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(54) **CLOTHING CARE MACHINE**

(57) The present invention provides a clothing care machine. The clothing care machine includes a machine body and a closure assembly disposed on the machine body. The closure assembly includes: an engaging member fixedly connected to the machine body; a cover body connected to the engaging member through a rotating shaft, where a buckle is disposed on the cover body, a door lock engaged with the buckle is disposed on the engaging member, and the door lock is configured to lock or unlock the cover body through pressing of the buckle;

and an elastic positioning portion, where the elastic positioning portion is disposed on at least one of the engaging member and the cover body. The elastic positioning portion is used to provide a displacement distance required by the door lock when the cover body is pressed; and when the cover body is locked, the elastic positioning portion abuts against the other one of the engaging member and the cover body, to prevent the closure assembly from shaking.

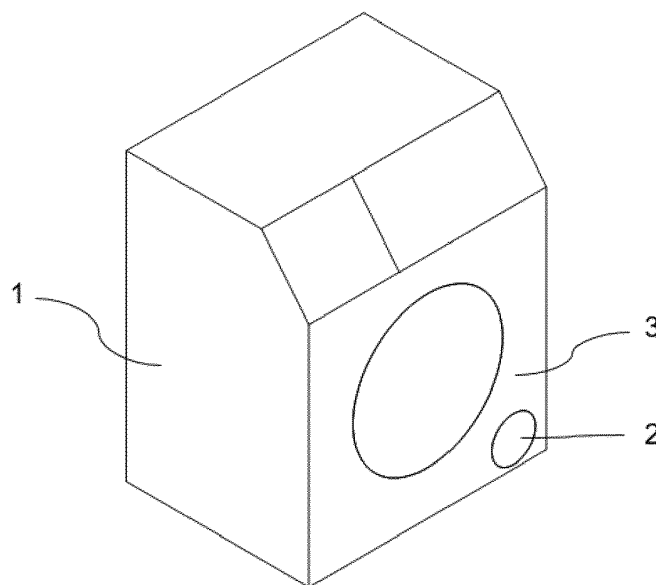


FIG. 1

Description

[0001] The present invention relates to the field of household appliance technologies, and specifically, to a clothing care machine.

[0002] At present, a closure of an access port of a clothing care machine is generally fixed on a machine body with a fastener. During overhauling, the closure needs to be first removed with a tool, bringing a lot of inconvenience to maintenance personnel in operation. Therefore, a press-type locking structure, for example, a press-type door lock structure disclosed in US4657291A, is considered to be used on the closure of the access port. However, when the press-type locking structure is used and after a cover body is locked, the cover body is prone to shaking due to lacking positioning support; even, noise is likely to be generated when a washing machine works.

[0003] One of objectives of embodiments of the present invention is to provide a clothing care machine, and in particular, to effectively alleviate at least one of the above technical problems.

[0004] An aspect of the embodiments of the present invention provides a clothing care machine, including a machine body and a closure assembly disposed on the machine body, the closure assembly being configured to open and close an access port, and characterized in that: the closure assembly includes: an engaging member fixedly connected to the machine body, where the engaging member includes a passage corresponding to the access port; a cover body connected to the engaging member through a rotating shaft, where a buckle is disposed on the cover body, a door lock engaged with the buckle is disposed on the engaging member, and the door lock is configured to lock or unlock the cover body through pressing of the buckle; and an elastic positioning portion, where the elastic positioning portion is disposed on at least one of the engaging member and the cover body; when the cover body is pressed, the elastic positioning portion is pushed and deformed to provide a displacement distance required by the buckle for pressing the door lock; and when the cover body is locked, the elastic positioning portion abuts against the other one of the engaging member and the cover body.

[0005] The elastic positioning portion provides a stable supporting force to the cover body when a locking operation is performed and after the cover body is locked, thereby improving stability of the cover body after the door lock is locked.

[0006] Optionally, there are at least two elastic positioning portions, and the at least two elastic positioning portions are symmetrically distributed relative to the door lock. This facilitates a uniform and stable supporting force for the cover body.

[0007] Optionally, one end of the elastic positioning portion is fixedly connected to one of the engaging member and the cover body, the other end is a free end, and when the cover body and the engaging member are locked, the free end is supported on the other one of the

engaging member and the cover body. The elastic positioning portion is fixedly connected to the closure assembly, thereby improving support stability of the elastic positioning portion.

[0008] Optionally, the elastic positioning portion includes a fixing portion fixedly connected to the engaging member and a boom portion formed by extending from the fixing portion. The formation of the boom portion causes the elastic positioning portion to be pushed and deformed. Therefore, it is easier to satisfy requirements of a distance of pressing.

[0009] Optionally, the other one of the cover body and the engaging member is provided with a boss in contact with the boom portion when the cover body is locked. The boom portion is pressed by the boss, so that a thrust can be applied to the elastic positioning portion and the cover body can be easily positioned.

[0010] Optionally, the elastic positioning portion includes the fixing portion fixedly connected to the engaging member and the boom portion formed by extending from the fixing portion. When the cover body is locked, the boss abuts against the boom portion, and an end of the boom portion is provided with a protrusion facing the boss. The protrusion can limit the boss when the boss applies a thrust.

[0011] Optionally, the boss on a side near a center of the machine body relative to the door lock is higher than the boss on the other side.

[0012] Optionally, the elastic positioning portion includes a spring or a rubber block.

[0013] Optionally, the elastic positioning portion and the engaging member or the cover body are manufactured integrally, facilitating manufacture and assembly of the elastic positioning portion and reducing material costs and process costs.

[0014] Optionally, the boss and the engaging member or the cover body are formed integrally, facilitating manufacture of the boss.

[0015] Optionally, the rotating shaft is located at the bottom of the access port. Because the rotating shaft is disposed at the bottom of the access port, after the cover body is pressed to unlock, the cover body automatically keeps the door open under actions of an elastic force of the door lock and a gravity of the cover body, requiring no additional operations performed by maintenance personnel.

[0016] Compared to the prior art, the technical solutions of the embodiments of the present invention have the following advantages. An access port of a clothing care machine of the present invention is provided with a closure assembly, and the closure assembly is in a press-type locking structure, so that maintenance personnel can conveniently and quickly open a cover body with one hand. Meanwhile, compared with a rigid positioning structure, an elastic positioning structure can satisfy requirements of a displacement distance of pressing of the press-type locking structure. In addition, when a locking operation is performed and after the cover body is locked,

the cover body is provided with a uniform and stable supporting force, so that the cover body is not prone to shaking. Therefore, when a clothing processing device works, the noise generated by shaking of a door can be reduced.

FIG. 1 is a schematic structural diagram of a clothing care machine according to an embodiment of the present invention;

FIG. 2 is a schematic structural diagram when a closure assembly is closed according to an embodiment of the present invention; and

FIG. 3 is a schematic structural diagram when a closure assembly is opened according to an embodiment of the present invention.

[0017] To make the above objectives, features and advantages of the present invention more obvious and comprehensible, specific embodiments of the present invention will be explained in detail below with reference to the accompanying drawings, but not intended to limit the scope of the present invention.

[0018] As shown in FIG. 1 to FIG. 3, in this embodiment, a clothing care machine includes a machine body 1, a closure assembly 2 is disposed on a front panel 3 of the machine body 1, and the closure assembly 2 is configured to open and close an access port. The access port may be an access configured to perform overhauling or a specific operation on the clothing care machine. For example, a closure and a sewage pipe of a draining pump, and/or a forcible door opening device, and/or an air inlet and a filter screen of a washing machine may be disposed inside the access port. The access port and the closure assembly 2 may be alternatively disposed as required at other positions of the machine body that are convenient for operations.

[0019] In this embodiment, the closure assembly 2 includes a cover body 4 and an engaging member 5, the cover body 4 is connected to the engaging member 5 through a rotating shaft 8, and the cover body 4 can be opened by being rotated about the rotating shaft 8. The engaging member 5 is provided with a passage corresponding to the access port, and is connected to the machine body 1 by a mechanical structure, for example, a fastener. The engaging member 5 may be further provided with a rotating shaft mounting base 9 engaged with the rotating shaft 8 to rotatably connect to the cover body 4.

[0020] A buckle 7 is disposed on the cover body 4, and a door lock 6 engaged with the buckle 7 is disposed on the engaging member 5. The cover body 4 is pressed to enable the buckle 7 on the cover body 4 to push an elastic element in the door lock 6, to lock and unlock the door lock 6.

[0021] An elastic positioning portion 10 is disposed on at least one of the engaging member 5 and the cover body 4, for example, on a surface of the cover body 4

facing the engaging member 5 and/or a surface of a flange of the engaging member 5 facing the cover body 4.

[0022] When the cover body 4 is pressed, the elastic positioning portion 10 is pushed and deformed to provide a displacement distance required by the buckle 7 for pressing the door lock 6; and when the cover body 4 is locked, the elastic positioning portion 10 abuts against the other one of the engaging member 5 and the cover body 4. The cover body 4 is supported and positioned by the elastic positioning portion 10 to prevent the cover body 4 from shaking when being locked and after being locked.

[0023] There may be at least two elastic positioning portions 10, and the at least two elastic positioning portions 10 are symmetrically distributed relative to the door lock. This facilitates a uniform and stable supporting force for the cover body 4.

[0024] One end of the elastic positioning portion 10 may be fixedly connected to one of the engaging member 5 and the cover body 4, and the other end is a free end. When the cover body 4 and the engaging member 5 are locked, the free end may be supported on the other one of the engaging member 5 and the cover body 4.

[0025] The elastic positioning portion 10 may include a fixing portion 11 fixedly connected to the engaging member and a boom portion 12 formed by extending from the fixing portion 11. The formation of the boom portion 12 causes the elastic positioning portion 10 to be pushed and deformed. Therefore, it is easier to satisfy requirements of a distance of pressing.

[0026] The other one of the cover body 4 and the engaging member 5 may be provided with a boss 14 abutting against the boom portion 12 when the cover body 4 is locked. A height of the boss may be designed according to a height of the front panel 3 relative to the engaging member. For example, in some specific cases, when the front panel 3 is curved and is fixedly connected to the engaging member 5 with a specific angle, the boss on a side near a center of the machine body 1 relative to the door lock 6 is higher than the boss on the other side, so that the cover body is flush with the front panel, and an appearance of the clothing care machine is aesthetic.

[0027] When the cover body 4 is locked, the boss 14 abuts against the boom portion 12, and an end of the boom portion 12 is provided with a protrusion 15 facing the boss 14. The protrusion 15 can limit the boss 14 when the boss 14 applies a thrust.

[0028] When the cover body is locked, the elastic positioning portion 10 is in contact with the boss 14 as a supporting structure, and meanwhile, the rotating shaft 8 and the door lock 6 are disposed to completely limit a degree of freedom of the cover body 4, to prevent the cover body 4 from shaking.

[0029] When the cover body is unlocked, the cover body 4 is pressed, the elastic positioning portion 10 is deformed, and the elastic element in the door lock 6 is pressed by the buckle on the cover body 4. After a distance required by the thrust to unlock is satisfied, the

door lock 6 is opened, and the cover body is opened by being rotated about the rotating shaft.

[0030] The elastic positioning portion 10 may be made of the same material as that of the engaging member 5 or the cover body, and is integrally formed with the engaging member 5 or the cover body 4, thereby facilitating manufacture of the elastic positioning portion 10 and reducing costs.

[0031] Certainly, the elastic positioning portion 10 may be alternatively designed as a spring or a rubber block fixedly connected to the engaging member 5 or the cover body 4. The spring or the rubber block may be integrally manufactured with the engaging member 5 or the cover body 4 by using an insert injection molding method, or may be connected to the engaging member 5 or the cover body 4 by other means such as gluing.

[0032] Preferentially, the rotating shaft 8 is disposed at the bottom of the access port. Because the rotating shaft 8 is disposed at the bottom of the access port, after the cover body 4 is pressed to unlock, the cover body 4 automatically keeps the door open under actions of an elastic force of the door lock 6 and a gravity of the cover body 4, requiring no additional operations performed by maintenance personnel.

[0033] At this point, it should be recognized by those skilled in the art that, although a plurality of exemplary embodiments of the present invention have been exhaustively shown and described herein, many other variations or modifications consistent with the principles of the present invention can still be directly determined or deduced from the disclosure of the present invention without departing from the spirit and scope of the present invention. Therefore, the scope of the present invention should be understood and held to cover all such other variations or modifications.

Claims

1. A clothing care machine, comprising a machine body (1) and a closure assembly (2) disposed on the machine body (1), the closure assembly (2) being configured to open and close an access port, **characterized in that** the closure assembly (2) comprises: an engaging member (5) fixedly connected to the machine body (1), wherein the engaging member (5) comprises a passage (13) corresponding to the access port; a cover body (4) connected to the engaging member (5) through a rotating shaft (8), wherein a buckle (7) is disposed on the cover body (4), a door lock (6) engaged with the buckle (7) is disposed on the engaging member (5), and the door lock (6) is configured to lock or unlock the cover body (4) through pressing of the buckle (7); and an elastic positioning portion (10), wherein the elastic positioning portion (10) is disposed on at least one of the engaging member (5) and the cover body (4);

when the cover body (4) is pressed, the elastic positioning portion (10) is pushed and deformed to provide a displacement distance required by the buckle (7) for pressing the door lock (6); and when the cover body (4) is locked, the elastic positioning portion (10) abuts against the other one of the engaging member (5) and the cover body (4).

2. The clothing care machine according to claim 1, **characterized in that** there are at least two elastic positioning portions (10), and the at least two elastic positioning portions (10) are symmetrically distributed relative to the door lock (6).
3. The clothing care machine according to claim 1, **characterized in that** one end of the elastic positioning portion (10) is fixedly connected to one of the engaging member (5) and the cover body (4), the other end is a free end, and when the cover body (4) and the engaging member (5) are locked, the free end is supported on the other one of the engaging member (5) and the cover body (4).
4. The clothing care machine according to claim 1, **characterized in that** the elastic positioning portion (10) comprises a fixing portion (11) fixedly connected to the engaging member (5) and a boom portion (12) formed by extending from the fixing portion (11).
5. The clothing care machine according to claim 4, **characterized in that** the other one of the cover body (4) and the engaging member (5) is provided with a boss (14) in contact with the boom portion (12) when the cover body (4) is locked.
6. The clothing care machine according to claim 5, **characterized in that** when the cover body (4) is locked, the boss (14) abuts against the boom portion (12), and one end of the boom portion (12) away from the fixing portion is provided with a protrusion (15) facing the boss (14).
7. The clothing care machine according to claim 5, **characterized in that** the boss (14) on a side near a center of the machine body (1) relative to the door lock (6) is higher than the boss (14) on the other side.
8. The clothing care machine according to claim 1, **characterized in that** the elastic positioning portion (10) comprises a spring or a rubber block.
9. The clothing care machine according to claim 1, **characterized in that** the elastic positioning portion (10) and the engaging member (5) or the cover body (4) are manufactured integrally.
10. The clothing care machine according to claim 6, **characterized in that** the boss (14) and the engag-

ing member (5) or the cover body (4) are formed integrally.

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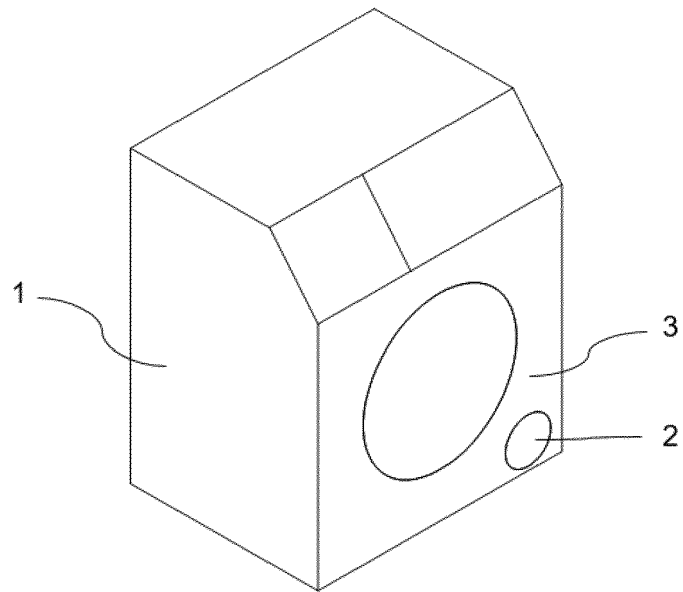


FIG. 1

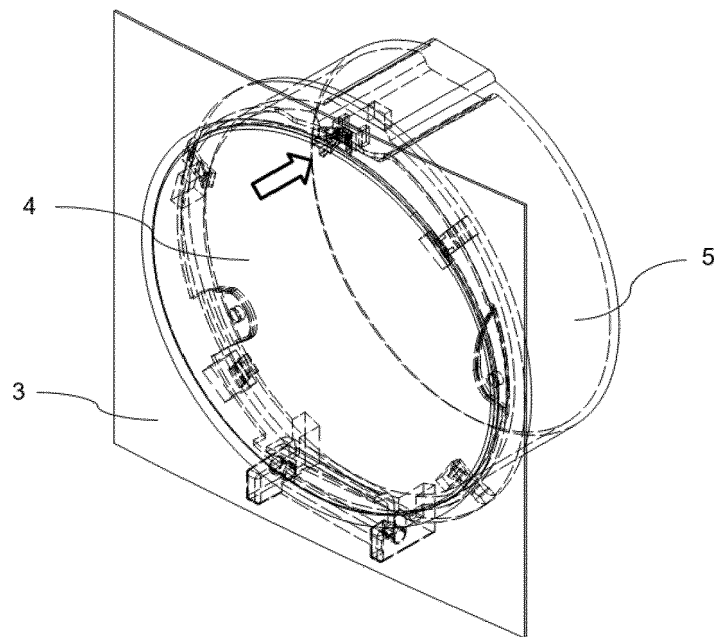


FIG. 2

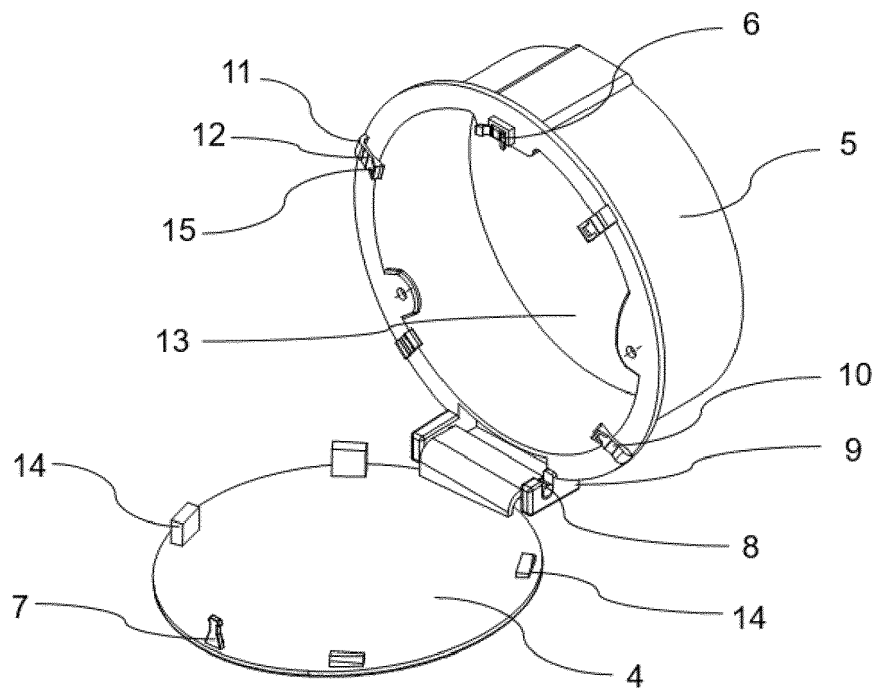


FIG. 3



EUROPEAN SEARCH REPORT

 Application Number
 EP 21 17 4953

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The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (IPC)
			D06F
Place of search		Date of completion of the search	Examiner
Munich		2 November 2021	Stroppa, Giovanni
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**ANNEX TO THE EUROPEAN SEARCH REPORT
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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

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