WASHING MACHINE

BACKGROUND

1. Technical Field

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

2. Description of the Related Art

[0002] Patent Literature 1 discloses a washing machine including a liquid washing agent feeding device configured to automatically feed an appropriate amount of a liquid washing agent.

[0003] The washing machine disclosed in Patent Literature 1 includes: the liquid washing agent feeding device; a tank configured to store the liquid washing agent in amounts allowing washing operation to be performed a plural number of times; and a case configured to accommodate the tank. The tank is configured such that, when moved in the vertical direction, the tank can be removed from or attached to the case.

Citation List

[0004] Patent Literature 1: Japanese Unexamined Patent Application Publication No. 2019-181023

SUMMARY

[0005] The present disclosure provides a washing machine configured to more easily refilling a liquid agent tank for storing a liquid agent with the liquid agent and thereby substantially prevent contamination around the liquid agent tank.

[0006] In one aspect, the washing machine according to the present disclosure comprises a washing tub, a liquid agent tank, a liquid agent automatic feeding device, and a liquid agent tank accommodation unit. The washing tub is configured to accommodate the laundry. The liquid agent tank is configured to store a liquid, and includes an opening being provided in an upper face of the liquid agent tank when the liquid agent tank is in an installed state. The liquid agent automatic feeding device is configured to feed the liquid from the liquid agent tank into the washing tub. The liquid agent tank accommodation unit is configured to accommodate the liquid agent tank and connect the liquid agent tank to the liquid agent automatic feeding device. Furthermore, the liquid agent tank is configured to be attachable to and detachable from the liquid agent automatic feeding device, and is

engaged with the liquid

agent tank accommodation unit at a first position at which the opening is open outward.

[0006a] In another aspect, the present disclosure refers to a washing machine that allows laundry to be put into a casing from a top portion of the casing when the washing machine is in an installed state, the washing machine comprising a lower casing being a constituent of the casing, a washing tub disposed inside the lower casing and formed in a shape of a cylinder with a bottom, the cylinder being open toward the top portion, an upper casing being a constituent of the casing, disposed in an upper portion of the lower casing, and including a loading opening for the laundry, the loading opening communicating with the washing tub, a liquid agent tank configured to store the liquid and including an opening in an upper face of the liquid agent tank and a liquid agent automatic feeding device configured to feed the liquid stored in the liquid agent tank into the washing tub, wherein the liquid agent automatic feeding device is formed in a shape of a box open toward the loading opening, and includes, a liquid agent tank accommodation unit configured to accommodate the liquid agent tank, and a connection unit configured to be detachably connected to the liquid agent tank, wherein the liquid agent tank includes, a first engagement unit configured to be engaged with the liquid agent tank accommodation unit at a position at which the opening is open outward, and a second engagement unit configured to be engaged with the liquid agent tank accommodation unit in a state in which the liquid agent tank is connected to the connection unit.

[0006b] In yet another aspect, the present disclosure refers to a washing machine, comprising a washing tub configured to accommodate laundry, a liquid agent tank configured to store a liquid, a liquid agent tank accommodation unit formed in a box shape and configured to accommodate the liquid agent tank, and a liquid agent automatic feeding device configured to feed the liquid stored in the liquid agent tank into the washing tub, wherein, at a second position at which the liquid agent tank is accommodated in the liquid agent tank accommodation unit, the liquid agent tank is connected to the liquid agent automatic feeding device and fixed to the liquid agent tank accommodation unit by a lock unit, and, in a state in which fixing by the lock unit is released, the liquid agent tank is hooked to the liquid agent tank accommodation unit at a first position forward of the second position.

[0006c] In yet another aspect, the present disclosure refers to a washing machine that allows laundry to be put into a casing from a top portion of the casing when the washing

machine is in an installed state, the washing machine comprising a lower casing being a constituent of the casing, a washing tub disposed inside the lower casing and formed in a shape of a cylinder with a bottom, the cylinder being open toward the top portion, an upper casing being a constituent of the casing, disposed in an upper portion of the lower casing, and including a loading opening for the laundry, the loading opening communicating with the washing tub, a liquid agent tank configured to store the liquid, and a liquid agent automatic feeding device configured to feed the liquid stored in the liquid agent tank into the washing tub, wherein the liquid agent automatic feeding device is formed in a shape of a box open toward the loading opening, and includes a liquid agent tank accommodation unit configured to accommodate the liquid agent tank, and a connection unit configured to be detachably connected to the liquid agent tank, wherein the liquid agent tank includes a lever, the lever being configured to be engaged with the liquid agent tank accommodation unit in a state in which the liquid agent tank is connected to the connection unit.

[0007] The washing machine according to the present disclosure makes it possible to more easily refill the liquid agent tank for storing a liquid agent with the liquid agent and thereby substantially prevent contamination around the liquid agent tank.

BRIEF DESCRIPTION OF THE DRAWINGS

[0008] FIG. 1 is an external perspective view of the configuration of a washing machine in Embodiment 1 in a state in which a lid of the washing machine is closed.

FIG. 2 is an external perspective view of the configuration of the washing machine in Embodiment 1 in a state in which the lid of the washing machine is opened.

FIG. 3 is an external perspective view of the configuration of a water supply unit of the washing machine and its surroundings in Embodiment 1 in a state in which a detergent case, a detergent tank, and a softening agent tank are drawn out.

FIG. 4 is a back view of the configuration of the water supply unit of the washing machine and its surroundings in Embodiment 1.

FIG. 5 is an exploded perspective view of the configuration of the water supply unit of the washing machine and its surroundings in Embodiment 1.

FIG. 6 is a top view of the configuration of the water supply unit of the washing machine and its surroundings in Embodiment 1, except a flow-path lid unit.

FIG. 7 is a top view of the water supply unit of the washing machine and its surroundings in Embodiment 1, except the flow-path lid unit, in a state in which the

detergent case, the detergent tank, and the softening agent tank are removed.

FIG. 8 is a cross-sectional view of the water supply unit and its surroundings, taken along line F-F in FIG. 7.

FIG. 9 is a top view of the water supply unit of the washing machine and its surroundings in Embodiment 1, except the flow-path lid unit, in a state in which the detergent case, the detergent tank, and the softening agent tank are drawn out.

FIG. 10 is a cross-sectional view of the water supply unit and its surroundings, taken along line B-B in FIG. 7.

FIG. 11 is a cross-sectional view of the water supply unit and its surroundings, taken along line E-E in FIG. 7.

FIG. 12 is a cross-sectional view of the water supply unit and its surroundings, taken along line C-C in FIG. 7.

FIG. 13 is a cross-sectional view of the water supply unit and its surroundings,