The opinion in support of the decision being entered today was **not** written for publication in a law journal and is **not** binding precedent of the Board.

Paper No. 30

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte AGAR CORPORATION, INC.

Appeal No. 2000-1022
Reexamination Control No. 90/004,524

ON BRIEF

Before THOMAS, KRASS, and BARRY, Administrative Patent Judges.
BARRY, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134 from the rejection of claims 1-21, 24-31, and 34. We affirm.

BACKGROUND

The invention at issue in this appeal measures the net amounts of oil and water in an emulsion thereof. The accuracy of such a measurement is important to buyers and sellers of oil. If oil contains water, a buyer does not want to pay for the gross amount of liquid. He wants to pay only for the net

amount of oil in the liquid. Net oil and water measurement is also required in oil fields for royalty payments and in enhanced oil recovery fields for pumping rate control.

Prior art devices are available to measure the net amounts of oil and water in an oil-and-water emulsion. Most of the devices rely on the difference between the dielectric constants of oil and water. As such, the devices cannot measure an emulsion in the water continuous phase, i.e., where water surrounds droplets of the oil.[1]

The invention determines how much oil and water are in an oil-and-water emulsion by measuring the energy absorption properties thereof. By measuring such properties, the percentages of oil and water can be determined whether the emulsion is in the oil continuous phase or the water continuous phase. Measuring the energy absorption properties of the emulsion yields a current output that can be plotted on one of two data curves. The first curve represents the oil

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[1] Where an emulsion is in the oil continuous phase, in contrast, oil surrounds droplets of water.

continuous phase; the second curve, the water continuous phase. A comparator determines which phase the emulsion is in to select the proper curve on which the energy absorption is plotted. Each curve has the energy absorption properties of the media plotted against the percentage of water. Plotting the energy absorbed on the proper curve yields the percentage of water present.

Claim 15, which is representative for our purposes, follows:

15. In combination with an oil/water monitor which generates data of the electrical properties of an oil/water mixture, a method for determining the percentage of water present in an oil/water mixture, comprising:

    a. transmitting the data from the oil/water monitor to a computer;

    b. using a comparator to compare the data in the computer to a predetermined value to determine if the oil or the water is in the continuous phase in the mixture; and

    c. selecting one of two data curves, each of said data curves stored in a memory and having an electrical signal plotted against percentage of water, one of said data curves representing water being in the continuous phase in the mixture and the other of said data curves representing oil

being in the continuous phase in the mixture; and

d. reading the selected data curve to determine the percentage of water present in the mixture.

The references relied on in rejecting the claims follow:

Warren et al. (Warren)	3,006,189	Oct. 31, 1961
Herzl	4,048,854	Sep. 20, 1977

Perl, "Complex Microwave Dielectric Properties of Liquids, Solutions and Emulsions" (May 1984).

Claims 1-8, 12-21, 24, 28, 30, 31, and 34 stand rejected under 35 U.S.C. § 103(a) as obvious over Perl in view of Herzl. Claims 9-11, 25-27, and 29 stand rejected under 35 U.S.C. § 103(a) as obvious over Perl in view of Herzl further in view of Warren. Rather than repeat the arguments of the appellant

or examiner in toto, we refer the reader to the briefs and answer[2] for the respective details thereof.

OPINION

In deciding this appeal, we considered the subject matter on appeal and the rejection advanced by the examiner. Furthermore, we duly considered the arguments and evidence of the appellant and examiner. After considering the totality of the record, we are persuaded that the examiner did not err in rejecting claims 1-21, 24-31, and 34. Accordingly, we affirm. Our opinion addresses the grouping and obviousness of the claims.

Grouping of the Claims

When the appeal brief was filed, 37 C.F.R. § 1.192(c)(7) (1998) included the following provisions.

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[2] The appellant argues that the answer should be stricken as late under 37 C.F.R. § 1.193(a)(1) and M.P.E.P. § 1208. (Reply Br. at 1-2.) Such an issues is to be settled by petition to the Director of the U.S. Patent and Trademark Office, however, rather than by appeal to the Board of Patent Appeals and Interferences. See In re Hengehold, 440 F.2d 1395, 1403, 169 USPQ 473, 479 (CCPA 1971).

> For each ground of rejection which appellant contests and which applies to a group of two or more claims, the Board shall select a single claim from the group and shall decide the appeal as to the ground of rejection on the basis of that claim alone unless a statement is included that the claims of the group do not stand or fall together and ... appellant explains why the claims of the group are believed to be separately patentable. Merely pointing out differences in what the claims cover is not an argument ... why the claims are separately patentable.

In general, claims that are not argued separately stand or fall together. In re Kaslow, 707 F.2d 1366, 1376, 217 USPQ 1089, 1096 (Fed. Cir. 1983). When the patentability of dependent claims in particular is not argued separately, the claims stand or fall with the claims from which they depend. In re King, 801 F.2d 1324, 1325, 231 USPQ 136, 137 (Fed. Cir. 1986); In re Sernaker, 702 F.2d 989, 991, 217 USPQ 1, 3 (Fed. Cir. 1983).

Here, the appellant neither alleges that the claims do not stand or fall together nor explains whether the claims are believed separately patentable. He instead, “makes no statement under 37 C. F. R. § 1.192(c)(7)." (Appeal Br. at 4.) Therefore, claims 1-21, 24-31, and 34 stand or fall

together as a group. We select claim 15 to represent the group. Next, we address the obviousness of the claims.

Obviousness of the Claims

We begin by noting the following principles from In re Rijckaert, 9 F.3d 1531, 1532, 28 USPQ2d 1955, 1956 (Fed. Cir. 1993).

> In rejecting claims under 35 U.S.C. Section 103, the examiner bears the initial burden of presenting a prima facie case of obviousness. In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992).... "A prima facie case of obviousness is established when the teachings from the prior art itself would appear to have suggested the claimed subject matter to a person of ordinary skill in the art." In re Bell, 991 F.2d 781, 782, 26 USPQ2d 1529, 1531 (Fed. Cir. 1993) (quoting In re Rinehart, 531 F.2d 1048, 1051, 189 USPQ 143, 147 (CCPA 1976)).

We next find that the references represent the level of ordinary skill in the art. See In re GPAC Inc., 57 F.3d 1573, 1579, 35 USPQ2d 1116, 1121 (Fed. Cir. 1995)(finding that the Board of Patent Appeals and Interference did not err in concluding that the level of ordinary skill was best

determined by the references of record); In re Oelrich, 579 F.2d 86, 91,
198 USPQ 210, 214 (CCPA 1978) ("[T]he PTO usually must evaluate ... the level of ordinary skill solely on the cold words of the literature."). Of course, "'[e]very patent application and reference relies to some extent upon knowledge of persons skilled in the art to complement that [which is] disclosed ....'"
In re Bode, 550 F.2d 656, 660, 193 USPQ 12, 16 (CCPA 1977) (quoting In re Wiggins, 488 F.2d 538, 543, 179 USPQ 421, 424 (CCPA 1973)). Those persons "must be presumed to know something" about the art "apart from what the references disclose."
In re Jacoby, 309 F.2d 513, 516, 135 USPQ 317, 319 (CCPA 1962). With these principles in mind, we consider the appellant's first three arguments, which concern the examiner's prima facie case of obviousness.

First, the appellant argues, "one of ordinary skill in the art would not be motivated to combine Perl with Herzl." (Appeal Br. at 14.) The examiner answers, "Herzl teaches the

advantageous use of computers ...." (Examiner's Answer at 4.)

The prior art would have suggested combining teachings of Herzl with those of Perl. “Obviousness is not to be determined on the basis of purpose alone.” In re Graf, 343 F.2d 774, 777, 145 USPQ 197, 199 (CCPA 1965). It is sufficient that references suggest doing what an appellant did, although the appellant's particular purpose was different from that of the references.
In re Heck, 699 F.2d 1331, 1333, 216 USPQ 1038, 1040 (Fed. Cir. 1983)(citing In re Gershon, 372 F.2d 535, 539, 152 USPQ 602, 605 (CCPA 1967)). “‘[T]he question is whether there is something in the prior art as a whole to suggest the desirability, and thus the obviousness, of making the combination.’” In re Beattie, 974 F.2d 1309, 1311-12, 24 USPQ2d 1040, 1042 (Fed. Cir. 1992) (quoting Lindemann Maschinenfabrik GMBH v. American Hoist & Derrick Co., 730 F.2d 1452, 1462, 221 USPQ 481, 488 (Fed. Cir. 1984)).

Here, Perl teaches a method for determining whether an emulsion is in the oil continuous phase or the water continuous phase and for determining the volume of water in the emulsion. Specifically, "[a] novel method for the simultaneous determination of emulsion type and water content from complex dielectric measurements is described." P. ix. The method makes use of data curves or plots. Specifically, "[t]he examination of loss tangent in Figure 8 ... allows the immediate, unambiguous determination of emulsion type for which either Figure 6 or 7 provides accurate determination of the volume fraction of water." P. 32.

Persons skilled in the art would have known that measurements and calculations generally lend themselves to performance by a computer. See, e.g., Engineering Research Assocs., High-Speed Computing Devices 3 (1950)(copy attached) ("The existence and importance of ... computational problems have fostered the development of machine aids to computation."). More specifically, U.S. Patent 4,340,938 (Rosso), which was submitted by the appellant, evidences that persons skilled in art would also have known that measurements

and calculations of oil and water percentages specifically lend themselves to performance by "[a] net oil computer ...." Col. 7, l. 1. Accordingly, Perl's complex measurements and calculations would have suggested themselves to performance by a computer. In fact, the reference teaches that the measurements "lend themselves to interfacing in a computer process control scheme." P. 75.

For its part, Herzl teaches a computer process control scheme employing a microcomputer to perform complex calculations to determine the volumes of oil and water in a metered fluid stream. Specifically, "the micro-computer ... is then able to solve for
X and Y, the respective volumes of oil and water." Col. 6, ll. 43-49. We are persuaded that Perl's teaching of determining the volume of water in an emulsion using complex measurements and calculations that lend themselves to a computer process control scheme and Herzl's teaching of employing a microcomputer to perform complex calculations to determine the volume of water in a fluid stream would have

suggested the desirability, and thus the obviousness, of performing Perl's method with a computer.

Second, the appellant argues, "Herzl ... fails to disclose the use of a comparator to select only one of two data curves ...." (Appeal Br. at 11.) The examiner answers, "Perl teaches the necessity of comparing an electrical signal to a criteria to determine which of the two curves is to be used .... The step of making the comparison to choose between two curves is clearly taught by Perl ...." (Examiner's Answer at 6.)

"'[T]he main purpose of the examination, to which every application is subjected, is to try to make sure that what each claim defines is patentable. [T]he name of the game is the claim ....'" In re Hiniker Co., 150 F.3d 1362, 1369, 47 USPQ2d 1523, 1529 (Fed. Cir. 1998)(quoting Giles S. Rich, The Extent of the Protection and Interpretation of Claims--American Perspectives, 21 Int'l Rev. Indus. Prop. & Copyright L. 497, 499, 501 (1990)). "In the patentability context, claims are to be given their broadest reasonable

interpretations. Moreover, limitations are not to be read into the claims from the specification."

In re Van Geuns, 988 F.2d 1181, 1184, 26 USPQ2d 1057, 1059 (Fed. Cir. 1993)(citing In re Zletz, 893 F.2d 319, 321, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989)).

Here, representative claim 15 specifies in pertinent part the following limitations:

> selecting one of two data curves, each of said data curves stored in a memory and having an electrical signal plotted against percentage of water, one of said data curves representing water being in the continuous phase in the mixture and the other of said data curves representing oil being in the continuous phase in the mixture ....

Giving the claim its broadest reasonable interpretation, the limitations do not require using a comparator to perform a selection. They merely recite selecting one of two data curves.

The combination of references would have suggested the limitations. "Non-obviousness cannot be established by attacking references individually where the rejection is based upon the teachings of a combination of references." In re Merck & Co., 800 F.2d 1091, 1097, 231 USPQ 375, 380 (Fed. Cir. 1986)(citing In re Keller, 642 F.2d 413, 425, 208 USPQ 871, 881 (CCPA 1981)). In determining obviousness, furthermore, a reference "must be read, not in isolation, but for what it fairly teaches in combination with the prior art as a whole." Id., 231 USPQ at 380.

Here, the rejection is based on a combination of Perl and Herzl. As mentioned regarding the first argument, Perl teaches employing two data curves. The first curve represents the oil-in-water (O/W) phase, i.e., oil continuous phase, of

an emulsion. The second curve represents the water-in-oil (W/O) phase, i.e., the water continuous phase, of the emulsion. Figures 6-14 of the reference show the two data curves.

Each data curve has an electrical measurement plotted against the percentage of water. Figure 8, for example, plots the loss tangent of the emulsion (,''/ ,') against the volume fraction of water, i.e., the percentage thereof. The figure shows that the loss tangent of the emulsion "is lower for emulsions of water-in-oil (W/O) than for those of O/W over the entire range of compositions and frequencies investigated ...." P. 21.

The appellant does not contest that Perl selects one of its two data curves. (Reply Br. at 6 ("Assuming *arguendo* that Perl teaches the selection of a single data curve ....").) For its part, the reference teaches the claimed selection. The method of Perl determines whether an emulsion is an O/W emulsion or a W/O emulsion. Specifically, it demonstrates "the ability of complex dielectric property measurements at

microwave frequencies to determine macroemulsion type ....

The term macroemulsion refers to a fluid dispersion of either

oil-in-water (O/W), or water-in-oil (W/O) ...." P. 6. Such a

determination implies selection of

either the O/W curve or the W/O curve. Specifically, "[t]he examination of loss tangent in Figure 8, however, allows the immediate, unambiguous determination of emulsion type ...." P. 32.

The method also determines the volume of water present in the emulsion. The latter determination requires selecting either the O/W curve or the W/O curve. The measured electrical property of the emulsion, e.g., its loss tangent, is then plotted on the selected curve to identify the volume of water. Specifically, "[t]he examination of loss tangent in Figure 8, however, allows the immediate, unambiguous determination of emulsion type for which either Figure 6 or 7 provides accurate determination of the volume fraction of water." P. 32.

Because Perl teaches selecting either the O/W curve or the W/O curve, we are persuaded that the teachings of Perl and Herzl in combination with the prior art as a whole would have suggested the claimed limitations of "selecting one of two data curves, each of said data curves stored in a memory and

having an electrical signal plotted against percentage of water, one of said data curves representing water being in the continuous phase in the mixture and the other of said data curves representing oil being in the continuous phase in the mixture ...."

Third, the appellant argues, "Herzl's teaching diverges from, and is in direct contradiction to, the limitations of Appellant's invention, involving a comparator or a comparison step to preclude the need to use both equations or both memories." (Appeal Br. at 9.) The examiner answers, "merely because Herzl teaches a different method of measuring the oil/water content of a liquid than that taught by Perl is not tantamount to teaching away from the combination." (Examiner's Answer at 4.)

Teaching an alternative or equivalent method does not teach away from the use of a claimed method. In re Dunn, 349 F.2d 433, 438, 146 USPQ 479, 483 (CCPA 1965). To coin a phrase, "teaching a way is not teaching away." See Lance

Leonard Barry, "Teaching a Way is not Teaching Away," 79 J. Pat. & Trademark Off. Soc'y 867 (1997).

Here, Perl teaches a method for determining the volume of water present in an emulsion (as well as determining whether the emulsion is in the oil continuous phase or the water continuous phase). The method involves selecting one of two data curves.

For its part, Herzl teaches another method for determining the volume of water present in an emulsion. The method employs a microcomputer that looks-up data curves stored in a memory to calculate the volume of water. Specifically, "the micro-computer, using the temperature data entered therein, provides the water and oil density values in the above equation, and entering the total volume value derived from converter **16** and the mixture density value derived from divider **18**, is then able to solve for X and Y, the respective volumes of oil and water." Col. 6, ll. 43-49.

Because the method of Herzl involves looking-up both "the relationship between water density versus temperature and oil density versus temperature," col. 6, ll. 29-32, the method

represents an alternative or equivalent method to the claimed method. It does not teach away from the claimed method. To the contrary, we are persuaded that Herzl's teachings would have suggested storing Perl's data curves in memory and using a computer to select one of the data curves to calculate the volume of water.[3] Because the prior art would have suggested combining teachings of Herzl with those of Perl; Perl would have suggested selecting one of two data curves; and Herzl would have suggested storing Perl's data curves in memory and using a computer to select one of the data curves to calculate the volume of water, we are persuaded that the evidence establishes a very strong prima facie case of obviousness.

We proceed by noting the following principles. "After a prima facie case of obviousness has been established, the burden of going forward shifts to the applicant." In re Piasecki,

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[3] Furthermore, Rosso evidences that selecting between programs stored in the memory of a net oil computer was within the level of ordinary skill in the art. Specifically, "it is emphasized that a prom unit **11** is available to contain multiple programs. Any of these programs could be selected ...." Col. 5, ll. 57-59.

745 F.2d 1468, 1472, 223 USPQ 785, 788 (Fed. Cir. 1984). "After evidence or argument is submitted by the applicant in response, patentability is determined on the totality of the record, by a preponderance of evidence with due consideration to

persuasiveness of argument." Oetiker, 977 F.2d at 1445, 24 USPQ2d at 1444 (citing In re Spada, 911 F.2d 705, 707 n.3, 15 USPQ2d 1655, 1657 n.3 (Fed. Cir. 1990); In re Corkill, 771 F.2d 1496, 1500, 226 USPQ 1005, 1008 (Fed. Cir. 1985); In re Caveney, 761 F.2d 671, 674, 226 USPQ 1, 3 (Fed. Cir. 1985); In re Johnson, 747 F.2d 1456, 1460, 223 USPQ 1260, 1263 (Fed. Cir. 1984)). With these principles in mind, we consider the appellant's fourth, and final, argument, which concerns the examiner's treatment of secondary considerations.

The appellant argues that the examiner failed to fully consider the evidence of secondary considerations. (Appeal Br. at 23.) The examiner answers, "all evidence provided by Appellant in previous responses with respect to acquiescence was considered." (Examiner's Answer at 9.) He adds, "the

evidence discussed by Appellant was provided in the Response to the Final Office action received 11/27/98 and was considered."

(Id. at 10.)

The record shows that the examiner fully considered the appellant's evidence of secondary considerations. Evidence of such consideration is found in the second Office action, the final rejection, and the answer. The second Office action indicates that the examiner considered "[t]he declaration of Agar assert[ing] two secondary considerations .... long felt need and commercial success." (Paper No. 14 at 12.) The final rejection reveals that he considered the "[p]atentee's arguments filed 7/20/98," (Final Rejection at 10); "[p]atentee's exhibits," (id. at 11); "the declaration under 37 C.F.R. 1.132," (id.); and "the deposition of Mr. Seal." (Id. at 13.) The answer indicates that the examiner considered "the arguments made by Appellant ... drawn to the effectiveness of the evidence," (Examiner's Answer at 9); "all evidence provided by Appellant in previous responses with respect to acquiescence," (id.); "the evidence discussed by

Appellant," (id. at 10); and "two articles asserted to show long felt need." (Id.) Regarding the answer, we note that the examiner's arguments regarding secondary considerations contained therein are uncontested. Although the appellant filed a reply brief in response to the answer, he did not respond to the remarks regarding secondary considerations contained therein.

Although secondary considerations "must be considered, they do not control the obviousness conclusion." Newell Cos. v. Kenney Mfg. Co., 864 F.2d 757, 768-69, 9 USPQ2d 1417, 1426-27 (Fed. Cir. 1988)(citing Custom Accessories, Inc. v. Jeffrey-Allan Indus., Inc ., 807 F.2d 955, 960, 1 USPQ2d 1196, 1199 (Fed. Cir. 1986) and EWP Corp. v. Reliance Universal Inc., 755 F.2d 898, 908, 225 USPQ 20, 26 (Fed. Cir. 1985)). With this principle in mind, we address the appellant's evidence of industry acquiescence, professional approval, and long felt need.

Regarding industry acquiescence, the appellant submitted "the Second Rule 132 Declaration of Joram Agar ('Second Agar

Declaration').... This declaration provided testimony that Agar Corporation, the assignee of the '680 Patent, had licensed the '680 Patent to Phase Dynamics." (Appeal Br. at 16.) The examiner answers, "there is 'no showing of why the product was licensed from Agar'." (Examiner's Answer at 9.)

The evidence of licensing is not persuasive of nonobviousness. "While evidence of licenses under the patent may be persuasive of industry respect for the claimed invention ... such evidence will not ... be accepted uncritically." Robert L. Harmon, Patents and the Federal Circuit 150 (4th ed. 1998). To wit, we note the following principles from EWP Corp., 755 F.2d at 906-07, 225 USPQ at 25.

> When ... the PTO issues a patent because the examiner did not consider prior art teaching the very technique essential to the claimed invention ... it is not unusual to see astute businessmen capitalize on it by erecting a temporarily successful licensing program thereon. Such programs are not infallible guides to patentability. They sometimes succeed because they are mutually beneficial to the licensed group or because of business judgments that it is cheaper to take licenses than to defend infringement suits, or for other reasons unrelated to the unobviousness of the licensed subject matter. Such a "secondary consideration" must be carefully appraised as to its evidentiary value ....

Here, there is no indication that the examiner considered Perl and Herzl in issuing the original patent or its reexamination certificate. To the contrary, neither reference is listed on the face of the patent or the face of the certificate. In view of this omission, the licensing to Phase Dynamics it is neither unusual nor an infallible guide to patentability. The appellant fails to show that the licensing evidences anything more than "the impact on the market that obtaining a patent with its presumption of validity can have." Akrie Lures Inc. v. Gene Larew Tackle, Inc., 912 F.Supp. 422, 428, 38 USPQ2d 1300, 1305 (W.D. Ark. 1996).

Regarding professional approval, the appellant argues, "[i]n the Second Agar Declaration, Appellant submitted additional testimony specifically identifying the prior evidence that Appellant had submitted of 'widespread industry praise and acceptance of the invention claimed in the '680 Patent' (Second Agar Declaration, ¶ 6)." (Appeal Br. at 18.) The declaration, in turn, cites "documents from (a) Shell Oil, (b) Amoco,

(c) Shell Internationale, (d) Shell Canada, and (e) The Texas Railroad Commission," (2d Agar Decl., ¶ 6), as evidence thereof. The examiner answers, "Appellant provides no argument for the effectiveness of his evidence." (Examiner's Answer at 10.)

These cited documents are not as persuasive as the appellant argues. Although the document from Shell Oil generalizes that "[t]he Agar Net Oil Computer will determine water content of crude streams with sufficient accuracy," T.L. Stewart, Water Measurement in Crude Streams Containing Water-Continuous and Oil-Continuous Mixtures, ii (Sept. 1986), for example, it includes a caution. Specifically, "[m]ore work needs to be done in the critical range of mixtures between the oil-continuous and water-continuous, about 50 to 70 percent water." Id. at 1. Although the document from Shell Internationale generalizes that "[t]he Agar probes are capable of measuring the water cut over the full range from 0-100%," J.J. den Boer, Functional Evaluation of the Agar Water-Cut Monitors OW-102 and OC-102, iv (Nov. 1990), for another example, it includes a warning. Specifically, "in the water

external phase, water cut above 50%, the meter curve is not uniform at all conditions, it was found to be susceptible to changes in the liquid velocity and the liquid temperature." Id. at 4. Accordingly, the document limits its recommendation of the Agar probes to situations "where the mixture is likely to be in the oil external phase (water cut 0-40%)." Id. at iv.

Regarding long-felt need, the appellant submitted "five U.S. patents" (Appeal Br. at 19), and "two articles ...." (Id.) The examiner answers that the references "fail[] to teach a long felt need for Appellant's claimed invention ...." (Examiner's Answer at 10.)

The references belie long-felt need. An allegation that there may have been an unsolved problem in the art "is not evidence of unobviousness unless it is shown ... that the widespread efforts of skilled workers having knowledge of the prior art had failed to find a solution to the problem." In re Allen, 324 F.2d 993, 997, 139 USPQ 492, 495 (CCPA 1963)

(citing Toledo Pressed Steel Co. v. Standard Parts, Inc., 307 U.S. 350, 356, 41 USPQ 593, 595 (1939)). Once another supplies a solution to a problem, moreover, there is no longer a long-felt need. Newell, 864 F.2d 757, at 768, 9 USPQ2d at 1426.

Here, although each of the patents and articles submitted by the appellant describes a need or problem, all but one also describes a solution (other than the appellant's invention) to the need or problem. Specifically, although Rosso describes a need "to continuously detect the percentage of oil and water ... in streams of well production," col. 1, ll. 15-18, the patent also describes how its net oil computer satisfies the need. Specifically, "[v]oltage pulses, whose frequency represents the flow rate of a stream of oil well production fluids, generate a train of clock pulses. Each train of clocked pulses is characterized into a non-linear analog ramp and compared with a matching non-linear analog signal representative of the percentage of water in the oil/water mixture of production fluids." Abs., ll. 1-7.

Although U.S. Patent No. 3,778,706 (Thompson) notes that "[i]t has long been a problem in accurately measuring dielectric constants of fluid media that the media themselves have an appreciable conductivity," col. 1, ll. 36-39, Thompson also explains that its dielectric constant measurement method solves the problem. Specifically, "[i]t is therefore an object of this invention to directly measure the real part of the dielectric constant of a fluid medium with an appreciable conductivity or which contains conducting impurities. It is a further object of this invention to directly measure the dielectric constant of a fluid medium by making measurements which are relatively insensitive to any conduction current flowing in the dielectric medium." Col. 2, ll. 18-26.

Although U.S. Patent No. 3,792,347 (Hawley) observes that "[p]rior devices of the foregoing type are usually off-line," col. 1, ll. 8-9, Hawley also describes how its oil well tool provides an improvement. Specifically, "there is provided a tool for insertion into an oil well for measuring the

percentage of oil in an oil and water mixture in the well." Id. at ll. 64-67.

Although U.S. Patent No. 3,833,340 (Jones) opines, "[i]n field work, such as sampling of oil/water slops, there is not, at present, a simple means for determining the water content of an oil-water mixture," col. 1, ll. 11-14, Jones explains how its process offers such a means. Specifically, "[a]nother object of the present invention is to provide an improved process for determining the water content of an oil-water mixture." Id. at ll. 18-20.

Although U.S. Patent No. 4,198,207 (Ladov) complains, "[c]urrent methods for water determination are time-consuming, difficult to run and expensive," col. 1, ll. 21-22, Ladov asserts that its method is better. Specifically, "[t]he present invention eliminates this time consuming analysis by allowing a simple apparatus to be set up at the desired site for essentially instantaneous determinations of water." Col. 2, ll. 48-51.

Although the July 1992 issue of Control notes a desire "to make our cut closer to 1% oil in water," p. 48, it also reports that probes from another manufacturer satisfy the desire.

Specifically, "[w]e have had excellent results using vertically spanned Drexelbrook, Horsham, Pa. radio frequency (RF) probes ...." P. 49.

To establish long-felt need, furthermore, an appellant must "bring forward evidence of his satisfaction of the need." In re Cavanaugh, 436 F.2d 491, 496, 168 USPQ 466, 471, (CCPA 1971). Because it was published almost ten years after the appellant's patent was issued, if the June 1998 issue of Hydrocarbon Processing does show a long-felt need, it implies that the appellant's invention failed to satisfy the need.

We have considered the totality of the record including the evidence and arguments asserting the secondary considerations of industry acquiescence, professional approval, and long-felt need. Upon full consideration of all the evidence, we are convinced that it presents a clear and very strong case of obviousness based on the teachings of the references and the knowledge of persons skilled in the art. Therefore, we affirm the rejection of claims 1-8, 12-21, 24, 28, 30, 31, and 34 as obvious over Perl in view of Herzl and

of claims 9-11, 25-27, and 29 as obvious over Perl in view of Herzl further in view of Warren. Our affirmance is based only on the arguments made in the brief. Arguments not made therein are not before us, are not at issue, and are considered waived.

CONCLUSION

In summary, the rejection of claims 1-8, 12-21, 24, 28, 30, 31, and 34 under 35 U.S.C. § 103(a) as obvious over Perl in view of Herzl is affirmed. Likewise, the rejection of claims 9-11,
25-27, and 29 under 35 U.S.C. § 103(a) as obvious over Perl in view of Herzl further in view of Warren is also affirmed.

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

AFFIRMED

JAMES D. THOMAS Administrative Patent Judge	)	
ERROL A. KRASS Administrative Patent Judge	)	BOARD OF PATENT APPEALS AND INTERFERENCES
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