The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte JAMES T. CONNORS,
JOHN D. MILLER, JOSEPH A. PERI,
STEPHEN J.A. MAYBEE
and RICHARD C. STOYELL, JR.

Appeal No. 2005-1943
Application 09/091,508

ON BRIEF

Before GARRIS, TIMM, and FRANKLIN, Administrative Patent Judges.

FRANKLIN, Administrative Patent Judge.

DECISION ON APPEAL

This is an appeal under 35 U.S.C. § 134 from the examiner's final rejection of claims 1 and 14-19. Claim 1 is representative of the subject matter on appeal, and is set forth below:

1. A separation element for separating one or more components from a fluid flowing through the separation element, the separation element comprising:

(a) two or more hollow pleated pack sections, each pack section having a plurality of pleats, wherein the plurality of pleats include roots, crowns, legs extending between the roots and the crowns, an inner periphery at the roots defining an upstream side, and an outer periphery at the crowns defining a downstream side and wherein each pleat has a height h greater than (D-d)/2 where D is the outer diameter at the outer periphery of the plurality of pleats and d is the inner diameter at the inner periphery of the plurality of pleats, a retainer disposed around the pleats, first and second ends, and a porous medium comprising a polymeric material or a glass fiber material;

(b) open joiner caps attached to at least one end of each of the two or more pack sections, adjacent open joiner caps being secured to coaxially connect the pack sections and open joiner caps into a hollow separation arrangement being at least about 40 inches in length and having an interior diameter of at least of about 2 inches; and

(c) first and second end caps attached to the hollow separation arrangement, wherein one of the first and second end caps comprises a seal having an outside diameter greater than the largest outside diameter of the hollow separation arrangement, the end caps including a polymeric or elastomeric material.

The examiner relies upon the following references as evidence of unpatentability:

Pall et al. (Pall ‘923)	3,344,923	Oct. 3, 1967
Pall et al. (Pall ‘881)	4,033,881	July 5, 1977
Pall et al. (Pall ‘012)	4,228,012	Oct. 14, 1980
Driscoll et al. (Driscoll)	4,517,085	May 14, 1985
Stoyell et al. (Stoyell)	5,543,047	Aug. 6, 1996

Claims 1 and 14-18 stand rejected under 35 U.S.C. § 103 as being obvious over Pall ‘923 in view of Stoyell, Pall ‘012, and Driscoll.

Claim 19 stands rejected under 35 U.S.C. § 103 as being obvious over Pall ‘923 in view of Stoyell, Pall ‘012, Driscoll, and further in view of Pall ‘881.

On page 3 of the brief, appellants state that the claims stand or fall with independent claim 1. We therefore limit our consideration to claim 1 in this appeal. See 37 CFR § 41.37(c)(1)(vii)(September 2004); formerly 37 CFR

§ 1.192(c)(7)(2003). Also see Ex parte Schier, 21 USPQ2d 1016, 1018 (Bd. Pat. App. & Int. 1991).

We have carefully reviewed appellants' brief and reply brief, the examiner's answer (mailed September 9, 2004), and the evidence of record. This review has led us to the following determinations.

OPINION

I. The 35 U.S.C. § 103 rejection of claims 1 and 14 through 18 as being obvious over Pall '923 in view of Stoyell, Pall '012, and Driscoll

The examiner's position for this rejection is set forth on pages 5-6 of the answer mailed September 9, 2004.

The examiner's basic position is that Pall '923 teaches many features of appellants' claimed invention, but does not teach **(1)** a pleat having a height h greater than D-d/2 where D is the outer diameter at the outer periphery of the plurality of pleats, and **(2)** the first and second end caps including polymeric or elastomeric material, and one of the first and second end caps comprising a seal having an outside diameter greater than the largest outside diameter of the hollow separation arrangement. The examiner relies upon Stoyell for teaching these missing elements. Answer, page 6.

On page 7 of the answer, the examiner also states that the combination of Pall '923 and Stoyell fails to disclose the length of the hollow separation arrangement and the interior diameter

thereof. The examiner states that the length and diameter would have been a matter of choice by the user. The examiner points out that Pall '012 teaches that filter capacity can be modified by linking together filter cartridges. In this way, the examiner shows that the length therefore is a matter of choice by the user. Answer, pages 7-8. On page 8 of the answer, the examiner states that the interior diameter likewise is a result effective variable element.

Appellants argue, *inter alia*, that Pall '923 discloses two annular filter units, in an end-to-end relation, separated by an annular adaptor. Appellants argue that the annular adaptor maintains a second filter element in reserve, and entirely separated from the primary element in such a manner that normal flow bypasses the second reserve element. Appellants emphasize that Pall '923 teaches that the reserve filter does not come into use until the primary filter element becomes plugged. Brief, page 4. At the top of page 5 of the brief, appellants also argue that Pall '923 teaches directly away from securing adjacent open joiner caps to connect the pack sections into a hollow separation arrangement "that allows fluids to flow through all of the pack sections connected by the open joiner caps."

We are not convinced by the above-mentioned arguments for the following reasons.

Firstly, as correctly pointed out by the examiner on page 12

of the answer, the concept of an arrangement that allows fluid flow through all of the pack sections connected by the open joiner caps is not required by appellants' claim 1. Therefore, appellants argue a limitation not present in the claim. Claim 1 requires that the pack sections be connected by open joiner caps "into a hollow separation arrangement." Pall '923 discloses such a configuration. That is, beginning at line 37 of column 3 of Pall '923, Pall '923 teaches that each of the end caps 17, 18, 25, and 26 is provided with a central aperture communicating the central open area enclosed by the primary and reserve filter elements 15 and 16, and together constituting the central passage 5.

Beginning at line 5 of column 4 of Pall '923, Pall '923 also teaches that the normal flow of fluid enters the filter head at inlet port 2, enters the space 4, and then it flows through the primary filter element 15 in core 30, and the filtrate then enters the central passage 5 and leaves the filter unit at the outlet port 3.[1]

The above-identified disclosure of Pall '923 clearly indicates that caps 18 and 25 secure pack sections 15 and 16 into "a hollow separation arrangement", as made evident by the normal

[1] When the filter element 15 becomes plugged, valve 50 opens, and the flow of fluid then continues, but now it passes valve 50 and enters space 60 on the outside of the reserve filter element 16, and then it flows through the filter element, and emerges via core 31 into central passage 5, as before, and then leaves the filter unit via port 3.

fluid flow.

Hence, we disagree with appellants' position, discussed supra.

Appellants also argue that Pall '923 does not indicate the length of the hollow separation arrangement or its interior diameter. Appellants argue that the specification at page 46, lines 2-6, indicates that increasing the length without increasing the diameter may result in an undesirable filter support core differential. Appellants argue that neither Pall '012 or any other cited reference suggests that the desirability of increasing the interior diameter in combination with increasing length.[2] Brief, page 5.

In response, on page 13 of the answer, the examiner states that these are result effective variables which would be determined based on the space availability for filter installation and the filter capacity required. We agree. We note that absent evidence of criticality[3], as in the present case, we agree with the examiner's prima facie case of obviousness in this regard.

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[2] On page 14 of the answer, the examiner responds that claim 1 does not positively recite a structural connection between length and diameter of the packs. We agree.

[3] Mere attorney argument is not found persuasive. That is, mere attorney argument is not the kind of factual evidence that can rebut the *prima facie* case of obviousness. See In re Wood, 582 F.2d 638, 642, 199 USPQ 137, 140 (CCPA 1978); In re Lindner, 457 F.2d 506, 508, 173 USPQ 356, 368 (CCPA 1972)("mere lawyers' arguments unsupported by factual evidence are insufficient to establish unexpected results.").

We also note that in column 5 of Pall ‘923, beginning at line 4, Pall teaches that it is understood that any type of filter element can be employed for the primary and reserve filter elements as the system may require. Pall teaches that the filter element need not be in corrugated form although it is desirable because higher dirt capacity and higher filtrate flow rate result from the greater surface area of the element, thus providing a greater surface area for flow through a small envelope. Pall ‘923 also teaches, in column 5, at lines 42-54, that flow conditions of all kinds can be met by appropriate design. Pall ‘923 also recognizes the importance of differential pressures in connection with protecting the filter elements. See column 4, lines 70 through column 5, line 2.

In view of the above, we agree with the examiner that one of ordinary skill in the art would appreciate design choices (such as pressure differential as a function of various parameters including length and diameter of the fluid flow path) in making a separation element.

With regarding to additional arguments found in the reply brief, beginning on page 1 of the reply brief, appellants argue that Pall ‘923 discloses a primary filter and a reserve filter but the primary and reserve filters do not include open joiner caps and do not function as a single longer element. Appellants argue that joiner end caps are end caps that can be connected to

make two shorter pack sections into a single larger element. At the top of page 2 of the reply brief, appellants argue that the end cap 18 and 25 of Pall '923 are not joiner caps and are not joined to one another. Appellants argue that these caps are separated from one another both physically and functionally by a relief valve assembly.

Claim 1 recites, inter alia, "open joiner caps attached to at least one end of each of the two or more pack sections, adjacent open joiner caps being secured to coaxially connect the pack sections." Pall '923 teaches that lower end cap 18 as shown in Figure 2 rests upon adapter ring 19, which is securely held between housing portions 20 and 21 by V-ring clamp 8, for proper placement and support of the upper filter element 15 in the housing. See column 3, lines 14-20. Lower cap 18 has a downwardly extending inner flange fitting snugly against ring 19, and a fluid-tight seal therebetween is ensured by O-ring 22. See column 3, lines 20-23. End caps 18 and 25 are provided with a central aperture communicating in the central open area enclosed by the primary reserve filter elements 15 and 16, and together constituting the central passage 5. See column 3, lines 37-40. In this way, end caps 18 and 25 connect pack sections 15 and 16 into a hollow separation arrangement. Hence, we are not convinced by appellants' arguments in this regard.

Appellants also argue that Pall ‘923 teaches that filter elements 15 and 16 are biased away from one another, and that therefore one skilled in the art would never secure the end caps of the upper and lower elements to one another. Reply Brief, page 2. We are not convinced by this argument either. The fact remains that Pall ‘923 teaches that end caps 18 and 25 are provided with a central aperture communicating in the central open area enclosed by the primary reserve filter elements 15 and 16, and together constituting the central passage 5. See column 3, lines 37-40. Such an arrangement forms a hollow separation arrangement, as explained by the examiner.

In view of the above, we affirm the 35 U.S.C. § 103 rejection of claims 1 and 14-18 as being obvious over Pall ‘923 in view of Stoyell, Pall ‘012, and Driscoll.

II. The 35 U.S.C. § 103 rejection of claim 19 as being obvious over Pall ‘923 in view of Stoyell, Pall ‘012, Driscoll, further in view of Pall ‘881

Appellants do not separately argue this rejection in the brief or reply brief. Because the claims fall with claim 1, we also affirm this rejection for the same reasons that we affirmed the rejection involving claim 1.

III. CONCLUSION

Each of the rejections is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a)(1)(iv)(effective Sept. 13, 2003; 69 Fed. Reg. 49960 (Aug. 12, 2004); 1286 Off. Gaz. Pat., Office 21 (Sept. 7, 2004)).

AFFIRMED

Bradley R. Garris Administrative Patent Judge	)	
Catherine Timm Administrative Patent Judge	)	BOARD OF PATENT APPEALS AND INTERFERENCES
Beverly A. Franklin Administrative Patent Judge	)	

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