

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

ZODIAC POOL SYSTEMS, INC.
Petitioner

v.

AQUA PRODUCTS, INC.
Patent Owner

Case IPR2013-00159 (BJM)
Patent 8,273,183 B2

Before BRIAN J. McNAMARA, RAMA G. ELLURU, and JAMES B. ARPIN,
Administrative Patent Judges.

ARPIN, *Administrative Patent Judge.*

DECISION
Institution of *Inter Partes* Review
37 C.F.R. § 42.108

I. INTRODUCTION

Zodiac Pool Systems, Inc. (“Petitioner”) filed a petition to institute an *inter partes* review of claims 1-14, 16, and 19-21 of Patent No. US 8,273,183 B2 (Ex. 1006; the “’183 Patent”) (Paper 5; “Pet.”). Aqua Products, Inc. (“Patent Owner”) filed a patent owner preliminary response (Paper 17; “Prelim. Resp.”). We have jurisdiction under 35 U.S.C. § 314.

The standard for instituting an *inter partes* review is set forth in 35 U.S.C. § 314(a) which provides as follows:

THRESHOLD -- The Director may not authorize an *inter partes* review to be instituted unless the Director determines that the information presented in the petition filed under section 311 and any response filed under section 313 shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.

Upon consideration of the petition and patent owner preliminary response, we determine that the information presented in the petition establishes that there is a reasonable likelihood that Petitioner would prevail with respect to claims 1-9, 13, 14, 16, and 19-21 of the ’183 Patent. Accordingly, pursuant to 35 U.S.C. § 314, we authorize an *inter partes* review to be instituted as to claims 1-9, 13, 14, 16, and 19-21 of the ’183 Patent.

A. *Related Proceedings*

The ’183 Patent is involved in concurrent district court litigation captioned *Aqua Products, Inc. v. Zodiac Pool Systems, Inc.*, 1:12-cv-09342-TPG (S.D.N.Y.). See Pet. 1.

B. The '183 Patent

The '183 Patent relates to self-propelled apparatus and methods for controlling such apparatus for cleaning a submerged surface of a pool or tank. '183 Patent, col. 1, ll. 22-26. Although such apparatus are propelled by a water jet to move generally in a forward direction, the movement of such apparatus is random. *Id.* at col. 2, ll. 57-59. The '183 Patent describes methods for controlling the scanning and traversing patterns of the cleaning apparatus with respect to the bottom and sidewalls of the pool or tank. *Id.* at col. 1, ll. 22-26. In the '183 Patent, “[r]eferences to the front or forward end of the cleaner will be relative to its then-direction of movement.” *Id.* at col. 4, ll.11-12.

An apparatus, as recited in the claims and said to be suitable for control according to the recited methods, is illustrated in Figure 1, reproduced below:

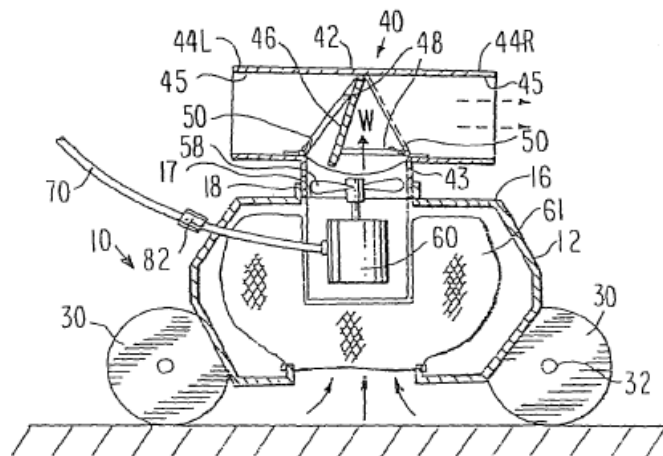


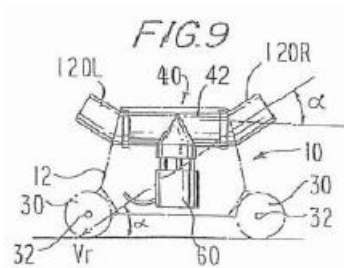
FIG. 1

In Figure 1, a schematic illustration of a cross-sectional, side view of a pool or tank cleaner apparatus 10 depicts an embodiment of the directional water jet, or discharge

conduit, recited in claims 1 and 20. '183 Patent, col. 7, ll. 1-3. A water inlet (not numbered) is disposed through housing 12 and below a motor-driven water pump 60, whereby pump motor 60 draws water and pool or tank debris through the water inlet for filtering. *Id.* at col. 8, ll. 58-61. Water drawn through the water inlet may pass through a filter 61, and pool or tank debris may be entrained by filter 61. *Id.* Pool cleaner 10 further comprises a valve assembly 40 forming a pump outlet that is mounted above pump motor 60. The device uses an impeller 58 to drive water “W” through a housing aperture 17 and into a valve assembly 40. *Id.* at col. 9, ll. 4-8.

As depicted in the embodiment of Figure 1, “valve assembly 40 comprises a generally T-shaped housing 42 with depending leg 43 having a first end that is secured to a cleaner housing flange 18, and a second end that is in fluid communication with discharge conduits 44R and 44L.” *Id.* at ll. 8-12. In Figure 1, the angle formed between the surface over which pool cleaner 10 is moving and discharge conduits 44R and 44L is equal to or is substantially equal to zero, *i.e.*, discharge conduits 44R and 44L are substantially parallel to the surface of movement. Thus, discharge conduits 44R and 44L are at acute angles, *i.e.*, angles less than 90° (*see* claim 1) or less than normal (*see* claim 20) with respect to the surface of movement. *Id.* at col. 6, ll. 7-11.

Alternatively, an apparatus, as recited in the claims and suitable for control according to the recited methods, is illustrated in Figure 9, reproduced below:



In Figure 9, a preferred embodiment of pool cleaner 10 is depicted having valve assembly 40 in which discharge conduits 44R and 44L through their associated elbows 120R and 120L project through the sidewalls of a pool cleaner housing 12 at angle α that is less than 90° and greater than 0° , *i.e.*, is acute or less than normal, with respect to the surface of movement of pool cleaner 10. *Id.* at col. 10, ll. 47-48, 60-64; *see* Claims 1 and 20.

Referring again to Figure 1, housing 12 is propelled by the water jet created by the selective ejection of water from pump motor 60 through discharge conduits 44R and 44L. *Id.* at col. 9, ll. 24-53; Figs. 1-3. Thus, the direction of movement may change depending upon which conduit ejects the water. *Id.* In the alternative embodiment depicted in Figure 9, elbows 120R and 120L cause a force vector component generated by the water jet to move housing 12 in a direction away from the discharged water jet and another force vector component to urge housing 12 downward against the pool or tank surface over which pool cleaner 10 moves. *Id.* at col. 10, ll. 47-51; Fig. 8. Pool cleaner 10 further comprises rotationally-mounted supports, *i.e.*, wheels 30 mounted on a pair of axles 32. *Id.* at col. 10, ll. 47-66. Each of axles 32 is disposed proximate to one of a front and an opposing rear end of pool cleaner 10, as defined by the direction of movement. *Id.* at col. 10, l. 64-col.

11, l. 3; *see also id. at col. 5, ll. 9-12* (“[R]eferences to the front and rear of the cleaning apparatus or its housing will be with respect to the direction of its movement.”).

C. Illustrative Claims

Challenged claims 1, 20, and 21 are independent; and claims 2-14 and 16 depend, directly or indirectly, from independent claim 1. Claim 1 is illustrative and is reproduced below to demonstrate the claimed subject matter:

1. A self-propelled cleaning apparatus for cleaning a submerged surface of a pool or tank, comprising:

a housing having a front portion as defined by the direction of movement of the apparatus when propelled by a water jet, an opposing rear portion and adjoining side portions defining the periphery of the apparatus, and a baseplate with at least one water inlet;

rotationally-mounted supports coupled proximate the front and rear portions of the housing to enable movement of said apparatus over the submerged surface;

a water pump mounted in the interior of said housing, said water pump being configured to draw water and debris from the pool or tank through the at least one water inlet for filtering; and

a stationary directional discharge conduit in fluid communication with the water pump and having at least one discharge opening through which a pressurized stream of water forming the water jet is directionally discharged at a predetermined angle that is acute with respect to the surface over which the apparatus is moving.

D. Prior Art Relied Upon

Petitioner relies upon the following prior art references:

Myers	US 3,321,787	May 30, 1967	(Ex. 1001)
Henkin	US 3,936,899	Feb. 10, 1976	(Ex. 1002)
Pansini	US 4,100,641	July 18, 1978	(Ex. 1003)
Altschul	US 4,429,429	Feb. 7, 1984	(Ex. 1004)

E. The Asserted Grounds

Petitioner alleges that the challenged claims are anticipated under 35 U.S.C. § 102(b) by Myers or unpatentable as obvious under 35 U.S.C. § 103(a) based upon the listed prior art references in various combinations. The specific grounds are detailed in the table below:

Grounds	Claims	Statutory Basis	Applied Reference(s)
1	1-4, 13, 14, 16, and 19-21	35 U.S.C. § 102(b)	Myers
2	1-5 and 19-21	35 U.S.C. § 103(a)	Henkin and Myers
3	1-9 and 19-21	35 U.S.C. § 103(a)	Pansini and Myers
4	1-5, 7-12, and 19-21	35 U.S.C. § 103(a)	Altschul and Myers

II. ANALYSIS

A. *Claim Construction*

In an *inter partes* review, claim terms in an unexpired patent are given their broadest reasonable interpretation in light of the specification of the patent in which they appear. 37 C.F.R. § 42.100(b); *see* Office Patent Trial Practice Guide, 77 Fed. Reg. 48756, 48766 (Aug. 14, 2012). Under the broadest reasonable interpretation standard, claim terms are given their ordinary and customary meaning as would be understood by one of ordinary skill in the art in the context of the entire disclosure. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007). Any special definition for a claim term must be set forth in the specification with reasonable clarity, deliberateness, and precision. *In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994). In this regard, however, we are careful not to read a particular embodiment appearing in the written description into the claim if the claim language is broader than the embodiment. *In re Van Geuns*, 988 F.2d 1181, 1184 (Fed. Cir. 1993).

“Petitioner submits, for purposes of the *inter partes* review only, that the claim terms are presumed to take on their ordinary and customary meaning that the terms would have to one of ordinary skill in the art in view of the Specification of the ’183 patent.” Pet. 4. Patent Owner contends, however, that, given the interpretation of certain claim terms, Myers alone does not disclose all of the elements, and Myers in combination of one of the other applied references does not teach or suggest all of the limitations of the claims for which review is sought in the petition. Prelim. Resp. 2-4, 12-18. In particular, Patent Owner contends that, in

view of the interpretation of the claim terms: “a stationary directional discharge conduit,” “a front portion as defined by the direction of movement of the apparatus when propelled by a water jet,” “an opposing rear portion,” “adjoining side portions,” and “rotationally-mounted supports coupled proximate the front and rear portions of the housing”; the challenged claims are neither anticipated nor rendered obvious by the cited art. *Id.* at 2-4. For the purpose of determining whether to institute *inter partes* review, we interpret those claim terms which Patent Owner relies upon to distinguish the claims over the references.

1. *a stationary directional discharge conduit*

Initially, we note that claim 1 limits the apparatus to “a stationary directional discharge conduit” (emphasis added). Referring to the language of claim 1 and to the Specification, we find no definition for a stationary directional discharge conduit. Although the Specification describes various embodiments of such discharge conduits, *e.g.*, discharge conduits 44R and 44L, we do not limit the interpretation of this term to such embodiments. *Van Geuns*, 988 F.2d at 1184. Considering the language of claim 1, we note that a definition of the term “stationary” is “having a fixed position, not moveable.” RANDOM HOUSE WEBSTER’S COLLEGE DICTIONARY, 1278 (2nd Random House ed. 1999). Moreover, a definition of the term “directional” is “of, pertaining to, or indicating direction.” *Id.* at 374. Petitioner notes that, during prosecution, Patent Owner argued in overcoming the Examiner’s proposed Restriction Requirement that

[a] pool cleaner apparatus [that] employs *at least one* discharge opening through which the water jet is directionally discharged from the cleaning apparatus at a predetermined angle that is less than normal

with respect to the surface beneath the apparatus. *At least one* angled discharge outlet 120R and/or 120L extends from the jet valve assembly 40, as described in paragraphs 0091 through 0094 and shown in Figs. 8 and 9 of the present application.

Pet. 6 (quoting Response to Restriction Requirement (Ex. 1005) 2 (emphases added)). Therefore, consistent with the language of claim 1, the description in the Specification, and the prosecution of the '183 Patent, the broadest reasonable interpretation of “*a stationary directional discharge conduit*” is one or more discharge conduits or at least one discharge conduit, each of which is stationary and is oriented in a particular direction, *e.g.*, that does not move and is aligned relative to a given axis of the apparatus. *KCJ Corp. v. Kinetic Concepts, Inc.*, 223 F.3d 1351, 1356 (Fed. Cir. 2000)(“an indefinite article ‘a’ or ‘an’ in patent parlance carries the meaning of ‘one or more’ in open-ended claims containing the transitional phrase ‘comprising’”); *see, e.g.*, '183 Patent, col. 4, ll. 18-20; Figs. 1-3, 8, 9.

2. *a front portion as defined by the direction of movement of the apparatus when propelled by a water jet*

Independent claim 1 recites that a housing has “a front portion *as defined by the direction of movement of the apparatus when propelled by a water jet*” (emphasis added). This language describes the front portion based on (1) the direction of movement of the apparatus, and (2) the time, *e.g.*, “when” the apparatus is propelled “by a water jet.”

With respect to the first basis for describing the “front portion,” the Specification states that the movement of the apparatus is random. '183 Patent, col.

5, ll. 4-9. The Specification further explains that the “[r]eference to the front or forward end of the cleaner will be *relative* to its *then*-direction of movement.” *Id.* at col. 4, ll. 11-12 (emphases added); *see also id.* at col. 5, ll. 9-12. Moreover, unless otherwise controlled, as noted above, this movement is random. *Id.* at col. 2, ll. 57-59. Thus, the “front portion” of the housing may change with time, and no single portion of the housing may be identified exclusively as the “front portion.”

Similarly, with respect to the second basis for describing the “front portion,” *i.e.*, “when” the apparatus is propelled by a water jet, the Specification states that “the invention comprehends a method of propelling a pool or tank cleaner by means of a water jet that is discharged [from a discharge conduit] in *at least* a first and a second direction that result in opposite translational directions.” *Id.* at col. 4, ll. 50-54 (emphasis added). Nevertheless, we do not interpret the language of claim 1 as limited to such an embodiment. The scope of this limitation is determined by the number and direction of orientation of the discharge conduits.

First, claim 1 recites that the apparatus comprises “*a* stationary directional discharge conduit” (emphasis added). As noted above, under the broadest reasonable interpretation, this limitation describes one or more such conduits or at least one such conduit. Second, although embodiments of the invention are depicted as having opposing discharge conduits, *e.g.*, discharge conduits 44R and 44L, *supra*, we do not read a particular embodiment appearing in the written description into the claim, especially if, as here, the claim language is broader than the particular embodiment. *Van Geuns*, 988 F.2d at 1184; *see* ’183 Patent, Figs. 1, 9 (depicting discharge conduits 44R and 44L). Third, during prosecution, Applicants argued that

the claimed apparatus employ “*at least one* discharge opening through which the water jet is directionally discharged.” Pet. 6 (quoting Response to Restriction Requirement 2 (emphasis added)).

Thus, we interpret this limitation as providing that the location of the front portion on the apparatus varies with the movement of the apparatus, both over time and depending upon the number and direction of orientation of one or more discharge conduits through which the water jet is discharged.

3. *an opposing rear portion and adjoining side portions*

Claim 1 recites that the front portion, together with “an opposing rear portion and adjoining side portions” define the periphery of the apparatus. *See also* ’183 Patent, Abstract. Moreover, the Specification states that “references to the front *and rear* of the cleaning apparatus or its housing will be with respect to the direction of its movement.” ’183 Patent, col. 5, ll. 9-12 (emphasis added). Thus, consistent with the broadest reasonable interpretation of the “front portion,” the “rear portion” is opposite to the “front portion” of the apparatus and, like the front portion, the location of the rear portion on the apparatus varies with the movement of the apparatus, both over time and depending upon the number and direction of orientation of one or more discharge conduits through which the water jet is discharged. Because the side portions adjoin the front and rear portions, as with the front and rear portions, we interpret the location of the side portions on the apparatus to vary with the movement of the apparatus, both over time and depending upon the number and direction of orientation of one or more discharge conduits through which the water jet is discharged. Therefore, the rear and side portions are defined relative

to the varying front portion.

4. *rotationally-mounted supports coupled proximate the front and rear portions of the housing*

Referring to the language of claim 1 and to the Specification, we again find no definition agreed upon by the parties for rotationally-mounted supports. The Specification, however, describes that

[a] further object of the invention is to provide an improved apparatus and method for varying the position of one or more of *the wheels or other support means* of the cleaner in order to vary the directional movement and scanning patterns of the apparatus with respect to the bottom surface of the pool or tank being cleaned.

'183 Patent, col. 3, ll. 35-40 (emphasis added). Further, the Specification describes that the cleaner may move “on *supporting wheels, rollers or tracks* that are aligned with the longitudinal axis of the cleaner body when it moves in a straight line.” '183 Patent, col. 4, ll. 8-11 (emphasis added). Referring, for example, to Figure 1, wheels 30 mounted on axles 32 are depicted as disposed at either end of pool cleaner 10.

Considering the language of claim 1, we note that a definition of the verb “to support” is “to bear or hold up (a load, mass, structure part, etc.),” and a definition of the noun “support” is “a person or thing that supports, esp. financially.” RANDOM HOUSE WEBSTER'S COLLEGE DICTIONARY at 1313. Moreover, a definition of the noun “rotation” is “the act of rotating; a turning around as on an axis.” *Id.* at 1145. Thus, we interpret the term “rotationally-mounted supports” to recite two or more things (including, but not limited to wheels, rollers, and tracks) that support or hold up the housing of the apparatus and which are mounted to the housing, so that the

supports may turn around, for example, on an axis. Nevertheless, because the front and rear of the apparatus are determined by its direction of movement at any particular point in time, whether the rotationally-mounted supports are “coupled proximate to the front and rear portions of the housing” depends upon the direction of movement of the apparatus at a given time.

III. DECISION ON PETITION

For the reasons described below, we institute an *inter partes* review on the grounds that of each of claims 1-9, 13, 14, 16, and 19-21 is anticipated by Myers and on the grounds that each of these same claims is obvious over the combination of Henkin and Myers and obvious over the combination of Pansini and Myers. We deny the petition with respect to the grounds that claims 10-12 are obvious over the combination of Altschul and Myers.

Patent Owner asserts that Henkin, relied upon by Petitioner in the request for *inter partes* review, was considered by the Examiner during the prosecution of the claims for which review is sought. Prelim. Resp. 6 (ftnt. 3 (citing 35 U.S.C. § 325(d))). Patent Owner concludes that the Board should “take into account” that the Examiner did not consider Henkin particularly pertinent during prosecution, and that the Board should not institute trial on the proposed grounds for review based on Henkin. Prelim. Resp. 6 (ftnt. 3).

Petitioner, however, presents different arguments and new supporting evidence here that were not before the Examiner. Therefore, we decline to deny the proposed grounds of review solely on the basis of 35 U.S.C. § 325(d).

IV. GROUNDS FOR REVIEW

A. *Anticipation by Myers*

Petitioner argues that Myers discloses, expressly or inherently, each and every element of claims 1-4, 13, 14, 16, and 19-21. Pet. 8-11, 21-23, 26-27, 40-42, 45-47, and 52-53. With the exception of certain elements of claims 3 and 4, we agree with Petitioner.

Figures 1 and 2 of Myers (Ex. 1001) are reproduced below, including Petitioner's annotations. See Pet. 8 (depicting annotated versions of Myers, Figs. 1 and 2).

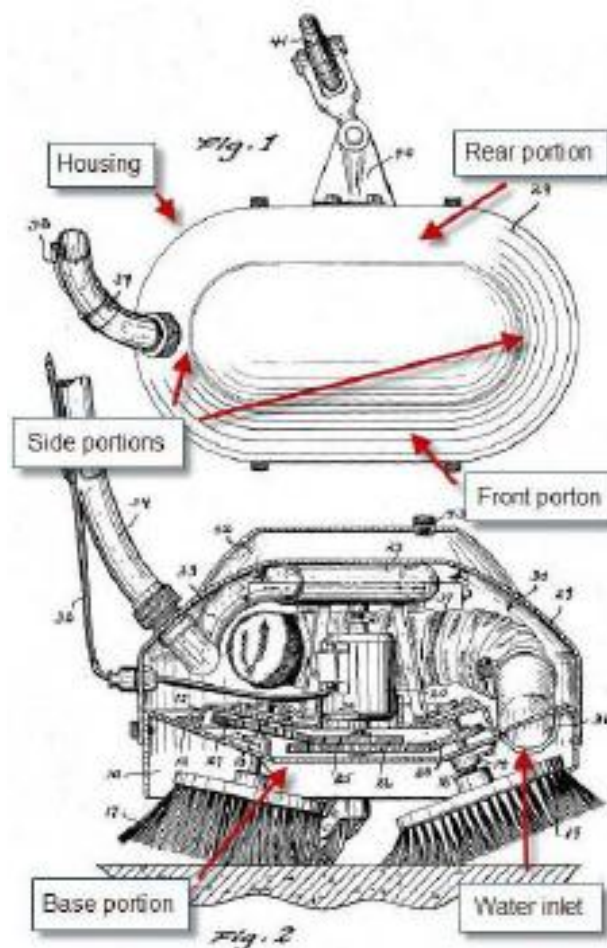


Figure 1 depicts a top plan view of a swimming pool cleaning means according to Myers's invention, and Figure 2 depicts a cross-sectional view of the swimming pool cleaning means, as depicted in Myers's Figure 1. Myers, col. 1, ll. 42-43. Petitioner annotated these figures to identify elements of Myers's device corresponding to the housing, including front, rear and side portions; the base portion, *e.g.*, the baseplate; and the water inlet. In view of our claim interpretation, we consider the identifications of the front, rear, and side portions in Petitioner's annotated Figure 2, as merely illustrative.

Referring to Figures 1 and 2, Petitioner argues that Myers depicts a self-propelled cleaning apparatus for cleaning a submerged surface of a pool or tank. Pet. 8; *see* '183 Patent, Claim 1 (preamble). In particular, Myers indicates that its "invention relates to a swimming pool cleaning device and more particularly to a cleaning means that is erratically self-propelled over the bottom surface of the swimming pool." Pet. 8 (quoting Myers, col. 1, ll. 8-11). Moreover, Petitioner argues that Myers's device includes the claimed "housing," *i.e.*, a hood 29, having front, opposing rear, and adjoining side portions, which define the periphery of the device. Pet. 8. Further, Petitioner argues that Myers's device includes a baseplate, *i.e.*, an outer area 12, through which a water inlet, *i.e.*, a passageway 36, communicates with the outside of the device. Pet. 8; *see* Myers, col. 1, 50-52; col. 2, ll. 22-24.

Referring to Figure 2, Myers depicts "a surface engaging element such as a brush or like 17" which is "rotatably mounted" on shafts at either end of hood 29. Myers, col. 1, ll. 55-61. Petitioner argues that these surface engaging elements 17 correspond to the

rotationally-mounted supports, as recited in claim 1. Pet. 8.

Finally, referring to Figure 2, Myers discloses that a flexible conduit 33 may be connected to outlet opening 32 of rotary pump 13 and may pass through and terminate just beyond hood 29. Myers, col. 2, ll. 8-13. An elongated, flexible conduit, *e.g.*, a hose 34, may be attached *detachably* to the outlet portion of conduit 33 and may extend to a point outside the swimming pool. *Id.* at ll. 13-18. Myers further explains that:

if the electric motor is operated as a motor, and the conduit 33 is detached [from conduit 34], *the water exiting from the unit and into the pool will provide a jet force to move the unit.* Also due to the gear wheel sizes and other placed elements more weight will be borne on by one brush than the other brush. This is particularly true if the conduit 33 is attached.

Myers, col. 3, ll. 6-12 (emphasis added). Thus, Petitioner argues that Myers discloses the stationary directional discharge conduit, as recited in claim 1. Pet. 10-11.

Patent Owner disagrees with Petitioner's reading of Myers' disclosure on the language of claim 1 for three reasons. Prelim. Resp. 12-17. First, Patent Owner contends that Myers's surface engaging elements 17 do not disclose rotationally-mounted supports, as recited in claim 1. *Id.* at 12-13. Second, Patent Owner contends that Myers does not disclose a housing having a front portion defined by the direction of the movement of the apparatus when propelled by water jet. *Id.* at 14-16. Third, Patent Owner contends that Myers does not disclose a directional discharge conduit. *Id.* at 16-17. For the reasons set forth below, we are not persuaded by Patent Owner that Myers fails to disclose any of these elements of claim 1.

In its first argument, Patent Owner contends that Petitioner inconsistently argues that Myers's surface-engaging elements 17 *are* rotationally-mounted supports for

purposes of the anticipation grounds of unpatentability, and that Myers's surface-engaging elements 17 *may be replaced* with wheels, taught by Henkin, Pansini, or Altschul, in the obviousness grounds for unpatentability. *Id.* In view of these allegedly inconsistent arguments, Patent Owner contends that Petitioner concedes that Myers lacks an element of claim 1, as well as claims 20 and 21, of the '183 Patent. We disagree.

The conclusions that a reference anticipates a claim and that the same reference in combination with another renders that same claim obvious are not inherently inconsistent. *See Cohesive Technologies, Inc. v. Waters Corp.*, 543 F.3d 1351, 1364 (Fed. Cir. 2008) (“[A]lthough anticipation can be proven inherently, proof of inherent anticipation is not the same as proof of obviousness. Thus, ‘it does not follow that every technically anticipated invention would also have been obvious.’”; citations omitted). Petitioner argues both that Myers's surface engaging elements 17 disclose rotationally-mounted supports, as recited in claim 1, and that a person of ordinary skill in the relevant art would have had reason to replace Myers's surface engaging elements 17 with wheels, a preferred embodiment of the rotationally-mounted supports disclosed in the '183 Patent, in view of the teachings regarding such wheels in Henkin, Pansini, or Altschul. Prelim. Resp. (citing Pet. 8-9, 12, 15-16, 18).

With respect to anticipation, the question here is whether Petitioner has demonstrated that Myers's surface engaging elements 17 disclose rotationally-mounted supports, as recited in claim 1. As noted above, we interpret the term “rotationally-mounted supports” broadly to recite two or more things which support or hold up the housing of the apparatus and which are mounted to the housing, so that the supports

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may turn around, for example, on an axis. Consequently, we agree with Petitioner that Myers discloses this element of claim 1.

In its second argument, Patent Owner contends that, because Myers's device moves "erratically" over the bottom surface of the pool, Patent Owner contends that Myers does not teach the claimed "front portion." *Id.* at 14-15 (citing Myers, col. 2, ll. 47-48; col. 2, l. 34-col. 3, l. 5). Again, we disagree.

We have construed the claim language as providing that the location of the front portion on the apparatus varies with the movement of the apparatus, both over time and depending upon the number and direction of orientation one or more discharge conduits through which the water jet is discharged. We agree with Patent Owner that Myers describes that its device moves "erratically" across the bottom surface of the pool. Myers, col. 1, ll. 8-11, 22-24; col. 2, l. 34-col. 3, l. 5. We determine, however, that Myers's device has an identifiable, if varying, "front portion" consistent with our interpretation of the element recited in claim 1, and that Petitioner's identification of front, rear, and side portions is merely illustrative. In addition, although the movement of Myers's device may be influenced by the rotation of surface engaging elements 17 (Myers, col. 2, l. 55-col. 3, l. 5), such additional influences are not precluded by the language of claim 1. Therefore, we are persuaded that Petitioner has demonstrated that Myers discloses this element, as recited in claim 1 of the '183 Patent.

In its third argument, Patent Owner contends that Myers does not disclose a directional discharge conduit. Prelim. Resp. 16-17. In particular, Patent Owner contends that:

[a]s expressly disclosed by Myers, *the "jet force" is produced when*

conduit 33 . . . is detached, severing the connection between the pump outlet 32 and conduit 34. (Myers, 3:6-8). Indeed, if conduit 33 is detached, conduit 34 (which attaches to conduit 33) would likewise have to be detached. In that event, the water stream exiting pump outlet 32 would first enter the interior of the hood 29 before exiting the opening in the hood through which conduit 33 would normally terminate if it had not been detached. Even assuming, as Myers suggests, that the stream exiting the opening in the hood 29 could constitute a “jet force,” the purpose of that “jet force” would be to contribute to the erratic movement of the Myers unit.

Id. at 4-5 (emphasis added; footnote omitted). We disagree with Patent Owner’s contention that Myers discloses that conduit 33 is detached from pump outlet 32.

Myers describes that “[a] flexible conduit 33 has one end *connected* to the outlet opening 32 and its other end terminating just outside the hood 29. Operatively *detachably secured* to the outer end of the conduit 33 is an elongated flexible conduit such as a rubber-like hose 34.” Myers, col. 2, ll. 11-15 (emphases added). Thus, Myers describes conduit 33 as “connected” to pump outlet opening 32, but “detachably secured” to hose 34. In the portion of Myers cited by both Patent Owner (Prelim. Resp. 4-5) and Petitioner (Pet. 10-11), Myers describes that the jet force of water exiting the Myers’s device is produced if the electric motor is operating and if “conduit 33 is *detached*.” Myers, col. 3, l. 6-9 (emphasis added). Because hose 34 is described as “detachably secured” to conduit 33, and because detaching hose 34 clearly would permit water to exit Myers’s device, we are persuaded that Myers describes that hose 34, rather than outlet opening 32, is “detached” to generate the jet force of water. Therefore, we also are persuaded that Myers discloses a directional

discharge conduit, as recited in claim 1.

Because Patent Owner contends that the reasons discussed above apply to independent claims 20 and 21, as well as independent claim 1, we are persuaded that Petitioner has demonstrated a reasonable likelihood of prevailing on its challenge to the patentability of claims 1, 20, and 21 of the '183 Patent as anticipated by Myers.

Patent Owner contends that Petitioner fails to demonstrate that there is a reasonable likelihood of prevailing on its challenge to the patentability of claims 2-4, 13, 14, 16, and 19, which depend from independent claim 1, as anticipated by Myers, based solely on the alleged deficiencies in Myers with respect to claim 1. Prelim. Resp. 17-18.

We are not persuaded that Petitioner demonstrates a reasonable likelihood of prevailing on its challenge to the patentability of claims 3 and 4, as anticipated by Myers.

Claim 3 depends from claim 1 and recites that:

a portion of the discharge conduit terminating in the at least one discharge opening is fixed at a predetermined upward angle with respect to the surface over which the apparatus is moving, wherein the water jet discharged produces a resultant force vector *that crosses a plane passing through between the axes of rotation of the front and rear rotationally-mounted supports*

(emphasis added). We interpret this claim language to require that the plane crossed by the resultant force vector passes “between” the axes of rotation of the front and rear rotationally-mounted supports, *e.g.*, Myers’s surface engaging elements 17. We

contrast this language with that of claim 19, which also depends directly from claim 1, and states that “the water jet discharged produces a resultant force vector that crosses a plane passing *through* the axes of rotation of the front rotationally-mounted supports” (emphasis added). *See Free Motion Fitness, Inc. v. Cybex Int’l, Inc.*, 423 F.3d 1343, 1351 (Fed. Cir. 2005) (“The doctrine of claim differentiation create[s] a presumption that each claim in a patent has a different scope.”).

Referring again to Myers’s Figure 2, Petitioner argues that Myers discloses this element as described in both claims 3 and 19 because the resultant force vector would cross a plane that passes through, *i.e.*, intersects, both the front and rear supports axes of rotation. Pet. 23 (claim 3), 42 (claim 19). Nevertheless, Petitioner fails to demonstrate that the resultant force vector would cross a plane that passes “between” both the front and rear supports axes of rotation, as further required by claim 3.¹ Therefore, we are not persuaded that Petitioner has demonstrated a reasonable likelihood of prevailing on its challenge to the patentability of claim 3 and of claim 4 that depends from claim 3 of the ’183 Patent, as anticipated by Myers.

¹The axes of rotation depicted in Figure 2 of Myers are inclined toward each other. *See* Myers, Claim 11 (“the brushes having their axes at an angle to each other”). Consequently, it may not be possible to place a plane “between” these axes of rotation. In Henkin, Pansini, and Altschul, the axes of rotation are depicted as parallel to each other, and the problem presented by Myers’s configuration is not present. *See* Henkin, Fig. 4; Pansini, Fig. 3; Altschul, Fig. 4.

B. Unpatentability Due To Obviousness

1. Henkin and Myers

Petitioner argues that Henkin discloses substantially all of the limitations of independent claim 1, except that Henkin discloses the use of an external pump, rather than an internal pump. Pet. 11-14. Like Myers, Henkin discloses an apparatus for cleaning submerged surfaces of a pool. Henkin, col. 1, ll. 46-59. Myers, however, teaches the use of an internal pump, *e.g.*, ordinary rotary pump 23. Pet. 13. Petitioner argues that a person of ordinary skill in the relevant art would have had a reason to modify the teachings of Henkin to replace the external pump with an internally-mounted pump to eliminate (1) the need for an external source of pressurized water and supply hose and (2) the need to manage the supply hose to prevent entanglement. *Id.* For the reasons set forth below, we agree with Petitioner.

Patent Owner does not dispute Petitioner's reading of the limitations of claim 1 on the disclosure of Henkin. Instead, Patent Owner disagrees with Petitioner's combination of the teachings of Henkin with those of Myers for three reasons. Prelim. Resp. 18-21. First, Patent Owner contends that Henkin *teaches away* from the incorporation of an internal pump, and, in particular, an electric pump, into its cleaner housing. *Id.* at 18-19. Second, Patent Owner contends that Petitioner fails to describe how an internal pump could be incorporated operably within Henkin's pool cleaner. *Id.* at 19-20. Third, Patent Owner contends that Petitioner fails to explain how the elimination of the supply hose "to prevent entanglement" would provide a reason to incorporate an internal pump when such an internal pump would require

the addition of a power supply cable that also would be subject to entanglement. *Id.* at 20-21. For the reasons set forth below, we are not persuaded by Patent Owner that Petitioner's proposed combination of the teachings of Henkin and Myers is improper.

First, as the Federal Circuit has explained, a reference may be said to *teach away* when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by patentee. *In re Gurley*, 27 F.3d 551, 553 (Fed. Cir. 1994). "The fact that the motivating benefit comes at the expense of another benefit, however, should not nullify its use as a basis to modify the disclosure of one reference with the teachings of another. Instead, the benefits, both lost and gained, should be weighed against one another." *Winner Int'l Royalty Corp. v. Wang*, 202 F.3d 1340, 1349 n. 8 (Fed. Cir. 2000).

Here, referring to known underwater cleaners, Henkin states that:

those underwater cleaners which employ an electric motor have proved to be somewhat inconvenient because of the potential shock hazard. That is, since *it is normally recommended that the motor not be operated while there are swimmers in the pool, the cleaner cannot safely be left in the pool under the control of a time clock*. As a consequence, the use of such cleaners has, for the most part, been restricted to commercial applications.

Henkin, col. 1, ll. 26-35 (emphasis added). Patent Owner focuses on Henkin's warning regarding the potential dangers to swimmers presented by submerged, electric motors, disposed internal to swimming pool cleaners. Prelim. Resp. 19. We

note, however, that the claim 1 apparatus is not limited to use in swimming pools, but also is suitable for use in tanks, *e.g.*, “commercial applications.” *See* ’183 Patent, Claim 1 (“for cleaning a submerged surface of a pool *or* tank,” emphasis added). Moreover, although the Specification may describe embodiments of the internal pump including electric motors, claim 1 merely recites a “water pump” and does not require that the recited pump be driven by an electric motor. Thus, Patent Owner’s contentions are not directed to the invention recited in claim 1 of the ’183 Patent, and we are not persuaded that Henkin teaches away from Petitioner’s proposed combination with the teachings of Myers.

Second, Patent Owner contends that Petitioner fails to describe how an internal pump could be incorporated *operably* within Henkin’s pool cleaner. Prelim. Resp. 19-20. In particular, Henkin describes “a complex manifold in which the incoming water stream from the external pump is divided into three separate streams to drive the unit’s wheels, to create a jet force to help propel the unit and to create a vacuum to draw water and debris from the pool bottom.” *Id.* at 20 (citing Henkin, col. 4, ll. 35-41; col. 5, ll. 6-18; col. 6, ll. 6-34; Fig. 4). Patent Owner contends that Petitioner fails to explain how a pump could be installed internally to operate with this manifold. *Id.*

As the Federal Circuit has explained, “[t]he test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference Rather, the test is what the combined teachings of those references would have suggested to those of ordinary skill in the art.” *In re Keller*, 642 F.2d 413, 425 (CCPA 1981); *see also In re Sneed*, 710 F.2d

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1544, 1550 (Fed. Cir. 1983) (“[I]t is not necessary that the inventions of the references be physically combinable to render obvious the invention under review.”); and *In re Nievelt*, 482 F.2d 965, 968 (CCPA 1973) (“Combining the *teachings* of references does not involve an ability to combine their specific structures.”). Rather, “if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 417 (2007). Because Patent Owner has not demonstrated, at this stage of the proceeding, that the proposed combination would be beyond the skill of a person of ordinary skill in the relevant art, we are not persuaded by this contention.

Third, Patent Owner contends that Petitioner fails to explain how the elimination of the supply hose “to prevent entanglement” would provide a reason to incorporate an internal pump when such an internal pump would require the addition of a power supply cable that also would be subject to entanglement. Prelim. Resp. 20-21. As noted above, however, claim 1 does not require the use of an electrically-driven pump or a power supply cable. To the extent such an electrically-driven pump may be used, Patent Owner fails to demonstrate that the pump must use a power supply cable, instead of, for example, a battery. Thus, Patent Owner’s contentions again are not directed to the invention recited in claim 1 of the ’183 Patent, and we are not persuaded that the combination of the teachings of Henkin and Myers would require the addition of a power cable, despite the elimination of a supply hose.

Because Patent Owner contends that the reasons discussed above apply also to independent claims 20 and 21, as well as independent claim 1 (Prelim. Resp. 21), we determine that Petitioner also has demonstrated that there is a reasonable likelihood of prevailing on its challenge to the patentability of claims 20 and 21 of the '183 Patent as unpatentable over Henkin and Myers. Patent Owner contends that Petitioner fails to demonstrate that there is a reasonable likelihood of prevailing on its challenge to the patentability of claims 2-5 and 19, which depend from independent claim 1, as unpatentable over Henkin and Myers, based solely on the alleged deficiencies in this combination of references with respect to claim 1. Prelim. Resp. 22. Therefore, in view of the foregoing discussion of claim 1, we also are persuaded that Petitioner has demonstrated that there is a reasonable likelihood of prevailing on its challenge to the patentability of claims 2-5 and 19 of the '183 Patent as unpatentable over Henkin and Myers.

2. *Pansini and Myers*

Petitioner argues that Pansini discloses substantially all of the limitations of independent claim 1, except that Pansini discloses the use of an external pump, rather than an internal pump. Pet. 14-17. Like Myers, Pansini discloses an apparatus for cleaning submerged surfaces of a pool. Pansini, Abstract. Myers, however, teaches the use of an internal pump, *e.g.*, ordinary rotary pump 23. Pet. 16. Petitioner argues that a person of ordinary skill in the relevant art would have had a reason to modify the teachings of Pansini to replace the external pump with an internally-mounted pump to eliminate (1) the need for an external source of

pressurized water and supply hose, and (2) the need to manage the supply hose to prevent entanglement. *Id.* For the reasons set forth below, we agree.

Patent Owner does not dispute Petitioner's reading of the limitations of claim 1 on the disclosure of Pansini. Instead, Patent Owner disagrees with Petitioner's combination of the teachings of Pansini with those of Myers for three reasons. Prelim. Resp. 22-27. First, Patent Owner contends that Pansini *teaches away* from the incorporation of an internal pump, and, in particular, an electric pump, into its cleaner housing. *Id.* at 22-24. Second, Patent Owner contends that Petitioner fails to describe how an internal pump could be incorporated operably within Pansini's pool cleaner. *Id.* at 25. Third, Patent Owner contends that Petitioner fails to explain how the elimination of the supply hose "to prevent entanglement" would provide a reason to incorporate an internal pump when such an internal pump would require the addition of a power supply cable that also would be subject to entanglement. *Id.* at 25-26. For the reasons set forth below, we are not persuaded by Patent Owner that Petitioner's proposed combination of the teachings of Pansini and Myers is improper.

First, Patent Owner contends that "the structural configuration of the Pansini cleaner is purposefully directed to implementing an external source of pressurized water (*i.e.*, an external pump) *without the need for a booster pump or an internal pump.*" *Id.* at 24; *see* Pansini, col. 1, ll. 38-43. Because Patent Owner contends that such a booster pump would include, for example, an internal, electric pump; Patent Owner concludes that Pansini teaches away from Petitioner's proposed combination

of Pansini and Myers. We disagree.

As noted above, a reference may be said to teach away when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by patentee. Here, Patent Owner provides no evidence supporting the contention that a booster pump is equivalent to an internal pump. Moreover, we are not persuaded that the Pansini's statement that "there is no *need* to employ a booster pump for proper operation of the cleaner" (Pansini, col. 1, ll. 38-43 (emphases added)) would discourage persons of ordinary skill in the relevant art from incorporating such a pump within the cleaner described in Pansini. Therefore, we are not persuaded that Pansini teaches away from the Petitioner's proposed combination of Pansini and Myers.

Second, Patent Owner contends that Petitioner fails to describe how an internal pump could be incorporated *operably* within Pansini's pool cleaner. Prelim. Resp. 25. In particular, Patent Owner contends that:

A person of ordinary skill in the art would not know how to install an internal electric pump within the confines of this filtering chamber or any other area of the Pansini cleaner without undue experimentation. In addition, such an installation would require the person skilled in the art to disregard the teaching of Myers that the pump is installed outside the filtration medium (Myers, FIG. 2).

Pet. 25. As the U.S. Supreme Court has explained, "if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it

would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill.” *KSR*, 550 U.S. at 417.

Because Patent Owner does not demonstrate that the proposed combination would be beyond the skill of a person of ordinary skill in the relevant art, we are not persuaded by this contention.

Third, Patent Owner again contends that Petitioner fails to explain how the elimination of the supply hose “to prevent entanglement” would provide a reason to incorporate an internal pump when such an internal pump would require the addition of a power supply cable that also would be subject to entanglement. Prelim. Resp. 25-26. For the same reasons that we were not persuaded by these contentions with respect to the combination of Henkin and Myers, we not persuaded by the same contentions here with respect to the combination of Pansini and Myers.

Because Patent Owner contends that the reasons discussed above apply to independent claims 20 and 21, as well as independent claim 1 (Prelim. Resp. 26), we are persuaded that Petitioner has demonstrated a reasonable likelihood of prevailing on its challenge to the patentability of claims 20 and 21 of the ’183 Patent as unpatentable over Pansini and Myers. Patent Owner contends that Petitioner fails to demonstrate that there is a reasonable likelihood of prevailing on its challenge to the patentability of claims 2-9 and 19, which depend from independent claim 1, as unpatentable over Pansini and Myers, based solely on the alleged deficiencies in this combination of references with respect to claim 1. Prelim. Resp. 27. Therefore, in view of the foregoing discussion of claim 1, we also are persuaded that Petitioner has demonstrated a reasonable likelihood of prevailing on its challenge to the

patentability of claims 2-9 and 19 of the '183 Patent as unpatentable over Pansini and Myers.

3. *Altschul and Myers*

Petitioner argues that Altschul discloses substantially all of the limitations of independent claim 1, except that Altschul discloses the use of an external pump, rather than an internal pump. Pet. 17-20. Myers, however, teaches the use of an internal pump, *e.g.*, ordinary rotary pump 23. Pet. 19-20. Petitioner argues that a person of ordinary skill in the relevant art would have had a reason to modify the teachings of Altschul to replace the external pump with an internally-mounted pump to eliminate the need (1) for an external source of pressurized water and supply hose, and (2) to manage the supply hose to prevent entanglement. *Id.* For the reasons set forth below, we disagree.

Patent Owner does not dispute Petitioner's reading of the limitations of claim 1 on the disclosure of Altschul. Instead, Patent Owner disagrees with Petitioner's combination of the teachings of Altschul with those of Myers. In particular, Patent Owner disputes the proposed combination of teachings for reasons similar to those discussed above with respect to the combinations of Henkin and Myers and of Pansini and Myers. Prelim. Resp. 27-34. We are not persuaded that Petitioner has demonstrated that it is reasonably likely to prevail on the issue of obviousness for claims 1-5, 7-12, and 19-21 of the '183 Patent based on Altschul and Myers.

Unlike the cleaning devices described Myers, Henkin, Pansini, and the '183 Patent, which are designed to clean the bottom surface of a pool or tank, Altschul describes a cleaning device "for cleaning the sidewalls of a swimming pool at the

waterline region, within a few inches above and below the waterline.” Prelim. Resp. 7 (quoting Altschul, col. 1, ll. 8-9).

Figure 1 of Altschul (Ex. 1004) is reproduced below:

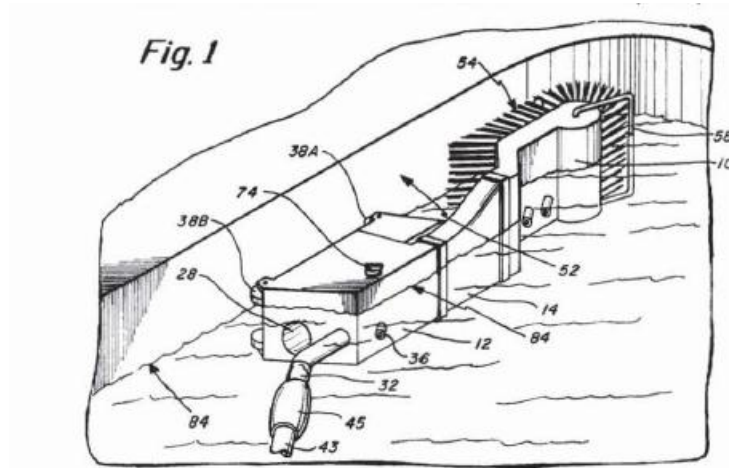


Figure 1 depicts Altschul’s device for cleaning a swimming pool sidewall, travelling along the sidewall in a partially-submerged condition.

In view of the stated purpose of cleaning immediately above and below the waterline, Altschul’s device “includes floatation material which affords sufficient buoyancy to maintain the device at the proper level in the water, about two to three inches above the waterline as it travels along the sidewalls.” Altschul, col. 2, ll. 18-22; *see* Prelim. Resp. 7, 27-28, 32-33. Despite the purpose of Altschul’s device and the need to maintain a specific degree of buoyancy to accomplish this purpose, Petitioner proposes modifying Altschul’s device to include an internal water pump, instead of an external water pump. Pet. 19-20. Patent Owner notes that “[t]he Petitioner, Myers and Altschul all give no guidance about . . . *how the weight of an electric pump might affect buoyancy.*” Prelim. Resp. 32-33 (emphasis added). Although Petitioner identifies a reason allegedly supporting the proposed

modification, Petitioner does not address the inconsistency or conflict created by the proposed modification or to explain why, on balance, the benefits of the proposed modification outweigh its deleterious effects on the operation and use of Altschul's device. *See Winner Int'l Royalty Corp.*, 202 F.3d at 1349, n.8 (“the benefits, both lost and gained, [by the proposed combination] should be weighed against one another”); *see also, DuPuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 567 F.3d 1314, 1326-27 (Fed. Cir. 2009) (different intended purpose may result in a reference teaching away from its combination with another reference). Because of these deficiencies in Petitioner's arguments, we are not persuaded that Petitioner has demonstrated a reasonable likelihood of prevailing on its challenge to the patentability of claims 1, 20, and 21 of the '183 Patent as unpatentable over Altschul and Myers or of claims 2-5, 7-12, and 19, which depend from independent claim 1. *See* Prelim. Resp. 33-34.

V. CONCLUSION

For the foregoing reasons, we determine that Petitioner has demonstrated that there is a reasonable likelihood of prevailing on its challenge to the patentability of claims 1-9, 13, 14, 16, and 19-21 of the '183 Patent.

VI. ORDER

For the reasons given, it is

ORDERED that the petition is granted as to claims 1-9, 13, 14, 16, and 19-21 of the '183 Patent and that, pursuant to 35 U.S.C. § 314, an *inter partes* review of the '183 Patent is hereby instituted for the following grounds:

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1. Claims 1, 2, 13, 14, 16, and 19-21 under 35 U.S.C. § 102(b) as anticipated by Myers;
2. Claims 1-5 and 19-21 under 35 U.S.C. § 103(a) as unpatentable over Henkin and Myers; and
3. Claims 1-9 and 19-21 under 35 U.S.C. § 103(a) as unpatentable over Pansini and Myers.

FURTHER ORDERED that the Petition for *inter partes* review based on the following grounds is denied:

Claims 1-5, 7-12, and 19-21 under 35 U.S.C. § 103(a) as unpatentable over Altschul and Myers.

FURTHER ORDERED that pursuant to 35 U.S.C. § 314(a), *inter partes* review of the '183 Patent is hereby instituted commencing on the entry date of this Order, and, pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4, notice is hereby given of the institution of a trial.

FURTHER ORDERED that the trial is limited to anticipation by Myers and to obviousness over Henkin and Myers or over Pansini and Myers; and no other grounds are authorized.

FURTHER ORDERED that an initial conference call with the Board is scheduled for 2:00 PM EDT on September 24, 2013. The parties are directed to the Office Trial Practice Guide, 77 Fed. Reg. 48756, 48765-66 (Aug. 14, 2012) for guidance in preparing for the initial conference call, and should come prepared to discuss any proposed changes to the Scheduling Order entered herewith and any motions the parties anticipate filing during the trial.

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