COMMISSIONER'S DECISION SUMMARY

C.D. 1224 .. App'n 565,417

Non-statutory subject matter/subject matter obvious in view of prior art

The examiner rejected this application on the basis that what was claimed was merely the visual appearance of a toy and as being obvious in view of 3 applied references. The Board determined that the applicant was claiming a toy to which is applied a special coating. The coating is different from those shown in the references and is not obvious in view of them.

The application was returned to the examiner for further prosecution.

IN THE CANADIAN PATENT OFFICE

DECISION OF THE COMMISSIONER OF PATENTS

Patent application number 565,417, having been rejected under Rule 47(2) of the Patent Rules, the Applicant asked that the Final Action of the Examiner be reviewed. The rejection has consequently been considered by the Patent Appeal Board and by the Commissioner of Patents. The findings of the Board and the ruling of the Commissioner are as follows:

Agent for Applicant

Riches, McKenzie & Herbert
2 Bloor Street East, Suite 2900
Toronto, Ontario
M4W 3J5

This decision deals with the Applicant's request for a review by the Commissioner of Patents of the Examiner's Final Action dated January 18, 1994, on application number 565,417, filed on April 28, 1988 and entitled "COLOR MEMORY TOY". The Applicant is Pilot Ink Co., Ltd. and the inventors are Yutaka Shibahashi, Norikazu Nakasuji, Tsutomu Kito, Michiyuki Yasuda and Kuniyuki Senga. A Hearing before the Patent Appeal Board, composed of Michael Howarth and Murray Wilson, was held on October 22, 1997 at which the Applicant was represented by Mr Brant Latham of Riches, McKenzie & Herbert.

The application relates to colour-changeable toys which have toy bodies to which a quasi-reversible thermochromatic material is applied in a pattern. The thermochromatic material stably holds either of two coloured states in a range of ordinary room temperatures. The material changes from the first coloured state to the second coloured state at a temperature above ~~the~~ range and the material changes from the second coloured state to the first coloured state at a temperature below ~~the~~ range. One embodiment of the invention is a toy soldier which can be made to change from a non-wounded to a wounded condition by blowing on it using another toy in the shape of a pistol. Figures 9 and 10 showing the toy soldier and toy pistol in use and Figure 11 of the application showing a graph of the relationship between ambient temperature and the colour of the thermochromatic material are reproduced below.

FIG. 9

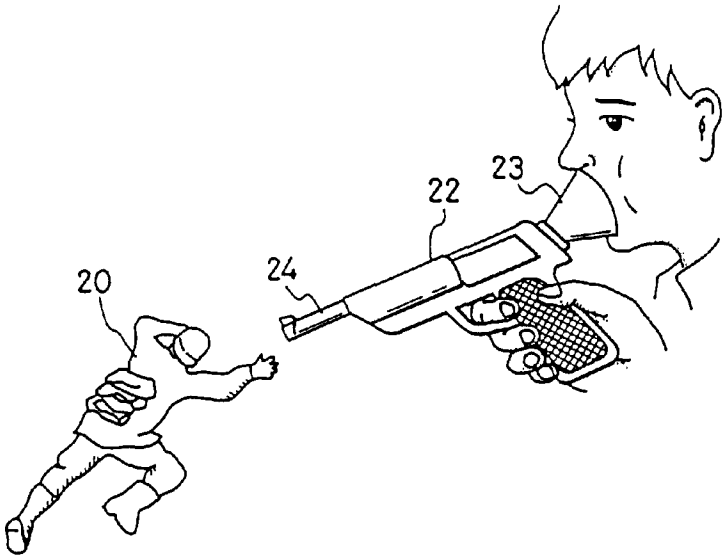


FIG. 10

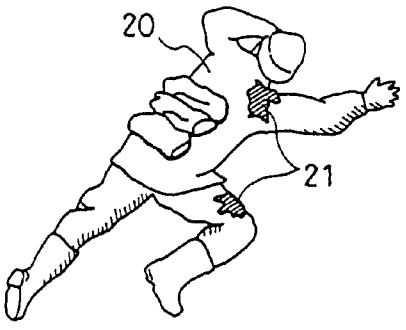
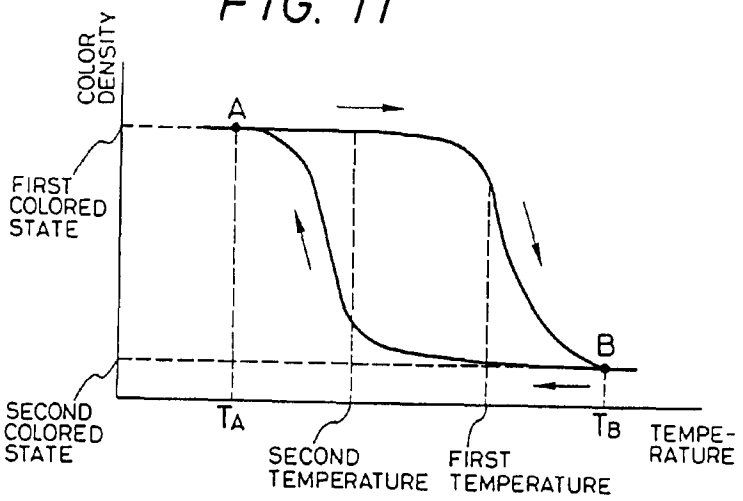


FIG. 11



In Figure 11, T_A is a temperature which can be achieved easily with the use of ice or cold water and T_B is a temperature which can be achieved using readily available sources of heat such as the human body, hot water, a hair dryer or the breath. A toy starting at point A on the graph is colour A. As it is heated from temperature T_A, it remains colour A until it approaches temperature T_B. On exceeding temperature T_B the toy then changes to colour B and will then remain colour B until it is cooled to below temperature T_A.

Claim 1 of the application reads as follows:

> A color memory toy, comprising a toy body having an outer surface; and
>
> a quasi reversible thermochromic coloring material applied to said surface;
>
> wherein said quasi-reversible thermochromic coloring material has a temperature hysteresis characteristic such that when said coloring material is in a first colored state and a temperature rises up to a first temperature, the first colored state starts to change to a second colored state, and becomes completely the second colored state at a temperature range higher than T_B, which is higher than the first temperature, and when the coloring material is in the second colored state and a temperature lowers to a second temperature lower than the first temperature, the second colored state starts to change to the first colored state, and becomes completely the first colored state at a temperature range lower than a temperature T_A, which is lower than the second temperature, where the temperature T_A is within the range of about 0°C to about 15°C, the temperature T_B is within the range of 27°C to about 90°C, the temperature range between the second temperature and the first temperature is about 10°C to about 35°C, and both the first colored state and the second colored state can appear at the temperature range between the second and first temperatures.

The application also contains five other claims dependent, either directly or indirectly, on claim 1. Claims 2 to 5 give details of the colour states and the colouring material while claim 6 adds the feature of a separate breath blowing means which can be used to raise the temperature of the colouring material.

In his Final Action the Examiner refused all of the claims for failing to patentably distinguish over three references and refused to allow the application to proceed to patent because the subject matter of the application was considered not to fall under Section 2 of the Patent Act.

In the Final Action, the following patents were cited:

United States Patents

4,028,118	June 7, 1977	Nakasuji et al.
4,421,560	Dec. 20, 1983	Kito et al.
4,425,161	Jan. 10, 1984	Shibahashi et al.

Each of these patents shows thermochromic materials. These materials are one colour at ambient temperature but change to a different colour when subjected to a change in temperature. Each patent also gives examples of applications of these materials, including painting toys.

In refusing the application the Examiner, in the Final Action, stated, in part, that:

> Claims 1 to 6 are rejected because the subject matter thereof lacks inventive ingenuity in view of Nakasuji, Kito and Shibahashi, as the difference thereover is held to be obvious to one of ordinary skill in the art to which the alleged invention pertains.
>
> Nakasuji, Kito and Shibahashi describe the composition of thermochromatic paint and state that it can be used on toys.
>
> .....
>
> Thus the invention lies purely in the application of paint to an object to enhance its visual appearance thus creating a design or pattern on the object. Since the coating material is old and its use on toys is indicated in the prior art, the alleged invention pertains only to a visual effect caused by the artistic application of the paint. Thus the subject matter does not fall under Section 2 of the Patent Act.

In its response to the Final Action dated July 18, 1994, the Applicant stated on page 7 with respect to the cited prior art that:

> These three cited references do not teach nor suggest the use of a quasi-reversible thermochromic paint material which is used to coat the entire or a part of the surface of a toy which is subjected to colour change by thermal means. The three cited references do not disclose a toy coated with such paint wherein the colour changed state can be held unchanged at room temperature ranges.
>
> The particular advantage of the invention is in the ability to maintain the selected colour unchanged in a room temperature range which is very useful for toys and represents a novel application.
>
> Such a toy application cannot be obtained by simply substituting the reversible thermochromic materials of the cited references with quasi-reversible thermochromic materials. All thermochromic materials having a quasi-reversible thermochromic property do not exhibit the ability to hold their coloured state unchanged in room temperature ranges.

With respect to Section 2 of the Patent Act, the Applicant stated, at page 12 of its response, the following:

> The subject matter claimed represents a new and useful manufacture or composition of matter in the form of the functional toy which exhibits novel surface color change properties. Since the color of the toy can be changed in many ways as desired and since its color appearance once set by the child is maintained unchanged at normal room temperature, the toy can attract and hold the interest of a child user over a long period of time thereby assisting the child in development of their creativity.
>
> The invention claimed clearly falls within the definition of an invention in Section 2 of the Patent Act as a new and useful composition of matter namely a toy which carries a reversible thermochromic material which changes properties in accordance with the temperature relationship disclosed in the application.

The issues before the Board are therefore whether or not (a) the subject matter disclosed and claimed falls within the definition of invention as set out in Section 2 of the Patent Act and (b) the claims define an invention which is inventive over the cited prior art.

The subject matter disclosed and claimed in the instant application is a toy which has applied to it a specific material which has certain physical properties which change in relation to changes in the temperature.

The Examiner appears to have interpreted the claims as being directed to a toy which has a unique appearance. In the report of February 13, 1991, the Examiner expressed the opinion that the alleged invention pertains to a visual effect caused by the artistic application of the paint and suggested that protection of this type of subject matter was possible only under the Industrial Design Act.

The Board has arrived at a different interpretation of the alleged invention. In the Board's view, the application is directed to a toy which has applied to it a special coating material. The visual effect mentioned by the Examiner is caused by the properties of the coating material but is not the inventive feature. This type of subject matter falls clearly within the definition of invention and is therefore proper subject matter for a patent application.

Turning to the question of inventive ingenuity, the Board has studied the disclosure of each of the cited references. Each patent discloses a material which is a first colour at a first temperature. When the temperature of the material changes, either by heating or by cooling, the material changes to a second colour. When the material returns to the first temperature it also returns to the first colour. Each disclosure gives many examples of uses of these materials and one use is to paint toys.

The material of the instant application has some similarity to the materials of the prior art. It changes colour when heated or cooled. However, the prior art materials return to their original colour automatically when the temperature returns to ambient, while the instant material retains its second colour even after it returns to ambient temperature. It must undergo a second temperature change, in the opposite direction from the first temperature change to return to its original colour.

The Examiner has shown that it is well known to paint toys with materials which have unusual temperature related colour characteristics. However, there is no evidence to show that painting toys with the specific material which is used in the instant application is known or obvious because there is no indication in the cited prior art that this material was known before the Applicant used it.

As a result, the Board finds that a toy painted with this material is not obvious in view of the cited references and recommends that the refusal of claims 1 to 6 and of the application itself be withdrawn and that the application be returned to the Examiner for further prosecution.

M. Howarth
Member
Patent Appeal Board

M. Wilson
Member
Patent Appeal Board

I concur with the findings and the recommendations of the Patent Appeal Board. Accordingly, I return the application to the Examiner for further prosecution consistent with the recommendations.

A. McDonough
Acting Commissioner of Patents

Dated at Hull, Quebec
this 21st day of November 1997