

PATENTS EXAMINATION BOARD

Subject: The Drafting of Patent Specifications - Paper 1 (22 pages)

Date: July 2026

Time: 09h00 - 13h00 (although candidates requiring extra time are entitled to an additional two hours)

Examiners: TH Doubell
Louw Steyn (Paper 2)

Moderator: JD Whittaker

Question 1

Your client wrote to you as follows:

"I have created an innovative press for making a beverage such as a cup of coffee or tea.

The making of a cup of coffee or tea is a well-known leaching process of adding hot water to coffee or tea beans, powder, capsules, leaves or the like for a preferred period of time, with one of the most common issues during the process being the separation of the resulting liquid beverage from remaining solids such as beans, undissolved powder, capsules, leaves or other particles after the leaching process.

The prior art includes various forms of strainers, filters and presses, but I believe, after spending quite some time on the Internet, that I have identified the three most relevant forms of the prior art.

The first prior art of relevance is a so-called "Pour Over Dripper" 1, as illustrated in Figure 1 of Question 1, which comprises a hollow cone 2, diverging upwardly towards a filler opening 3 and converging downwardly towards an apex drain 4. The cone 2 is mounted co-axially on a disk-like base 5 with an annular opening 6. The cone 2 has a partially-porous, conical wall 7 to receive and hold a required charge (or load) of beans, powder, capsules or leaves (not shown) while allowing liquid (also not shown) to be poured onto and drain downwardly through the charge towards the apex drain 4 as well as along and through the porous wall 7 and the annular opening 6. A user typically places or holds the charged dripper 1 by a handle 8 on top of or above a receptacle such as a cup or a mug (not shown) before pouring liquid such as hot water (also not shown) over the charge, allowing the beverage to brew, steep, drain and/or drip into the receptacle. Some drippers have porous walls that simultaneously constitute reusable filters, while other

drippers are used with discardable paper filters (not shown). A disadvantage of this prior art is that it operates by gravity percolation only, with the rate of percolation being dictated by the resistance of the filter medium and by the resistance of the bed of grounds, neither of which can be varied independently by a user during brewing. The contact time between water and the coffee grounds therefore cannot be hastened or prolonged as required. An additional disadvantage is that the brew temperature must further be kept near boiling to achieve adequate extraction within an acceptable interval, and there is a risk of releasing unwanted compounds.

The second prior art is the well-known “French Press”, with its typical apparatus and operation as illustrated in Figure 2 of Question 1. The French Press 1 usually comprises a vessel 2, a plunger assembly 3 and a closure 4. The plunger assembly 3 in turn usually includes a push rod 5, a filter-and-seal arrangement 6 and a handle 7 respectively. The vessel 2 conventionally consists of an outer casing 8, an inner cavity 9 and a peripheral edge or seal 10 respectively.

A disadvantage of this prior art is that it operates by full immersion extraction at atmospheric pressure, with no pressure differential being applied across the bed of grounds at any stage. Extraction is accordingly governed only by time, temperature and the surface area of the grounds, and the plunger performs no extraction function whatsoever - it merely effects mechanical separation of the grounds from the brew after extraction is complete. The extraction kinetics accordingly cannot be accelerated by a user with the means available within the apparatus, and adequate extraction at atmospheric pressure accordingly requires a long contact time (typically of the order of four minutes) during which bitter and astringent compounds are often released alongside the desired flavour compounds. An additional disadvantage is that separation of the brew from the spent grounds is achieved by a metal mesh plunger whose apertures (typically of the order of 100 to 300 microns) are sized to displace the grounds mechanically rather than to filter the brew. Fines, suspended particulates and emulsified oils accordingly pass freely into the cup, producing a sedimented brew with significant body and an oily mouthfeel, as the typical French Press is structurally incapable of either accelerating extraction or refining filtration, both of which require the application of pressure that the apparatus cannot generate.

The third prior art is the so-called “Reverse French Press” or “French Pull”, which, as its name suggests, is physically for all practical purposes identical to the French Press, but for the fact that it operates in reverse. Thus, the coffee grounds and water are initially mixed, and a filter or plunger then sweeps the grounds up and out of the coffee, rather than pushing them down (i.e. by pulling up rather than pushing down on the plunger).

The “Reverse French Press” or “French Pull” is deemed to achieve a cleaner extraction and to eliminate the risk of over-steeping relative to the French Press, and it might well be so, but the French Pull suffers from materially the same disadvantages as the French Press, as detailed above. In this regard, it also operates by full immersion extraction at atmospheric pressure, with no pressure differential being applied across the bed of grounds at any stage, and with extraction governed only by time, temperature and the surface area of the grounds, and with the plunger not performing any extraction function whatsoever, the French Pull is structurally incapable of either accelerating extraction or

refining filtration under pressure.

In contrast with the above prior art, and as illustrated in Figures 3 to 5 of Question 1, my press 1 includes a hollow cylinder 2 having top and bottom openings. A perforated removable cap 3 encloses the bottom opening. A removable piston 4 is insertable into the top opening and may be pressed downwardly in use to force liquid 5 in the cylinder through the perforated cap. My press has a support 6 to hold it on the mouth of an open vessel 7.

A filter 8 is placeable between the cap 3 and the cylinder 2 to strain particles from the liquid. Alternatively, the filter 8 can be integrated into the cap 3.

My press has a stirring paddle 9 with an upper stop 10 and a length, measured from its lower extremity 11 to the stop, that is slightly less than the length of the cylinder 2. The stop 10 prevents the tip 11 of the paddle 9 from touching the filter 8 during stirring.

In operation, my press 1 is placed on an open vessel 7. Ground coffee or tea is put into the cylinder 2. Hot water is added and the mixture is stirred with the paddle 9. The paddle 9 is then removed and the piston 4 is inserted into the top opening and pressed downward to force the liquid 5 through the filter 8 and perforated cap 3 and into the vessel 7. The piston pressurizes the air 20 above the liquid, and it is this pressurized air that forces the liquid 5 through the cap. When the liquid is expelled, my press is then lifted off the vessel and the cap 3 is removed. Finally, piston 4 is pressed further to eject the spent puck 21 of coffee or tea into a waste receptacle.

The piston 4 is capped with a flexible seal 12 to engage the inside of the cylinder. The seal preferably has its maximum diameter 13 at its lowest point in order to wipe clean the inside of the cylinder when the maximum diameter is pushed fully through the cylinder with the cap removed during ejection of the spent puck.

The piston 4 has a stop 14 that limits the maximum travel of the piston but permits the maximum diameter 13 of the seal to extend beyond the bottom opening of the cylinder with the cap removed to eject the spent puck.

The perforated cap 3 has multiple drain holes 15, adjacent to and radially external to a perimeter line defined by the outer circumference of the bottom of the cylinder 2. These drain holes relieve pressure between the outer wall of the cylinder 2 and the inner wall of the cap 3 and prevent leakage out of the top edge of the cap. The perforated cap 3 is attached to cylinder 2 with a twist-lock 16.

An alternative version of my innovation is shown in Figure 5 wherein the support 6A forms part of the perforated cap 3A. In this figure, an alternative attachment method is shown wherein the perforated cap is attached to the cylinder with a screw thread 17. A further alternative version is to secure the perforated cap 3 to the cylinder 2 with a latch.

A central bottom step 18 extends below the rim of the open vessel in order to keep my press from slipping off the vessel. In Figures 3 and 4, this bottom step is the lower portion of the cap 3. In Figure 5, the bottom step 18 is an extension below the lower surface of the cap 3A.

The alternative cap and support of Figure 5 also has an upper cavity 19 to collect liquid which leaks between the cylinder 2 and the cap 3A.

Supports 6 and 6A are shaped to permit air to pass readily out of the open vessel when my press is resting on top of the vessel and liquid is entering the vessel. The twist lock 16 of Figures 3 and 4 has through-holes 22 which achieve this. In the alternative of Figure 5, the bottom surface of the support 6A is roughened or grooved to achieve the same result.

While the cylinder 2 could be made from a wide range of materials, the preferred materials are transparent so that the user can observe the pressing process. Glass and transparent plastics are suitable.

While a wide range of dimensions are feasible for the invention, a cylinder having an inside diameter of approximately 2.25 inches and a length of approximately 5 inches has been found to perform very well.”

The candidate is required to identify the novel and inventive feature(s) of the above invention, and to draft up to three claims to protect the invention and its primary novel and inventive features.

ooo000ooo

Question 2

Your client wrote to you as follows:

“I have designed an improved, inexpensive yet innovative corkscrew that is especially suitable for those old corks that so often break up and stay behind when one tries to remove them with conventional corkscrews from those older selections of your preferred wines.

After spending quite some time on the Internet, I have identified the three most relevant forms of the prior art.

The first and simplest prior art is, as you would know, the basic corkscrew, as illustrated in Figure 1 of Question 2. The corkscrew 1 comprises a handle 2 and a transversely extending shank 3, fixed at one end to the handle and extending at an opposite end into a helix or worm 4, with a sharpened point 5 at the free end of the worm. A user typically grips the handle and screws the point into a cork in a bottle until the helix is firmly embedded. Then, a vertical pull on the corkscrew extracts the cork from the bottle.

The second prior art corkscrew of relevance was, interestingly, patented as early as 1795 in England by a Reverend Samuel Henshall. This corkscrew is illustrated in Figure 2 of Question 2. The corkscrew 1, which is similar to the first prior art described above, has a handle 2, a shank 3, a worm 4 and a sharpened point 5. In addition, the corkscrew 1 includes a simple disk 6, later known as a Henshall Button, on the shank 3. The disk 6 prevents the worm 4 from going too deeply into the cork (not shown), forcing the cork to turn with the turning of the handle 2, and thus to break the adhesion between the cork and the neck of a bottle. The disk 6 is preferably slightly concave on the underside to retain and compress the top of the cork radially inwardly (not shown), thereby helping to keep the cork from breaking apart.

The third prior art corkscrew of relevance is the so-called lever corkscrew, which is illustrated in Figure 3 of Question 2. This corkscrew 1 comprises a body 2, having a bottle-engaging ring 3, a shank 4, having a co-axially arranged set of gears 4A, a bottle-opener ring 5, located towards one end of the shank, and a worm 6 having a sharpened point 7 at the end thereof. A set of levers 8 are pivotally mounted to the body 2 about a set of pins 10, each lever having a set of radially-arranged gears 9, co-operatively engaged with the set of gears 4A, enabling a user to pull or extract a cork (not shown) from a bottle (also not shown) by pulling down on the levers 8.

The above types of prior art usually work relatively well with corks that are structurally sound and recently inserted, allowing for extraction via the conventional axial force transmitted longitudinally along the substantially cylindrical cork by means of the helix-shaped worm. However, once corks dry out, such as in bottles that were stored in an upright position, or become brittle or fragile over time, the worm of the prior art tends to break out of the cork during the pulling or extraction process, leaving the annular remains of the cork still in the bottle and even parts of the cork floating in the bottle content.

In addition, and should a cork have leaked or “sweated” slightly over time, the

leakage or “sweat” between the cork and the bottle sometimes solidifies or forms a sticky seal between the cork and the bottle, “cementing” or “glueing” the cork in place. When using the above prior art with these glued-in corks, the worm often breaks out too with the same disastrous results.

I have come up with an innovative corkscrew arrangement that is aimed at overcoming the above shortcomings of the prior art.

My corkscrew arrangement, in various embodiments, is illustrated in Figures 4.1 to 4.8 respectively and comprises primarily of two parts, a helix or worm 110, 300 and 710, and a prong 212, 410 and 728 respectively.

I have two different embodiments of the worm in accordance with my invention, as depicted by worm 110 (Figure 4.1) and worm 300 (Figure 4.3) respectively. In turn, I have two different embodiments of the prong in accordance with my invention, as depicted by prong 212 (Figure 4.2) and prong 410 (Figure 4.4) respectively.

The corkscrew arrangement 200 (Figure 4.2) is accordingly an arrangement between worm 110 and prong 212, and the corkscrew arrangement 400 (Figure 4.4) is an arrangement between worm 300 and prong 410 respectively.

In Figures 4.5 to 4.8, I show the use of my corkscrew 700, with worm 710 and prong 728, wherein worm 710 is the worm 110 embodiment as shown in Figure 4.1, and prong 728 is the prong 212 embodiment as shown in Figure 4.2 respectively.

As illustrated in Figure 4.1, the worm 110 has a first portion 112 and a second portion 114 according to one embodiment of my invention. The first portion 112 could include a sharp-tipped end 116 for gaining purchase on a cork (not shown) and a substantially helical shaped body portion 118. The body portion 118 typically has a helical shape for gaining purchase on the cork. Alternatively, the body portion 118 could have a helical shape with a substantially flat top surface, or further alternatively, the body portion 118 could have any shape or configuration adapted to gain purchase on the cork when it is inserted.

The second portion 114 includes a cross element 122 for connecting with insert members from a prong (not shown). The cross element 122 could be essentially perpendicular to the body portion 118 and includes an elongated portion 124 and formations defining openings 126, 128 and 130, for receiving prong insert members (not shown). With reference also to Figure 4.5, the cross element 122 preferably features at least one dimension that is greater than the inner diameter of a bottle opening 705 of a bottle 703 to prevent the cork 701 from being pushed into the bottle. As an example of the greater dimension, the cross element 122 could be longer than the diameter of the bottle opening 705.

In Figure 4.2, I show the worm 110 detachably connected to the prong 212. The prong 212 has two insert members 214 and 216 that are insertable into the openings 126, 128 and 130 in the cross element 122 of the worm 110.

The prong 212 has a handle 218 operatively connected to the insert members 214 and 216. The handle 218 is used (i) to rotate the worm 110 into a cork, and

(ii) to insert the insert members 214 and 216 between a cork and the inner wall of a bottle opening. The insert members 214 and 216 have locking formations (not shown) for locking with the cross element 122, once both the worm 110 and the insert members have been inserted fully into the cork and between the cork and the inner wall of a bottle opening respectively, to lock the cross element to the prong.

In Figure 4.3, an alternative embodiment of a worm 300 in accordance with my invention is shown, wherein the worm now has a first portion 312 with a sharp-tipped end 314 and a substantially helical body portion 316. The body portion 316 in this embodiment is connected to a cross element 318 that could, for example, be made from a plastic, metal or other suitable material. In this embodiment, the worm 300 has openings 320 and 322 to receive the insert members of a prong (not shown). The cross element 318, in one design, could have a recess 324 for receiving a lower portion or locating formation of a prong handle (not shown). The cross element 318 is preferably longer in length than the inner diameter of a bottle opening with the recess 324 having a length such that the cross element 318 does not interfere with the insertion of insert members between a cork and the inner wall of a bottle opening. The cross element 318 is further provided with a pair of locking formations (not shown) for locking with complementary locking formations on a prong (not shown), once both the worm and the insert members have been inserted fully into the cork and between the cork and the inner wall of a bottle opening respectively.

In Figure 4.4, I show a preferred embodiment of my corkscrew arrangement 400 with the worm 300 of Figure 4.3 detachably connected to an alternative, correspondingly modified embodiment of the prong 212, here shown as prong 410, with a handle 416 and prong insert members 412 and 414 that are insertable through the worm cross element slots 320 and 322 which are shown in Figure 4.3.

The handle 416 has a lower portion or locating formation 418 that releasably locates, alternatively secures, in the recess 324 of the cross element 318 and could, for example, initially be retained in the recess 324 by side members 325 and 327 in the upper portion of the worm cross element 318 (as shown in Figure 4.3). The insert members 412 and 414 are inserted in the openings 320 and 322 of the cross element 318 in Figure 4.3. The handle 416 is used to rotate and insert the worm 300 into a cork (not shown), detach the insert members 412 and 414 from the worm 300, and insert the prong insert members 412 and 414 between a cork and the inner wall of a bottle opening. Finally, the handle 416 is twisted slightly, to enable the cross element 318 to lock with the insert members 412 and 414 by means of the complementary locking formations (not shown) before the handle is used to remove the worm 300, insert members 412 and 414, and the cork from the bottle opening.

The body portion 316 is typically made from spring or annealed steel and is approximately 6 cm in length. At least a part of the cross element (not shown) is also made from steel and connected directly to the body portion 316. The cross element body 326 is typically made from plastic or metal, and encloses the cross element portion that is connected directly to the body portion 316 and together form the cross element 318.

Below the recess 324, the cross element 318 has a top to bottom dimension 329 (see Figure 4.3) that is at least equal to the difference in length between the insert member 412 and the insert member 414. The cross element 318 also includes openings 320 and 322 through which the insert members 412 and 414 are passed. The openings 320 and 322 are approximately 0.25 cm wide, 0.615 cm long, and 0.175 cm apart.

The handle 416 is made from metal while the insert members 412 and 414 are made from one piece of spring or annealed steel that is shaped in an essentially squared U-shape and connected to the handle 416. The prong insert 412 is slightly longer than the prong insert 414, with the prong insert 412 having a length of about 5.75 cm while the prong insert 414 has a length of about 5.5 cm.

In Figures 4.5 to 4.8, I show a sequence of illustrations of the corkscrew arrangement 700 according to my invention (and as shown in Figures 4.1 and 4.2) being used to remove a cork 701 from a bottle 703. In Figure 4.5, a worm 710 is used with a first helical shaped portion 712 and a second cross element portion 714. The helically shaped portion 712 includes a sharp-tipped end (not visible) and a body portion 716 for gaining purchase on the cork 701. The cross element portion 714 includes an elongated portion 720 that is longer than the inner diameter of the bottle opening 705. The elongated portion 720 includes end openings 722, 724 and 726 for detachably connecting to a prong 728.

The prong 728 has insert members 730 and 732 and a handle 734. It is envisaged that one insert member 732 is preferably longer than the other insert member 730.

The members 730 and 732 are inserted in the worm end openings 722, 724 and 726, and the worm end (not visible) is located approximately in the centre of the cork 701. The handle 734 is then used to rotate the prong and thus the worm 710 in a clockwise direction and with a slight force downwardly directed with respect to the cork 701 to gain purchase in the cork. The worm 710 is inserted and rotated into the cork 701 until the cross element 714 is at the top of the bottle opening 705, and typically against the top of the bottle opening 705, as shown in Figure 4.6. The prong 728 is then removed from the worm end openings 722, 724 and 726 by pulling upward on the handle 734.

The handle 734 and prong 728 are then rotated, about 90 degrees with respect to the cross element 714, to allow the insert members 730 and 732 to be inserted between the cork 701 and the inner wall of the bottle opening 705. Using the handle, the insert members 730 and 732 are inserted between the cork 701 and the inner wall of the bottle opening 705 by partially inserting first the one, longer insert member 732, pressing down and rocking the insert member 732, as needed, to partially insert it, and then inserting the other, shorter insert member 730 and pressing down slightly. Using the handle 734, the insert members 730, 732 are pressed down until the bottom of the handle is located at the top of the bottle opening 705 and the insert members 730 and 732 extend along the cork 701, as shown in Figure 4.7. Finally, the handle 734 is twisted slightly, to enable the cross element 714 to lock with the insert members 730 and 732 by means of the complementary locking formations (not shown) before the handle is used to remove the worm 710, insert members 730 and 732, and the cork 701 respectively from the bottle opening 705.

It is envisaged that the insert members 730 and 732 could be attached permanently to the worm 710 in an alternative embodiment. In such embodiment, the worm 710 would be inserted into the cork 701 while the insert members 730 and 732 are inserted between the cork 701 and the inner wall of the bottle opening 705 without detachment of the insert members 730 and 732 from the worm 710.

In Figure 4.8, the corkscrew arrangement 700 with the worm 710 and the prong 728 is shown with the cork 701 removed from the bottle 703.

The cork 701, removed from the bottle 703 with the insert members 730 and 732, is separated from the worm 710 for reuse by preferably holding the cork to prevent the cork from rotating, and rotating the worm 710 counter-clockwise relative to the top of the cork.”

The candidate is required to identify the novel and inventive feature(s) of the above invention, and to draft up to three claims to protect the invention and its primary inventive features.

ooo000ooo

Question 1

Figure 1
(Prior Art No 1 - Pour Over Coffee Dripper)



Figure 2
(Prior Art No 2 - French Press)

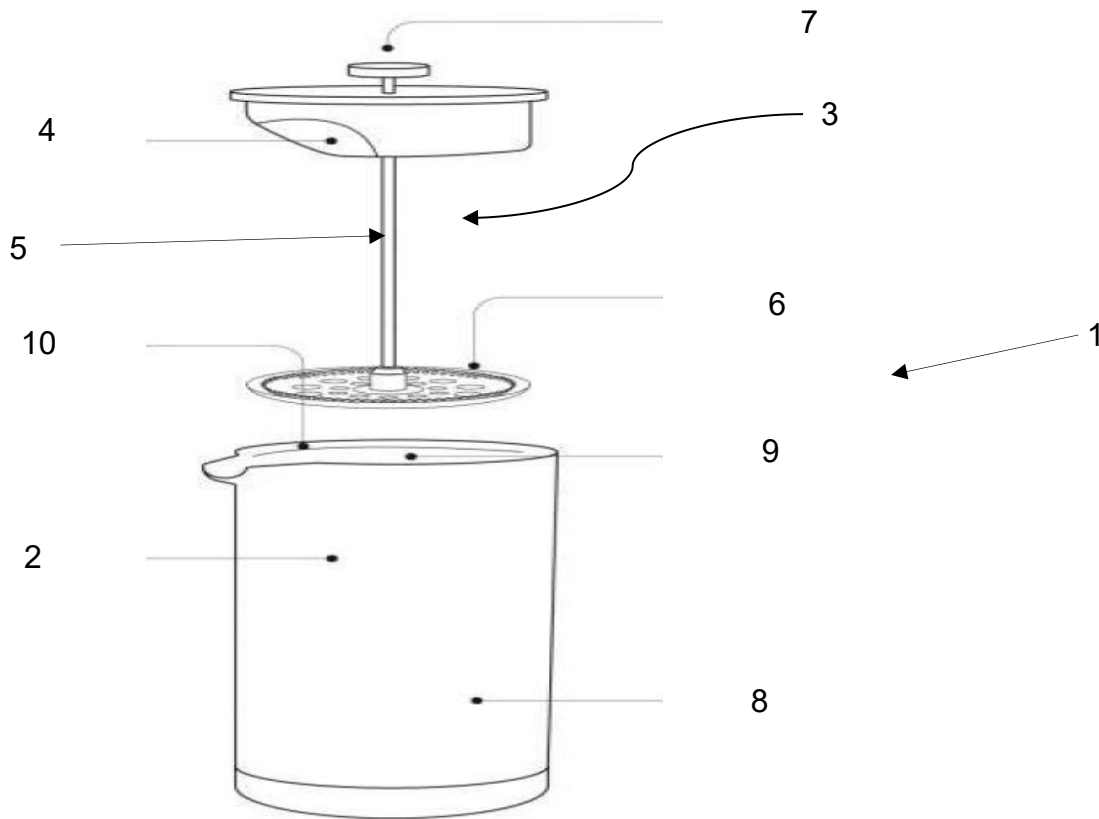


Figure 3
(My Innovative Press)

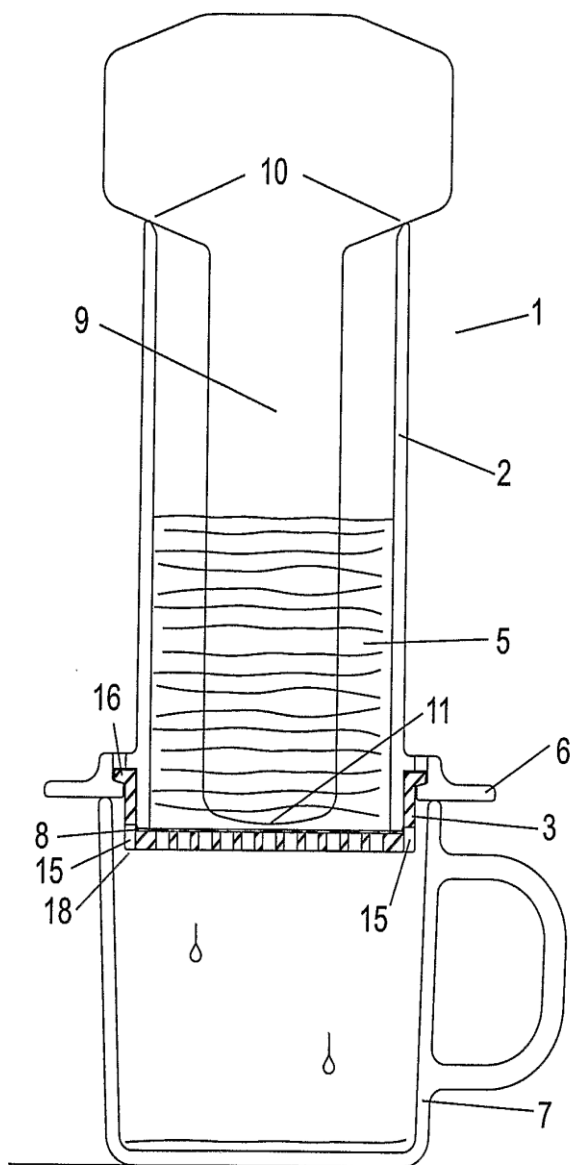


Figure 4
(My Innovative Press)

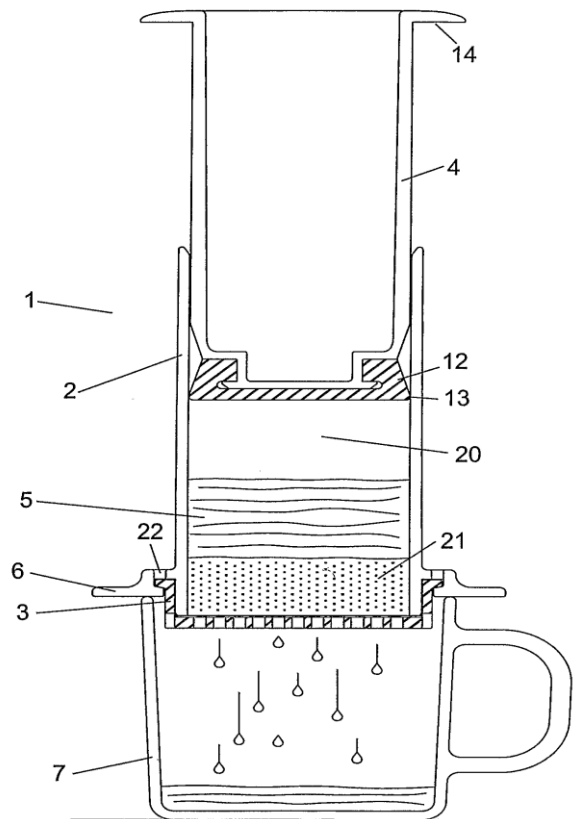
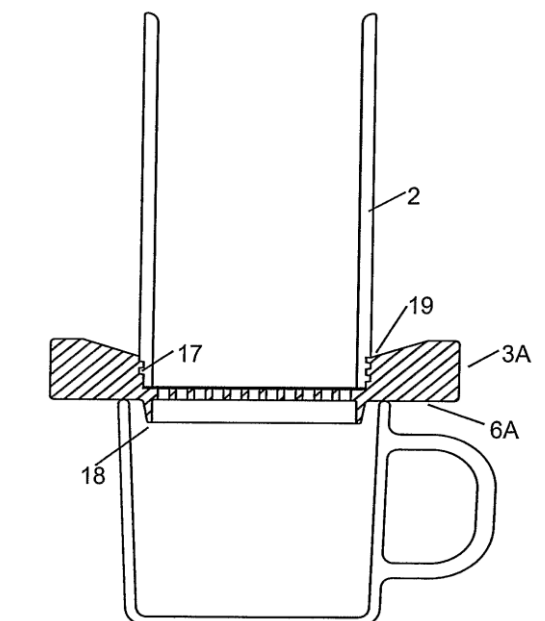


Figure 5
(My Innovative Press)



Question 2

Figure 1
(Prior Art 1 – Basic Corkscrew)

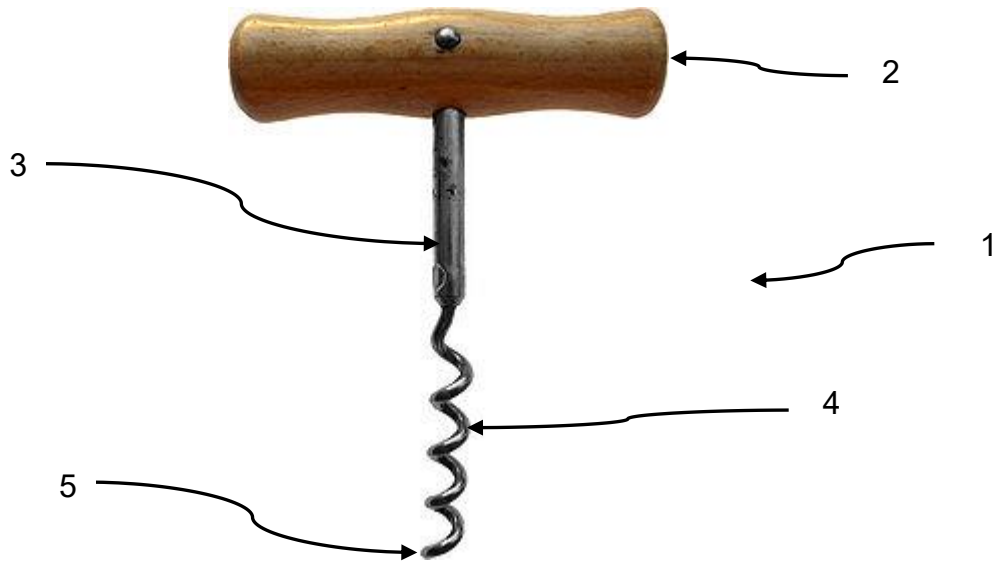


Figure 2
(Prior Art 2 – Basic Corkscrew with Henshall Button)



Figure 3
(Prior Art 3 – Lever Corkscrew)

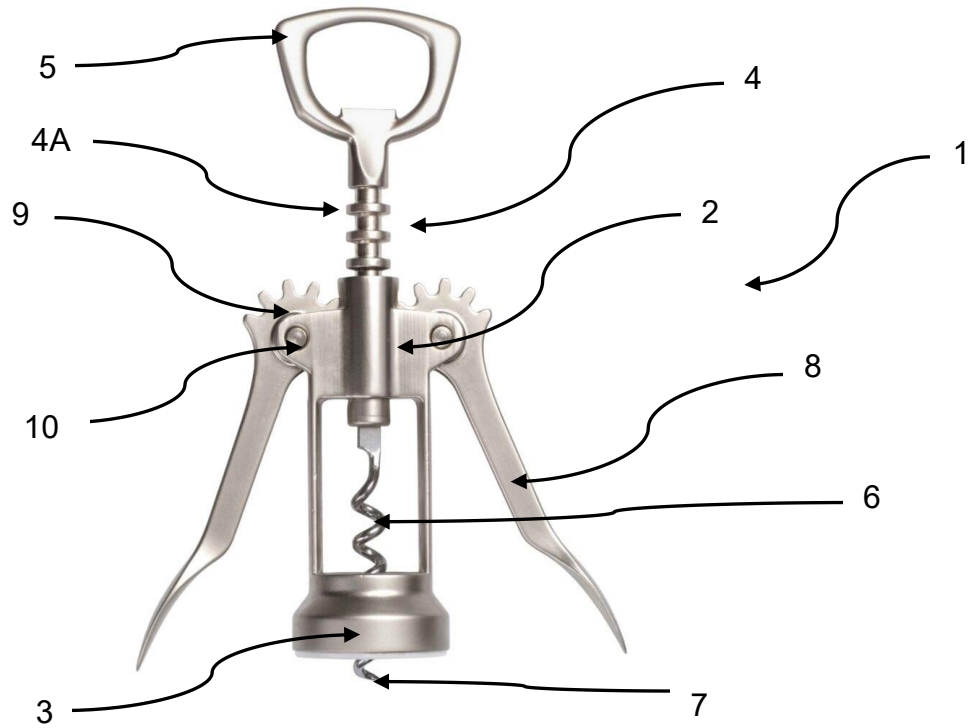


Figure 4.1
(My Innovative Corkscrew)

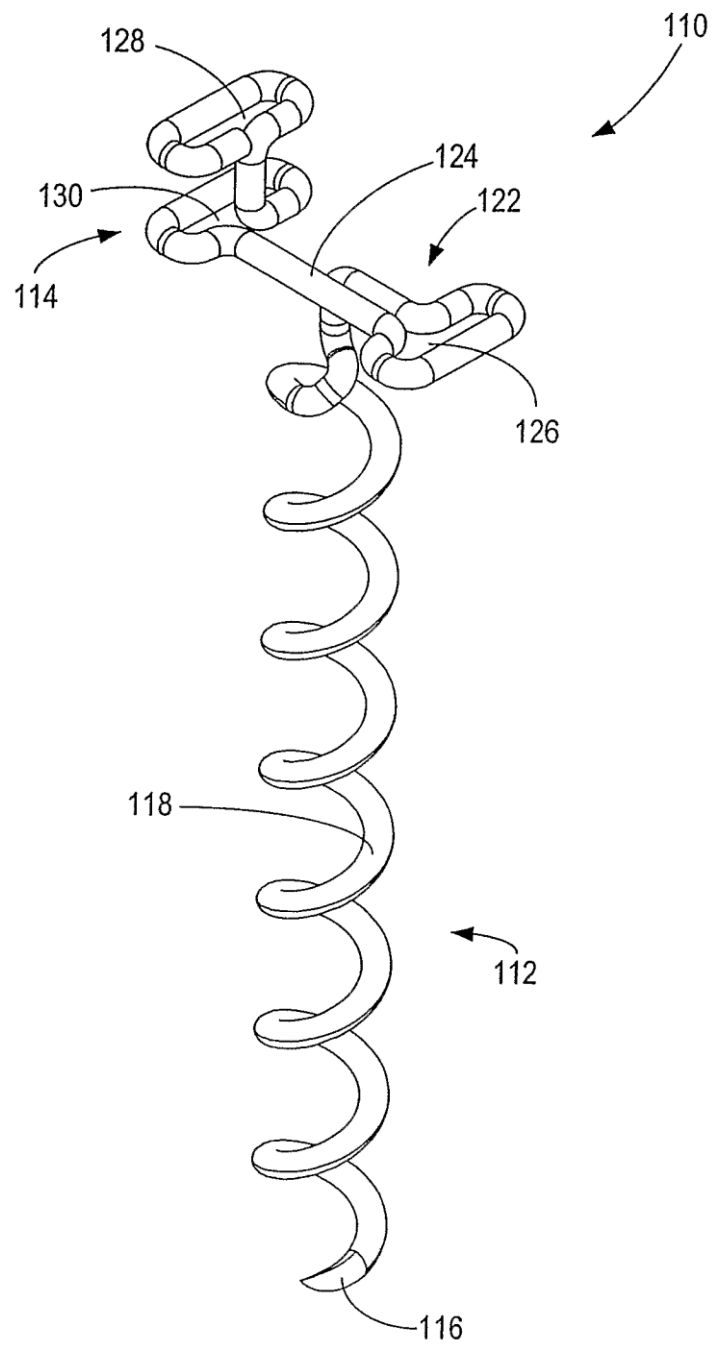


Figure 4.2
(My Innovative Corkscrew)

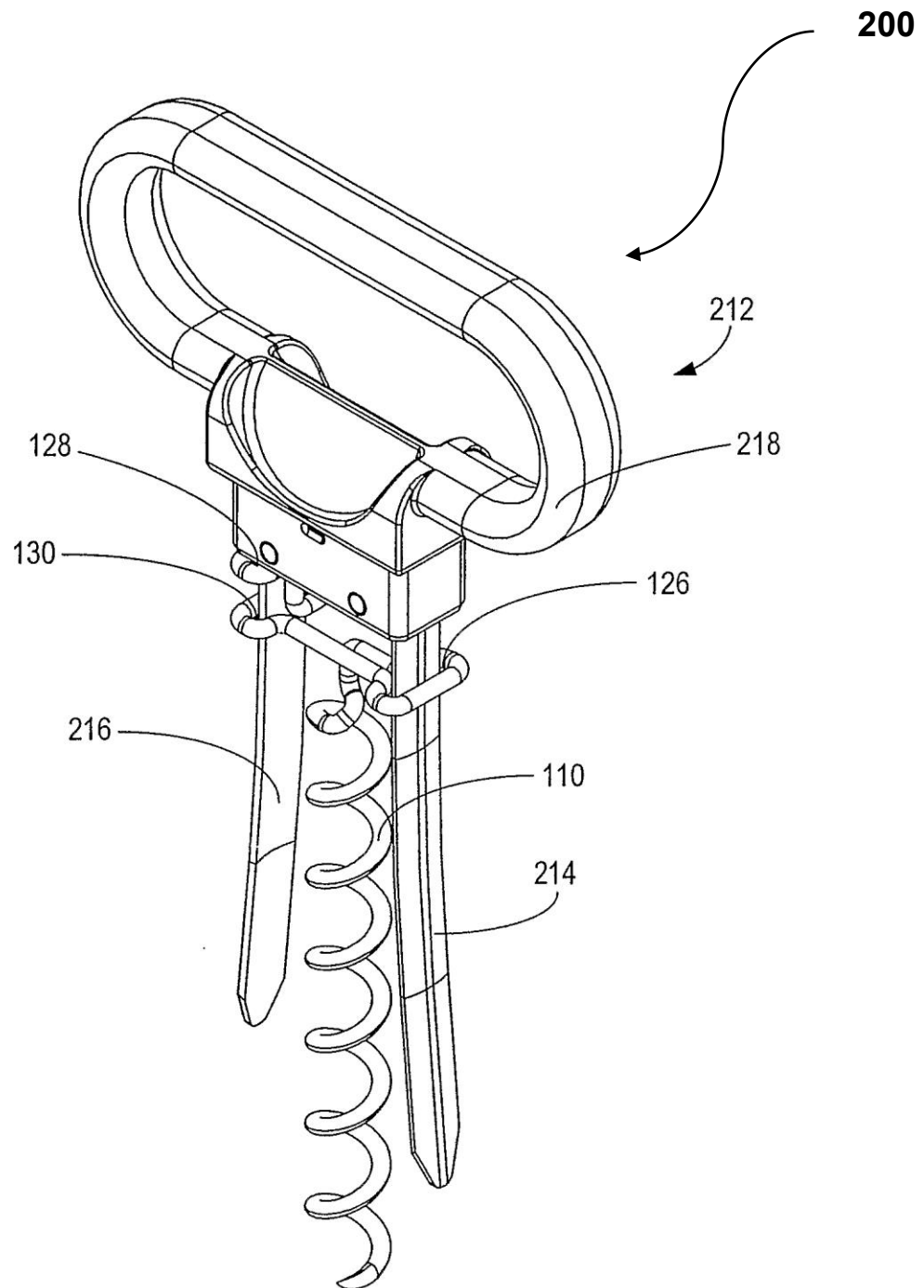


Figure 4.3
(My Innovative Corkscrew)

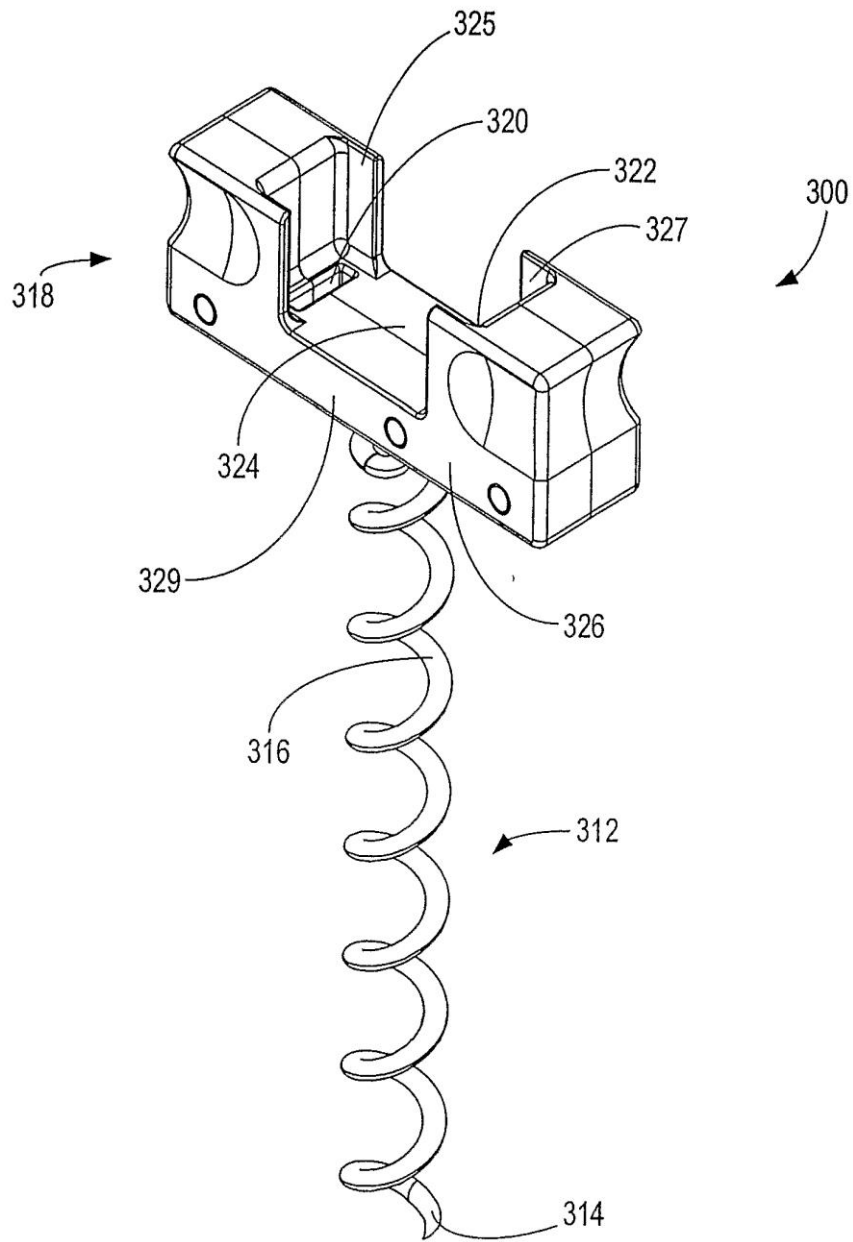


Figure 4.4
(My Innovative Corkscrew)

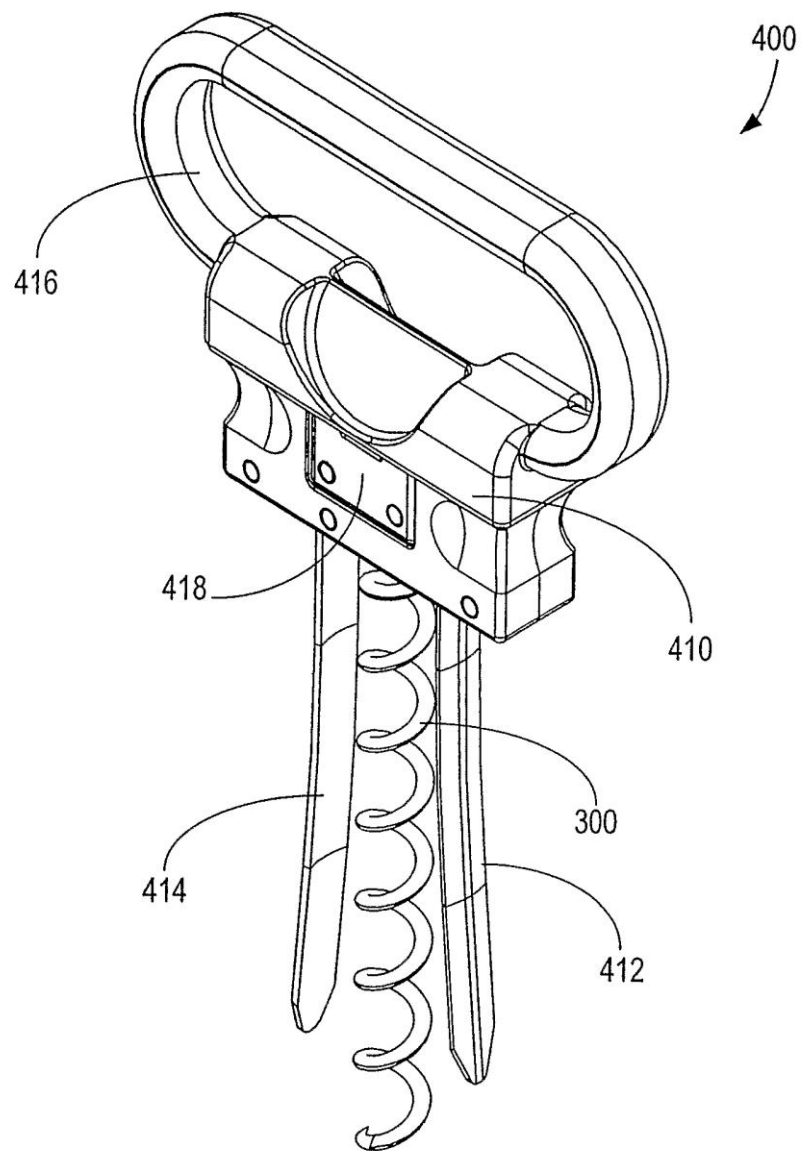


Figure 4.5
(My Innovative Corkscrew)

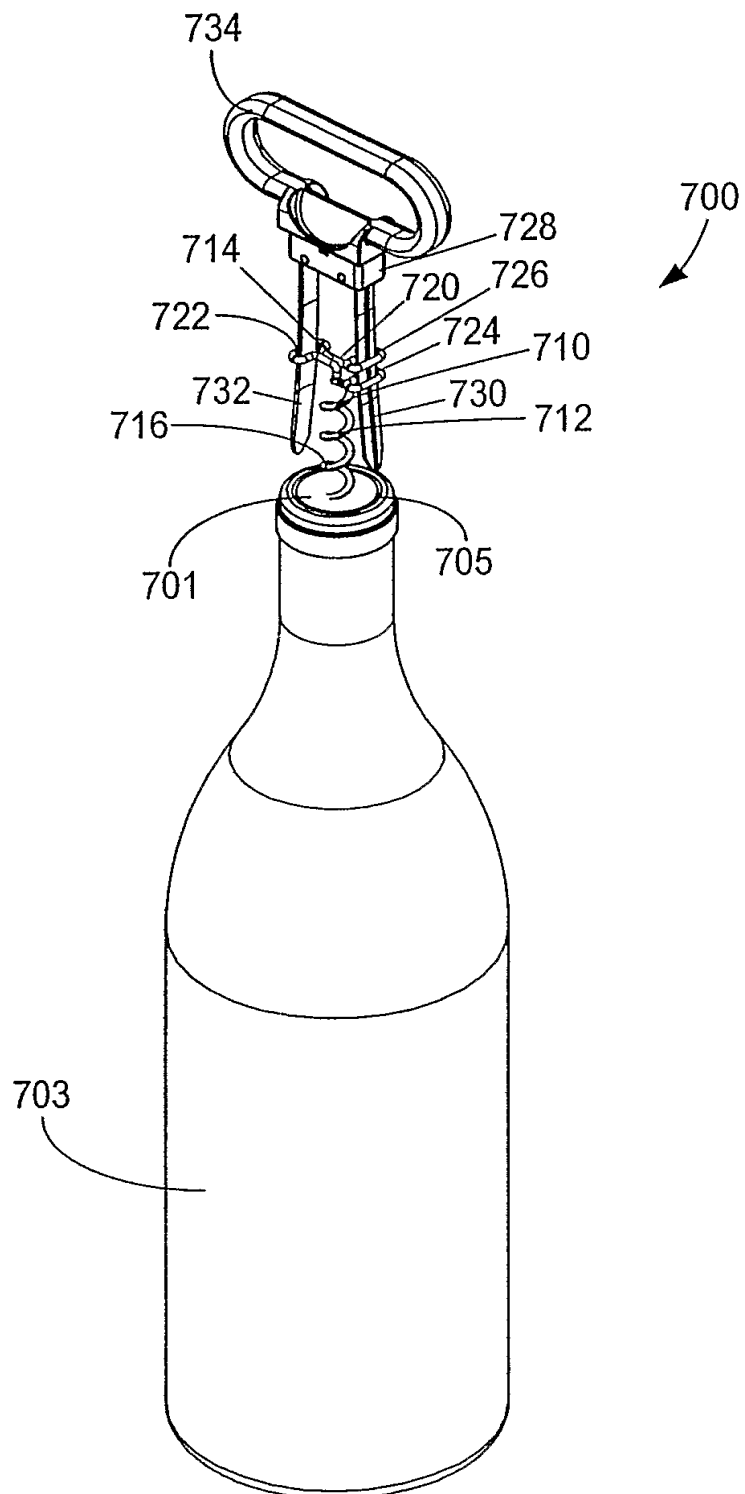


Figure 4.6
(My Innovative Corkscrew)

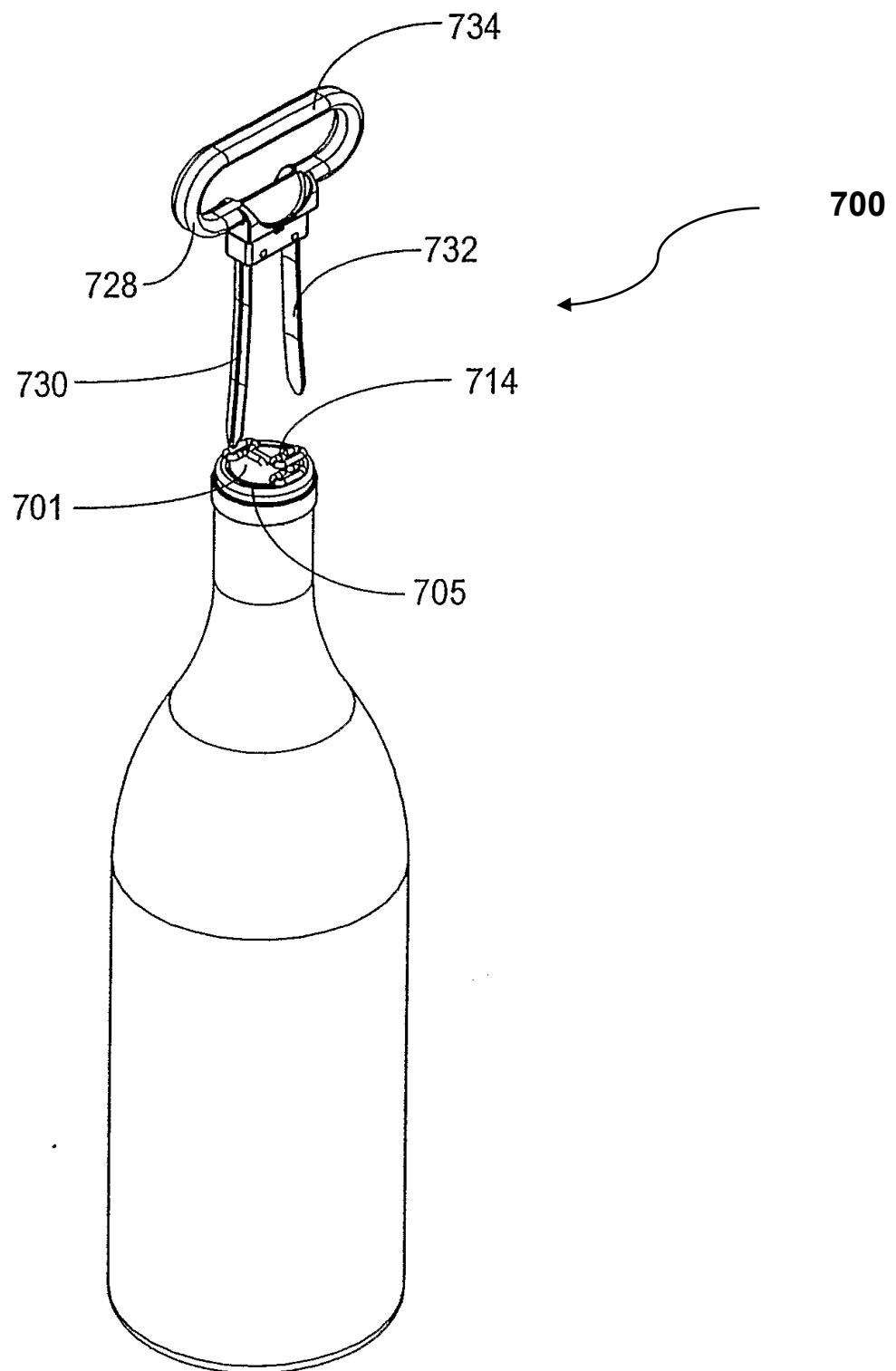


Figure 4.7
(My Innovative Corkscrew)

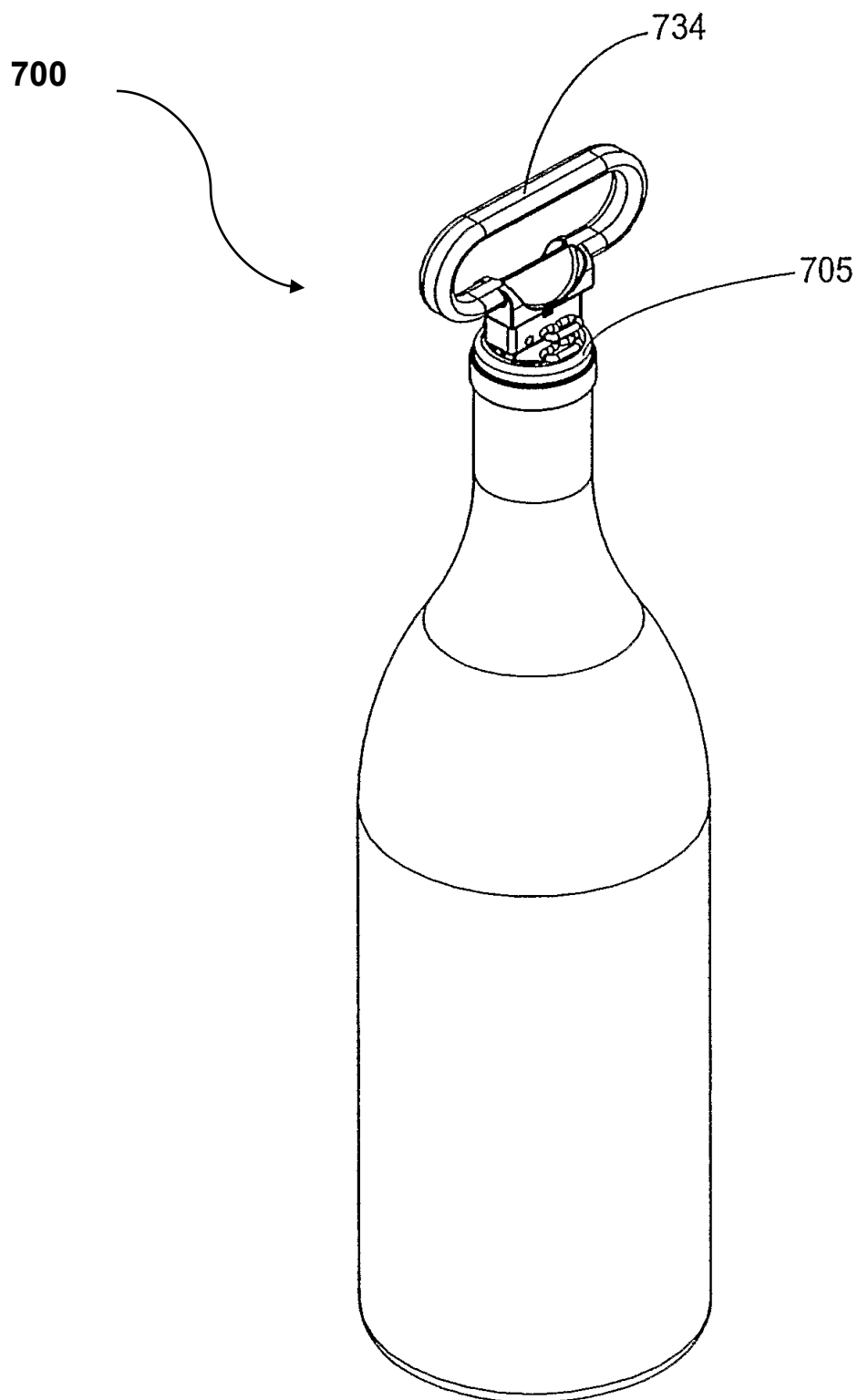
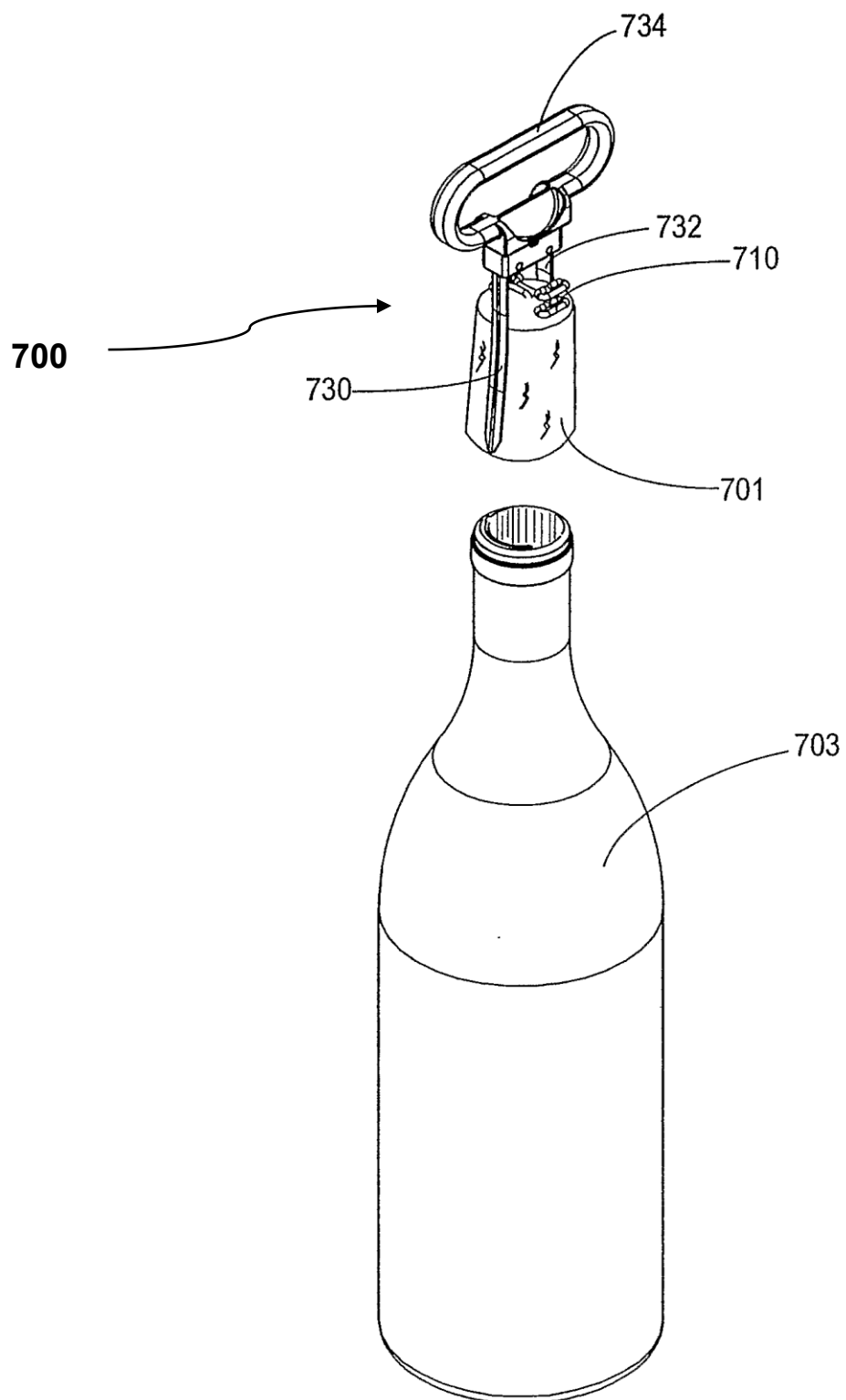


Figure 4.8
(My Innovative Corkscrew)



ooo000ooo