

COMMISSIONER'S DECISION

Section 36(2): Cable Splice Repair Sleeve

The applicant is entitled to claims which accurately define the inventive concept. The invention made is broad, and the claim need not in this case be restricted to the preferred embodiment.

Final Action: Reversed

Patent application 138,599 (Class 339-47.1), was filed on March 30, 1972 for an invention entitled "Cable Splice." The inventor is Duane D. Rodger, (assignor to Raychem Corporation). The examiner in charge of the application took a Final Action on May 26, 1977 refusing to allow it to proceed to patent.

This application relates to repair sleeve suitable for splicing electrical cables, such as those used in underground coal mines. The sleeve is made of a polymeric material which has been radially expanded from an original heat-stable form to a dimensionally heat-unstable form which shrinks upon the application of heat. The sleeve is fitted over the splicing joint, is then heated, and shrinks back to its unextended form to form a tight covering over the joint. This permits cables to be spliced in the mine, rather than taking them above ground for repairs. The invention is illustrated by figure 3 and in particular by figure 6 of the drawings.

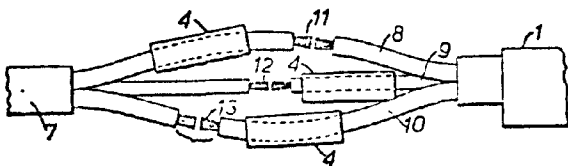


Figure 3

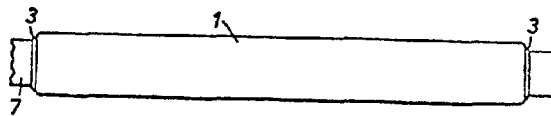


Figure 6

In the Final Action the examiner rejected claim 1 under Sec. 36(2) of the Final Action for "not stating distinctly and in explicit terms the thing that the applicant regards as new." Claim 1 reads:

An article comprising a sleeve of polymeric material which sleeve has been radially expanded from an original heat-stable form to a form in which it is independently dimensionally heat-unstable and is capable of shrinking in the direction of its original form upon the application of heat alone, the sleeve having a tensile strength of at least about 1200 p.s.i. when measured in accordance with ASTM D 2671 using a jaw separation speed of 20 ± 2 inches per minute, a maximum stiffness of 10,000 p.s.i. when measured according to ASTM D 747 and a dielectric strength of at least 200 volts per mil determined in accordance with ASTM D 149, and at least part of the inner surface of the sleeve being provided with an adhesive.

In making his objection the examiner said (in part):

The alleged invention disclosed by the applicant is to a composition of material suitable for making sleeves to cover a cable splice used in the mining industry. To find a solution to the problem in existing sleeves, applicant decided to increase the flexibility of the material in which the major polymeric component was polyethylene. He made the following composition: - 40-50% (about 45%) an ethylene vinyl acetate copolymer (e.g. "ALATHON 3190"); up to about 10% (about 7%) an ethylene ethyl acrylate copolymer; 10-20% (about 15%) carbon black; up to about 25% flame retardant (about 13%) a halogenated bis-imide; up to 10% (about 6%) antimony oxide; the remainder being anti-oxidants and chemical cross-linking agents (example a peroxide).

Having made the compound a series of tests were made to determine the physical properties of the compound. As was expected in increasing the flexibility, the tensile strength was reduced from that of previous material. However, the overall properties were such that the use of the material as a sleeve, overcame the problems previously encountered, without preventing the splice as a whole from meeting the statutory requirements.

Applicant did not invent the physical properties but rather the compound that exhibited the physical properties as defined in claim 1. As the alleged invention is to a composition the claims must define the ingredients. If the same test results can be obtained from "a family" of ingredients then a Markush type claim should be considered to name the ingredients.

He is prepared to allow claims which are restricted to the novel composition disclosed.

In response to the Final Action the applicant stated (in part):

...

Applicant has already stated in prosecution, and now repeats, that his invention is based upon the realization that, contrary to all expectation, the novel articles defined in Claim 1 have substantial and unexpected advantages. While that inventive concept is of

course exemplified by sleeves made from the particular compositions set out in the specification, it is well settled law that an Applicant is entitled to claims which accurately define his inventive concept and that he should not be forced to restrict his claims to the specific embodiment thereof. Especially is this so in the present case, in which (as the prosecution history shows) those skilled in the art will readily be able to prepare a wide variety of sleeves which are within the scope of Claim 1 now on file, but which would be outside the scope of a claim restricted to sleeves made from the particular compositions shown in the specification. While it is not entirely clear what the Examiner meant when he said that "Applicant did not invent the physical properties", it is submitted that the Examiner was clearly wrong if he was concluding that Applicant did not invent sleeves having the combination of physical properties set out in claim 1. Again it must be emphasised that at no stage has it been suggested that sleeves as defined in Claim 1 are not novel and inventive.

Also, it should perhaps be added, for the sake of completeness, that during the earlier prosecution of the application, the Examiner rejected the claims as being too broad in view of the disclosure, and that this objection was not repeated after Applicant had shown in detail, in his letters of 20 May and 9 July, 1976, and the affidavits referred to therein, that there was no substance in that objection.

...

The question to be answered is whether claim 1 complies with Section 36 of the Patent Act.

It is the examiner's position that since the applicant developed a new composition for a particular purpose from specific ingredients and then determined its physical properties, he may claim only this specific composition. He argues that the applicant "did not invent the physical properties but rather the composition that exhibited the physical properties defined in claim 1".

On the other hand the applicant maintains that he is entitled to claims which accurately define the full inventive concept, and should not be forced to restrict them to a specific embodiment of that concept.

In weighing that contention we have had recourse to Bergeon v De Kermor Electric 1927 Ex. C.R. 181 at 196, where we find:

It was held in Denning Wire and Fence Co. v. American Steel and Wire Co (3): "That the mere function or operation of a machine, or other device, as distinguished from the machine or device itself, are not the subject of a patent is well settled." And a patent covering generally any and every means or method for producing a given result cannot be upheld. [underlining added]

At the same time we should not be too astute in unduly restricting an inventor to the specific embodiment disclosed. There is a need to balance the needs of the inventor to claim his invention in such sufficiently broad terms as to afford him adequate protection for what he has done, and those of others who should not be prevented from doing what the patentee has not invented. We find, for example, in P & M v Canada Machinery 1926 S.C.R. 105 at 118:

...that a claim may be well founded to the use of a principle of manufacture so individual in form that it may be carried out under the general direction of a skilled manufacturer without further invention. Or if you suggest and discover not only the principle but a means of applying it to a practical result by a mechanical contrivance and apparatus, and show also that you are aware "that no particular sort of modification or form of the apparatus is essential in order to obtain a benefit from the principle, then you may take your patent for the mode of carrying it into effect and are not under the necessity of describing and confining yourself to one form of apparatus. (British Thomson - Houston v Corona Lamp Works 39 RPC 20)."

The real issue then, as we see it, is whether the applicant invented a specific solution to a problem, in which event he may claim only that specific solution; or whether he pointed out a general solution to a problem, in which event he might claim the general solution. He himself has said that:

...those skilled in the art will readily be able to prepare a wide variety of sleeves which are within the scope of claim 1 now on file, but which would be outside the scope of a claim restricted to sleeves made from the particular compositions shown in the specification.

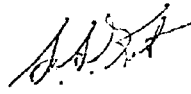
Part of our task will be to assess the accuracy of that statement.

In the disclosure the inventor has specifically described two types of copolymers as being suitable, namely ethylene-ethyl acrylate copolymers and ethylene-vinyl acetate copolymers. He has discovered the properties required in the polymers used to produce the desired results. He has said that other useful copolymers would be well known to those skilled in the art. Further, he has pointed out on page 6 of the disclosure at line 25 to three United States patents in which are disclosed several other polymers suitable for use in his sleeve. As a result we are satisfied that the inventor has developed a general solution to the problem, and should be allowed to claim broadly. We find that the specification defines the physical properties of the articles to be used, and that the specification enables a person skilled in the art to make the invention and obtain the desired results. As no prior art has been cited suggesting that the claim is too broad because of prior art, we find that claim 1 does meet the requirements of section 36(2) of the Patent Act and the scope of monopoly need not, under these circumstances, be limited to the preferred embodiment.

We recommend that the Final Action be withdrawn.

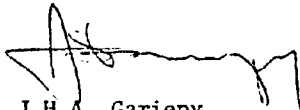


G. Asher
Chairman
Patent Appeal Board, Canada



S.D. Kot
Member

I concur with the findings of the Patent Appeal Board and withdraw the Final Action. The application is returned to the examiner for resumption of prosecution.



J.H.A. Gariepy
Commissioner of Patents

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Dated at Hull, Quebec
this 4th. day of January, 1979