

IN THE CANADIAN PATENT OFFICE

DECISION OF THE COMMISSIONER OF PATENTS

Patent application 380,049 having been rejected under Rule 47(2) of the Patent Regulations, 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

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Obviousness

The materials and proportions in the polypropylene as an antistatic agent for forming a container to withstand sterilization temperatures are not addressed in the cited art in any manner that supports an obviousness rejection. Rejection withdrawn.

This decision deals with Applicant's request for review by the Commissioner of Patents of the Final Action of application 380,049 (Class 190-150) filed June 18, 1981. Assigned to Metal Box Limited, it is entitled Processable Plastics Containers. The inventor is Martin J. Braithwaite. The Examiner in charge issued a Final Action on March 15, 1985, refusing to allow the application. Following his response to the Final Action, the Applicant submitted further arguments in a letter dated March 16, 1987.

The invention relates to a container capable of withstanding temperatures of at least 115°C, and made of polypropylene and a C₁₂ to C₁₈ fatty acid ester of glycerol wherein at least 80% of the monoester is incorporated in the polypropylene as an antistatic agent.

The Examiner relied on the following references in taking his Final Action:

- British Patent
(1) 1,331,343 Sept. 26, 1973
- Chemical Abstracts
(2) Vol. 84, 166553s (1976)
 (equivalent Kokai 51-007077, Jan. 21, 1976)

He considered them relevant for the following reasons:

(1) teaches the addition of glycerol monoesters of fatty acids (12 to 26 carbon, page 1 lines 70 to 79, 12 to 18 carbon preferred, page 2 lines 45 to 56) in an ester-glycerol mixture of 60 to 96% total ester, 4 to 40% of glycerol, where the total diester and triester is not greater than 25% of the ester-glycerol mixture, as an antistatic agent in the proportion of 0.2 to 2.8%, 0.4 to 2% preferred (page 2 lines 40 to 44) to a polyolefin, including polypropylene. It is exemplified inter alia that 1% of glycerol monomyristate (14 carbon), monostearate (18 carbon), monolaurate (12 carbon) give charge half lives to 60 to 120 seconds (examples 3, 4, 6 of Table I, and footnote, page 4) which is substantially similar to applicant's results (52 to 155 seconds).

(2) indicates that it is known to add 1.2% of glycerin monostearate (glycerol monostearate) to polypropylene to produce an antistatic effect.

The Examiner condensed the Applicant's arguments prior to the Final Action, as follows:

- (a) the prior art "monoesters" were the old 40 to 65% monoester, 35 to 60% diester/triester;
- (b) that the 80% plus pure monoesters (novel) had superior antistatic properties (selection);
- (c) that unlike the prior art polypropylene containers containing suitable quantities of applicant's additive retained their antistatic properties after 1 hour in water at 115°C (unexpected result).

In not accepting any of these arguments, the Examiner said in part, as follows:

...

... the examiner does not believe that the prior art (1) "monoesters" are in fact the commercially available 40 to 65% pure variety. The examiner's reasons are as follows in (1) (especially Table I examples 3, 4, 6) the monoesters (Table I, examples 3 to 12, 15 to 17, 19, Table II, examples 3, 6, 7, 9, Table III, examples 2, 4, 5, 7) are invariably described as alpha i.e. the isomer was known, where mixtures occur (Table I, examples 18, 20, Table II, examples 4, 8, Table III, example 6) the nature of the mixture is precisely indicated. This alone is enough to tell a skilled chemist that the patentee of (1) deemed the monoesters pure. However turning to the disclosure the method of manufacture is given (page 2 lines 84 to 114), while glycerolysis can give mixtures (depending on conditions) neither of the other specified methods are likely to do so, especially the reaction of Na, or K salt of the acid with an alpha- or beta- halogeno propylene glycol. A reasonable assumption is that all three methods are equivalent and deliver pure (100%) glycerol monoesters. The examiner is thus unable to accept applicant's argument (a).

Similarly argument (b) of applicant is rejected, as the antistatic properties of applicant are not seen to be superior to those of citation (1). Further even if they are somewhat superior based on improved purity of additive, this is expected, because it is well known to skilled chemists that a purer additive has an enhanced effect because not only is there more effective additive but there is less impurity to have (unwanted) side effects.

Similarly argument (c) of applicant is traversed. The devices of citation (1) are described as dishes (page 4 lines 1 to 9) it seems unlikely that such devices would not stand subjection to normal pasteurisation/sterilisation processes. It is noted that applicant teaches 115°C for one hour in water - which must be in an autoclave - sterilisation is often executed as 120/121°C for 20 minutes using superheated steam, which is equivalent to one hour at 115°C, for food processing, (see "Canned Foods" Herson & Hulland, Churchill, London, page 154, page 168, 1969 for example). It is felt by the examiner that any material considered for a food container would have to tolerate pasteurising/sterilising autoclaving to be operable.

...

In any response to overcome this rejection applicant must provide solid experimental proof demonstrating beyond any reasonable doubt that the antistatic property survival is unexpected. The examiner is aware that such evidence is often neither readily apparent nor presented in the disclosure, nevertheless applicant must have such experimental evidence available to make such assertions.

...

In his response, the Applicant addresses the Examiner's rejection as follows, in part:

It has been common to use commercial grades of glycerol monostearate in non-processable containers but applicant has found that this and other antistatic agents have little antistatic activity at recommended levels in containers which have been processed, e.g. sterilization or pasteurization. Glycerol monostearate with monoester content of 65% is only really effective as an antistatic agent in processed containers at a concentration of 2%.

...

...

The applicant submits that the use of a fatty acid ester of glycerol having the specified higher content of monoester than has conventionally been used gives the containers improved antistatic property retention after encountering a processing temperature.

The preferred amount of monoester to be incorporated is from 1% to 1.5% by weight.

...

(a) The Chemical Abstract indicates that glycerin monostearate was used as an antistatic agent for polypropylene paper substitute. Thus a mixture including polypropylene and glycerin monostearate was extruded at 230° and treated with corona discharge to prepare a film having good printing properties. The amount of antistatic agent was 1.2 parts (not necessarily 1.2%) In any event, as commercially available glycerin monostearate is usually a mixture of mono, di and tri-esters with the monoester content typically from 40-65%, the reference does not appear to say more than that glycerin monostearate may be used as an antistatic agent for polypropylene paper substitutes having good printing properties.

(b) ... The (British) patent ... states that the invention relates to anti-electrostatic moulding compositions and mouldings of polyolefins which contain fanyl acid glycerides and glycerol.

It (says) the use of polyhydric alcohols such as glycerol is "completely unsatisfactory from the point of view of an antistatic effect as will be shown later. On the other hand, glycerol esters show greatly differing behavior." (Column 1, lines 32 - 35).

The British patent is directed to providing antistatic moulding compositions and moulding of polyolefins containing a mixture of

(a) 60 to 96 percent by weight of a glycerol monoester of a fatty acid with 12 to 26 carbon atoms in which the content of diester and triester is at most 25% by weight of the glycerol - glycerol ester mixture, and

(b) 40 to 4 percent by weight glycerol.

(Preferably these mouldings additionally contain an amine)
(c). The mixture of (a) and (b) (and optionally (c)) may be incorporated into the moulding compositions in amounts of 0.2 to 2.8% by weight of the compositions (preferably 0.46 to 2.0% by weight).

The monoesters can still contain minor proportions of diesters and/or triesters remaining from the manufacture provided they do not exceed 25% by weight of mixtures of (a) and (b).

... Examples 3, 4 and 6 of Table I exemplify the use of glycerol monoesters and whilst the use thereof is able to reduce the surface resistance the patent states that "it can only do so to a very unsatisfactory extent". This statement would not encourage a person reviewing the patent to consider the further use of glycerol monoesters under conditions requiring sterilization of polypropylene products....

Applicant has previously in the prosecution acknowledged that adding C₁₂ to C₁₈ fatty acid esters of normal commercial purity to polypropylene is known for providing antistatic properties in containers which are not processed. The essential feature of applicant's invention is the selection of C₁₂ to C₁₈ fatty acid ester of glycerol containing at least 80% monoester for the purpose of providing a simple but yet effective antistatic protection in polypropylene containers capable of withstanding temperatures of at least 115°C, i.e. sterilization temperatures.

Nothing in the British patent directs a person to applicant's invention.

...

... The Examples 3, 4 and 6 are for comparison purposes and in the context of the British patent were not considered effective for the purposes of such patented invention. If anything, the patent teaches away from a person attempting to use such examples as a basis for effecting the retentions of antistatic properties in sterilized polypropylene containers.

With reference to (b), the Examiner's analysis is predicated on a person knowing that in the context of sterilization problems, the at least 80% purity would be effective to cause retention of antistatic properties at concentrations which do not adversely affect molding and imprinting of containers. The Examiner's position on (b) is interrelated with (c) and not mutually exclusive.

As to point (c) ... There is simply nothing in the patent which teaches the retention of antistatic properties at elevated temperatures of retort sterilization. The assumption that the "dish mouldings" of the British patent are food containers or must be able to withstand or tolerate pasteurizing/sterilization autoclaving is not factually correct. There are many "dishes" including those simply for the purpose of testing in the British patent which are not used or intended to be used in pasteurizing/sterilization conditions.

Applicant recalls the comments of Mr. Justice Pigeon in Farbwerk Hoechst A.G. v Halocarbon (Ont) Ltd (SCC) 42 CPR (2nd) 145. ...on the conclusion of then Chief Justice Jackett of the Federal Court of Appeal who took the position that the "worth a try" test was part of Canadian patent law. Chief Justice Jackett indicated that "inventive ingenuity" was not met if the "state of the art" points to a process and all that the alleged inventory has done is ascertain whether or not the process will work successfully.

To this conclusion Mr. Justice Pigeon commented (in part):

"In my view this statement of the requirement of inventive ingenuity puts it much too high. Very few inventions are unexpected discoveries. Practically all research work is done by looking in directions where the "state of the art" points. On that basis and with hindsight, it could be said in most cases that there was no inventive ingenuity in the new development because everyone would then see how the previous accomplishments pointed the way. The discovery of penicillin was, of course, a major development, a great invention. After that, a number of workers went looking for other antibodies methodically testing whole families of various micro-organisms other than penicillium notatum. This research work was rewarded by the discovery of a number of antibiotics such as chloromycetin obtained from streptomyces venezuelae as mentioned in Laboratoire Pentagone Ltee v. Parke, Davis and Co. (1968), 55 C.P.R. 111, 69 D.L.R. (2d) 267, (1968) S.C.R. 307, tetracycline as mentioned in American Cyanamid Co. v. Berk Pharmaceuticals Ltd., (1976) R.P.C. 231, where Whitford J., said (at p. 257): "A patient searcher is as much entitled to the benefits of a monopoly as someone who hits upon an invention by such lucky chance or inspiration". I cannot imagine patents obtained for antibiotics and for various processes for their production being successfully challenged on the basis that the discovery of penicillin pointed the way and there was no inventive ingenuity in the search for other antibiotics and in the testing and the development of processes.

...

In the subsequent letter dated March 16, 1987, the Applicant points to the findings in the Commissioner's Decision in Re Dialog Systems Inc., 59 C.P.R. (2nd) 423. The Applicant argues as follows, in part:

...

In that case the applicant sought to patent a process to prepare certain ethers and cited two references, one of which was held too late to constitute a proper reference. The other reference was a U.S. patent and applicant's Agent believe the head note to the Decision is particularly appropriate with reference to the British patent relied on by the Examiner in this case.

"The United States patent must be considered as a whole and not merely the two examples relied upon by the Examiner. The Examiner has stated that it is conceivable that the invention is obvious. A rejection should be based upon something more probable than a conceivable conclusion. The teachings of the relevant art are too nebulous, uncertain and imprecise to be a satisfactory basis to hold that the impugned invention is obvious. To so find involves too many elements of speculation and ex post facto analysis to satisfy the Board that the application should be refused."

The Examiner in the Final Action in this case states that: .

"The devices of citation (1) are described as dishes (page 4, lines 1 to 9) it seems unlikely that such devices would not stand subjection to normal pasteurization/sterilization processes."

:
:
:

"It is felt by the Examiner that any material considered for a food container would have to tolerate pasteurizing/sterilizing autoclaving to be operable."

Applicant's Agents submit that the Examiner is in effect taking the same position as did the Examiner in the abovenoted reported case, i.e. that the invention is "conceivably obvious". The rejection should be based on something more than a conceivable conclusion.

Applicant submits that the teachings of the cited British reference are too nebulous, uncertain and imprecise to be a satisfactory basis to hold applicant's invention obvious. There are too many elements of speculation and ex post facto analysis in the Examiner's rejection.

The issue before the Board is whether or not the claims present patentable subject matter in view of the cited references. Claim 1 reads:

"A container made of polypropylene and capable of withstanding temperatures of at least 115°C, wherein a C₁₂ to C₁₈ fatty acid ester of glycerol containing at least 80% of the monoester is incorporated in the polypropylene as an antistatic agent."

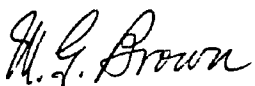
We observe that the cited British patent 1,331,343 describes mouldings and moulding compositions that are formed to provide an antistatic surface. In Tables I to III showing test results, the surface resistance of such surfaces are shown to be measured at temperatures of 23°C 1 day after manufacture. In the application before us, the containers are intended for

use with food at sterilization temperatures of at least 115°C for times up to 1 hour as well as for their antistatic properties. With respect to the antistatic characteristic, the Applicant includes a C₁₂ to C₁₈ fatty acid ester of glycerol containing at least 80% monoester that is said to withstand the sterilizing temperature. No description is found in the British patent that relates the particular higher percentage, nor that a higher percentage of monoester would be useable at higher temperatures approaching sterilization temperatures.

We learn from the Chemical Abstract that polypropylene paper substitutes having good printing properties are prepared by extrusion techniques, and treatment with a corona discharge. From this reference, we are not led to an understanding that a paper substitute would be subjected to temperatures used for sterilization purposes.

We think the Applicant has overcome the rejections in the Final Action, and has particularly distinguished the features that set his contribution apart from the cited art. We are persuaded that the materials and proportions he has incorporated into polypropylene as an antistatic agent have not been addressed in the citations for forming a container capable of withstanding sterilization temperatures. We find the Final Action has not established that the results achieved by the Applicant are expected. Moreover, we think the Applicant does not have to establish experimental proof showing the antistatic property of the container that has been in our view, sufficiently described in the application under consideration.

We recommend that the refusal of the claims for lacking invention over the citations, be withdrawn.

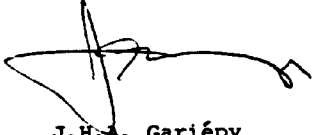


M.G. Brown
Acting Chairman
Patent Appeal Board



S.D. Kot
Member

I have reviewed the prosecution. I concur with the findings and the recommendation of the Patent Appeal Board. Accordingly, I withdraw the refusal of the claims and I remand the application for prosecution consistent with the recommendation.

A handwritten signature in black ink, appearing to be 'J.H.A. Gariépy', written over a horizontal line.

J.H.A. Gariépy
Commissioner of Patents

Dated at Hull, Quebec
this 25 day of October 1988.

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