受験番号：28IPM026

1.

[0003]

[Solution to Problem] However, even an object having a smooth surface has air resistance that cannot be ignored. In the above-mentioned vehicles, the air resistance negatively affects its fuel efficiency, acceleration, maximum speed, and stability. In particular, the problem in the fuel efficiency is directly related with environmental problems such as energy resource problems, pollutions, acid rain, and global warming, and is increasing its importance with a recent increase in traffic energies. Further, an object travelling at super high speed has a problem of air frictional heat (aerodynamic heating). For example, a space shuttle reaches a speed of 7.6 km per second when re-entering the atmosphere, causing its partial surface to have a temperature of 1,400 °C due to frictional heat. This makes it difficult to develop heat resisting materials and structures that sufficiently resist or insulate heat. This is a big problem. Further, new ideas for durability improvements are also expected and are urgently needed.

[0004] It is an object of the present invention to provide an innovative structure for reducing the fluid resistance of the surface of an object, capable of solving the above-mentioned problems. Specifically, the invention makes it possible, based on a new hydromechanics theory, to reduce the fluid resistance of the object surface compared to the case where the object has a smooth surface. According to the invention, it is possible to obtain innovative techniques highly advanced from the conventional levels. For example, the invention can improve the fuel efficiency, acceleration, maximum speed, and stability of vehicles of any type, make contribution to global efforts for enhancing energy saving and solving the environmental problems. In addition, with regard to the vehicles flying at super high speed, it is possible to improve the problems of durability and cost associated with heat resistance materials and heat insulating structures by reducing frictional heat or other harmful resistances.

2.

Next, a first core 1a and a second core 1b each in the form of a bell are disposed at respective predetermined positions in a cavity formed in a metal mold for a final hollow molded body, as shown in Fig. 2.

Fig. 2 shows three molds constituting the metal mold, which include a mold A shown by the symbol 20, a mold B shown by the symbol 30, a mold C shown by the symbol 40. The mold A includes protrusions 22 and 23, the mold B includes protrusions 32 and 33, and the mold C includes the protrusion 41.

Specifically, the protrusion 22 of the mold A and the protrusion 32 of the mold B are in contact with an upper protrusion of the first core 1a. The protrusion 23 of the mold A and the protrusion 33 of the mold B are in contact with each other in a through hole formed between the first and second cores 1a and 1b and are spaced from the inner walls of the first and second cores 1a and 1b. In addition, the projection 41 of the mold C is placed in a concave of the second core 1b. In this manner, the first and second cores 1a and 1b are placed in the predetermined positions in the metal mold cavity.

Outer peripheral resin (B) 5 is injected into gaps around the first and second cores 1a and 1b placed in the metal mold, from an inlet 21 shown in Fig. 2 at the above-mentioned injection molding temperature (320 °C), whereby injection molding is performed. Subsequently, the resin is cooled to yield a core-integral molded body.

○: No breakage or cracks in the outer peripheral resin were observed by looking (a core-integral molded body without deformation was obtained.)
△: Breakage or cracks in the outer peripheral resin were observed by looking (the cores were deformed a little at the time of the injection molding of the resin (B).)
×: Many breakage or cracks in the outer peripheral resin were observed by looking (the cores were deformed a little at the time of the injection molding of the resin (B).)

修正点：
図面に参照番号のない中子の凸部(11)、貫通部(12)、凹部(13)の参照番号を省略しました。
また、明確にするために二つの中子を first core, second core としました。

[Claim 1]

A simple zoom lens mechanism, comprising:

a lens barrel including

stationary lens groups disposed at opposite ends of the lens barrel along an optical axis L,

a zooming movable lens group 3 and a focusing movable lens group 4 disposed between the stationary lens groups and movable along the optical axis L, the zooming movable lens group 3 being able to change a photographing magnification of a subject and the focusing movable lens group 4 being able to adjust a focus, the zooming movable lens group 3 and the focusing movable lens group 4 having respective mirror frames;

a main shaft 5 and a passive shaft 6 disposed around the optical axis L and in parallel with the optical axis L;

a main mover 8 slidably fitted on the main shaft 5 and integrated with the mirror frame of the focusing movable lens group 4; and

a driven mover 9 slidably fitted on the passive shaft 6 and integrated with the mirror frame of the zooming movable lens group 3, wherein

the driven mover 9 is driven to move by driving of the main mover 8 on the main shaft 5, whereby the zooming movable lens group 3 and the focusing movable lens group 4 can move along the optical axis L.