

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opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.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. 37

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte MANFRED BORGER and HEINER EMONTS

Appeal No. 95-3096
Application 08/139,072¹

HEARD: September 16, 1997

Before CALVERT, COHEN and NASE, Administrative Patent Judges.

CALVERT, Administrative Patent Judge.

DECISION ON APPEAL

This is an appeal from the final rejection of claims 1, 4 and 5. The examiner has indicated that claims 2 and 6, the other claims remaining in the application, would be allowable if rewritten in independent form.

Claim 5 is representative of the subject matter involved:

¹ Application for patent filed October 21, 1993. According to appellants, this application is a continuation of Application 07/959,539, filed October 13, 1992, now abandoned; which is a continuation of Application 07/758,123, filed September 12, 1991, now abandoned.

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5. In an automobile glazing having a conductive layer thereon, an electrical connection element comprising:

a segment of flexible metal braid;

a plug mounted on one end of the braid; and

a connection piece formed of a piece of rigid sheet metal and connected to another end of the segment of flexible metal braid, said connection piece being brazed to the conductive layer,

wherein the piece of sheet metal forming the connection piece comprises a middle section and two end sections, and the middle section is bent so as to take the shape of a bridge element so that only the end sections are braze mounted to the conductive layer.

The references applied in the final rejection are:

Reeder	3,980,382	Sept. 14, 1976
Boaz	4,246,467	Jan. 20, 1981
Sinharoy et al. (Sinharoy)	4,658,504	Apr. 21, 1987
Eckardt et al. (Eckardt)	5,023,403	June 11, 1991

The claims on appeal stand finally rejected under 35 U.S.C.

§ 103 as follows:

(1) Claims 1 and 5, unpatentable over Boaz in view of Eckardt.

(2) Claim 4, unpatentable over Boaz in view of Eckardt and either of Reeder or Sinharoy.

We will first consider the rejection of claims 1 and 5.

The basis of this rejection is set forth on pages 2 and 3 of the examiner's answer as follows:

Boaz discloses a connection piece having the claimed structure, namely, a middle section, and two

end sections 22 which are brazed to the conductive layer on the windshield. The middle section has male plug 18 which is disclosed as being a lead area to which an electrical connection can be made. In paper no. 16, page 3, lines 3-5, the lead (conductor) is admittedly 1) "flexible", and 2) attached to male plug 18 by a female connector (not shown) attached to the lead (not shown).^[2] Eckardt et al. discloses a lead connected to the conductive layer on the windshield. The lead comprises a flexible braid having a plug mounted on one end of the braid. It would have been obvious to one of ordinary skill in the art at the time the invention was made to form the admittedly flexible lead of Boaz as a flexible braid having a plug mounted at one end, as taught by Eckardt et al., to allow stresses to be absorbed by the flexible braid. It is noted that the claims recite the connection piece as "to be mounted" to the braid or "connected" to the braid. Thus the plug connection of Boaz to the braid meets these limitations.

Appellants argue, in essence, that it would not have been obvious to combine Boaz and Eckardt. They note that Eckardt discusses the use of bridge elements, such as disclosed by Boaz, at column 1, lines 38 to 55, and discloses the use of a metal braid as a replacement for such elements to avoid the solder

² Paper No. 16 is an amendment filed by appellants on February 23, 1993. The portion referred to by the examiner states:

Boaz is directed to an electrical terminal of the type having a male plug connector 18 onto which a flexible conductor can be fitted via a female plug connector.

In addition, we take official notice of the fact that the wires used in automobile electrical systems are usually stranded, rather than solid. The wire connected to lug 18 of Boaz would therefore be flexible, although presumably not braided.

rupturing which may occur when such elements are subject to sudden stresses. According to appellants, their invention

provides an additional advantage beyond Eckardt et al and solves the problems introduced by the efforts of Eckardt et al to overcome the drawbacks of Boaz, i.e., it provides stress isolation while remaining compatible with automatic brazing operations. (Brief, page 9.)

After fully considering the record in light of the arguments presented by appellants and the examiner, we conclude that the subject matter recited in claim 5 is unpatentable under 35 U.S.C. § 103.

We note first that, while Eckardt does state at column 1, lines 21 to 24, that conductors may be either imprinted on one of two joined glass sheets or embedded therebetween, the particular braided wire member is disclosed only for use with conductors 13 which are sandwiched between two sheets of glass 1a, 1b. Thus, Eckardt discloses that the ends 5 of the braid are soldered to the conductors through a solder window 2 through one of the glass sheets (Fig. 4).

Boaz, on the other hand, discloses terminal (bridge element) 14 as being used to make a connection to conductors 12 which are on the surface of the window 10. Moreover, the terminal is so constructed as to be soldered to the conductor by a resistance heating gun which is pressed down on bonding feet 16 of the terminal (column 3, line 57 to column 4, line 13).

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In view of these differences between Eckardt and Boaz, we do not consider that one of ordinary skill would have necessarily simply replaced the Boaz terminal with the Eckardt braid. If the conductors were on the surface of the glass, and it was desired to use a resistance heating gun, one of ordinary skill would utilize the Boaz terminal, rather than the Eckardt system. At the same time however, in order to avoid the problems associated with the Boaz terminal, as described by Eckardt at column 1, lines 60 to 68, one of ordinary skill would have found it obvious to modify the Boaz device by providing the solution to those problems taught by Eckardt, namely, a section of braided wire in between the solder connection and the connection to the power lead. As Eckardt states at column 2, lines 36 to 41:

[B]raid body extending between the soldered arms of the T and the lug is likewise of a highly flexible nature capable of withstanding the thermal expansion and contraction phenomena to which the connection may be subject as well as mechanical stresses which are slow acting or sudden.

On page 2 of the reply brief, appellants argue:

[A]n obvious combination of Eckardt et al and Boaz would involve brazing a female plug connector onto the end of the braided lead of Eckardt et al, and then plugging the same onto the male plug connector 18 of Boaz. This would produce the same stresses that it is an object of the invention to avoid.

We agree with the first sentence of this statement, but disagree with the second. Contrary to appellants' argument, the stresses

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in question would obviously be avoided by plugging the braided lead onto the Boaz connector 18 before soldering the Boaz terminal to the conductor on the window.

Appellants also argue in their reply brief (page 1) that Boaz does not disclose a brazed connection between the connecting piece and braid, however, claim 5 does not recite a brazed connection.

Accordingly, the rejection of claim 5 will be sustained. Since appellants state on page 6 of their brief that claims 1, 4 and 5 stand or fall together, the rejections of claims 1 and 4 will also be sustained.

Conclusion

The examiner's decision to reject claims 1, 4 and 5 is affirmed.

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

AFFIRMED

IAN A. CALVERT)	
Administrative Patent Judge)	
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IRWIN CHARLES COHEN)	BOARD OF PATENT
Administrative Patent Judge)	APPEALS AND
)	INTERFERENCES
)	

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JEFFREY V. NASE)
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