

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 15

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte CYPRIAN EMEKA UZOH
and
HOMAYOUN TALIEH

Appeal No. 2003-1980
Application No. 09/351,868

ON BRIEF

Before OWENS, WALTZ, and MOORE, *Administrative Patent Judges*.
MOORE, *Administrative Patent Judge*.

DECISION ON APPEAL

This is an appeal under 35 U.S.C. § 134 from the final rejection of claims 1-3, 5-9, 11-20, 49-52, 66, 67, 71-80, 85, and 86. Claims 21-37, 55-62, and 64 are allowed. Claims 4, 10, 53, 54, 68-70, and 81-84 are objected to. Claims 38-48, 63, and 65 have been canceled. Thus, only claims 1-3, 5-9, 11-20, 49-52, 66, 67, 71-80, 85, and 86 are before us on this appeal.

REPRESENTATIVE CLAIMS

Claims 1, 5, 6, 17, 49, 73 and 74 are representative and read as follow:

1. A method for simultaneously cleaning and annealing a metallic layer plated on a workpiece having an insulating substrate, the method comprising the step of applying a cleaning and annealing fluid to the metallic layer while heating the workpiece and the applied cleaning and annealing fluid.

5. A method according to claim 1, wherein the cleaning and annealing fluid comprises deoxygenated de-ionized water.

6. A method according to claim 5 further comprising the step of deoxygenating the deionized water by adding bubbled nitrogen to the de-ionized water.

17. A method according to claim 1, wherein the cleaning and annealing fluid comprises propylene glycol.

49. A method for altering the grain size and the texture of a metallic layer formed over an insulating substrate, the method comprising the step of heating the substrate and deoxygenated de-ionized water while applying the deoxygenated de-ionized water to the substrate.

73. A method for simultaneously cleaning and annealing a metallic layer plated on a workpiece having an insulating substrate, the method comprising the step of applying a heated cleaning and annealing fluid to the metallic layer to both clean and anneal the metallic layer.

74. A method according to claim 73, wherein the cleaning and annealing fluid comprises deoxygenated de-ionized water.

Appeal No. 2003-1980
Application No. 09/351,868

The References

In rejecting the claims under 35 U.S.C. § 103(a), the examiner relies upon the following references:

Foreman	3,865,642	Feb. 11, 1975
Allain et al. (Allain)	3,928,443	Dec. 23, 1975
Wahlbeck	4,902,342	Feb. 20, 1990
Cohen et al. (Cohen)	5,800,626	Sep. 01, 1998

The Rejections

A. Claims 1-3, 5, 11-16, 19, 20, 49-52, 66, and 67 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Allain.

B. Claims 1-3, 12-16, 19, 20, 66, 71-73, 75-80, 85, and 86 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Wahlbeck.

C. Claims 17 and 18 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Allain or Wahlbeck in view of Foreman.

D. Claims 6-9 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Allain in view of Cohen.

E. Claim 74 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Wahlbeck in view of Allain.

Appeal No. 2003-1980
Application No. 09/351,868

The Invention

The invention relates to a method for cleaning and annealing a metallic layer on a workpiece having an insulating substrate by applying a cleaning and annealing fluid to the metallic layer while heating the workpiece and the applied cleaning and annealing fluid. (See, e.g., claim 1).

A. The Rejection of Claims 1-3, 5, 11-16, 19, 20, 49-52, 66, and 67 under 35 U.S.C. § 103(a) as being unpatentable over Allain.

The examiner has found that Allain teaches treating metal such as a copper aluminum alloy with deionized, deoxygenated water. (Examiner's Answer, page 4, lines 14-15). The examiner states that Allain does not disclose cleaning and annealing, but finds that Allain would clean and anneal at the temperatures recited. (Examiner's Answer, page 4, lines 17-19). The examiner further states that Allain does not specify that the material being treated is a metallic layer, but finds that any material undergoing treatment can be considered a layer and the copper alloy of Allain is the layer, while any substance on which the metal rests is an insulating substrate (Examiner's Answer, page 5, lines 12-19).

The appellants, on the other hand, urge that Allain is directed to dissolving aluminum from particles, not annealing metal plated on a workpiece (Appeal Brief, page 4, lines 7-9).

Appeal No. 2003-1980
Application No. 09/351,868

The appellants further urge that the claims recite that the metallic layer is plated on a workpiece that has an insulating substrate, which is much narrower than any metal undergoing treatment. (Appeal Brief, page 4, lines 26-30).

We agree with the appellants. We find that the independent claims, claim 1, 49, and 73, are restricted to a method involving a metallic layer formed over an insulating substrate. For example, claim 1 specifically recites that a cleaning and annealing fluid is applied to a metallic layer and claim 73 specifically references the metallic layer, each in the body of the claim. Claim 49 references the layer in the preamble and such reference is necessary to understand the grain size adjustment which occurs in the metal layer.

Generally, the preamble does not limit the claims. DeGeorge v. Bernier, 768 F.2d 1318, 1322 n.3, 226 USPQ 758, 764 n.3 (Fed. Cir. 1985). However, the preamble may be limiting "when the claim drafter chooses to use both the preamble and the body to define the subject matter of the claimed invention." Bell Communications Research, Inc. v. Vitalink Communications Corp., 55 F.3d 615, 620, 34 USPQ2d 1816, 1820 (Fed. Cir. 1995). If the preamble is "necessary to give life, meaning and vitality" to the claim, then the claim preamble should be construed as limiting. Kropa v. Robie, 187 F.2d 150, 152, 88 USPQ 478, 480-81 (CCPA 1951). This

Appeal No. 2003-1980
Application No. 09/351,868

is determined "on the facts of each case in view of the claimed invention as a whole." In re Stencel, 828 F.2d 751, 754, 4 USPQ2d 1071, 1073 (Fed. Cir. 1987); see also Applied Materials, Inc. v. Advanced Semiconductor Materials Am., Inc., 98 F.3d 1563, 1572-73, 40 USPQ2d 1481, 1488 (Fed. Cir. 1996) ("Whether a preamble stating the purpose and context of the invention constitutes a limitation . . . is determined on the facts of each case in light of the overall form of the claim, and the invention as described in the specification and illuminated in the prosecution history.").

In this instance, the inventor has chosen to, and admits that, these claims are limited by the preamble. The use of the term "layer" in the body of the claim requires reference to the preamble to understand the structural relationships involved. Accordingly, we conclude, based upon the facts of this claim, that claim 1 is limited by its preamble.

Likewise, claim 49 accomplishes its method of altering grain size of a metallic layer by heating a substrate. The metallic layer is defined as plated upon the substrate in the preamble. Accordingly, based upon the facts of this claim, we conclude that the preamble limits claim 49 and requires a metallic layer.

Finally, claim 73 contains similar structural relationships as claim 1. The body of the claim references the metallic layer, while the preamble defines that layer as plated on a workpiece

Appeal No. 2003-1980
Application No. 09/351,868

having an insulating substrate. Accordingly, we also conclude that, based upon the facts of this claim, claim 73 is limited by its preamble and requires the presence of the metallic layer plated on a workpiece.

Turning to the cited reference, we observe that it discusses treating particles of a metal alloy, which particles can range from 0.001 to 0.5 inch. (Column 1, lines 43-49). We are unable to discern where treating a metal layer plated on a workpiece is disclosed. We disagree with the Examiner's conclusion that "any" metal material undergoing treatment can be a layer and the substance upon which that metal rests is a substrate. The independent claims clearly require the metal layer to be plated upon the workpiece.

As the examiner has not shown this element of the claimed invention to be present in the cited prior art, we are constrained to reverse this rejection.

B. The Rejection of Claims 1-3, 12-16, 19, 20, 66, 71-73, 75-80, 85, and 86 under 35 U.S.C. § 103(a) as being unpatentable over Wahlbeck.

The examiner has found that Wahlbeck discloses annealing copper wire using highly purified deionized water. The wire is heated and the examiner states that the water would inherently clean the wire. The examiner also finds that the wire undergoing

Appeal No. 2003-1980
Application No. 09/351,868

treatment is equivalent to the claimed layer, and that the idle running contact roller is equivalent to the substrate of the appealed claims. (Examiner's Answer, page 6, lines 5-15).

The appellants, on the other hand, again maintain that the metal pieces of Wahlbeck are not covered by the instant claims, that Wahlbeck has no relevance to the instant claims, and that there is no teaching that Wahlbeck operates as the instant claims recite. (Appeal Brief, page 5, lines 12-24).

Again, we agree with the appellants. Wahlbeck discloses annealing metal jewelry in deionized water (column 7, lines 19-21 and 55-57). However, we find that the wire, resting on the running contact roller, is not equivalent to, and does not teach, the claimed metal layer plated on a workpiece having an insulating substrate. Accordingly, we reverse this rejection.

C. The Rejection of Claims 17 and 18 under 35 U.S.C. §103(a) as being unpatentable over Allain or Wahlbeck in view of Foreman.

The examiner has found that Foreman teaches the use of propylene glycol in a metal treating fluid. Thus, the examiner concludes, it would have been obvious to use a cleaning and annealing fluid of propylene glycol in the Allain or Wahlbeck processes. (Examiner's Answer, page 7, lines 6-10).

The appellants urge, again, that Allain and Wahlbeck are inapplicable. (Appeal Brief, page 6, lines 15-17).

Appeal No. 2003-1980
Application No. 09/351,868

We agree with the appellants that Allain and Wahlbeck do not render the invention as claimed obvious, and that Foreman does not remedy the deficiencies discussed above with respect to each reference. Accordingly, we reverse this rejection.

D. The Rejection of Claims 6-9 under 35 U.S.C. §103(a) as being unpatentable over Allain in view of Cohen.

The examiner has found that Cohen indicated the use of gases as claimed in claims 6-8 are conventional in the art of producing deoxygenated water. Accordingly, he concludes that one of ordinary skill in the art would have been motivated to produce deoxygenated water in this manner. (Examiner's Answer, page 7, last paragraph).

The appellants again note that the combination of Allain with Cohen does not support a rejection under section 103 as Allain is inapplicable. (Appeal Brief, page 7, lines 8-10). We agree, for the reasons recited above, and reverse this rejection as well.

E. The Rejection of Claim 74 under 35 U.S.C. § 103(a) as being unpatentable over Wahlbeck in view of Allain.

The examiner has found that Allain indicates the use of deoxygenated water is preferable in treating metals with deionized water. Accordingly, he concludes that it would have been obvious to use the deionized water of Allain in the Wahlbeck process. (Examiner's Answer, page 8, lines 3-7).

Appeal No. 2003-1980
Application No. 09/351,868

The appellants again urge that Allain is inapplicable, and that Wahlbeck is distinguished from the claimed invention. (Appeal Brief, page 7, lines 17-24).

Again, we agree that neither Allain nor Wahlbeck teach treating the plated metal layer, as required by the instant claims. Accordingly, we reverse this rejection.

Summary of Decision

The rejection of claims 1-3, 5, 11-16, 19, 20, 49-52, 66, and 67 under 35 U.S.C. § 103(a) as being unpatentable over Allain is reversed.

The rejection of claims 1-3, 12-16, 19, 20, 66, 71-73, 75-80, 85, and 86 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Wahlbeck is reversed.

The rejection of claims 17 and 18 under 35 U.S.C. §103(a) as being unpatentable over Allain or Wahlbeck in view of Foreman is reversed.

The rejection of claims 6-9 under 35 U.S.C. §103(a) as being unpatentable over Allain in view of Cohen is reversed.

Appeal No. 2003-1980
Application No. 09/351,868

The rejection of claim 74 under 35 U.S.C. § 103(a) as being unpatentable over Wahlbeck in view of Allain is reversed.

REVERSED

TERRY J. OWENS)	
Administrative Patent Judge)	
)	
)	
)	BOARD OF PATENT
THOMAS A. WALTZ)	
Administrative Patent Judge)	APPEALS AND
)	
)	INTERFERENCES
)	
JAMES T. MOORE)	
Administrative Patent Judge)	

JTM/ki

Appeal No. 2003-1980
Application No. 09/351,868

PILLSBURY MADISON & SUTRO LLP
DAVID A JAKOPIN
1100 NEW YORK AVENUE N W
NINTH FLOOR EAST TOWER
WASHINGTON DC 20005-3918