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(54) TOILET

(57) Disclosed is a toilet, comprising a toilet body (1), a flow-splitting plate (2) fixed at a front end of a main water channel outlet of the toilet body (1), and a flow-blocking plate (3) fixed at a front end of the flow-splitting plate (2), wherein a water inlet (4) is provided in the middle of the flow-splitting plate (2), and an inner side of the flow-blocking plate (3) is provided, at positions close to two sides of the flow-splitting plate (2), with water-blocking protruding blocks (5) which extend from a top end to a bottom end of the flow-blocking plate (3).

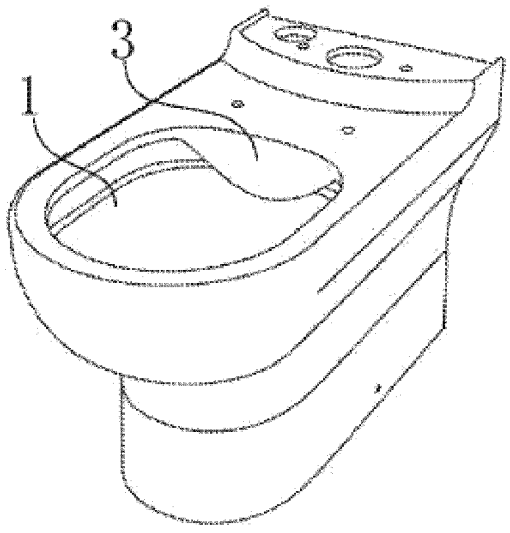

FIG. 1

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Description

TECHNICAL FIELD

[0001] The disclosure relates to the field of sanitary ware, in particular to a toilet.

BACKGROUND

[0002] Flushing type toilets mainly comprise flushing structures with a common water ring or without a water ring.

[0003] Compared with a structure without a water ring, the flushing type toilet with a common water ring is complex in production process, high in requirement for skills of people during operation, inconvenient to clean daily, not prone to cleaning residual water stains and the like in use.

[0004] The flushing type toilet of a structure without a water ring is simple in production structure, relatively low in technological operation skill requirement and convenient to clean in daily use. The flushing type toilet of a structure without a water ring is provided with a water diversion structure usually arranged at a water outlet position, the water diversion structure is used for splitting a water flow to flow down from the rear part of the toilet and flow along an inner ring of the toilet, and due to the fact that the water flow of the toilet is large, splashed water can be generated on the two sides of a flow-blocking plate, discomfort can be brought to a user, and normal use of the toilet is affected.

SUMMARY

[0005] The technical problem to be solved by the disclosure is to overcome the defects in the prior art, and a toilet is provided.

[0006] The disclosure is achieved by the following technical solution:

a toilet comprises a toilet body, a flow-splitting plate fixed at a front end of a main water channel outlet of the toilet body, and a flow-blocking plate fixed at a front end of the flow-splitting plate, wherein

a water inlet is provided in the middle of the flow-splitting plate, and an inner side of the flow-blocking plate is provided, at positions close to two sides of the flow-splitting plate, with water-blocking protruding blocks which extend from a top end to a bottom end of the flow-blocking plate.

[0007] The top ends of the water-blocking protruding blocks are fixedly connected with the top end of the flow-blocking plate, and the tail ends of the water-blocking protruding blocks extend to the tail end of the flow-blocking plate.

[0008] The middle part of the flow-splitting plate protrudes towards the inner side of the outlet of the main water channel, and the two sides of the flow-splitting plate and the parts, on the two sides of the outlet of the main water channel, of the toilet body form hedging flow guide outlets.

[0009] The top end of the flow-blocking plate is fixedly connected with the toilet body, the upper part of the flow-blocking plate and the upper part of the flow-splitting plate form a backflush flow guide cavity, and a gap for rear water outflow is reserved between the bottom of the flow-blocking plate and the flow-splitting plate.

[0010] The two sides of the flow-blocking plate go along the inner side of a water guide platform of the toilet body respectively, and the two sides of the flow-blocking plate and the water guide platform of the toilet body form a hedging flow guide cavity.

[0011] The middle part of the flow-blocking plate is provided with a turbulent flow table which is inwards convex towards a backflush flow guide cavity.

[0012] The direction of flushing water flow entering the backflush flow guide cavity in contact with the turbulent flow table or the tangential direction of the contact surface and a flushing water flow incident direction forms an obtuse angle.

[0013] The turbulent flow table is wedge-shaped or semi-cylinder-shaped.

[0014] The disclosure has the following beneficial effects:

due to the fact that the water-blocking protruding blocks are arranged on the inner side of the flow-blocking plate, flushing water flowing down along the flow-blocking plate is limited in the middle and cannot be split to the two sides or only little water overflows to the two sides, splashed water cannot be generated on the two sides of the flow-blocking plate, and the problem that the splashed water is generated on the two sides of the flow-blocking plate when a traditional closestool is flushed is effectively solved.

BRIEF DESCRIPTION OF DRAWINGS

[0015]

FIG. 1 is a schematic view of an external structure of the disclosure.

FIG. 2 is a structural schematic view before a flow-blocking plate is fixed in the disclosure.

FIG. 3 is a schematic view of the inner side structure of the flow-blocking plate of the disclosure.

FIG. 4 is a schematic view of an obliquely section structure of the disclosure.

Fig. 5 is a schematic view of a middle cross-sectional structure and a water flow direction of the disclosure.

FIG. 6 is a schematic view of a partial cross-sectional structure of the middle parts of a water-splitting plate and a flow-blocking plate of the disclosure.

FIG. 7 is a schematic view of a middle section structure of the disclosure.

FIG. 8 is a schematic view of the local structure of

position A.

[0016] In the figures, 1 is a toilet body, 2 is a flow-splitting plate, 3 is a flow-blocking plate, 4 is a water inlet, 5 is a water-blocking protruding block, 6 is a hedging flow guide outlet, 7 is a backflush flow guide cavity, 8 is a hedging flow guide cavity, and 9 is a turbulent flow cavity.

DESCRIPTION OF EMBODIMENTS

[0017] For the purpose that a person skilled in the art understands the technical solution of the disclosure better, the following further illustrates the disclosure with the reference to the accompanying diagrams and optimal embodiments.

[0018] As shown in FIG. 1, a toilet comprises a toilet body 1, a flow-splitting plate 2 fixed at a front end of a main water channel outlet of the toilet body 1, and a flow-blocking plate 3 fixed at a front end of the flow-splitting plate 2, wherein

as shown in FIG. 2 and FIG. 3, the flow-splitting plate and the toilet body are integrally formed, and the flow-blocking plate can be bonded to the toilet body during blank making and then is formed through firing.

[0019] A water inlet 4 is provided in the middle of the flow-splitting plate 2, and an inner side of the flow-blocking plate 3 is provided, at positions close to two sides of the flow-splitting plate 2, with water-blocking protruding blocks 5 which extend from to top end to a bottom end of the flow-blocking plate 3. The water-blocking protruding blocks and the flow-blocking plate are integrally formed.

[0020] Specifically, the top end of the flow-blocking plate is fixedly connected with the toilet body, preferably, the top ends of the water-blocking protruding blocks are fixedly connected with the top end of the flow-blocking plate, and the tail ends of the water-blocking protruding blocks extend to the tail end of the flow-blocking plate.

[0021] As shown in FIG. 4, in combination with FIG. 5, flushing water flows out of the main water channel of the toilet body, under the flow shunting effect of the flow-blocking plate, a part of water flows into the space between the flow-splitting plate and the flow-blocking plate through a water inlet of the flow-splitting plate and flows out along the rear part of the toilet body, and flushing of the rear part of the toilet body is achieved; and the other part of water flows out from two sides of the water-splitting plate.

[0022] The upper part of the flow-blocking plate and the upper part of the flow-splitting plate form a backflush flow guide cavity 7, and a gap for rear water outflow is reserved between the bottom of the flow-blocking plate and the flow-splitting plate.

[0023] The two sides of the flow-blocking plate go along the inner side of a water guide platform of the toilet body respectively, and the two sides of the flow-blocking plate and the water guide platform of the toilet body form a hedging flow guide cavity 8.

[0024] Due to the fact that the water-blocking protruding blocks are located on the two sides of the backflush flow guide cavity, flushing water flow injected from the water inlet of the flow-splitting plate can be blocked by the water-blocking protruding blocks and flows down along the space between the two water-blocking protruding blocks, and when the top ends of the water-blocking protruding blocks are fixedly connected with the top end of the flow-splitting plate, the flushing water flow can be completely limited between the two water-blocking protruding blocks. Therefore, the flushing water flow cannot flow out along the two sides of the flow-blocking plate.

[0025] As shown in FIG. 1, FIG. 2 and FIG. 8, the specific shape of the flow-blocking plate can be known, the lower part of the flow-blocking plate extends downwards in an arc shape, the middle part of the flow-blocking plate is longer, the two sides of the flow-blocking plate are shorter, flushing water flow at the rear part of a traditional closestool flows down along the inner side of the flow-blocking plate after the flow-blocking plate is blocked, and because the two sides of the flow-blocking plate are shorter, the problem of water splashing on the two sides of the water-blocking plate can be solved under high water pressure. However, the flow-blocking plate limits the flushing water flow at the rear part to the middle part, so that the flushing water flow cannot be split to the two sides or only a small amount of water overflows to the two sides, and the problem of splashed water on the two sides of the water-blocking plate is solved.

[0026] Preferably, the middle part of the flow-splitting plate protrudes towards the inner side of the outlet of the main water channel, so that the upper part of the flow-blocking plate and the upper part of the flow-splitting plate form a backflush flow guide cavity with a certain volume; hedging flow guide outlets 6 are formed by the two sides of the flow-splitting plate and the parts, on the two sides of the outlet of the main water channel, of the toilet body, part of flushing water is split along the two sides of the flow-splitting plate, enters the hedging flow guide cavity through the hedging flow guide outlets, flows along the hedging flow guide cavity and finally flows out to flush the two sides of the toilet body.

[0027] Due to the fact that the hedging flow guide cavity is arranged, the guiding performance of flushing water flow is higher, the water guiding and flow guiding efficiency of flushing water is improved, the hedging flow guide cavity is a cavity with the two open ends, air in the cavity can be released after the flushing water enters the cavity, and the problem of water splashing caused by instant water outflow of the water outlet of the hedging flow guide cavity is effectively solved.

[0028] As shown in FIG. 6, the middle part of the flow-blocking plate is provided with a turbulent flow table 9 which is inwards convex towards a backflush flow guide cavity.

[0029] As shown in FIG. 7, under the action of the turbulent flow table, stranded water flow entering from the water inlet of the flow-splitting plate impacts the turbulent

flow table after entering, turbulent flow is achieved, the water flow is disturbed in the backflush flow guide cavity, the better dispersion effect on the water flow is achieved, and the water flow flushed out of the rear part of the toilet is evenly distributed.

[0030] Preferably, an obtuse angle is formed between the direction of the contact surface of the flushing water flow entering the backflush flow guide cavity and the turbulent flow table and the injection direction of the flushing water flow, and specifically, the obtuse angle can be wedge-shaped; or an obtuse angle is formed between the tangential direction of the contact surface of the flushing water flow entering the backflush flow guide cavity and the turbulent flow table and the injection direction of the flushing water flow, and specifically, the backflush flow guide cavity can be semi-cylindrical. Therefore, incident water flow can move towards the upper side of the backflush flow guide cavity along the turbulent flow table after colliding with the turbulent flow table, and then circulation along the inner side of the backflush flow guide cavity is achieved, so that a better dispersion effect is achieved.

[0031] The foregoing descriptions are merely example implementations of the disclosure. It should be noted that a person of ordinary skill in the art may make several improvements or polishing without departing from the principle of the disclosure and the improvements or polishing shall fall within the protection scope of the disclosure.

Claims

1. A toilet, **characterized by** comprising a toilet body, a flow-splitting plate fixed at a front end of a main water channel outlet of the toilet body, and a flow-blocking plate fixed at a front end of the flow-splitting plate, wherein
   a water inlet is provided in the middle of the flow-splitting plate, and an inner side of the flow-blocking plate is provided, at positions close to two sides of the flow-splitting plate, with water-blocking protruding blocks which extend from a top end to a bottom end of the flow-blocking plate.

2. The toilet according to claim 1, **characterized in that** the top ends of the water-blocking protruding blocks are fixedly connected with the top end of the water-splitting plate, and the tail ends of the water-blocking protruding blocks extend to the tail end of the flow-blocking plate.

3. The toilet according to claim 1 or 2, **characterized in that** the middle part of the flow-splitting plate protrudes towards the inner side of the outlet of the main water channel, and the two sides of the flow-splitting plate and the parts, on the two sides of the outlet of the main water channel, of the toilet body form hedging flow guide outlets.

4. The toilet according to claim 3, **characterized in that** the top end of the flow-blocking plate is fixedly connected with the toilet body, the upper part of the flow-blocking plate and the upper part of the flow-splitting plate form a backflush flow guide cavity, and a gap for rear water outflow is reserved between the bottom of the flow-blocking plate and the flow-splitting plate.

5. The toilet according to claim 4, **characterized in that** the two sides of the flow-blocking plate go along the inner side of a water guide platform of the toilet body respectively, and the two sides of the flow-blocking plate and the water guide platform of the toilet body form a hedging flow guide cavity.

6. The toilet according to claim 5, **characterized in that** the middle part of the flow-blocking plate is provided with a turbulent flow table which is inwards convex towards a backflush flow guide cavity.

7. The toilet according to claim 6, **characterized in that** the direction of flushing water flow entering the backflush flow guide cavity in contact with the turbulent flow table or the tangential direction of the contact surface and a flushing water flow incident direction forms an obtuse angle.

8. The toilet according to claim 7, **characterized in that** the turbulent flow table is wedge-shaped or semi-cylinder-shaped.

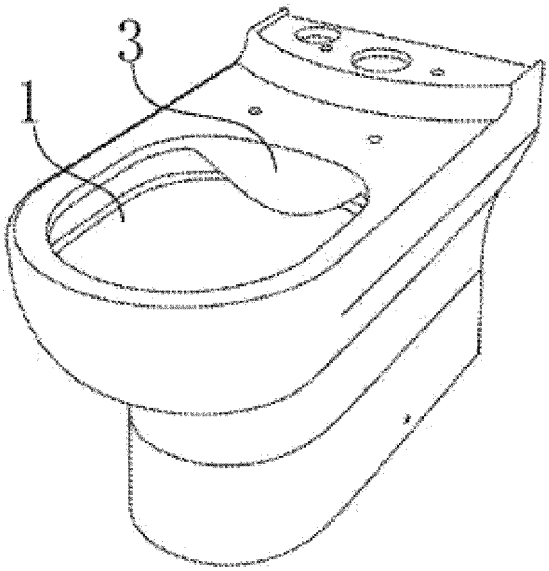

FIG. 1

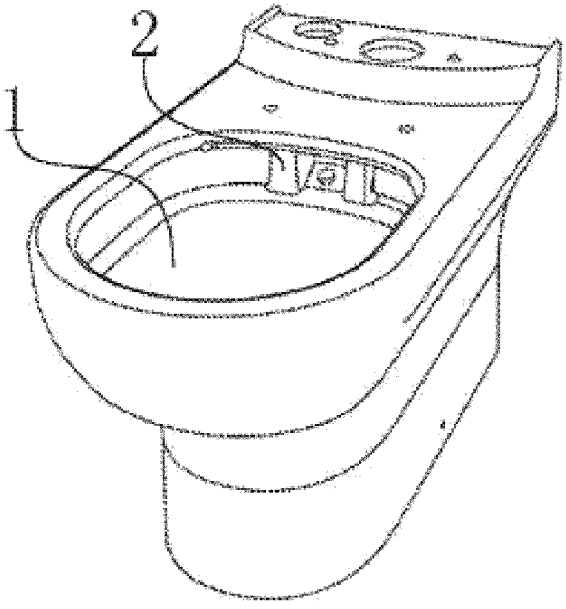

FIG. 2

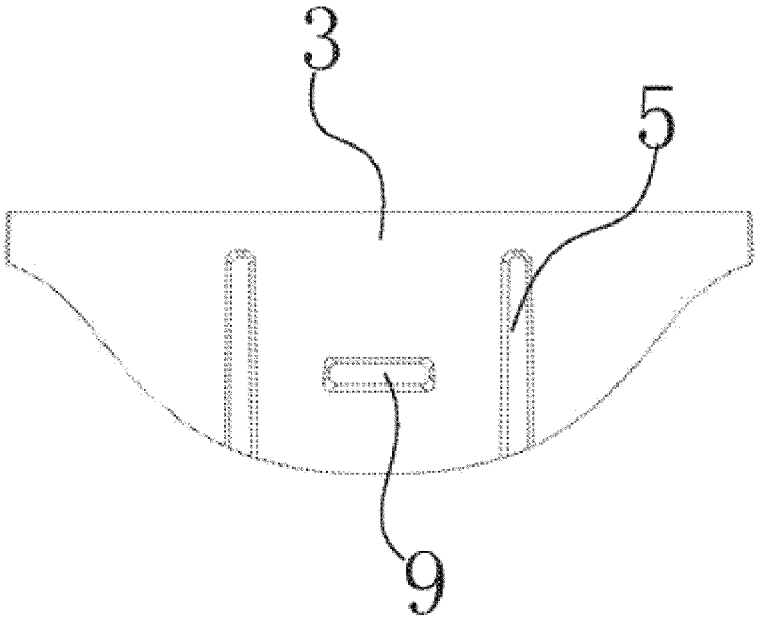

FIG. 3

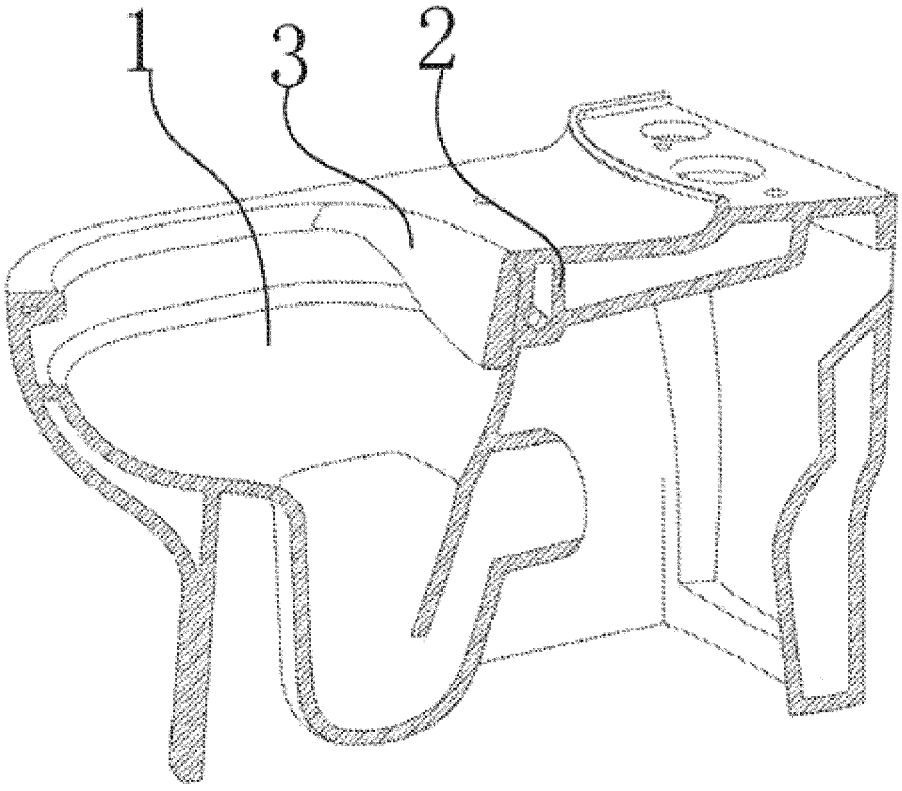

FIG. 4

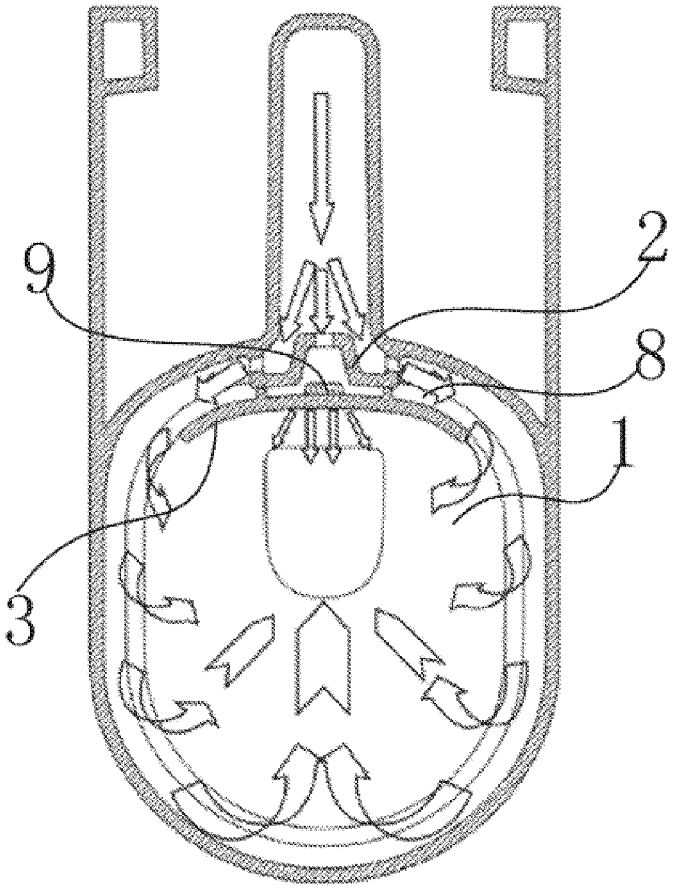

FIG. 5

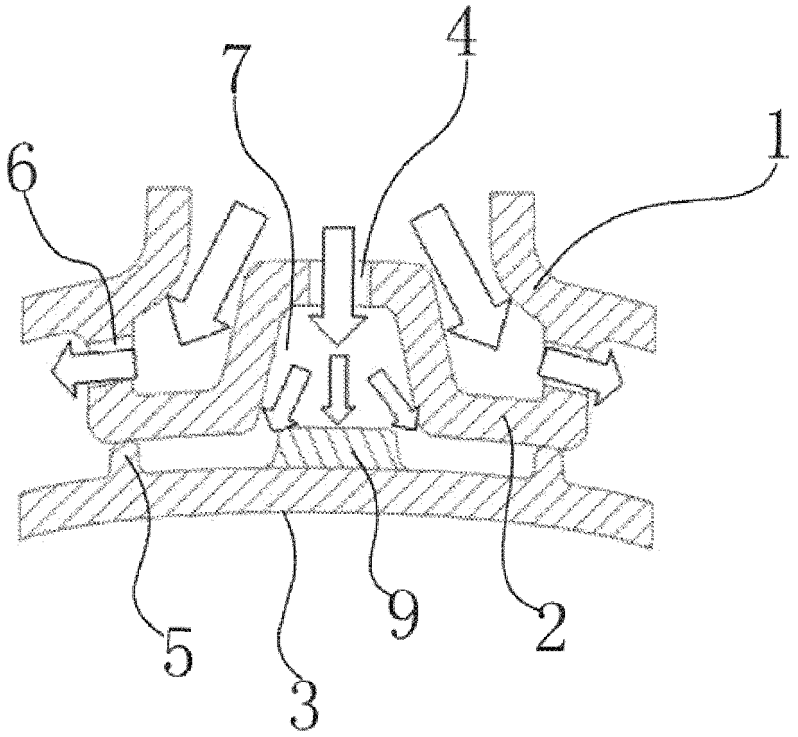

FIG. 6

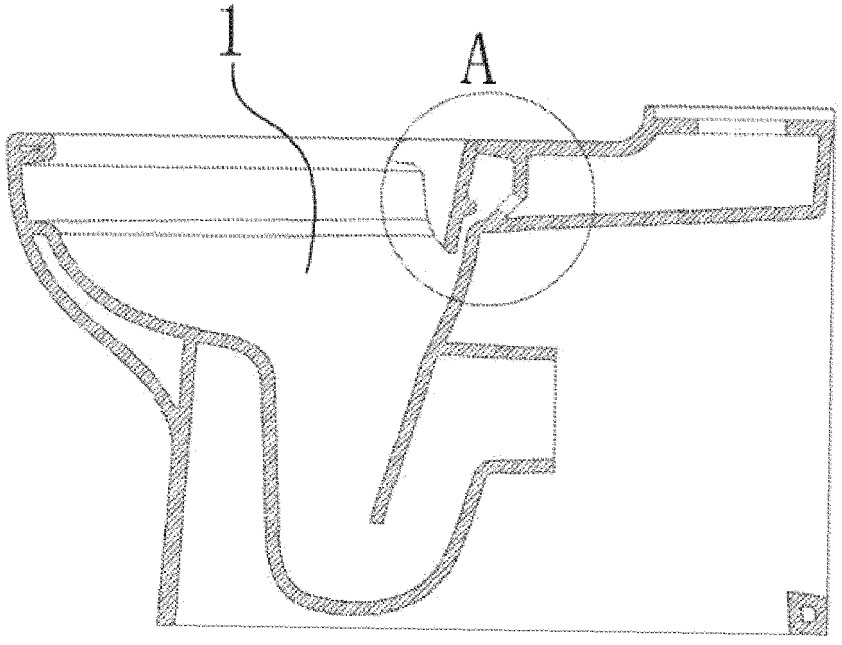

FIG. 7

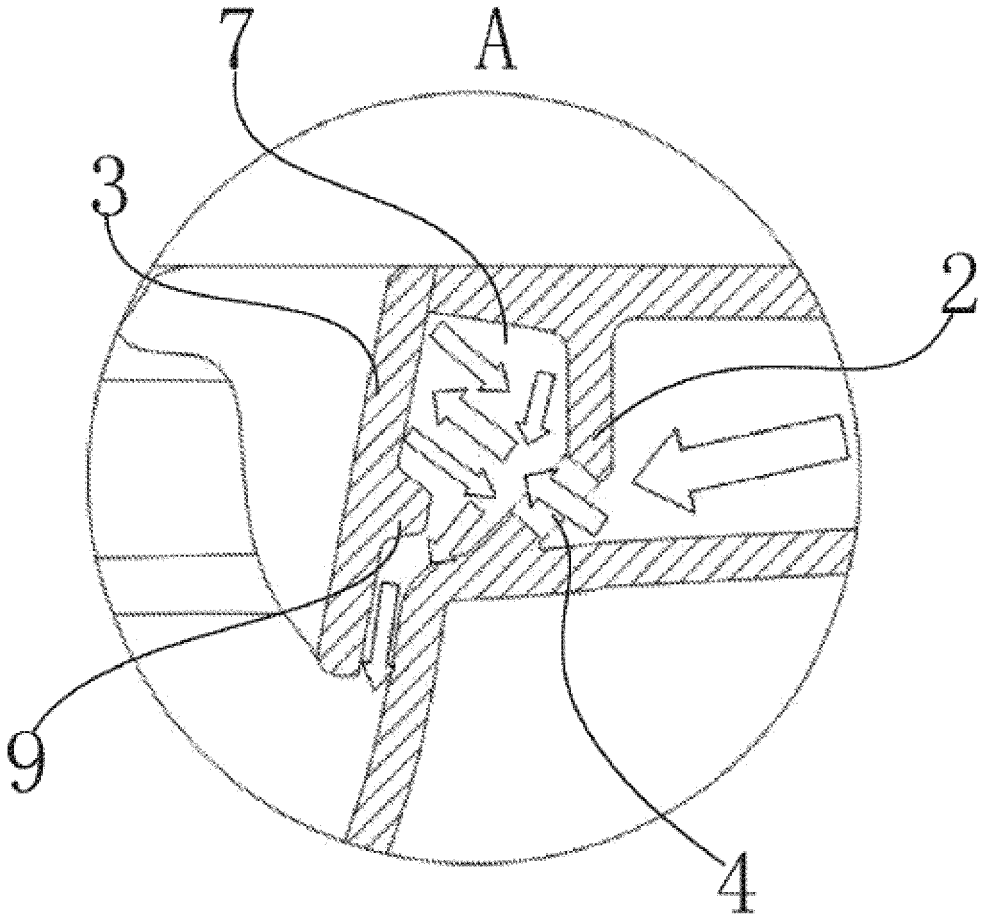

FIG. 8

INTERNATIONAL SEARCH REPORT

International application No.
PCT/CN2018/110170

A. CLASSIFICATION OF SUBJECT MATTER

E03D 11/06(2006.01)i; E03D 9/00(2006.01)i; E03D 11/13(2006.01)i

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

E03D11, E03D9

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

CNKI, CNABS, CNTXT, VEN; 坐便器, 马桶, 分水, 分流, 挡水, 挡流; toilet, pedestal pan, closestool, distribut+, diversion, diffluence, divid+, baffl+, block+

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	CN 103510601 A (FOSHAN ROYALKING SANITARY WARE CO., LTD.) 15 January 2014 (2014-01-15) description, paragraphs [0025]-[0030], and figures 1-6	1-8
Y	CN 106545065 A (GEBERIT SHANGHAI INVESTMENT ADMINISTRATION CO., LTD.) 29 March 2017 (2017-03-29) description, paragraph [0029], and figures 1-6	1-8
A	CN 204781241 U (TANGSHAN QILONG SANITARY WARE CO., LTD.) 18 November 2015 (2015-11-18) entire document	1-8
A	JP 2001193134 A (INAX CORP.) 17 July 2001 (2001-07-17) entire document	1-8
A	DE 20120693 U1 (BOEHNEL ERHARD) 25 July 2002 (2002-07-25) entire document	1-8

☐ Further documents are listed in the continuation of Box C. ☑ See patent family annex.

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Date of the actual completion of the international search	Date of mailing of the international search report
07 January 2019	**24 January 2019**
Name and mailing address of the ISA/CN **National Intellectual Property Administration, PRC (ISA/CN)** **No. 6, Xitucheng Road, Jimenqiao, Haidian District, Beijing 100088** **China** Facsimile No. **(86-10)62019451**	Authorized officer Telephone No.

Form PCT/ISA/210 (second sheet) (January 2015)

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/CN2018/110170

Patent document cited in search report	Publication date (day/month/year)	Patent family member(s)	Publication date (day/month/year)
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		WO 2015058451 A1	30 April 2015
		EP 2944730 A1	18 November 2015
		PL 2944730 T3	30 April 2018
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		EP 2944730 B1	08 November 2017
CN 106545065 A	29 March 2017	None	
CN 204781241 U	18 November 2015	None	
JP 2001193134 A	17 July 2001	None	
DE 20120693 U1	25 July 2002	None	

Form PCT/ISA/210 (patent family annex) (January 2015)