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Wörn et al.

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(54) CONTROL AND PROGRAMMING UNIT

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(73) Assignee: Kuka Roboter GmbH (DE)

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(51) Int. Cl.⁷ **G09G 5/00**

(52) U.S. Cl. **345/169; 345/158; 345/161; 345/1.2; 345/2.1**

(58) Field of Search **345/158, 161, 345/169, 1.2, 2.1**

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Primary Examiner—Steven Saras

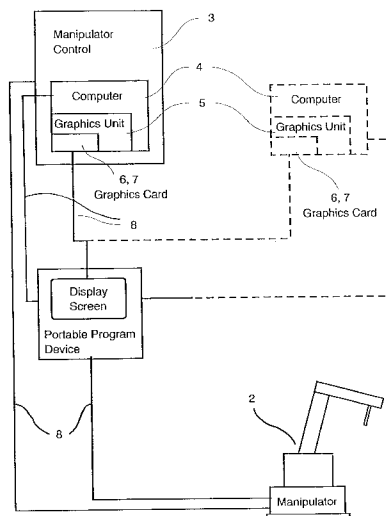
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(57) ABSTRACT

The present invention pertains to a control and programming means (1) for a manipulator (2) with a manipulator control (3), a computer (4) with a graphics unit and with a portable programming device (10), which connected to the computing unit (4) by remote data transmission. The programming device (10) has a display screen (12) without a graphics card (10) of its own, which is connected to the graphics unit (5) of the computer (4) by remote data transmission means and receives the graphic information from the said graphics unit. The graphics unit (5) preferably has a graphics card (6) with a converter (9) and an integrated serial interface (7) for remote data transmission for this purpose. The programming device (10) has a serial interface (7) for remote data transmission. The programming device (10) has a serial interface (7), which is connected to the display screen (12) via a converter (9).

19 Claims, 6 Drawing Sheets



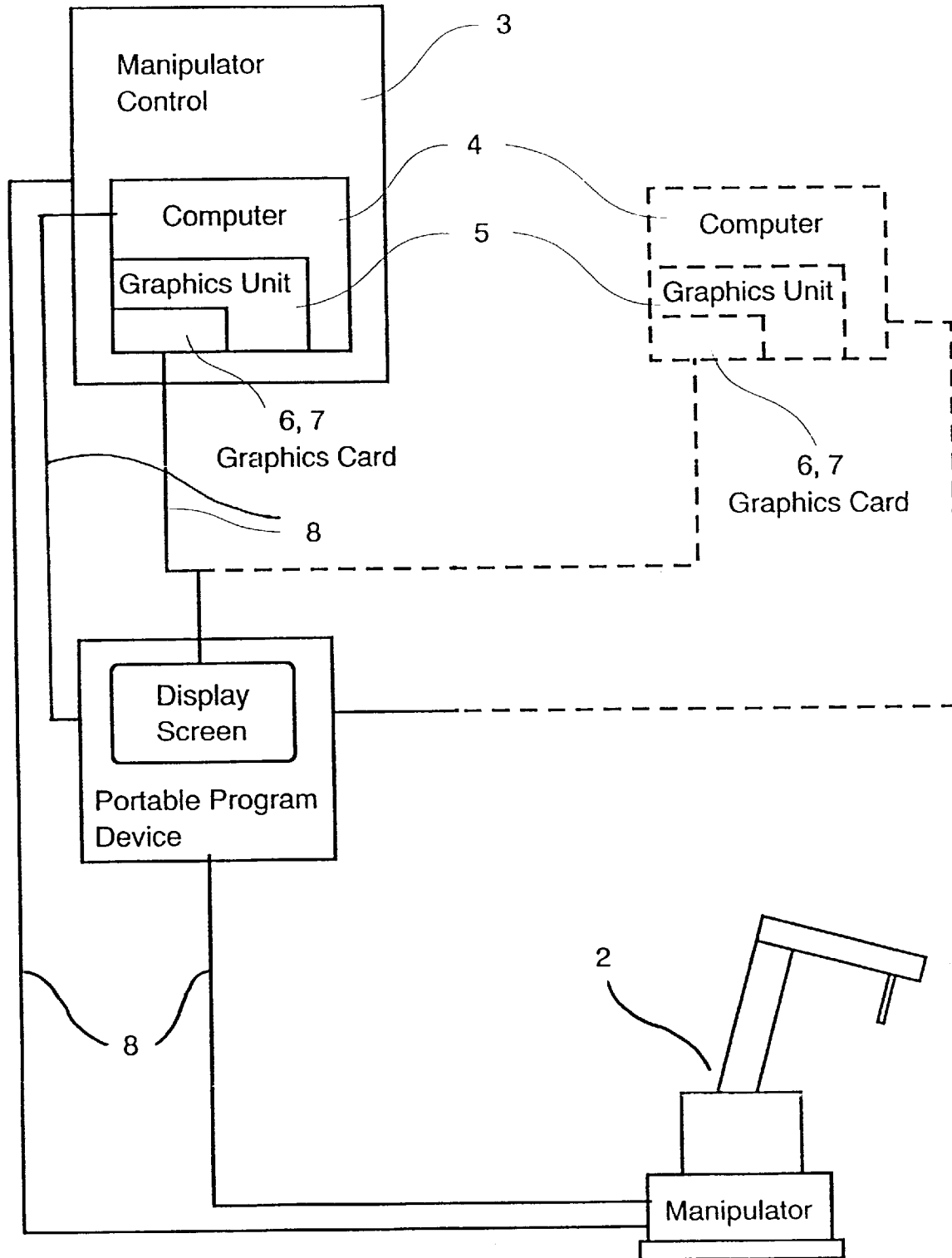


Fig. 1

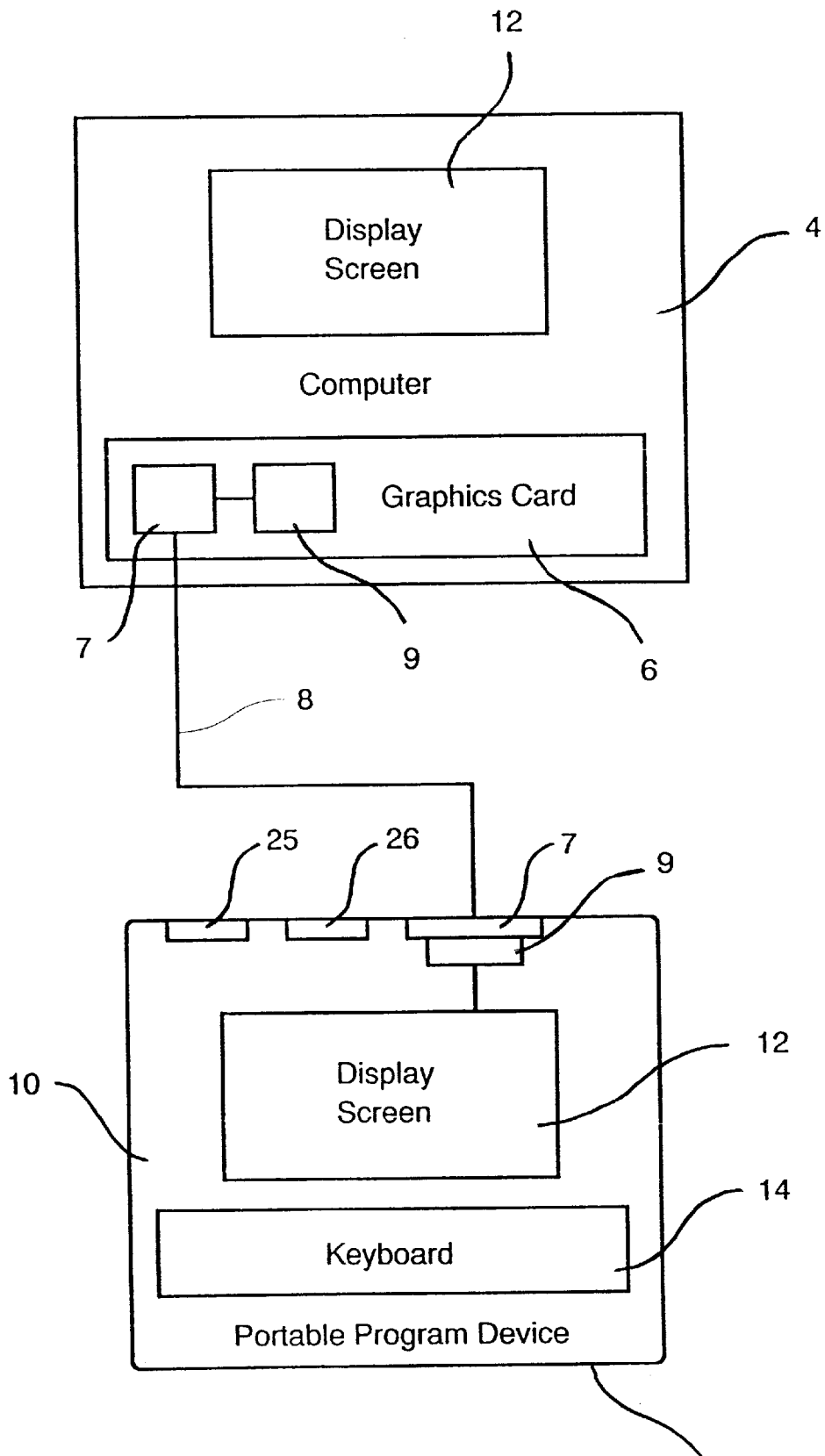


Fig. 2

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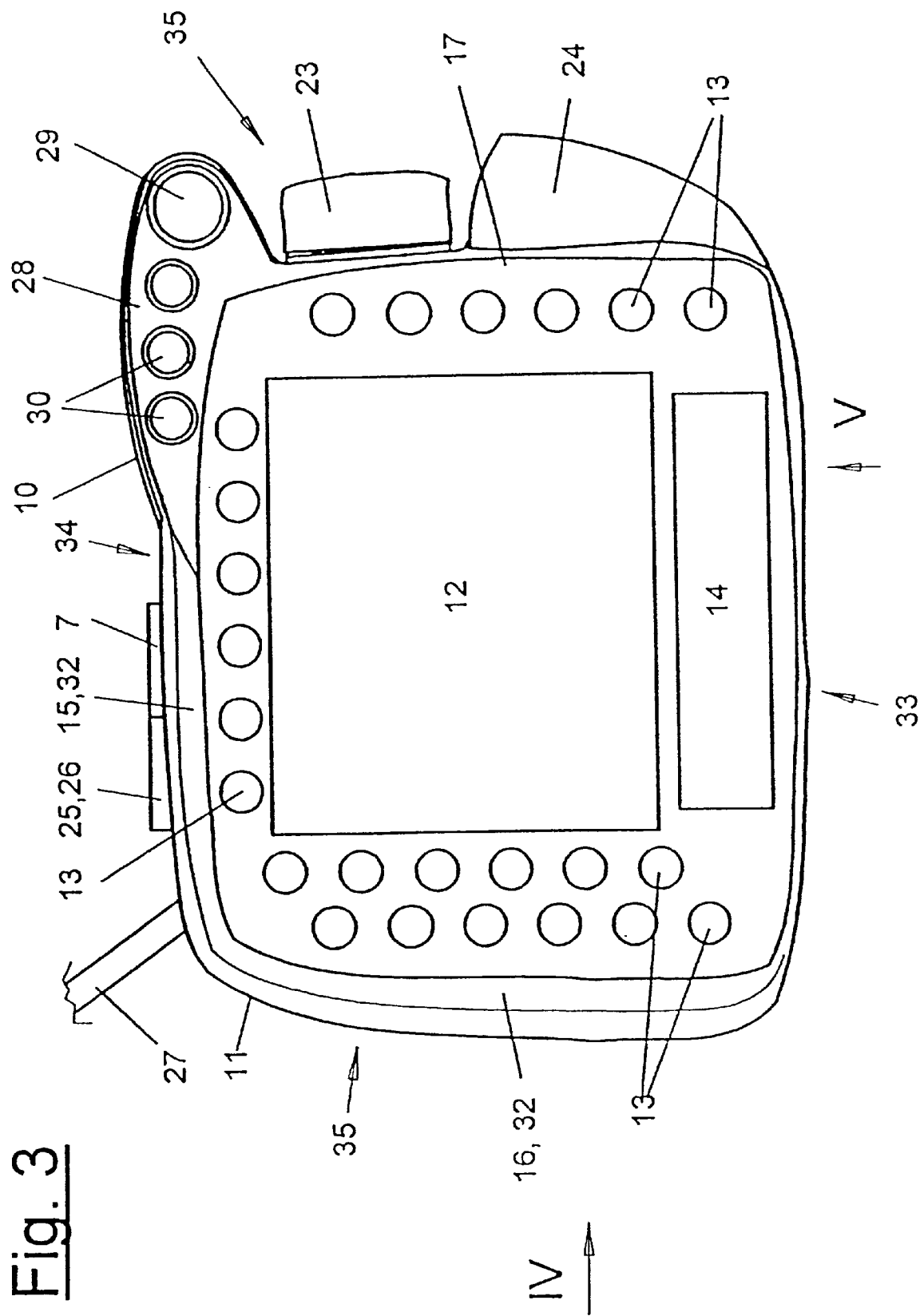
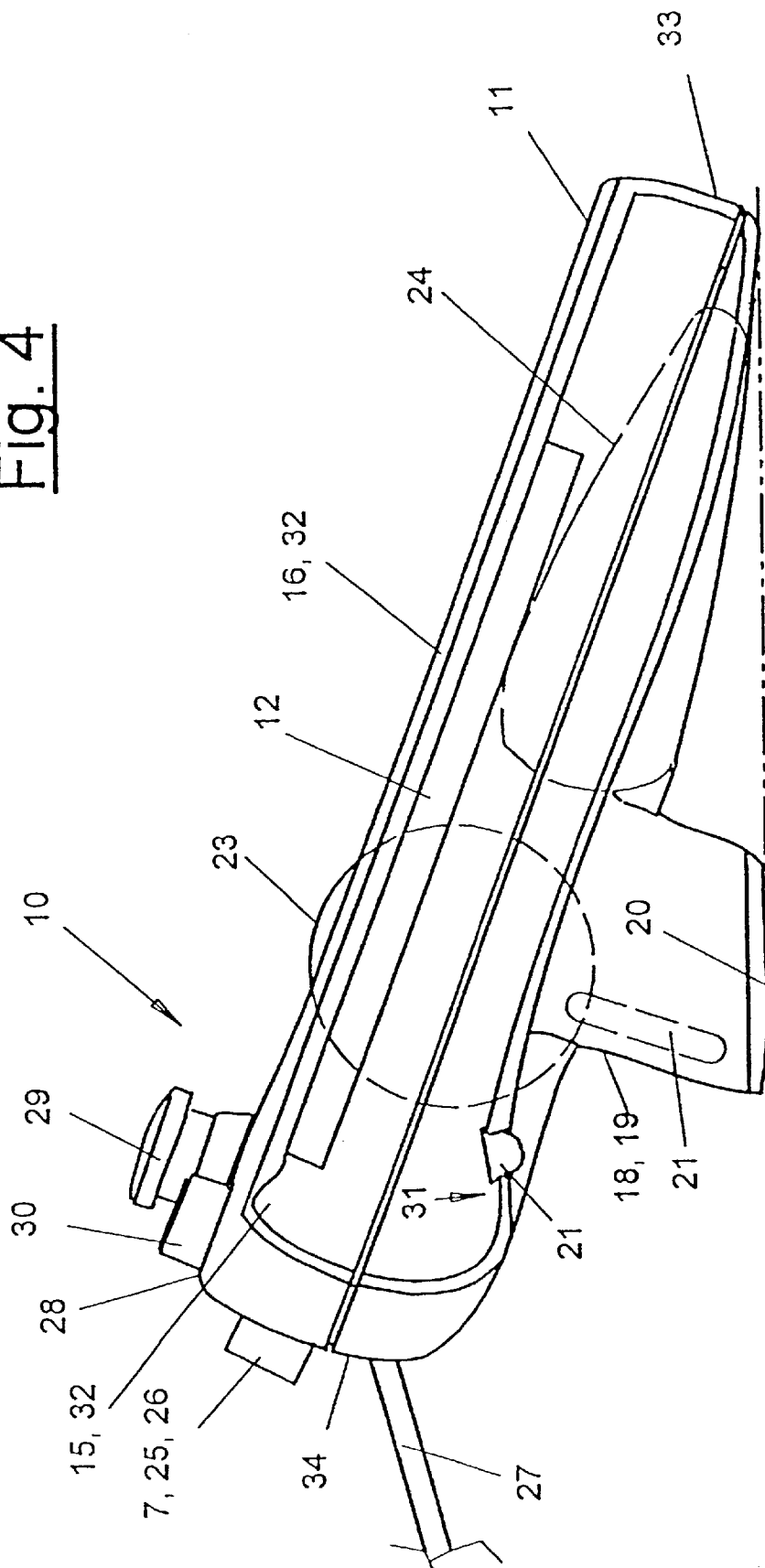


Fig. 4



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