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(54) WASHING MACHINE PROVIDED WITH INCOMING-WATER FILTER

(57) A washing machine provided with an inflowing-water filter. The washing machine is provided with a water inlet (2), a water inlet path (3) and a filter mounting opening (4), wherein the filter mounting opening (4) is communicated with the water inlet path (3), an inflowing-water filter (5) is detachably installed in the water inlet path (3) via the filter mounting opening (4). Said washing machine is provided with a water inlet valve (6), and the water inlet valve (6) comprises a valve body (61), a water inlet end (62) and a water outlet end (63), wherein the water inlet end (62) comprises the water inlet (2) provided on an end part, the water inlet path (3) and the filter mounting opening (4) provided on a side part of the water inlet end (62). Alternatively, said washing machine is provided with the water inlet valve (6), said water inlet path (3) is provided between the water inlet (2) and the water inlet valve (6), and the inflowing-water filter (5) is provided in the water inlet path (3) which is arranged between the water inlet valve (6) and the water inlet (2). Said washing machine is provided with the inflowing-water filter (5) which is convenient to detach and clean, the inflowing-water filter (5) is provided in the water inlet path (3) via the filter mounting opening (4) instead of the water inlet (2), and has a relative large filtering area, is easy to be assembled or dissembled, and is convenient to clean.

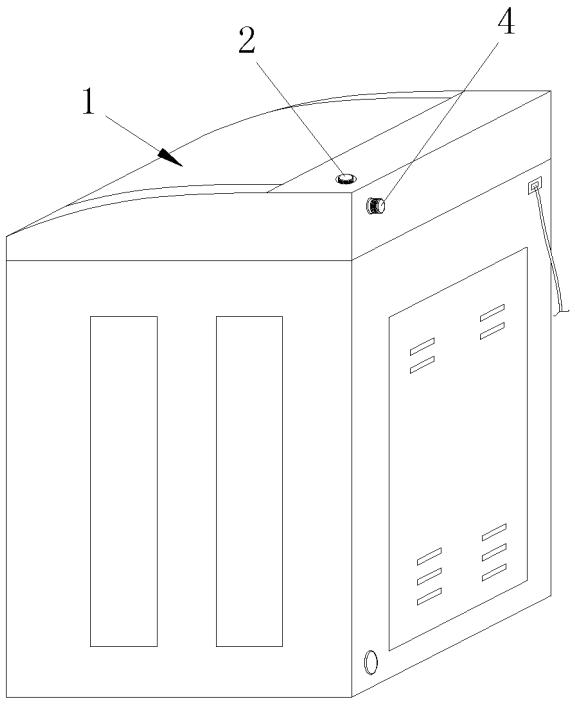

FIG.3

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Description

FIELD OF THE INVENTION

[0001] The present disclosure relates to a field of a washing machine, in particular to a washing machine provided with an inflowing-water filter.

BACKGROUND OF THE INVENTION

[0002] A washing machine comprises a body constituting a bottom and a side, a top cover provided at a top of the body. Inside the body, a water tank is supported by a plurality of supports and a washing tub for washing and dewatering of clothes disposed is provided inside the water tank. A pulsator is provided inside the washing tub.

[0003] A detergent box frame capable of inserting or removing the detergent box, a water supply pipe connected to the detergent box frame, and a water inlet valve connected to the water supply pipe are provided at the rear of the top cover. A filter is provided inside an inlet end of the water inlet valve.

[0004] An upper cover for users disposing clothes into the washing tub or taking clothes out is provided at a middle part of the top cover, a control panel is provided on an upper of a rear of the top cover. A control unit such as a controller for controlling various operations of the washing machine is provided on the bottom surface of the control panel.

[0005] Using a washing machine with a structure as described above, the user opens the top cover and disposes clothes into the washing tub and chooses the required washing operation through buttons provided on the control panel. The water inlet valve is open and the washing water flows into the washing tub to the set water level.

[0006] Then, the motor is driven and the driving force of the motor is appropriately decelerated and transmitted to the pulsator or the washing tub to perform the washing operation. When the washing operation is done, several rinsing operations are performed. When the rinsing operation is done, the washing tub rotates at a high speed and performs a dehydration operation. Further a series of washing process is completed.

[0007] However, because of poor water quality in many parts of the country, such as rural areas and foreign countries and regions, the impurities in the water will jam the filter which results in slow inflowing water or no water after the washing machine being used several times, and the washing machine can't operate normally. Due to limitation of the structure of the water inlet valve, the current water inlet pipe, the water inlet valve is basically a standard interface design. The filter at the entrance of the water inlet can't be made too large due to space constraints, which will result in less water filtration and is easy been jammed, the water inlet is difficult to remove and clean.

[0008] According to most of the filters net 3' fitted in the water inlet 2' of the existing water inlet valve 1' not provided with a detachable structure (see Fig. 1), some changes have been made. For example, a handle 4' is added to the filter net of the water inlet valve (see Fig. 2). The cylindrical handle and support frame are integral forming through the injection, while the iron material filter net also put into it for integral forming. Although this may not rely on tools to facilitate the removal of clean up, but can't avoid the frequent disassembly for removal of impurities.

[0009] A Chinese patent application No. 03130294.7 discloses a filter structure of a water inlet valve of a washing machine. The structure comprises a water inlet valve provided in the water supply path of the washing machine, a filter is provided inside a top of the water inlet valve. The filter structure comprises a handle, a filter net and a support frame surrounding them, and a net shaped second filter is provided on an inner side wall of the filter. Although the secondary filter structure has been added, it is still necessary to remove the inlet pipe from the water inlet valve when removing the filter. And the water inlet valve and the inlet pipe need to have a good seal, so the installation and removal is not very convenient. Often there will be a leaking problem because an installation is not in place.

[0010] In a view of foregoing, the present invention is proposed.

SUMMARY OF THE INVENTION

[0011] The technical problem to be solved by the present disclosure is to overcome the shortcomings of the prior art and to provide a washing machine equipped with an inflowing-water filter. It has a simple structure and is easy to disassemble and has a large filtation area and is not easy to plug.

[0012] In order to solve the technical problem described above, the basic scheme adopted by the present disclosure is: a washing machine equipped with an inflowing-water filter, which is provided a water inlet and a water inlet path communicated with the water inlet. A housing of the washing machine is provided with a filter mounting opening, the filter mounting opening is communicated with the water inlet path, and the inflowing-water filter is detachably mounted in the water inlet path through the filter mounting opening.

[0013] Further, the water inlet path is provided with a filter box, the filter box is communicated with the filter mounting opening, and the inflowing-water filter is detachably mounted in the filter box through the filter mounting opening. The washing machine is provided with a water inlet valve, the water inlet path is between the water inlet and the water inlet valve.

[0014] Further, the washing machine is provided with the water inlet valve. The water inlet valve comprises a valve body, a water inlet end and a water outlet end. A filter mounting end is provided on the valve body. An end of the water inlet end is the water inlet, an end of the filter

mounting end is the filter mounting opening, and the inflowing-water filter is detachably mounted inside the valve body through the filter mounting end.

[0015] Further, the water inlet path is provided inside the valve body, two ends of the water inlet path are communicated with a water inlet end and a water outlet end. The water inlet path is provided with a plug, the filter mounting end is communicated with the water inlet path between the water inlet end and the plug.

[0016] Further, the washing machine is provided with a water inlet valve, the water inlet valve comprises a valve body, a water inlet end and a water outlet end. The water inlet end comprises a water inlet which is provided at an end, a water inlet path and a filter mounting opening which is provided at a side of the water inlet end.

[0017] Further, the inflowing-water filter comprises a filtering mechanism and a connecting piece, the filtering mechanism is connected with the connecting piece. The connecting piece is detachably connected with the filter mounting opening, and the filtering mechanism is inserted into the water inlet path through the filter mounting opening.

[0018] Further, the connecting piece is a cap structure with a "⊓" shape, a peripheral wall of which is provided with an internal thread. The filter mounting opening is provided with an external thread fitting the internal thread. The filtering mechanism is a cylindrical structure, of which one end is inserted in and connected with the connecting piece from an opening of the connecting piece, and of which a peripheral wall is provided with a filter net, or of which the peripheral wall and another end are provided with the filter net. Preferably, the filtering mechanism is detachably connected with the connecting piece.

[0019] Further, the inflowing-water filter and the water inlet path are provided in cross, or, the inflowing-water filter is set in a direction of a water flow after a direction of the water inlet path is changed.

[0020] Further, the water inlet path is an "L" shape or at least two sequentially connected "L" shapes. The filter mounting opening is communicated with a bend part of the water inlet path. The inflowing-water filter is inserted in the direction of the water flow which is redirected at the bend part. The filter mounting opening and the water inlet are in a crossed or parallel positional relationship.

[0021] Further, an end of the filtering mechanism corresponding to the connecting piece is provided with a sealing ring for sealing the filter mounting opening. Further, the other end is provided with a sealing ring to close a gap between the filtering mechanism and the water inlet path. The inflowing water is filtered by going through the inflowing-water filter twice to achieve a better filtering effect.

[0022] Further, the water inlet is provided at a top of the housing of the washing machine, the filter mounting opening is provided at the top or a rear or a side of the housing of the washing machine. Or, the water inlet is provided at the rear of the housing of the washing machine, the filter mounting opening is provided at the top or the rear or the side of the housing of the washing machine. Or, the water inlet is provided at the side of the housing of the washing machine, the filter mounting opening is provided at the top or the rear or the side of the housing of the washing machine.

[0023] Further, the positional relationship between the filter mounting opening and the water inlet is related to a structure of the inflowing-water filter installed in the water inlet path.

[0024] By adopting the technical scheme described above, the present disclosure has the following advantageous effects as compared with the prior art.

[0025] The washing machine of the present disclosure is provided with a inflowing-water filter which is easy to disassemble and clean. The inflowing-water filter is not provided inside the water inlet, but provided in the water inlet path through a filter mounting opening which has a larger filtering area and easy to disassemble and clean. The filtering area can be freely adjusted due to no limitation on the size of the cross of the incoming water and the filter is not easy being plugged. Corresponding to incoming water flows with different flowing directions, the filter mounting opening and the water inlet are arranged with different positional relationships to facilitate the filter mounting opening installation of the washing machine. The inflowing-water filter can be set as multiple filters and set as filters with different filtering levels according to water quality of different regions, it has a wide range of applications. The filter mounting opening is integrated in the water inlet valve which has a simple structure and easy to install. Because the filter mounting opening is independently provided, so the water inlet will not be plugged and don't need to frequently remove the water inlet pipe. It avoids the leaking caused by not correctly installed from happening.

BRIEF DESCRIPTION OF THE DRAWINGS

[0026]

Fig. 1 is an installation schematic diagram of an existing filter net of a water inlet valve of a washing machine;

Fig. 2 is an installation schematic diagram of another existing filter net of a water inlet valve of a washing machine;

Fig. 3 is a schematic diagram of a washing machine of the present disclosure;

Fig. 4 is a schematic diagram of a water inlet valve of a washing machine of the present disclosure;

Fig. 5 is a sectional view of a water inlet valve of a washing machine of the present disclosure;

Fig. 6 is a schematic view of water incoming and filtration of a water inlet valve of a washing machine of the present disclosure;

Figs. 7 to 9 are schematic views of different water incoming and filtration of a washing machine of the present disclosure;

Fig. 10 is a schematic diagram of an inflowing-water filter of a washing machine of the present disclosure;

Fig. 11 is a sectional view of an inflowing-water filter of the present disclosure;

Figs. 12 to 15 are respectively diagrams of different structures of a washing machine of the present disclosure.

DETAILED DESCRIPTION OF THE INVENTION

[0027] Embodiments of the present invention are described in further detail with reference to the accompanying drawings.

[0028] As shown in from Fig. 3 to Fig. 15, a washing machine is provided with a water inlet 2 and a water inlet path 3 which is communicated with water inlet 2, the water inlet 2 is detachably connected with a water inlet pipe outside. The other end of the water inlet pipe is connected with a tap water faucet (not show in Figs). Tap water flows successively through the water inlet pipe, the water inlet, a water inlet path into a washing tub. The water inlet path is provided inside the washing machine and the water inlet path is a water path which the tap water flows through from the water inlet into the washing tub. The water inlet path is a water supply pipe installed in the washing machine or is a water passage in the water inlet valve. A housing 1 of the washing machine of the present disclosure is provided with a filter mounting opening 4, the filter mounting opening 4 is communicated with the water inlet path 3. An inflowing-water filter 5 is detachably mounted in the water inlet path 3 through the filter mounting opening 4 to filter the impurities of the incoming water of the washing machine.

Embodiment 1

[0029] As shown in from Fig. 4 to Fig. 6, a water inlet valve 6 of a washing machine of the present embodiment comprises a valve body 61, a water inlet end 62 and a water outlet end 63. The valve body 61 is provided with a filter mounting end 64. An end opening of the water inlet end 62 is a water inlet 2 of the washing machine. An end opening of the filter mounting end 64 is a filter mounting opening 4 of the washing machine. The inflowing-water 5 filter is detachably mounted inside the valve body 61 through the filter mounting end 64.

[0030] Specifically, the water inlet path 3 is provided inside the valve body 61, two ends of the water inlet path are communicated with a water inlet end 62 and a water outlet end 63. The water inlet path is provided with a plug 65 which is controlled by the electromagnetic components to open and close (the structure is a solenoid valve structure in a conventional washing machine, which is not shown). The filter mounting end 64 is communicated with the water inlet path between the water inlet end 62 and the plug. As the existing washing machine has more and more functions, different procedures require different effects of water, such as spray water, main water, rinsing water, etc. which need different water outlets. Therefore, the inlet valve is a one-way in and multi-way out structure, that is, with several water outlets. But no matter how many water outlets are provided, there is a water outlet which is closest to the water inlet and a plug which controls the water outlet. The inflowing-water filter 5 is provided in the water inlet path between the water inlet 62 and the plug closest to the water inlet (see Fig. 5 and Fig. 6) to prevent the impurities in the incoming water from affecting the service life of the plug.

Embodiment 2

[0031] As shown in Fig. 7, a filtering method of another water inlet path is described in the present embodiment, which makes some improvements to the water inlet end 62 of the water inlet valve of the washing machine. That the inflowing-water filter installed in the water inlet path of the valve body of the above-described embodiment is changed to be installed in the water inlet path 3 of the water inlet end 62 of the water inlet valve. The water inlet end 62 comprises a water inlet 2 at an end, a water inlet path 3 and a filter mounting opening 4 which is provided at a side of the water inlet end 62. The inflowing-water filter 5 is mounted in the water inlet path 3 through the filter mounting opening 4.

Embodiment 3

[0032] As shown in Fig. 8, a filtering method of another water inlet path of the present embodiment, the water inlet path 3 of the washing machine is provided with a filter box 31, such as the water inlet path and the filter box are mounted on a control panel or the housing of the washing machine. The control panel or the housing is provided with the water inlet 2 which is connected to the water inlet pipe outside. The water inlet 2 is communicated with the filter box 31 through the water inlet path 3, the filter box 31 is communicated with the water inlet valve and the filter box 31 is communicated with the filter mounting opening 4. The inflowing-water filter 5 is detachably mounted in the filter box 31 through the filter mounting opening 4.

Embodiment 4

[0033] As shown from Fig. 7 to Fig. 9, the inflowing-water filter 5 and the water inlet path 3 are provided in

cross (see Fig. 8), or, the inflowing-water filter 5 is set in a direction of a water flow after the direction of water inlet path 3 is changed (see Fig. 7 and Fig. 9).

[0034] Specifically, the water inlet path 3 is an "L" shape (see Fig. 7) or two sequentially connected "L" shapes (see Fig. 9), the filter mounting opening 4 is communicated with a bend part of the water inlet path 3. The inflowing-water filter 5 is inserted in the direction of the water flow which is redirected at the bend part. The filter mounting opening 4 and the water inlet 2 are in a crossed or parallel positional relationship. In a water inlet path with several successively connected "L" shape, when the inflowing-water filter 5 is inserted in the direction of the water flow which is redirected at the bend part which is a water turning place nearest to the water inlet, the filter mounting opening 4 and the water inlet 2 have crossed positional relationship. As shown in Fig. 3 and Figs. from 12 to 14, the water inlet 2 and the filter mounting opening 4 are located at adjacent sides of the housing of the washing machine. As shown in Fig. 9, when the inflowing-water filter 5 is inserted in the direction of the water flow which is redirected at the bend part which is a second water turning place, the filter mounting opening 4 and the water inlet 2 have a parallel positional relationship which are at the same side of the housing of the washing machine as shown on the washing machine (see Fig. 15).

Embodiment 5

[0035] As shown in Fig. 10 and Fig. 11, the inflowing-water filter 5 of the present disclosure comprises a filtering mechanism 51 and a connecting piece 52, the filtering mechanism 51 is connected with the connecting piece 52. The connecting piece 52 is detachably connected with the filter mounting opening 4. And the filtering mechanism 51 is inserted into the water inlet path 3 through the filter mounting opening 4.

[0036] Further, the connecting piece 52 is a "冂" shaped cap structure, a peripheral wall of which is provided with an internal thread. The filter mounting opening is provided with an external thread fitting with the internal thread. The filtering mechanism 51 is a cylindrical structure, of which one end is inserted in and connected with the connecting piece 52 from an opening of the connecting piece 52, and of which a peripheral wall is provided with a filter net 511, or the peripheral wall and another end are provided with the filter net. Further, in order to facilitate cleaning the filter, the filtering mechanism 51 is detachably connected with the connecting piece 52.

[0037] As shown in Fig. 11, an end of the filtering mechanism 51 corresponding to the connecting piece 52 is provided with a sealing ring 53 for sealing the filter mounting opening. Further, the other end is provided with a sealing ring 53 to close a gap between the filtering mechanism and the water inlet path. The inflowing water is filtered by going through the inflowing-water filter twice to achieve a better filtering effect.

Embodiment 6

[0038] As shown in Fig. 3 and from Figs. 12 to 15, the housing 1 of the washing machine of the present disclosure comprises that of a pulsator washing machine and a drum washing machine. The water inlet 2 is provided on a top of the housing of the washing machine, the filter mounting opening 4 is provided at a top or a rear or a side of the housing of the washing machine. Or, the water inlet 2 is provided at the rear of the housing 1 of the washing machine, the filter mounting opening 4 is provided at the top or the rear or the side of the housing 1 of the washing machine. Or, the water inlet 2 is provided at the side of the housing 1 of the washing machine, the filter mounting opening 4 is provided at the top or the rear or the side of the housing 1 of the washing machine. The positional relationship between the filter mounting opening and the water inlet is related to a structure of the inflowing-water filter installed in the water inlet path, see embodiment 4.

[0039] The embodiments in the above described may be further combined or replaced and the description is only preferred embodiments of the disclosure but not intended to be limited to the spirit and scope of the present disclosure. It should be noted that without departing from the design concept of the present disclosure, various variations and improvements made to the technical solutions of the present disclosure by persons skilled in the art all belong to the protection scope of the present disclosure.

Claims

1. A washing machine provided with an inflowing-water filter, which is provided with a water inlet and a water inlet path communicated with the water inlet,
   wherein a housing of the washing machine is provided with a filter mounting opening, the filter mounting opening is communicated with the water inlet path,
   and the inflowing-water filter is detachably mounted in the water inlet path through the filter mounting opening.

2. The washing machine provided with the inflowing-water filter according to claim 1, wherein the water inlet path is provided with a filter box, the filter box is communicated with the filter mounting opening, and the inflowing-water filter is detachably mounted in the filter box through the filter mounting opening.

3. The washing machine provided with the inflowing-water filter according to claim 1, wherein the washing machine is provided with a water inlet valve,
   the water inlet valve comprises a valve body, a water inlet end and a water outlet end,
   a filter mounting end is provided on the valve body, an end of the water inlet end is the water inlet, an

end of the filter mounting end is the filter mounting opening,
and the inflowing-water filter is detachably mounted inside the valve body through the filter mounting end.

4. The washing machine provided with the inflowing-water filter according to claim 3, wherein the water inlet path is provided inside the valve body, two ends of the water inlet path are communicated with the water inlet end and the water outlet end, the water inlet path is provided with a plug, the filter mounting end is communicated with the water inlet path between the water inlet end and the plug.

5. The washing machine provided with the inflowing-water filter according to claim 1, wherein the washing machine is provided with a water inlet valve, the water inlet valve comprises a valve body, a water inlet end and a water outlet end,
the water inlet end comprises the water inlet which is provided at an end, the water inlet path and the filter mounting opening which is provided at a side of the water inlet end.

6. The washing machine provided with the inflowing-water filter according to claim 1, wherein the inflowing-water filter comprises a filtering mechanism and a connecting piece,
the filtering mechanism is connected with the connecting piece, the connecting piece is detachably connected with the filter mounting opening,
and the filtering mechanism is inserted into the water inlet path through the filter mounting opening.

7. The washing machine provided with the inflowing-water filter according to claim 6, wherein the connecting piece is a cap structure with a "⊓" shape, a peripheral wall of which is provided with an internal thread, the filter mounting opening is provided with an external thread fitting the internal thread,
the filtering mechanism is a cylindrical structure, of which one end is inserted in and connected with the connecting piece from an opening of the connecting piece, and of which a peripheral wall is provided with a filter net, or of which the peripheral wall and another end are provided with the filter net.

8. The washing machine provided with the inflowing-water filter according to any one of claims from 1 to 7, wherein the inflowing-water filter and the water inlet path are provided in cross,
or, the inflowing-water filter is set in a direction of a water flow after a direction of the water inlet path is changed.

9. The washing machine provided with the inflowing-water filter according to claim 8, wherein the water inlet path is an "L" shape or at least two sequentially connected "L" shapes,
the filter mounting opening is communicated with a bend part of the water inlet path, the inflowing-water filter is inserted in the direction of the water flow which is redirected at the bend part, the filter mounting opening and the water inlet are in a crossed or parallel positional relationship.

10. The washing machine provided with the inflowing-water filter according to any one of claims from 1 to 7, wherein the water inlet is provided at a top of the housing of the washing machine, the filter mounting opening is provided at the top or a rear or a side of the housing of the washing machine,
or, the water inlet is provided at the rear of the housing of the washing machine, the filter mounting opening is provided at the top or the rear or the side of the housing of the washing machine,
or, the water inlet is provided at the side of the housing of the washing machine, the filter mounting opening is provided at the top or the rear or the side of the housing of the washing machine.

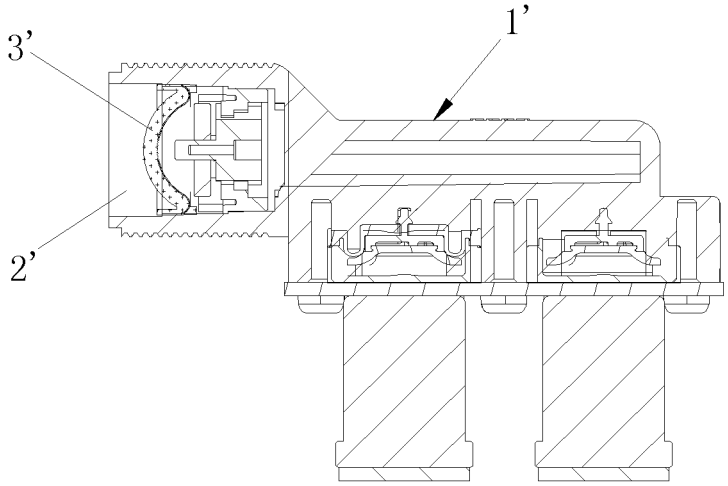

FIG.1

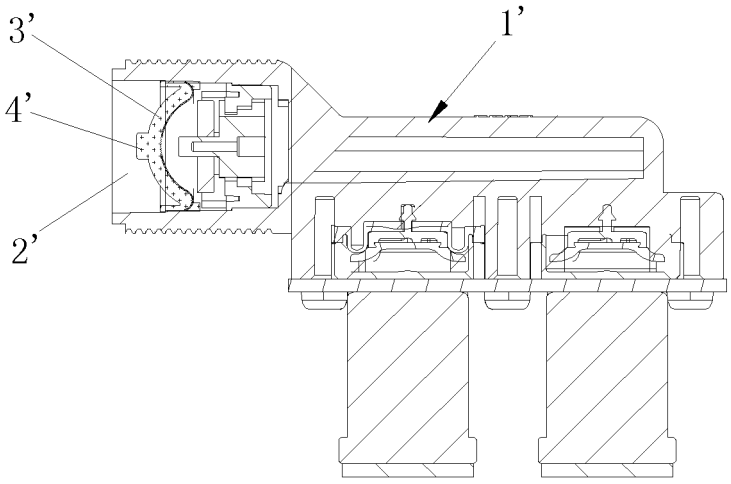

FIG.2

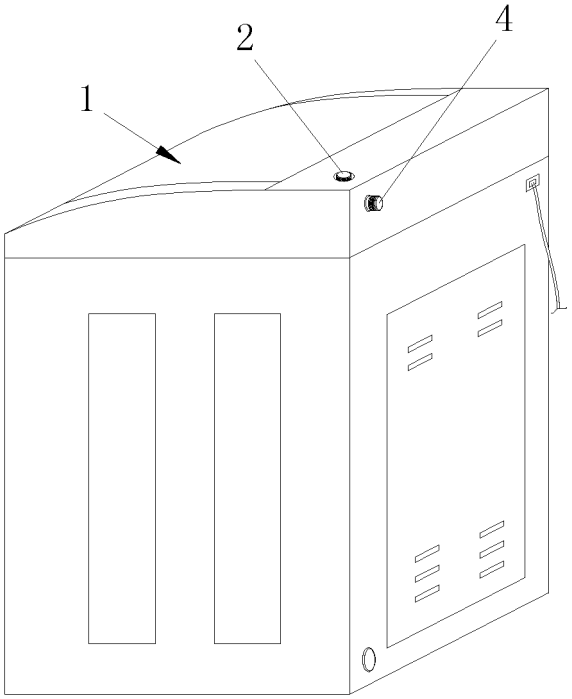

FIG.3

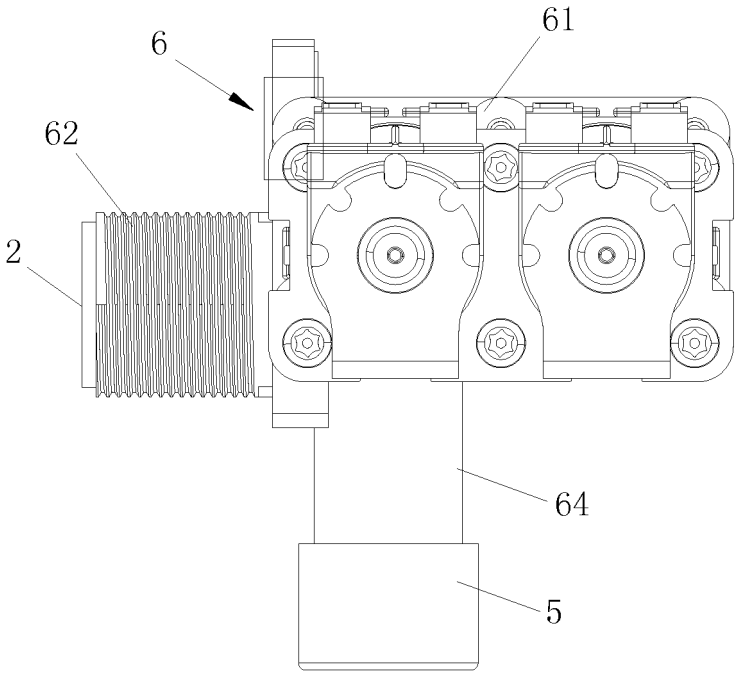

FIG.4

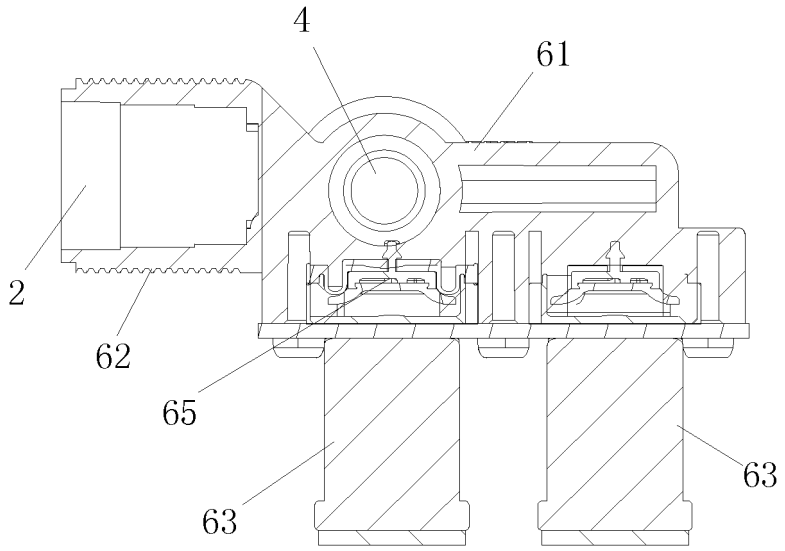

FIG.5

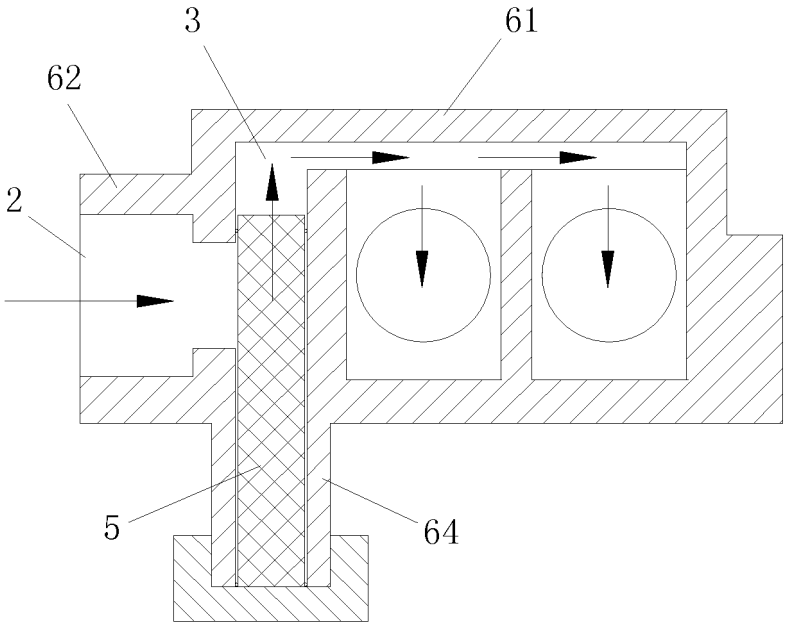

FIG.6

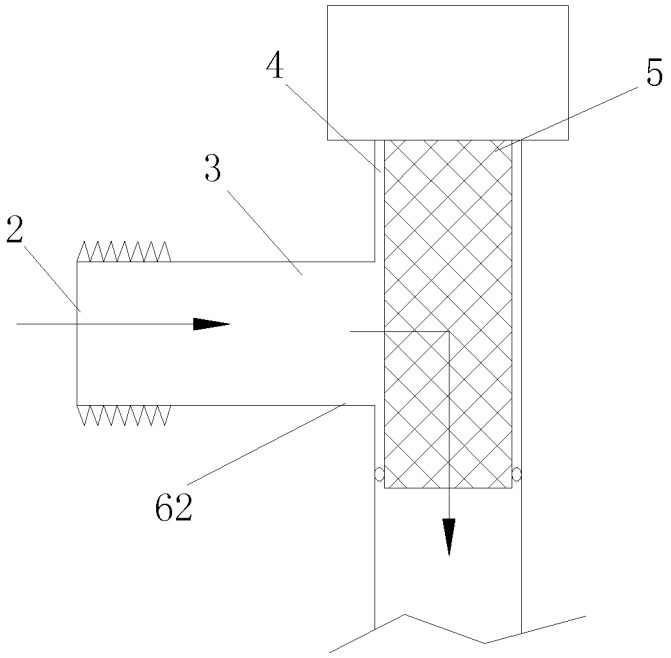

FIG.7

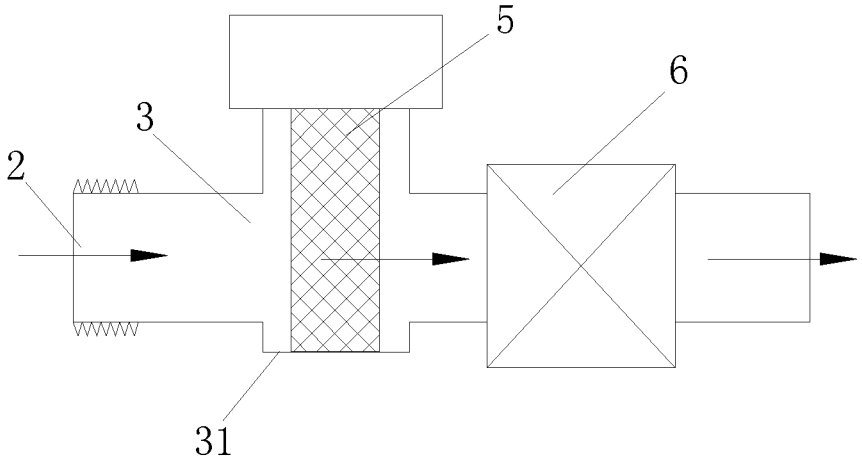

FIG.8

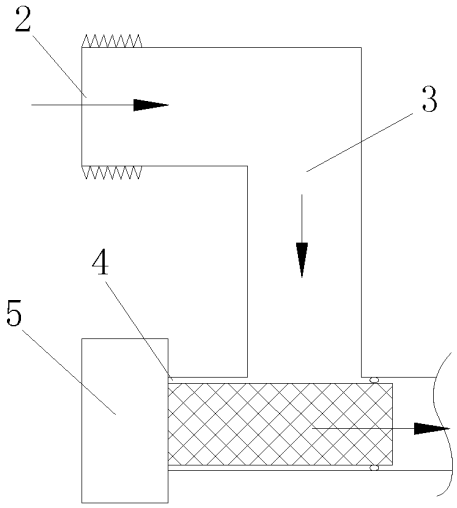

FIG.9

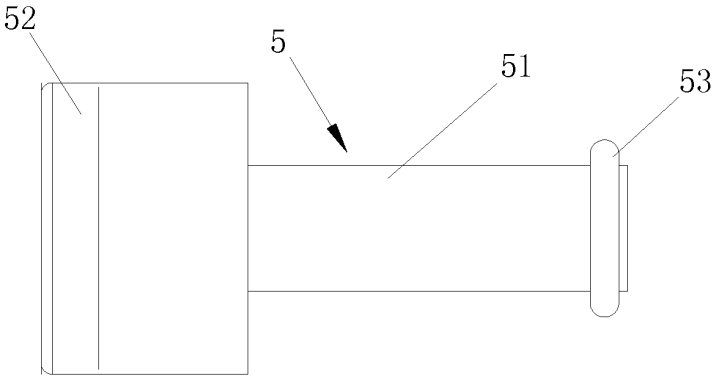

FIG.10

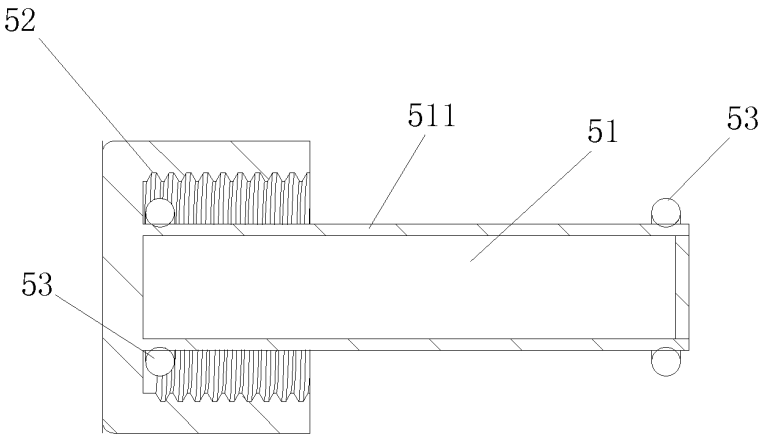

FIG.11

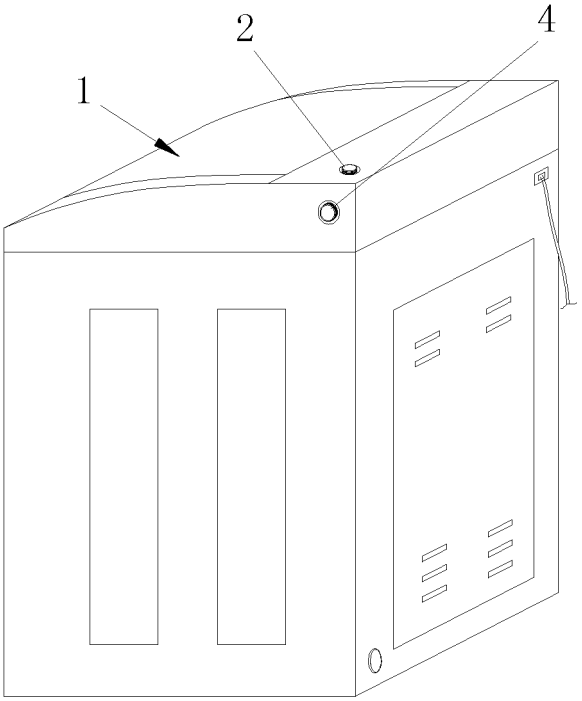

FIG.12

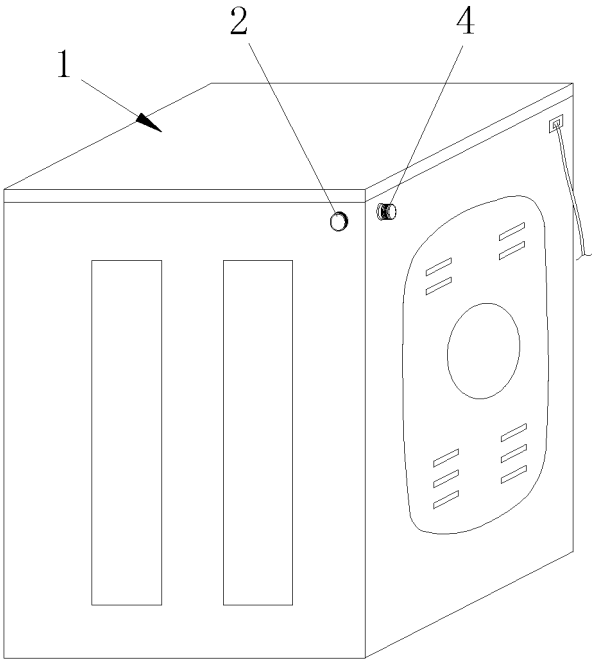

FIG.13

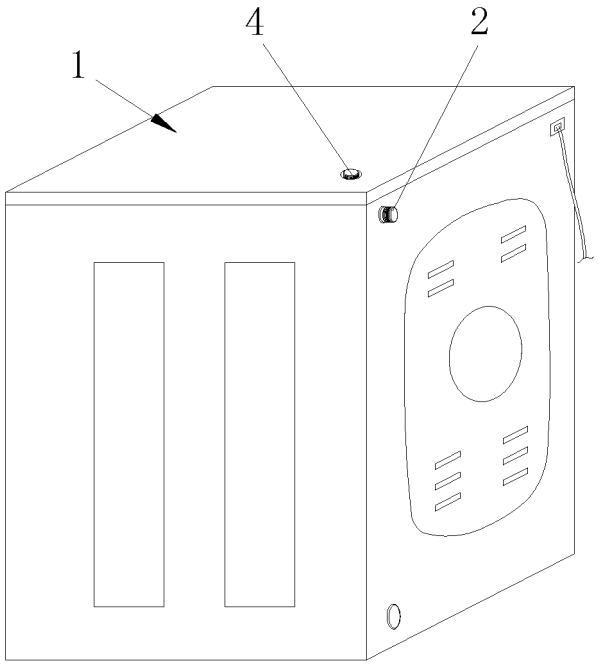

FIG.14

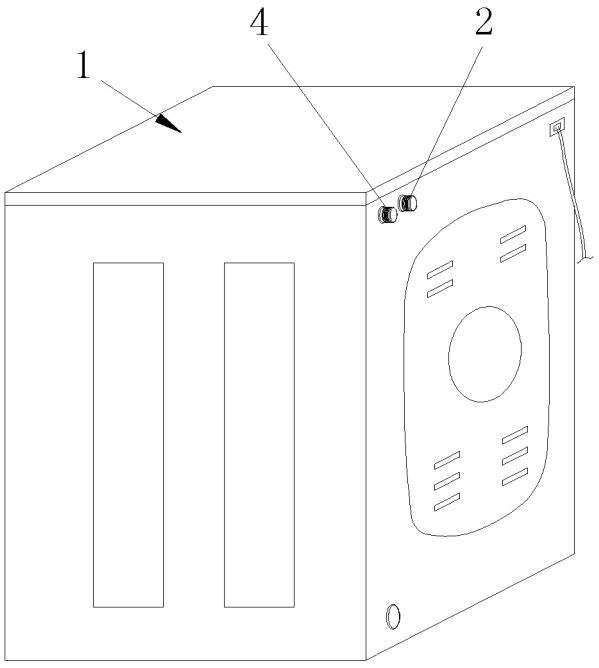

FIG.15

INTERNATIONAL SEARCH REPORT

International application No.
PCT/CN2014/091402

A. CLASSIFICATION OF SUBJECT MATTER

D06F 39/08 (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)

D06F

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)

CNABS, DWPI, SIPOABS, CNKI: filter, inlet, supply water, casing, housing, cabinet, casing, fixing opening filter, filtrate+, inlet, feed???, housing, casing, cabinet

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
E	CN 204199056 U (QINGDAO HAIER WASHING MACHINE CO.) 11 March 2015 (11.03.2015) claims 1-10	1-10
A	CN 202181455 U (HAIER GROUP et al.) 04 April 2012 (04.04.2012) description, paragraphs [0006]-[0013]	1-10
A	KR 20060036751 A (LG ELECTRONICS INC.) 02 May 2006 (02.05.2006) the whole document	1-10

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

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&"document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
15 June 2015	09 July 2015

Name and mailing address of the ISA	Authorized officer
State Intellectual Property Office of the P. R. China No. 6, Xitucheng Road, Jimenqiao Haidian District, Beijing 100088, China Facsimile No. (86-10) 62019451	CHEN, Pengfei Telephone No. (86-10) 62084627

Form PCT/ISA /210 (second sheet) (July 2009)

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/CN2014/091402

Patent Documents referred in the Report	Publication Date	Patent Family	Publication Date
CN 204199056 U	11 March 2015	None	
CN 202181455 U	04 April 2012	None	
KR 20060036751 A	02 May 2006	None	

Form PCT/ISA /210 (patent family annex) (July 2009)

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- CN 03130294 **[0009]**