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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(2) is not binding precedent of the Board.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. 38

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte MANJIT S. CHOPRA and MICHAEL D. VICK

Appeal No. 1997-0569
Application 08/150,559

ON BRIEF

Before FRANKFORT, MCQUADE and NASE, Administrative Patent
Judges.

FRANKFORT, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the examiner's final rejection of claims 1, 3, 5 through 7, 9, 11 through 13, 15, and 17 through 22, which are all of the claims remaining in the application. Claims 2, 4, 8, 10, 14 and 16 have been canceled.

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Appellants' invention relates to a method of preparing colored roofing granules, a product (i.e., granules) prepared by that method and a roofing material including granules prepared by that method on a man-made composition substrate. Independent claims 1, 7, 13, 19 and 20 are representative of the subject matter on appeal and a copy of those claims, as reproduced from the Appendix to appellants' brief, is attached to this decision.

The prior art references of record relied upon by the examiner as evidence of obviousness of the claimed subject matter are:

Doherty 1909	0,927,644	Jul. 13,
Wright 1937	2,092,567	Sep. 7,
Lewis et al. (Lewis) 1967	3,341,347	Sep. 12,

Additional prior art relied upon by the examiner is

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stated to be appellants' Admitted Prior Art (APA), as set forth at page 5, lines 3-10 of the specification.

Claims 7, 9, 13 and 15 stand rejected under 35 U.S.C. § 103 as being unpatentable over Wright in view of Lewis.

Claims 1, 3 and 19 through 22 stand rejected under 35 U.S.C. § 103 as being unpatentable over Wright in view of Lewis as applied above, and further in view of APA.

Claims 5, 6, 11, 12, 17 and 18 stand rejected under 35 U.S.C. § 103 as being unpatentable over Wright in view of Lewis as applied above, and further in view of Doherty.

Reference is made to the answer (Paper No. 32, mailed September 4, 1996) for the examiner's full reasoning in support of the above-noted rejections and to appellants' brief (Paper No. 30, filed March 12, 1996) for the arguments thereagainst.

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OPINION

As a preliminary matter, we note that on page 4 of the brief appellants have indicated that claims 7, 9, 13 and 15 on appeal "stand together" and that claims 1, 3, 5, 6, 11, 12 and 17 through 22 "stand together." In the ARGUMENT section of their brief appellants have, with respect to the first group of claims noted above, argued only claim 13. With regard to the second group of claims, appellants have argued only claim 1.

Accordingly, we focus our attention on claims 1 and 13 for consideration in this appeal, although other of the independent claims on appeal will also be discussed.

Our evaluation of the obviousness issues raised in this appeal has included a careful assessment of appellants' specification and claims, the applied prior art, and the respective positions advanced by appellants and the examiner. As a consequence of our review, we have come to the conclusions which follow.

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Looking first at the examiner's rejection of claims 7, 9, 13 and 15 under 35 U.S.C. § 103 based on Wright and Lewis, we note that representative claim 13 is directed to a roofing material which comprises a man-made composition substrate and granulated mineral-containing matter forming a surface coating on said substrate, wherein the granulated matter comprises slag having an initial elemental iron content of about 15% to about 70% by weight, said iron having been heated to a temperature of about 450°C to about 1000°C for a period of time sufficient to oxidize said iron and cause a change in color of said granulated matter.

According to appellants (brief, page 4), the roofing material of claim 13 differs from conventional roofing materials "in the manner in which the desired coloration is achieved." Appellants concede that conventional roofing materials include granules which are artificially colored by applying a pigmented coating to a base rock material and also that it is known in the art that base rocks which already possess the desired natural coloration can be used as roofing granules without having to apply a pigmented surface coating. By

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contrast, appellants point out that the coloration of the granulated matter of claim 13 is not obtained by applying a pigmented surface coating or by using a naturally colored rock, but instead by selecting iron-containing slag as the granulated matter and oxidizing the iron contained therein to achieve the desired color.

In rejecting claim 13 (and claims 7, 9 and 15), the examiner has taken the position that Wright teaches the use of mineral granules that are colored red and, more particularly, the use of natural rock granules that are colored throughout (e.g., red) on man-made composition roofing substrates. Wright also teaches the use of a protective coating of transparent varnish on the granules, which varnish includes a small amount of pigment therein having the same color as the natural colored rock granules. Lewis is relied upon as teaching (col. 1, lines 38-43) the use of various iron-containing ores to produce red iron oxide pigments by roasting the iron-containing ores. In the examiner's opinion, it would have been obvious to one of ordinary skill in the art to form red colored roofing granules that are colored throughout by

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heating iron minerals in view of the teachings of Wright to use red mineral granules that have natural color throughout and the teaching of Lewis to form red mineral particles (i.e., iron oxide particles) by heating iron-containing minerals.

Appellants urge that the collective teachings of the prior art references relied upon by the examiner teach or suggest only that roasted iron oxide pigments may be used in a surface coating like that described in Wright to provide the desired coloration for roofing granules. From appellants' perspective, nothing in the applied references teaches or suggests a roofing material wherein coloration of the roofing granules is obtained by using iron containing slag as the roofing granules and oxidizing the iron to achieve the desired coloration by the process set forth in the claims on appeal.

While it is true that the references relied upon by the examiner do not teach appellants' specific method of making roofing granules by heating granulated iron-containing slag to a temperature in the claimed range and for a period of time sufficient to oxidize said iron and cause a color change of

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the granulated slag material, we note that independent claims 7 and 13 on appeal are "product-by-process" claims and that, in our opinion, the product-by-process limitations therein do not serve to distinguish the claimed product (claim 7) or roofing material (claim 13) from the naturally colored red (e.g., iron oxide) roofing granules disclosed or suggested in Wright or the prior art roofing material disclosed in Wright that would utilize only naturally occurring red (e.g., iron oxide) granules as a surface coating on a man-made composition substrate. The patentability of a product-by-process claim is based on the product itself, and such claim is unpatentable over a product made obvious by the prior art even if the product of the claim is made by a different process. See In re Thorpe, 777 F.2d 695, 697, 227 USPQ 964, 966 (Fed. Cir. 1985); In re Brown, 459 F.2d 531, 535, 173 USPQ 685, 688 (CCPA 1972); and Ex parte Edwards, 231 USPQ 981, (Bd. Pat. App. & Int. 1986). As was indicated by the Court in Brown, 459 F.2d at 535, 173 USPQ at 688:

When the prior art discloses a product which reasonably appears to be either identical with or only slightly different than a product claimed in a

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product-by-process claim, a rejection based alternatively on either section 102 or section 103 of the statute is eminently fair and acceptable [because] [als a practical matter, the Patent Office is not equipped to manufacture products by the myriad of processes put before it and then obtain prior art products and make physical comparisons therewith.

The burden in this type of situation is on the appellants to present evidence from which the examiner could reasonably conclude that the claimed product differs in kind from the product of the prior art, thus demonstrating the unobvious character of the claimed subject matter (i.e., product) over the cited reference or references. No such evidence was offered in this case. Appellants have provided no evidence to show that the granules of claim 7 on appeal or the roofing material of claim 13 are in any way different in kind from the naturally occurring red colored (e.g., iron oxide) rock roofing granules disclosed or suggested in Wright and Lewis or a roofing material as in Wright which would use only those naturally occurring red rock granules as a coating on a man-made composition substrate. We see no reason why appellants' artificially produced iron oxide roofing granules or a roofing material using such granules would in any meaningful way be

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different from roofing granules produced from naturally occurring red iron oxide ores or slag, or a roofing material using such natural colored rock granules.

Accordingly, we are led to conclude that the examiner has made out a prima facie case of obviousness here with regard to independent claims 7 and 13 on appeal, and that appellants have failed to submit evidence to refute that case. Thus, we will sustain the examiner's rejection of claims 7 and 13 under 35 U.S.C. § 103, and also that of claims 9, 11, 12, 15, 17 and 18 which depend therefrom and have not been separately argued by appellants.

Independent claim 1 on appeal is directed to a method of preparing colored roofing granules of a desired size range from iron-containing slag. That method involves heating the iron-containing slag granules to a temperature of from about 450°C to about 1000°C and maintaining that temperature for a period of time sufficient to cause oxidation of said iron and to thereby effect a desired color change in the granules, thus forming the colored roofing granules. While, as urged by the

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examiner, it may have been obvious to one of ordinary skill in the art to size the natural colored rock roofing granules of Wright to be in the apparently standard size range claimed by appellants, we see nothing in Wright or Lewis which teaches or suggests appellants' particular method as set forth in claim 1 on appeal for making colored roofing granules.

Wright discloses or suggests using properly graded natural colored rock granules or such granules that are further coated with a protective layer of tinted varnish as roofing granules. Lewis discloses producing iron oxide pigments by roasting relatively pure iron ores to drive off volatile matter, thus converting the natural ore to a natural iron oxide pigment. As is urged by appellants, the collective teachings of the applied references may have provided motivation or suggestion for one of ordinary skill in the art to use a pigment as produced in Lewis (col. 1) as the coloring agent for the varnish used in Wright, but in no way teach or suggest appellants' claimed method of making colored roofing granules. As for the process that is the subject of the Lewis patent, that process for preparing an iron oxide pigment is

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also entirely different than the process or method of preparing colored roofing granules claimed by appellants.

In light of the foregoing, we will not sustain the examiner's rejection of method claim 1 under 35 U.S.C. § 103 based on Wright, Lewis and the APA. The examiner's rejections of dependent claims 3, 5 and 6 under 35 U.S.C. § 103 will also not be sustained. The examiner's reliance on Doherty with regard to claims 5 and 6 on appeal does nothing to account for the deficiencies we have noted above in the basic combination of Wright, Lewis and the APA.

Looking to the examiner's rejection of claims 19 through 22 under 35 U.S.C. § 103, we note that these claims are also product-by-process claims and, like claims 7, 9, 11, 12, 13, 15, 17 and 18 above, do not define over the naturally colored red (e.g., iron oxide) roofing granules disclosed or suggested in Wright and Lewis or the prior art roofing material disclosed in Wright that would utilize only such naturally occurring red (e.g., iron oxide) granules as a surface coating on a man-made composition substrate. In reaching this

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conclusion, we agree with the examiner that it would have been obvious to one of ordinary skill in the art at the time of appellants' invention to select a known proper size for the roofing granules of Wright, which size of roofing granules would fall within the apparently standard size range broadly set forth in appellants' claims 19 through 22 on appeal. Appellants' specification (page 5, lines 3-10) does at least imply that the sizing of roofing granules is within the skill level of one of ordinary skill in the art, and Wright discloses (col. 1, lines 7-10), or at least suggests, that roofing granule manufacturers have "properly graded" or sized roofing granules for many years. Again, we note that the patentability of a product-by-process claim is based on the product itself, and such claim is unpatentable over a product made obvious by the prior art even if the product of the claim is made by a different process. Thus, absent evidence by appellants to show that the granules of claims 19 and 21 on appeal or the roofing material of claims 20 and 22 are in any way different in kind from the naturally occurring red colored (e.g., iron oxide) rock roofing granules suggested in Wright and Lewis or a roofing material as in Wright which would use

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only those naturally occurring rock granules as a coating on a man-made composition substrate, we will sustain the examiner's rejection of claim 19 through 22 under 35 U.S.C. § 103.

To summarize, we note that the decision of the examiner to reject product-by-process claims 7, 9, 11, 12, 13, 15 and 17 through 22 under 35 U.S.C. § 103 has been affirmed, while the decision to reject method claims 1, 3, 5 and 6 under 35 U.S.C. § 103 has been reversed. The decision of the examiner is, accordingly, affirmed-in-part.

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

AFFIRMED-IN-PART

CHARLES E. FRANKFORT)
Administrative Patent Judge)
)
)
) BOARD OF PATENT

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JOHN P. MCQUADE)	
Administrative Patent Judge)	APPEALS AND
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APPENDIX

1. A method of preparing colored roofing granules from granulated mineral-containing matter comprising slag having an iron content of about 15% to about 70% by weight and being sized so that approximately 100% of said granulated matter will pass through a number 8 U.S. Standard Sieve and no more than approximately 2% will pass through a number 40 U.S. Standard Sieve, said method comprising the steps of:

heating said granules to a temperature of from about 450°C to about 1000°C; and
maintaining said temperature for a period of time sufficient to cause oxidation of said iron to effect a color change in said granules and thereby form said colored roofing granules.

7. A product for use in providing a surface coating for composition roofing materials, said product comprising:
granulated mineral-containing matter comprising slag having an initial elemental iron content of about 15% to about 70% by weight, said iron having been heated to a temperature of about 450°C to about 1,000°C for a period of time sufficient to cause oxidation of said iron and produce a change in color of said matter.

13. A roofing material comprising:
a man-made composition substrate; and
a granulated mineral-containing matter forming a surface coating for said substrate,
said matter comprising slag having an initial elemental iron content of about 15% to about 70% by weight, said iron having been heated to a temperature of about 450°C to about 1,000°C for a period of time sufficient to oxidize said iron and cause a change in color of said matter.

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19. A product for use in providing a surface coating for composition roofing materials, said product comprising:
granulated mineral-containing matter being sized so that approximately 100% of said granulated matter will pass through a number 8 U.S. Standard Sieve and no more than approximately 2% will pass through a number 40 U.S. Standard Sieve, said matter comprising slag having an initial elemental iron content of about 15% to about 70% by weight, said iron having been heated to a temperature of about 450°C to about 1,000°C for a period of time sufficient to oxidize said iron and cause a change in color of said matter.

20. A roofing material comprising:
a man-made composition substrate; and
a granulated mineral-containing matter forming a surface coating for said substrate,
said matter being sized so that approximately 100% of said granulated matter will pass through a number 8 U.S. Standard Sieve and no more than approximately 2% will pass through a number 40 U.S. Standard Sieve, said matter comprising slag having an initial elemental iron content of about 15% to about 70% by weight, said iron having been heated to a temperature of about 450°C to about 1,000°C for a period of time sufficient to oxidize said iron and cause a change in color of said matter.