

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte HIDEFUMI KOTSUBO,
YASUHIRO MORIMURA, AND
ITSUO TANUMA

Appeal 2008-4940
Application 10/848,361
Technology Center 1700

Decided: December 23, 2008

Before EDWARD C. KIMLIN, CHUNG K. PAK, and LINDA M.
GAUDETTE, *Administrative Patent Judges*.

KIMLIN, *Administrative Patent Judge*.

DECISION ON APPEAL

This is an appeal from the final rejection of claims 1-9, 14, and 16-18.
Claims 11-13, and 15 have been withdrawn from consideration.

Claim 1 is illustrative of the appealed claims:

1. A method of manufacturing an electromagnetic-wave shielding and light transmitting plate comprising a transparent film and a conductive

pattern made of a conductive material, wherein the conductive pattern is formed on a surface of the transparent film by plating, the method comprising:

a step of forming a negative pattern to be an opposite pattern of said conductive pattern, wherein the negative pattern is formed on the surface of the transparent film having a relatively high affinity for the plated layer by using a transparent resin having a relatively low affinity for the plated layer, and

a step of forming said conductive pattern by subjecting the transparent film to plating treatment with plating solution after the formation of the negative pattern so as to attach the conductive material only to the surface of the transparent film not covered by the negative pattern,

wherein said negative pattern is formed by means of printing.

The Examiner relies upon the following references as evidence of obviousness:

Tanaka	US 4,008,383	Feb. 15, 1977
Bakos	US 4,009,033	Feb. 22, 1977
Beining	US 4,692,809	Sep. 8, 1987
Asanuma	US 5,824,361	Oct. 20, 1998
Fukushima	US 2001/0012869 A1	Aug. 9, 2001

Independent claim 1 on appeal is directed to a method of making an electromagnetic-wave shielding and light transmitting plate comprising a transparent film having a conductive pattern thereon. The method entails printing a negative pattern on the transparent film with a transparent resin having a relative low affinity for the plated conductive layer. As a result, the plating of the conductive pattern takes place on the transparent film but not on the printed transparent resin on the film. Independent claim 2 defines a similar method but does not require that the transparent resin is printed upon

the transparent film. Accordingly, claim 2 includes within its scope uniformly coating the transparent resin on the transparent film and patterning the transparent resin by photolithographic processing. Claim 2 does require that the plating step occurs after the entire back surface of the transparent film is coated with a material having a relative affinity for the plating, such as the transparent resin.

The appealed claims stand rejected under 35 U.S.C. § 103(a) as follows:

- (a) claims 1, 8, 9, and 16-18 over Fukushima in view of Tanaka;
- (b) claims 2-4 and 14 over Fukushima in view of Tanaka and Asanuma,
- (c) claims 6 and 7 over Fukushima in view of Tanaka and Bokos, and
- (d) claim 5 over Fukushima in view of Tanaka and Beining.

Appellants present separate, substantive arguments only for independent claims 1 and 2. Accordingly, claims 1, 5-9, and 16-18 stand or fall together, as do claims 2-4, and 14.

We have thoroughly reviewed the respective positions advanced by Appellants and the Examiner. As a result, we will not sustain the Examiner's rejection of claims 1, 5-9, and 16-18. We will, however, sustain the Examiner's rejection of claims 2-4, and 14.

We consider first the Examiner's rejections of claims 1, 5-9, and 16-18 which use Fukushima as the primary reference. While the Examiner properly finds that Fukushima discloses a method of making an electromagnetic-wave shielding and light transmitting plate of the type claimed that may comprise printing a polysilane pattern on a film, Appellants accurately point out that the polysilane pattern does not meet the

claim 1 requirement for a transparent resin having a relatively low affinity for the plated layer. Quite the opposite, Fukushima teaches depositing a metal film on the patterned polysilane that has received catalytic metal nuclei. In an attempt to remedy this deficiency in the Fukushima disclosure, the Examiner cites an alternative embodiment of the reference disclosure wherein a photosensitive layer, which has a relatively low affinity for the plated layer, is coated on the polysilane thin film. However, as emphasized by Appellants, the photosensitive layer of Fukushima is not printed on the polysilane film. While the Examiner states that the different embodiments of Fukushima do "not take away the fact that the polysilane is taught to be applied by printing and hence meets the claim limitation" (Ans. 7, first para.), the polysilane film of the reference does not meet the claim requirement for a transparent resin having a relatively low affinity for the plated layer. Since the Examiner has not demonstrated that Fukushima provides the requisite teaching or suggestion of printing a negative pattern of the photosensitive layer on the polysilane film, we are constrained to reverse the Examiner's § 103 rejections of claims 1, 5-9, and 16-18.

The Examiner's § 103 rejection of claims 2-4, and 14, which do not require that the negative pattern of the transparent resin is printed on the transparent film, is another matter. As set forth by the Examiner, Fukushima discloses photolithographically processing a photosensitive layer to form a resin having a relatively low affinity for the plated layer on the film. Appellants do not contest this finding of the Examiner but argue that Fukushima does not teach or suggest the claimed step of coating the entire back surface of the transparent film with a material having a relatively low affinity for the plating before the plating treatment is conducted. However,

the Examiner provides a sound rationale that it would have been obvious for one with ordinary skill in the art to provide Fukushima's photosensitive layer on both sides of the film to prevent unwanted, wasteful plating on the backside of the film. As explained by the Examiner, Fukushima teaches dip coating the polysilane layer which would coat both sides of the film (¶ 81), and the reference also teaches immersing the film in a solution which coats the platinum salt on the polysilane film. Consequently, since dip coating the polysilane film and immersing the substrate in a solution comprising the platinum salt would result in both sides of the substrate being plated with conductive material, we fully concur with the Examiner that it would have been a matter of obviousness for one of ordinary skill in the art to coat the backside of the transparent film with the photosensitive layer of Fukushima, or with any other material that has a relatively low affinity for the plating. Appellants' argument that Fukushima's coating of a polysilane layer on both sides of the substrate results in a coating material having a high affinity for plating solutions, not the claimed low affinity, misses the thrust of the Examiner's rejection. The Examiner's rejection is based on the obviousness of providing a photosensitive layer or other material having a low affinity for plating over the polysilane layer on the backside of the substrate that results from dip coating.

In conclusion, based on the foregoing, the Examiner's rejection of claims 1, 5-9, and 16-18 is reversed, and the Examiner's rejection of claims 2-4, and 14 is sustained. Accordingly, the Examiner's decision rejecting the appealed claims 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)(1)(iv)(effective Sept. 13, 2004).

AFFIRMED-IN-PART

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