



(12) **United States Patent**  
**Brown et al.**

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(54) **DISTRIBUTION OF MOTION CONTROL COMMANDS OVER A NETWORK**

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(List continued on next page.)

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(73) Assignee: **Roy-G-Biv Corporation**, Bingen, WA (US)

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**Related U.S. Application Data**

(List continued on next page.)

(63) Continuation of application No. 09/205,627, filed on Dec. 3, 1998, now Pat. No. 6,209,037, and a continuation-in-part of application No. 09/191,981, filed on Nov. 13, 1998, which is a continuation of application No. 08/656,421, filed on May 30, 1996, now Pat. No. 5,867,385, which is a continuation-in-part of application No. 08/454,736, filed on May 30, 1995, now Pat. No. 5,691,897.

*Primary Examiner*—Krisna Lim

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(60) Provisional application No. 60/067,466, filed on Dec. 4, 1997.

(57) **ABSTRACT**

(51) **Int. Cl.**<sup>7</sup> ..... **G06F 15/16**

A system for allowing an application program to communicate with any one of a group of supported hardware devices comprising a software system operating on at least one workstation and a network communications protocol. The software system includes a control command generating module for generating control commands based on component functions of an application program, component code associated with the component functions, and the driver code associated with software drivers associated with the hardware devices. The network communication protocol allows the control commands to be communicated from the control command generating module to at least one of the supported hardware devices over the network.

(52) **U.S. Cl.** ..... **709/201; 709/230; 700/1; 700/19; 700/56**

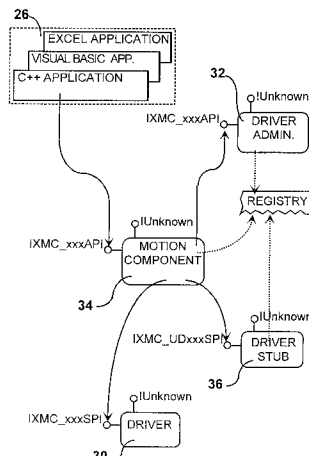
(58) **Field of Search** ..... **709/201, 230; 700/1, 19, 56**

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**5 Claims, 68 Drawing Sheets**



**ABB Inc.**  
**EXHIBIT 1023**

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FIG. 1A

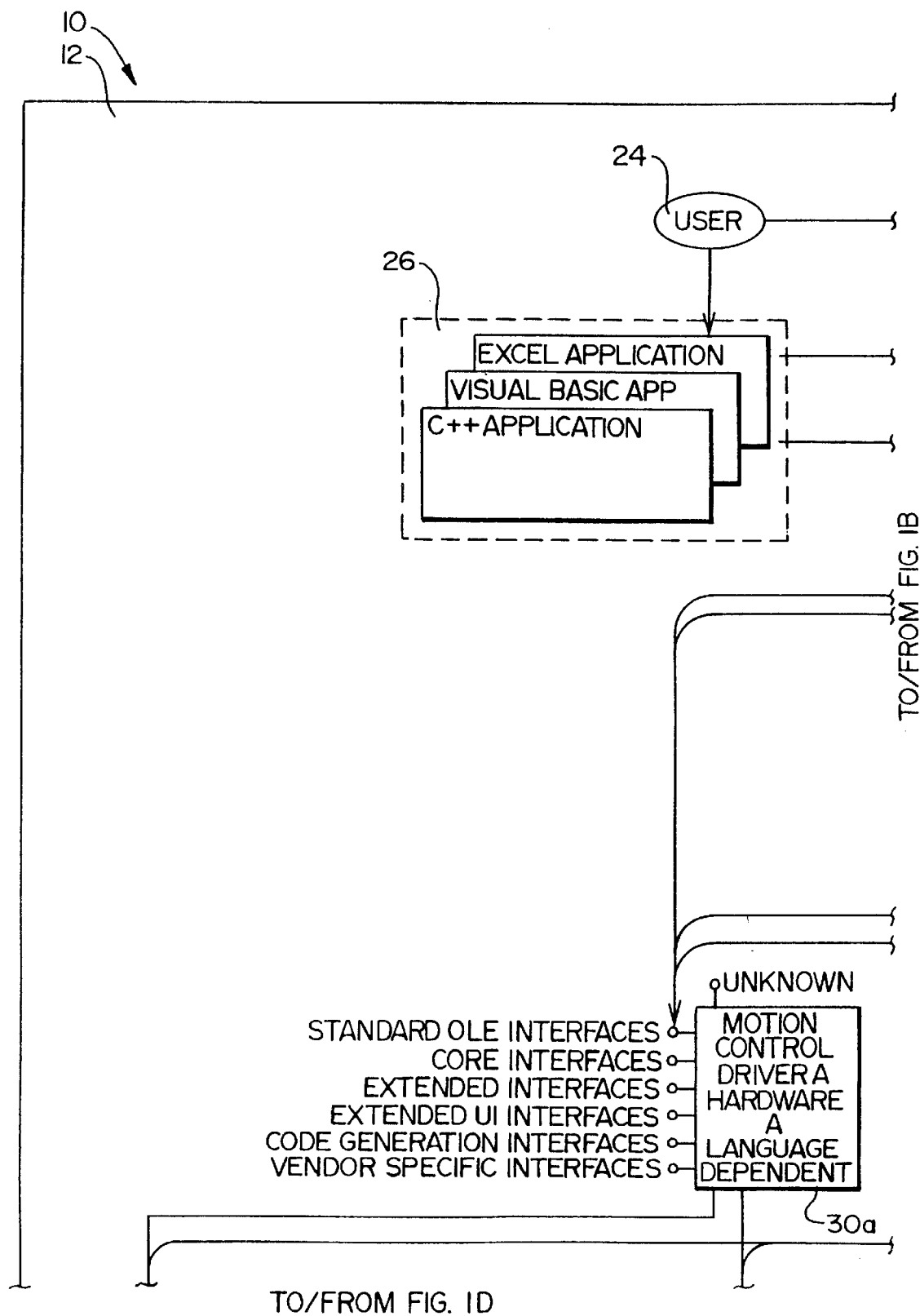
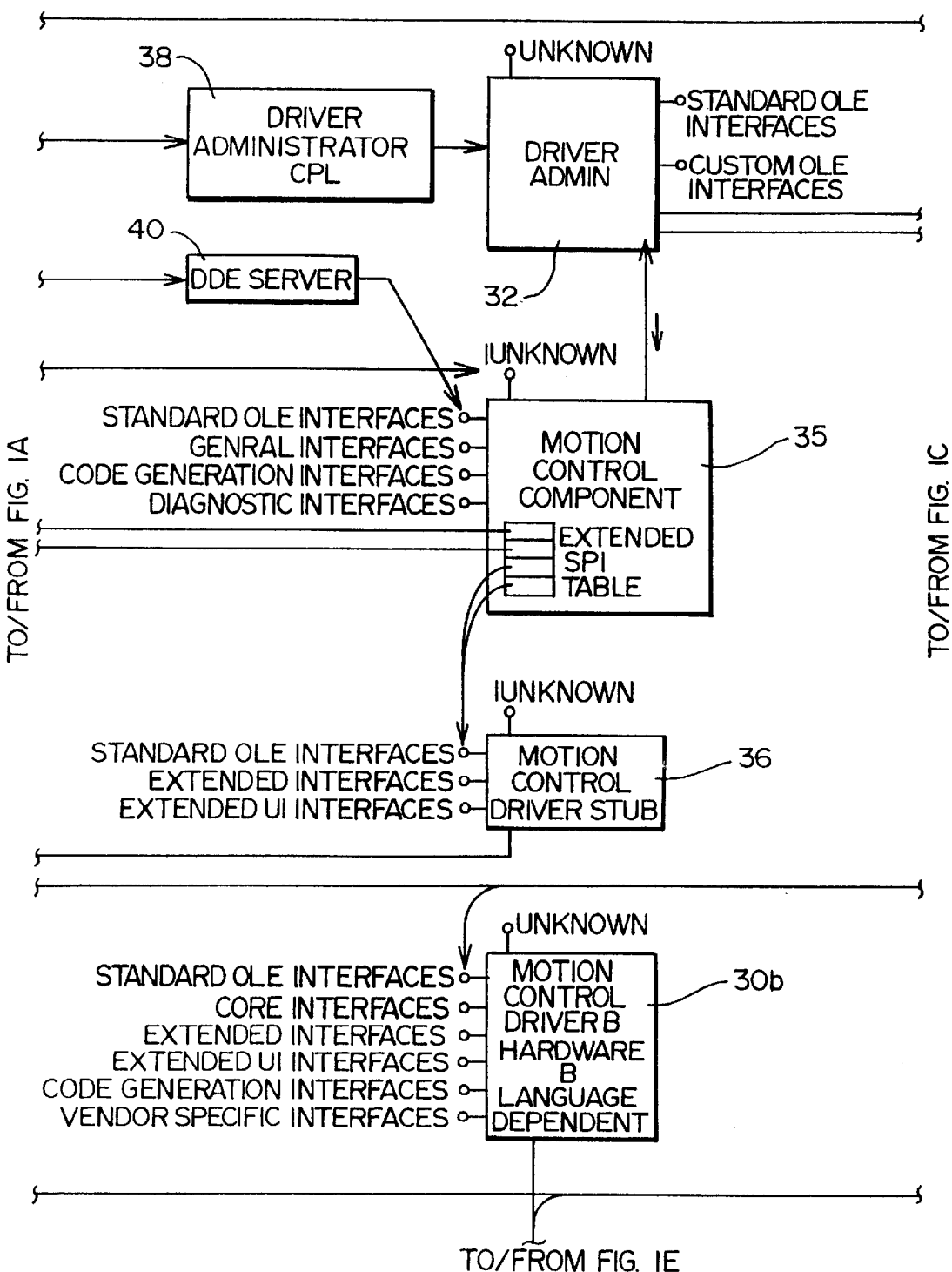


FIG. 1B



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