

THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

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opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.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. 11

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte GEOFFREY D. BROWN, MICHAEL J.
KEOGH, SARI B. SAMUELS
and JEFFREY M. COGEN

Appeal No. 95-3782
Application 08/048,371¹

ON BRIEF

Before SOFOCLEOUS, HANLON and WALTZ, ***Administrative Patent Judges.***

WALTZ, ***Administrative Patent Judge.***

DECISION ON APPEAL

This is an appeal under 35 U.S.C. § 134 from the examiner's final rejection of claims 1 through 11. Claims 17 and 18 are the only other claims remaining in this application

¹ Application for patent filed April 15, 1993.

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and the examiner has indicated that these claims are allowed (brief, page 1).

According to appellants, the invention is directed to an article of manufacture comprising a plurality of electrical conductors surrounded by one or more layers of a composition comprising a polyolefin and a linear or cyclic organopolysiloxane containing one or more functionalized hindered amine moieties, with hydrocarbon cable filler grease within the interstices between the conductors (specification, page 3, lines 6-15).

Appellants state that the claims stand or fall together (brief, page 1). Accordingly, we will base our decision² on independent claim 1, which is illustrative of the subject matter on appeal and is reproduced below:

1. An article of manufacture comprising (i) a plurality of electrical conductors, each surrounded by one or more layers of a composition comprising (a) one or more polyolefins and bonded thereto or blended therewith, (b) a linear or cyclic organopolysiloxane containing one or more functionalized hindered amine moieties; and (ii) hydrocarbon cable filler grease within the interstices between said

² See 37 CFR § 1.192(c)(5)(1993), now 37 CFR § 1.192(c)(7)(1995).

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surrounded conductors.

The examiner relies upon the following references as evidence of obviousness:

Eager, Jr. et al. (Eager) 1973	3,745,231	Jul. 10,
Foster et al. (Foster) 1990	4,895,885	Jan. 23,

Appellants rely on the following references to rebut the examiner's evidence of obviousness:

ASTM Designation: D 4568-86, "Standard Test Methods for Evaluating Compatibility between Cable Filling and Flooding Compounds and Polyolefin Cable Materials," Annual Book of ASTM Standards, pp. 666-670, April 1986;

Davis, "A Global Test Method for Long Term Stability of Solid and Foam Skin Insulation," Proceedings of the Thirty-Sixth International Wire and Cable Symposium, pp. 475-476, Nov. 17-19, 1987.

Claims 1-11 stand rejected under 35 U.S.C. § 103 as unpatentable over Eager in view of Foster. We *affirm* this rejection for reasons which follow.

OPINION

The article of manufacture recited in appealed claim 1

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requires a plurality of conductors surrounded by layers of polyolefin bonded or blended with a linear or cyclic organopolysiloxane containing one or more functionalized hindered amine moieties, with hydrocarbon cable filler grease within the interstices between the conductors.

Eager discloses communication cables where the insulated conductors are protected from water by filling in the interstitial space among the conductors with a water repellant filler material comprising a grease, most often petrolatum blended with polyethylene (column 1, lines 15-24). Eager teaches that there is a problem with these type of communication cables when they are exposed to high temperatures (column 1, lines 25-34 and 39-40). Eager attempts to solve this problem by crosslinking the polyethylene through irradiation (column 1, lines 46-59). Eager discloses that a preferred filling material consists of a mixture of petrolatum, low molecular weight polyethylene and an antioxidant (column 4, lines 9-13). Appellants and the examiner agree that Eager does not disclose or teach the hindered amine polysiloxane required by appealed claim 1 (answer, page 3, and brief, page 2).

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The examiner applies Foster for the disclosure of a polysiloxane having pendent, sterically-hindered heterocyclic moieties attached to the siloxane chain (answer, page 3). The examiner states that the basic structure of the siloxane monomer in appealed claim 2 is disclosed by Foster in claim 1 (*id.*). The examiner further finds that Foster teaches this siloxane is used as an antioxidant and is added to polyolefins to stabilize them against light, heat or other forms of degradation (answer, page 4). The examiner concludes that it would have been obvious to use Foster's polysiloxane with Eager's polyethylene cable composition in order to stabilize the polyethylene in the presence of heat, light or other forms of degradation (*id.*).

Appellants do not contest that Foster discloses the same polysiloxane additive as required by the appealed claims (brief, page 2). However, appellants argue that a person of ordinary skill in the art would not be led to the Foster reference for several reasons (brief, page 4). Appellants submit that the artisan who wishes to stabilize a grease filled cable would not be interested in the Foster

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polysiloxane for its light stabilizing effect since these types of cables are buried underground. Appellants submit two references (ASTM D 4568-86 and Davis, as Appendices II and III, respectively, attached to the brief) to support this contention. Appellants further submit that the artisan would thus look to the heat stabilizing effect of the polysiloxane of Foster but this effect is either not material (the Yellowness Index reports color changes which are immaterial if the cable is buried in the ground) or negligible (the melt flow ratio is not affected by the polysiloxane of Foster in Example 2). Therefore appellants conclude that there is no reason why a person of ordinary skill in the art, on reading the Foster reference, would consider Foster's polysiloxanes to be useful as stabilizers in the grease filled cable of Eager (page 3 of the brief).

Appellants' arguments are not well taken. Foster discloses a problem in common with Eager, namely, the instability or degradation of synthetic organic polymers on exposure to light, atmospheric conditions and elevated temperatures (column 1, lines 19-22). Foster teaches that it

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is known in the industry to add light stabilizers, heat stabilizers, and antioxidants to stabilize these organic polymers (column 1, lines 25-30). Appellants state that the polyorganosiloxane of Foster stabilizes olefin polymers against "light and heat" (brief, page 2, citing Foster, column 1, lines 59-64). However, as noted by the examiner on page 4, line 1, of the answer, Foster also teaches that his disclosed polysiloxanes "are herein used as additives in olefin polymers either as antioxidants and/or heat stabilizers and/or light stabilizers." (column 7, lines 61-65). Eager specifically calls for an antioxidant in his preferred filling material composition (column 4, lines 9-13). Thus we agree with the examiner that it would have been well within the ordinary skill in the art to use the polysiloxane of Foster in the grease filled cable composition of Eager for its known antioxidant properties with olefin compositions. Appellants only address the reasons why one of ordinary skill in the art would not be interested in the polysiloxane of Foster for its light and heat stabilizing effects when used in the grease filled cable composition of Eager.

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Appellants submit evidence (see Appendix II and III)³ to show that light degradation is not a consideration in grease filled cable compositions (Eager also teaches that most of the cable is designed to be buried, except for the above-ground pedestals, see column 1, lines 25-32). However, appellants' arguments regarding the heat stability of Foster are not convincing. Appellants argue that the Yellowness Index used by Foster is immaterial to underground cable compositions but present no evidence to support this contention (brief, paragraph 6 (ii), page 3). Foster discloses that the Yellowness Index was determined after aging at 60EC. for 4 weeks (column 10, lines 5-7) and that "the colors were compared to determine the heat stability properties of the various blends." (column 10, lines 52-54). There is no evidence to determine whether the color change represents actual degradation of the olefin polymer or, as appellants urge, a mere aesthetic change in the surface color. There are numerous teachings in Foster of the improved heat stability by

³ This is the same evidence that was submitted by Keogh in a declaration under 37 CFR § 1.132 dated June 6, 1994 (attachment to Paper No. 6). Since this evidence and conclusions are set forth by appellants in the brief (see also paragraph 8 on page 3 of the brief), we will not address the declaration specifically.

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use of the disclosed polysiloxane and appellants do not present objective evidence that one of ordinary skill in the art would not "look to the heat stabilizing effect" of the polysiloxane in Foster (see the brief, page 3), especially given the problem recognition in the art of stability of polyethylene to high temperatures (see Eager, column 1, lines 25-45, and Foster, column 1, lines 18-22).

For the foregoing reasons, we find that the examiner has established a *prima facie* case of obviousness in view of the disclosure and teachings of Eager and Foster. Based on the totality of the record, with due consideration to the evidence and arguments of appellants, we find that a preponderance of the evidence weighs in favor of obviousness within the meaning of 35 U.S.C. § 103. See *In re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). Accordingly, the examiner's rejection of claims 1 through 11 under 35 U.S.C. § 103 as unpatentable over Eager in view of Foster is affirmed.

OTHER ISSUES

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The examiner has indicated the allowability of claims 17 and 18, directed to the same article of manufacture as set forth in claims 1 and 2, respectively, but with the addition of component (b), which is 1,2-bis(3,5-di-tert-butyl-4-hydroxy-hydrocinnamoyl)hydrazine. The specification discloses this component (b) as another antioxidant (page 19, lines 3-9).

It is well known to use antioxidants in grease filled cable compositions (see Eager, column 4, lines 9-13). It is also well known to use antioxidants to stabilize polyolefins, including the use of mixtures of stabilizers to obtain the desired protection (Foster, column 1, lines 25-28 and 42-45).

Upon return of this application to the examiner, the examiner and appellants should determine if component (b) of claims 17 and 18 is a well known antioxidant and whether these claims contain patentable subject matter in light of this determination and the above noted disclosures of the prior art of record.

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

AFFIRMED

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MICHAEL SOFOCLEOUS)	
Administrative Patent Judge)	
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)	BOARD OF PATENT
ADRIENE L. HANLON)	
Administrative Patent Judge)	APPEALS AND
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)	INTERFERENCES
)	
THOMAS A. WALTZ)	
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