

## DESCRIPTION

### WASHING MACHINE

#### 5 TECHNICAL FIELD

**[0001]** The present disclosure relates to a washing machine.

#### BACKGROUND ART

**[0002]** PTL 1 discloses a washing machine including a damper mechanism that damps  
10 the closing movement of the lid.

**[0003]** The washing machine according to PTL 1 includes a top cover placed on top of a washing machine body, a lid provided so as to openably cover a clothes loading port formed on the top cover, and a rotary shock damper that damps a rotation of the lid pivotally supported by the top cover.

#### 15 Citation List

Patent Literature

**[0004]** PTL 1: WO 2018/042962 A

### SUMMARY OF THE INVENTION

20 **[0005]** The present disclosure provides a washing machine capable of preventing a finger from being pinched when the lid is opened or closed.

**[0006]** A washing machine according to the present disclosure is a washing machine including a housing that enables laundry to be loaded inside of the housing, from a top surface side of the housing in an installed orientation, and includes an upper frame, a  
25 laundry loading port, and a lid. The upper frame is disposed as an upper portion of the housing. The laundry loading port is formed in the upper frame in a manner enabling the laundry to be loaded inside. The lid openably covers the laundry loading port. The lid includes a lid plate, lid rotation shaft components, and lid rotation shafts. The lid rotation shaft components are fixed to a rear portion of the lid plate, the rear portion being on a rear  
30 side of the washing machine according to the present disclosure with the lid closed, in the installed orientation. The lid rotation shafts rotatably support the respective lid rotation shaft components. On a rear side of an upper portion of the upper frame, bearing spaces each having an opening facing upward are formed. Closure portions that close the

respective bearing spaces when the lid is opened are formed as lower portions of the respective lid rotation shaft components, the lower portions being lower when the lid is opened.

**[0007]** A washing machine according to the present disclosure is a washing machine including a housing that enables laundry to be loaded inside of the housing, from a top surface side of the housing in an installed orientation, and includes an upper frame, a laundry loading port, and a damper-compatible lid. The upper frame is disposed as an upper portion of the housing. The laundry loading port is formed in the upper frame in a manner enabling the laundry to be loaded inside. The damper-compatible lid openably covers the laundry loading port. The damper-compatible lid includes a lid plate, and a damper casing fixed to a rear portion of the lid plate, the rear portion being on the rear side of the washing machine according to the present disclosure, with the damper-compatible lid closed, in the installed orientation. The damper casing has damper housings, and each of the damper housings accommodates a damper that damps a closing movement of the damper-compatible lid. On the rear side in the upper portion of the upper frame, bearing spaces each having an opening facing upward are formed. A damper bearing to which a damper is to be attached is inserted in and fixed to each of the bearing spaces.

**[0008]** The washing machine according to the present disclosure can prevent a finger from being pinched when the lid is opened or closed.

## BRIEF DESCRIPTION OF THE DRAWINGS

**[0009]** Fig. 1 is a longitudinal sectional view illustrating a structure of a washing machine according to a first exemplary embodiment.

Fig. 2 is an exploded perspective view illustrating structures of and around a lid in the washing machine according to the first exemplary embodiment.

Fig. 3A is an external perspective view illustrating structures of and around the lid in the washing machine according to the first exemplary embodiment.

Fig. 3B is an enlarged external perspective view illustrating structures of and around a closure portion in the washing machine according to the first exemplary embodiment.

Fig. 4A is a longitudinal sectional view illustrating structures of and around a closure portion in the washing machine according to the first exemplary embodiment with the lid closed.

Fig. 4B is a longitudinal sectional view illustrating structures of and around a closure portion in the washing machine according to the first exemplary embodiment, in an orientation with the lid opened.

Fig. 5 is an exploded perspective view illustrating structures of and around a damper-compatible lid in the washing machine according to the first exemplary embodiment.

Fig. 6 is an exploded perspective view illustrating structures of and around a damper in the washing machine according to the first exemplary embodiment.

Fig. 7 is a longitudinal sectional view illustrating structures of and around a damper bearing, with a damper-compatible lid closed, in the washing machine according to the first exemplary embodiment.

#### DESCRIPTION OF EMBODIMENT

**[0010]** A washing machine according to the present disclosure is a washing machine including a housing that enables laundry to be loaded inside of the housing, from a top surface side of the housing in an installed orientation, and includes an upper frame, a laundry loading port, and a lid. The upper frame is disposed as an upper portion of the housing. The laundry loading port is formed in the upper frame in a manner enabling the laundry to be loaded inside. The lid openably covers the laundry loading port. The lid includes a lid plate, lid rotation shaft components, and lid rotation shafts. The lid rotation shaft components are fixed to a rear portion of the lid plate, the rear portion being on a rear side of the washing machine according to the present disclosure with the lid closed, in the installed orientation. The lid rotation shafts rotatably support the respective lid rotation shaft components. On a rear side of an upper portion of the upper frame, bearing spaces each having an opening facing upward are formed. Closure portions that close the respective bearing spaces when the lid is opened are formed as lower portions of the respective lid rotation shaft components, the lower portions being lower when the lid is opened.

**[0011]** In the washing machine according to the present disclosure, each of the closure portions may be provided with an abutment portion. The abutment portion is formed as a projection on the front surface of the lower portion, and abuts against the inner wall of the corresponding bearing space, in an orientation with the lid opened.

**[0012]** A washing machine according to the present disclosure is a washing machine

including a housing that enables laundry to be loaded inside of the housing, from a top surface side of the housing in an installed orientation, and includes an upper frame, a laundry loading port, and a damper-compatible lid. The upper frame is disposed as an upper portion of the housing. The laundry loading port is formed in the upper frame in a manner enabling the laundry to be loaded inside. The damper-compatible lid openably covers the laundry loading port. The damper-compatible lid includes a lid plate, and a damper casing fixed to a rear portion of the lid plate, the rear portion being on the rear side of the washing machine according to the present disclosure, with the damper-compatible lid closed, in the installed orientation. The damper casing has damper housings, and each of the damper housings accommodates a damper that damps a closing movement of the damper-compatible lid. On the rear side in the upper portion of the upper frame, bearing spaces each having an opening facing upward are formed. A damper bearing to which a damper is to be attached is inserted in and fixed to each of the bearing spaces.

**[0013]** The washing machines according to the present disclosure may share the upper frame as a common component.

**[0014]** Some exemplary embodiments will now be explained in detail with reference to some drawings. Note that the attached drawings and the following descriptions are provided for those skilled in the art to fully understand the present disclosure, and are not intended to limit the subject matter described in the appended claims.

**[0015]** (First exemplary embodiment)

Washing machines 10, 10A, and 10B according to a first exemplary embodiment will now be explained with reference to Figs. 1 to 7.

**[0016]** [1-1-1. Structure of washing machine]

Fig. 1 is a longitudinal sectional view illustrating a structure of washing machine 10 according to the first exemplary embodiment. In the present exemplary embodiment and other exemplary embodiments to be described later, regardless of whether lid 25 is open or closed, the vertical direction in the orientation where washing machine 10 is installed (corresponding to the installed orientation in the present disclosure), as illustrated in Fig. 1, may be referred to as the vertical direction. In the present exemplary embodiment and other exemplary embodiments described later, a left side of washing machine 10 in Fig. 1 is sometimes referred to as a front side, and a right side of washing machine 10 in Fig. 1 is sometimes referred to as a rear side. The same applies to washing machines 10A and 10B.

**[0017]** Fig. 1 illustrates common structures of washing machines 10A and 10B, to be described later, as a structure of washing machine 10. Washing machines 10A and 10B are washing machines where laundry can be loaded via a top surface of housing 11 in the installed orientation, and include at least upper frame 24 illustrated in Fig. 1, in particular,  
5 as a common structure.

**[0018]** Common structures of washing machines 10A and 10B will now be explained, using washing machine 10 illustrated in Fig. 1. As illustrated in Fig. 1, in washing machine 10, water tank 13 has a bottomed cylindrical shape, and is supported in housing 11, in a manner isolated from vibrations, via a suspension (not illustrated). Washing tub 15 also has  
10 a bottomed cylindrical shape, and is rotatably disposed inside water tank 13. In addition, a large number of water drainage holes 16 are formed on the side wall of washing tub 15, so that washing tub 15 is also used as a dewatering tub. Fluid balancer 17 is disposed on an upper portion of washing tub 15 to suppress abnormal vibrations of water tank 13 caused when laundry such as clothing (hereinafter, also simply referred to as "clothing") becomes  
15 decentered inside washing tub 15. Laundry is not limited to clothing, and refers to cloth or leather products such as bedclothing, curtains, carpet, and shoes that are washable in general washing machines.

**[0019]** Pulsator 18 is disposed rotatably at a center of the bottom of washing tub 15. Rotation shaft 14 is disposed in a manner passing through a bottom surface of washing tub  
20 15, and pulsator 18 is mounted on the top end of rotation shaft. Transmission mechanism 19 is mounted on the bottom end of the rotation shaft. Rotation shaft 14 has a two-shaft structure that is hollow, and is capable of rotating washing tub 15 and pulsator 18 independently. A deceleration gear (not illustrated), a clutch (not illustrated), and a brake (not illustrated) are incorporated inside transmission mechanism 19. Motor 20 is mounted  
25 on the bottom of water tank 13, and belt 23 is stretched across motor 20 and transmission mechanism 19. The rotational driving force of motor 20 is thus transmitted in order of motor-side pulley 21, belt 23, and mechanism-side pulley 22 provided to the transmission mechanism 19, thereby causing rotation shaft 14 to rotate.

**[0020]** Upper frame 24 is provided on top of housing 11. Upper frame 24 forms clothes loading port 24a that is an opening, and the clothes loading port 24a is openably covered  
30 by lid 25. By lifting and opening lid 25, a user can put clothing into or take out clothing from washing tub 15, via clothes loading port 24a. Clothes loading port 24a is an example of a laundry loading port according to the present disclosure, the laundry port being formed

in upper frame 24 in a manner through which laundry is loaded therein.

**[0021]** [1-1-2. Structures of and around lid]

Washing machine 10A not having damper 41, to be described later, will now be explained.

5 **[0022]** Fig. 2 is an exploded perspective view illustrating structures of and around lid 25, in the washing machine 10A. As illustrated in Fig. 2, lid 25 includes lid plate 26 that is a single lid made of glass, grip 27 where a user holds when opening or closing lid 25, and lid rotation shaft components 28 that support lid 25 on upper frame 24 via lid rotation shafts 29, respectively. Grip 27 is fixed to the front side of lid plate 26 with an adhesive, and lid  
10 rotation shaft components 28 are fixed to the rear side of lid plate 26 with a double-sided tape or the like for bonding. In other words, lid rotation shaft components 28 are fixed to the rear portion of lid plate 26, the rear portion being on the rear side of washing machine 10A with lid 25 closed, in the installed orientation.

**[0023]** Although lid plate 26 is made of glass in the present exemplary embodiment,  
15 plastic, metal, resin, or other materials may be used as long as grip 27 and lid rotation shaft components 28 can be fixed thereon. As a matter of course, something other than the double-sided tape may be used to fix lid rotation shaft components 28.

**[0024]** Lid rotation shafts 29 are passed through and fixed to lid rotation shaft components 28, respectively, and are rotatably supported by bearing holes 30, respectively,  
20 that are formed in upper frame 24. In other words, lid rotation shafts 29 rotatably support lid rotation shaft components 28, respectively. Thus, lid 25 is supported openably with respect to upper frame 24.

**[0025]** Bearing spaces 31, each having an opening facing upward, are provided on the rear side of the upper portion of upper frame 24 near lid rotation shaft components 28,  
25 respectively, and bearing spaces 31 are formed in such a manner that damper bearings 40, to be described later, can be inserted therein, respectively.

**[0026]** Although details will be described later, closure portions 32 are provided at the bottom ends of respective lid rotation shaft components 28. Closure portions 32 extend downwards with respect to lid plate 26, being downward when lid plate 26 (that is, lid 25)  
30 is opened, and are inserted into respective bearing spaces 31.

**[0027]** [1-1-3. Structures of and around bearing spaces]

Fig. 3A is an external perspective view illustrating structures of and around lid 25 in washing machine 10A, and Fig. 3B is an enlarged external perspective view illustrating

structures of and around closure portion 32 in washing machine 10A. Fig. 4A is a longitudinal sectional view illustrating structures of and around closure portion 32 in washing machine 10A with lid 25 closed, and Fig. 4B is a longitudinal sectional view illustrating structures of and around closure portion 32 in washing machine 10A with lid 25 opened. The right side in Figs. 4A and 4B corresponds to the front side of washing machine 10A.

**[0028]** As illustrated in Fig. 3A, when lid 25 is opened, lid 25 stands still in an orientation titled rearward with respect to the vertical direction. At this time, as illustrated in Fig. 3B, closure portions 32 cover the respective openings of bearing spaces 31 from the bottom.

**[0029]** As illustrated in Fig. 4A, when lid 25 is closed, closure portions 32 become positioned on the rear side. As illustrated in Fig. 4B, when lid 25 is opened, closure portions 32 close the front sides of respective bearing spaces 31. In other words, each closure portion 32 is formed as the lower portion of corresponding lid rotation shaft component 28, being lower in the orientation with lid 25 opened, so as to close corresponding bearing space 31 when lid 25 is opened. Abutment portion 33 is provided on a side surface of closure portion 32. When lid 25 is opened, abutment portion 33 is brought into abutment against wall surface 34 extending on the front side of bearing space 31, and keeps lid 25 open. In other words, abutment portion 33 is formed as a projection on the front surface of the lower portion, and abuts against wall surface 34 that is an inner wall of bearing space 31, in the orientation with the lid 25 opened.

**[0030]** An operation of the above structure when lid 25 is opened will now be explained.

**[0031]** While lid 25 is closed, lid plate 26 covers bearing spaces 31 from above. Therefore, user's fingers do not go into bearing spaces 31.

**[0032]** When the user grips grip 27 and opens lid 25, top openings of bearing spaces 31 gradually appear, from the front side, as lid 25 becomes open. Accordingly, closure portions 32 move down and forwards inside respective bearing spaces 31, and stop when abutment portions 33 are brought into abutment against respective wall surfaces 34. Even when lid 25 is open, because closure portions 32 cover the upper front portions of the respective bearing spaces 31, a user does not get his/her finger pinched therebetween.

**[0033]** When the movement of lid 25 being opened or closed is stopped halfway, the upward openings of bearing spaces 31 become temporarily exposed, so that user's finger may get inside of the space. However, because abutment portions 33 in the present exemplary embodiment are disposed in the manner described below, even if a finger goes

shallowly inside bearing space 31, the finger does not get pinched between abutment portion 33 and wall surface 34. In other words, as the operation of opening lid 25 takes place, corresponding closure portion 32 pushes up the finger and carries the finger out of bearing space 31. Abutment portion 33 is disposed so as to be brought into abutment against the lower front wall surface 34 of bearing space 31, after the finger is carried out of the bearing space 31.

**[0034]** [1-1-4. Structure using damper bearings]

Washing machine 10 according to the present exemplary embodiment is configured such a manner that a damper mechanism that damps a closing movement of a lid can be attached.

**[0035]** Washing machine 10B provided with damper 41, instead of lid rotation shaft components 28 in washing machine 10A, will now be explained. The same components as those in washing machine 10A are denoted by the same reference numerals, and description thereof will be omitted.

**[0036]** Fig. 5 is an exploded perspective view illustrating structures of and around damper-compatible lid 45 in washing machine 10B. As illustrated in Fig. 5, washing machine 10B includes damper-compatible lid 45, instead of lid 25 in washing machine 10A. Damper-compatible lid 45 is configured as a single lid, in the same manner as lid 25. Damper-compatible lid 45 openably covers clothes loading port 24a, and includes lid plate 26 and damper casing 48.

**[0037]** Damper casing 48 has damper housings 46. Each damper housing 46 accommodates damper 41 that damps a closing movement of damper-compatible lid 45. Damper casing 48 is fixed to a rear portion of lid plate 26 with a double-sided tape for bonding, for example. In other words, damper casing 48 is fixed to the rear portion of lid plate 26, the rear portion being on the rear side of the washing machine 10B with damper-compatible lid 45 closed, in the installed orientation. Damper housing covers 46a cover respective openings of damper housings 46, with dampers 41 housed therein. Note that, of course, something other than the double-sided tape may be used for fixing damper casing 48.

**[0038]** Fig. 6 is an exploded perspective view illustrating structures of and around damper 41 in washing machine 10B. Fig. 7 is a longitudinal sectional view illustrating structures of and around damper bearing 40, with damper-compatible lid 45 closed, in washing machine 10B. The right side of Fig. 7 corresponds to the front side of washing

machine 10B. As illustrated in Fig. 6, one end of damper 41 forms damper shaft 41a supported by damper bearing 40, and the other end forms damper fixture portion 41b fixed to damper housing 46.

**[0039]** In the washing machine 10B including dampers 41, instead of using bearing holes 30 of washing machine 10A, damper bearing 40 need to be attached. As illustrated in Fig. 6 and Fig. 7, damper bearing 40 is provided with damper shaft hole 40a on an inner side surface. Damper shaft hole 40a has a non-circular shape, and is configured to become engaged with damper shaft 41a, and to cancel a rotational moment received from damper shaft 41a. The shape of damper shaft hole 40a is not limited to the shape illustrated in Fig. 6 and Fig. 7, and may have a shape allowing the rotational moment received from damper shaft 41a to be cancelled, in a manner matched with the shape of damper shaft 41a.

Damper bearing pedestal 40b extending horizontally rearward is provided on the bottom of damper bearing 40, and screw hole 40c is provided in damper bearing pedestal 40b. As mentioned earlier, bearing spaces 31 each having an opening facing upward are provided on the rear side of the upper portion of upper frame 24. Damper bearing 40 is fixed to the bottom surface of each bearing space 31 with screw 42 via screw hole 40c. In other words, damper bearing 40 where damper 41 is to be mounted, is inserted and fixed inside bearing space 31. With these structures, damper bearings 40 are configured to withstand the force generated when dampers 41 damp the closing movement of damper-compatible lid 45.

**[0040]** In washing machine 10B, damper bearings 40 close upper portion of respective bearing spaces 31, so that there is no gap between bearing space 31 and damper bearing 40 where a user's finger enters.

**[0041]** As described above, bearing space 31 in the present exemplary embodiment is enabled to accommodate either one of lid rotation shaft 29 and damper bearing 40.

Therefore, washing machine 10B with the damper mechanism and washing machine 10A without the damper mechanism can be manufactured using upper frame 24 manufactured as a common component. Hence, manufacturing cost can be reduced.

**[0042]** [1-2. Effects and others]

As described above, washing machine 10A according to the first exemplary embodiment is a washing machine where laundry such as clothing can be loaded via an top surface of housing 11, the top surface being top in an installed orientation, and includes upper frame 24, clothes loading port 24a that is an example of the laundry loading port according to the present disclosure, and lid 25. Upper frame 24 is disposed as an upper

portion of housing 11. Clothes loading port 24a is formed in upper frame 24 in a manner through which laundry is loaded therein. Lid 25 openably covers clothes loading port 24a. Lid 25 includes lid plate 26, lid rotation shaft components 28, and lid rotation shafts 29.

Lid rotation shaft components 28 are fixed to the rear portion of lid plate 26, the rear portion being on the rear side of washing machine 10A with lid 25 closed, in the installed orientation. Lid rotation shafts 29 rotatably support lid rotation shaft components 28, respectively. Bearing spaces 31 each having an opening facing upward are formed on the rear side of the upper portion of upper frame 24, and closure portions 32 that close respective bearing spaces 31 when lid 25 is opened are formed as lower portions of respective lid rotation shaft components 28, the lower portions being lower in the orientation with lid 25 opened.

**[0043]** With such a configuration, closure portions 32 close respective bearing spaces 31 when lid 25 is opened. Hence, in washing machine 10A, insertion of a finger into bearing spaces 31 can be prevented.

**[0044]** Therefore, in washing machine 10A, when lid 25 is opened, a finger can be prevented from being pinched between the inner wall of bearing space 31 and lid rotation shaft component 28. In other words, washing machine 10A can prevent a finger from being pinched when lid 25 is opened and closed.

**[0045]** As in washing machine 10A in the present exemplary embodiment, each closure portion 32 may be provided with abutment portion 33. Abutment portion 33 is formed as a projection on the front surface of the lower portion, and abuts against the inner wall of corresponding bearing space 31, in the orientation with the lid 25 opened.

**[0046]** As a result, closure portion 32 abuts against a lower portion of the inner wall of bearing space 31, but does not abut against a portion of the inner wall of bearing space 31, near the opening of bearing space 31.

**[0047]** Therefore, in washing machine 10A, when lid 25 is opened, if a finger is put in a shallow position of bearing space 31, the finger is not pinched between the inner wall of bearing space 31 and lid rotation shaft component 28. In other words, washing machine 10A can prevent a finger from being pinched when lid 25 is opened and closed.

**[0048]** Washing machine 10B according to the present exemplary embodiment is a washing machine where laundry such as clothing can be loaded via an top surface of a housing 11 in the installed orientation, and includes upper frame 24, clothes loading port 24a that is an example of the laundry loading port according to the present disclosure, and

damper-compatible lid 45. Upper frame 24 is disposed as an upper portion of housing 11. Clothes loading port 24a is formed in upper frame 24 in a manner through which laundry is loaded therein. Damper-compatible lid 45 openably covers clothes loading port 24a.

Damper-compatible lid 45 includes lid plate 26 and damper casing 48 fixed to the rear portion of lid plate 26, the rear portion being on the rear side of washing machine 10B with damper-compatible lid 45 closed, in the installed orientation. Damper casing 48 has damper housings 46, and each damper housing 46 accommodates damper 41 that damps a closing movement of damper-compatible lid 45. Bearing spaces 31 each having an opening facing upward is formed on the rear side of the upper portion of upper frame 24, and damper bearing 40 where damper 41 is to be mounted, is inserted and fixed inside bearing space 31.

**[0049]** As a result, bearing spaces 31 are configured in such a manner that damper bearings 40, configured to withstand the force generated by dampers 41 when dampers 41 damp the closing movement of damper-compatible lid 45, can be installed, respectively.

**[0050]** Therefore, washing machine 10B improves the operability of the user, and, in washing machine 10B, a finger does not get into bearing space 31. In other words, washing machine 10B can prevent the finger from being pinched when the damper-compatible lid 45 is opened and closed.

**[0051]** Washing machine 10A and washing machine 10B according to the present exemplary embodiment may share upper frame 24 as a common component.

**[0052]** Upper frame 24 according to the exemplary embodiment has the same shape as washing machine 10A including no damper mechanism and washing machine 10B including a damper mechanism.

**[0053]** Therefore, components of upper frame 24 can be shared between washing machine 10A not provided with the damper mechanism and washing machine 10B provided with the damper mechanism. Therefore, manufacturing cost can be reduced.

**[0054]** (Other exemplary embodiments)

The first exemplary embodiment has been described above, as some examples of the technology according to the present disclosure. The technique according to the present disclosure is not, however, limited thereto.

**[0055]** Therefore, some other exemplary embodiments will be explained as examples.

**[0056]** In the first exemplary embodiment, lid rotation shaft 29 that is a component separate from lid rotation shaft component 28 has been described, as an example of the lid

rotation shaft according to the present disclosure, the lid rotation shaft rotatably supporting the lid rotation shaft component according to the present disclosure. The lid rotation shaft according to the present disclosure may have any configuration that rotatably supports the lid rotation shaft component according to the present disclosure, and thus is not limited to being a separate component. For example, the lid rotation shaft according to another exemplary embodiment may be formed as a part of the lid rotation shaft component according to another exemplary embodiment, or may be formed as a part of the top cover. **[0057]** Explained in the first exemplary embodiment as an example of the lid according to the present disclosure is lid 25 that is formed as lid plate 26. The lid according to the present disclosure may have any configuration that includes lid plate according to the present disclosure and that openably covers the laundry loading port according to the present disclosure. Therefore, it is possible for the lid not to be formed of a single lid. For example, a lid according to another exemplary embodiment may include a two foldable lids, an example of the lid plate according to the present disclosure.

#### INDUSTRIAL APPLICABILITY

**[0058]** The present disclosure is applicable to a washing machine including a lid that openably covers the top surface of the washing machine. Specifically, the present disclosure is applicable to a washing machine such as a top-loading-type washing machine or a twin-tub washing machine.

#### REFERENCE MARKS IN THE DRAWINGS

**[0059]** 10: washing machine  
10A: washing machine  
10B: washing machine  
11: housing  
13: water tank  
14: rotation shaft  
15: washing tub  
16: water drainage hole  
17: fluid balancer  
18: pulsator  
19: transmission mechanism

|    |                              |
|----|------------------------------|
|    | 20: motor                    |
|    | 21: motor-side pulley        |
|    | 22: mechanism-side pulley    |
|    | 23: belt                     |
| 5  | 24: upper frame              |
|    | 24a: clothes loading port    |
|    | 25: lid                      |
|    | 26: lid plate                |
|    | 27: grip                     |
| 10 | 28: rotation shaft component |
|    | 29: lid rotation shaft       |
|    | 30: bearing hole             |
|    | 31: bearing space            |
|    | 32: closure portion          |
| 15 | 33: abutment portion         |
|    | 34: wall surface             |
|    | 40: damper bearing           |
|    | 40a: damper shaft hole       |
|    | 40b: damper bearing pedestal |
| 20 | 40c: screw hole              |
|    | 41: damper                   |
|    | 41a: damper shaft            |
|    | 41b: damper fixture portion  |
|    | 42: screw                    |
| 25 | 45: damper-compatible lid    |
|    | 46: damper housing           |
|    | 46a: damper housing cover    |
|    | 48: damper casing            |

## CLAIMS

1. A washing machine including a housing that enables laundry to be loaded inside of the housing, from a top surface side of the housing in an installed orientation, the washing machine comprising:

an upper frame disposed as an upper portion of the housing;

a laundry loading port in the upper frame, the laundry loading port passing the laundry to be loaded inside the housing; and

a lid openably covering the laundry loading port, wherein the lid includes

a lid plate,

a lid rotation shaft component fixed to a rear portion of the lid plate, the rear portion being on a rear side of the washing machine with the lid closed, in the installed orientation, and

a lid rotation shaft rotatably supporting the lid rotation shaft component,

a bearing space having an opening facing upward is formed on a rear side of an upper portion of the upper frame, and

a closure portion that closes the bearing space when the lid is opened is formed as a lower portion of the lid rotation shaft component, the lower portion being lower when the lid is opened.

2. The washing machine according to Claim 1, wherein the closure portion is provided with an abutment portion that is formed as a projection on a front surface of the lower portion, and abuts against an inner wall of the bearing space, in an orientation with the lid opened.

3. A washing machine including a housing that enables laundry to be loaded inside of the housing, from a top surface side of the housing in an installed orientation, the washing machine comprising:

an upper frame disposed as an upper portion of the housing;

a laundry loading port formed in the upper frame in a manner enabling the laundry to be loaded inside; and

a damper-compatible lid openably covering the laundry loading port, wherein

the damper-compatible lid includes

a lid plate, and

a damper casing having a damper housing that accommodates a damper that  
damps closing movement of the damper-compatible lid, and fixed to a rear portion of the  
5 lid plate, the rear portion being on a rear side of the washing machine with the damper-  
compatible lid closed, in the installed orientation,

a bearing space having an opening facing upward is formed on a rear side of an  
upper portion of the upper frame, and

a damper bearing where the damper is mounted is inserted and fixed inside the  
10 bearing space.

4. The washing machine according to any one of Claims 1 to 3, wherein the  
upper frame is a common component.