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(54) **A mounting adapter**

(57) The present invention relates to a mounting adapter (1) which enables hidden mounting of wall-hung toilets (K) on the wall (D). The objective of the present invention is to provide a mounting adapter (1) which is formed by being specially molded for hidden mounting apparatuses (13) in ceramic wall-hung toilets (K) and which eliminates the mounting area that has a complicated structure.

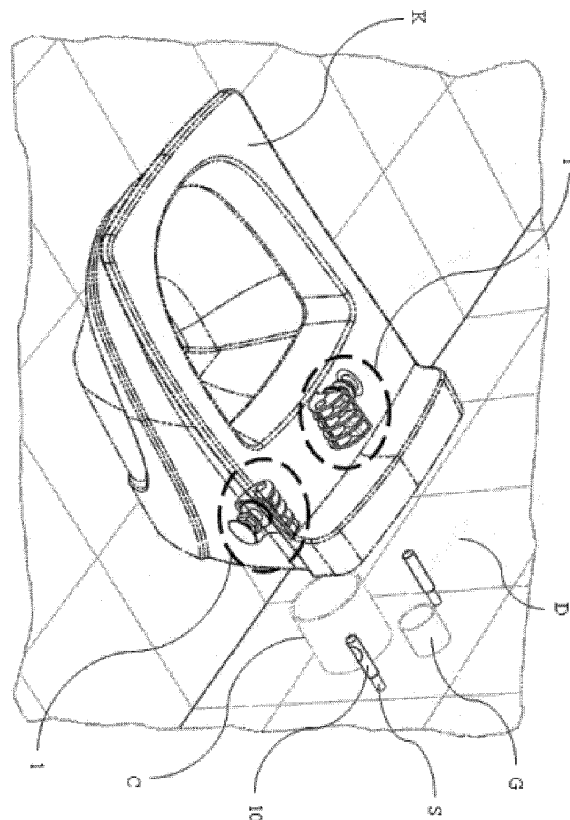


Figure 1

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Description

[0001] A MOUNTING ADAPTER

[0002] Field of the Invention

[0003] The present invention relates to a mounting adapter which enables hidden mounting of wall-hung toilets on the wall.

[0004] Background of the Invention

[0005] Mounting apparatuses are used to carry out hidden mounting of wall-hung toilets on the wall. These apparatuses are pre-mounted to the slots that are formed by being molded on the ceramic structure at the area where the mounting holes of the wall-hung toilet are located, and enable the toilet to become ready for mounting.

[0006] The patent document numbered TR200701077 discloses an apparatus which enables hidden mounting for wall-hung toilets. This apparatus is pre-mounted to the slots that are formed by being molded on the mounting area of the ceramic structure, and makes the toilet ready for mounting.

[0007] The patent document numbered TR200904485 discloses an apparatus which enables hidden mounting for wall-hung toilets. This apparatus is pre-mounted to the slots that are formed by being molded on the mounting area of the ceramic structure, and makes the toilet ready for mounting.

[0008] Summary of the Invention

[0009] The objective of the present invention is to provide a mounting adapter which is formed by being specially molded for hidden mounting apparatuses in ceramic wall-hung toilets and which eliminates the mounting area that has a complicated structure.

[0010] Detailed Description of the Invention

[0011] A mounting adapter developed to fulfill the objectives of the present invention is illustrated in the accompanying figures, in which

[0012] Figure 1 is the perspective view of the position of the inventive mounting adapter on the toilet to which it will be connected.

[0013] Figure 2 is the exploded perspective view of the mounting adapter.

[0014] Figure 3 is the rear view of the position of the mounting adapter on the toilet to which it will be connected.

[0015] Figure 4 is the sectional view of the mounting adapter connected to the wall-hung toilet.

[0016] Figure 5 is the partial sectional view of the mounting adapter connected to the wall-hung toilet.

[0017] Figure 6 is the front partial sectional view of the mounting adapter.

[0018] Figure 7 is the rear partial sectional view of the mounting adapter.

[0019] Figure 8 is the perspective view of the mounting adapter connected to the wall-hung toilet.

[0020] Figure 9 is the partial sectional view of the mounting adapter connected to the wall-hung toilet.

[0021] Figure 10 is the exploded perspective view of

the hidden mounting apparatus and the mounting adapter.

[0022] Figure 11 is the perspective view of the hidden mounting apparatus and the mounting adapter.

[0023] Figure 12 is the rear view of the hidden mounting apparatus and the mounting adapter connected to the wall-hung toilet.

[0024] Figure 13 is the sectional view of the hidden mounting apparatus and the mounting adapter connected to the wall-hung toilet.

[0025] Figure 14 is the perspective view of the hidden mounting apparatus and the mounting adapter.

[0026] Figure 15 is the exploded perspective view of the hidden mounting apparatus and the mounting adapter.

[0027] Figure 16 is the rear view of the hidden mounting apparatus and the mounting adapter connected to the wall-hung toilet.

[0028] Figure 17 is the sectional view of the hidden mounting apparatus and the mounting adapter connected to the wall-hung toilet.

[0029] Figure 18 is the bottom perspective view of the prior art wall-hung toilet complying with the hidden mounting apparatus

[0030] Figure 19 is the perspective view of the prior art wall-hung toilet complying with the hidden mounting apparatus from the surface that faces the wall that it will be connected to.

[0031] Figure 20 is the bottom perspective view of the toilet that complies with the inventive mounting adapter.

[0032] Figure 21 is the perspective view of the toilet that complies with the inventive mounting adapter from the surface that faces the wall that it will be connected to.

[0033] The components shown in the figures are each given reference numerals as follows:

1. Mounting adapter
2. Bracket
3. Slot
4. Bushing
5. Adjustment member
6. Washer
7. Nut
8. Rosette
9. Rosette pin
10. Fixing member
11. Fixing opening
12. Fixing set screw
13. Hidden mounting apparatus
14. Chamber
15. Wedge
16. Slot
17. Connection member
18. Plate
19. Extension
20. Rivet

[0034] K. Toilet

- [0035] H. mounting hole
 [0036] D: Wall
 [0037] G: Clean water inlet pipe
 [0038] C: Waste water outlet pipe
 [0039] S. mounting studs
 [0040] O. Prior art
 [0041] M. Prior art mounting area
 [0042] The inventive mounting adapter (1) comprises

- at least one bracket (2) positioned in the mounting hole (H) on the toilet (K),
- at least two slots (3) which are located in the bracket (2) and one of which is perpendicular and the other is parallel to the surface that the bracket (2) is connected, such that they intersect each other,
- at least one hollow cylindrical bushing (4) which is placed into the slot (3) that is perpendicular to the surface that the bracket (2) is connected and which is threaded on the outer surface thereof,
- at least one circular adjustment member (5), which has a threaded opening in the center thereof through which the bushing (4) passes, and which is used for adjusting the axial distance during mounting,
- at least one circular washer (6) having an opening in the center thereof that will surround the bushing (4),
- at least one nut (7) which has an opening that will surround the bushing (4) and enables to be fixed to the toilet,
- at least one rosette (8) which is in the form of a surface that is wide enough to cover the surface of the nut (7) that is distant from the washer (6),
- at least one rosette pin (9) which is fixed to the rosette (8), extends from the rosette (8) to the bracket (2) and has protrusions that enables it to hold on when it enters into the opening within the bushing (4),
- at least one cylindrical fixing member (10) which enters into the slot that is parallel to the toilet surface of the bracket (2) from the wall (D) side, and which is internally threaded in order to be fixed to the wall (D) that the toilet (K) will be connected,
- at least one fixing opening (11) which is located on the fixing member (10), and, when the fixing member (10) is fit into the slot (3) that is parallel to the toilet surface, is aligned with the perpendicular slot (3),
- at least one fixing set screw (12), which fits into the slot (3) of the bracket (2) that is perpendicular to the surface of the toilet, and which is engaged to the threads on the said slot's (3) surface and thereby enables the bracket (2) to be fixed to the wall (D).

[0043] The hidden mounting apparatus (13) used to support fixing of the toilet to the wall comprises

- at least one bracket (2) having suitable form to facilitate assembly of the parts,
- at least one chamber (14) which is provided on the bracket (2), in the form of an opening formed at the

intersection point of the slots (3) that are positioned parallel and perpendicular to the toilet (K),

- at least one wedge (15) which is fitted into the chamber (14) located on the bracket (2),
- at least two slots (16) which are located on the wedge (15) and which correspond to the two slots (3) on the bracket (2),
- at least one hollow cylindrical connection member (17), which fits into the slot (3) of the bracket (2) that is parallel to the toilet (K) from its side that is close to the wall (D), and through which the fixing member (10) passes.

[0044] In the preferred embodiment of the invention, the bracket (2) is produced from a suitable plastic material in order for it to be strong and not to be fragile.

[0045] In another embodiment of the invention, a sheet-metal bracket (2) is used; which comprises a plate (18) parallel to the toilet (K) surface; and at least one extension (19), which extends vertically from this plate (18) to the toilet (K), has a slot (3) thereon that is wide enough for the fixing member to pass through, and is fixed to the plate (18) via rivets (20).

[0046] The inventive mounting adapter (1) enables a wall-hung toilet (K) to be connected to the wall (D) at the toilet's place of use, and to the clean water inlet (G), waste water outlet (C) and mounting studs (S) which are prepared in advance as a standard on the said wall (D). For this purpose, firstly preliminary mounting of the mounting adapter (1) is performed by placing it in the mounting hole (H) that is provided on the toilet (K). Preliminary mounting is based on adjustment of the mounting studs (S) that are provided in advance - as standard - on the wall (D) and the slot (3) of the bracket (2) that corresponds to the mounting studs (S) so as to have them aligned during connection of mounting adapters (1) to the wall-hung toilet (K). Two mounting adapters (1) are used for the toilet (K) to be connected to the wall (D).

[0047] During installation of the inventive mounting adapter (1), the bracket (2) which is the central element, the bushing (4) which is placed in the slot (3) on the bracket (2) that is perpendicular to the toilet (K), the axial distance adjustment member (5) which is fastened on the bushing (4) are disposed in the mounting hole (H) provided at the inner surface of the toilet (K). Then, the washer (6) and nut (7) are attached on the bushing (4) through the opening of the mounting hole (H) on the wall-hung toilet (K) surface, and are left to have a small gap therebetween. This gap is used for adjustment of axial distance. After the second mounting adapter (1) is disposed to the wall-hung toilet (K) in the same manner, the axial distance between the mounting studs (S) located on the wall (D) is controlled by means of a gauge, and adjustments are made to ensure that the mounting axial distances of the mounting adapters (1) fastened on the wall-hung toilet (K) are also the same. This adjustment is made by the adjustment members (5) which can move rotatively on the bushing (4) and which adjust the axial

distance between the adapters. When the axial distance adjustment between the mounting adapters (1) is performed, the adjustment member (5) is completely fitted into the mounting hole (H) of the toilet (K). When the nuts (7) are completely tightened, the mounting adapters (1) are fixed to the wall-hung toilet (K). In the next step, the wall-hung toilet (K) is aligned with the fixing members (10) that are placed in advance on the mounting studs (S) located on the wall (D). Then the fixing members (10) are driven towards the wall (D) so as to engage into the mounting adapters (1), and thus the wall-hung toilet (K) is connected with the clean water inlet pipe (G) and the waste water outlet pipe (C). At the last stage of the mounting, the set screw (12), which is passed through the bushings (4), is moved towards the fixing opening (11) provided on the fixing member (10) and it tightens the fixing member (10), and thus the adapter group (1) and the wall-hung toilet (K) that it is connected to are pulled towards and fixed to the wall (D). Upon fitting the elastic rosette pin (9) and the rosette (8) into the hole within the bushing (4), the mounting hole (H) is covered.

[0048] In another embodiment of the invention, a hidden mounting apparatus (13) is used in the mounting adapter (1) when connecting the wall-hung toilet (K) to the wall (D). In this embodiment of the invention, the mounting adapter (1) is assembled in the same manner. The difference is that the form of the bracket (2) of the mounting adapter (1) complies with the parts of the hidden mounting apparatus (13). The wedge (15) of the hidden mounting apparatus (13), prior to preliminary mounting, is fitted in the chamber (14) located on the bracket (2) and is connected with the connection member (17) passed through the slot (3) that is parallel to the toilet (K). During fixing of the toilet (K) to the wall (D), the fixing member (10) that is engaged to the mounting studs (S) on the wall (D) is passed through the connection member (17) and is fastened to the bracket (2) by the set screw (12). By means of the threads on the slot (16) of the wedge (15) that is perpendicular to the toilet (K) surface, the fixing set screw (12) is supported. The brackets (2) are maintained on the same axis by means of the adjustment member (5). The rosette (8) and the rosette pin (9) are mounted to the mounting hole (H) and thereby the process is completed.

[0049] In another embodiment of the invention, sheet metal brackets (2) are used whose basic structure is similar to plastic brackets (2, 14) and which have two slots (3) one parallel and the other perpendicular to the toilet (K) that the brackets are connected to. While the perpendicular slot (3) is located on a plate (18) disposed on the surface of the toilet (K), the parallel slot (3) is located on the vertical extensions (19) which are positioned vertically and fixed by rivets (20) on the said plate (18). In these brackets (2), the bushing (4) is connected to the bracket (2) by welding. A chamber (14) is also provided in this mounting adapter (1) which enables to use the hidden mounting apparatus (13), and on which the wedge (15) can be placed on the plate (18). The wedge (15) is

placed in the chamber (14) located on the bracket (2) such that it will fit onto the bushing (4), and is connected with the connection member (17) that is passed through the slot (3) of the bracket (2) that is parallel to the toilet (K) surface. The fixing members (10) which are placed on the mounting studs (S) are connected with the brackets (2) that are coupled with the toilet (K) upon being passed through the connection member (17). Then, the fixing member (10) is tightened by means of the set screw (12) that is passed through the bushing (4). Axial adjustment of the mounting adapters (1) is carried out by means of the adjustment member (5) placed on the bushing (4). Mounting process is completed upon placing the rosette (8) and the rosette pin (9) into the hole within the bushing (4).

[0050] Within the scope of these basic concepts, it is possible to develop various embodiments of the inventive "A mounting adapter (1)". The invention can not be limited to the examples described herein; it is essentially according to the claims.

Claims

1. A mounting adapter (1) **characterized by**; at least one bracket (2) positioned in the mounting hole (H) on the toilet (K), at least two slots (3) which are located in the bracket (2) and one of which is perpendicular and the other is parallel to the surface that the bracket (2) is connected, such that they intersect each other, at least one hollow cylindrical bushing (4) which is placed into the slot (3) that is perpendicular to the surface that the bracket (2) is connected and which is threaded on the outer surface thereof, at least one circular adjustment member (5), which has a threaded opening in the center thereof through which the bushing (4) passes, and which is used for adjusting the axial distance during mounting, at least one circular washer (6) having an opening in the center thereof that will surround the bushing (4), at least one nut (7) which has an opening that will surround the bushing (4) and enables to be fixed to the toilet, at least one rosette (8) which is in the form of a surface that is wide enough to cover the surface of the nut (7) that is distant from the washer (6), at least one rosette pin (9) which is fixed to the rosette (8), extends from the rosette (8) to the bracket (2) and has protrusions that enables it to hold on when it enters into the opening within the bushing (4), at least one cylindrical fixing member (10) which enters into the slot that is parallel to the toilet surface of the bracket (2) from the wall (D) side, and which is internally threaded in order to be fixed to the wall (D) that the toilet (K) will be connected, at least one fixing opening (11) which is located on the fixing member (10), and, when the fixing member (10) is fit into the slot (3) that is parallel to the toilet surface, is aligned with the perpendicular slot (3), at least one fixing set

screw (12), which fits into the slot (3) of the bracket (2) that is perpendicular to the surface of the toilet, and which is engaged to the threads on the said slot's (3) surface and thereby enables the bracket (2) to be fixed to the wall (D).

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2. A mounting adapter (1) according to Claim 1, **characterized by** a hidden mounting apparatus (13) which is used to support fixing of the toilet to the wall and comprises at least one bracket (2) having suitable form to facilitate assembly of the parts, at least one chamber (14) which is provided on the bracket (2), in the form of an opening formed at the intersection point of the slots (3) that are positioned parallel and perpendicular to the toilet (K), at least one wedge (15) which is fitted into the chamber (14) located on the bracket (2), at least two slots (16) which are located on the wedge (15) and which correspond to the two slots (3) on the bracket (2), at least one hollow cylindrical connection member (17), which fits into the slot (3) of the bracket (2) that is parallel to the toilet (K) from its side that is close to the wall (D), and through which the fixing member (10) passes.
3. A mounting adapter (1) according to any of the preceding claims **characterized by** a bracket (2) which is produced from a suitable plastic material in order for it to be strong and not to be fragile.
4. A mounting adapter (1) according to Claim 1 or 2, **characterized by** a sheet-metal bracket (2) which comprises a plate (18) parallel to the toilet (K) surface; and at least one extension (19), which extends vertically from this plate (18) to the toilet (K), has a slot (3) thereon that is wide enough for the fixing member to pass through, and is fixed to the plate (18) via rivets (20).

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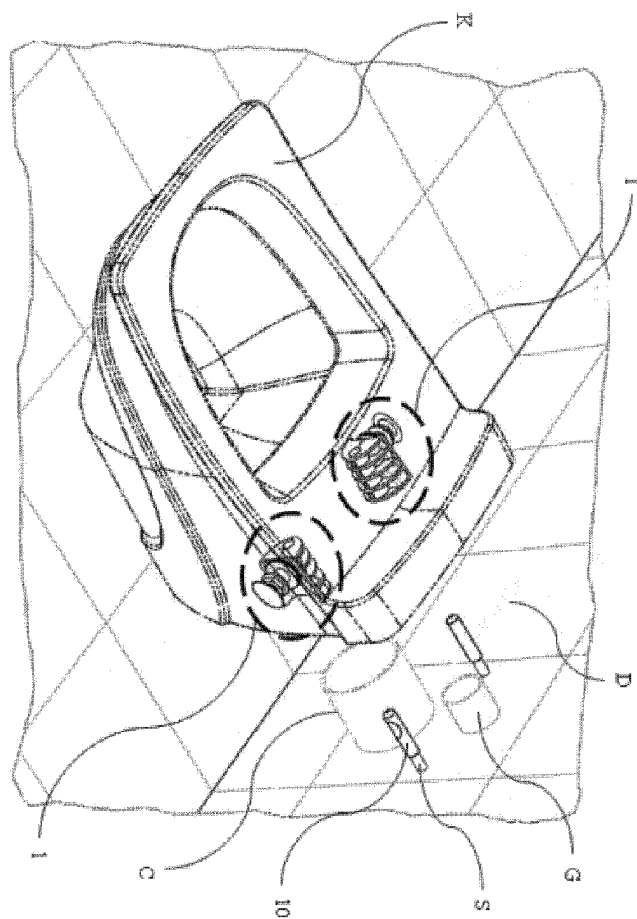


Figure 1

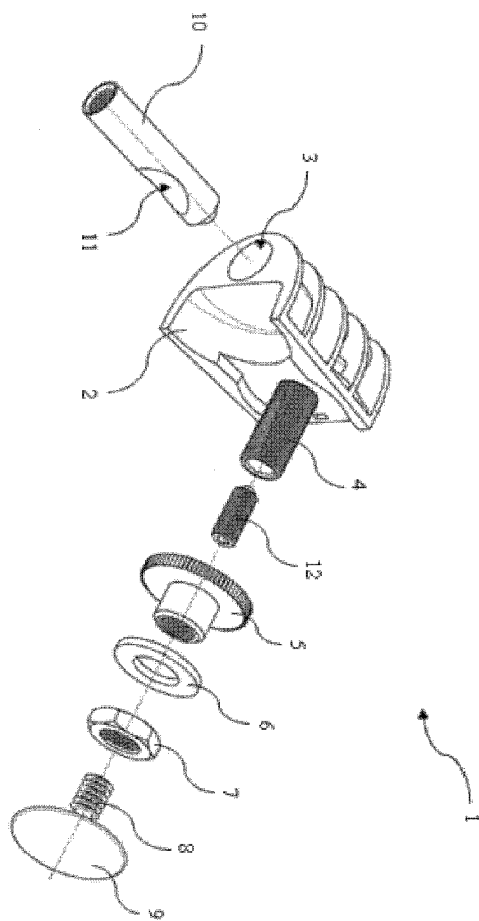


Figure 2

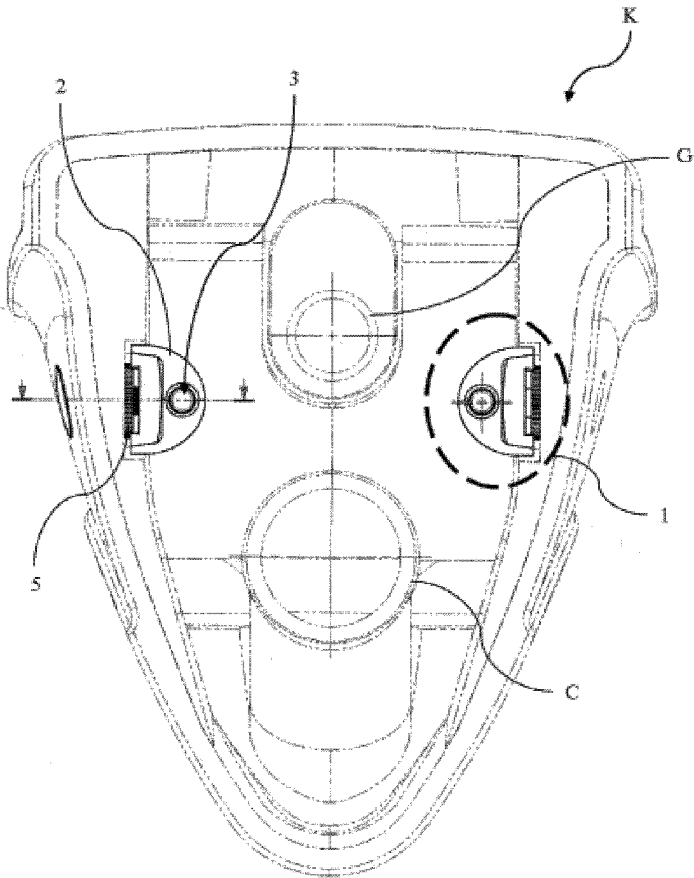


Figure 3

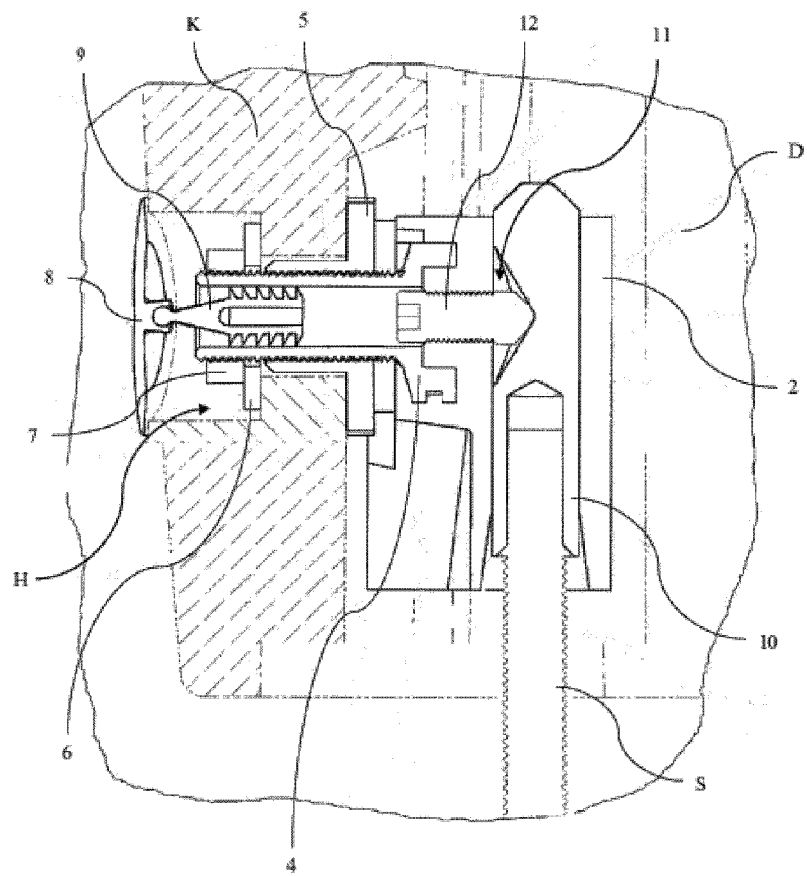


Figure 4

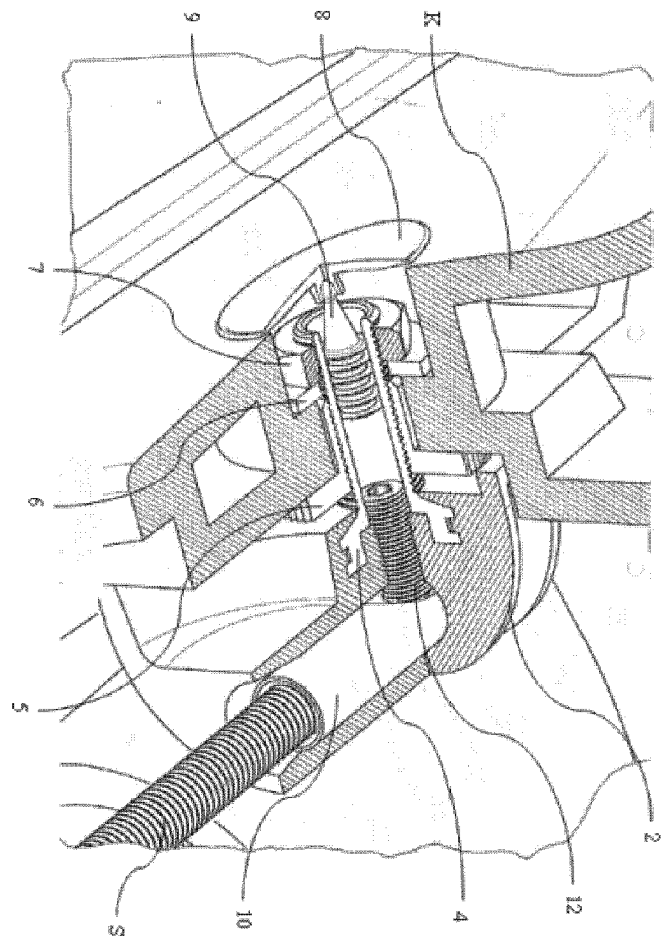


Figure 5

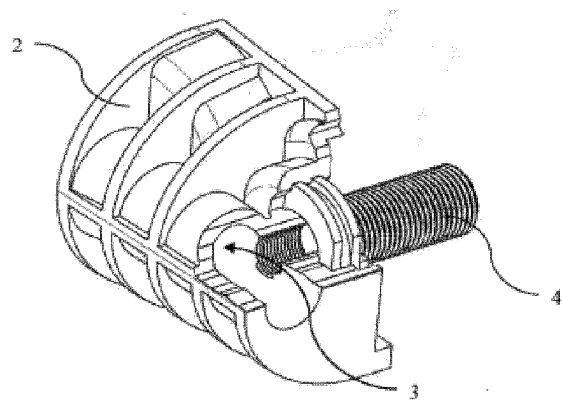


Figure 6

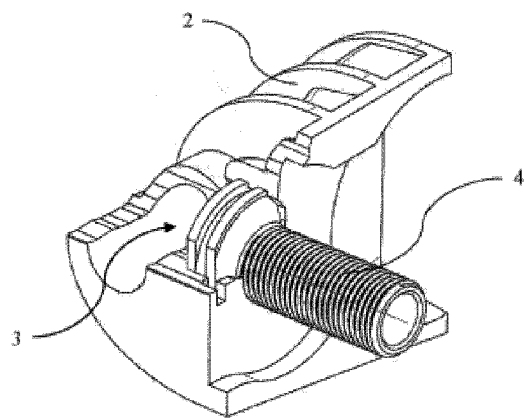


Figure 7

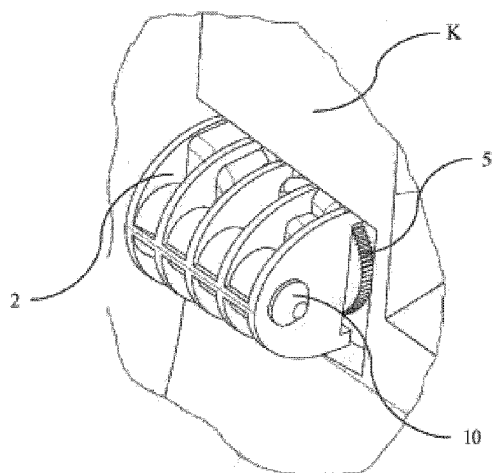


Figure 8

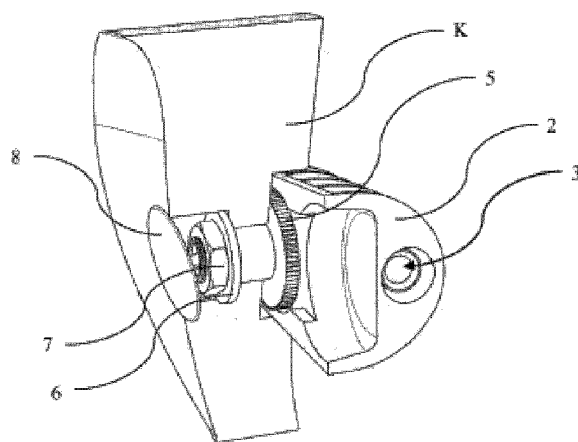


Figure 9

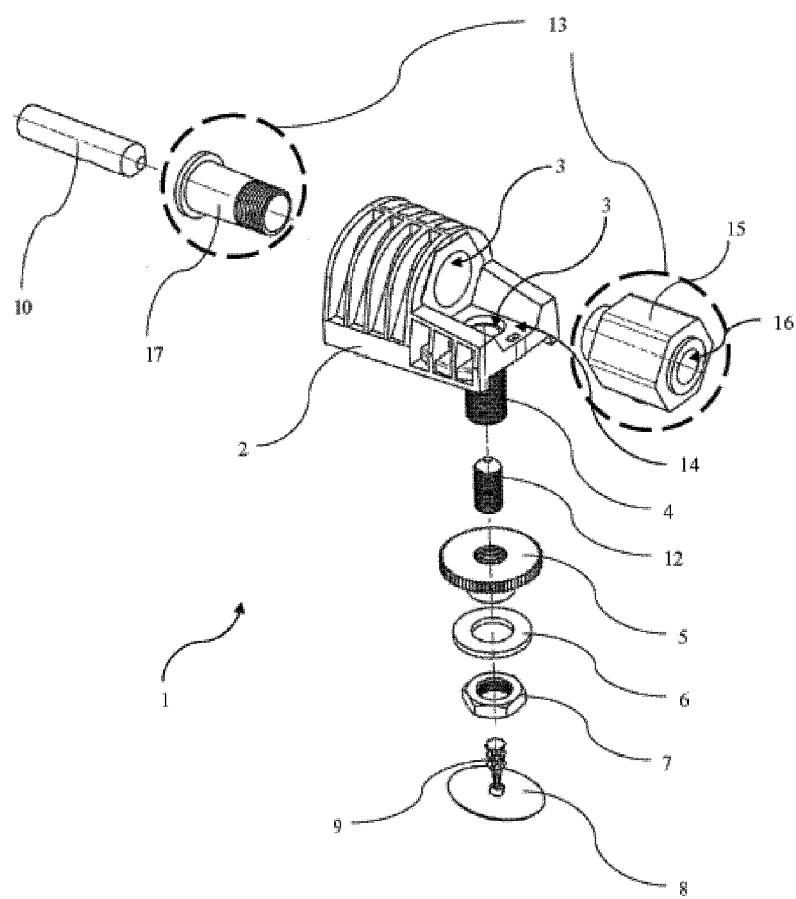


Figure 10

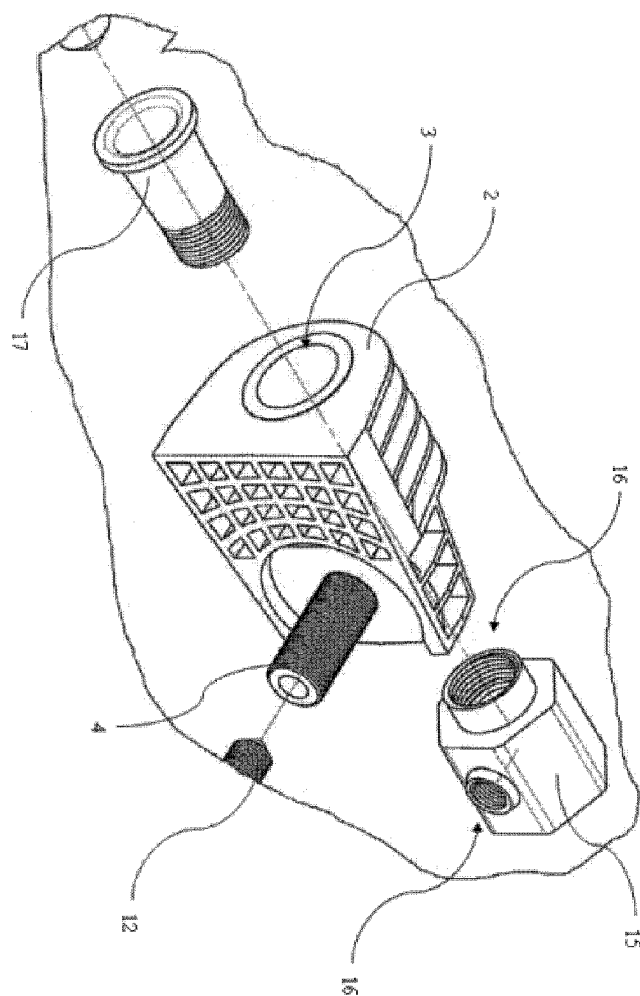


Figure 11

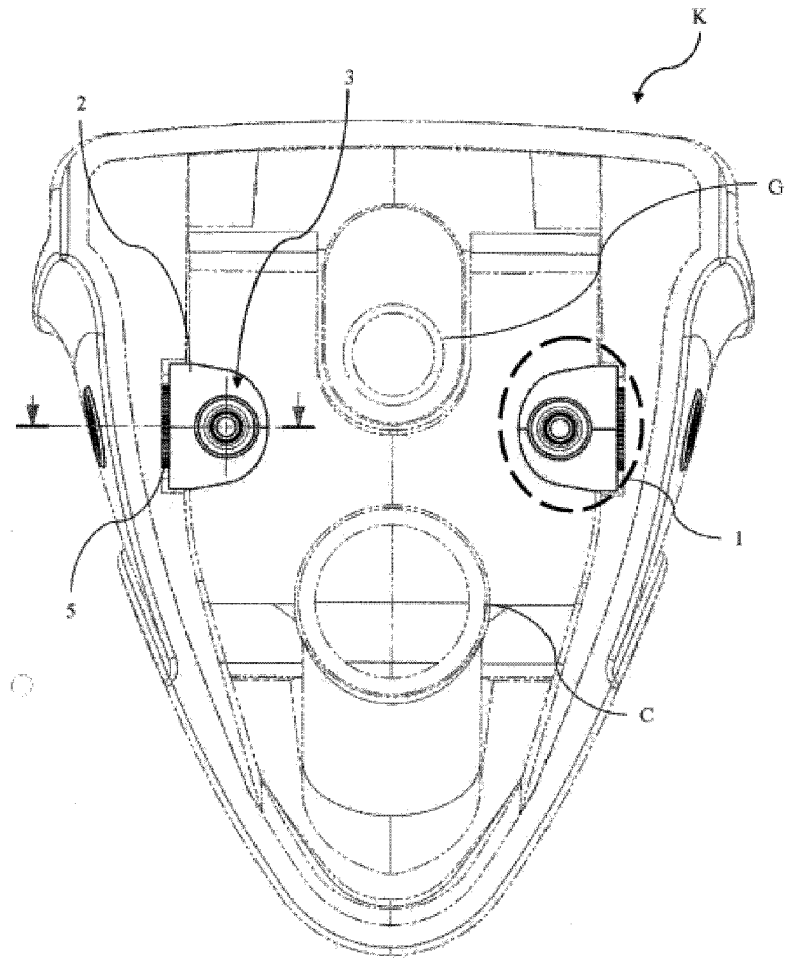


Figure 12

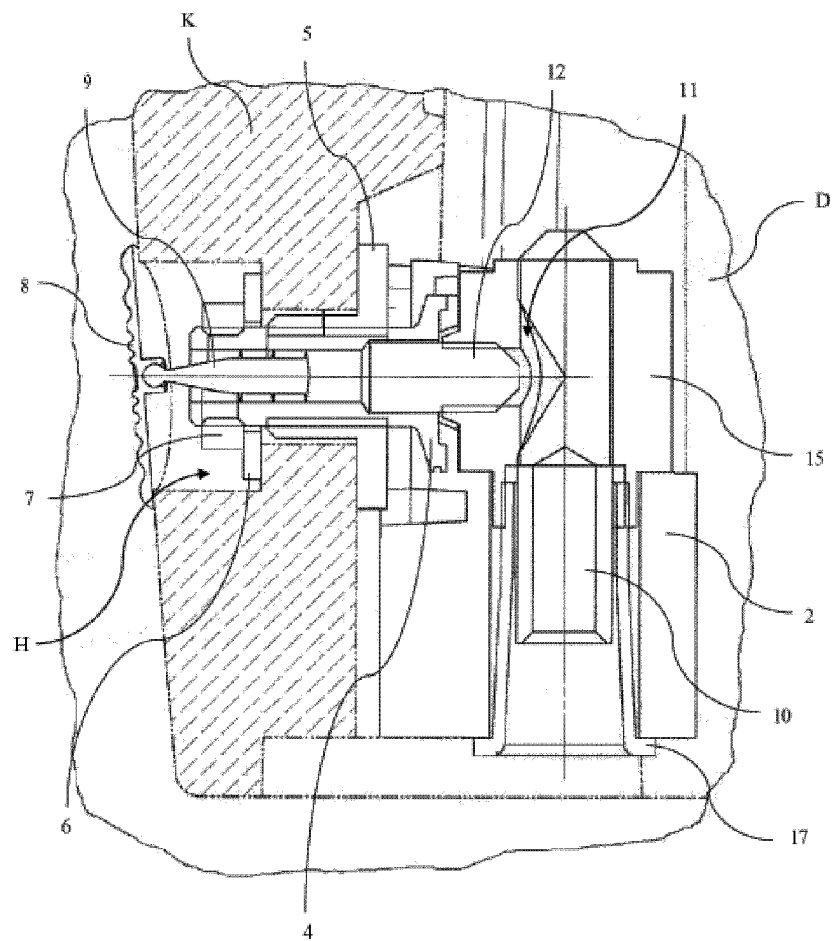


Figure 13

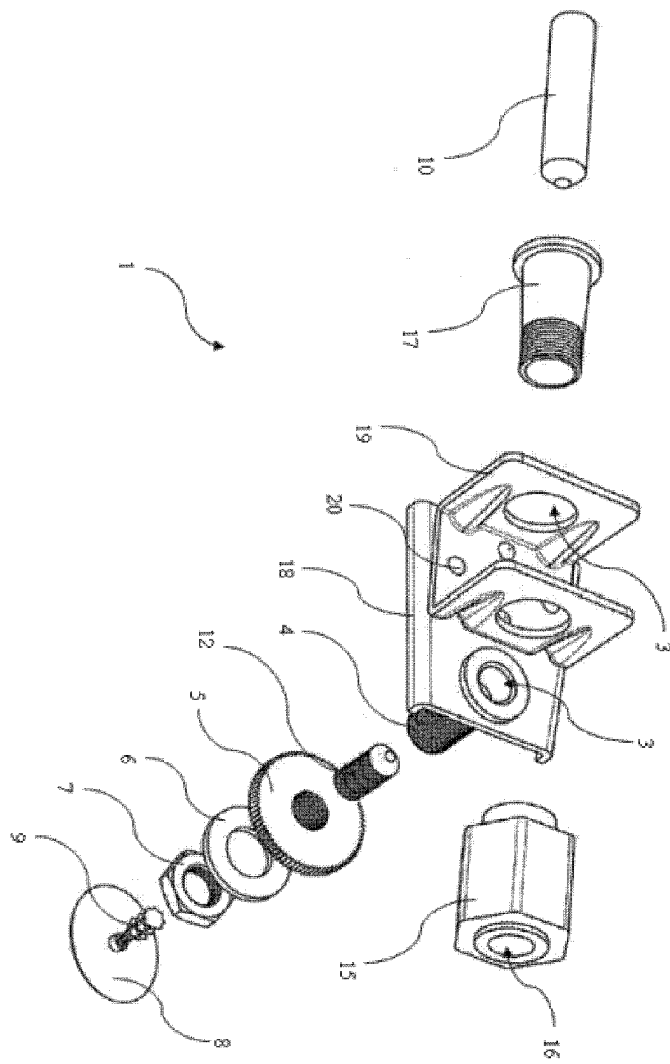


Figure 14

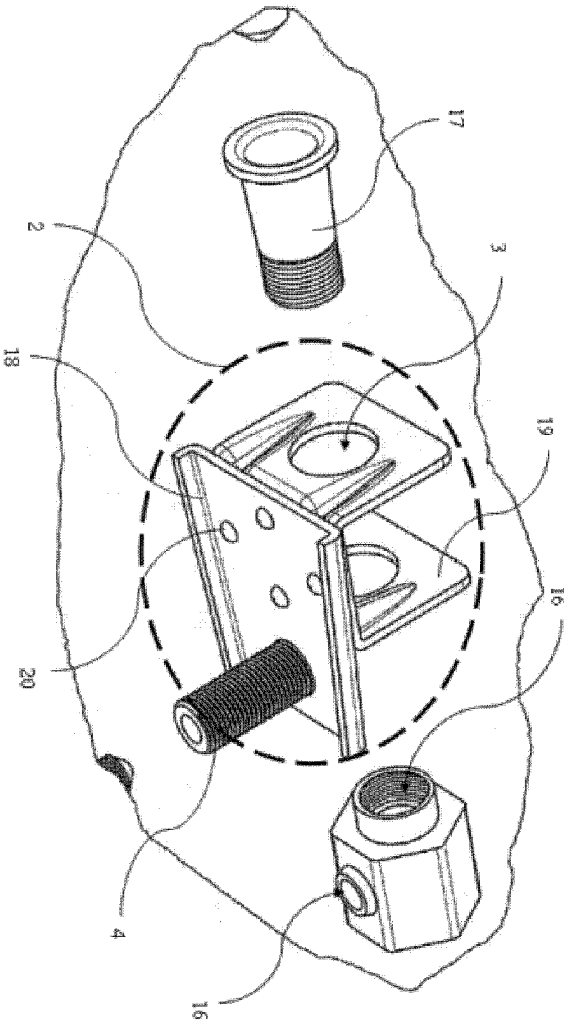


Figure 15

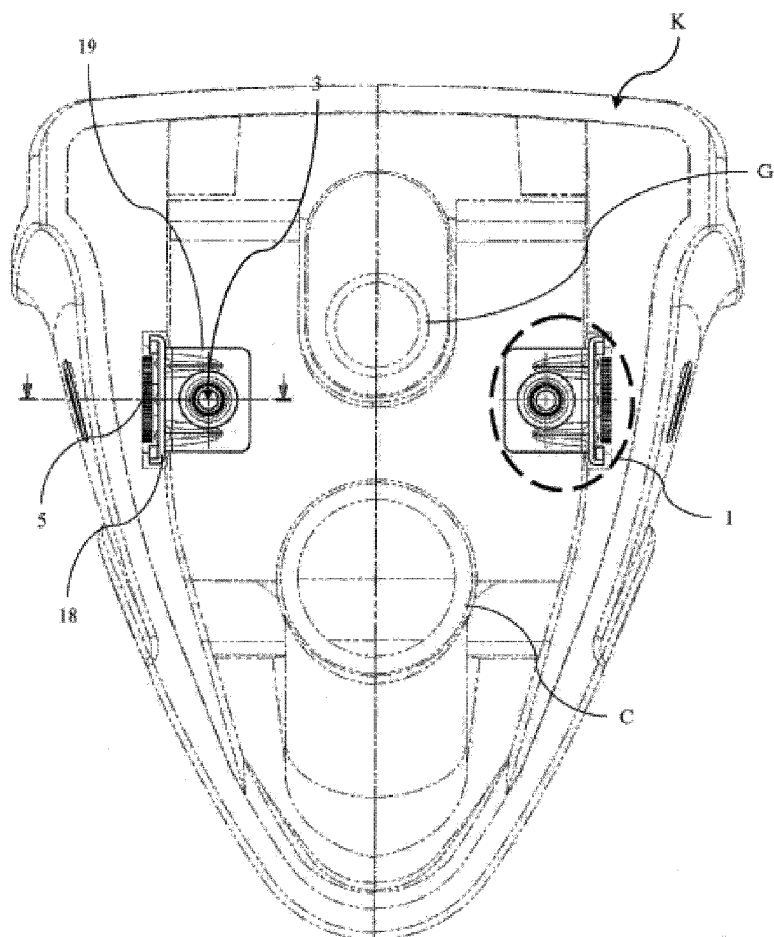


Figure 16

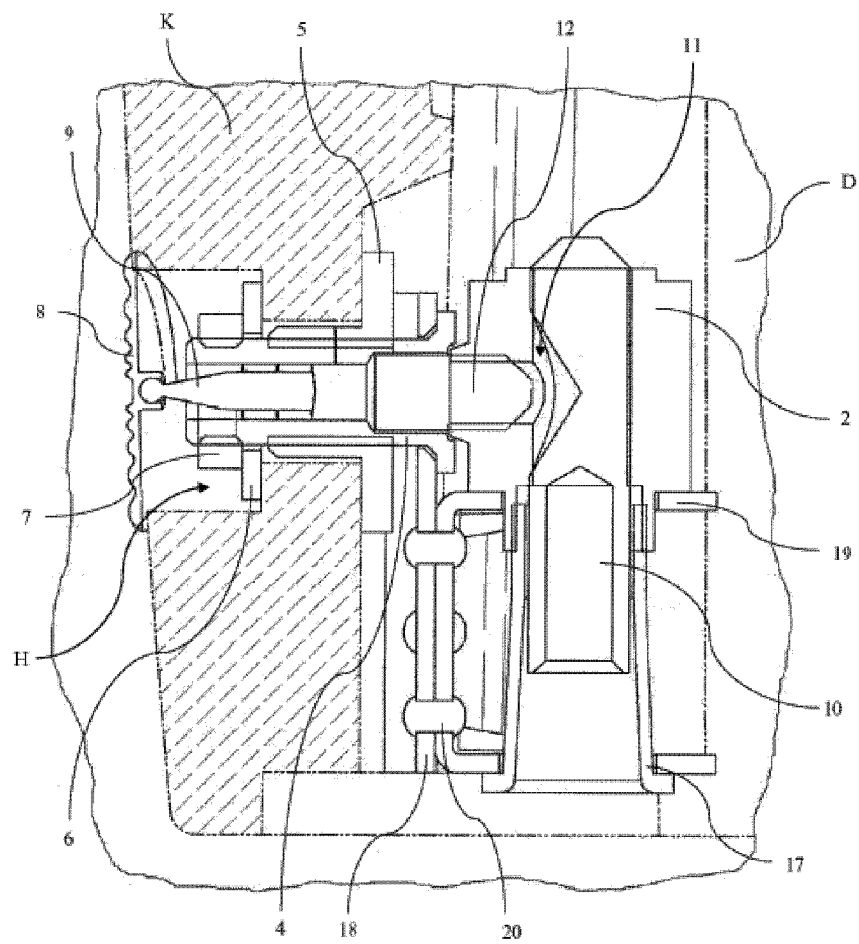


Figure 17

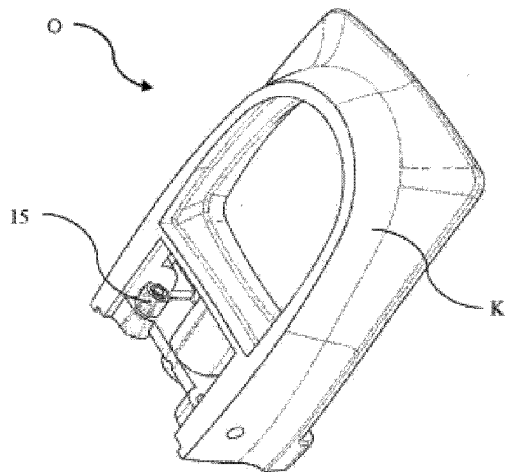


Figure 18

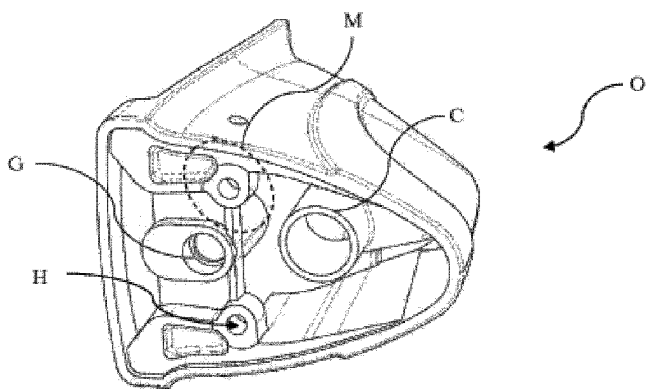


Figure 19

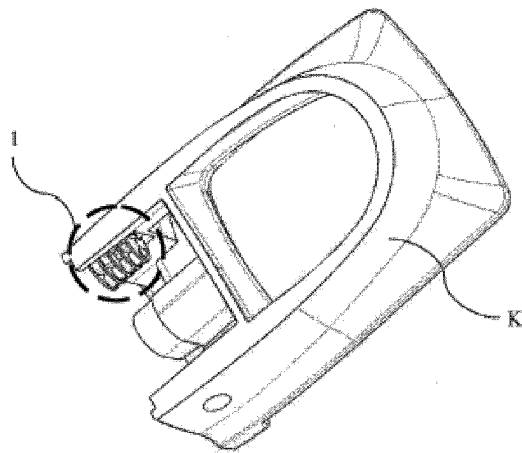


Figure 20

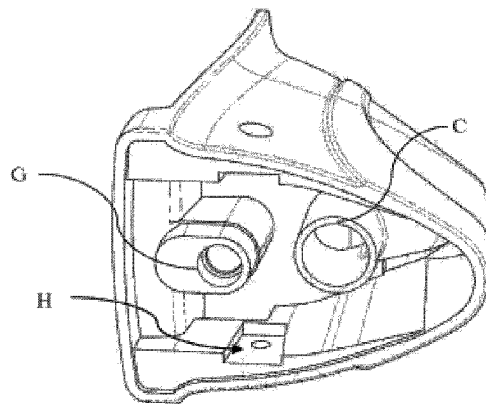


Figure 21

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- TR 200701077 [0006]
- TR 200904485 [0007]