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(54) CONTROL METHOD AND APPARATUS FOR WASHING MACHINE, WASHING MACHINE AND STORAGE MEDIUM

(57) The invention relates to a control method and apparatus for a washing machine, a washing machine and a storage medium. The control method for the washing machine includes: entering (S100) into a target working mode, where the target working mode is a mode of washing a to-be-cleaned object in the washing machine through a first washing object; stopping (5200) adding into a washing bucket a second washing object dispensed into a washing material box in the washing machine, where the second washing object is different from the first washing object in shape, form, size, flavor, brand and/or effect; and washing (S300) the to-be-cleaned object through the first washing object under the target working mode.

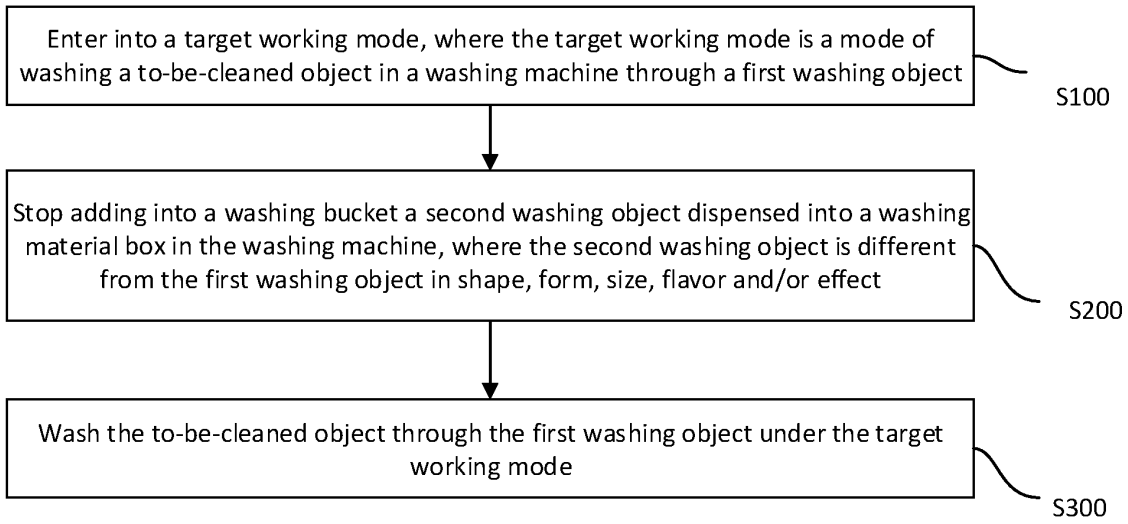

Figure 1

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Description

TECHNICAL FIELD

[0001] The invention relates to the technical field of control of electric appliances, in particular to a control method and apparatus for a washing machine, a washing machine and a storage medium.

BACKGROUND OF THE INVENTION

[0002] With the development of household electrical equipment, household appliances have more and more functions and are becoming more intelligent. There are various types of household appliances, and a washing machine, as one of the most frequently used household appliances in daily life, can be used to clean clothes. There are various types and functions of washing machines, and different types of washing machines have different functions, resulting in different effects on washed clothes.

SUMMARY OF THE INVENTION

[0003] The invention provides a control method and apparatus for a washing machine, a washing machine and a storage medium.

[0004] A first aspect of examples of the invention provides a control method for a washing machine, including: entering into a target working mode, where the target working mode is a mode of washing a to-be-cleaned object in the washing machine through a first washing object; stopping adding into a washing bucket a second washing object dispensed into a washing material box in the washing machine, where the second washing object is different from the first washing object in shape, form, size, flavor, brand and/or effect; and washing the to-be-cleaned object through the first washing object under the target working mode.

[0005] In an example, the first washing object includes: laundry capsules; and the second washing object includes: washing powder and/or a liquid detergent.

[0006] In an example, washing the to-be-cleaned object through the first washing object includes:

receiving first information of the first washing object dispensed into the washing bucket, where the first information at least includes: a weight and label information, and the label information is used to represent ingredients and effects of the first washing object, materials of applicable to-be-cleaned objects and a proportion of the applicable to-be-cleaned objects in a space of the washing bucket; obtaining second information of the to-be-cleaned object, where the second information includes: a material of the to-be-cleaned object and a proportion of the to-be-cleaned object in the space of the washing bucket; determining first washing parameters according to the first information and the second information, where the first washing parameters at least include: a number of times of washing, a number of times of rinsing as well as washing time, a water temperature and a water level of individual washing; and washing the to-be-cleaned object according to the first washing parameters.

[0007] In an example, receiving first information of the first washing object dispensed into the washing bucket includes: receiving the first information sent by a preset device in communication connection with the washing machine, where the first information is determined by the preset device according to an input operation related to the first washing object received by the preset device.

[0008] In an example, receiving second information of the to-be-cleaned object includes: receiving the second information sent by a preset device in communication connection with the washing machine, where the second information is determined by the preset device according to an input operation related to the to-be-cleaned object received by the preset device.

[0009] In an example, washing the to-be-cleaned object through the first washing object includes:

washing the to-be-cleaned object according to preset second washing parameters, where the second washing parameters at least include: a number of times of washing, a number of times of rinsing as well as washing time, a water temperature and a water level of individual washing.

[0010] In an example, the method further includes: entering into a mode of washing the to-be-cleaned object in the washing machine through the second washing object so as to wash the to-be-cleaned object in a case of not entering into the target working mode.

[0011] In an example, entering into a target working mode includes: receiving a startup instruction of starting the target working mode, and entering into the target working mode according to the startup instruction; or, entering into the target working mode according to a preset start button on the washing machine.

[0012] A second aspect of examples of the invention provides a control apparatus for a washing machine, including: an entering module, configured to enter into a target working mode, where the target working mode is a mode of washing a to-be-cleaned object in the washing machine through a first washing object; a stopping module, configured to stop adding into a washing bucket a second washing object dispensed into a washing material box in the washing machine, where the second washing object is different from the first washing object in shape, form, size, flavor, brand and/or effect; and a washing module, configured to wash the to-be-cleaned object through the first washing object under the target working mode.

[0013] In an example, the first washing object includes: laundry capsules; and the second washing object includes: washing powder and a liquid detergent.

[0014] In an example, the washing module includes:

a first receiving unit, configured to receive first information of the first washing object dispensed into

the washing bucket, where the first information at least includes: a weight and label information, and the label information is used to represent ingredients and effects of the first washing object, materials of applicable to-be-cleaned objects and a proportion of the applicable to-be-cleaned objects in a space of the washing bucket;

a second receiving unit, configured to receive second information of the to-be-cleaned object, where the second information includes: a material of the to-be-cleaned object and a proportion of the to-be-cleaned object in the space of the washing bucket;

a determining unit, configured to determine first washing parameters according to the first information and the second information, where the first washing parameters at least include: a number of times of washing, a number of times of rinsing as well as washing time, a water temperature and a water level of individual washing; and

a first washing unit, configured to wash the to-be-cleaned object according to the first washing parameters.

[0015] In an example, the first receiving unit is configured to receive the first information sent by a preset device in communication connection with the washing machine, where the first information is determined by the preset device according to an input operation related to the first washing object received by the preset device.

[0016] In an example, the second receiving unit is configured to receive the second information sent by a preset device in communication connection with the washing machine, where the second information is determined by the preset device according to an input operation related to the to-be-cleaned object received by the preset device.

[0017] In an example, the washing module includes:

a second washing unit, configured to wash the to-be-cleaned object according to preset second washing parameters, where the second washing parameters at least include: a number of times of washing, a number of times of rinsing as well as washing time, a water temperature and a water level of individual washing.

[0018] In an example, the washing module is further configured to:

enter into a mode of washing the to-be-cleaned object in the washing machine through the second washing object so as to wash the to-be-cleaned object in a case of not entering into the target working mode.

[0019] In an example, the entering module includes:

a first access unit, configured to receive a startup instruction of starting the target working mode, and enter into the target working mode according to the startup instruction;

or,

a second access unit, configured to enter into the target working mode according to a preset start button on the washing machine.

[0020] A third aspect of examples of the invention provides a washing machine, including:

a processor and a memory configured to store executable instructions capable of running on the processor, where: when the processor is configured to run the executable instructions, the method of any example above is implemented.

[0021] A fourth aspect of examples of the invention provides a non-transitory computer-readable storage medium, storing computer-executable instructions, where when the computer-executable instructions executed by a processor, cause the processor to implement the method of any example above.

[0022] The technical solution provided by the examples of the invention may include the following beneficial effects:

according to the solution provided by the examples of the invention, after the washing machine enters into the target working mode, the second washing object dispensed into the washing material box in the washing machine is stopped being added into the washing bucket, the target working mode is a mode of washing the to-be-cleaned object in the washing machine through the first washing object, the second washing object is different from the first washing object in shape, form, size, flavor, brand and/or effect, etc., and under the target working mode, the to-be-cleaned object is washed through the first washing object.

[0023] Under the target working mode, after the addition of the second washing object is stopped, the impact of re-adding the second washing object on the effect of the first washing object when the first washing object is used to wash clothes can be reduced, the mutual impact between the different washing objects is reduced, and thus the maximum effect of the first washing object can be achieved conveniently, and the washing effect of the first washing object is improved.

[0024] It is to be understood that the above general descriptions and later detailed descriptions are merely exemplary and illustrative, and do not limit the invention.

BRIEF DESCRIPTION OF DRAWINGS

[0025] The accompanying drawings here are incorporated into the specification and constitute a part of the specification, show examples consistent with the invention, and together with the specification, are used to explain the principles of the invention.

Fig. 1 is a schematic diagram of a control method for a washing machine illustrated according to an example.

Fig. 2 is a schematic diagram of washing illustrated according to an example.

Fig. 3 is a control apparatus for a washing machine illustrated according to an example.

Fig. 4 is a block diagram of a washing machine illustrated according to an example.

DETAILED DESCRIPTION OF THE INVENTION

[0026] Examples will be described in detail here, and instances of the examples are shown in the accompanying drawings. When the following description refers to the accompanying drawings, unless otherwise indicated, the same numbers in different accompanying drawings indicate the same or similar elements. The implementations described in the following examples do not represent all possible implementations consistent with the invention. Rather, they are merely instances of apparatuses consistent with some aspects of the invention as detailed in the appended claims.

[0027] Referring to Fig. 1, it is a schematic diagram of a control method for a washing machine, the method may be performed by the washing machine, and the method includes:

S100: a target working mode is entered into, where the target working mode is a mode of washing a to-be-cleaned object in the washing machine through a first washing object.

S200: a second washing object dispensed into a washing material box in the washing machine is stopped being added into a washing bucket, where the second washing object is different from the first washing object in shape, form, size, flavor and/or effect.

[0028] S300: the to-be-cleaned object is washed through the first washing object under the target working mode.

[0029] For S100, the washing machine has different working modes, the washing machine in this example has the target working mode, that is, the washing machine may enter into the target working mode to work. The target working mode is the mode of washing the to-be-cleaned object through the first washing object, namely a washing mode of adding the first washing object alone to be used as a detergent.

[0030] The first washing object may be a detergent having a washing effect, and may be one of washing powder, a liquid detergent, laundry capsules, etc. The first washing object may be determined according to actual use requirements.

[0031] Besides the target working mode, the washing machine further has other working modes, for example, a plurality of working modes different from the target working mode, and under these working modes, the washing machine may wash the to-be-cleaned object through the second washing object.

[0032] There may be many ways to enter into the target working mode, and it may be determined according to actual use requirements.

[0033] For example, a startup instruction of starting the target working mode is received, and the target working mode is entered into according to the startup instruction.

[0034] The washing machine may be in communication connection with a preset device, for example, the communication connection is achieved through a local area network, through Bluetooth or through other manners. In a case that the washing machine is in communication connection with the preset device, the preset device and the washing machine are paired, and the washing machine may perform information interaction with the preset device.

[0035] The preset device may be a mobile terminal, such as a remote control, a mobile phone, a tablet computer and other devices that may control the washing machine, as long as a preset device which can control the washing machine to enter into the target working mode. For example, the remote control may be a factory-configured remote control for the washing machine, used as a dedicated remote control for the washing machine.

[0036] The preset device has a touch display screen and/or keys, and the touch display screen and/or the keys are used to perform corresponding configurations according to users' operations. For example, the preset device may configure the target working mode for the washing machine, and may determine a working mode of the washing machine according to users' operations. After a target mode is entered into according to users' operations, a startup instruction is generated and sent to the washing machine, and the startup instruction is used to control the washing machine to enter into the target working mode.

[0037] After receiving the startup instruction, the washing machine enters into the target working mode according to the startup instruction.

[0038] For another example, the target working mode is entered into according to a preset start button on the washing machine.

[0039] The washing machine has a preset start button of the target working mode, and the preset start button is used to control the washing machine to enter into the target working mode according to a start operation of a user. After the user presses the start button, the washing machine enters into the target working mode.

[0040] For another example, the washing machine has a preset display screen, the preset display screen displays a control interface, the control interface has a start control, the start control may be used to receive the start operation of the user, and the washing machine enters into the target working mode in response to the start operation.

[0041] For S200, the second washing object dispensed into the washing material box in the washing machine is stopped being added into the washing bucket, where the second washing object is different from the first

washing object in shape, form, size, flavor, brand and/or effect.

[0042] The washing machine has the washing material box inside, and the washing material box is used to store the washing object, e.g., storing a detergent. In this example, the washing material box is used to store the second washing object. The second washing object is different from the first washing object, and the first washing object and the second washing object are two different washing objects. The difference here may include the difference in any parameter, and the parameters here may include parameters in a list of ingredients, a shape, a form, a size, a flavor, an effect and/or a brand, etc.

[0043] For example, the first washing object is washing powder, and the second washing object is a liquid detergent. The first washing object is laundry capsules, and the second washing object is a liquid detergent. The first washing object is laundry capsules, and the second washing object is washing powder.

[0044] The washing material box in the washing machine may be located inside the washing machine, and the washing machine may control whether the second washing object in the washing material box is added into the washing bucket according to a working mode. Under the target working mode, the washing machine may stop adding the second washing object into the washing bucket. In this way, the first washing object may be used to clean the to-be-cleaned object in the washing bucket, and the impact of the second washing object on the effect of the first washing object is reduced.

[0045] The second washing object dispensed into the washing material box in the washing machine may include a second washing object dispensed into the washing material box before the target working mode is entered into, that is, the second washing object may be stored in the washing material box in advance, and the washing material box has stored the second washing object before the target working mode is entered into.

[0046] The second washing object may further be a second washing object dispensed into the washing material box by a user during washing after the target working mode is entered into.

[0047] The step of stopping adding into the washing bucket the second washing object dispensed into the washing material box in the washing machine may include:

[0048] the second washing object which has been stored in the washing material box before the target working mode is entered into is stopped being added into the washing machine, or, the second washing object dispensed into the washing material box after the target working mode is entered into is stopped being added into the washing machine.

[0049] The step of stopping adding into the washing bucket the second washing object dispensed into the washing material box in the washing machine may include: a channel between the washing material box and the washing bucket is closed, for example, a preset switch is turned off, where the preset switch is used to control drawing of the second washing object into the washing bucket. For another example, a preset water pump is turned off, a water outlet of the preset water pump is connected with the washing material box, and a water stream output by the preset water pump is used to flush the second washing object in the washing material box into the washing bucket.

[0050] For S300, the to-be-cleaned object is washed through the first washing object under the target working mode.

[0051] Under the target working mode, after the addition of the second washing object is stopped, the impact of re-adding the second washing object on the effect of the first washing object when the first washing object is used to wash clothes can be reduced, the mutual impact between the different washing objects is reduced, and thus the maximum effect of the first washing object can be achieved conveniently, and the washing effect of the first washing object is improved.

[0052] In an example, the first washing object has been dispensed into the washing machine before the startup instruction is received.

[0053] In an example, the first washing object includes: laundry capsules. The second washing object includes: washing powder and a liquid detergent.

[0054] The laundry capsules are different from the washing powder in shape and size, and different from the liquid detergent in form.

[0055] In an example, the first washing object is first laundry capsules, the second washing object is second laundry capsules, and the first laundry capsules and the second laundry capsules are different in component.

[0056] In an example, referring to Fig. 2, it is a schematic diagram of washing, and S300 that the to-be-cleaned object is washed through the first washing object includes:

[0057] S301: first information of the first washing object dispensed into the washing bucket is received, where the first information at least includes: a weight and label information, and the label information is used to represent ingredients and effects of the first washing object, materials of applicable to-be-cleaned objects and a proportion of the applicable to-be-cleaned objects in a space of the washing bucket.

[0058] S302: second information of the to-be-cleaned object is received, where the second information includes: a material of the to-be-cleaned object and a proportion of the to-be-cleaned object in the space of the washing bucket.

[0059] S303: first washing parameters are determined according to the first information and the second information, where the first washing parameters at least include: a number of times of washing, a number of times of rinsing as well as washing time, a water temperature and a water level of individual washing.

[0060] S304: the to-be-cleaned object is washed according to the first washing parameters.

[0061] For S301, when the to-be-cleaned object is washed through the first washing object, the washing machine may receive the first information, and the first information is the information of the first washing object and at least includes the weight and the label information of the first washing object. The weight may represent the quantity or volume of the first washing object. For example, the first washing object is laundry capsules, and then the weight is the quantity of the laundry capsules, such as 1 and 2. For another example, the first washing object is a liquid detergent, and then the weight is the volume of the liquid detergent, such as a volume with milliliter as the unit.

[0062] The label information is used to represent ingredients and effects of the first washing object, materials of applicable to-be-cleaned objects and a proportion of the applicable to-be-cleaned objects in a space of the washing bucket. Different first washing objects are different in label information, and the label information may at least include ingredients, effects, materials of applicable to-be-cleaned objects and a proportion of the applicable to-be-cleaned objects in a space of the washing bucket.

[0063] The ingredients may be information included in a list of ingredients, such as component information, and in a case of different ingredients, the effect of the first washing object and the applicable to-be-cleaned objects may also be different.

[0064] The effects may include: cleaning, brightening, enhancing fragrance, whitening, sterilizing, softening, static removal, etc. The different first washing objects may be different in effect, and the first washing object needs to be determined according to the to-be-cleaned object.

[0065] The materials of the applicable to-be-cleaned objects may include: fiber materials, wool materials, leather materials, as well as materials such as cotton, linen, polyester and silk. The different first washing objects may be different in material of the applicable to-be-cleaned object, and the first washing object needs to be determined according to the to-be-cleaned object.

[0066] The proportion of the applicable to-be-cleaned objects in the space of the washing bucket may be a volume of the to-be-cleaned object which can be effectively cleaned by the first washing object, and with the volume of the washing bucket as the reference, the proportions of the to-be-cleaned object to which the unit weight of first washing object is applicable in the space of the washing bucket are different. For example, the first washing object is laundry capsules, the proportion of a to-be-cleaned object to which one laundry capsule is applicable in the space of the washing bucket is one half, and then two laundry capsules are needed.

[0067] In an example, the washing machine may receive first information sent by the preset device in communication connection with the washing machine. The first information is determined by the preset device according to an input operation related to the first washing object received by the preset device.

[0068] In addition to sending the startup instruction to the washing machine, the preset device may send the first information to the washing machine, the first information is determined by the preset device according to a first configuration operation of a user, the first configuration operation may configure the first information, and then the preset device may send the first information to the washing machine.

[0069] For S302, the washing machine may further obtain the second information of the to-be-cleaned object, and the second information includes: the material of the to-be-cleaned object and the proportion of the to-be-cleaned object in the space of the washing bucket.

[0070] The second information may further be obtained from the preset device, the second information sent by the preset device in communication connection with the washing machine is received, and the second information is determined by the preset device according to the input operation related to the to-be-cleaned object received by the preset device.

[0071] The second information may further be sent to the washing machine, the second information is determined by the preset device according to a second configuration operation of a user, the second configuration operation may configure the second information, and then the preset device may send the second information to the washing machine.

[0072] For S303, the first washing parameters are determined according to the first information and the second information. The first washing parameters at least include: a number of times of washing, a number of times of rinsing as well as washing time, a water temperature and a water level of individual washing.

[0073] In a case that the first information and/or the second information are/is different, the first washing parameters may also be different. The number of times of washing, the number of times of rinsing as well as the washing time of individual washing, the water temperature of individual washing and the water level of individual washing may affect the washing effect, and the first washing parameters may be determined according to the first information and the second information, so that a preset effect is achieved.

[0074] For S304, the to-be-cleaned object is washed according to the first washing parameters after the first washing parameters are determined.

[0075] In another example, washing the to-be-cleaned object through the first washing object includes:

[0076] the to-be-cleaned object is washed according to preset second washing parameters, where the second washing parameters at least include: a number of times of washing, a number of times of rinsing as well as washing time, a water temperature and a water level of individual washing.

[0077] In this example, the second washing parameters are set in advance, after the washing machine enters into the target working mode, the to-be-cleaned

object in the washing machine is washed according to the second washing parameters, and the second washing parameters are default washing parameters.

[0078] In an example, the control method further includes:

[0079] a mode of washing the to-be-cleaned object in the washing machine through the second washing object is entered into so as to wash the to-be-cleaned object in a case of not entering into the target working mode.

[0080] If the washing machine does not receive the startup instruction of entering into the target working mode, or receives an instruction of entering into other working descriptions, then the to-be-cleaned object is washed through the mode of washing the to-be-cleaned object in the washing machine through the second washing object. The second washing object may be determined according to an actual working mode and/or the to-be-cleaned object.

[0081] For example, the to-be-cleaned object in the washing machine may further be washed according to a default washing mode.

[0082] In an example, referring to Fig. 3, it is a schematic diagram of a control apparatus for a washing machine, and the apparatus includes:

an entering module 1, configured to enter into a target working mode, where the target working mode is a mode of washing a to-be-cleaned object in the washing machine through a first washing object;

a stopping module 2, configured to stop adding into a washing bucket a second washing object dispensed into a washing material box in the washing machine, where the second washing object is different from the first washing object in shape, form, size, flavor, brand and/or effect; and

a washing module 3, configured to wash the to-be-cleaned object through the first washing object under the target working mode.

[0083] In an example, the first washing object includes: laundry capsules; and the second washing object includes: washing powder and a liquid detergent.

[0084] In an example, the washing module 3 includes:

a first receiving unit, configured to receive first information of the first washing object dispensed into the washing bucket, where the first information at least includes: a weight and label information, and the label information is used to represent ingredients and effects of the first washing object, materials of applicable to-be-cleaned objects and a proportion of the applicable to-be-cleaned objects in a space of the washing bucket;

a second receiving unit, configured to receive second information of the to-be-cleaned object, where the second information includes: a material of the to-be-cleaned object and a proportion of the to-be-cleaned object in the space of the washing bucket;

a determining unit, configured to determine first washing parameters according to the first information and the second information, where the first washing parameters at least include: a number of times of washing, a number of times of rinsing as well as washing time, a water temperature and a water level of individual washing; and

a first washing unit, configured to wash the to-be-cleaned object according to the first washing parameters.

[0085] In an example, the first receiving unit is configured to receive the first information sent by a preset device in communication connection with the washing machine, where the first information is determined by the preset device according to an input operation related to the first washing object received by the preset device.

[0086] In an example, the second receiving unit is configured to receive the second information sent by a preset device in communication connection with the washing machine, where the second information is determined by the preset device according to an input operation related to the to-be-cleaned object received by the preset device.

[0087] In an example, the washing module 3 includes: a second washing unit, configured to wash the to-be-cleaned object according to preset second washing parameters, where the second washing parameters at least include: a number of times of washing, a number of times of rinsing as well as washing time, a water temperature and a water level of individual washing.

[0088] In an example, the washing module 3 is further configured to:
enter into a mode of washing the to-be-cleaned object in the washing machine through the second washing object so as to wash the to-be-cleaned object in a case of not entering into the target working mode.

[0089] In an example, the entering module 1 includes:

a first access unit, configured to receive a startup instruction of starting the target working mode, and enter into the target working mode according to the startup instruction;
or,

a second access unit, configured to enter into the target working mode according to a preset start button on the washing machine.

[0090] In another example, a washing machine is further provided, including:

a processor and a memory configured to store ex-

ecutable instructions capable of running on the processor, where:

when the processor is configured to run the executable instructions, the method of any example above is implemented.

[0091] In another example, a non-transitory computer-readable storage medium is further provided, storing computer-executable instructions, where when the computer-executable instructions executed by a processor, cause the processor to implement the method of any example above.

[0092] In another example, an implementation of a control method for a washing machine is further provided.

[0093] At present, a washing machine has a detergent dispensing function, and there are more and more washing machines with automatic dispensing functions. However, some users are still accustomed to directly dispensing laundry capsules and other cleaning items into a washing machine bucket. The washing machine has a washing material box, and if dispensing in the washing material box and the laundry capsules work together, it may cause the effect of the laundry capsules to be less than expected.

[0094] A user puts laundry capsules into the washing machine himself and then selects a certain mode of the washing machine for washing, without considering the conflict between the laundry capsules and other detergents in the washing material box, and without considering how to maximize the effect of the laundry capsules, such as better fragrance retention.

[0095] For laundry capsules commonly used in a washing machine at present, as a special cleaning method, the washing machine has a target working mode, that is, a "laundry capsule dispensing" mode is set on a washing machine body or a random application program. After selecting this mode, a user may effectively avoid the problem of poor washing effect caused by mixing with other detergents, and for functions such as fragrance retention of the laundry capsules, specific processes and parameters are set for the washing machine to better utilize the characteristics of the laundry capsules.

[0096] There is a switch for dispensing "laundry capsules" on a control interface of the washing machine body or a random application program. When the user turns on the switch for dispensing the "laundry capsules", a material box dispensing system of the washing machine body stops working, including an automatic dispensing system and a manual dispensing system. If the washing machine contains both of the above dispensing systems, they will be turned off simultaneously.

[0097] According to the characteristics of the laundry capsules, the washing machine uses the specific processes or parameters in the current washing program to better utilize the unique functions of the laundry capsules, such as the better fragrance retention function.

[0098] When the user turns off the switch for dispensing the "laundry capsules", the material box dispensing system of the washing machine body starts working, including the automatic dispensing system and the manual dispensing system. If the washing machine contains both of the above dispensing systems, dispensing is performed according to user's settings. The washing machine uses default parameters of the current washing program for washing.

[0099] In this example, the laundry capsule function may be conveniently operated on the washing machine body or the random application program; after a laundry capsule mode is turned on, dispensing of other detergents is stopped; after the laundry capsule mode is turned on, combined with specific process parameters, the characteristic functions such as fragrance retention of the laundry capsules are achieved; and the laundry capsules are an optional function that may be turned on and off conveniently, and dispensing of other detergents is be resumed after the function is turned off.

[0100] It is to be noted that, the terms "first" and "second" in the examples of the invention are for ease of expression and distinction merely, and have no other specific meanings.

[0101] Fig. 4 is a block diagram of a washing machine illustrated according to an example. Referring to Fig. 4, the washing machine may include one or more of the following components: a processing component 802, a memory 804, a power component 806, a multimedia component 808, an audio component 810, an input/output (I/O) interface 812, a sensor component 814, and a communication component 816.

[0102] The processing component 802 typically controls the overall operation of the washing machine, such as operations associated with display, data communication, camera operations, and recording operations. The processing component 802 may include one or more processors 820 to execute instructions to complete all or part of the steps of the above method. In addition, the processing component 802 may include one or more modules to facilitate interaction between the processing component 802 and other components. For example, the processing component 802 may include a multimedia module to facilitate interaction between the multimedia component 808 and the processing component 802.

[0103] The memory 804 is configured to store various types of data to support operations at the washing machine. Instances of these data include instructions, messages, pictures, videos, etc. for any application or method operating on the washing machine. The memory 804 may be implemented by any type of volatile or nonvolatile storage device or a combination of them, such as a static random access memory (SRAM), an electrically erasable programmable read only memory (EEPROM), an erasable programmable read only memory (EPROM), a programmable read only memory (PROM), a read only memory (ROM), a magnetic memory, a flash memory, a magnetic disk or optic disk.

[0104] The power component 806 provides power for

various components of the washing machine. The power component 806 may include a power management system, one or more power sources and other components associated with generating, managing and distributing power for the washing machine.

[0105] The multimedia component 808 includes a screen providing an output interface between the washing machine and a user. In some examples, the screen may include a liquid crystal display (LCD) and a touch panel (TP). If the screen includes the touch panel, the screen may be implemented as a touch screen to receive an input signal from the user. The touch panel includes one or more touch sensors to sense touch, sliding and gestures on the touch panel. The touch sensor can not only sense the boundary of the touch or sliding operation, but also detect the duration and pressure related to the touch or sliding operation. In some examples, the multimedia component 808 includes a camera. When the washing machine is in an operation mode, such as a shooting mode or a video mode, the camera may receive external multimedia data. The camera may be a fixed optical lens system or has a focal length and optical zoom capability.

[0106] The audio component 810 is configured to output and/or input audio signals. For example, the audio component 810 includes a microphone (MIC) configured to receive an external audio signal when the washing machine is in the operation mode, such as a recording mode, and a speech recognition mode. The received audio signal may be further stored in the memory 804 or transmitted via the communication component 816. In some examples, the audio component 810 also includes a speaker for outputting an audio signal.

[0107] The I/O interface 812 provides an interface between the processing component 802 and a peripheral interface module which can be a keyboard, a click wheel, a button, etc. These buttons may include but are not limited to: a home button, volume buttons, a start button and a lock button.

[0108] The sensor component 814 includes one or more sensors for providing state evaluation of various aspects of the washing machine. For example, the sensor component 814 may detect an on/off state of the washing machine and the relative positioning of the components, for example, the component is a display and a keypad of the washing machine. The sensor component 814 may also detect the change of the position of the washing machine or one component of the washing machine, the presence or absence of user contact with the washing machine, the azimuth or acceleration/deceleration of the washing machine, and temperature change of the washing machine. The sensor component 814 may include a proximity sensor configured to detect the presence of nearby objects without any physical contact. The sensor component 814 may further include an optical sensor, such as a CMOS or CCD image sensor, for use in imaging applications. In some examples, the sensor component 814 may further include an acceleration sensor, a gyroscope sensor, a magnetic sensor, a pressure sensor, or a temperature sensor.

[0109] The communication component 816 is configured to facilitate wired or wireless communication between the washing machine and other devices. The washing machine may access a wireless network based on a communication standard, such as Wi-Fi, 4G or 5G, or a combination of them. In an example, the communication component 816 receives a broadcast signal or broadcast-related information from an external broadcast management system via a broadcast channel. In an example, the communication component 816 further includes a near field communication (NFC) module to facilitate short-range communication. For example, the NFC module may be implemented based on a radio frequency identification (RFID) technology, an infrared data association (IrDA) technology, an ultra wideband (UWB) technology, a Bluetooth (BT) technology and other technologies.

[0110] In an example, the washing machine may be implemented by one or more application-specific integrated circuits (ASIC), digital signal processors (DSP), digital signal processing devices (DSPD), programmable logic devices (PLD), field programmable gate arrays (FPGA), controllers, microcontrollers, microprocessors, or other electronic elements for performing the above method.

[0111] Other implementation schemes of the invention will be apparent to those skilled in the art from consideration of the specification and practice of the invention disclosed here. The invention is intended to cover any variations, uses, or adaptations of the invention, and these variations, uses, or adaptations follow the general principles of the invention and include such departures from the invention as come within known or customary practice in the art. It is intended that the specification and examples be considered as exemplary merely, with the scope of the invention being indicated by the following claims.

[0112] It will be appreciated that the disclosure is not limited to the exact construction that has been described above and illustrated in the accompanying drawings, and that various modifications and changes may be made without departing from the scope of the disclosure. The scope of the disclosure is merely limited by the appended claims.

Claims

1. A control method for a washing machine, comprising:

   entering (S100) into a target working mode, wherein the target working mode is a mode of washing a to-be-cleaned object in the washing machine through a first washing object;
   stopping (S200) adding into a washing bucket a

second washing object dispensed into a washing material box in the washing machine, wherein the second washing object is different from the first washing object in shape, form, size, flavor, brand and/or effect; and
washing (S300) the to-be-cleaned object through the first washing object under the target working mode.

2. The method according to claim 1, wherein

the first washing object comprises: laundry capsules; and
the second washing object comprises: washing powder and/or a liquid detergent.

3. The method according to claim 1 or 2, wherein washing (S300) the to-be-cleaned object through the first washing object comprises:

receiving (S301) first information of the first washing object dispensed into the washing bucket, wherein the first information at least comprises: a weight and label information, and the label information is used to represent ingredients and effects of the first washing object, materials of applicable to-be-cleaned objects and a proportion of the applicable to-be-cleaned objects in a space of the washing bucket;
receiving (S302) second information of the to-be-cleaned object, wherein the second information comprises: a material of the to-be-cleaned object and a proportion of the to-be-cleaned object in the space of the washing bucket;
determining (S303) first washing parameters according to the first information and the second information, wherein the first washing parameters at least comprise: a number of times of washing, a number of times of rinsing as well as a washing time, a water temperature and a water level of individual washing; and
washing (S304) the to-be-cleaned object according to the first washing parameters.

4. The method according to claim 3, wherein receiving (S301) first information of the first washing object dispensed into the washing bucket comprises:
receiving the first information sent by a preset device in communication connection with the washing machine, wherein the first information is determined by the preset device according to an input operation related to the first washing object received by the preset device.

5. The method according to claim 3, wherein receiving (S302) second information of the to-be-cleaned object comprises:
receiving the second information sent by a preset device in communication connection with the washing machine, wherein the second information is determined by the preset device according to an input operation related to the to-be-cleaned object received by the preset device.

6. The method according to any one of claims 1-5, wherein washing (S300) the to-be-cleaned object through the first washing object comprises:
washing the to-be-cleaned object according to preset second washing parameters, wherein the second washing parameters at least comprise: a number of times of washing, a number of times of rinsing as well as a washing time, a water temperature and a water level of individual washing.

7. The method according to any one of claims 1-6, further comprising:
entering into a mode of washing the to-be-cleaned object in the washing machine through the second washing object so as to wash the to-be-cleaned object in a case of not entering into the target working mode.

8. The method according to any one of claims 1-7, wherein entering (S100) into a target working mode comprises:

receiving a startup instruction of starting the target working mode, and entering into the target working mode according to the startup instruction;
or,
entering into the target working mode according to a preset start button on the washing machine.

9. A control apparatus for a washing machine, comprising:

an entering module (1), configured to enter into a target working mode, wherein the target working mode is a mode of washing a to-be-cleaned object in the washing machine through a first washing object;
a stopping module (2), configured to stop adding into a washing bucket a second washing object dispensed into a washing material box in the washing machine, wherein the second washing object is different from the first washing object in shape, form, size, flavor, brand and/or effect; and
a washing module (3), configured to wash the to-be-cleaned object through the first washing object under the target working mode.

10. The apparatus according to claim 9, wherein

the first washing object comprises: laundry capsules; and
the second washing object comprises: washing powder and/or a liquid detergent.

11. The apparatus according to claim 8 or 9, wherein the washing module (3) comprises:

a first receiving unit configured to receive first information of the first washing object dispensed into the washing bucket, wherein the first information at least comprises: a weight and label information, and the label information is used to represent ingredients and effects of the first washing object, materials of applicable to-be-cleaned objects and a proportion of the applicable to-be-cleaned objects in a space of the washing bucket;
a second receiving unit, configured to receive second information of the to-be-cleaned object, wherein the second information comprises: a material of the to-be-cleaned object and a proportion of the to-be-cleaned object in the space of the washing bucket;
a determining unit, configured to determine first washing parameters according to the first information and the second information, wherein the first washing parameters at least comprise: a number of times of washing, a number of times of rinsing as well as washing time, a water temperature and a water level of individual washing; and
a first washing unit, configured to wash the to-be-cleaned object according to the first washing parameters.

12. The apparatus according to claim 11, wherein the first receiving unit is configured to:
receive the first information sent by a preset device in communication connection with the washing machine, wherein the first information is determined by the preset device according to an input operation related to the first washing object received by the preset device.

13. The apparatus according to claim 11, wherein the second receiving unit is configured to:
receive the second information sent by a preset device in communication connection with the washing machine, wherein the second information is determined by the preset device according to an input operation related to the to-be-cleaned object received by the preset device.

14. A washing machine comprising:
a processor (820) and a memory (804) configured to store executable instructions capable of running on the processor (820), wherein:
the processor (820) is configured to run the executable instructions to implement the method according to any one of claims 1 to 8.

15. A non-transitory computer-readable storage medium storing computer-executable instructions, wherein, when executed by a processor, the computer-executable instructions cause the processor to implement the method according to any one of claims 1 to 8.

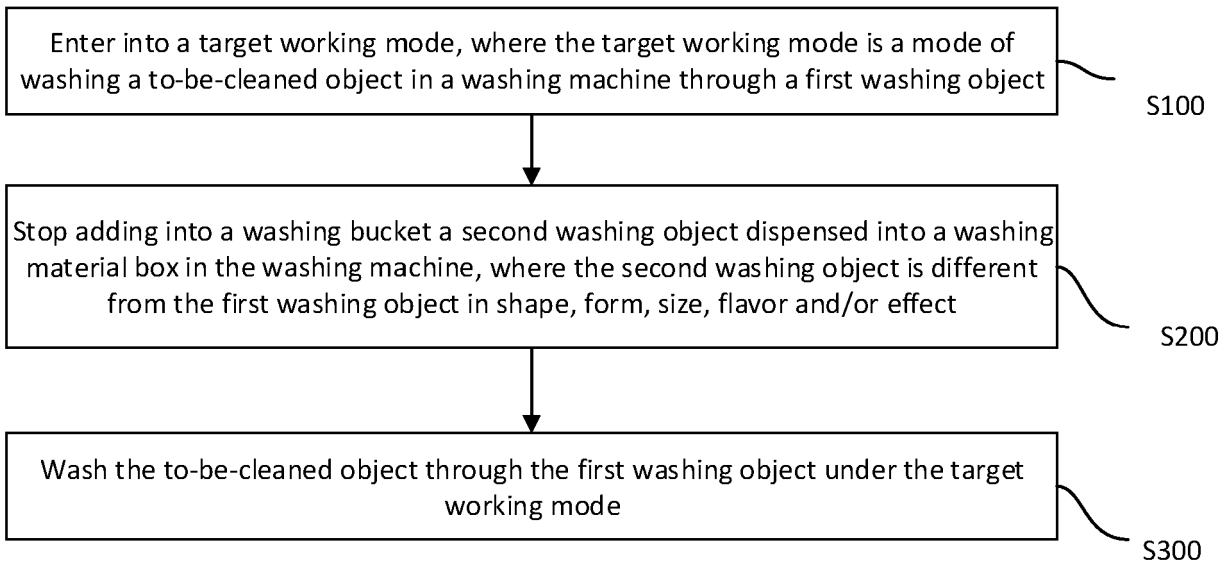
Enter into a target working mode, where the target working mode is a mode of washing a to-be-cleaned object in a washing machine through a first washing object
S100
Stop adding into a washing bucket a second washing object dispensed into a washing material box in the washing machine, where the second washing object is different from the first washing object in shape, form, size, flavor and/or effect
S200
Wash the to-be-cleaned object through the first washing object under the target working mode
S300

Figure 1

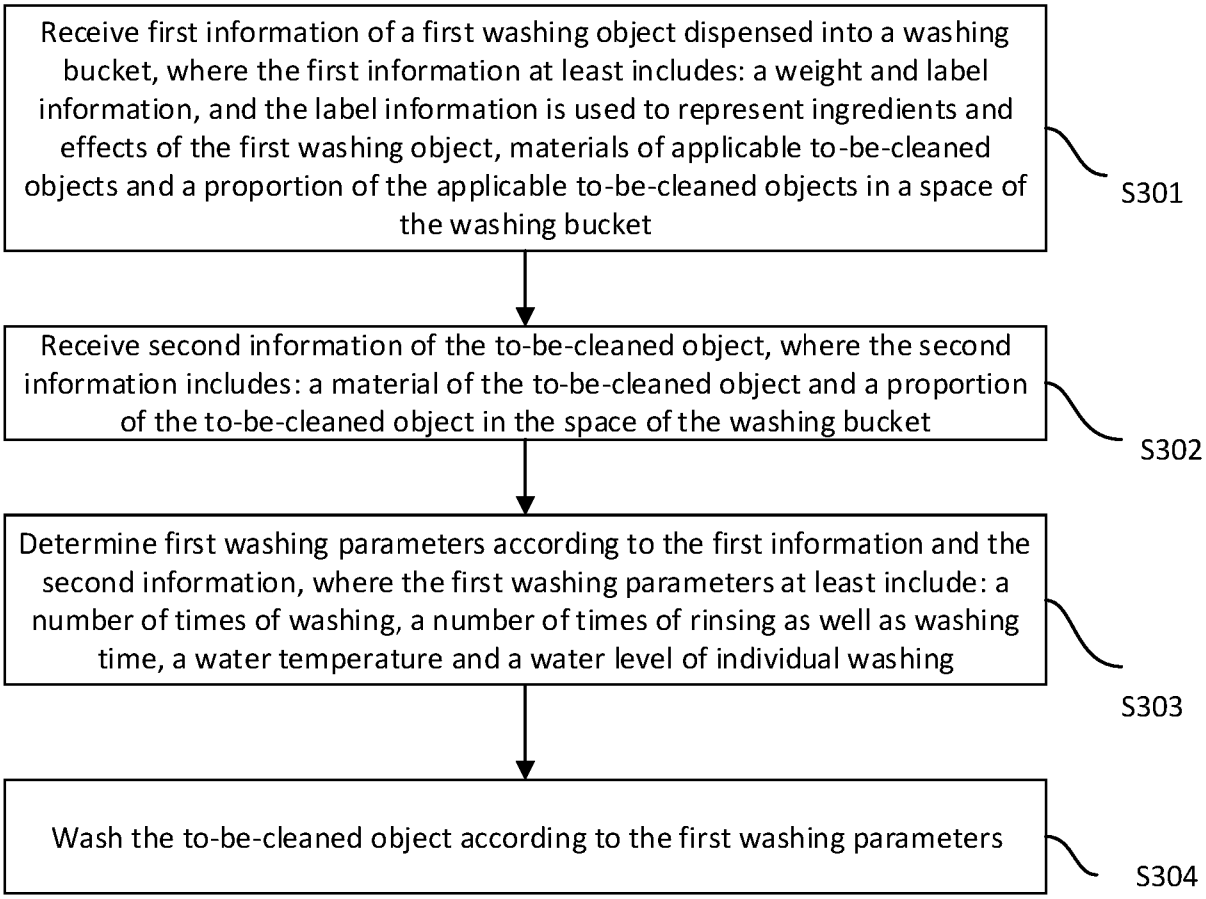

Figure 2

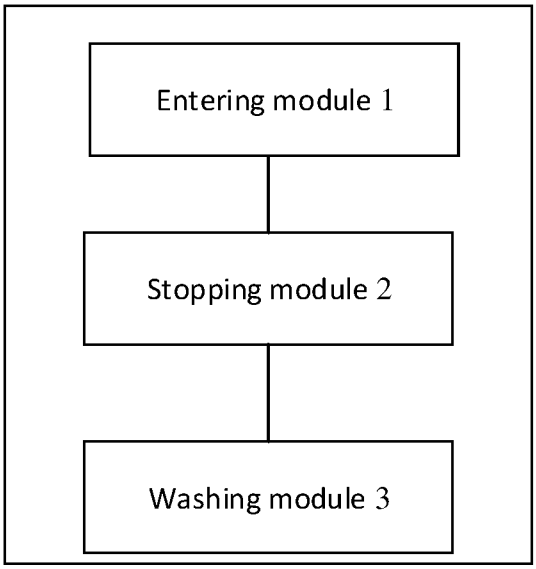

Figure 3

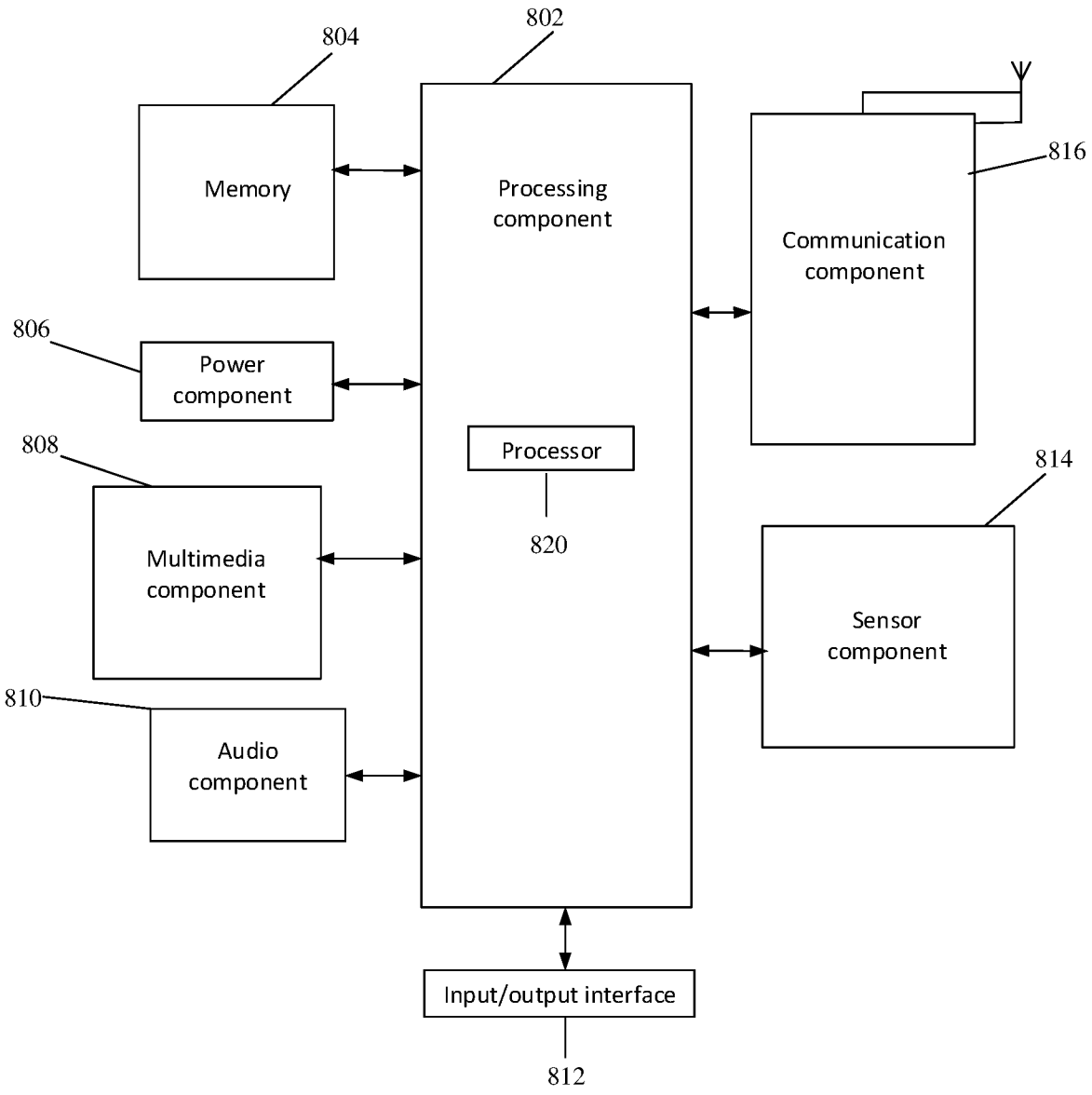
802
804
Memory
Processing component
Processor
820
816
Communication component
806
Power component
808
Multimedia component
814
Sensor component
810
Audio component
Input/output interface
812

Figure 4

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EUROPEAN SEARCH REPORT

Application Number
EP 24 20 3082

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D06F

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	20 February 2025	Stroppa, Giovanni

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20-02-2025

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