

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 18

UNITED STATES PATENT AND TRADEMARK OFFICE

**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Ex parte TAKAO MURAKAMI and MASARU FUKUDA

Appeal No. 2004-0019
Application No. 09/884,914

ON BRIEF

Before FRANKFORT, NASE, and BAHR, Administrative Patent Judges.
NASE, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the examiner's final rejection of claims 1 to 3, which are all of the claims pending in this application.

We REVERSE.

BACKGROUND

The appellants' invention relates to a connector, such as a waterproof connector, in which a wire, connected to a terminal received in a chamber in a connector housing, is sealed by a rubber plug (specification, p. 1). A copy of the claims under appeal is set forth in the appendix to the appellants' brief.

The prior art references of record relied upon by the examiner in rejecting the appealed claims are:

Saijo et al. (Saijo)	5,455,515	Oct. 3, 1995
Wakata et al. (Wakata)	6,039,603	Mar. 21, 2000
Yamaguchi	JP 8-273732 ¹	Oct. 18, 1996

Claim 1 stands rejected under 35 U.S.C. § 103 as being unpatentable over Yamaguchi in view of Wakata.

Claims 2 and 3 stand rejected under 35 U.S.C. § 103 as being unpatentable over Yamaguchi in view of Wakata and Saijo.

¹ In determining the teachings of Yamaguchi, we will rely on the computer translation provided by the Japan Patent Office. A copy of that translation is attached for the appellants' convenience.

Rather than reiterate the conflicting viewpoints advanced by the examiner and the appellants regarding the above-noted rejections, we make reference to the answer (Paper No. 14, mailed February 24, 2003) for the examiner's complete reasoning in support of the rejections, and to the brief (Paper No. 13, filed December 10, 2002) and reply brief (Paper No. 15, filed April 24, 2003) for the appellants' arguments thereagainst.

OPINION

In reaching our decision in this appeal, we have given careful consideration to the appellants' specification and claims, to the applied prior art (Yamaguchi, Wakata and Saijo), and to the respective positions articulated by the appellants and the examiner. Upon evaluation of all the evidence before us, it is our conclusion that the evidence adduced by the examiner is insufficient to establish a prima facie case of obviousness with respect to the claims under appeal. Accordingly, we will not sustain the examiner's rejection of claims 1 to 3 under 35 U.S.C. § 103. Our reasoning for this determination follows.

In rejecting claims under 35 U.S.C. § 103, the examiner bears the initial burden of presenting a prima facie case of obviousness. See In re Rijckaert, 9 F.3d 1531, 1532, 28 USPQ2d 1955, 1956 (Fed. Cir. 1993). A prima facie case of obviousness is

established by presenting evidence that would have led one of ordinary skill in the art to combine the relevant teachings of the references to arrive at the claimed invention.

See In re Fine, 837 F.2d 1071, 1074, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988) and In re Lintner, 458 F.2d 1013, 1016, 173 USPQ 560, 562 (CCPA 1972). Thus, the test for obviousness is what the combined teachings of the references would have suggested to one of ordinary skill in the art. See In re Young, 927 F.2d 588, 591, 18 USPQ2d 1089, 1091 (Fed. Cir. 1991) and In re Keller, 642 F.2d 413, 425, 208 USPQ 871, 881 (CCPA 1981).

In this case, the combined teachings of the applied prior art would not have suggested having the visual confirmation member pulled into the insertion path by a second distance from the rear end face of the outer housing, which is smaller than the "first distance" (i.e., the distance the front end face of the inner housing protrudes from a front end face of the outer housing when the inner housing provisionally fits with the outer housing). Instead, the combined teachings of the applied prior art would have suggested having the visual confirmation member pulled into the insertion path by a distance from the rear end face of the outer housing, which is equal to or larger than the "first distance."

Wakata discloses in Figures 4-5 that it was known to use a rubber plug 2 for waterproofing a connector. The rubber plug 2 has a cylindrical shape having a through hole 2a extending along a centerline thereof for passing a wire 1 therethrough. The rubber plug has two flange-like collars 2b formed at a rear end portion 7 thereof. A front end portion 5 of the rubber plug has an outer diameter such that the front end portion 5 can be compressively clamped by an insulation barrel 3a of a terminal 3 with the wire 1 passing through the front end portion 5. A connector housing 4 has a tubular terminal-receiving chamber 4a for retaining and holding the terminal at its front portion 8, the terminal receiving chamber having an open rear end portion 9. The open rear end portion 9 has a diameter such that the collars 2b are held in tight contact with the peripheral wall when the rubber plug 2 and the wire 1 are inserted into the housing 4. When the terminal 3 is inserted into the terminal receiving chamber 4a of the connector housing 4, the terminal 3 defining the leading side is retained at the inner end portion of the terminal receiving chamber 4a, and the rubber plug 2 at the rear end 9 of the terminal is received in the terminal receiving chamber 4a in intimate contact with the peripheral wall of the chamber, with the collars 2b being slightly elastically deformed. When water is poured on the open end 9 of the terminal receiving chamber 4a, the intrusion of the water is prevented because of the intimate contact between the peripheral wall of the terminal receiving chamber 4a and the collars 2b of the rubber

plug 2, thereby achieving a waterproof effect. Wakata provides (column 1, lines 51-60) that:

In the above conventional rubber plug for a waterproof connector, however, if the rear end face 7 of the rubber plug 2 is not flush with the open end of the terminal receiving chamber 4a, a water collecting recess R may be formed. In such a case, when the wire vibrates, although water will not intrude immediately, a gap is formed between the collars 2b and the peripheral wall of the terminal receiving chamber 4a. This vibration allows the collected water to intrude into the terminal receiving chamber 4a.

In our view, the above-noted teachings of Wakata would have made it obvious at the time the invention was made to a person of ordinary skill in the art to have provided each of the terminals of Yamaguchi (i.e., the receptacles 41 with wires 43) with a rubber plug (i.e., a visual confirmation member) to achieve a waterproof effect. However, Wakata teaches that if the rear end face of the rubber plug is not flush with the open end of the terminal receiving chamber, a water collecting recess may be formed which would lead to leakage. This teaching of Wakata would have suggested to one skilled in the art to design the connection so that the rear end face of the rubber plug is flush with the open end of the terminal receiving chamber. Thus, when applying the teachings of Wakata to the connector of Yamaguchi, one skilled in the art would have designed the rubber plug to be pulled into the insertion path (see Figure 1 of Yamaguchi) by a distance from the rear end face of the outer housing which is equal to the "first distance" so that the rear end face of the rubber plug would be flush with the rear end

face of the outer housing of Yamaguchi in the completed connector (see Figure 4 of Yamaguchi). In addition, we note that a water collecting recess that Wakata teaches to avoid would be formed when the rubber plug is pulled into the insertion path by a distance from the rear end face of the outer housing which is greater than the "first distance" so that the rear end face of the rubber plug is recessed with the rear end face of the outer housing of Yamaguchi in the completed connector. However, the teachings of Wakata do not teach or suggest providing Yamaguchi with a rubber plug which will be pulled into the insertion path by a distance from the rear end face of the outer housing which is smaller than the "first distance" so that the rear end face of the rubber plug would protrude with the rear end face of the outer housing of Yamaguchi in the completed connector.

For the reasons set forth above, the decision of the examiner to reject claim 1 under 35 U.S.C. § 103 is reversed.

We have also reviewed the patent to Saijo additionally applied in the rejection of claims 2 and 3 but find nothing therein which makes up for the deficiencies of Yamaguchi and Wakata discussed above regarding claim 1. Accordingly, the decision of the examiner to reject claims 2 and 3 under 35 U.S.C. § 103 is reversed.

CONCLUSION

To summarize, the decision of the examiner to reject claims 1 to 3 under 35 U.S.C. § 103 is reversed.

REVERSED

CHARLES E. FRANKFORT
Administrative Patent Judge

JEFFREY V. NASE
Administrative Patent Judge

JENNIFER D. BAHR
Administrative Patent Judge

)
)
)
)
)
) BOARD OF PATENT
) APPEALS
) AND
) INTERFERENCES
)
)
)
)

Appeal No. 2004-0019
Application No. 09/884,914

Page 9

MORGAN LEWIS & BOCKIUS LLP
1111 PENNSYLVANIA AVENUE NW
WASHINGTON, DC 20004

JVN/jg