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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte AKOS SPIEGEL and NICOLAS JEAN-GUY BEZET

Appeal 2018-008011
Application 14/421,569
Technology Center 3700

Before JAMESON LEE, JONI Y. CHANG, and
JUSTIN T. ARBES, *Administrative Patent Judges*.

LEE, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Pursuant to 35 U.S.C. § 134(a), Appellant¹ appeals from the Examiner's decision to reject claims 1–9.² We have jurisdiction under 35 U.S.C. § 6(b).

We reverse.

¹ We use the word “Appellant” to refer to “applicant” as defined in 37 C.F.R. § 1.42. Appellant identifies the real party in interest as Nestec S.A. Appeal Br. 2.

² Appellant also appeals from an alleged rejection of claim 10. App. Br. 14. However, we find no rejection in the record for claim 10. Final Act. 1. Therefore, the appeal is recognized only for the rejection of claims 1–9.

CLAIMED SUBJECT MATTER

The independent claims are claims 1 and 8. Claims 2–7 each depend directly from claim 1, and claim 9 depends from claim 8. Claim 1 is directed to a capsule for containing a food ingredient, suitable for being inserted in a food preparation machine which mixes the ingredient with fluid introduced under pressure to produce a food product. Claim 8 is directed to a beverage preparation system comprising a closed capsule for containing a food ingredient, and a food preparation machine having a cavity for functionally inserting the closed capsule and injecting a beverage preparation fluid under pressure into the capsule. Claims 1 and 8 are reproduced below:

1. A capsule for containing a food ingredient, suitable for being inserted in a food preparation machine, the capsule having a rigid body structure defining a closed compartment wherein the ingredient is mixed with a fluid introduced under pressure by the food preparation machine in order to produce a food product, the rigid body structure comprising body walls defining an external volume V_{caps} and an internal compartment volume V_{comp} , the rigid body structure further comprises at least one elastic portion having at least one characteristic selected from the group consisting of a shape, a dimension, and being made of a material, such that the at least one elastic portion is elastically deformable and that V_{caps} and V_{comp} are reversibly reduced by at least 3% by applying an elastic compression along at least one dimension of the capsule at the time the capsule is functionally inserted within the food preparation machine, the at least one elastic portion allowing the capsule to flex back to initial volumes V_{caps} and V_{comp} after extraction, such that residual pressure within the capsule is reduced.

8. A beverage preparation system comprising:

a closed capsule with a rigid body structure defining a closed compartment for containing a food ingredient, the closed capsule having an external volume V_{caps} and V_{comp} internal compartment volume; and

a food preparation machine havng a cavity for functionally inserting the closed capsule and injecting a beverage prepatation fluid under pressure thereinto, the cavity having an internal volume V_{cav} ,

the rigid body structure of the capsule comprises at least one elastic portion having at least one characteristic selected from the group consisting of a shape, a dimension, and being made of a material, such that the at least one elastic portion is elastically deformable and that V_{caps} and V_{comp} are reversibly reduced by at least 3% by applying an elastic compression along at least one dimension of the capsule at the time the capsule is functionally inserted within the food preparation machine, the at least one elastic portion allowing the capsule to flex back to intial volumes V_{caps} and V_{comp} after extraction, such that residual pressure within the capsule is reduced.

The specification explains the problem intended to be solved by the invention as follows:

In all cases, due to residual pressure P which remains inside the capsule compartment after the capsule has been used, a jet of liquid “JL” – often referred to as “whale effect” – can spray out of the capsule top membrane, through the hole pierced by the machine needle, due to gas that may remain trapped within the capsule under pressure. Such a whale effect is represented in **figure 1**. Although such a phenomenon occurs randomly and very infrquently, it is undesirable because hot liquid splashing out is messy. Moreover, in case said liquid is water mixed with an ingredient such a leakage of liquid from the capsule topmembrane is also undesirable for a cleanliness point of view as it could create some bacteria growth around or inside the machine, which forces the consumer to spend time cleaning the machine and its surroundings after usage.

It is therefore one main objective of the present invention to provide a solution for beverage preparation system which prevents the so-called “whale effect” described above.

Spec. 5. Both claims 1 and 8 require an elastic portion in a rigid capsule, that is reversibly deformable such that the capsule’s volume is reduced by at least 3% when inserted into a food preparation machine and expands after extraction to reduce the residual pressure within the capsule.

Figure 3 of the Application is reproduced below:

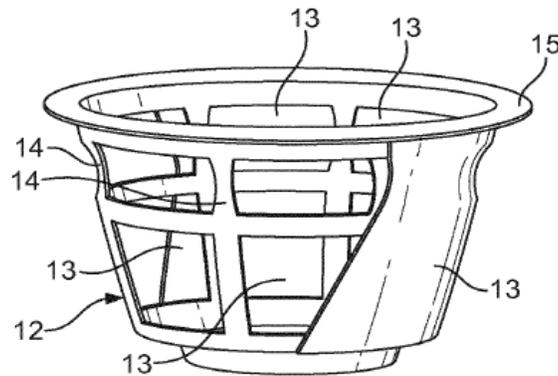


FIG. 3

Figure 3 is a schematic view of a capsule according to the invention. Spec. 7:19–20. Skeleton structure 12 has a weakened zone that forms flexible bellows portion 14. *Id.* at 9:22–24. The weekend portion can be achieved through numerous ways, including by changing the size of the cross section support as is shown in Figure 3 or by using a softer material which is co-injected during formation with the rest of structure 12. *Id.* at 9:24–28.

REFERENCES

Krüger	US Pat. Pub. 2011/0142996 A1	June 16, 2011
Mariller	US Pat. Pub. 2011/0183055 A1	July 28, 2011

REJECTIONS

A. Claims 1–7 stand finally rejected under 35 U.S.C. § 103 as obvious over Krüger.

B. Claims 8 and 9 stand finally rejected under 35 U.S.C. § 103 as obvious over Krüger and Mariller.

OPINION

A. The Obviousness Rejection of Claims
1–7 over Krüger under 35 U.S.C. § 103

Krüger discloses a portion capsule for preparing a beverage, which includes a cavity for accommodating a beverage raw material and a membrane that closes the cavity. Krüger ¶ 1. Krüger explains that a disadvantage of preexisting beverage portion capsules is that they have a comparatively low degree of mechanical stability, and there is a risk that, when extraction liquid is injected into the capsule, the capsule would buckle laterally, particularly in a wall region between the membrane and the bottom region. *Id.* ¶ 3. Krüger further explains that the advantage of its beverage portion capsule over preexisting capsules is that the wall region of the base element of the portion capsule is reinforced by a plurality of channels. *Id.* ¶ 6. According to Krüger, such a structure gives its beverage portion capsule a greater degree of mechanical stability and prevents deformation, particularly lateral buckling. *Id.*

diameter larger than that of wall region 12. *Id.* Bottom region 11 has greater thickness than wall region 12. *Id.* The diameter of circumferential shoulder 16 is fixed. *Id.*

The embodiment of Figure 2 is substantially the same as the embodiment of Figure 1. *Id.* However, it does not have a shoulder, a sealing lip, or a greater thickness in bottom region 11 as compared to wall region 12. *Id.* ¶ 25. Also, the channel grooves in the wall region face away from cavity 3. *Id.*

The embodiment of Figure 3 is substantially the same as the embodiment of Figure 1. *Id.* ¶ 26. However, it has only two channels in wall region 12 and filter 5 can snap into one of the channels. *Id.* Also, the diameter of circumferential shoulder 16 decreases in the direction of flange 7. *Id.* ¶ 24.

The dispositive issue in this case centers around the following two limitations of claim 1:

(1) the capsule has a rigid body structure; and

(2) the rigid body structure comprises an elastic portion having at least one characteristic selected from the group consisting of a shape, a dimension, and being made of a material, such that the at least one elastic portion is elastically deformable and that V_{caps} and V_{comp} are reversibly reduced by at least 3% by applying an elastic compression along at least one dimension of the capsule at the time the capsule is functionally inserted within the food preparation machine.

The Examiner finds that Krüger's capsule has a rigid body having an elastic portion. Ans. 6. We are unpersuaded, because that determination is not sufficiently supported by the reasoning and evidence provided by the Examiner, as we explain below.

For the rigid body structure required by claim 1, the Examiner relies on base element 2 in Figure 3 of Krüger. *Id.* Krüger describes “[t]he base element 2 comprises, in particular, a soft, semi-rigid or rigid plastics material which has preferably been deep-drawn.” Krüger ¶ 24. For the elastic portion, the Examiner again relies on base element 2 in Figure 3 of Krüger, citing Krüger’s description that base element 2 can be made of soft, semi-rigid, or rigid material. *Id.* The problem, however, is that Krüger does not describe that base element 2 is made of *both* rigid and soft material such that overall it is made of rigid material but also includes a softer portion. The claim requires a rigid structure including an elastic portion. That requires two different levels of elasticity, with the overall characteristic being rigid. The Examiner attempts to meet the requirement by first asserting that Krüger’s base element 2 has a rigid structure because it can be made of rigid material, and then asserting that Krüger’s base element 2 has a soft elastic structure because it can be made of soft material. There is no accounting by the Examiner for two different levels of elasticity as is required by the claim.

Additionally, the Examiner misreads Krüger’s disclosure about shoulder 16, in two ways. First, the Examiner asserts that shoulder 16 is elastically compressed as is shown collectively by Krüger’s Figures 1 and 3. Final Act. 3–4; Ans. 6. Note that in Figure 1 of Krüger, shoulder 16 is straight and perpendicular to flange 7, and in Figure 3 of Krüger shoulder 16 is inclined and has a decreasing diameter in the direction of flange 7. The Examiner’s position is unpersuasive because, as Appellant correctly notes (App. Br. 7), Figures 1 and 3 of Krüger illustrate separate embodiments and do not depict the same embodiment in which shoulder 16 is compressed at

one time and non-compressed at another time. Such a reading by the Examiner is not supported by the record.

Second, the Examiner further reasons that Krüger's shoulder 16 has gaps, which enable creation of elastic compression. Final Act. 14; Ans. 6. But the finding that shoulder 16 has gaps is not supported by the record. Krüger does not describe any gap in shoulder 16 and none of Figures 1–3 illustrate any gap in shoulder 16. As for the requirement of at least 3% reduction in the elastic portion, the Examiner find that the degree of elasticity is a design choice and that one with ordinary skill in the art would have known to make the capsule more compact inside the beverage machine. *Id.* The reasoning is inadequate, in light of Krüger's disclosure, described above, that it is undesirable to have a low level of mechanical stability and a risk of lateral buckling of the capsule. Also, the Examiner does not point to any evidence that it is desirable to have the capsule compressed to a smaller size when it is inside a beverage machine or that the beverage machine used in association with Krüger's capsule applies pressure to the capsule to make it smaller when it is inside the beverage machine.

For the foregoing reasons, the Examiner's reasoning is unpersuasive. The rejection of claim 1 as obvious over Krüger cannot be sustained.

Each of claims 2–7 depends from claim 1 and thus incorporates all limitations of claim 1. For the limitations incorporated from claim 1, the Examiner relies on the same reasoning as the Examiner provides in the context of claim 1. Final. Act. 5–7; Ans. 8–9. The deficiencies of the Examiner's reasoning with respect to claim 1 carry through to the Examiner's analysis with respect to each of claims 2–7. For the same reasons discussed above regarding why the Examiner's reasoning in the

context of claim 1 is deficient and unpersuasive, the Examiner's reasoning and analysis with respect to claims 2–7 are also deficient and unpersuasive.

For the foregoing reasons, we do not sustain the rejection of claims 1–7 as obvious over Krüger.

**B. The Obviousness Rejection of
Claims 8 and 9 over Krüger and Mariller**

Claim 8 is independent and includes two limitations very much like the two limitations we discussed above in the context of claim 1. Specifically, it requires the capsule to have a rigid body structure and it requires the capsule to have an elastic portion that is deformable due to compression applied at the time the capsule is inserted into the beverage machine to cause a 3% reduction in the external volume and compartment volume of the capsule. For the other limitations of claim 8, specifically those directed to a beverage machine, the Examiner relies on Mariller. Final Act. 7–8. For the two limitations at issue, however, the Examiner relies on the same reasoning presented with respect to the corresponding limitations in claim 1. Final Act. 8–9; Ans. 11–12. We have discussed that reasoning above in the content of claim 1 and found it to be unpersuasive. It is equally unpersuasive here in the context of claim 8. Thus, the rejection of claim 8 as obvious over Mariller and Krüger cannot be sustained.

Claim 9 depends from claim 8, and thus incorporates all limitations of claim 8. For the limitations incorporated from claim 8, the Examiner relies on the same reasoning as the Examiner provides in the context of claim 8. Final Act. 10; Ans. 13. The deficiencies of the Examiner's reasoning with respect to claim 8 carry through to the Examiner's analysis with respect to claim 9. For the same reasons discussed above regarding why the

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Examiner's reasoning in the context of claim 8 is deficient and unpersuasive, the Examiner's reasoning and analysis with respect to claim 9 is also deficient and unpersuasive. Therefore, the rejection of claim 9 as obvious over Mariller and Krüger cannot be sustained.

CONCLUSION

In summary:

Claims Rejected	35 U.S.C. §	Basis	Affirmed	Reversed
1-7	103	Krüger		1-7
8, 9	103	Krüger and Mariller		8, 9

REVERSED