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Kawagoe et al.

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(54) **MOVING APPARATUS FOR EFFICIENTLY MOVING ON FLOOR WITH OBSTACLE**

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(52) **U.S. Cl.** **701/23**; 701/24; 15/53.3; 15/98; 15/319; 318/568.1; 318/568.12; 318/568.13; 901/1; 901/5
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(57) **ABSTRACT**

A moving robot first moves straight in a first forward path. When encountering an obstacle such as shelf, the robot makes a U-turn to move straight in a backward path located with a prescribed distance away from the first forward path. When encountering another obstacle, the robot again makes a U-turn to move straight in a second forward path extending in the same direction as that of the first forward path but located with a distance away from the backward path. When the robot exceeding the point of the U-turn in the first forward path is detected during running in the second forward path, presence of a region where the robot has not run yet is recognized, and running in that region is carried out thereafter.
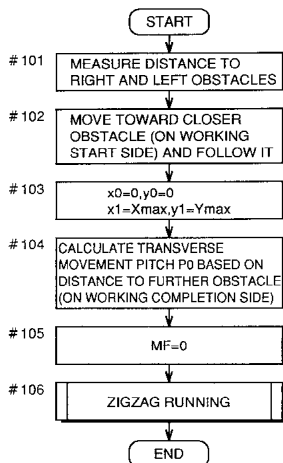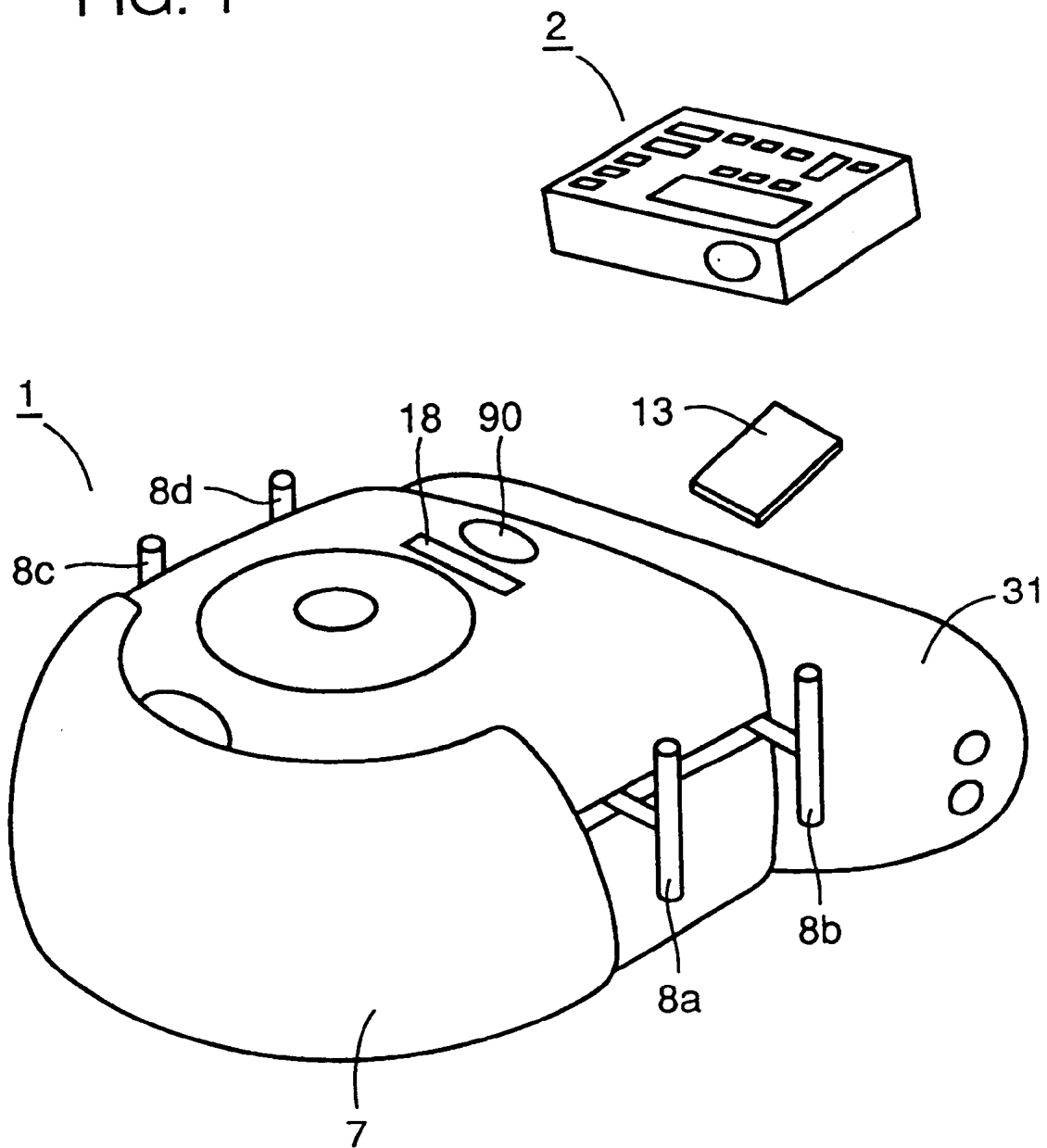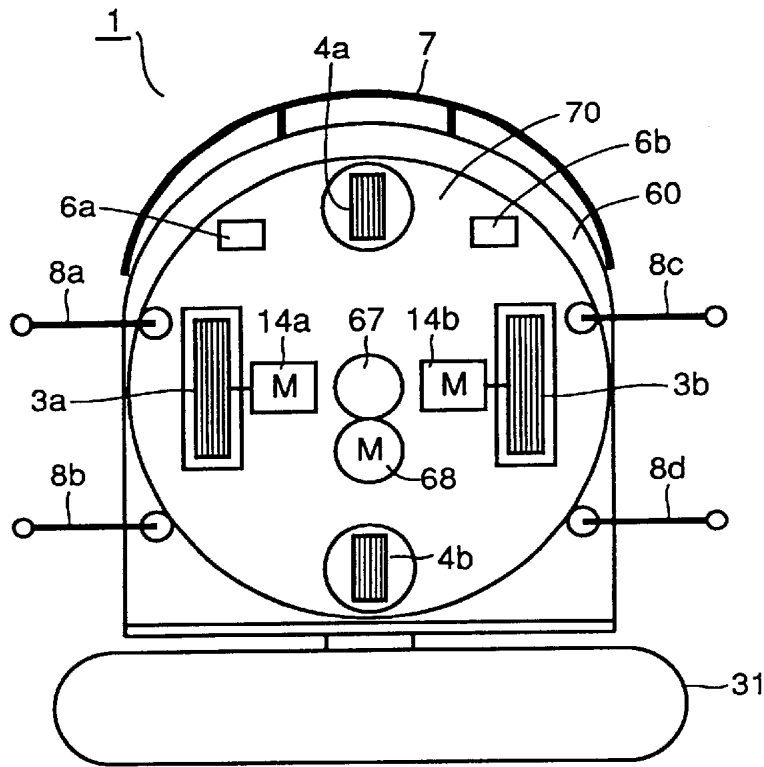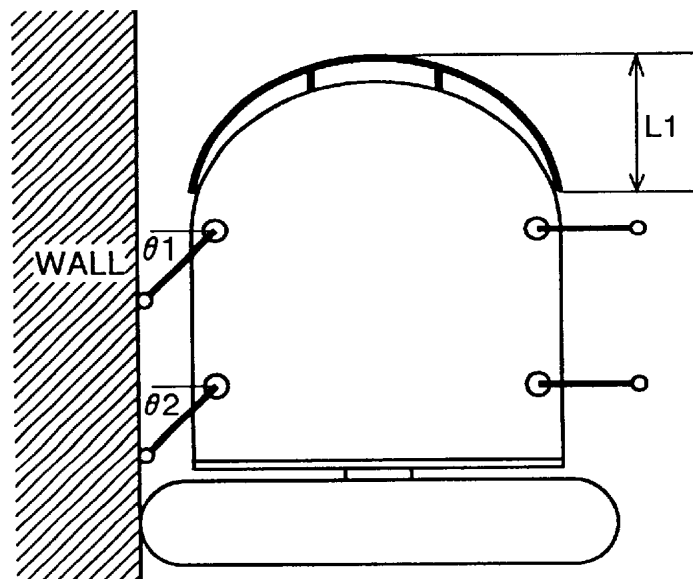
27 Claims, 22 Drawing Sheets

FIG. 1

FIG. 2

FIG. 3

FIG. 4

OPERATE ☐
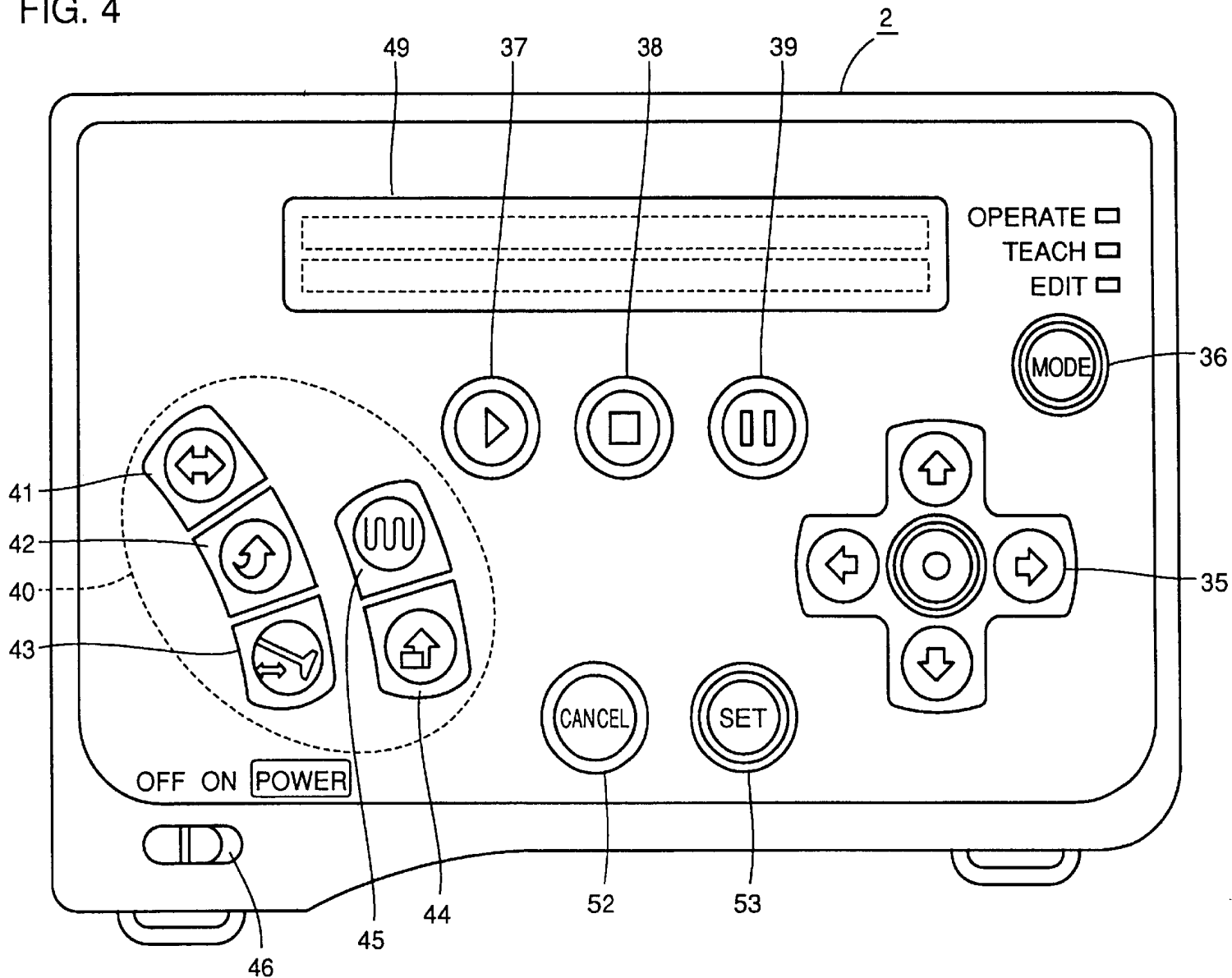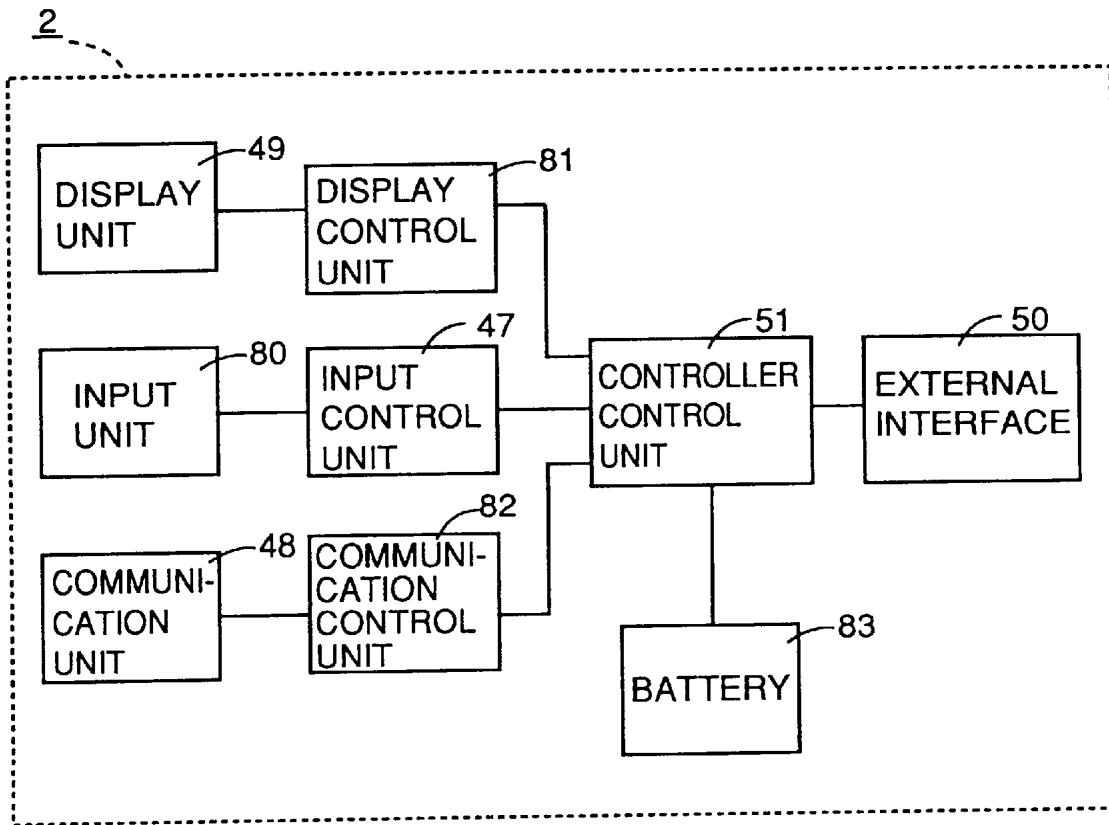TEACH ☐
EDIT ☐

MODE

OFF ON POWER

CANCEL   SET

FIG. 5

START RUNNING BY SETTING "ZIGZAG"

LONGITUDINAL 300 cm TRANSVERSE 300 cm END ↓

FIG. 7

DOCKET ALARM

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