

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(2) is not binding precedent of the Board.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. 15

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte ARTHUR FISCHER
and WILLI HAUG

Appeal No. 95-3883
Application 08/147,987¹

HEARD: December 11, 1998

Before FRANKFORT, PATE and McQUADE, Administrative Patent Judges.

PATE, Administrative Patent Judge.

DECISION ON APPEAL

This is an appeal from the final rejection of claims 1,

¹ Application for patent filed November 5, 1993.

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3, 5 and 6. These are the only claims remaining in the application.

The claimed invention is directed to a composite anchor having an anchoring rod and a cartridge filled with hardenable bonding agent which secures the anchoring rod in a borehole. Typically, such devices are used as rock bolts in underground mining. When such bolts are used in the roof and one of the hardenable components is a liquid, the problem of leakage out of the borehole before the anchor is fixed has been recognized. Appellants' invention, which uses mineral mortar, places a thixotropic agent in the water that hardens the mortar. The thixotropic agent maintains the water in a gel or paste-like state until the gel is sheared by movement of the anchoring rod.

Claim 1, reproduced below, is further illustrative of the claimed subject matter.

1. A composite anchor, comprising a rotatable anchoring rod; a crushable cartridge filled with two components of a hardenable bonding agent which include a mineral mortar component and a water component separated from one another by crushable separating means provided with a thixotropic agent which is paste-like unless it is subjected to shear forces, said thixotropic agent being amorphous, pyrogenic silicic acid admixed with said water component in a proportion of 0.5% to 10%; and means for rotating said anchoring rod and screwing

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the latter into a drilled hole, so that when said cartridge with said separating means is crushed by said rotating anchoring rod said rotating anchoring rod generates shear forces which liquify said water component and said components are mixed by said rotating anchoring rod and produce a bonding agent which prevents any escape of said water component and fixes said anchoring rod in the drilled hole.

The references of record relied upon as evidence of obviousness are:

Montgomery 1971	3,618,326	Nov. 9,
Maechtle 1994	5,282,697	Feb. 1,
		(filed Feb. 21, 1992)

Claims 1, 3, 5 and 6 stand rejected under 35 U.S.C. § 103 as unpatentable over Maechtle in view of Montgomery.

According to the examiner, Maechtle discloses a composite rotatable anchoring rod and a crushable cartridge that is filled with two components of hardenable bonding agent that includes mineral mortar and water. Maechtle discloses that the anchoring rod will crush the separating means so that the two components will mix. Maechtle does not disclose the use of thixotropic agent in any of the two components. The examiner is further of the view that Montgomery discloses a thixotropic agent that can be pyrogenic silica. Thus, the

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examiner has determined that to provide Maechtle with a thixotropic agent would have been obvious to one of ordinary skill in the art.

OPINION

We have carefully reviewed the rejection on appeal in light of the arguments of the appellants and the examiner. As a result of this review, we have determined that the applied prior art does not establish a prima facie case of obviousness with respect to the invention on appeal. Accordingly, we will reverse the rejection of the claims on appeal. Our reasons follow.

We are in general agreement with the examiner's findings of fact with respect to the Maechtle reference. We particularly note his finding that Maechtle does not disclose a thixotropic agent. Turning to a consideration of the Montgomery patent, we note that Montgomery does not use a mineral mortar as required in the claim. The Montgomery patent is directed to a polymer or resin bonding agent.²

²We do note, however, that Montgomery does disclose that a mineral mortar agent such as portland cement can be used as a catalyst in his composition.

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In our view, the fact that Montgomery teaches the use of a thixotropic agent in the polymer resin bonding agent would not have suggested the use of a thixotropic agent in the water disclosed in the Maechtle reference. There is no teaching of how the thixotropic agent would work with water and mineral mortar, nor is there a reasonable expectation of success as required to support a prima facie case of obviousness. In fact, the combined teachings of the references do not provide a factual basis establishing that the pyrogenic silica will render the water capsule of the Maechtle reference thixotropic, or, for that matter, that proportions of 0.5% to 10% as required in appellants' claim 1 on appeal would have been obvious to one of ordinary skill. It is our view that the combination of references is based on an impermissible hindsight reconstruction of appellants' claimed invention, inasmuch as there is no suggestion in the references' combined teachings.

In summary, we find that the rejection under 35 U.S.C. § 103 of claims 1, 3, 5 and 6 lacks an underlying factual basis, and the rejection of these claims is reversed.

REVERSED

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CHARLES E. FRANKFORT)	
Administrative Patent Judge)	
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)	BOARD OF PATENT
WILLIAM F. PATE, III)	APPEALS AND
Administrative Patent Judge)	INTERFERENCES
)	
)	
JOHN P. McQUADE)	
Administrative Patent Judge)	

WFP:svt

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