

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 17

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte RICHARD A. MURRAY,
WILLIAM M. FRIES,
and DAVID A. PURCELL

Appeal No. 2001-0073
Application 08/966,894¹

ON BRIEF

Before HAIRSTON, BARRETT, and GROSS, Administrative Patent Judges.

BARRETT, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134(a) from the final rejection of claims 22-26.

¹ Application for patent filed November 10, 1997, entitled "Ink Jet Printer Incorporating High Volume Ink Reservoirs," which is a continuation of Application 08/433,792, filed May 3, 1995, now U.S. Patent 5,686,947, issued November 11, 1997.

We reverse.

BACKGROUND

The invention relates to a replaceable ink jet cartridge which is designed to be refilled from an external ink reservoir via an ink supply tube between the cartridge and the reservoir. A connecting tube is coupled to the ink supply tube and is designed to extend into the interior of the cartridge. The cartridge has a first fitting, which may be a luer-lock² fitting as recited in claim 16, molded into the top panel of the cartridge which mates with a second fitting secured to the connecting tube.

Claim 26 is reproduced below.

26. A replaceable ink jet cartridge for an ink jet printer comprising:

² "The luer fitting or luer-lock fitting is among the most widely used connectors in the medical industry. Its purpose is to 'connect two medical devices in a liquid-leak-proof and mechanically secure manner.' Applications for these male and female tapered, interlocking fittings include, but are not limited to, syringes, needles, stopcocks, IV sets, and diagnostic and therapeutic catheters." (Footnote omitted.) Lane and Miller, Strain and Short-Term Creep Behavior of Thermoplastics in Luer Taper Fitting Applications, Medical Plastics and Biomaterials (Jan. 1998), reprinted <http://www2.devicelink.com/mpb/archive/98/01/003.html>. A luer connector consists of round, tapered mating surfaces, male and matching female. A luer-slip connection is put together with a half-twist. A luer-lock connection has a threaded locking collar on the male luer connector, which mates with ears on the female luer connector.

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a housing having an interior region and a top panel covering said interior region, wherein said interior region is devoid of both foam and ink supply tubing;

a luer-lock fitting molded into said top panel, wherein said luer-lock fitting defines an opening into said interior region for fluid communication therewith, and wherein said luer-lock fitting is configured to mate in a substantially air tight seal with a mating luer-lock fitting on an ink supply tube provided as part of said ink jet printer.

The examiner relies on the following references:

Erickson	5,367,328	November 22, 1994
McAffer et al. (McAffer)	5,454,409	October 3, 1995

Claims 22-26 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Erickson and McAffer.

We refer to the final rejection (Paper No. 9) (pages referred to as "FR__") and the examiner's answer (Paper No. 13) (pages referred to as "EA__") for a statement of the examiner's rejection, and to the brief (Paper No. 12) (pages referred to as "Br__") and reply brief (Paper No. 14) (pages referred to as "RBr__") for a statement of appellants' arguments thereagainst.

OPINION

Factual findings

Erickson, figures 1 and 6, discloses a disposable ink jet cartridge 12 which is refillable from an external ink reservoir container 14 via flexible tubing 110 (which is part of the connecting piping system 16). The flexible tubing 110 corresponds to the claimed "ink supply tube." A formable but

rigid tube 62 corresponds to the claimed "connecting tube." The rigid tube 62 is coupled to the ink supply tube 60 via a seal 66 which overlaps the ends of tubing 62 and 110. The rigid tube 62 fits through an aperture 27 in the top panel 26 (mislabeled as 126 in figure 1) of the cartridge and a lower end 61 is located approximately at the bottom of the ink supply container 24, shown more or less proximate to the print head 22. In Erickson, the rigid tube 62 is joined to the cartridge top 26 in an airtight seal and includes appropriate strain relief (col. 8, lines 38-39; col. 13, lines 5-7), such as by gluing the tubing to the aperture 27, thereby sealing the ink jet cartridge and providing the appropriate strain relief (col. 8, lines 29-31; col. 13, lines 21-23 & 29-32).

The differences between Erickson and claim 22 are that Erickson does not disclose the claimed "first fitting integrally molded into said top panel . . ." or the limitation beginning with "a second fitting" The difference between the cartridge in Erickson and claim 26 is that the interior of the cartridge in Erickson is not "devoid of . . . ink supply tubing" and Erickson does not disclose the limitation beginning with "a luer-lock fitting molded into said top panel"

McAffer discloses a transfer adaptor 21 for effecting fluid communication, such as from an ampoule 61 to a vial 67 in figure 2. The transfer adaptor 21 has a rigid cannula 23 with a

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central bore 25. The upper end of the cannula is integral with a female luer 29 which acts as a connector and defines a receiving chamber 31 which communicates with the bore. The ampoule 61 has a male luer 63. The male luer 63 of the ampoule 61 is introduced into the receiving chamber 31 of the female luer 29 and the adaptor with the ampoule attached is then pushed over the neck of the vial 67 so that the tip of the cannula punctures the rubber septum 69 of the vial and the adaptor is held in place by clips 45, 47. A vacuum in the vial draws in water from the ampoule through the adapter to reconstitute an injectable compound. The male luer of a syringe is then inserted into the receiving chamber 31 of the female luer 29 and the syringe is operated to draw up a desired amount of the vial contents.

Analysis

Appellants argue: (1) McAffer is nonanalogous art; (2) there is no suggestion to combine McAffer with Erickson; and (3) the combination of McAffer and Erickson does not suggest the claimed invention.

(1)

Appellants argue (Br7-8) that McAffer is not analogous prior art (i.e., it is not within the scope of the prior art) because it is not within the appellants' field of endeavor, defined as "ink jet printers having large volume ink supplies" (Br7), and is

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not reasonably pertinent to the particular problem with which the inventor was involved, which is stated to be the "problem of excess waste, high manufacturing cost, and the lack of user friendliness of prior art large volume ink supply systems and their components" (Br7-8).

The examiner finds that McAffer is analogous as evidenced by the fact that McAffer is classified in Class 141, directed to "fluent material handling," and that U.S. Patent 5,495,877 to Schwenk (front page attached to the examiner's answer), directed to filling an ink jet cartridge, is also classified in Class 141 (EA3-4). (The examiner further states that the end product of appellants' invention and Erickson are the same and that the claimed invention is merely an obvious rearrangement of the parts in Erickson (EA4-5); however, this reasoning goes to the issue of obviousness rather than nonanalogous art.)

Appellants respond that the field of endeavor is ink jet printing, not fluid handling, and that the problems associated with and solved by appellants' invention are different from those addressed in McAffer and, so, McAffer is not analogous (RBr1-2).

Patent and Trademark Office classification is inherently weak evidence of analogous and nonanalogous prior art. See In re Mlot-Fijalkowski, 676 F.2d 666, 669 n.5, 213 USPQ 713, 715 n.5 (CCPA 1982). Thus, the examiner's reasoning about classification is not persuasive. Nevertheless, we find that

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McAffer is analogous prior art. The particular problem with which the inventors were involved was how to couple a tube to an ink jet cartridge, not the non-specific overall "problem of excess waste, high manufacturing cost, and the lack of user friendliness of prior art large volume ink supply systems and their components" (Br7-8). McAffer is reasonably pertinent to the problem facing the inventors, as properly defined.

(2)

The rejection states (FR3):

Because luer-lock coupler was art-recognized equivalents for transferring fluid at the time the invention was made, one of ordinary skill in the art would have found it obvious to substitute the one of Erickson for the one of McAffer et al for the purpose of facilitating fluid transfer.

Appellants argue that there is no suggestion or motivation to combine McAffer with Erickson (Br9-10). It is argued that the examiner does not state what structures of Erickson this supposed equivalent is being substituted for (Br9), although appellants presume it is the tubing coupler (Br10). Appellants state that the issue is obviousness, not equivalence (Br10). It is argued that there is no suggestion in McAffer to use fittings, luer-lock or otherwise, which are integral to the top panel of an ink-jet cartridge or that the coupler could be used in any other field or application (Br9). Appellant argues that Erickson does not cure this deficiency because it has no fitting as part of the cartridge top panel, the cartridge has some type of permanently

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glued-on section of tubing, and there is no suggestion that couplers may be provided in other locations (Br9-10).

The examiner responds that rearrangement of the components of Erickson would meet the claimed limitations and McAffer is an alternative coupler for transferring fluid (EA5). The examiner earlier stated that the end product of appellants' invention and Erickson are the same and that the claimed invention is merely an obvious rearrangement of the parts in Erickson (EA4-5). The examiner states that fitting 66 in Erickson is part of the cartridge top panel via tube 62 and the tube inserted into the cartridge is the same as appellants' concept of inserting a tube portion into the cartridge (EA5-6).

We presume, like appellants, that the examiner's intended position is that it would have been obvious to substitute the luer fitting of McAffer for the in-line seal 66 of Erickson and to mount the luer fitting integral with the top of the cartridge. The examiner does not clearly address the question of motivation. It appears that the examiner considers that it would have been obvious to locate the in-line fitting (seal 66) in Erickson to be integral with the top of the cartridge because this is a mere rearrangement of parts. This is a mere conclusion based on a disfavored per se rule, rather than on solid factual evidence and obviousness reasoning, and is not persuasive. While we believe that it was within the level of knowledge of one of ordinary

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skill in the tubing connector art that a connector can be located either in-line, as shown in Erickson, or on the container to which the tubing goes, so as to make the use of either location obvious, the examiner has presented no evidence of this fact (a simple catalog page showing both types of connectors as alternative would have been sufficient). Thus, the examiner has failed to establish motivation for the proposed modification. We will not base a rejection on our own knowledge. See In re Zurko, 258 F.3d 1379, 1386, 59 USPQ2d 1693, 1697 (Fed. Cir. 2001) ("With respect to core factual findings in a determination of patentability, however, the Board cannot simply reach conclusions based on its own understanding or experience -- or on its assessment of what would be basic knowledge or common sense.").

We do not agree with the examiner's reasoning that the fitting 66 in Erickson is part of the cartridge top panel via tube 62 because this distorts the teachings of Erickson. Moreover, the tube 62 is permanently part of the cartridge and violates the limitations of claims 22 and 26 that the interior of the cartridge is devoid of ink supply tubing when the second fitting is not mated with the cartridge fitting.

While we agree that one skilled in the art would have known to use known alternative fittings to the in-line seal 66 of Erickson, the examiner has not explained why one of ordinary skill in the art would have been motivated to use the coupler in

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McAffer which is not a tubing coupler or an in-line coupler. It appears that the main reason for using McAffer is because it mentions "luer-lock" couplings, as disclosed by appellants, rather than because of any teachings in McAffer itself. This suggests the rejection is based on hindsight.

In addition, the examiner has not stated the motivation for attaching the connecting tube to the second fitting so that it extends through the opening and is removed from the interior region when the second fitting is not mated to the first fitting. Absent some further modification, it must be assumed that the cannula 23 in McAffer corresponds to the claimed connecting tube, is fixed to the first fitting, and remains in the cartridge.

For the reasons stated above, we find that the examiner has not factually established motivation for the proposed modifications and, thus, has failed to establish a prima facie case of obviousness. Nevertheless, this is not the sole reason why the rejection must be reversed.

(3)

Appellants argue that the combination of McAffer and Erickson does not suggest the invention (Br10-13). It is argued that the claims require that the cartridge contains no ink supply tubing, while both McAffer and Erickson include some form of supply tube. In particular, the coupler in McAffer has an integral cannula 23 which extends downward into the fluid

reservoir and Erickson has some form of tube for fluid transfer being made part of the fluid reservoir (Br11-12). Appellant argues that "[t]he Examiner's statement that 'upon modification of Erickson to utilize the luer-lock coupler of McAffer et al., the interior region would be devoid of ink supply tubing' is therefore factually incorrect" (Br11).

The examiner states that the interior of the reservoir has no ink supply tubing before the connection via couplers and McAffer clearly shows that lower end of the tubing (cannula) 23 is not part of the container (vial) 67 and that appellants' claimed invention is devoid of tubing only prior to connecting with the fluid supply (EA6).

This reasoning is not persuasive. Both claims 22 and 26 require a "fitting molded into said top panel." The adaptor 21 in McAffer must be in place on the vial 67 to attempt to meet the claim limitation. The female luer fitting 29 in McAffer corresponds to the claimed "fitting molded into said top panel" and, absent discussion by the examiner, it is assumed that the cannula 23 corresponds to the claimed connecting tube. The cannula 23 is fixed to the "fitting molded into said top panel," and not to the "second fitting" (claim 22) or "a mating luer-lock fitting" (claim 26). The cannula 23 is always in the vial 67 when the adaptor 21 is in place (as it must be to meet the limitation of a "fitting molded into said top panel") regardless

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of whether the mating fitting is attached. This does not satisfy the limitation that "said connecting tube is completely removed from said interior region" (claim 22) when the second fitting is not mated to the first fitting, or the limitation that "said interior region is devoid of . . . ink supply tubing" (claim 26).

The examiner further states that the "Erickson ink supply tube would be removed from the cartridge when it is rearranged to attached with the coupler that is not part of the cartridge similarly to McAffer as explained above" (EA6). The examiner states that the end product of Erickson, McAffer, and appellants are all the same because they have a tube portion in the reservoir of the cartridge (EA7).

As previously discussed, the examiner has not provided any motivation for modifying the combination of McAffer and Erickson to put the connecting tube on the coupler that is not part of the cartridge. The tube in Erickson is permanently glued to the ink jet cartridge and the adaptor in McAffer has a cannula permanently attached to the fitting which mounts on the vial. Reliance on per se rules, such as mere rearrangement of parts, is not persuasive of obviousness. The fact that Erickson, McAffer, and appellants may all have a tube portion extending into the container does not address the obviousness of the differences in structure that lead to that final result.

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For these additional reasons, we conclude that the examiner has failed to establish a prima facie case of obviousness. The rejection of claims 22-26 is reversed.

REVERSED

KENNETH W. HAIRSON)	
Administrative Patent Judge)	
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)	BOARD OF PATENT
LEE E. BARRETT)	APPEALS
Administrative Patent Judge)	AND
)	INTERFERENCES
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