

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 OVE KULLBORG and EINAR MYKLEBUST

Appeal No. 2001-2654
Application No. 09/069,192

HEARD: January 22, 2002

Before COHEN, STAAB, and NASE, Administrative Patent Judges.
NASE, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the examiner's final rejection of claim 1. Claim 2 has been objected to as depending from a non-allowed claim. No claim has been canceled.

We REVERSE.

BACKGROUND

The appellants' invention relates to an industrial robot having convection cooled frequency converters (title). A copy of the claim under appeal is set forth in the opinion section below.

The prior art of record relied upon by the examiner in rejecting the appealed claim is:

Gorman	4,552,505	Nov. 12,
1985		

The appellants' admission of prior art (Figure 1; specification, page 2, line 19 to page 4, line 5) relating to a drive system for an industrial robot (Admitted Prior Art).

Claim 1 stands rejected under 35 U.S.C. § 103 as being unpatentable over the Admitted Prior Art in view of Gorman.

Rather than reiterate the conflicting viewpoints advanced by the examiner and the appellants regarding the above-noted rejection, we make reference to the final rejection (Paper No. 7, mailed November 3, 1999) and the answer (Paper No. 11, mailed August 1, 2000) for the examiner's complete reasoning

in support of the rejection, and to the brief (Paper No. 10, filed May 22, 2000) and reply brief (Paper No. 13, filed September 27, 2000) for the appellants' arguments thereagainst.

OPINION

In reaching our decision in this appeal, we have given careful consideration to the appellants' specification and claim 1, to the applied prior art, 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 claim under appeal. Accordingly, we will not sustain the examiner's rejection of claim 1 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).

Claim 1 reads as follows:

An industrial robot comprising a manipulator body structure of articulated members mounted for rotative movement about respective axes thereof, drive means at each of said axes to effect the respective rotative movements, each of said drive means comprising at least one electric driving motor capable of operating up to a predetermined maximum temperature without the use of a cooling fan, control equipment means for driving and controlling each of said respective drive means, said respective control equipment means comprising at least one rectifier and drive devices each capable of withstanding heat generated up to a maximum temperature of approximately one-half the predetermined maximum temperature of the motor likewise without the use of any cooling fan, said drive devices being operatively connected respectively to said motors, each of said drive devices being mounted only on selected areas of said body structure other than at each said motor, and each of said drive devices being spaced a predetermined distance from said respective motors to which said drive devices are operatively connected, said body structure thereby functioning to absorb the waste heat generated by said drive devices, to spread the waste heat throughout the body structure, and to transfer the waste heat solely by convection to the ambient air.

The Admitted Prior Art is an industrial robot comprising a manipulator; six drive means mounted on the manipulator, each of the drive means comprising an AC motor and its own reduction gear; the motors are each connected via long conductors to separate drive devices for converting direct current into alternating current, the drive devices being located in a control cabinet spaced outside the operating range of the manipulator; and one rectifier located in the control cabinet for supplying direct current to all the drive devices.

Gorman discloses an industrial robot including three primary drive units defining three separately controlled axes of movement, and an outer arm assembly having three additional axes of movement. As shown in Figures 1-2, an industrial robot 10, adapted to move through six axes of movement, comprises a main frame 12 which includes a support stand 13, with the stand defining a generally vertical axes A. A waist 14 is rotatable with respect to the stand and defines a generally horizontal axis B which is perpendicular to and

intersects the axis A. A first or inner arm 15 is rotatable with respect to the waist about the horizontal axis B, and a second or outer arm 16 is rotatable with respect to the inner arm about a second horizontal axis C, which is parallel to and laterally spaced from the axis B. A hand assembly 18 including a gripper 19 is mounted at one end of the outer arm 16, and is adapted to move through three additional axes of movement. In addition, the main frame of the robot includes a control box 20 mounted adjacent the stand 13 for housing the electronic controls for the various drive motors of the robot.

The appellants argue that the applied prior art does not suggest the claimed subject matter. We agree.

We agree with the examiner's determination (final rejection, p. 3) that it would have been obvious at the time the invention was made to one of ordinary skill in the art to have positioned the rectifier and drive devices of the Admitted Prior Art in a control box located on the main frame of the robot adjacent the stationary portion of the robot (e.g., stand 13 of Gorman). However, it is our view that this

modification of the Admitted Prior Art does not result in an industrial robot within the scope of claim 1. In that regard, it is our opinion that claim 1, when read as a whole, requires the claimed drive devices to be mounted on the manipulator body structure (i.e., the parts of the robot that can be moved). Since the applied prior art at best only suggests mounting the drive devices to a stationary part of the robot (e.g., Gorman's main frame 12 or stand 13), the applied prior art would not have suggested the subject matter of claim 1. Accordingly, the decision of the examiner to reject claim 1 under 35 U.S.C. § 103 is reversed.

CONCLUSION

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

REVERSED

IRWIN CHARLES COHEN)	
Administrative Patent Judge)	
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)	BOARD OF PATENT
LAWRENCE J. STAAB)	APPEALS
Administrative Patent Judge)	AND
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