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## KITCHEN STAND MIXER AND SHAFT HEIGHT ADJUSTMENT MECHANISM FOR A KITCHEN STAND MIXER


### Abstract

A stand mixer includes a casing including a base, a column extending from the base, and a motor housing connected to the column; a motor assembly provided within the motor housing and including a motor shaft; and a shaft adjustment assembly operably coupled with the motor shaft, the shaft adjustment assembly including an output shaft connected with the motor shaft, the output shaft configured to receive a rotational input from the motor shaft, the output shaft including an attachment holder at a distal end thereof; a handle adjustably coupled with the output shaft, the handle being configured to be rotatable about the circumferential direction; and a resilient member connecting the handle with the output shaft, the resilient member biasing the handle along the axial direction and along the circumferential direction.



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## Background/Summary

FIELD OF THE INVENTION

[0001] The present subject matter relates generally to domestic appliances, and more particularly to shaft adjustment mechanisms for stand mixers.

BACKGROUND OF THE INVENTION

[0002] Stand mixers are generally used for performing automated mixing, churning, or kneading involved in food preparation. Typically, stand mixers include a motor configured to provide torque to one or more driveshafts. Users may connect various utensils to the one or more driveshafts, including whisks, spatulas, or the like. In performing operations, multiple different utensils may be frequently switched. Each utensil may be a different height, resulting in different depth to which each utensil may extend within a bowl, for example.

[0003] Existing mixers exhibit certain drawbacks. For instance, adjusting a height (or depth) of a particular utensil is cumbersome and time consuming. Additional accessories or manipulation of the mixer can be required in order to achieve a desired depth of the utensil.

[0004] Accordingly, a stand mixer that obviates one or more of the above-mentioned drawbacks would be beneficial. In particular, a shaft adjustment assembly for a stand mixer capable of fine tuning would be useful.

BRIEF DESCRIPTION OF THE INVENTION

[0005] Aspects and advantages of the invention will be set forth in part in the following description, or may be obvious from the description, or may be learned through practice of the invention.

[0006] In one exemplary aspect of the present disclosure, a stand mixer is provided. The stand mixer may include a casing including a base, a column extending from the base, and a motor housing connected to the column; a motor assembly provided within the motor housing, the motor assembly including a motor shaft; and a shaft adjustment assembly operably coupled with the motor shaft, the shaft adjustment assembly defining an axial direction, a radial direction, and a circumferential direction. The shaft adjustment assembly may include an output shaft connected with the motor shaft, the output shaft configured to receive a rotational input from the motor shaft, the output shaft including an attachment holder at a distal end thereof; a handle adjustably coupled with the output shaft, the handle being configured to be rotatable about the circumferential direction; and a resilient member connecting the handle with the output shaft, the resilient member biasing the handle along the axial direction and along the circumferential direction.

[0007] In another exemplary aspect of the present disclosure, a shaft adjustment assembly for a domestic appliance is provided. The domestic appliance may include a motor assembly and a motor shaft, the shaft adjustment assembly defining an axial direction, a radial direction, and a circumferential direction. The shaft adjustment assembly may include an output shaft connected with the motor shaft, the output shaft configured to receive a rotational input from the motor shaft, the output shaft including an attachment holder at a distal end thereof; a handle adjustably coupled with the output shaft, the handle being configured to be rotatable about the circumferential direction; and a resilient member connecting the handle with the output shaft, the resilient member biasing the handle along the axial direction and along the circumferential direction.

[0008] These and other features, aspects and advantages of the present invention will become better understood with reference to the following description and appended claims. The accompanying drawings, which are incorporated in and constitute a part of this specification, illustrate embodiments of the invention and, together with the description, serve to explain the principles of the invention.

## Description

BRIEF DESCRIPTION OF THE DRAWINGS

[0009] A full and enabling disclosure of the present invention, including the best mode thereof, directed to one of ordinary skill in the art, is set forth in the specification, which makes reference to the appended figures.

[0010] FIG. **1** provides a side section view of a stand mixer according to an exemplary embodiment of the present disclosure.

[0011] FIG. **2** provides a front view of the exemplary stand mixer of FIG. **1**.

[0012] FIG. **3** provides a close-up perspective view of a shaft adjustment assembly of the stand mixer of FIG. **1** according to exemplary embodiments of the disclosure with a handle in a first position.

[0013] FIG. **4** provides a close-up view of an output shaft of the exemplary shaft adjustment assembly of FIG. **3**.

[0014] FIG. **5** provides a close-up section view of the exemplary output shaft of FIG. **4**.

[0015] FIG. **6** provides a close-up perspective view of the exemplary shaft adjustment assembly of FIG. **3** including the handle.

[0016] FIG. **7** provides a close-up perspective view of the exemplary shaft adjustment assembly of FIG. **3** with an attachment in a detached position and the handle in a second position.

[0017] FIG. **8** provides a close-up perspective view of the output shaft of FIG. **4** with an attachment in a detached position.

[0018] Repeat use of reference characters in the present specification and drawings is intended to represent the same or analogous features or elements of the present invention.

DETAILED DESCRIPTION

[0019] Reference now will be made in detail to embodiments of the invention, one or more examples of which are illustrated in the drawings. Each example is provided by way of explanation of the invention, not limitation of the invention. In fact, it will be apparent to those skilled in the art that various modifications and variations can be made in the present invention without departing from the scope of the invention. For instance, features illustrated or described as part of one embodiment can be used with another embodiment to yield a still further embodiment. Thus, it is intended that the present invention covers such modifications and variations as come within the scope of the appended claims and their equivalents.

[0020] As used herein, the terms “first,” “second,” and “third” may be used interchangeably to distinguish one component from another and are not intended to signify location or importance of the individual components. The terms “includes” and “including” are intended to be inclusive in a manner similar to the term “comprising.” Similarly, the term “or” is generally intended to be inclusive (i.e., “A or B” is intended to mean “A or B or both”). In addition, here and throughout the specification and claims, range limitations may be combined and/or interchanged. Such ranges are identified and include all the sub-ranges contained therein unless context or language indicates otherwise. For example, all ranges disclosed herein are inclusive of the endpoints, and the endpoints are independently combinable with each other. The singular forms “a,” “an,” and “the” include plural references unless the context clearly dictates otherwise.

[0021] Approximating language, as used herein throughout the specification and claims, may be applied to modify any quantitative representation that could permissibly vary without resulting in a change in the basic function to which it is related. Accordingly, a value modified by a term or terms, such as “generally,” “about,” “approximately,” and “substantially,” are not to be limited to the precise value specified. In at least some instances, the approximating language may correspond to the precision of an instrument for measuring the value, or the precision of the methods or machines for constructing or manufacturing the components and/or systems. For example, the approximating language may refer to being within a 10 percent margin, i.e., including values within ten percent greater or less than the stated value. In this regard, for example, when used in the context of an angle or direction, such terms include within ten degrees greater or less than the stated angle or direction, e.g., “generally vertical” includes forming an angle of up to ten degrees in any direction, e.g., clockwise or counterclockwise, with the vertical direction V.

[0022] The word “exemplary” is used herein to mean “serving as an example, instance, or illustration.” In addition, references to “an embodiment” or “one embodiment” does not necessarily refer to the same embodiment, although it may. Any implementation described herein as “exemplary” or “an embodiment” is not necessarily to be construed as preferred or advantageous over other implementations. Moreover, each example is provided by way of explanation of the invention, not limitation of the invention. In fact, it will be apparent to those skilled in the art that various modifications and variations can be made in the present invention without departing from the scope of the invention. For instance, features illustrated or described as part of one embodiment can be used with another embodiment to yield a still further embodiment. Thus, it is intended that the present invention covers such modifications and variations as come within the scope of the appended claims and their equivalents.

[0023] FIG. **1** provides a side view of a stand mixer **100** according to an exemplary embodiment of the present subject matter. It will be understood that stand mixer **100** is provided by way of example only and that the present subject matter may be used in or with any suitable stand mixer in alternative example embodiments. Moreover, with reference to FIG. **1**, stand mixer **100** defines a vertical direction V, a lateral direction L, and a transverse direction T. It should be understood that these directions are presented for exemplary purposes only, and that relative positions and locations of certain aspects of stand mixer **100** may vary according to specific embodiments, spatial placement, or the like.

[0024] Stand mixer **100** may include a casing **101**. In detail, casing **101** may include a motor housing **102**, a base **104**, and a column **106**. Motor housing **102** may house various mechanical and/or electrical components of stand mixer **100**. For example, as shown in FIG. **1**, a motor **112**, a planetary gearbox (or reduction gearbox) **114**, and a bevel gear box **116** may be disposed within motor housing **102**. Base **104** may support motor housing **102**. For example, motor housing **102** may be mounted (e.g., pivotally) to base **104** via column **106**, e.g., that extends upwardly (e.g., along the vertical direction V). Motor housing **102** may be suspended over a mixing zone **105**, within which a mixing bowl may be disposed.

[0025] A drivetrain **110** may be provided within motor housing **102** and is configured for coupling motor **112** to a shaft **109** (e.g., a mixer shaft or drive shaft), such that shaft **109** is rotatable via motor **112** through drivetrain **110**. Drivetrain **110** may include planetary gearbox **114**, bevel gearbox **116**, etc. Drive shaft **109** may be positioned above mixing zone **105** on motor housing **102**, and an attachment **108**, such as a beater, whisk, or hook, may be removably mounted to drive shaft **109**. Attachment **108** may rotate within a bowl B (FIG. **2**) in mixing zone **105** to beat, whisk, knead, etc. material within the bowl, during operation of motor **112**.

[0026] As noted above, motor **112** may be operable to rotate drive shaft **109**. For instance, a motor shaft **113** may connect motor **112** to drive shaft **109** (e.g., through planetary gearbox **114**, bevel gearbox **116**, etc.). Motor **112** may be a direct current (DC) motor in certain example embodiments. In alternative example embodiments, motor **112** may be an alternating current (AC) motor. Motor **112** may include a rotor and a stator. The stator may be mounted within motor housing **102** such that the stator is fixed relative to motor housing **102**. A current through windings within the stator may generate a magnetic field that induces rotation of the rotor, e.g., due to magnets or a magnetic field via coils on the stator. The rotor may rotate at a relatively high rotational velocity and relatively low torque. Thus, drivetrain **110** may be configured to provide a rotational speed reduction and mechanical advantage between motor **112** and drive shaft **109**.

[0027] Stand mixer **100** may include a shaft adjustment assembly **200**. Shaft adjustment assembly

**200** may be provided at a distal end of drive shaft **109**. For instance, shaft adjustment assembly **200** may be operably connected with drive shaft **109**. Shaft adjustment assembly **200** may be configured to provide height adjustments (e.g., along the vertical direction V) to attachment **108**. For instance, shaft adjustment assembly **200** may allow for incremental height adjustments of attachment **108** relative to drive shaft **109**. Shaft adjustment assembly **200** may define an axial direction A, a radial direction R, and a transverse direction T. According to some embodiments, axial direction A may be parallel with vertical direction V of stand mixer **100**.

[0028] As mentioned, drive shaft **109** may protrude from motor housing **102** toward mixing zone **105**. A receptacle (e.g., such as a mixing bowl) B may be selectively positioned within mixing zone. Drive shaft **109** may protrude into receptacle B. Drive shaft **109** may be configured such that attachment **108** is removably coupled thereto. Accordingly, a plurality of attachments may be selectively attached to and detached from drive shaft **109** according to specific desired operations. For instance, attachment **108** may be coupled to drive shaft **109** via shaft adjustment assembly **200**. Additionally or alternatively, according to some embodiments, attachment **108** is coupled to drive shaft **109** via one or more additional shafts.

[0029] Referring now to FIGS. **3** through **8**, shaft adjustment assembly **200** will be described in detail. Shaft adjustment assembly **200** may be operably coupled with motor shaft **113**. For instance, shaft adjustment assembly **200** may receive rotational inputs from motor shaft **113** to in turn provide rotation to attachment **108**. Shaft adjustment assembly **200** may allow for attachments **108** to be quickly and easily connected to drive shaft **109**. Moreover, shaft adjustment assembly **200** may allow for incremental height adjustments to be made to attachment **108** (e.g., with respect to a bottom of receptacle B).

[0030] As mentioned above, drive shaft **109** may be connected with attachment **108** via one or more additional shafts. For one example, shaft adjustment assembly **200** includes an output shaft **202**. Output shaft may extend along the axial direction A. According to some embodiments, output shaft **202** is operably connected with drive shaft **109**. In additional or alternative embodiments, output shaft **202** directly incorporates drive shaft **109** (e.g., such that drive shaft **109** and output shaft **202** are a single piece or item). Output shaft **202** may thus be connected with motor shaft **113** (e.g., either directly or through drive shaft **109**). Output shaft **202** may be configured to receive a rotational input from motor shaft **113**.

[0031] Output shaft **202** may include an attachment holder **204**. Attachment holder **204** may be provided at a distal end of output shaft **202** (e.g., along the axial direction A). As seen in FIGS. **4** and **5**, output shaft **202** may define a shaft diameter D**1**. Attachment holder **204** may define a holder diameter D**2**. Holder diameter D**2** may be greater than shaft diameter D**1**. Accordingly, attachment holder **204** may define a top face **206** and a bottom face **208** opposite top surface **206**. Attachment holder **204** may be integrally formed with output shaft **202**. For instance, output shaft **202** and attachment holder **204** may be formed as one solid, unitary piece. However, according to some embodiments, attachment holder **204** may be separately coupled to output shaft **202**.

[0032] Output shaft **202** may include an adjustment groove **210**. Adjustment groove **210** may be formed therein (e.g., along the radial direction R). For instance, adjustment groove **210** may protrude into output shaft **202** along the radial direction R, such that a portion of output shaft **202** is removed. Additionally or alternatively, two adjustment grooves **210** may be included (e.g., on opposite sides of output shaft **202**). Adjustment groove **210** may protrude a predetermined depth into output shaft **202**. For instance, adjustment groove **210** may protrude a predetermined percentage into output shaft **202**. The predetermined percentage may be between about 5% and about 20%. As best seen in FIGS. **4** and **7**, adjustment groove **210** may include a first portion **2101** and a second portion **2102**.

[0033] First portion **2101** may extend along the axial direction A from top face **206** of attachment holder **204** toward motor housing **102**. For instance, first portion **2101** may extend a predetermined distance along the axial direction A from top face **206**. In some embodiments, first portion **2101** defines a terminus after the predetermined distance (i.e., first portion **2101** is a blind groove having a stop before a top of output shaft **202**). In additional or alternative embodiments, first portion **2101** extends through the top of output shaft **202**. Second portion **2102** may extend along the circumferential direction C from first portion **2101**. Second portion **2102** may be positioned at top face **206** of attachment holder **204**. For instance, second portion **2102** may extend, as viewed from a top of output shaft **202** along the axial direction A, second portion **2102** may extend along the clockwise direction from first portion **2101**. Thus, second portion **2102** may be elongated along the circumferential direction C with respect to first portion **2101**.

[0034] An extending length of second portion **2102** along the circumferential direction C may vary according to specific embodiments. For one example, second portion **2102** extends for between about 30% and about 45% of a total circumference of output shaft **202**. Additionally or alternatively, a top edge **212** of second portion **2102** may be tapered (e.g., along the axial direction A). For instance, with reference to FIG. **7**, a height of second portion **2102** along the axial direction A may vary across the circumferential length thereof. A proximal point of top edge **212** may be positioned higher (e.g., further from top face **206**) than a distal point of top edge **212**. Thus, as second portion **2102** proceeds from first portion **2101** toward its terminus, a height of second portion **2102** decreases along the axial direction A.

[0035] Attachment holder **204** may include an inlet channel **214**. Inlet channel **214** may extend along the axial direction A from top face **206** to bottom face **208**. For instance, inlet channel **214** may be formed into attachment holder **204** along the radial direction R (e.g., as a cut-out). Inlet channel **214** may thus define a through-channel in attachment holder **204**. As will be described later, a portion of an attachment adapter (e.g., for attachment **108**) may selectively pass through inlet channel **214**.

[0036] Attachment holder **204** may include a plurality of positioning grooves **216**. With reference to FIG. **5**, the plurality of positioning grooves **216** may be spaced equidistant about attachment holder **204** along the circumferential direction C. As shown, at least 9 positioning grooves **216** may be included. However, it should be understood that the number of positioning grooves **216** shown is provided by way of example only, and that any suitable number of positioning grooves **216** may be included. Each of the plurality of positioning grooves **216** may extend along the axial direction A from top face **206** of attachment holder **204**.

[0037] Each of the plurality of positioning grooves **216** may extend to a distinct, unique, and independent depth. As best seen in FIGS. **4**, **7**, and **8**, the depths of each of the plurality of positioning grooves **216** (e.g., along the axial direction A) may vary per individual positioning groove **216**. For instance, the plurality of positioning grooves **216** may include a first positioning groove **2161** and a second positioning groove **2162**. Referring to FIG. **8**, first positioning groove **2161** may define a first length L**1** along the axial direction A. First positioning groove **2161** may thus extend from top face **206** for first length L**1** to a blind stopping point within attachment holder **204**. Similarly, second positioning groove **2162** may define a second length L**2** along the axial direction A. Second positioning groove **2162** may thus extend from top face **206** for the second length L**2** to a blind stopping point within attachment holder **204**. Second length L**2** may be different from first length L**1**. For example, second length L**2** is greater than first length L**1**. Accordingly, the lengths of each of the plurality of positioning grooves **216** may increase incrementally about a circumference of attachment holder **204**.

[0038] As mentioned above, attachment **108** may include an attachment adapter **218**. Attachment adapter **218** may be formed integrally with attachment **108**. Additionally or alternatively, attachment adapter **218** may be configured to be selectively coupled to two or more attachments **108** for easy connection with attachment holder **204**. Attachment adapter **218** may include a body **220**. Body **220** may be annular in shape. For instance, body **220** may be predominantly cylindrical. Body **220** may be configured to slide over attachment holder **204** (e.g., along the axial direction A). Thus, a diameter of body **220** may be greater than holder diameter D**2** of attachment holder **204**.

[0039] Attachment adapter **218** may include a tab **222**. Tab **222** may protrude from an inner circumferential surface of body **220**. A protrusion distance or length of tab **222** may be less than or equal to the predetermined depth of inlet channel **214**. As shown in FIG. **8**, tab **222** may be aligned with inlet channel **214** along the axial direction A. In order to attach attachment **108** (e.g., attachment adapter **218**) to output shaft **202**, body **220** may be slid over attachment holder **204** (e.g., along the axial direction A) when tab **222** is aligned with inlet channel **214**. Since inlet channel **214** is defined through an entirety of attachment holder **204**, tab **222** may pass through to be positioned above top face **206** thereof. At this point, attachment adapter **218** may be rotated (e.g., clockwise, counterclockwise). Tab **222** may then be positioned within a selected positioning groove **218**. For instance, a user may select a height at which they desire to have attachment **108** be (e.g., with respect to a bottom of bowl B) and then select the corresponding positioning groove **218**. Since each of the plurality of positioning grooves **218** has a different depth (e.g., along the axial direction A), attachment **108** may be positioned at a different height according to whichever positioning groove **216** receives tab **222** therein.

[0040] Shaft adjustment assembly **200** may include a handle **224**. Handle **224** may be adjustable coupled with output shaft **202**. For instance, handle **224** may be rotatable about the circumferential direction C with respect to output shaft **202**. Thus, handle **224** may be positioned around output shaft **202** (e.g., along the radial direction R). Handle **224** may include a main annular body **226**. As mentioned, main annular body **226** may surround output shaft **202**. Main annular body **226** may include a plurality of indicators **228**. Referring briefly to FIGS. **6** and **7**, the plurality of indicators **228** may be provided along an outer circumferential surface **2261** of main annular body **226**. The plurality of indicators **228** may be spaced equidistant about outer circumferential surface **2261** of main annular body **226**. For instance, the plurality of indicators may correspond to the plurality of positioning grooves **216**. Each of the plurality of indictors **228** may indicate the height of the corresponding positioning groove **216**. Accordingly, a user may easily determine and select the desired height of attachment **108**.

[0041] Handle **224** may include at least one arm **230**. Arm **230** may extend from main annular body **226** along the radial direction R. In detail, arm **230** may include a first section **232** and a second section **234**. First section **232** may extend inward (e.g., along the radial direction R) from an inner circumferential surface **2262** of main annular body **226**. Thus, first section **232** may extend toward output shaft **202**. An extending length of first section **232** may be greater than a recessed depth (e.g., along the radial direction R) of the plurality of positioning grooves **216**. For instance, first section **232** may be at least partially received within adjustment groove **210**. As mentioned above, two adjustment grooves **210** may be provided on output shaft **210**. Accordingly, two arms **230** may be included on handle **224**. Thus, a first handle may be received within a first adjustment groove and a second handle may be received within a second adjustment groove.

[0042] Arm **230** (e.g., first section **232**) may be configured to move within adjustment groove **210**. For instance, first section **232** may move along the circumferential direction C within second portion **2102** of positioning groove **210** and may move along the axial direction A within first portion **2101** of positioning groove **210**. Thus, handle **224** may rotate (e.g., about the circumferential direction C) and translate (e.g., about the axial direction A). Handle **224** may be movable between a first position (FIG. **3**) and a second position (FIG. **7**). When handle **224** is in the first position, attachment adapter **218** is locked into place within the selected positioning groove **216**. When handle is moved to the second position, attachment adapter **218** is able to move upward along the axial direction A and rotated about the circumferential direction C. Thus, a user may switch a position of attachment adapter **218** and thus switch a height of attachment **108**.

[0043] Second section **234** may extend outward (e.g., along the radial direction R) from outer circumferential surface **2261** of main annular body **226**. Second section **234** may be configured such that a user may grasp second section **234** to provide a rotational force thereto. An extending length of second section **234** (e.g., along the radial direction R) may be greater than the extending

length of first section **232**. However, it should be understood that second section **234** may extend to any suitable length, and the disclosure is not limited to the examples provided herein.
[0044] Shaft adjustment assembly **200** may include a resilient member **236**. Resilient member **236** may connect handle **224** with output shaft **202**. For instance, resilient member **236** may be a spring configured to provide each of a rotational force and an axial force to handle **224** with respect to output shaft **202**. In some embodiments, resilient member **236** is a coil spring. Resilient member **236** may be positioned circumferentially around output shaft **202**. Additionally or alternatively, resilient member **236** may be connected to output shaft **202** through one or more separate pieces, such as clamps, clips, collars, or the like.
[0045] Resilient member **236** may bias handle **224** along the circumferential direction C. For instance, resilient member **236** may maintain first section **232** of arm **230** in a locked position (e.g., within second portion **2102** of adjustment groove **210**). A user may apply a force to second section **234** of arm **230** to counter the biasing force of resilient member **236** and move handle **224** from the first position to the second position. Moreover, resilient member **236** may bias handle **224** downward along the axial direction A (e.g., into the first position). Accordingly, attachment adapter **218** may be locked into place to restrict attachment **108** from inadvertently adjusting during operation.
[0046] According to the embodiments described herein, accessories for a stand mixer may be fine adjusted along the axial direction through a handle, an accessory holder, and a plurality of individually heighted positioning grooves. The accessory may include an accessory adapter having a tab. The tab may be selectively placed into one of the plurality of positioning grooves according to the desired height. A handle may be biased via a resilient member to hold the accessory adapter in a locked position within the selected positioning groove. Advantageously, users may easily attach the attachment to the output shaft, select a desired mixing height, and lock the attachment in place by twisting the handle.
[0047] This written description uses examples to disclose the invention, including the best mode, and also to enable any person skilled in the art to practice the invention, including making and using any devices or systems and performing any incorporated methods. The patentable scope of the invention is defined by the claims, and may include other examples that occur to those skilled in the art. Such other examples are intended to be within the scope of the claims if they include structural elements that do not differ from the literal language of the claims, or if they include equivalent structural elements with insubstantial differences from the literal languages of the claims.

## Claims

**1**. A stand mixer comprising: a casing comprising a base, a column extending from the base, and a motor housing connected to the column; a motor assembly provided within the motor housing, the motor assembly comprising a motor shaft; and a shaft adjustment assembly operably coupled with the motor shaft, the shaft adjustment assembly defining an axial direction, a radial direction, and a circumferential direction, the shaft adjustment assembly comprising: an output shaft connected with the motor shaft, the output shaft configured to receive a rotational input from the motor shaft, the output shaft comprising an attachment holder at a distal end thereof; a handle adjustably coupled with the output shaft, the handle being configured to be rotatable about the circumferential direction; and a resilient member connecting the handle with the output shaft, the resilient member biasing the handle along the axial direction and along the circumferential direction.
**2**. The stand mixer of claim 1, wherein a diameter of the attachment holder is greater than a diameter of the output shaft.
**3**. The stand mixer of claim 2, wherein the attachment holder comprises: an inlet channel extending along the axial direction from a top face to a bottom face of the attachment holder, the inlet channel

being formed into the attachment holder along the radial direction; and a plurality of positioning grooves extending along the axial direction from the top face of the attachment holder to a plurality of predetermined depths.
**4**. The stand mixer of claim 3, wherein each of the plurality of positioning grooves is spaced equidistant about the attachment holder along the circumferential direction.
**5**. The stand mixer of claim 3, wherein the plurality of positioning grooves comprises: a first positioning groove defining a first length along the axial direction; and a second positioning groove defining a second length along the axial direction, the second length being different from the first length.
**6**. The stand mixer of claim 3, wherein the handle comprises: a main annular body; and at least one arm extending from the main annular body along the radial direction, the at least one arm comprising a first section extending inward from the main annular body and a second section extending outward from the main annular body.
**7**. The stand mixer of claim 6, wherein the output shaft comprises an adjustment groove formed therein, the adjustment groove comprising: a first portion extending along the axial direction from the top face of the attachment holder toward the motor housing; and a second portion extending along the circumferential direction from the first portion at the top face of the attachment holder.
**8**. The stand mixer of claim 7, wherein the first section of the at least one arm is at least partially positioned within the adjustment groove.
**9**. The stand mixer of claim 7, wherein the resilient member biases the first section of the at least one arm from the first portion into the second portion of the adjustment groove.
**10**. The stand mixer of claim 6, wherein the main annular body comprises a plurality of indicators provided on an outer surface of the main annular body, the plurality of indicators corresponding to the plurality of positioning grooves.
**11**. A shaft adjustment assembly for a domestic appliance, the domestic appliance comprising a motor assembly and a motor shaft, the shaft adjustment assembly defining an axial direction, a radial direction, and a circumferential direction, the shaft adjustment assembly comprising: an output shaft connected with the motor shaft, the output shaft configured to receive a rotational input from the motor shaft, the output shaft comprising an attachment holder at a distal end thereof; a handle adjustably coupled with the output shaft, the handle being configured to be rotatable about the circumferential direction; and a resilient member connecting the handle with the output shaft, the resilient member biasing the handle along the axial direction and along the circumferential direction.
**12**. The shaft adjustment assembly of claim 11, wherein a diameter of the attachment holder is greater than a diameter of the output shaft.
**13**. The shaft adjustment assembly of claim 12, wherein the attachment holder comprises: an inlet channel extending along the axial direction from a top face to a bottom face of the attachment holder, the inlet channel being formed into the attachment holder along the radial direction; and a plurality of positioning grooves extending along the axial direction from the top face of the attachment holder to a plurality of predetermined depths.
**14**. The shaft adjustment assembly of claim 13, wherein each of the plurality of positioning grooves is spaced equidistant about the attachment holder along the circumferential direction.
**15**. The shaft adjustment assembly of claim 13, wherein the plurality of positioning grooves comprises: a first positioning groove defining a first length along the axial direction; and a second positioning groove defining a second length along the axial direction, the second length being different from the first length.
**16**. The shaft adjustment assembly of claim 13, wherein the handle comprises: a main annular body; and at least one arm extending from the main annular body along the radial direction, the at least one arm comprising a first section extending inward from the main annular body and a second section extending outward from the main annular body.

**17**. The shaft adjustment assembly of claim 16, wherein the output shaft comprises an adjustment groove formed therein, the adjustment groove comprising: a first portion extending along the axial direction from the top face of the attachment holder toward the motor housing; and a second portion extending along the circumferential direction from the first portion at the top face of the attachment holder.
**18**. The shaft adjustment assembly of claim 17, wherein the first section of the at least one arm is at least partially positioned within the adjustment groove.
**19**. The shaft adjustment assembly of claim 17, wherein the resilient member biases the first section of the at least one arm from the first portion into the second portion of the adjustment groove.
**20**. The shaft adjustment assembly of claim 16, wherein the main annular body comprises a plurality of indicators provided on an outer surface of the main annular body, the plurality of indicators corresponding to the plurality of positioning grooves.