UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte KI-OOK PARK, IN-EUNG KIM, IN-SEOP JEONG,
and TAE-SEOK PARK

Appeal 2007-2140
Application 09/892,790[1]
Patent 5,917,679
Technology Center 2600

Decided: June 22, 2007

Before: FRED E. MCKELVEY, *Senior Administrative Patent Judge,*
HOWARD B. BLANKENSHIP, and ALLEN R. MACDONALD,
Administrative Patent Judges.

MACDONALD, *Administrative Patent Judge*.

DECISION ON APPEAL

AFFIRMED

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[1] Application filed June 28, 2001, seeking to reissue U.S. Patent 5,917,679 issued June 29, 1999, based on Application 08/915,342 filed August 22, 1997. The real party in interest is SamSung Electronics Co., Ltd. (Br. 2).

I. STATEMENT OF CASE

1. Appellants appeal under 35 U.S.C. § 134 from a Final Rejection of reissue claims 21-60 entered July 9, 2002. We have jurisdiction under 35 U.S.C. § 6(b).

2. The Examiner has withdrawn the rejection of claims 21-60 under 35 U.S.C. § 251. (August 2004 Supplemental Answer 2:4-5).

3. Claims 21, 30-32, and 41 remain on appeal before us.

4. Independent reissue claims 21 and 31 on appeal, and 42 (newly rejected below) read as follows:

> 21. A negative pressure air bearing slider having a negative pressure cavity, comprising:
>
> a body with a principal surface disposed to confront a recording surface of a recording medium, said principal surface having a lead portion and a rear portion, said lead portion being spaced upstream from said rear portion relative to a rotational direction of any recording medium confronted by said slider, said lead portion having a front edge, said rear portion having a rear edge, said front edge and said rear edge together defining boundaries of said principal surface in a longitudinal direction of said slider body; and
>
> a U-shaped air bearing platform defining a negative pressure cavity on said principal surface, said U-shaped air bearing platform comprising not more than two separate air bearing platforms each extending rearwardly toward said rear portion of said principal surface and respectively terminating at a first rear termination and a second rear termination, at least one of said not more than two separate air bearing platforms including a side wall portion;

at least one of said first rear termination and said second rear termination not coinciding with said rear edge, and being disposed upstream of said rear edge relative to said rotational direction of said recording medium.

31. A negative pressure air bearing slider, comprising:

a principal surface defining a first plane tangential to a first direction;

said principal surface having a lead portion and a rear portion, said lead portion being spaced upstream from said rear portion relative to said first direction, said lead portion having a front edge, said rear portion having a rear edge, said front edge and said rear edge together defining longitudinal boundaries of said principal surface in said first direction; and

a U-shaped air bearing platform having a plurality of air bearing surfaces surrounding a negative pressure cavity while defining a second plane tangential to said first direction, said U-shaped air bearing platform comprising not more than two separate air bearing platforms each extending from said lead portion rearwardly toward said rear portion and respectively terminating at a first rear termination and a second rear termination, at least one of said not more than two separate air bearing platforms including a side wall portion;

at least one of a surface between said first rear termination and said rear edge and a surface between said second rear termination and said rear edge being in said first plane.

42. A negative pressure air bearing slider, comprising:

a slider having a body with a principal surface disposed to confront a recording surface of a recording medium, said principal surface having a lead portion and a rear portion, said lead portion being spaced upstream from said rear portion relative to a rotational direction of any recording medium confronted by said slider with a longitudinal axis of said slider

> extending between said lead portion and said rear portion defining a longitudinal direction of said slider and forming a tangent to said rotational direction, said lead portion having a front edge, said rear portion having a rear edge, said front edge and said rear edge together defining boundaries of said principal surface in said longitudinal direction of said slider; and
>
> a U-shaped air bearing platform defining a negative pressure cavity on said principal surface, said U-shaped air bearing platform comprising not more than two separate air bearing platforms each extending from different and facing spaced-apart opposite ends of said not more than two separate air bearing platforms rearwardly toward said rear portion of said principal surface and respectively forming a first air bearing surface terminating said first side wall portion and forming a second air bearing surface terminating said second side wall portion, at least one of said not more than two separate air bearing platforms including a side wall portion with said U-shaped platform comprising an arcuately shaped front wall oriented toward said lead portion.

5. The copy of dependent reissue claims 22, 25, 32, 39, 43, 46, and 51, in the claim appendix attached to the Brief filed December 9, 2002 is defective; a correct copy of these claims appears in Appellants' Amendment filed June 18, 2002 and reads as follows:

> 22. The negative pressure air bearing slider according to claim 21, further comprising:
>
> a gap disposed within said U-shaped air bearing platform.
>
> 25. The negative pressure air bearing slider according to claim 21, further comprising:
>
> a recessed step disposed within said U-shaped air bearing platform.

32. The negative pressure air bearing slider according to claim 31, wherein said U-shaped air bearing platform further comprises:

a cross rail portion extending generally laterally across said principal surface.

39. The negative pressure air bearing slider according to claim 31, further comprising:

a first front air bearing platform; and

a second front air bearing platform;

said first and said second front air bearing platforms being disposed on opposite ends of said principal surface symmetrically about a longitudinal axis of said slider body, said first and second front air bearing platforms being disposed upstream of said U-shaped air bearing platform relative to said first direction.

43. The negative pressure air bearing slider according to claim 42, further comprising a gap disposed within said U-shaped platform.

46. The negative pressure air bearing slider according to claim 42, further comprising a recessed step disposed within said U-shaped platform.

51. The negative pressure air bearing slider according to claim 42, further comprising a rear air bearing platform accommodating mounting of a transducer, said rear air bearing platform being spaced downstream of said U-shaped air bearing platform relative to said rotational direction of the recording medium, and being centered with respect to said longitudinal axis of said slider body.

6. The remaining reissue claims are correctly shown in the claim appendix attached to the Brief.

7. Reissue claims 22-29, 33-40, and 42-60 are not rejected by the Examiner.

8. With respect to the rejection of claims 21, 30-32, and 41, the panel affirms the decision of the Examiner.

9. Additionally, the panel enters new grounds of rejection of claims 21-60.

II. ISSUES

The sole issue before the Board is whether Appellants have established that the Examiner erred in rejecting claims 21, 30-32, and 41 under 35 U.S.C. § 102(a).

III. FINDINGS OF FACT

The following findings of fact are supported by a preponderance of the evidence.

A. *The Invention*

1. According to Appellants (U.S. Patent 5,917,679, Abstract):

> A negative pressure air bearing slider includes a slider body for flying above a surface of a recording disc during relative rotation of the recording disc. First and second projections extend from a lead portion of a principal surface of the slider body to define first and second air bearing surfaces,

> respectively, the first and second air bearing surfaces being spaced apart from each other in the lateral direction of said slider body. A third U-shaped projection extends from the principal surface and includes a curved front wall portion at least partially located between the first and second projections and first and second side wall portions extending from opposite ends of the curved front wall portion to a rear portion of the principal surface so as to define a rounded negative pressure cavity therein. A fourth projection extends from the rear portion of the principal surface of the slider body at a position centrally located in the lateral direction of the slider body, and a transducer is mounted on a rear edge of the third projection so as to establish pseudo contact with the disc surface while the slider body is flying above the disc surface.

2. Additionally, Appellants disclose that side wall portions extend along the sides of the principal surface and each defines an air bearing surface (ABS) (U.S. Patent 5,917,679, Specification col. 4, ll. 26-31):

> [S]ide wall portions respectively extend along said first and second side portions of said principal surface and define third and fourth air bearing surfaces located at said rear portion of said principal surface and space apart from each other relative to the radial direction of said slider body.

3. Additionally, Appellants disclose that cross rail 130 made of straight segments forms an arcuate structure with a curvature (Specification col. 5, ll. 37-46):

> In addition, as shown in FIGS. 4 and 5, an arcuate cross rail 130 extends across the principal surface 111 of the slider 100 and between the rear ABS platforms 110c and 110d and lead ABS platforms 110a and 110b and generally along the latitudinal axis H. The arcuate cross rail 130 and the rear ABS

> platforms 110c and 110d together define a substantially U-shaped projection that extends from the principle [sic] surface 111 of the slider 100. The curvature of the cross rail 130 forms a negative pressure cavity 150, that may be somewhat rounded, at the center of the slider body 100.

4. Appellants disclose the cross rail 130 may be formed of a series of straight sidewall segments or alternatively may be a smooth curve (Specification col. 6, ll. 35-38):

> As shown in FIG. 6, the cross rail 130 may be respectively smoothly configured without inner or outer corners, or it instead may be formed by a series of connected straight sidewall segments, or a combination thereof.

5. Appellants disclose that the cross rail extends from side to side of the principal surface and thus the ABS (e.g. 110c) does not extend into the center portion of the principal surface (Specification col. 6, ll. 54-57):

> an interface region between the ABS rail 110c and the cross rail 130 includes a stepped down surface portion 112 extending between the ABS platform 110c and an edge of the slider body 100 . . .

B. *Prosecution history of the original application*

6. On December 1, 1998, Appellants filed an Amendment that in-part amended originally filed claim 1 and added new independent claim 21 during prosecution of the patent for which reissue is sought.

7. Appellants' amendment to originally filed claim 1 added language to the effect that each ABS side wall portion extends rearwardly and outwardly (Patent claim 1, Specification col. 8, ll. 20-31):

> [S]aid U-shaped projection including an arcuate front wall portion at least partially located between said first and second air bearing surfaces, said U-shaped projection further including first and second side wall portions extending from opposite ends of said arcuate front wall rearwardly toward said rear portion and outwardly toward said first and second side portions of said principal surface for defining a negative pressure cavity therein, said first and second wall portions terminating at said rear portion of said principle [sic] surface of said slider body for defining third and fourth air bearing surfaces . . .

Newly added claim 21 contained analogous language.

8. On December 7, 1998, a Notice of Allowability was mailed which stated that the remaining pending claims were allowed.

9. Consistent with Office practice, application claim 21 was renumbered as patent claim 16 in the course of preparing the original application for issue.

10. U.S. Patent 5,917,679 issued June 29, 1999, based on the original application and contained claims 1-20.

11. Appellants' U-shaped projection is formed of a cross rail 130 and rear air bearing surface (ABS) platforms 110c and 110d. (See Finding of Fact 3.)

12. The cross rail 130 and rear ABS platforms 110c and 110d are formed of "side wall portions" or "sidewall segments." (See Findings of Fact 2 and 4.)

13. Rear ABS platforms 110c and 110d "side wall portions" are along the side portion of the principal surface. (See Finding of Fact 2.)

14. The cross rail sidewall segments extend from side to side of the principal surface and interfaces with ABS rail 110c at the side of the . (See Finding of Fact 5.)

15. Alternatively, the side wall of each rear ABS platforms 110c and 110d can also extend away from the side portions of the principal surface. (See Finding of Fact 7.)

16. Thus, the cross rail sidewall segments nearest to the side portions of the principal surface are alternatively described by Appellants as being sidewall segments of cross rail 130 or claimed by Appellants as being side wall portions of rear third and fourth ABS surfaces (e.g., platforms 110c and 110d).

17. Appellants' alternative usages of the cross rail sidewall segments nearest to the side portions of the principal surface is consistent with the function of these sidewall segments as would be understood by one skilled in the art.[2]

[2] The failure of Appellants' Specification to explicitly disclose the side wall portions as recited in patent claims 1-20 does not give rise to an issue under 35 U.S.C. § 112, first paragraph, as an artisan would have understood that the disclosed cross rail sidewall segments nearest to the side portions of the

C. *Prosecution of reissue application*

18. Appellants filed reissue application 09/892,790 on June 28, 2001, seeking to reissue U.S. Patent 5,917,679.

19. Appellants presented original patent claims 1-20 along with new reissue application claim 21-60 for consideration.

20. Ultimately, reissue claims 21, 30-32, and 41 were rejected.

21. Reissue application claims 21, 30-32, and 41 are before the Board in the appeal.

22. Copies of the independent claims 21 and 31 under appeal are set forth in the Statement of the Case *supra*.

D. *Examiner's Rejection under 35 U.S.C. § 102(a)*

23. Claims 21, 30-32 and 41 were rejected under 35 U.S.C. § 102(a) as being unpatentable over Nepela et al (Nepela), U.S. Patent 5,568,981, issued October 29, 1996, based on an application filed April 10, 1995.

24. Nepela is prior art to applicants under 35 U.S.C. § 102(e).

25. During prosecution, Appellants made no attempt to antedate (37 CFR § 1.131) Nepela.

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principal surface could alternatively be viewed as a side wall portions of the rear ABS platforms.

26. The Examiner based the rejection of claims 21, 30-32 and 41 on the grounds that pads 108 and 120 of Nepela's Figure 5c anticipate the claims.

27. The Examiner's reasoning is found at pages 5-9 of the March 1, 2007 Supplemental Answer.

E. *Nepala*

28. Nepela teaches at col. 2, ll. 41-50:

> The negative pressure air bearing slider has two side rails providing air bearing surfaces extending fully from the leading edge towards the trailing edge of the slider, and a central pad at the leading edge for providing an additional air bearing surface. Relief vents are formed between the two side rails and the central pad and extend from the slider leading edge to connect to a central recessed cavity that extends from the central pad to the trailing edge of the slider. The central recessed cavity defines an effective negative pressure region.

29. Thus Nepela describes "a central pad at the leading edge for providing an additional air bearing surface," "a central recessed cavity that extends from the central pad to the trailing edge of the slider," and "[the] central recessed cavity defines an effective negative pressure region."

30. Nepela teaches at col. 3, ll. 4-8:

> FIG. 1 is a plan view of the air bearing surface of a negative pressure air bearing slider, according to this invention;
> FIG. 1a is a side view of the negative pressure air bearing slider of FIG. 1[.]

31. Nepela teaches at col. 3, ll. 38-49:

> With reference to FIGS. 1 and 1a, a rectangular slider body 24 has a length L1, a width designated by reference numeral 19 and a thickness designated by numeral 28. The slider 24 is configured with raised side rails 10 and 12, tapered regions 22 at the leading edge of the slider and a central pad 8 formed adjacent to the central taper 22. The tapered regions 22 are of identical length from the leading edge. The tapered regions 22 have a taper angle (shown at 20 in FIG. 1a) which may be in the order of 20 minutes to 60 minutes. A negative pressure cavity 18 is formed by etching between the central pad 8 and side rails 10, 12 and extending to the trailing edge of the slider.

32. Thus Nepela describes "a rectangular slider body," "[a] leading edge of the slider," and "[a] trailing edge of the slider."

33. Nepela teaches at col. 3, ll. 21-24:

> FIGS. 5a-5d are plan views of alternative embodiments of a negative pressure air bearing slider with a modified center rail structure, negative pressure regions associated with the side rails of the slider, and an additional rear pad[.]

34. Nepela also teaches at col. 5, ll. 40-60:

> FIG. 5a illustrates another embodiment of a negative pressure air bearing slider having two side rails 112, 114, a

> central pad 104 and a rear pad 120. The rear pad 120 has a trailing edge on which a magnetic transducer is disposed.
>
> * * *
>
> The embodiment of FIG. [5a] includes negative pressure cavities 128a that are associated with each side rail 112, 114 and a central negative pressure cavity 128 that extends from the center pad.

35. Nepela also teaches at col. 5, ll. 61-65:

> FIGS. 5b-5d show modifications of the slider of FIG. 5a, wherein the center pads 106, 108, 110 are modified to accommodate different skew/velocity ranges for different applications used with negative pressure air bearing sliders of the instant invention.

36. Figure 5c shows Nepela's center pad 108 is U-shaped with three walls (unlabeled). The center pad walls consist of a front wall and two walls that extend from sides of the front wall towards the trailing edge of the slider.

37. Nepela also teaches at col. 7, ll. 39-41:

> The symmetrical design relative to the longitudinal axis of the slider allows the sliders to be used as UP or DOWN magnetic heads.

Thus, rear pad 120 is centered with respect to the longitudinal axis of the slider body.

38. Reissue claims 21, 30-32, and 41 are anticipated by Nepela.

F. *Additional prior art cited by the Board*

39. We cite the following prior art:

Ogishima	US 4,553,184	Nov. 12, 1985
Mo	US 4,636,894	Jan. 13, 1987
Strom [I]	US 4,802,042	Jan. 31, 1989
Strom [II]	US 5,062,017	Oct. 29, 1991
Chapin	US 5,210,666	May 11, 1993
Murray [I]	US 5,353,180	Oct. 4, 1994
Murray [II]	US 5,406,432	Apr. 11, 1995
Dorius	US 5,438,467	Aug. 1, 1995
Bolasna [I]	US 5,650,893	Jul. 22, 1997
Ruiz	US 5,734,524	Mar. 31, 1998
Lairson	US 5,822,153	Oct. 13, 1998
Chhabra	US 5,831,791	Nov. 3, 1998
Bolasna [II]	US 5,870,250	Feb. 9, 1999
Chang	US 5,889,634	Mar. 30, 1999

40. Ogishima, Mo, Strom I, Strom II, Chapin, Murray I, Murray II, and Dorius are prior art vis-à-vis applicants under 35 U.S.C. § 102 (b).

41. Bolasna I, Ruiz, Lairson, Chhabra, Bolasna II, and Chang are prior art vis-à-vis applicants under 35 U.S.C. § 102 (e).

Ogishima

42. Ogishima describes at figure 2 and the corresponding section of the Specification (col. 3, l. 59, through col. 4, l. 23) a slider 20 with a U-shaped air bearing platform formed by surface 27b (cross rail) and the connected portions of surfaces 26a and 26b (side wall portions) terminating at grooves 28 and 29 (not coinciding with the rear edge of surface 27a). Also, surface 27a forms a rear air bearing platform centered on the longitudinal axis with a magnetic head core 19 (transducer).

43. Reissue claims 21, 30-32, and 41 are anticipated by Ogishima.

Strom I

44. Strom I describes at figure 2 and the corresponding section of the Specification (col. 3, ll. 1-33) a slider 10 with a U-shaped air bearing platform formed by cross rail 20 and side rails 16 and 18 terminating at groove 38. Also, trailing cross rail 40 forms a rear air bearing platform centered on the longitudinal axis with pole tips 32 (transducer elements).

45. Reissue claims 21, 30-32, and 41 are anticipated by Strom I.

Dorius

46. Dorius describes at figure 9A and the corresponding section of the Specification (col. 6, ll. 26-46) a slider 1501 with an U-shaped air bearing platform whose side wall portions terminate before reaching the rear edge. Also shown is a rear air bearing platform centered on the longitudinal axis for mounting a transducer (Col. 5, ll. 20-21).

47. Reissue claims 21, 30-32, and 41 are anticipated by Dorius.

Ruiz

48. Ruiz describes at figure 10 and the corresponding section of the Specification (col. 8, l. 65, through col. 9, l. 14) a slider 72 with an U-shaped air bearing platform whose side wall portions terminate before reaching the rear edge. Also shown is a rear air bearing platform centered on the longitudinal axis for mounting a transducer 310.

49. Reissue claims 21, 30-32, and 41 are anticipated by Ruiz.

Bolasna I

50. Bolasna I describes at figure 5A and the corresponding section of the Specification (col. 6, ll. 26-46) a slider with a U-shaped air bearing platform with side wall portions (62 and 64) whose leading edge forms a cross rail. Side wall portion (62) terminates before reaching the rear edge. Also shown is cross rail gap centered on the longitudinal axis.

51. Reissue claims 21-23 and 31-34 are anticipated by Bolasna I.

Lairson

52. Lairson describes at figure 4 and the corresponding section of the Specification (col. 5, l. 58, through col. 6, l. 17) a slider (head 69) with a U-shaped air bearing platform 105 with a plurality of arcuate arms whose side wall portions terminate before reaching the rear edge.

53. Reissue claims 21, 31-32, 52-53, 55-56, and 58-59 are anticipated by Lairson.

Chang

54. Chang describes at figure 1 and the corresponding section of the Specification (col. 2, l. 41, through col. 3, l. 17) a slider with a U-shaped air bearing platform formed of side wall portions (pads 14 and 16) which terminate before reaching the rear edge. Pads 14 and 16 include transverse sections (cross rail) forming a center gap (channel 22). Also shown is a rear air bearing platform (pad 24) centered on the longitudinal axis for mounting a transducer.

55. Reissue claims 21-23, 30-34, and 41 are anticipated by Chang.

Bolasna II

56. Bolasna II describes at figure 19 and the corresponding section of the Specification (col. 9, l. 49, through col. 10, l. 14) a slider 1100 with a U-shaped air bearing platform (side rails 1106 and 1108, and crossbar 1130) whose side wall portions terminate before reaching the rear edge. The U-shaped air bearing platform includes an off-center gap (gaps 1150 and 1152). Also shown is a rear air bearing platform (broadened area 1124) centered on the longitudinal axis for mounting a transducer.

57. Reissue claims 21, 22, 24, 30-33, 35, and 41 are anticipated by Bolasna II.

Chapin

58. Chapin describes at figure 2 and the corresponding section of the Specification (col. 3, l. 34 through col. 4, l. 26) a slider 26 with an U-shaped air bearing platform formed by cross rail 44 and side rails 40 and 42. Cross rail 44 is between rails 40 and 42 (col. 3, ll. 54-55) and includes notch 54 (recessed step) instead of a gap. The notch is shown as being centered with respect to the longitudinal axis.

Murray II

59. Murray II describes at figures 4 and 5 and the corresponding section of the Specification (col. 3, l. 67, through col. 4, l. 31) a slider 11 with a U-shaped air bearing platform formed by the left portion (as seen in

the figures) of the wishbone structure having arcuate arms (legs 14d and 14e) and a cross rail (the portion of 14b that connects the legs). Each leg includes a sidewall portion that adjoins or borders the longitudinal sides of the slider body. The side wall portions terminate before reaching the rear edge. The slider also includes a first and second front air bearing platforms (side rails 12 and 13) each with a tapered surface portion (12a and 13a). Also shown is a rear air bearing platform (14a) centered on the longitudinal axis for mounting a transducer (16).

60. Reissue claims 21, 28-32, 39-41, and 52-60 are anticipated by Murray II.

Murray I

61. Murray I describes at figure 10 that curved surfaces can be used instead of straight segments to form arcuate arms.

Mo

62. Mo describes at figure 5 and the corresponding section of the Specification (col. 4, ll. 3-15) a slider with a V-shaped cross rail 16A formed of straight sidewall segments having an apex 16B. The cross rail is arcuate or curved within the definition shown by Appellants' specification. (See Finding of Fact 3.)

Strom II

63. Strom II describes at figure 6 that the air bearing surface 80 can include internal and external edge steps 76 such as disclosed in Appellants' figure 8.

Chhabra

64. Chhabra describes at figure 14a that the slider can include leading edge steps 254 and 256 such as disclosed in Appellants' figure 8.

G. *Differences*

65. Chang differs from claims 25, 26, 36, and 37 in that Chang does not teach that the cross rail gap can instead be a recessed step.

66. Bolasna II differs from claims 25, 27, 36, and 38 in that Bolasna II does not teach that the off-center cross rail gap can instead be a recessed step.

67. Chapin teaches a cross rail 44 which includes notch 54 (recessed step) instead of a gap.

68. The prior art cited above in Section G teaches all of the structures of Appellants' claims 25-27 and 36-38.

H. *Level of Skill in the Art*

69. The references cited above, in Sections E and F, demonstrate the high level of skill in the art which includes knowledge of how to manufacture a negative pressure air bearing slider surface with multiple air

bearing surfaces and additional functional structures (e.g., transducers) and a knowledge of how surface and structure changes impact the sliders operation for its intended purpose.

IV. EXAMINER'S REJECTION UNDER 35 U.S.C. § 102

A. *Legal Principles*

On appeal, Appellants bear the burden of showing that the Examiner has not established a legally sufficient basis for anticipation based on the Nepela patent.

Appellants may sustain this burden by showing that the prior art reference relied upon by the Examiner fails to disclose an element of the claim. It is axiomatic that anticipation of a claim under § 102 can be found only if the prior art reference discloses every element of the claim. *See In re King*, 801 F.2d 1324, 1326, 231 USPQ 136, 138 (Fed. Cir. 1986) and *Lindemann Maschinenfabrik GMBH v. American Hoist & Derrick Co.*, 730 F.2d 1452, 1458, 221 USPQ 481, 485 (Fed. Cir. 1984).

B. *§ 102 - The Examiner's Prima Facie Case*

Our Findings of Fact 23-27 set out the basis upon which the Examiner originally made a § 102 rejection in the Final Office Action. As shown in Findings of Fact 28-37, the record supports the Examiner's findings with respect to Nepela.

Basically, the Examiner has properly established a prima facie showing that reissue 21, 30-32, and 41, are anticipated by Nepela.

C. *§ 102 - Appellants' Response*[3]

(1)
Missing Elements

In the Brief at pages 50-51, Appellants argue that claims 21, 30-32, and 41 are patentable because side rails 72, 74 and cross rail 98 of Nepela's Figure 4b (and analogous features in Figures 4c, 5b, 5c, and 5d) fail to recite all the U-shaped platform of claims 21, 30-32, and 41. We disagree.

By itself, central front pad 108 of Nepela's Figure 5c is a U-shaped platform as defined by the claims. Findings of Fact 28-37 demonstrate that every element of claims 21, 30-32, and 41, is found in Nepela. This argument fails to show Examiner error.

(2)
Center Pad 108 Is Missing Sidewalls

In the Substitute Reply Brief at pages 21-23 (and again in the Third Reply at pages 9-18), Appellants argue that claims 21, 30-32, and 41 are patentable because the presence of side rails 112, 114 in Nepela's Figure 5c

[3] Appellants' response is contained in the Brief filed December 9, 2002, Substitute Reply Brief filed May 8, 2003, Third Reply Brief filed October 25, 2004, and Supplement to Reply Brief filed April 4, 2007.

prevents either of the short legs of center pad 108 from serving as the "sidewall portion" defined by claims 21 and 31. We disagree.

In effect Appellants' argue for a narrow definition of the claim term "side wall" that require a "side wall" to adjoin the side of the slider as does side rails 112 and 114. Such a narrow definition would preclude the short legs of center pad 108. One such use of the term is found in Appellants' Specification at column 4, lines 26-31. (See Finding of Fact 2.) However, Appellants' Specification also uses the term to describe straight line segments of the cross rail which do not adjoin the slider sides. (See Finding of Fact 4.) As our reviewing court stated in Phillips v. AWH Corp., 415 F.3d 1303, 1315, 75 USPQ2d 1321, 1327 (Fed. Cir. 2005):

> The claims, of course, do not stand alone. Rather, they are part of "a fully integrated written instrument," *Markman*, 52 F.3d at 978, consisting principally of a specification that concludes with the claims. For that reason, claims "must be read in view of the specification, of which they are a part." *Id*. at 979. As we stated in *Vitronics*, the specification "is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term." 90 F.3d at 1582.

Moreover, in prosecution before the Patent Office, claims are given their broadest reasonable construction consistent with the specification. *In re American Academy of Science Tech. Center*, 367 F.3d 1359, 1369, 70 USPQ2d 1827, 1834 (Fed. Cir. 2004).

Given the ample support for Examiner's position, we conclude that Appellants have not shown the Examiner erred on this point.

(3)
Modification of Nepela to Provide Missing Elements

In the Third Reply Brief at pages 18-21, Appellants argue that modification of Nepela is impermissible to support an anticipation rejection. We agree.

However, no such modification is used by the Examiner to support the rejection. Rather, as discussed above, every element of claims 21, 30-32, and 41, is found in Nepela. Therefore, this argument fails to show Examiner error.

(4)
Chapin Patent

In the Third Reply Brief at pages 21-25, Appellants argue that the Chapin does not support the Examiner's anticipation rejection. We agree.

However, the Chapin Patent was not used by the Examiner to support the rejection. Rather, as discussed above, every element of claims 21, 30-32, and 41, is found in Nepela. Therefore, this argument fails to show Examiner error.

(5)
Presence of Other Air Bearing Surfaces

In the Third Reply Brief at pages 25-26, Appellants argue that the presence of other air bearing surfaces is irrelevant to the Examiner's anticipation rejection. We agree.

However, this point was not used by the Examiner to support the rejection. Rather, as discussed above, every element of claims 21, 30-32, and 41, is found in Nepela. Therefore, this argument fails to show Examiner error.

(6)
Presence of Other Air Bearing Surfaces

In the Supplement to Reply Brief at pages 3-5, Appellants argue that Nepela does not expressly teach a negative pressure cavity on said principal surface. We disagree.

This element is found in Nepela as shown by Findings of Fact 28-29. Therefore, this argument fails to show Examiner error.

(7)
Function of Nepela's U-Shape

In the Supplement to Reply Brief at page 5, Appellants argue that Nepela does not ascribe any function to the inverted U-shape. We disagree.

An "air bearing" function for the center pad is described in Nepela as shown by Findings of Fact 28-29. Therefore, this argument fails to show Examiner error.

(8)
Nepela Teaches Three Air Bearing Surfaces

In the Supplement to Reply Brief at page 5-7, Appellants argue that the claims are patentable over Nepela because Nepela teaches three air bearing surfaces rather than "not more than two separate air bearing platforms" as required by the claims. We disagree.

The claim limitation "not more than two separate air bearing platforms" is a limitation on the number of platforms that form the U-shape. This limitation does not limit the total number of air bearing platforms. The Examiner relies on a single platform 108 forming a U-shape to support the rejection. (See Finding of Fact 26.) As discussed above, every element of claims 21, 30-32, and 41, is found in Nepela. Therefore, this argument fails to show Examiner error.

(9)
Nepela fails to Label Features

In the Supplement to Reply Brief at page 7-9, Appellants argue that the claims are patentable over Nepela because Nepela does not label features using the same labels as Appellants. We disagree.

Appellants do not present an argument that Nepela's structures fail to function as described by the Examiner. Rather, Appellants argue that Nepela does not label the structures in the same way as Appellants and thus there is no basis for the Examiner to equate Nepela's structures to Appellants' labels.

As discussed above, every element of claims 21, 30-32, and 41, is found in Nepela. Therefore, this argument fails to show Examiner error.

V. NEW GROUNDS OF REJECTION

(1)
New Ground of Rejection of Claims 42-51

Reissue claims 42-51 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite.

As to claim 42, lines 11-13 (Br. 59) read as follows:

> "said U-shaped air bearing platform comprising not more than two separate air bearing platforms each extending from different and facing spaced-apart opposite ends of said not more than two separate air bearing platforms . . ."

This does not make sense as the "separate air bearing platforms" extend from opposite ends of themselves. Also lines 14 and 15 of claim 42 recite "said first side wall portion" and "said second side wall portion" respectively. These items have no antecedent basis. Thus, it is unclear what structure Appellants are actually claiming in claim 42 and its dependent claims.

For the reasons *supra*, we reject of claims 42-51 under 35 U.S.C. § 112 using our authority under 37 C.F.R. § 41.50(b).

We make no prior art rejection of claims 42-51 because the subject matter encompassed by the claims on appeal must be reasonably understood without resort to speculation. Presently, speculation and conjecture must be utilized by us and by the artisan inasmuch as the claims on appeal do not adequately reflect what the disclosed invention is. Note *In re Steele*, 305 F.2d 859, 862, 134 USPQ 292, 295 (CCPA 1962) (A prior art rejection cannot be sustained if the hypothetical person of ordinary skill in the art would have to make speculative assumptions concerning the meaning of claim language.); Note also *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970).

(2)
New Ground of Rejection of Claims 21, 30-32, and 41

Reissue claims 21, 30-32, and 41 are rejected under 35 U.S.C. § 102(b) as being anticipated by each of the Ogishima, Strom I, and Dorius patents. See Findings of Fact 42-47.

Reissue claims 21, 30-32, and 41 are rejected under 35 U.S.C. § 102(e) as being anticipated by the Ruiz patent. See Findings of Fact 48-49.

For the reasons *supra*, we reject of claims 21, 30-32, and 41 under 35 U.S.C. § 102(b) and (e) using our authority under 37 C.F.R. § 41.50(b).

(3)
New Ground of Rejection of Claims 21-23 and 31-34

Reissue claims 21-23 and 31-34 are rejected under 35 U.S.C. § 102(e) as being anticipated by the Bolasna I patent. See Findings of Fact 50-51.

For the reasons *supra*, we reject of claims 21-23 and 31-34 under 35 U.S.C. § 102(e) using our authority under 37 C.F.R. § 41.50(b).

(4)
New Ground of Rejection of Claims 21, 31-32, 52-53, 55-56, and 58-59

Reissue claims 21, 31-32, 52-53, 55-56, and 58-59 are rejected under 35 U.S.C. § 102(e) as being anticipated by the Lairson patent. See Findings of Fact 52-53.

For the reasons *supra*, we reject of claims 21, 31-32, 52-53, 55-56, and 58-59 under 35 U.S.C. § 102(e) using our authority under 37 C.F.R. § 41.50(b).

(5)
New Ground of Rejection of Claims 21-23, 30-34, and 41

Reissue claims 21-23, 30-34, and 41 are rejected under 35 U.S.C. § 102(e) as being anticipated by the Chang patent. See Findings of Fact 54-55.

For the reasons *supra*, we reject of claims 21-23, 30-34, and 41 under 35 U.S.C. § 102(e) using our authority under 37 C.F.R. § 41.50(b).

(6)
New Ground of Rejection of Claims 25-26 and 36-37

Reissue claims 25-26 and 36-37 are rejected under 35 U.S.C. § 103 as being unpatentable over the Chang and Chapin patent.

An invention that would have been obvious is not patentable. *KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 82 USPQ2d 1385 (2007). The question of obviousness is resolved on the basis of underlying factual determinations including (1) the scope and content of the prior art, (2) any differences between the claimed subject matter and the prior art, (3) the level of skill in the art, and (4) where in evidence, so-called secondary considerations. *Graham v. John Deere Co.*, 383 U.S. 1, 17-18, 148 USPQ 459, 467 (1966). *See also KSR*, 127 S.Ct. at 1734, 82 USPQ2d at 1391 ("While the sequence of these questions might be reordered in any particular case, the [Graham] factors continue to define the inquiry that controls.")

In *KSR*, the Supreme Court emphasized "the need for caution in granting a patent based on the combination of elements found in the prior

art," *id*. at 1739, 82 USPQ2d at 1395. In particular, the Court reaffirmed principles based on its precedent that "[t]he combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results." *Id*. The Court stated that there are "[t]hree cases decided after *Graham* [that] illustrate this doctrine." *Id*. at 1739, 82 USPQ2d at 1395. "In *United States v. Adams*, … [t]he Court recognized that when a patent claims a structure already known in the prior art that is altered by the mere substitution of one element for another known in the field, the combination must do more than yield a predictable result." *Id*. at 1739-40, 82 USPQ2d at 1395. "In *Anderson's-Black Rock, Inc. v. Pavement Salvage Co.*, … [t]he two [pre-existing elements] in combination did no more than they would in separate, sequential operation." *Id*. at 1740, 82 USPQ2d at 1395. "[I]n *Sakraida v. AG Pro, Inc.*, … the Court derived from the precedents the conclusion that when a patent simply arranges old elements with each performing the same function it had been known to perform and yields no more than one would expect from such an arrangement, the combination is obvious." *Id*. at 1740, 82 USPQ2d at 1395-96 (internal quotation omitted). The principles underlining these cases are instructive when the question is whether a patent application claiming the combination of elements of prior art is obvious.

> When a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one. If a person of ordinary skill can implement a predictable variation, § 103 likely bars its patentability. For the same reason, 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.

Id. at 1740, 82 USPQ2d at 1396. The operative question is thus "whether the improvement is more than the predictable use of prior art elements according to their established functions." *Id*.

See Findings of Fact 54-55, 58, 65, and 67-69. Given, the teachings of Chang and Chapin, the level of skill in the art, and small difference between Chang and the subject matter of claims 25-26 and 36-37, we conclude that the substitution of a recessed step (as found in Chapin) in place of the centered gap taught by Chang would have been obvious.

For the reasons *supra*, we reject of claims 25-26 and 36-37 under 35 U.S.C. § 103 using our authority under 37 C.F.R. § 41.50(b).

(7)

New Ground of Rejection of Claims 21-22, 24, 30-33, 35, and 41

Reissue claims 21-22, 24, 30-33, 35, and 41 are rejected under 35 U.S.C. § 102(e) as being anticipated by the Bolasna II patent. See Findings of Fact 56-57.

For the reasons *supra*, we reject of claims 21-22, 24, 30-33, 35, and 41 under 35 U.S.C. § 102(e) using our authority under 37 C.F.R. § 41.50(b).

(8)

New Ground of Rejection of Claims 25-26 and 36-37

Reissue claims 25, 27, 36, and 38 are rejected under 35 U.S.C. § 103 as being unpatentable over the Bolasna II and Chapin patent.

See Findings of Fact 56-58 and 66-69. Given, the teachings of Bolasna II and Chapin, the level of skill in the art, and small difference between Bolasna II and the subject matter of claims 25-26 and 36-37, we conclude that the substitution of a recessed step (as found in Chapin) in place of the off-center gap taught by Bolasna II would have been obvious.

For the reasons *supra*, we reject of claims 25, 27, 36, and 38 under 35 U.S.C. § 103 using our authority under 37 C.F.R. § 41.50(b).

(9)

New Ground of Rejection of Claims 21, 28-32, 39-41, and 52-60

Reissue claims 21, 28-32, 39-41, and 52-60 are rejected under 35 U.S.C. § 102(b) as being anticipated by the Murray II patent. See Findings of Fact 59-60.

For the reasons *supra*, we reject of claims 21, 28-32, 39-41, and 52-60 under 35 U.S.C. § 102(b) using our authority under 37 C.F.R. § 41.50(b).

(10)
37 C.F.R. § 41.50(b)

37 C.F.R. § 41.50(b) provides that, "[a] new ground of rejection pursuant to this paragraph shall not be considered final for judicial review."

37 C.F.R. § 41.50(b) also provides that the Appellants, *WITHIN TWO MONTHS FROM THE DATE OF THE DECISION*, must exercise one of the following two options with respect to the new grounds of rejection to avoid termination of the appeal as to the rejected claims:

> (1) Submit an appropriate amendment of the claims so rejected or new evidence relating to the claims so rejected, or both, and have the matter reconsidered by the examiner, in which event the proceeding will be remanded to the examiner …
>
> (2) Request that the proceeding be reheard under 37 C.F.R. § 41.52 by the Board upon the same record …

VI. CONCLUSIONS OF LAW

(1) Appellants have failed to establish that the Examiner erred in rejecting claims 21, 30-32, and 41 under 35 U.S.C. § 102(a).

(2) Reissue claims 21-60 are not patentable.

(3) Since we have entered new rejections, our decision is not a final agency action.

VII. DECISION

Upon consideration of the record, and for the reasons given, we affirm the rejection of reissue claims 21, 30-32, and 41 under 35 U.S.C. § 102(a); we reject reissue claims 42-51 under 35 U.S.C. § 112, second paragraph; we reject reissue claims 21-24, 28-35, 39-41, and 52-60 under 35 U.S.C. § 102; and we reject reissue claims 25-27 and 36-38 under 35 U.S.C. § 103.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED
37 C.F.R. § 41.50(b)

pgc

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