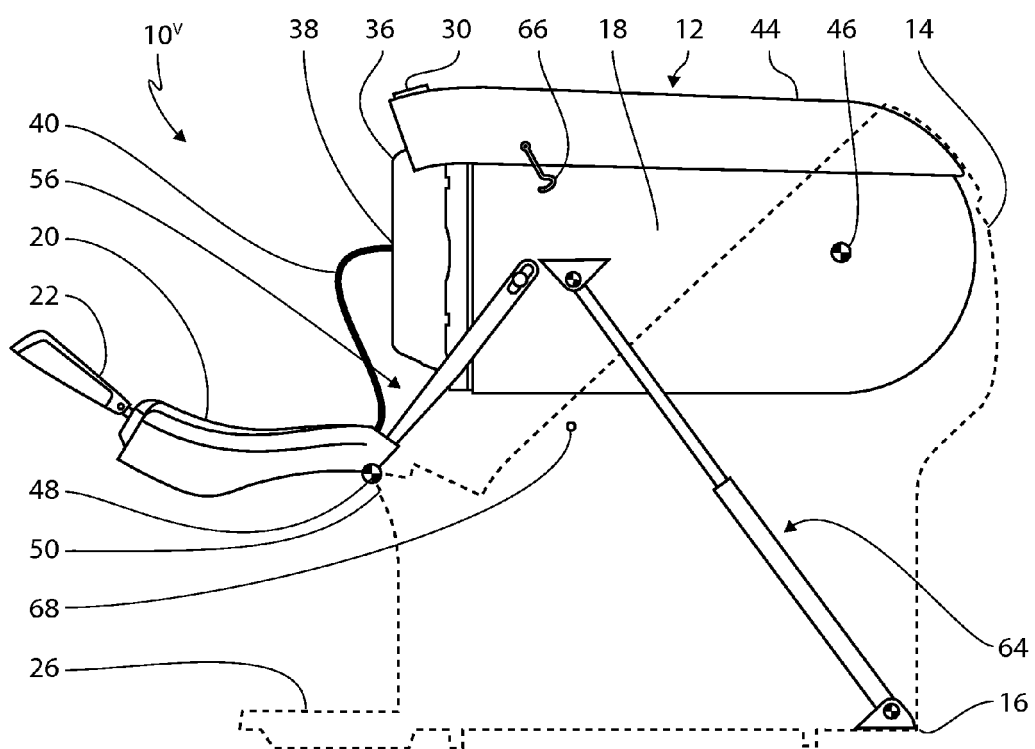


FIG. 7A

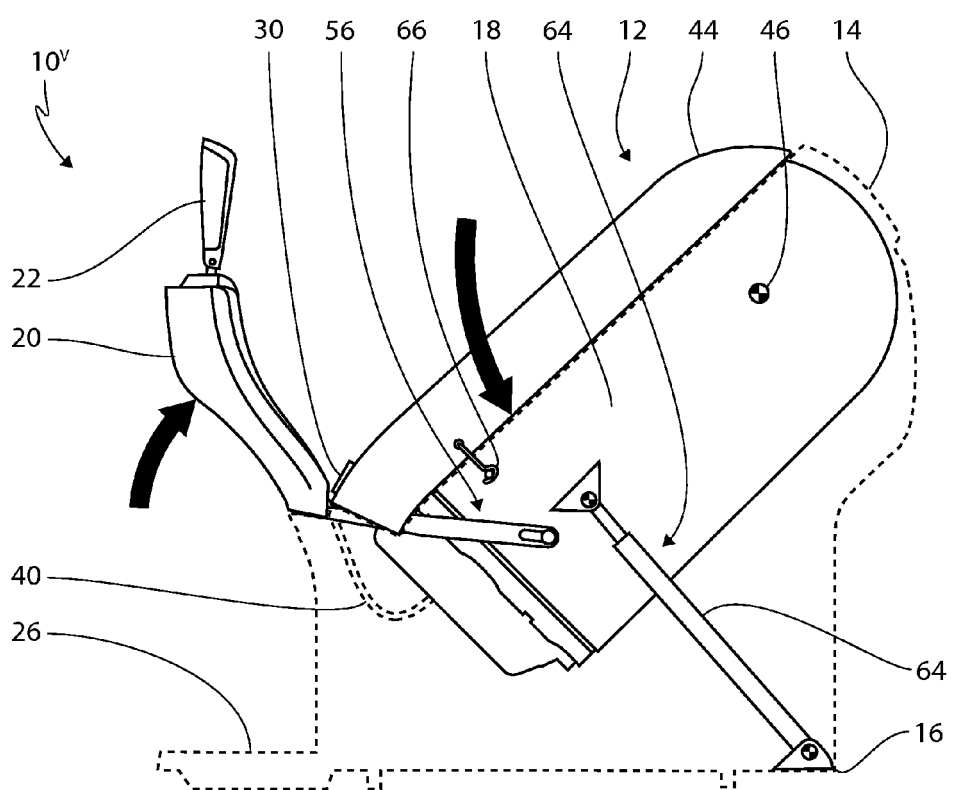


FIG. 7B



EUROPEAN SEARCH REPORT

Application Number
EP 13 17 6529

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X,D	WO 2007/019853 A2 (CARLSBERG BREWERIES AS [DK]; RASMUSSEN JAN NOERAGER [DK]) 22 February 2007 (2007-02-22)	1,16	INV. B67D1/04
A	* page 22, line 13 - page 23, line 7; figures 2-3 *	2	
X	WO 98/39246 A1 (SODA FLO INC [US]; BOSHEARS MICHAEL B [US]; CONNER VICTOR L D R [US]) 11 September 1998 (1998-09-11)	1,16	
A	* page 5, line 6 - page 8, line 4; figures 1-5 *	2	
A,D	WO 2004/099060 A2 (CARLSBERG BREWERIES AS [DK]; RASMUSSEN JAN NOERAGER [DK]) 18 November 2004 (2004-11-18) * abstract; figure 1 *	1,16	
			TECHNICAL FIELDS SEARCHED (IPC)
			B67D
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 12 November 2013	Examiner Ferrien, Yann
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			

EPO FORM 1503 03.82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 13 17 6529

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

12-11-2013

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 2007019853 A2	22-02-2007	AU 2006281791 A1	22-02-2007
		CA 2618011 A1	22-02-2007
		DK 2404865 T3	06-05-2013
		EA 200800574 A1	30-06-2008
		EP 1940727 A2	09-07-2008
		EP 2404865 A1	11-01-2012
		JP 2009504516 A	05-02-2009
		KR 20080041245 A	09-05-2008
		PT 2404865 E	26-04-2013
		US 2010176149 A1	15-07-2010
		WO 2007019853 A2	22-02-2007
WO 9839246 A1	11-09-1998	AU 6544398 A	22-09-1998
		US 5947339 A	07-09-1999
		WO 9839246 A1	11-09-1998
WO 2004099060 A2	18-11-2004	AT 356076 T	15-03-2007
		AT 506317 T	15-05-2011
		AT 517841 T	15-08-2011
		AT 522472 T	15-09-2011
		AU 2004235874 A1	18-11-2004
		BR PI0410014 A	25-04-2006
		CA 2524292 A1	18-11-2004
		CN 1784354 A	07-06-2006
		CN 101698466 A	28-04-2010
		CN 101734599 A	16-06-2010
		DE 602004005182 T2	08-11-2007
		DK 1626925 T3	09-07-2007
		DK 1798190 T3	08-08-2011
		DK 1798193 T3	19-12-2011
		DK 1798194 T3	31-10-2011
		EP 1626925 A2	22-02-2006
		EP 1798190 A2	20-06-2007
		EP 1798193 A2	20-06-2007
		EP 1798194 A2	20-06-2007
		ES 2284010 T3	01-11-2007
		HK 1090623 A1	20-05-2010
		HR P20070257 T3	31-08-2007
		JP 4741461 B2	03-08-2011
		JP 2006525195 A	09-11-2006
		KR 20060018835 A	02-03-2006
		NO 331475 B1	09-01-2012
		NZ 543280 A	27-10-2006
		PT 1626925 E	12-06-2007
		PT 1798190 E	17-06-2011
		PT 1798194 E	29-09-2011

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 13 17 6529

5

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

12-11-2013

10

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
		SI 1626925 T1	31-10-2007
		UA 81478 C2	10-01-2008
		US 2006283879 A1	21-12-2006
		WO 2004099060 A2	18-11-2004
		ZA 200508651 A	31-12-2008
		ZA 200706071 A	30-04-2008
		ZA 200706072 A	30-04-2008
		ZA 200706073 A	25-06-2008

15

20

25

30

35

40

45

50

55

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

REFERENCES CITED IN THE DESCRIPTION

This list of references cited by the applicant is for the reader's convenience only. It does not form part of the European patent document. Even though great care has been taken in compiling the references, errors or omissions cannot be excluded and the EPO disclaims all liability in this regard.

Patent documents cited in the description

- WO 2004099060 A [0004]
- WO 2007019853 A [0006]
- WO 0230807 A [0006]
- WO 2006103566 A [0006]
- WO 2011061343 A [0008]
- WO 2011061344 A [0009] [0016]