

THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 14

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte TUKARAM K. HATWAR AND DOUGLAS G. STINSON

Appeal No. 95-4066
Application 07/963,189¹

ON BRIEF

Before METZ, WEIFFENBACH and OWENS, ***Administrative Patent Judges***.

METZ, ***Administrative Patent Judge***.

DECISION ON APPEAL

This is an appeal under 35 U.S.C. § 134 from the examiner's refusal to allow claims 1, 4, 6, 7, 10, 12, 13, 15, 17 and 20, all the claims in this application.

¹ Application for patent filed October 19, 1992.

THE INVENTION

The claimed invention is directed to an improved compact disk capable of having information written thereon by a radiation beam. The improvement is obtained by substituting for the prior art reflective gold layer an alloy of silver with palladium and optionally copper or an alloy of silver with copper and optionally palladium.

Claims 1 and 7 are reproduced below for a more facile understanding of appellants' claimed invention.

Claim 1. A compact disk capable of having information written thereon by a radiation beam, said compact disk comprising:

a protective overcoat;

a reflecting layer proximate said protective overcoat, wherein said reflecting layer is a silver-palladium alloy having a palladium content in the range of from 1-15 at.%;

a recording layer coupled to said reflecting layer; and

a plastic substrate coupled to said recording layer.

Claim 7. A compact disk capable of having information written thereon by a radiation beam, said compact disk comprising:

a protective overcoat;

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a reflecting layer coupled to said protective
overcoat;
a recording layer coupled to said
layer; and
a plastic substrate
coupled to said recording layer, wherein said reflecting
layer is a silver-copper alloy, wherein said copper
content of said silver copper alloy is in the range of 1-
30 at.%.

THE PRIOR ART

In addition to what the examiner has characterized as
"appellants' admissions", the references of record which are
being relied on by the examiner as evidence of obviousness
are:

Takahashi et al. (Takahashi) 5, 1988	4,717,628	Jan.
Shindo et al. (Shindo) 16, 1991	5,032,470	Jul.
Tomie et al. (Tomie) (Japanese Kokai)	03-25737	Feb. 4, 1991
Kobayashi et al. (Kobayashi) 1989 (Japanese Kokai)	01-204243	Aug. 16,
Hasegawa et al. (Hasegawa)	04-102241	Apr. 3,

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1992²
(Japanese Kokai)

Claims 1, 4, 6, 7, 10, 12, 13, 15, 17 and 20 stand rejected under 35 U.S.C. § 103 as being unpatentable over "appellants' admissions" considered with Tomie, and further in view of Kobayashi, Takahashi and Shindo. Claims 1, 4, 6, 7, 10, 12, 13, 15, 17 and 20 stand rejected under 35 U.S.C. § 103 as being unpatentable over "appellants' admissions" in view of Takahashi, in further view of Hasegawa and Shindo. Claim 7 stands rejected under 35 U.S.C. § 103 as being unpatentable from "appellants' admissions" considered with Tomie and Shindo. We shall reverse the first stated rejection under 35 U.S.C. § 103 to the extent it extends to claims 1, 4, 6, 10, 12, 13, 15, 17 and 20 but affirm the first rejection to the extent it applies to claim 7. We shall reverse the second stated rejection in its entirety. We shall affirm the sole rejection of claim 7 under 35 U.S.C. § 103.

APPELLANTS' ADMISSIONS

² Reference to each of Tomie, Kobayashi and Hasegawa is a reference to an English language translation thereof.

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The examiner relies on what he characterizes as "appellants' admissions" in each of his rejections of appellants' claims. Rejections founded on evidence of what appellants have conceded to be prior art with respect to their claimed invention is not without precedent. See In re Nomiya, 509 F.2d 566, 570-71, 184 USPQ 607, 611 (CCPA 1975). Accordingly, we shall first determine the scope and content of "appellants' admissions."

As "appellants' admissions", it appears that the examiner relies on appellants' Figure 1 of the drawings which is characterized by appellants as "an example of the structure of a typical writable storage medium such as a compact disk." (page 3, lines 34 through 36 of the specification). In Figure 1 there is described a layered structure comprising a plastic substrate; an organic dye recording layer; a metal reflector layer, typically gold; and, a protective overcoat, such as lacquer (page 1, lines 16 through 24 of the specification). Appellants allege to have discovered that the problems associated with a gold reflector layer may be mitigated by substituting for gold a silver-palladium alloy with a palladium content of from 1 to 15 atomic percent (claims 1, 4,

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6, 10, 12, 13, 15, 17 and 20) or a silver-copper alloy with a copper content of from 1 to 30 atomic percent (claim 7).

THE CLAIMS

There are four independent claims before us for our consideration. Claim 1 is an independent claim directed to a compact disk comprising, *inter alia*, a reflecting layer which is a silver-palladium alloy having a palladium content of from 1 to 15 atomic percent. Claim 7 is an independent claim drawn to a compact disk comprising, *inter alia*, a reflecting layer which is a silver-copper alloy having a copper content of from 1 to 30 atomic percent. Claim 13 is an independent claim directed to a method for improving the storage characteristics of a compact disk having a recording layer proximate to a reflecting layer comprising depositing a reflecting layer of a silver-palladium alloy having a palladium content of from 1 to 15 atomic percent on the recording layer of said disk. Claim 17 is an independent claim drawn to a storage medium for storing information by vertically oriented magnetic domains comprising, *inter alia*, a reflecting layer coupled to the recording layer and including a silver-palladium alloy having

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a palladium content of from 1 to 15 atomic percent.

Claim 4 depends from independent claim 1 and further includes in the alloy of claim 1 copper in an amount less than 30 atomic percent. Claim 10 depends from claim 7 and further includes in the silver-copper alloy of claim 7 from 1 to 15 atomic percent palladium. Claim 15 depends from independent claim 13 and further requires in the alloy of claim 13 from 1 to 30 atomic percent copper. Claim 20 depends from independent claim 17 and further includes in the alloy of claim 17 from 1 to 30 atomic percent of copper.

OPINION

The examiner's first stated rejection under 35 U.S.C. § 103 over appellants' admission considered with Tomie, Kobayashi, Takahashi and Shindo is apparently founded on the examiner's unsubstantiated position that a person of ordinary skill in the art would have been motivated to substitute for the admitted, conventional gold reflector layer, the reflector layer of Tomie as modified in accordance with Kobayashi, Takahashi and Shindo. Thus, as a first error in his rejection,

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the examiner has failed to provide, as was his burden, evidence establishing that the skilled routineer would have been motivated to substitute for gold of the admitted prior art configuration the silver-copper alloy reflector layer of Tomie as modified by Kobayashi, Takahashi and Shindo.

Secondly, and more significantly, claims 1, 4, 6, 10, 12, 13, 15, 17 and 20 require a silver-palladium alloy and none of Tomie, Kobayashi or Takahashi is directed to silver-palladium alloys. Tomie is directed to silver-copper alloys. Kobayashi is directed to aluminum layers or aluminum alloys covered with protective layers of tantalum. While Kobayashi does disclose palladium as a useful metal for alloying metal reflector layers, the metal to which it is suggested that palladium may be added is aluminum. Similarly, Takahashi alloys aluminum with nickel, palladium, platinum, chromium or molybdenum.

Shindo recognizes a problem with the adherence of the organic dye recording layer to the metal reflector layer and resolves the problem by further including an organic heterocyclic compound intermediate layer between the recording layer and the metal reflector layer. While Shindo does recognize, in the broadest sense, that alloys of silver and

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copper make useful metal reflector layers, no alloy within the range claimed by appellants is described or suggested.

Moreover, Shindo always requires an intermediate layer of an organic heterocyclic compound between the metal layer and the recording layer. Claim 1 requires that the recording layer is coupled to the reflecting layer.

Thus, in his first stated rejection, as it applies to all claims except claim 7, the examiner has failed to discharge his burden of persuasion by failing to provide both a factual basis which supports a legal conclusion of obviousness and by failing to provide evidence which would establish the requisite motivation for making the proposed substitution and, assuming motivation existed, that an ordinarily skilled routineer would have had a reasonable expectation of success by making the various selections and substitutions suggested by the prior art on which the examiner relies.

While there is a modicum of logic to the examiner's stated position, we find it is flawed for at least two reasons. First, making the proposed selections and substitutions does not yield a silver-palladium alloy as claimed in claims 1, 4, 6, 10, 12, 13, 15, 17 and 20. Second,

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the examiner has made the proposed selections and substitutions using appellants' claims as a guide.

Nevertheless, claim 7 stands on a different footing than all the other claims which the examiner has rejected on the first stated grounds. Claim 7 requires a compact disk having a reflective layer which is a silver-copper alloy having from 1 to 30 atomic percent copper. Tomie describes an alloy within the metes and bounds of claim 7 and Tomie provides motivation for using said alloy rather than conventional compact disk metal reflective layers. Specifically, the silver-copper alloy of Tomie is said to yield a reflective layer with an improved signal to noise ratio with superior corrosion resistance. Thus, we are satisfied that a person seeking a reflective layer of improved signal to noise ratio would have been motivated to substitute for the prior art gold reflective layer the silver-copper alloy reflective layer of Tomie. Accordingly, we shall affirm the rejection of claim 7 under 35 U.S.C. § 103 as being unpatentable from "appellants' admissions" taken with Tomie. We find Kobayashi, Takahashi and Shindo to be merely cumulative and represent the state of the art.

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The examiner's second stated rejection under 35 U.S.C. § 103 is founded on "appellants' admissions" considered with Takahashi in further view of Hasegawa and Shindo. Having discussed above all the prior art on which the examiner relies here except for Hasegawa, we shall here limit our specific discussion of the prior art to Hasegawa.

Hasegawa recognizes that a problem exists between the organic dye recording layers of a compact disk and the metal reflective layer. Specifically, Hasegawa recognizes that there is poor adhesion between the metal reflective layer and the organic dye layer. Hasegawa overcomes this problem by including a layer of an organic heterocyclic compound containing at least one of nitrogen or sulfur between the recording layer and the reflective layer. Appellants' claims, however, require that the recording layer and reflective layer are coupled, one to the other. Still further, Hasegawa at best only generically suggests silver-copper alloys as useful for the reflective layer. The specific examples of alloys used by Hasegawa include, in atomic percents: 60/40 gold/copper; 70/30 gold/copper; 70/30 gold/silver; and, 50/50 gold/silver. No silver-palladium or silver-copper alloys in the atomic

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percents claimed by appellants are described.

Accordingly, to the extent the rejected claims require either a silver-palladium alloy or a silver-copper alloy, the proposed combination of prior art does not make out a *prima facie* case of obviousness. As we noted above, Takahashi is directed to lowering the coefficient of thermal conductivity of aluminum alloys not silver alloys. Hasegawa does not describe silver-palladium alloys at all and only broadly suggests silver-copper alloys to be useful. Additionally, Hasegawa requires a layer between the recording layer and the reflective layer we find is excluded by appellants' claims. Shindo is directed to aluminum-hafnium alloys as reflective layers and neither describes nor suggests silver-palladium nor silver-copper alloys. Where the legal conclusion of obviousness is not supported by facts it cannot stand. See In re Warner, 379 F.2d 1011, 1017, 154 USPQ 173, 178 (CCPA 1967).

The examiner's rejection of claim 7 as being unpatentable under 35 U.S.C. § 103 from "appellants' admissions" considered with Tomie in further view of Shindo is affirmed for reasons expressed above with respect to the examiner's first stated

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rejection.

SUMMARY

The rejection of claims 1, 4, 6, 10, 12, 13, 15, 17 and 20 under 35 U.S.C. § 103 as being unpatentable over "appellants' admissions" considered with Tomie, and further in view of Kobayashi, Takahashi and Shindo is, **REVERSED**. The rejection of claim 7 under 35 U.S.C. § 103 as being unpatentable over "appellants' admissions" considered with Tomie, and further in view of Kobayashi, Takahashi and Shindo is, **AFFIRMED**. The rejection of claims 1, 4, 6, 7, 10, 12, 13, 15, 17 and 20 under 35 U.S.C. § 103 as being unpatentable over "appellants' admissions" in view of Takahashi, in further view of Hasegawa and Shindo is, **REVERSED**. The rejection of claim 7 under 35 U.S.C. § 103 as being unpatentable from "appellants' admissions" considered with Tomie and Shindo is, **AFFIRMED**.

The decision of the examiner is **AFFIRMED-IN-PART**.

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

AFFIRMED-IN-PART

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ANDREW H. METZ))
Administrative Patent Judge)	
)	
)	
)	BOARD OF PATENT
CAMERON WEIFFENBACH))
Administrative Patent Judge)	APPEALS AND
)	
)	INTERFERENCES
)	
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