

2007年第4回知的財産翻訳検定<和文英訳>

機械工学分野 標準解答

(Question 1)

Pressure Regulator

What Is Claimed Is:

1. A pressure regulator comprising:

an outer casing having an interior divided into two chambers by a partition wall in which a fluid communication passage communicating both the chambers is formed;

a diaphragm disposed in one chamber of the casing and receiving, at one surface thereof, a fluid pressure to be regulated;

a first valve unit including a valve body, operative by the diaphragm, and a valve seat operating in association with the valve body;

a spring disposed in another chamber in the casing and applying an urging force to another surface of the diaphragm to thereby open the first valve unit; and

a second valve unit disposed in the another chamber in the casing and configured to interrupt fluid communication through the fluid communication passage formed in the partition wall in accordance with displacement of the diaphragm.

2. The pressure regulator according to claim 1, wherein the casing is formed with a screw hole in which an adjusting screw is fitted so as to compress the spring.

(Question 2)

Related Art (Background Art)

An outboard motor is generally held in a tilted up state about a tilt axis of a bracket assembly at a time when the outboard motor is not in use. With a small outboard motor, the tilt-up operation is manually performed by an operator. However, even such a small-sized outboard motor is relatively heavy, and in a certain case, it may be difficult to manually perform the tilt-up operation. In order to obviate such defect, an outboard motor equipped with an assist device, for example, a gas-assist cylinder device, for assisting the manual tilt-up operation has been proposed.

However, although the provision of such an assist device facilitates the tilt up operation, it results in an increase in the overall weight of the outboard motor as well as an increase in the manufacturing cost.

The present invention was conceived in consideration of the circumstances mentioned above, and an object of the present invention is to provide an outboard motor in which it is possible to easily perform the manual tilt up operation without using any assist device.

(Question 3)

Linear Motion Guide Device

Description of the Preferred Embodiment

Fig. 1 shows a linear motion guide device (or linear rolling motion guide device) 1 according to one embodiment of the present invention. The linear motion guide device 1 includes a guide rail 4 serving as a track member and a movable block 2 serving as a movable member, the movable block 2 being supported by the guide rail 4 via a number of balls 3, 3, --.

The movable block 2 includes, as shown in Fig. 2, a movable block body 6 and end plates 7 and 8 mounted to both longitudinal ends of the movable block body 6. The movable block body 6 has substantially an inverted U-shaped cross section, and is provided with a horizontal portion 6a, facing an upper surface of the guide rail 4, and a pair of leg portions 6b, 6b extending downward from both ends of the horizontal portion 6a so as to oppose to the lateral side surfaces of the guide rail 4. The paired leg portions 6b, 6b are formed, in inside surfaces thereof, with loaded ball rolling grooves 9 corresponding to ball rolling grooves 5 formed in the side surfaces 4a of the guide rail 4.

Guide portions 10 are formed linearly along the loaded ball rolling grooves 9 of the movable block body 6.