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D E C I S I O N
of 20 March 2001

Case Number: T 0276/98 - 3.2.5

Application Number: 88305170.8

Publication Number: 0298604

IPC: B44F 1/08

Language of the proceedings: EN

Title of invention:

Decorative objects with multicolor effects

Patentee:

The Mearl Corporation

Opponent:

Merck Patent GmbH

Headword:

-

Relevant legal provisions:

EPC Art. 54, 56

Keyword:

"Novelty (yes)"

"Inventive step (yes)"

Decisions cited:

-

Catchword:

-



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Boards of Appeal

Chambres de recours

Case Number: T 0276/98 - 3.2.5

D E C I S I O N
of the Technical Board of Appeal 3.2.5
of 20 March 2001

Appellant: Merck Patent GmbH
(Opponent) Postfach
D-64271 Darmstadt (DE)

Representative: -

Respondent: The Mearl Corporation
(Proprietor of the patent) 217 North Highland Avenue
Ossining
New York (US)

Representative: Smith, Norman Ian
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Decision under appeal: Decision of the Opposition Division of the
European Patent Office posted 17 December 1997
rejecting the opposition filed against European
patent No. 0 298 604 pursuant to Article 102(2)
EPC.

Composition of the Board:

Chairman: A. Burkhart
Members: P. E. Michel
S. U. Hoffmann

Summary of Facts and Submissions

I. The appellant (opponent) lodged an appeal against the decision of the opposition division rejecting the opposition against patent No. 0 298 604.

Opposition was filed against the patent as a whole based on Article 100(a) EPC (lack of novelty and inventive step).

II. Oral Proceedings were held before the Board of Appeal on 20 March 2001.

(i) The appellant requested that the decision under appeal be set aside and that the patent be revoked.

(ii) The respondent (patentee) requested as a main request that the appeal be dismissed, or as first and second auxiliary requests, that the decision under appeal be set aside and the patent be maintained in amended form on the basis of sets of claims filed on 28 October 1998.

III. The following documents have been referred to in the appeal procedure:

D1: DE-C-2 313 332

D2: DE-C-1 467 468

D3: Bäumer, "Perlglanz und Perlglanzpigmente",
Sonderdruck aus "farbe + lack" 79. Jahrgang (1973)

D4: Rieger, "The Phenomena of Iridescence and its

Application", Soap/Cosmetics/Chemical
Specialities, June 1980, pages 54,58,70,72

- D5: "Iriodin^R für Polyethylen (PE) und Polypropylen (PP)", Firmenschrift der Fa. E. Merck, September 1983
- D6: "Perlglanzpigmente für Kosmetika" Sonderdruck aus SÖFW, Heft 20/85, page 643 to 645, Heft 2/86, pages 45 to 48
- D7: "Iriodin^R für Polystyrol (PS)", Firmenschrift der Fa. E. Merck, July 1981.

IV. The claims of the patent as granted include two independent claims reading as follows:

"1. An article exhibiting a multicolor effect comprising a transparent body, an interference pigment and an absorption colorant in which said absorption colorant is of a color which is different from the reflection color of the interference pigment or the complement thereof."

"11. A process of preparing an article exhibiting a multicolor effect which comprises incorporating an interference pigment and an absorption colorant in which the absorption colorant is of a color which is different from the reflection color of the interference pigment or the complement thereof into a transparent substrate."

V. The appellant argued essentially as follows:

Document D4 discloses in the passage at page 58, from line 56 in the centre column to line 17 in the right

hand column, the addition of an absorption colour pigment having a different colour from the reflection colour and at lines 37 to 41 of the centre column a plastic film in which a complementary colour can be seen by "looking through the film".

Document D7 discloses at pages 4 and 5 a number of interference pigments available under the trademark Iriodin^R, at page 2 refers to the use of an absorption colorant in conjunction with an interference pigment, and at page 6 teaches the use of Iriodin^R pigment in polystyrene articles.

Claim 1 thus lacks novelty in view of documents D4 and D7. In the written procedure, it was also alleged that the disclosure of document D1 anticipates the subject-matter of claim 1.

As regards inventive step, the closest prior art is represented by document D4. This document discloses the combination of an interference pigment and an absorption colorant in which the absorption colorant is of a colour which is different from the reflection colour of the interference pigment or the complement thereof. The object of the invention is to obtain a multicolour effect in a transparent body. In order to achieve this, document D7 proposes using the pigment in a transparent body formed of polystyrene.

Document D1 refers at column 8 to "Masterbatches" and in column 13 to buttons and polyester sheets, thus implying the presence of a transparent plastics body.

The pigments of the prior art are always utilised in a transparent medium, whether liquid or solid.

Therefore, the subject-matter of claim 1 does not involve an inventive step.

VI. The respondent argued essentially as follows:

Claim 1 requires the presence of a transparent body, not a liquid medium. Document D4 does not disclose such a body, but rather the use of a black or white background. The reference to a plastic film is not a reference to a completed article. Document D7 is concerned with nacreous lustre pigments and does not suggest a transparent body. There is also no hint of the use of an absorption colorant in which the absorption colorant is of a colour which is different from the reflection colour of the interference pigment or the complement thereof.

The subject-matter of claim 1 is thus new.

The present invention relates to a novel article having a new technical effect, that is, the formation of a third colour. This is not suggested anywhere in the prior art.

Documents D1 and D4 both disclose the combination of an interference pigment and an absorption colorant as specified in claim 1, but do not suggest the use of such a combination in a transparent body. Documents D5 and D7 do not suggest the use of an absorption colorant in which the absorption colorant is of a colour which is different from the reflection colour of the interference pigment or the complement thereof. Documents D3 and D4 suggest that the best effects are obtained with a dark background.

Therefore, the subject-matter of claim 1 involves an inventive step.

Reasons for the Decision

Main Request

1. *Novelty*

- 1.1 Document D4 commences with a discussion of the phenomenon of iridescence and continues with a discussion of interference effects created by light being reflected from and transmitted through a thin film. From line 42 of the left hand column of page 58 to line 45 of the centre column of page 58, reference is made to iridescent pigments being capable of producing two colours in a similar manner to thin films, the first occurring through reflection and the second through transmission. The discussion then continues to consider the results of applying such pigments to black and white backgrounds. The first reference to using an absorbent pigment in addition to the interference pigment occurs at line 56 of the centre column of page 58, and discusses the effects of using pigments having either the same or a different colour from the reflection colour.

Document D4 does not, however, contain a disclosure of an article having all of the following three features in combination:

- (a) a transparent body
- (b) an interference pigment and

- (c) an absorption colorant of a color which is different from the reflection color of the interference pigment or the complement thereof.

The plastic film discussed at lines 37 to 45 of the centre column of page 58, which produces a "two-color play" does not include an absorption colorant, so that feature (c) is absent. The passage from line 56 of the centre column to line 18 of the right hand column of page 58 is concerned solely with the effects resulting from the presence of a black or white background, so that feature (a) is absent.

- 1.2 Document D7 is concerned with iridescent pigments and refers at page 2 to the presence of an absorption pigment being applied as a coating on platelets. Pages 4 and 5 list the interference colours which are available and page 6 suggests that the pigments can be mixed with polystyrene and injection moulded produce articles having iridescent effects. There is, however, no disclosure of the use of a combination pigment comprising an interference pigment and an absorption colorant as specified in claim 1 in a transparent body.
- 1.3 Document D1 discloses combination pigments comprising an interference pigment and an absorption colorant in the form of Prussian blue. Examples of interference colours include violet (Example 7) and red or green (column 7, lines 28 to 32). In these cases, the absorption colorant is thus of a colour (blue) which is different from the reflection colour of the interference pigment or the complement thereof. Such pigments are disclosed as being for use in cosmetics in the form of powders, creams, emulsions and fat-based

lipsticks or pencils. There is, however, no disclosure of the use of these combination pigments in a transparent body.

The only possibly transparent solid bodies disclosed in document D1 are the buttons of Example E and the platelets of Example F. However, Example E uses the pigment of Example 9, and Example F uses the pigment of Example 5, in both of which a blue interference pigment and a blue absorption colorant are used in order to intensify the blue colouring of the article. The absorption colorant is thus not of a colour which is different from the reflection colour of the interference pigment or the complement thereof.

1.4 Therefore, the subject-matter of claim 1 is novel.

2. *Inventive step*

2.1 The closest prior art is represented by document D4. This document discloses a combination pigment comprising an interference pigment and an absorption colorant in which said absorption colorant is of a colour which is different from the reflection colour of the interference pigment or the complement thereof (page 58, right hand column, lines 11 to 17).

2.2 The object of the invention is to provide an article possessing more interesting optical effects.

According to the invention, this is achieved by the use of a combination pigment, as defined in paragraph 2.1 above, in an article comprising a transparent body. By virtue of the use of a transparent body, not only can the colour of the absorption colorant and the

reflection colour of the interference pigment be seen, but also the transmission colour of the interference pigment. Since the absorption colorant is of a colour which is different from the reflection colour of the interference pigment or the complement thereof, it is possible to observe three distinct colours as the article is moved relative to the observer.

- 2.3 Such a "three colour play" is nowhere mentioned in the prior art. There is thus no incentive for the person skilled in the art to make the combination as specified in claim 1, using a combination pigment as specified in claim 1 in an article comprising a transparent body.

Whilst document D7 refers to the use of interference pigments in a transparent body formed of polystyrene, there is no suggestion that the combination of the three features set out at paragraph 1.1 above will result in an article possessing more interesting optical effects.

It is accepted that the known interference pigments are generally used in transparent media. Such media do not, however, constitute a body and are intended to be used as, for example, cosmetics to be applied to the skin as disclosed in document D1 or, as discussed in document D4, to be applied as a coating onto a black or white background.

The prior art thus does not suggest to the person skilled in the art that combination pigments should be used in a transparent body, thus enabling three distinct colours to be seen. The subject-matter of claim 1 thus involves an inventive step.

The term "transparent substrate" as used in claim 11 is construed as being equivalent to the term "transparent body" as used in claim 1, so that claim 11 relates to a process of preparing an article as claimed in claim 1, and the subject-matter of claim 11 similarly involves an inventive step.

Claims 2 to 10 and 12 to 19 are directly or indirectly appendant to either claim 1 or claim 11 and relate to preferred features of the article or process respectively. The subject-matter of the dependent claims thus also involves an inventive step.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:

M. Dainese

A. Burkhardt