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(72) Inventors:

- **CATALTEPE, Servet**
34445 Istanbul (TR)
- **AYAS, Recep**
34445 Istanbul (TR)
- **METIN, Ergin**
34445 Istanbul (TR)
- **BAYHAN, Ismet**
34445 Istanbul (TR)
- **AYHAN, Adem**
34445 Istanbul (TR)

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(71) Applicant: **Arçelik Anonim Sirketi**
34445 Istanbul (TR)

(54) **A WASHING MACHINE COMPRISING A RETAINER**

(57) The present invention relates to a washing machine (1) comprising a tub (2) wherein the laundry is washed; a hose (3) which is used for delivering the mains water to the tub (2) and for discharging the dirty water collected in the tub (2) at the end of the washing process; and a retainer (12) which enables the hose (3) to be fixed to the tub (2).

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Description

[0001] The present invention relates to a washing machine comprising a retainer which enables the hose to be easily mounted onto the tub.

[0002] In washing machines, a hose is used for delivering the mains water to the drum through the tub and for discharging the dirty water at the end of the washing process in the drum. Hoses or pipes used for discharging the water from the washing machine or delivering the same from the mains to the washing machine are grouped together and mounted to the washing machine. The use of locking members during the grouping and fixing operations is known. The dislodging of the hoses from the mounting position on the body causes the washing machine to be damaged during the washing process as well as loss of time and energy. Therefore, said hoses must be mounted to the washing machine in the correct mounting direction and properly fixed.

[0003] In the state of the art European Patent Document No. EP0915197, a household appliance for laundry washing/drying is disclosed, comprising a retainer having a U-shaped bend and two hose-fixing housings.

[0004] In the state of the art United States Patent Document No. US2012255330, a household appliance is disclosed, comprising a hose retainer composed of a first part having a guiding member at one end and a second part having a connection member at one end.

[0005] The aim of the present invention is the realization of a washing machine comprising a hose retainer which is firmly mounted in the direction predetermined by the producer.

[0006] The washing machine of the present invention comprises a single-piece hose retainer in the form of a clamp and a tub to which the retainer is fixed.

[0007] A pin is provided on the retainer, and a housing with the suitable for the placement of the pin is provided on the tub. Thus, the pin is seated into the housing and the retainer is aligned with the tub at a correct angle.

[0008] The retainer comprises a first plate and a second plate which can move away/towards each other, and a C-shaped clamp which connects the first and second plates to each other and which is suitable for the fitting of the hose. The clamp is disposed on a region of the hose and then aligned with the tub.

[0009] The first and second plates are aligned such that two holes provided thereon overlap. The tub further comprises a protrusion and an opening in the form of a connection hole which is provided on the protrusion. Said opening and the holes on the retainer are aligned and then fixed to each other by means of a connection member such as screw, etc.

[0010] In an embodiment of the present invention, the hose is corrugated. In said embodiment, the clamp has an extension in the form of a continuous protrusion on the inner surface thereof which is in contact with the hose. The corrugations on the hose are seated on this extension, thus providing a more durable mounting.

[0011] By means of the present invention, a washing machine is realized, comprising a hose which is prevented from dislodging from the retainer due to water pressure during operation and for which the mounting direction is correctly determined.

[0012] The model embodiments relating to the washing machine realized in order to attain the aim of the present invention are illustrated in the attached figures, where:

Figure 1 - is the general front view of the washing machine of the present invention.

Figure 2 - is the perspective view of the washing machine of the present invention in an embodiment wherein the tub, the hose and the hose retainer are mounted.

Figure 3 - is the perspective view of the hose retainer of the washing machine in an embodiment of the present invention.

Figure 4 - is the detailed view of a region of the tub where the hose retainer is mounted shown in the Region A in Figure 2.

[0013] The elements illustrated in the figures are numbered as follows:

1. Washing machine
2. Tub
3. Hose
4. Housing
5. Protrusion
6. First plate
7. Clamp
8. Second plate
9. Extension
10. Pin
11. Hole
12. Retainer
13. Screw
14. Opening

[0014] The washing machine (1) comprises a tub (2) wherein the laundry is washed; a hose (3) which is used for delivering the mains water to the tub (2) and for discharging the dirty water collected in the tub (2) at the end of the washing process; and a retainer (12) which enables the hose (3) to be fixed to the tub (2).

[0015] The washing machine (1) of the present invention comprises a housing (4) which is arranged on the tub (2) and which enables the hose (3) to be fixed to the tub (2) in the mounting direction predetermined by the producer and the retainer (12) having a pin (10) fitted into the housing (4). Thus, the retainer (12) is firmly aligned with the tub (12) by the operator in the mounting direction determined by the producer.

[0016] In an embodiment of the present invention, the washing machine (1) comprises the retainer (12) having a clamp (7) in the form of a C-shaped ring which is at

least partially open, a first plate (6) which is integrated with the clamp (7) and which extends towards the tub (2) from an open end of the clamp (7) and a second plate (8) which is integrated with the clamp (7), which overlaps with the first plate (6) and which extends towards the tub (2) from the other open end of the clamp (7). The retainer (12), by means of said form thereof, can be flexibly opened by holding the first plate (6) and the second plate (8) such that the hose (3) can be easily placed. Moreover, by means of said structure, the mounting region of the hose (3) is firmly gripped by the retainer, thus preventing the hose (3) from dislodging from the retainer (12).

[0017] In another embodiment of the present invention, the washing machine (1) comprises the retainer (12) having a pin (10) which is provided on the first plate (6) or the second plate (8). Thus, the hose (3) is enabled to be aligned with the housing (4) on the tub (2) in the correct mounting angle.

[0018] In an embodiment of the present invention, the washing machine (1) comprises the hose (3) having an indented, curved form such that the discharge or supply water is taken from the mains or discharged at the end of the washing process in a pressurized manner.

[0019] In an embodiment of the present invention, the washing machine (1) comprises the retainer (12) having the clamp (7) having an extension (9) whereon the recesses on a corrugated hose (3) can be fitted. Thus, the inner surface of the clamp (7) at the ring section supports the fixing of the hose (3).

[0020] In an embodiment of the present invention, the washing machine (1) comprises the tub (2) having a protrusion (5) and an opening (14) arranged on the protrusion (5); one hole (11) on the first plate (6) and the second plate (8) for mounting the retainer (12) to the opening (14) on the protrusion (5); and a screw (13) for fixing the opening (14) and the holes (11). Thus, after the retainer (12) is aligned with the tub (2), the tub (2) and the retainer (12) are fixed to each other.

[0021] By means of the present invention, a washing machine (1) is realized, comprising a retainer (12) which can be mounted to the tub (2) at the mounting angle predetermined by the producer.

2. A washing machine (1) as in Claim 1, **characterized by** the retainer (12) having a clamp (7) in the form of a C-shaped ring which is at least partially open, a first plate (6) which is integrated with the clamp (7) and which extends towards the tub (2) from an open end of the clamp (7) and a second plate (8) which is integrated with the clamp (7), which overlaps with the first plate (6) and which extends towards the tub (2) from the other open end of the clamp (7).

3. A washing machine (1) as in Claim 2, **characterized by** the retainer (12) having a pin (10) which is provided on the first plate (6) or the second plate (8).

4. A washing machine (1) as in any one of the above claims, **characterized by** the retainer (12) comprising the clamp (7) having an extension (9) whereon the recesses on a corrugated hose (3) can be fitted.

5. A washing machine (1) as in any one of the above claims, **characterized by** the tub (2) having a protrusion (5) and an opening (14) arranged on the protrusion (5); one hole (11) on the first plate (6) and the second plate (8) for mounting the retainer (12) to the opening (14) on the protrusion (5); and a screw (13) for fixing the opening (14) and the holes (11).

Claims

1. A washing machine (1) comprising a tub (2) wherein the laundry is washed; a hose (3) which is used for delivering the mains water to the tub (2) and for discharging the dirty water collected in the tub (2) at the end of the washing process; and a retainer (12) which enables the hose (3) to be fixed to the tub (2), **characterized by** a housing (4) which is arranged on the tub (2) and which enables the hose (3) to be fixed to the tub (2) in the mounting direction predetermined by the producer and the retainer (12) having a pin (10) fitted into the housing (4).

Figure 1

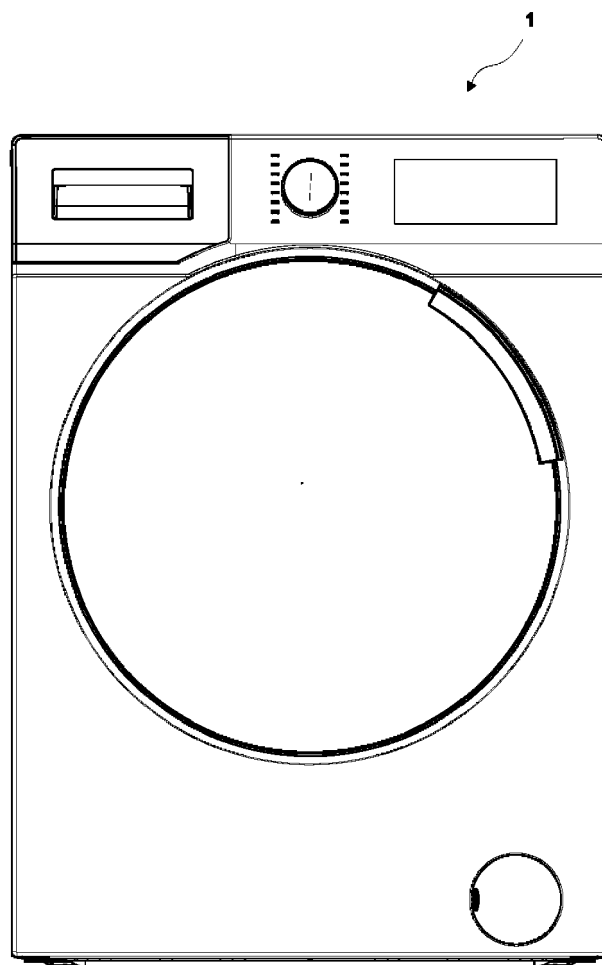


Figure 2

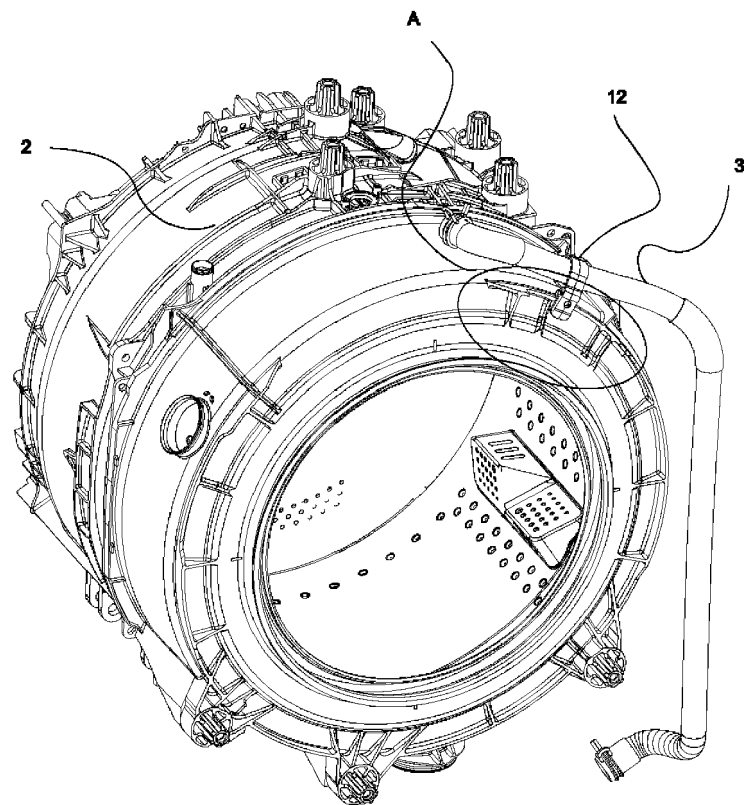


Figure 3

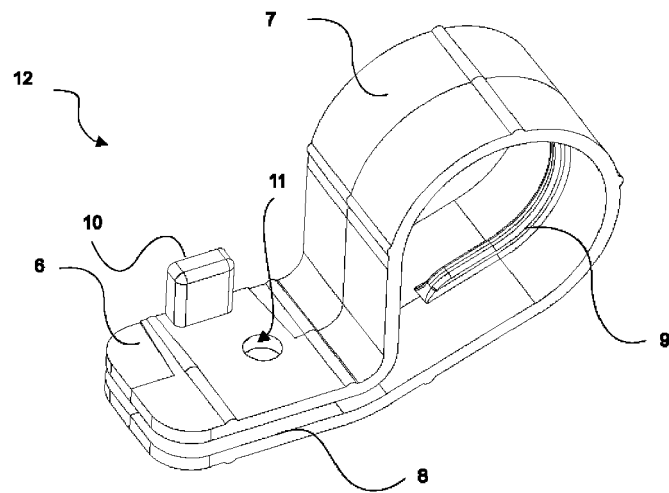
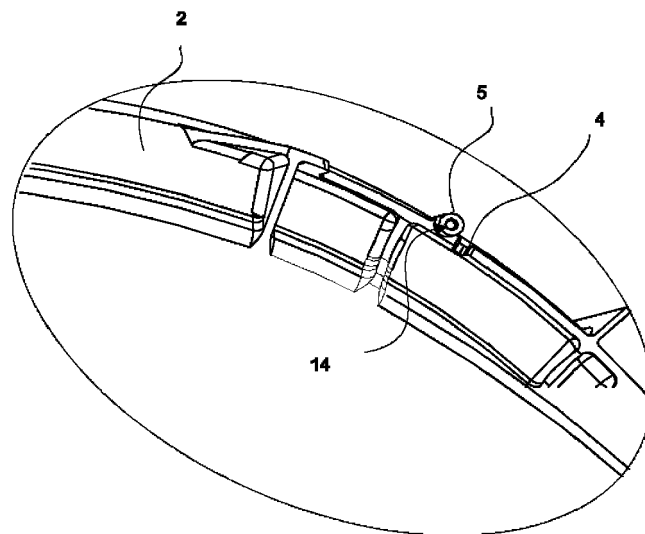


Figure 4





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Application Number
EP 20 20 3792

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The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 19 March 2021	Examiner Werner, Christopher
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

EPO FORM 1503 03.82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
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5 This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
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19-03-2021

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