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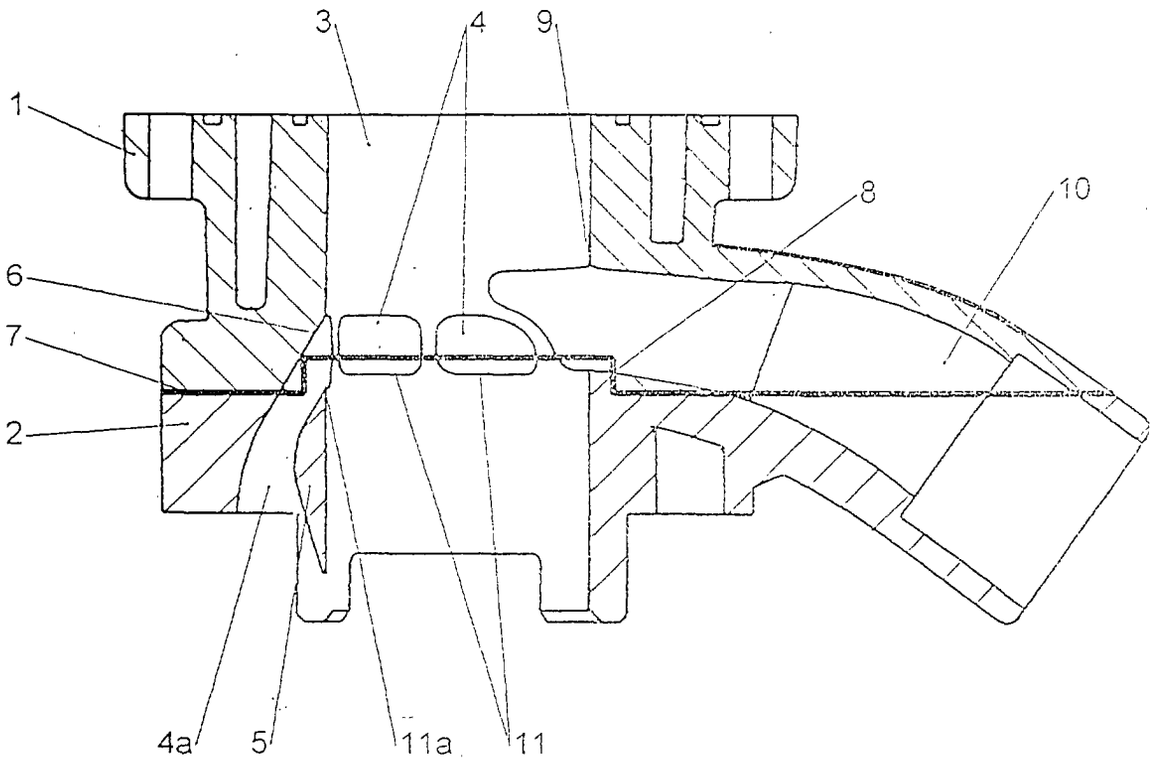
(54) Two-stroke combustion engine cylinder

(57) The access to the internal areas (6) of closed transfer ports (4, 4a) and their edges (11, 11a) is solved to allow the precise working and the checking of channel shape precision in the two-stroke combustion engine cylinder.

This is achieved if the cylinder is arranged of the upper and lower bodies (1 and 2) while the separating plane (7) of both bodies (1 and 2) is placed between the upper edge (9) of the exhaust channel (10) and the lower edges (11) of the side closed transfer ports (4). Both bodies (1 and 2) can be connected by either a demountable method (by means of screws) or a fixed arrangement (e.g., by bonding, welding, etc.).



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Description

TECHNOLOGY

[0001] The submitted invention relates to two-stroke combustion engine cylinder for which the additional working of the internal channel areas including their edges on the cylinder bore is possible.

PRESENT CONDITION OF TECHNOLOGY

[0002] A two-stroke combustion engine cylinder is produced as an integral part, mainly as a casting. The working cylinder is connected with a filling blower by transfer ports by which the air or a mixture of the air/fuel is supplied, and by which combustion products are displaced into an exhaust pipe. This procedure, which is called scavenging of the cylinder, has a great effect on engine performance, fuel consumption and the quantity of pollutants in combustion products. The quality of scavenging is given by the shape and position of the orifice of the individual transfer ports. To improve the flow, it is necessary that transfer ports are closed (the ports are separated from the cylinder bore area by a partition).

[0003] Two-stroke combustion engine cylinders that are produced from one piece are disadvantageous for their inaccessibility to closed transfer ports to be machined, repaired or modified, and for their difficult and limited possibility to check the port shapes. The other disadvantage is in their demanding and complex production of two-stroke cylinder engine cylinder castings by means of complex model equipment.

INVENTION NATURE

[0004] The above-mentioned disadvantages are removed, to a certain extent, in a two-stroke combustion engine cylinder which is based on the following principle: the cylinder consists of the upper and lower bodies which are firmly interconnected by contact areas forming a separating partition. The partition is located diagonally over the cylinder bore area from the upper edge of the exhaust channel to the lower edges of the side closed transfer ports.

In compliance with the invention submitted, the two-stroke combustion engine cylinder makes it possible to control the shape and the precise working on both the upper areas of the closed transfer ports and the orifice edges of the individual channels in the cylinder bore area. The separate casting process of the upper and lower cylinder bodies can be done in a cast-iron mould without any laborious insertion of lost sand cores, which makes the production more effective. In the case of the connection of both cylinder bodies by a demountable method, it is possible to make additional modifications of the port shape, or to replace a part of the cylinder if any functional fault occurs at one cylinder part.

List of figures in the drawing

[0005] A longitudinal section of the two-stroke combustion engine cylinder is shown in the enclosed drawing.

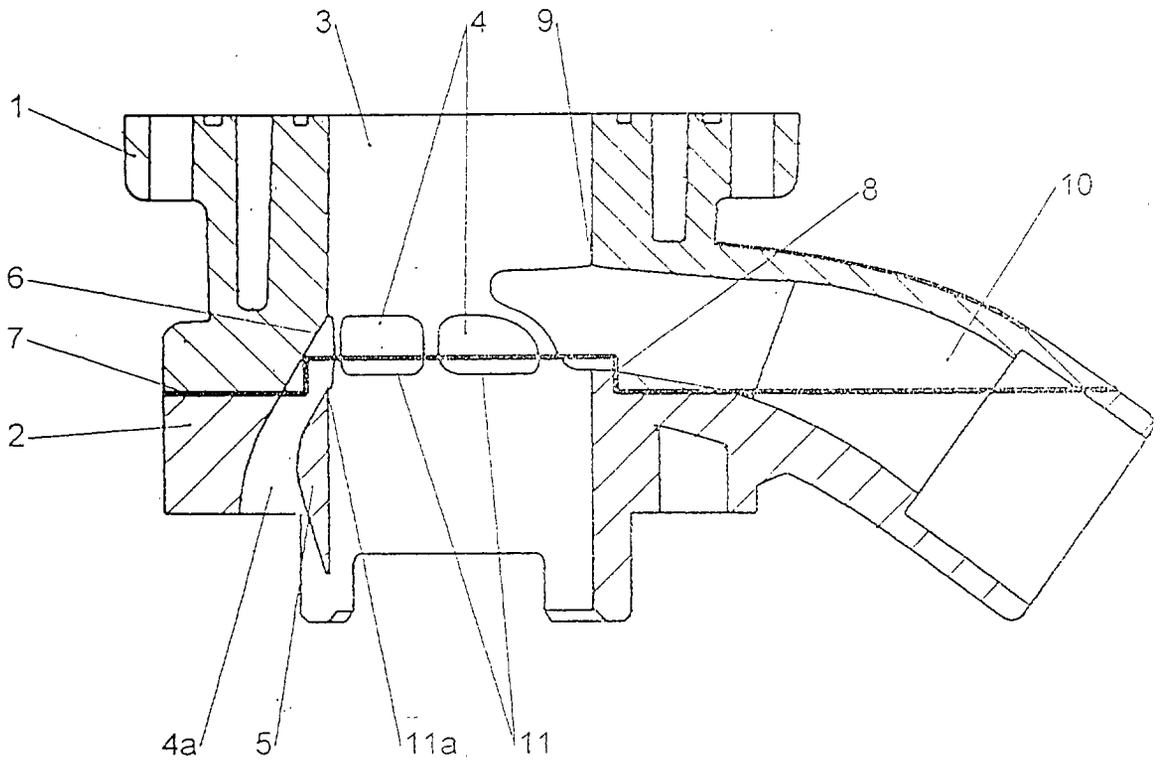
Example of invention arrangement

[0006] The two-stroke combustion engine cylinder consists of the upper body (1) and the lower body (2) with its precise interconnection which is provided by a lock (8) in the separation plane (7). The lock (8) can be replaced, for example, by the pins that hold the bodies (1) and (2) together. The central closed transfer port (4a), two pairs of the side closed transfer ports (4) and the exhaust channel (10) lead into the cylinder bore (3). The closed transfer channels (4), (4a) are separated from the bore area (3) by the partitions (5). The separation plane (7) is located diagonally in the bore area (3) between the upper edge (9) of the exhaust channel (10) and the lower edges (11) of the side closed transfer ports (4). The lowest edge (11a) of the central closed transfer port (4a) is located lower than the lower edges (11) of the side closed transfer ports (4). The separation of the cylinder makes it possible to work both the upper areas (6) of the closed transfer ports (4 and 4a) and the orifice edges of the cylinder bore area (3). The connection of the upper body (1) and the lower body (2) can be implemented by different ways, for example, by screwing, riveting, bonding or welding.

[0007] The invention is not limited only to the above-described example of the two-stroke engine cylinder arrangement.

Claims

1. The two-stroke combustion engine cylinder, which is provided with the exhaust channel and the closed transfer ports and which lead into the cylinder bore area, is **characterised by** the cylinder that incorporates the upper body (1) and the lower body (2) which are mutually interconnected by the contact areas that form the separation plane (7). This separation plane is located diagonally over the cylinder bore area (3) between the upper edge (9) of the exhaust channel (10) and the lower edges (11) of the side closed transport ports (4).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