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. 13

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

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Ex parte BEHNAM MORADI

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Appeal No. 2003-1249
Application 09/386,972

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ON BRIEF

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Before OWENS, TIMM and DELMENDO, *Administrative Patent Judges*.

OWENS, *Administrative Patent Judge*.

DECISION ON APPEAL

This appeal is from the examiner's refusal to allow claims 2, 4-7, 10, 11, 13, 14, 16, 17, 19, 20, 22, 23 and 25-27 as amended after final rejection, and claims 28-33 which were added after final rejection.[1] These are all of the claims pending in the application.

[1] The advisory action mailed March 4, 2002 (paper no. 7) states that for purposes of appeal the amendment after final rejection mailed February 12, 2002 (paper no. 6) will be entered. This amendment has not yet been clerically entered.

THE INVENTION

The appellants claim a field emission device and a method for making it. Claims 4 and 17 are illustrative:

4. A method of manufacturing a field emission device, the method comprising:

operating the field emission device in a pressure of at most about 10^{-8} Torr for at least approximately 15 minutes to remove at least a portion of materials from within said field emission device; and

sealing the field emission device;

17. A field emission device formed by a method comprising:

operating the field emission device in a pressure of at most about 10^{-8} Torr for at least approximately 15 minutes to remove a least a portion of outgassed materials through a tube before pinching off the tube to seal the field emission device.

THE REFERENCES

Itoh et al. (Itoh)	5,564,958	Oct. 15, 1996
Watkins et al. (Watkins)	5,827,102	Oct. 27, 1998
Konuma	6,042,441	Mar. 28, 2000 (filed Apr. 2, 1998)

THE REJECTION

Claims 2, 4-7, 10, 11, 13, 14, 16, 17, 19, 20, 22, 23 and 25-33 stand rejected under 35 U.S.C. § 103 as being unpatentable over Konuma in view of Itoh and Watkins.

OPINION

We reverse the aforementioned rejection and remand the application to the examiner. In our discussion of the examiner's rejection we need to address only the independent claims, i.e., method claims 4 and 11 and device claims 17 and 23.

Method claims 4 and 11

Konuma discloses a method for cleaning and exhausting a cathode ray tube (CRT), at pressures which can reach as low as 10^{-9} Torr, and then sealing the CRT (col. 3, lines 66-67; col. 4, lines 6-7; col. 5, lines 20-24 and 44-47; col. 6, line 67 - col. 7, line 2). Konuma places a getter in the CRT, heats the getter for 20 seconds to absorb gases in the CRT, heats an electron lens for 5 seconds, impresses a voltage on the CRT's cathode and cathode cone for 0.5-2 minutes to emit electrons which collide with gases emitted though heating the getter, thereby forming ions which sputter-clean the cathode cone, and then seals a tube used to provide the vacuum in the CRT (col. 4, lines 5-18; col. 5, lines 1-49; col. 5, line 60 - col. 6, line 5; col. 6, line 24 - col. 7, line 55). This method also can be applied to a flat panel display (col. 7, lines 56-59).

Itoh discloses a method for cleaning, evacuating and sealing a flat panel display device by 1) repeatedly, several times, feeding the device with electricity to emit electrons from the cathode for several minutes while evacuating the device to about 10^{-7} Torr, introducing reducing gas into the device until the pressure is 10^{-2} to 500 Torr, holding this pressure in the device for a few minutes, and evacuating the device to about 10^{-7} Torr, 2) evacuating the device for about 6 hours at about 300°C, and 3) sealing an evacuation tube or sealing lid to form a high vacuum in the device (col. 6, line 64 - col. 7, line 27).

Watkins discloses a method for evacuating and then sealing a field emission display device (col. 1, lines 6-8). The device is evacuated by maintaining it in a chamber at a pressure which can be 10^{-8} Torr for a sufficient time, e.g., 1-2 hours, to reach equilibrium and outgas water and other contaminants through a gap between the device's peripheral seal material and back plate, and is sealed by compressing and optionally heating the seal material (col. 6, lines 5-31).

The examiner argues that the reason why Konuma removes harmful gas atoms to the greatest extent feasible and limits the time of operation during evacuation apparently is to protect the cathode from damage by ion bombardment during sputter cleaning of

the cathode (answer, pages 3-4). The cathode cleaning time, the examiner argues, obviously varies based upon the nature of the display device (answer, page 4). The examiner argues, without providing evidentiary support, that a flat panel display requires more cleaning time than a CRT because, unlike a CRT, its cathodes are energized only intermittently (answer, pages 4-5).

As evidence that a flat panel display requires a longer cleaning time than a CRT the examiner relies upon Itoh and Watkins (answer, pages 5-6). Although Itoh repeats, several times, a step of emitting electrons from the cathode for a few or several minutes, he does this in a procedure in which reducing gas, instead of Konuma's getter, is used for cleaning. Watkins uses an exemplified cleaning time of 1-2 hours, but does not use Konuma's getter or electron emission from the cathode. The examiner has not provided evidence that the cleaning times of Itoh and Watkins are longer than Konuma's disclosed CRT cleaning time due to a difference in the devices cleaned rather than being due to differences in the cleaning procedures. The examiner has provided only speculation to that effect, and such speculation is not a sufficient basis for a *prima facie* case of obviousness. *See In re Warner*, 379 F.2d 1011, 1017, 154 USPQ 173, 178 (CCPA 1967), *cert. denied*, 389 U.S. 1057 (1968); *In re Sporck*, 301 F.2d

686, 690, 133 USPQ 360, 364 (CCPA 1962). "'Common knowledge and common sense,' even if assumed to derive from the agency's expertise, do not substitute for authority when the law requires authority." *In re Lee*, 277 F.3d 1338, 1345, 61 USPQ2d 1430, 1435 (Fed. Cir. 2002).

The examiner, therefore, has not established that one of ordinary skill in the art would have combined the teachings of Konuma, Itoh and Watkins to arrive at the appellant's claimed method. Accordingly, we reverse the rejection of independent method claims 4 and 11 and the claims which depend therefrom.

Device claims 17 and 23

The examiner argues that the device claims "are unpatentable since the appellant has shown no difference between the display devices as manufactured by the process therein and that of Konuma as modified by the teachings of Itoh and Watkins" (answer, pages 6-7). This argument is not well taken because, as discussed above regarding the method claims, the examiner has not established that one of ordinary skill in the art would have combined the teachings of Konuma, Itoh and Watkins. We therefore reverse the rejection of independent device claims 17 and 23 and the claims which depend therefrom.

REMAND

The appellant's device claims are in product-by-process form. Thus, the patentability of the claimed invention is determined based on the product itself, not on the method of making it. *See In re Thorpe*, 777 F.2d 695, 697, 227 USPQ 964, 966 (Fed. Cir. 1985) ("If the product in a product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior art product was made by a different process."). Whether a rejection is under 35 U.S.C. § 102 or § 103, when the appellant's product and that of the prior art appear to be identical or substantially identical, the burden shifts to the appellant to provide evidence that the prior art product does not necessarily or inherently possess the relied-upon characteristics of the appellant's claimed product. *See In re Fitzgerald*, 619 F.2d 67, 70, 205 USPQ 594, 596 (CCPA 1980); *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433-34 (CCPA 1977); *In re Fessmann*, 489 F.2d 742, 745, 180 USPQ 324, 326 (CCPA 1974). The reason is that the Patent and Trademark Office is not able to manufacture and compare products. *See Best*, 562 F.2d at 1255, 195 USPQ at 434; *In re Brown*, 459 F.2d 531, 535, 173 USPQ 685, 688 (CCPA 1972).

The appellant's specification (page 9, lines 9-19) indicates that Itoh's cleaning pressure of about 10^{-7} Torr falls within the appellant's pressure range of at most about 10^{-8} Torr. Although Itoh's introductions of reducing gas interrupt his few to several minute periods of cleaning using electron emission from the cathode, Itoh's total time of cathode electron emission is the sum of several repeats of periods of a few to several minutes each. Thus, Itoh's total cathode electron emission time approaches or equals the appellant's minimum field emission device operating time of 15 minutes.

We remand the application to the examiner for the examiner and the appellant to address on the record whether, because Itoh's cleaning pressure is within the appellant's range, Itoh's cathode electron emission time approaches or equals that of the appellant, Itoh provides additional cleaning using several introductions of reducing gas, and after cleaning the device Itoh, like the appellant, evacuates the device and seals it by pinching off a tube, the device produced by Itoh's method is the same or substantially the same as that of the appellant.[2]

[2] The examiner also should consider, with respect to the appellant's method and device claims, Japanese patent application laid-open publication no. 299129/1990 discussed by Konuma (col. 2, lines 31-39).

DECISION

The rejection of claims 2, 4-7, 10, 11, 13, 14, 16, 17, 19, 20, 22, 23 and 25-33 under 35 U.S.C. § 103 over Konuma in view of Itoh and Watkins is reversed. The application is remanded to the examiner.

REVERSED and REMANDED

TERRY J. OWENS Administrative Patent Judge	)
CATHERINE TIMM Administrative Patent Judge	) BOARD OF PATENT) APPEALS AND) INTERFERENCES
ROMULO H. DELMENDO Administrative Patent Judge	)

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