Paper No. 22

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

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Ex parte KAZUYA NAKADA and YOSHINORI TAKAHASHI

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Appeal No. 2004-0375
Application 09/841,926

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HEARD: APRIL 15, 2004

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Before KIMLIN, OWENS and JEFFREY T. SMITH, *Administrative Patent Judges*.

OWENS, *Administrative Patent Judge*.

DECISION ON APPEAL

This appeal is from a nonfinal rejection of claims 1 and 2, which are all of the claims in the application.[1]

THE INVENTION

The appellants claim a semiconductive roller which, the appellants state, is useful as a charging roller, developing

[1] In an appeal in which claims have been at least twice rejected, the board has jurisdiction as discussed in *Ex parte Lemoine*, 46 USPQ2d 1432 (Bd. Pat. App. & Int. 1995).

roller, transfer roller or cleaning roller used around a photoreceptor drum of an image forming apparatus (specification, page 1, lines 7-10). Claim 1 is illustrative:

1. A semiconductor roller comprising:

a semiconductive elastic layer made of silicone rubber comprising carbon black formed around a conductive shaft body,

wherein a resin layer including a hard film material is formed on the outer circumference of said elastic layer via a coupling agent layer, wherein the hard film material further comprises an amino resin and a crosslinking component, wherein the ratio of the amino resin to the crosslinking component is about 40/50 to about 20/80 by weight.

THE REFERENCES

Ishii et al. (Ishii)	5,925,893	Jul. 20, 1999
Takagi et al. (Takagi)	6,067,434	May 23, 2000

THE REJECTION

Claims 1 and 2 stand rejected under 35 U.S.C. § 103 as being unpatentable over Takagi in view of Ishii.

OPINION

We affirm the aforementioned rejection.

The appellants state that the claims stand or fall together (brief, page 3). We therefore limit our discussion to one claim, i.e., claim 1. *See In re Ochiai*, 71 F.3d 1565, 1566 n.2, 37 USPQ2d 1127, 1129 n.2 (Fed. Cir. 1995); 37 CFR § 1.192(c)(7)(1997).

Takagi discloses a developing roller having a highly conductive shaft (2) and, around the outer periphery of the shaft, an elastic layer (3) (col. 3, lines 57-62). The elastic layer is covered, optionally over its entire surface, with a high resistivity surface layer which can be a urea resin or a melamine resin (col. 6, lines 34-41; col. 8, lines 9-11). Urea resin and melamine resin are among Takagi's preferred surface layer materials (col. 6, lines 47-48). In an example, a melamine resin is mixed with an oil free alkyd resin in a 1:4 ratio (col. 10, lines 54-57). There is no dispute as to whether the oil free alkyd resin is a crosslinking component. The disclosed elastic layer materials include silicon rubber (col. 4, lines 11-14). For resistivity adjustment, the elastic layer includes 0.01-1 parts by weight of an ionically conductive material and can include a suitable amount of an electronically conductive material (col. 5, lines 11-55). The disclosed electronically conductive materials include carbon black (col. 5, lines 55-56).

Takagi does not disclose a coupling layer between the elastic layer and the high resistivity surface layer. Ishii, however, teaches that a coupling layer between a carbon black-containing silicone rubber layer and a polyurethane outer layer of a semiconductive roller improves the adhesion between the

silicone rubber and the polyurethane (col. 3, lines 9-27). It is undisputed that Ishii would have fairly suggested, to one of ordinary skill in the art, including a coupling layer between Takagi's silicon rubber elastic layer and high resistivity surface layer made from urea resin or melamine resin to obtain improved adhesion between these layers.

We therefore conclude that the combined disclosures of Takagi and Ishii would have rendered the roller claimed in the appellants' claim 1 *prima facie* obvious to one of ordinary skill in the art.

The appellants argue that polyurethane, but not silicone rubber, is among Takagi's five preferred elastic layer materials (col. 4, lines 16-19), and that polyurethane is Takagi's only exemplified elastic layer material (brief, pages 4-5; reply brief, page 2). This argument is not well taken because Takagi is not limited to the preferred materials or the examples. *See In re Fracalossi*, 681 F.2d 792, 794 n.1, 215 USPQ 569, 570 n.1 (CCPA 1982)*; In re Kohler*, 475 F.2d 651, 653, 177 USPQ 399, 400 (CCPA 1973).

The appellants argue that Takagi does not indicate when an electronically conductive material such as carbon black would be needed (brief, page 5). Determining the amount of carbon black would have been *prima facie* obvious to one of ordinary skill in the art through no more than routine experimentation to achieve the desired effect of adjusting, to the appropriate level, the resistivity of the elastic layer (col. 5, lines 42-56). *See In re Boesch*, 617 F.2d 272, 276, 205 USPQ 215, 219 (CCPA 1980); *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955).

The appellants argue that Takagi's comparative example 3, wherein carbon black is included in the elastic layer, shows significantly poor repeatability of gradient, crushed photographic image, and poor half-tone repeatability and, therefore, teaches away from using carbon black (brief, pages 5-6; reply brief, page 5). This argument is not persuasive because in that comparative example there is no high resistivity surface layer on the elastic layer. Moreover, Takagi does not disclose that the roller in that comparative example is useless as a semiconductive roller. Instead, Takagi merely teaches that although the image produced using the roller is very

monochromatic and has excellent repeatability of characters, it has the undesirable characteristics pointed out by the appellants (col. 12, lines 47-52).

The appellants argue that Takagi's ionically conductive material is necessary for the invention and cannot be removed (brief, page 5; reply brief, page 4). We are not convinced by this argument because in the appellants' claim 1, "elastic layer made of silicone rubber comprising carbon black" encompasses an elastic layer containing other components such as an ionically conductive material. *See In re Baxter*, 656 F.2d 679, 686, 210 USPQ 795, 802 (CCPA 1981).

The appellants argue that Takagi's silicone rubber elastic layer material is one of 4,096 possible disclosed materials or their mixtures, and that Takagi does not provide any motivation for selecting silicone rubber from among them (reply brief, page 2). This argument is not persuasive because the fact that many are disclosed would not have made any of them less obvious, particularly where, as here, the material recited in the appellants' claim is used for the identical purpose taught by the reference. *See Merck & Co. v. Biocraft Labs.*, 874 F.2d 804, 807, 10 USPQ2d 1843, 1846 (Fed. Cir.), *cert. denied*, 493 U.S. 975 (1989).

The appellants argue that claim 1 requires a resin layer formed on the entire outer circumference of the elastic layer (reply brief, page 3). This feature is not required by the appellants' claim 1, but is disclosed by Takagi (col. 8, lines 9-11).

The appellants argue that if there is motivation to include carbon black in Takagi's elastic layer, it would be in such quantities to adjust resistivity without adversely affective ionic conductivity (reply brief, page 4). This argument is not persuasive even if it is correct because the appellants' claim 1 does not require any particular amount of carbon black and, therefore, encompasses the amount argued by the appellants.

For the above reasons we conclude that a *prima facie* case of obviousness of the appellants' claimed invention has been established and has not been effectively rebutted by the appellants.

DECISION

The rejection of claims 1 and 2 under 35 U.S.C. § 103 over Takagi in view of Ishii is affirmed.

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

AFFIRMED

EDWARD C. KIMLIN Administrative Patent Judge	)
TERRY J. OWENS Administrative Patent Judge	) BOARD OF PATENT) APPEALS AND) INTERFERENCES
JEFFREY T. SMITH Administrative Patent Judge	)

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