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opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.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.33

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte TADASHI ASANUMA, KAZUHIKO YAMAMOTO
and KAORU KAWANISHI

Appeal No. 95-3464
Application 08/075,857[1]

HEARD: January 12, 1999

Before WEIFFENBACH, OWENS, and WALTZ, *Administrative Patent Judges.*
OWENS, *Administrative Patent Judge.*

DECISION ON APPEAL

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[1] Application for patent filed June 11, 1993. According to appellants, the application is a continuation of Application 07/804,726, filed December 11, 1991, now abandoned.

This is an appeal from the examiner's refusal to allow claims 6-9 as amended after final rejection. These are all of the claims remaining in the application.

THE INVENTION

Appellants' claimed invention is directed toward a method for preparing molded articles of a crosslinked olefin wherein crosslinking takes place in the molding machine. The articles are made from a blend of polyolefin granules which contain a hydrosilylation catalyst, polyolefin granules which contain a copolymer of an alkenylsilane of a recited formula and an olefin, and optionally polyolefin granules which contain neither the hydrosilylation catalyst nor the copolymer of the alkenylsilane and the olefin. Claim 6 is illustrative and reads as follows:

6. A method for preparing molded articles of a crosslinked polyolefin which comprises the steps of mixing two kinds of polyolefin granules comprising polyolefin granules containing a hydrosilylation catalyst and polyolefin granules containing a copolymer of an alkenylsilane and an olefin, or three kinds of polyolefin granules comprising said two kinds of polyolefin graules and polyolefin granules containing neither the hydrosilylation catalyst nor the copolymer of the alkenylsilane and the olefin, and then heating, melting and molding the mixture in a molding machine whereby a crosslinking reaction occurs in the molding machine so as to obtain a crosslinked article in the absence of contact with water, said alkenylsilane having the formula:

$$H_2C=CH-(CH_2)_n-SiH_pR_{3-p} \qquad (1)$$

wherein n is an integer of from 0 to 12, p is an integer of from 1 to 3, and R is a hydrocarbon residue having 1 to 12 carbon atoms.

THE REFERENCES

Topcik	4,798,864	Jan. 17, 1989
Asanuma et al. (Asanuma)	5,085,895	Feb. 4, 1992 (parent filed Dec. 15, 1988)

THE REJECTION

Claims 6-9 stand rejected under 35 U.S.C. § 103 as being unpatentable over Asanuma in view of Topcik.

OPINION

We have carefully considered all of the arguments advanced by appellants and the examiner and agree with appellants that the aforementioned rejection is not well founded. Accordingly, we do not sustain this rejection.

Asanuma discloses a random copolymer of an alkenylsilane

and an "-olefin (col. 1, lines 9-12), which is in the form of a powder (col. 6, lines 8-9). The alkenylsilane can be one which falls within formula 1 in appellants' claim 1 (col. 2, lines 50-62). The copolymer can be blended with a polyolefin which contains no alkenylsilane (col. 4, lines 28-34). The copolymer or blend can be molded into a sheet or film for use in adhering two layers together (col. 5, lines 11-26), or can be molded into a desired shape and coated with a material such as a urethane or acrylic coating material (col. 2, lines 20-23; col. 5, lines 31-36; col. 9, lines 37-48). Catalysts can be added to the copolymer or blend to activate Si-H bonds to improve the adhesive and coating properties of the molded product (col. 4, lines 55-58). The disclosed catalysts include palladium and platinum (col. 4, lines 58-62).

Topcik discloses a cured rubber composition made from a blend which comprises a polyolefin and an ethylene-propylene-diene rubber (col. 1, lines 40-50). The polyolefin can be polyethylene, a hydrolyzable copolymer of ethylene and a silane, or a hydrolyzable silane-modified polyethylene (col. 1, lines 42-45). The silane copolymer and silane-modified polyethylene can be crosslinked by exposure to moisture, and

the crosslinking is accelerated in the presence of a silanol condensation catalyst (col. 2, lines 57-65). Premature curing of the silane copolymer or silane-modified polyethylene is prevented by keeping pellets of a masterbatch of a carrier polymer containing the silanol condensation catalyst separate from pellets of the blend of the terpolymer rubber and the silane copolymer or silane-modified polyethylene prior to molding or extrusion of the blend into the desired shape (col. 3, lines 39-48). The product of the molding or extrusion is cured by immersing it in hot water (col. 3, lines 51-53).

The examiner points out that both Asanuma's catalyst and appellants' catalyst can be palladium or platinum, and argues that because these catalysts and the other materials are the same in both Asanuma's method and that of appellants, then if crosslinking takes place in appellants' method, it must take place in Asanuma's method (answer, pages 3-4). Thus, the examiner argues, one of ordinary skill in the art would have been motivated to use Topcik's pelletization method to keep Asanuma's catalyst separate from the silane copolymer to prevent premature curing (answer, page 3).

Asanuma does not mention crosslinking, but since

Asanuma's catalyst (col. 4, lines 58-62), like appellants' catalyst (specification, page 12, line 15 page 13, line 2), can be palladium or platinum, it appears that some crosslinking can take place in Asanuma's method. The examiner's argument is deficient, however, in that the examiner has provided no evidence that any crosslinking which would take place in Asanuma's method is sufficient to have led one of ordinary skill in the art to consider Topcik's pelletizing method to be desirable for preventing that amount of crosslinking from taking place prematurely. Also, the examiner has provided no evidence that Asanuma's product can be crosslinked to an extent which would have rendered Topcik's pelletizing method desirable to one of ordinary skill in the art, and also have the activated Si-H bonds desired by Asanuma for enhancing the adhesion and coatability properties of the product (col. 4, lines 55-58).

The examiner argues that if crosslinking in the molding machine is acceptable for making appellants' products, then it would be acceptable for the products of Asanuma (answer, page

4). This argument is not well taken because it does not account for the differences in the properties of appellants' product and that of Asanuma. Appellants' product is a crosslinked polyolefin having improved heat resistance and mechanical strength (specification, page 3, lines 16-20), whereas Asanuma's product is a sheet or film which adheres well to other layers (col. 5, lines 11-26), or is a shaped object to which coating material adheres well (col. 2, lines 20-23; col. 5, lines 31-34). The examiner has provided no evidence which shows that a product which is crosslinked to the extent of appellants' product would have the adhesion properties desired by Asanuma.

For the above reasons, we find that the examiner has not set forth a factual basis which is sufficient to support a conclusion of obviousness of the subject matter recited in any of appellants' claims.

DECISION

The rejection of claims 6-9 under 35 U.S.C. § 103 as being unpatentable over Asanuma in view of Topcik is reversed.

REVERSED

CAMERON WEIFFENBACH Administrative Patent Judge	)
TERRY J. OWENS Administrative Patent Judge	) BOARD OF PATENT APPEALS AND INTERFERENCES
THOMAS A. WALTZ Administrative Patent Judge	)

TJO/pgg

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