The opinion in support of the decision being entered today was <u>not</u> written for publication and is <u>not</u> binding precedent of the Board.

Paper No. 33

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte ROBERT ZELLER

Appeal No. 2004-1137
Application No. 09/734506

ON BRIEF

Before FRANKFORT, STAAB, and MCQUADE, *Administrative Patent Judges*.

FRANKFORT, *Administrative Patent Judge*.

DECISION ON APPEAL

This is a decision on appeal from the examiner's final rejection of claims 1 through 12, 17, 20 and 24 through 32. Claims 21 through 23 and 33 through 43 stand allowed. Claims 18 and 19, which are the only other claims remaining in the application, stand objected to and have been indicated by the examiner to be allowable if rewritten in independent form. Claims 13 through 16 have been canceled.

Appellant's invention relates to a sampler and method of dispensing and cooling a fluid sample taken thereby, which sample is said to be used to monitor chemobiological conditions of the fluid. On page 2 of the specification, appellant notes that the change in the chemobiological condition of a fluid sample per unit time is commonly referred to as the "activity" of the fluid and that such activity is temperature dependent, i.e., increases with increasing fluid temperature. It is further noted that the quality of monitoring is determined, *inter alia*, by how closely the chemobiological condition of the fluid sample at the time of testing or examination corresponds to the chemobiological condition of the fluid at the sampling instant. Thus, if the fluid sample taken is to represent the chemobiological condition of the fluid sample existing at the sampling instant as precisely as possible, the activity of the fluid sample, averaged over the time period between sampling and examination must be minimized. It is to this end that appellant's invention is directed. As stated on page 4 of the specification, an object of the invention is to provide a sampler and method for dispensing and cooling a fluid sample whereby the cooling time, and thus the activity of the fluid sample, can be reduced. On page 8 of the specification, it is noted that

> [a] basic idea of the method according to the invention is to reduce the activity of the withdrawn fluid, and thus of the fluid sample, already during the dispensing process and to reach a required minimum of the activity in the shortest possible time. This is achieved in the invention by cooling a fluid-conducting volume of the vessel assembly prior to the dispensing process by means of a suitable cooling assembly. This coolable volume may extend over the total internal volume of the vessel assembly, so that the cooling of the fluid begins immediately upon its entry into the vessel assembly, or comprise only part of the total internal volume.

Independent claims 1, 17 and 24 are representative of the subject matter on appeal, and a copy of those claims, as reproduced from the Appendix to appellant's brief, is attached to this decision.[1]

The prior art references of record relied upon by the examiner in rejecting the claims before us on appeal are:

Gillard et al. (Gillard)	2,348,806	May 16, 1944

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[1] In claim 1, line 8, there is no clear and proper antecedent basis for "the vessel." For purposes of appeal, we will assume that appellant intends to refer to "the vessel assembly" earlier recited in the claim. Claim 17, line 14 contains several minor typographical errors. Lines 14-15 of claim 17 should read as follows: --lowering the internal temperature of the vessel assembly by means of the cooling assembly . . .--. Correction of these minor errors during any further prosecution of the application before the examiner is required.

Singer	3,795,347	Mar. 5, 1974
Hansen	4,195,524	Apr. 1, 1980
Longsworth	4,283,948	Aug. 18, 1981

Claims 24 through 32 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1 through 9 and 11 stand rejected under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over Longsworth.

Claims 1, 3, 10 and 12 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Singer in view of Gillard.

Claims 17 and 20 stand rejected under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over Hansen.

Claims 28, 29, 31 and 32 stand rejected under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over Gillard.

Rather than reiterate the conflicting viewpoints advanced by the examiner and appellant regarding the above-noted rejections, we refer to the examiner's answer (Paper No. 28, mailed August 19, 2003) for a full exposition of the examiner's position, and to appellant's brief (Paper No. 27, filed June 25, 2003) and reply brief (Paper No. 29, filed October 17, 2003) for the arguments thereagainst.

OPINION

Having carefully reviewed the indefiniteness, anticipation and obviousness issues raised in this appeal in light of the record before us, we have made the determinations which follow.

Looking first to the examiner's rejection of claims 24 through 32 under 35 U.S.C. § 112, second paragraph, we note that the examiner questions the meaning of the terminology "mean temperature value" as used in claims 24, 25 and 28 on appeal. On page 12 of the answer, the examiner contends that appellant is redefining the common meaning of the term "mean" in a manner to include "average." According to the examiner, "[m]ean values are median values, and are not average values." We do not agree.

For the reasons aptly advanced by appellant on pages 25-29 of the brief, we find no basis to conclude that claims 24 through 32 are indefinite or that they somehow fail to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Like appellant, we consider that one of ordinary skill in the art reading claims 24, 25 and 28 in light of the specification and the ordinary, accepted definition of the word "mean" would readily understand that the claimed "mean temperature value" of the vessel assembly, as used in the above enumerated claims, is an average temperature value over the volume of the vessel assembly. Thus, the examiner's rejection of claims 24 through 32 under 35 U.S.C. § 112, second paragraph, will not be sustained.

Turning next to the examiner's rejection of claims 1 through 9 and 11 under 35 U.S.C. § 102(b) as being anticipated by Longsworth, we note that Longsworth discloses a sampler for dispensing and cooling a sample of a fluid (air) withdrawn from a sampling location and for storing the sample at a selectable storage temperature. As both appellant and the examiner agree, Longsworth's sampler includes a sample storage bottle (10) and a conduit (32) extending from the neck of the bottle to permit collection and removal of the fluid sample. As can be seen in Figure 1 of the patent, the sample bottle (10) and conduit (32) are housed within a vacuum jacketed Dewar (50), with the sample bottle being submerged below the surface (53) of a liquid cryogen (51) and the conduit extending therefrom to a manifold structure (34) carried on the cover/flange (30) of the Dewar. In addition, a cryogenic refrigerator member (70) is carried by the cover/flange (30) and has a cold end (72) extending into the interior of the Dewar and positioned above the surface (53) of the liquid cryogen.

As indicated in column 3, lines 34, et seq., in use, for sampling air, the sampler of Longsworth is assembled as shown with a supply of liquid cryogen (e.g., liquid nitrogen) introduced into the Dewar through the refrigerator port (31) to cool sample bottle (10) to 77 degrees Kelvin (°K.). After the liquid nitrogen (51) and sample bottle are introduced into the Dewar, the refrigerator member (70) is put in place and activated. In addition, to effect a rapid cool-down from 77° K. to less than 73° K., a small vacuum pump is connected to the Dewar (at valve 94) so that the space above the surface (53) of the liquid nitrogen can be rapidly evacuated. Longsworth notes (col. 3, lines 49-53) that the combination of the refrigeration produced by the refrigerator (70) and evacuation of the Dewar (50) makes it possible to achieve a working temperature of less than 73° K. inside the Dewar, in less than 15 minutes. In column 3, lines 59+, Longsworth refers to a prior filed U.S. Patent Application (SN 956,312) for an explanation of how cooling the sample bottle (10) in the manner set forth above creates a partial vacuum within the bottle, thus permitting air from the sampling location to be drawn through metering orifice valve (40) into the sample bottle when desired. It is further noted that because of the liquid nitrogen (51) surrounding the sample bottle (10), the air sample taken is condensed inside the sample storage bottle.

In the examiner's view, the sampler of Longsworth in fully responsive to that defined in appellant's claim 1 on appeal and is therefore anticipatory. More particularly, in the language of claim 1 on appeal, the examiner has indicated (answer, pages 3-4) that Longsworth teaches a sampler comprising, *inter alia*, a vessel assembly of a predetermined volume, said vessel assembly including a tubular intake vessel (conduit 32) and a sample storage vessel (10); and a cooling assembly (internally of Dewar

50, including the liquid cryogen 51, the refrigerator 70, and the gaseous cryogen located above the surface of the liquid cryogen) thermally coupled to the vessel assembly, the cooling assembly including a first cooling volume (the lower portion of Dewar 50 housing the liquid cryogen 51 and the sample bottle 10) operable to cool the fluid sample to the storage temperature, and a second cooling volume (upper portion of Dewar 50 which contains the gaseous cryogen, refrigerator 70, and conduit 32) operable to cool the withdrawn fluid in the conduit to a temperature below the sampling temperature; wherein at least the storage vessel (10) is disposed in the first cooling volume, and wherein the vessel assembly is disposed in said second cooling volume at least in sections (i.e., conduit 32, which constitutes a section of the "vessel assembly" in Longsworth's sampler, is disposed in the second cooling volume).

Appellant contends (brief, page 12) that Longsworth's liquid cryogen (51) does not "cool the fluid sample to the storage temperature" as required in claim 1 on appeal, and thus does not satisfy claim 1's "first cooling volume." We do not agree. While it is true that the liquid cryogen initially introduced into the Dewar (50) cools the sample storage vessel (10) to 77°

Kelvin, we note that Longsworth clearly indicates (col. 3, lines 43-53) that subsequent to supplying the liquid nitrogen, the combined effects of the cooling steps used therein achieves "a working temperature of less than 73° K. inside the Dewar, in less than 15 minuets." From this, we conclude that the mean or average temperature within the Dewar (50) just prior to sampling will be a working temperature of about 73° K. or slightly less and that the liquid nitrogen bath surrounding the submerged sample storage bottle (10) will likewise be at or near 73° Kelvin. Moreover, even if the temperature of the liquid nitrogen bath (51) is somewhat higher than the approximately 73° K. working temperature within Dewar (50), since the sample storage bottle (10) is entirely submerged in the liquid nitrogen, whatever temperature the liquid nitrogen bath is at will be the storage temperature of the sample within the storage bottle (10). Thus, the liquid cryogen (51) in Longsworth's sampler defines a "first cooling volume" that is "operable to cool the fluid sample to the storage temperature," exactly as set forth in appellant's claim 1 on appeal.

In the reply brief filed October 17, 2003 (Paper No. 29), appellant has raised a second line of argument with regard to claim 1 on appeal <u>not</u> presented in the appeal brief (Paper No. 27). In addition to further comments concerning the "first cooling volume" argued previously, appellant now raises the argument that the examiner has not properly identified any structure in Longsworth that meets the requirements of the claimed "second cooling volume" of claim 1 on appeal (reply brief, pages 2-4). As expressly stated in 37 CFR § 1.192(a), "[a]ny arguments or authorities not included in the brief will be refused consideration by the Board of Patent Appeals and Interferences, unless good cause is shown." No good cause having been shown, we refuse to consider appellant's arguments directed to the "second cooling volume." However, we note our agreement with the examiner's view, as set forth on page 4 of the answer, that the space above the surface (53) of the liquid cryogen in the Dewar (50) of Longsworth's sampler, which space contains gaseous cryogen, the refrigerator (70), and the conduit (32), and which is said to be maintained at a temperature of between 70° and 73° Kelvin (col. 4, lines 36-38), constitutes a "second cooling volume" which is inherently "operable to cool" the withdrawn fluid (air) passing through stainless steel conduit (32) on its way to the storage bottle (10), at least to some extent, to a temperature below the sampling temperature existing outside the sampler.

Since Longsworth clearly teaches a sampler like that broadly set forth in claim 1 on appeal, the examiner's rejection of claim 1 under 35 U.S.C. § 102(b) will be sustained. As for claims 2 through 9 and 11, also rejected by the examiner under 35 U.S.C. § 102(b) based on Longsworth, in view of appellant's grouping of claims set forth on page 10 of the brief, it is our determination that claims 2 through 9 and 11 will fall with independent claim 1, from which they depend.

The examiner has also nominally rejected claims 1 through 9 and 11 under 35 U.S.C. § 103(a) based on Longsworth. However, notwithstanding that we find no express obviousness analysis made by the examiner, we will sustain this rejection also, since anticipation or lack of novelty is the ultimate or epitome of obviousness. See, in this regard, In re Fracalossi, 681 F.2d 792, 794, 215 USPQ 569, 571 (CCPA 1982); In re Pearson, 494 F.2d 1399, 1402, 181 USPQ 641, 644 (CCPA 1974).

The next rejection for our review is that of claims 1, 3, 10 and 12 under 35 U.S.C. § 103(a) as being unpatentable over Singer in view of Gillard. In this instance, the examiner has determined (answer, page 5) that Singer teaches a "sewage" sampler including a vessel assembly having a tubular intake vessel for conducting a withdrawn fluid sample (tube 33) and a storage vessel (36) for storing the fluid sample. What the examiner finds lacking in the disclosure of Singer with respect to the sampler defined in appellant's claim 1 on appeal is any teaching of cooling the withdrawn fluid and stored fluid sample. However, to account for this difference, the examiner points to the sewage sampler of Gillard and its teaching of cooling a fluid sewage sample within sample chamber (13) to thereby maintain it under refrigeration to prevent deterioration of the sample (page 1, col. 2, lines 38-43). From the combined teachings of the above-noted applied patents, the examiner concludes that it would have been obvious to one of ordinary skill in the art at the time of appellant's invention to use a cooling coil in the sample chamber of Singer because Gillard teaches cooling a sewage sample container (similar that in Singer) by surrounding the sample container with a cooling coil (41) provides refrigeration which avoids putrefaction or deterioration of the sample.

The examiner has further determined that positioning cooling coils around Singer's sample storage vessel (36) would provide a "first cooling volume" defined by the internal volume/area of the cooling coils that contains the storage vessel, and a "second cooling volume" defined by the volume both outside of and above the cooling coils and within the sample chamber (13) that contains the tube or intake vessel (33). In the examiner's view, such cooling coils, positioned in Singer in generally the same manner as shown in Gillard, would have a cooling effect upon both the sample storage vessel (36) and the tubular intake vessel (33) positioned within sample chamber (13) of Singer's liquid sewage sampler.

Appellant contends that the examiner's position concerning the combined teachings of Singer and Gillard is entirely based on improper hindsight reasoning, and further urges that neither reference teaches two cooling volumes as presently claimed (brief, pages 18-22). More particularly, appellant urges that Gillard only teaches one, insulated cooling volume (13), while Singer has no cooling volumes at all. However, what appellant has lost sight of is the fact that the cooling coils (41) of Gillard's sampler are adapted to maintain a desired predetermined low refrigeration temperature within the entirety of the insulated sample chamber (13) to prevent deterioration of the fluid sample, i.e., in the space or "first cooling volume" physically located within the confines of the cooling coils themselves which is occupied by the sample storage bottle (16), as well as in the space or "second cooling volume" located, for example, above the storage bottle and cooling coils (41) and adjacent the lower end of inlet conduit (28) through which the fluid sample must pass, as seen in Figure 2 of Gillard. Thus, although Gillard teaches cooling only the insulated sample chamber (13), the examiner has correctly determined that the chamber (13) is made up of two contiguous volumes, each of which is clearly cooled by the cooling coils (41). Moreover, the two volumes are operative to cool the fluid sample both during its passing from the conduit (28) to the storage bottle (16), i.e., within the second cooling volume, and once housed within the storage bottle in the first cooling volume.

In a similar fashion, when cooling coils like those seen at (41) of Gillard are used in the lower section or sample chamber (13) of Singer's fluid sewage sampler so as to gain the advantage of preventing putrefaction and deterioration of the fluid sample, as taught in Gillard, it is clear to us that the sample chamber of Singer would likewise include two cooling volumes, one within the coils directly surrounding the storage container (36) in a lower portion of the chamber, and a second in the space above the storage container through which the conduit (33) passes. Given that the entirety of the sample chamber (13) of Singer would thus be refrigerated by cooling coils to prevent deterioration of the sample, it follows that both the tube (33) carrying sample fluid to the sample storage container and the storage container (36) itself will be cooled by air present in each of the respective volumes noted above.

In light of the foregoing, we will sustain the examiner's rejection of claim 1 under 35 U.S.C. § 103(a) as being obvious over the collective teachings of Singer and Gillard. Regarding claims 3, 10 and 12, we again refer to appellant's grouping of claims found on page 10 of the brief, and conclude that those claims will fall with independent claim 1, from which they depend.

The examiner has next rejected claims 17 and 20 under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over Hansen. In this case, the examiner contends that Hansen teaches a method of dispensing and cooling a sample of a fluid withdrawn at a sampling location by means of a sampler like that seen in the sole figure of the Hansen patent. See particularly page 6 of the answer for the examiner's position regarding Hansen.

On pages 22-24 of the brief, appellant argues that independent claim 17 specifically recites two different quantities: the "withdrawn fluid" and the "fluid sample," and further requires that the "fluid sample" includes "a partial volume of the withdrawn fluid," thus indicating that not all of the withdrawn fluid that flows through the intake vessel is let flow into the storage vessel. In appellant's view, Hansen does not teach the step of letting only a portion of the withdrawn fluid flow into the storage vessel (10). We do not agree. Like the examiner, we point to the disclosure of Hansen at column 3, lines 48-54, as indicating that not all of the withdrawn fluid passing through the inlet tube (20) is allowed to flow into the storage vessel (10), some portion of the fluid sample flows into and through a portion of the inlet tube (20) and remains in the inlet tube, where the surface of the liquid in the tube will heat to a temperature of at least 78.8° Kelvin, thereby ultimately equalizing the pressure in the inlet tube and thus preventing further sampling since the pressure in the inlet tube will be the same as across the metering orifice (28).

In the reply brief (Paper No. 29, pages 5-6), appellant has again attempted to introduce new arguments not presented in the appeal brief. As we noted before, this type of belated argument of the appeal is <u>not</u> permitted (37 CFR § 1.192(a)). Thus, we have not considered the new arguments directed to the step of "lowering the internal temperature of the vessel assembly . . . to a temperature value lower than the initial internal temperature value of the vessel assembly." However, we note the disclosure of Hansen in the paragraph bridging columns 2-3, wherein the vessel assembly apparently has an initial internal temperature of 150° F to drive off contaminants, which temperature is then lowered by the cooling assembly (40) to below 75° Kelvin, with inlet shutoff valve (27) then being opened to allow a sample of the environment (e.g., air) to be drawn into the sample container (10). As for appellant's argument (B) spanning pages 6-7 of the reply brief, we have fully responded to it above, by pointing out where Hansen teaches allowing a "partial volume" of the overall withdrawn fluid to flow into the storage container (10).

Since Hansen clearly teaches a sampler and method like that broadly defined in claim 17 on appeal, the examiner's rejection of claim 17 under 35 U.S.C. § 102(b) will be sustained. As for claim 20, also rejected by the examiner under 35 U.S.C. § 102(b) based on Hansen, in light of appellant's grouping of claims set forth on page 10 of the brief, it is our determination that claim 20 will fall with independent claim 17, from which it depends.

The examiner has also nominally rejected claims 17 and 20 under 35 U.S.C. § 103(a) based on Hansen. However, notwithstanding that we again find no express obviousness analysis made by the examiner, we will sustain this rejection also, since, as we noted earlier, anticipation or lack of novelty is the ultimate or epitome of obviousness.

The last of the examiner's rejections for our review is that of claims 28, 29, 31 and 32 under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over Gillard. We have discussed the Gillard patent

<u>supra</u> in our evaluation of the examiner's rejection of claims 1, 3, 10 and 12 under 35 U.S.C. § 103(a) relying on Singer and Gillard. The examiner's position regarding the rejection of claims 28, 29, 31 and 32 is set forth on pages 7, 8 and 13-15 of the answer. Like the examiner, it is our view that normal operation of the thermostatic control of the refrigeration unit (43) in Gillard, as described at page 3, column 1, thereof, results in performing both the step of "adjusting an internal temperature of the vessel assembly to an initial mean temperature value" and the further step of "lowering the internal temperature of the vessel assembly to a mean temperature value lower than the initial mean temperature value," as set forth in claim 28 on appeal.

When cooling the sample chamber (13) of Gillard during hot weather, the thermostat (45) is set at a predetermined low temperature value that will prevent putrefaction and deterioration of the liquid sewage sample contained in sample bottle (16). However, normal operation of a thermostat involves more than just the exact temperature at which the thermostat has been set to maintain a desired temperature within the chamber (13). In a cooling environment, like that in Gillard, a thermostat normally operates over a small temperature range from slightly above the set point temperature (e.g., 2 degrees above) to slightly below the set point temperature (e.g., 1 degree below). That is, if the thermostat in Gillard were set to maintain a temperature of 35° F in the sample chamber (13), then it would actually allow an initial internal mean temperature of approximately 37° F to exist before turning on the refrigeration unit (43) to cool the sample chamber, and then continue to allow cooling of the sample chamber until a lower internal temperature of approximately 34° F is reached before shutting the refrigeration unit off. Whereupon the sample chamber would be allowed to again rise in temperature to an initial internal mean temperature of approximately 37° F before the refrigeration unit (43) is again turned on to cool the sample chamber to the set point temperature. This type of operation is generally explained at page 3, lines 39-75, of Gillard.

Moreover, if a different set point temperature were desired in sample chamber (13), e.g., 37° F, then that would result in an adjustment of the initial internal mean temperature in the sample chamber to a value of approximately 39° F, instead of the earlier value of approximately 37° F, before the refrigeration unit is turned on. Operation of the refrigeration unit would then continue until such time that the sample chamber reaches approximately 36° F, at which time cooling would cease and the sample chamber would again be allowed to rise in temperature to its initial internal mean temperature of approximately 39° F before the refrigeration unit (43) is again turned on to cool the sample chamber to the set point temperature. In our view, the broad language of claim 17 on appeal requires nothing more.

Although it is true, as noted on page 30 of the brief, that claim 28 recites steps relating to changing both the temperature of the vessel assembly and the temperature of the storage vessel, we observe that nothing in claim 28 indicates or requires that the lower internal temperature of the vessel assembly and the storage temperature of the sample in storage bottle (16) necessarily be different from one another. In Gillard, lowering the internal temperature of the vessel assembly (i.e., inlet conduit 28 and sample bottle 16) to a mean temperature value lower than the initial internal mean temperature value by operation of the refrigeration unit (43) also adjusts the storage temperature of the storage vessel (16) for storing the sample at a storage temperature value lower than the liquid sampling temperature value of the sampling location outside the sampler. Thus, we find that this requirement in claim 28 is also present in Gillard.

As for appellant's argument (brief, page 31) regarding the "partial volume" limitation of claim 28 on appeal, we agree with the examiner (answer, pages 14-15) that the composite sample in storage bottle (16) of Gillard is obtained by accumulating a series of small sample volumes, each of which represents only a "partial volume" of the entire withdrawn liquid making up the composite sample. Moreover, if we view the sampling location in Gillard to be the main sewage discharge pipe to which inlet pipe (17) of Gillard is attached as a by-pass, then the withdrawn fluid would be that which enters the open conduit or channel (18) of the sampler and a partial volume of that withdrawn fluid is then picked-up by ladle (31) and allowed to flow through an intake vessel (conduit 28) into the sample storage vessel (16). Thus, the composite sample in Gillard is obtained from the withdrawn liquid by letting flow a series of small partial volumes of the withdrawn liquid into the storage vessel.

In light of the foregoing, we will sustain the examiner's rejection of claim 28 under 35 U.S.C. § 102(b) as anticipated by Gillard, and that of claims 29, 31 and 32, which depend therefrom, since appellant's grouping of claims on page 10 of the brief allows those claims to fall with independent claim 28.

The examiner has also nominally rejected claims 28, 29, 31 and 32 under 35 U.S.C. § 103(a) based on Gillard. However, notwithstanding that we again find no express obviousness analysis made by the examiner, we will sustain this rejection also, since, as we noted earlier, anticipation or lack of novelty is the ultimate or epitome of obviousness.

To summarize, of the eight rejections before us on appeal, only the examiner's rejection of claims 24 through 32 under 35 U.S.C. § 112, second paragraph, has been reversed, each of the prior art rejections posited by the examiner has been sustained. Thus, the decision of the examiner is affirmed-in-part.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED-IN-PART

CHARLES E. FRANKFORT Administrative Patent Judge	)	
LAWRENCE J. STAAB Administrative Patent Judge	)	BOARD OF PATENT APPEALS AND INTERFERENCES
JOHN P. MCQUADE Administrative Patent Judge	)	

CEF/lbg

CLAIMS

1. A sampler for dispensing and cooling a sample of a fluid withdrawn at a sampling location, said sample to be stored at a selectable storage temperature, said fluid having an instantaneous sampling temperature greater than the storage temperature, said sampler comprising:

a vessel assembly of a predetermined volume, said vessel assembly including a tubular intake vessel for conducting the withdrawn fluid and a storage vessel for storing the fluid sample; and

a cooling assembly thermally coupled to the vessel, said cooling assembly including a first cooling volume being operable to cool the fluid sample to the storage temperature, and a second cooling volume being operable to cool the withdrawn fluid to a temperature below the sampling temperature;

wherein at least the storage vessel is disposed in said first cooling volume, and wherein the vessel assembly is disposed in said second cooling volume at least in sections.

17. A method of dispensing and cooling a sample of a fluid withdrawn at a sampling location by means of a sampler, said sample to be stored at a selectable storage temperature value, said fluid having a sampling temperature value greater than the storage temperature value, said sampler comprising a vessel assembly of a predetermined volume with a tubular intake vessel for conducting the withdrawn fluid, said sampler further comprising a storage vessel for storing the fluid sample, said vessel assembly having an internal temperature, wherein prior to the dispensing said internal temperature of the vessel assembly having an initial internal temperature value being lower than the sampling temperature value; and said sampler further comprising a cooling assembly thermally coupled to the vessel assembly for adjusting said internal temperature of the vessel assembly, said cooling assembly comprising at least a first cooling volume having a first cooling temperature, said cooling temperature being set at the storage temperature value at least after the storing of the fluid sample, said method comprising steps of:

lowering the internal temperature of the vessel assembly by means of the cooling assembly to a temperature value lower than the initial internal temperature value of the vessel assembly;

letting the withdrawn fluid flow through the intake vessel; and

letting a partial volume of the withdrawn fluid flow into the storage vessel to obtain the fluid sample.

24. A method of dispensing and cooling off a sample of a liquid by means of a sampler, said sampler comprising a vessel assembly being operable to conduct and to store said sample, said method comprising steps of:

adjusting an internal temperature of the vessel assembly to an initial mean temperature value;

lowering the internal temperature of the vessel assembly to a mean temperature value lower than the initial mean temperature value;

withdrawing liquid at a sampling location, said sampling location having a liquid temperature value higher than the initial mean temperature value;

letting the withdrawn liquid flow through an intake vessel of said vessel assembly; and

obtaining said sample from said withdrawn liquid by letting flow a partial volume of the withdrawn fluid into a storage vessel of said vessel assembly, said storage vessel having a variable storage vessel temperature;

adjusting said storage vessel temperature for storing said sample at a storage temperature value lower than said liquid sampling temperature value of the sampling location;

wherein said step of lowering the internal temperature of the vessel assembly comprises the step of adjusting the storage vessel temperature to a temperature value lower than the storage temperature value.

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