

Beating Machine

Technical Field

Embodiments of the present application relate to, but are not limited to, the technical field of food processing machinery, in particular to, but are not limited to a beating machine.

5

Background

In related technologies, fruits and vegetables such as lemons may be put into a cup first, and then beaten with a tool such as a hammer to obtain corresponding pulp puree. However, in the process of beating fruits and vegetables, juice of fruits and vegetables and formed particles are easy to splash from a mouth of a cup to the outside, which not only causes waste, but also easily pollutes the surrounding environment.

10

Summary

The following is a summary of the subject matter described in detail herein. This summary is not intended to limit the protection scope of claims.

15

A beating machine includes a beating member, a power mechanism and a cover body. The power mechanism is used for driving the beating member to reciprocatingly move up and down, the cover body is sleeved outside the beating member, and the cover body is used for covering a mouth of a cup.

20

Other aspects will become apparent after reading and understanding the drawings and detailed description.

Brief Description of Drawings

Accompanying drawings are used to provide a further understanding of technical solutions of the present application and form a part of the specification. Together with embodiments of the present application, they are used to explain the technical solutions of the present application and do not constitute a limitation on the technical solutions of the present

25

application.

FIG. 1 is a schematic diagram of a three-dimensional structure of a beating machine according to an embodiment of the present application;

FIG. 2 is a schematic diagram of a three-dimensional structure of a beating machine with
5 a shell removed according to an embodiment of the present application;

FIG. 3 is a schematic three-dimensional structural diagram of a connection between a cover body of a beating machine and a cup according to an embodiment of the present application;

FIG. 4 is a schematic structural diagram of a cover body and a fixing member of a beating
10 machine and a cup according to an embodiment of the present application;

FIG. 5 is a schematic structural diagram of a cover body of a beating machine and a cup according to an embodiment of the present application viewed from another angle;

FIG. 6 is a schematic diagram of another three-dimensional structure of a beating machine with a shell removed according to an embodiment of the present application;

FIG. 7 is a schematic structural diagram of a sliding member, a mounting frame and a
15 guide structure of a beating machine according to an embodiment of the present application; and

FIG. 8 is a schematic diagram of yet another three-dimensional structure of a beating machine with a shell removed according to an embodiment of the present application.

20 Reference signs:

1000- beating machine, 2000- cup, 2001- mouth, 2002- end portion, 100- beating member, 11- end portion of beating member, 110- concave-convex structure, 200- power mechanism, 21-first transmission assembly, 210- connecting rod structure, 2100- wheel disc, 2101- connecting rod, 211- sliding member, 22- first motor, 300- mounting frame, 31- first side, 32-
25 second side, 33- guide structure, 330- guide bar, 3300- guide groove, 331- guide block, 3310- projection, 34- recess, 400- bracket, 41- hollow-out area, 500- lifting mechanism, 51- second transmission assembly, 510- screw rod, 511- slider, 52- second motor, 600- shell, 61- placing seat, 700- cover body, 71- avoiding hole, 72- accommodating groove, 720- opening, 721-

bottom surface, 73- notch, 74- mounting hole, 800- fixing member, 81- mounting hole, 82- hollow-out structure.

Detailed Description

5 The technical solutions in embodiments of the present application will be clearly and completely described below with reference to the drawings in the embodiments of the present application, and apparently, the described embodiments are only part of the embodiments of the present application, but not all of the embodiments of the present application. Based on the
10 ordinary skills in the art without making creative efforts fall within the scope of protection of the present application.

 In addition, the technical solutions in various embodiments of the present application may be combined with each other, but shall be based on the realization by those ordinary skilled in the art. When the combination of technical solutions is contradictory or cannot be realized, it
15 should be considered that such combination of technical solutions does not exist, and is not within the protection scope of the present application.

 In the description of the present application, it should be understood that an orientation or position relationship indicated by the terms “center”, “longitudinal”, “transverse”, “length”, “width”, “thickness”, “upper”, “lower”, “front”, “rear”, “left”, “right”, “vertical”, “horizontal”,
20 “top”, “bottom”, “inner”, “outer”, “clockwise”, “counterclockwise” and the like is based on the orientation or position relationship shown in the drawings, which is only for ease of description of the present application and simplification of the description, rather than indicating or implying that the referred apparatus or element must have a specific orientation, or is constructed and operated in a particular orientation, and therefore cannot be understood as a
25 limitation on the present application. Furthermore, the terms “first” or “second” are used for the purpose of description only, and cannot be understood as indication or implication of relative importance or implicit indication of the number of the mentioned technical features. Thus, features defined by “first” or “second” may explicitly or implicitly include one or more of the

features. In the description of the present application, “multiple/a plurality of” means two or more, unless defined otherwise explicitly and specifically.

In the description of the present application, unless otherwise expressly specified and limited, the terms “mounting”, “connection” and “connecting” should be understood in a broad sense. For example, they may be fixed connection, detachable connection, or integral connection; they may be mechanical connection, electrical connection, or mutual communication; they may be direct connection, indirect connection through an intermediate medium, internal communication between two elements, or interaction between two elements. For those of ordinary skills in the art, specific meanings of the above terms in the present application may be understood according to specific situations.

In the present application, unless specified and defined otherwise explicitly, a first feature “above” or “below” a second feature may include that the first and second features contact directly, or may include that the first and second features do not contact directly but the first and second features contact through an additional feature therebetween. Also, a first feature “on” or “above” or “at top of” a second feature includes the first feature being directly above and obliquely above the second feature, or simply indicates that the horizontal height of the first feature is greater than that of the second feature. A first feature “under” or “below” or “underneath” a second feature includes the first feature being directly below and obliquely below the second feature, or simply indicates that the horizontal height of the first feature is less than that of the second feature.

The following disclosure provides many different embodiments or examples for implementing different structures of the present application. In order to simplify the disclosure of the present application, components and arrangements of specific examples are described below. Of course, they are only examples and are not intended to limit the present application. Further, reference numbers and/or reference letters may be repeated in different examples of the present application for the purposes of simplicity and clarity, which does not per se indicate the relationship between the various embodiments and/or arrangements discussed. In addition, examples of various specific processes and materials are provided in the present application, but those of ordinary skills in the art will be aware of the application of other processes and/or the

use of other materials.

Referring to FIGS. 1-4, an embodiment of the present application provides a beating machine 1000. The beating machine 1000 includes a beating member 100, a power mechanism 200, and a cover body 700. The power mechanism 200 is used for driving the beating member 100 to reciprocatingly move up and down, the cover body 700 is sleeved outside the beating member 100, and the cover body 700 is used for covering a mouth 2001 of a cup 2000.

It should be noted that the beating machine may be used for making fruit tea and many cakes in household or commercial use. It may be understood that in the process of rapid development of modern food industry, the production of many kinds of foods, such as fruit tea, fruit and vegetable juice, fruit and vegetable cakes, etc., all need to use corresponding fruit puree and vegetable puree. However, producers often need to beat the cut fruits or vegetables by hand to obtain the corresponding fruit puree and vegetable puree, which brings great inconvenience to household or commercial food production and is not hygienic enough.

Then, in order to solve the inconvenience of manual beating, the food industry gave birth to the beating machine. However, in the process of beating fruits and vegetables by the beating machine in the related art, the juice of fruits and vegetables and formed particles are easy to splash from the mouth of the cup to the outside, which not only causes waste, but also easily pollutes the surrounding environment.

In the beating machine 1000 provided in the embodiment of the present application, the cover body 700 is sleeved outside the beating member 100 such that the mouth 2001 of the cup 2000 can be covered with the cover body 700 in the process that the power mechanism 200 drives the beating member 100 to reciprocatingly move up and down, thereby preventing juice of fruits and vegetables and formed particles from being easily splashed from the mouth 2001 to the outside in the process of beating the fruits and vegetables,.

In addition, in the beating machine 1000 provided in the embodiment of the present application, as long as the cut food materials such as lemon, grape or green grape are thrown into a cup 2000 such as a shaker cup, and the cup 2000 is placed on a placing seat 61 of the beating machine 1000, and then the beating machine 1000 is turned on, clean and sanitary

beaten lemon puree, grape puree and green grape puree may be obtained.

The beating machine 1000 in the embodiment of the present application may be used for home production as well as commercial production. The beating machine 1000 includes a beating member 100. The beating member 100 may have a generally cylindrical shape, and an
5 end of the beating member 100 may be formed with an irregular concave-convex shape so as to better beat and obtain corresponding fruit and vegetable puree. Alternatively, the beating member 100 may have other regular or irregular shapes, which is not limited here in the present application.

A material of the beat member 100 may be plastic, or the beat member 100 may be
10 formed by an injection molding process, thus having low manufacturing cost and simple process. The material of the beating member 100 may also be a composite material such as an alloy, so that the beating member 100 has sufficient rigidity, may well maintain its own shape in the process of multiple uses, is not easy to deform, and is more durable.

The power mechanism 200 may be connected to the beating member 100, which may be
15 indirectly connected or directly connected, so that the power mechanism 200 may provide power for the up-and-down reciprocating movement of the beating member 100, and the beating member 100 beats corresponding fruits and vegetables into fruit and vegetable puree by the up-and-down reciprocating movement.

The power mechanism 200 may include a motor as a power member and a transmission
20 assembly as a connection member to connect the motor and the beating member 100. The motor may be a servo motor, and the transmission assembly may adopt any of transmission modes, such as thread transmission, screw rod transmission, gear transmission and rack transmission, or a combination of multiple transmission modes, as long as the rotary motion of the motor may be converted into linear motion through the transmission assembly, and the beating member
25 100 may be driven to reciprocatingly move up and down.

The material of the cover body 700 may be plastic, which has low manufacturing cost and simple process. Alternatively, the material of the cover body 700 may also be a composite material such as an alloy, which has sufficient rigidity, may keep its own shape well in the

process of multiple uses, is not easy to deform, and is more durable.

The cover body 700 may be sleeved outside the beating member 100 so that the cover body 700 is formed with an avoiding hole 71 for the beating member 100 to pass through. The shape and size of the avoiding hole 71 need to be adapted to the shape and size of the beating member 100. The cover body 700 may have a certain thickness, so that the mouth 2001 may be well covered even when the beating height is high (i.e., the beating member 100 reciprocatingly moves up and down in a large range), thereby preventing juice and particulate matter of food materials from splashing out of the mouth 2001.

Since the cover body 700 is used for covering the mouth 2001 of the cup 2000, an outer contour shape of the cover body 700 needs to be matched with a shape of the mouth 2001, so as to play a better covering role, thereby preventing splashing of juice and particulate matter of food materials. A size of the cover body 700 may be made slightly larger than that of the standard sized cup 2000, so that the cover body 700 may also play a good splash prevention effect when the cup 2000 of different sizes need to be replaced.

Referring to FIG. 5, in some embodiments, the cover body 700 may be formed with an accommodating groove 72 with an opening 720 thereof facing downward. The accommodating groove 72 may be used for accommodating an end portion 2002 of the cup 2000, and a bottom surface 721 (an end surface opposite the opening 720) of the accommodating groove 72 may be used to be attached to the mouth 2001 of the cup 2000.

Thus, the accommodating groove 72 is arranged so that the end portion 2002 of the cup 2000 may be enclosed in the accommodating groove 72, thereby having good sealing property and preventing juice and particulate matter of the food materials contained in the cup 2000 from splashing during beating.

It may be understood that if the cover body 700 is completely hollow without providing the accommodating groove 72, when a bottom end of the cover body 700 is placed on the mouth 2001, only the height of the cup 2000 is increased, but it is impossible to prevent juice and particulate matter of the food materials contained in the cup 2000 from splashing during beating. Alternatively, if the accommodating groove 72 is not provided, and the cover body 700

is provided to be completely solid except for the avoiding hole 71, it will not only lead to an increase in cost and weight, but also make it difficult to clean the cover body 700 after the beating is completed.

Therefore, in the present application, the cover body 700 is provided with an
5 accommodating groove 72, and the opening 720 of the accommodating groove 72 is oriented downward, that is, towards the end portion 2002 of the cup 2000. During beating, the bottom surface 721 of the accommodating groove 72 may be maintained in a state of being attached to the mouth 2001 of the cup 2000, so that the end portion 2002 of the cup 2000 may be enclosed in the accommodating groove 72, thereby having good sealing performance and preventing
10 juice and particulate matter of the food materials contained in the cup 2000 from splashing during beating.

Referring to FIGS. 2 and 3, in some embodiments, the beating machine 1000 may include a mounting frame 300 to which both the power mechanism 200 and the cover body 700 are mounted, and the beating member 100 is capable of reciprocatingly moving up and down
15 relative to the mounting frame 300. Thus, the power mechanism 200, the cover body 700, and the mounting frame 300 may be formed as a compact whole, so that various components of the beating machine 1000 may be connected more reliably and stably.

The mounting frame 300 may have a regular or irregular shape, such as a rectangle, a square, a disc shape, etc. An outer contour of the mounting frame 300 in an embodiment of the
20 present application is generally rectangular. The mounting frame 300 may be made of a non-metal or a metal composite material, such as plastic, aluminum alloy, and the material may be determined according to requirements. The mounting frame 300 may be formed with a plurality of mounting holes for mounting components such as the power mechanism 200.

It may be understood that the cover body 700 needs to be sleeved outside the beating
25 member 100 and cover the mouth 2001 of the cup 2000 during beating. The beating member 100 may be connected to the power mechanism 200 so as to be driven by the power mechanism 200 to reciprocatingly move up and down relative to the mounting frame 300, and then the beating member 100 and the cover body 700 may be indirectly mounted to the mounting frame 300 through another component.

The mounting frame 300 is provided, so that the various components of the beating machine 1000, such as the power mechanism 200, the cover body 700, the beating member 100, and the like, may be mounted to the mounting frame 300 to form a compact and stable whole, and the up-and-down reciprocating movement of the beating member 100 may be more reliable and stable.

Referring to FIGS. 2-4, in some embodiments, the beating machine 1000 may include a fixing member 800. The fixing member 800 may be fixed to the mounting frame 300 and the cover body 700 is fixed to the fixing member 800.

Thus, the cover body 700 may be fixedly mounted to the mounting frame 300 by being fixed to the fixing member 800, so that the cover body 700 may be maintained in a state of covering the mouth 2001 during the beating of the beating member 100, thereby playing a role in stably preventing splashing of juice and particulate matter of food materials during beating.

The fixing member 800 may be a plastic product or an alloy product, such as an aluminum alloy or a stainless steel product. The material of the fixing member 800 may be determined according to actual demand and cost control.

The fixing member 800 may be fixed to the cover body 700 in a detachable manner. For example, in the present embodiment, the cover body 700 may be fixedly mounted to the fixing member 800 by a fastener such as a screw, in cooperation with mounting holes 81 and 74 respectively formed in the fixing member 800 and the cover body 700. It may be understood that such a mounting manner makes it easy to replace the cover body 700 or the fixing member 800. Alternatively, the fixing member 800 and the cover body 700 may be fixed together by non-detachable fixing mounting such as adhesive mounting.

The fixing member 800 may include a hollow-out structure 82 such that the hollow-out portion (i.e., the hollow-out structure 82) may be used to avoid the remaining components of the beating machine 1000. For example, in the case that the beating member 100 is mounted to the mounting frame 300 through a guide structure 33 (see below for a detailed description) or other components and the power mechanism 200 drives the beating member 100 to reciprocatingly move up and down through the guide structure 33, the hollow-out structure 82

of the fixing member 800 may avoid up and down sliding of the guide structure 33. Thus, the fixing member 800 and the cover body 700 may be fixed in their own positions without interfering with the movement of the remaining components.

Referring again to FIG. 2, in some embodiments, the power mechanism 200 may include a first transmission assembly 21 and a first motor 22. The first transmission assembly 21 and the first motor 22 may both be mounted to the mounting frame 300, the first transmission assembly 21 is connected to the first motor 22 and the beating member 100, and the first motor 22 may drive the beating member 100 to reciprocatingly move up and down through the first transmission assembly 21.

Thus, the first motor 22 and the beating member 100 are connected through the first transmission assembly 21, so that rotary motion of the first motor 22 may be converted into linear motion through the first transmission assembly 21, and the beating member 100 may be driven to reciprocatingly move up and down. The movement mode is reliable and the driving mode is simple.

The beating machine 1000 may include a mounting frame 300. The first motor 22 may be provided on a first side 31 of the mounting frame 300, the first transmission assembly 21 may be provided on a second side 32 of the mounting frame 300, and the first side 31 and the second side 32 are opposite each other (see FIG. 7). The second side 32 may be a side facing the beating member 100, and the first side 31 is opposite to the second side 32. Both the first motor 22 and the first transmission assembly 21 are provided to the mounting frame 300 such that the assemblies form a compact whole.

The first motor 22 may be a servo motor. The beating member 100 may be connected to the first motor 22 through the first transmission assembly 21. A transmission mode of the first transmission assembly 21 may be any one of thread transmission, screw rod transmission, gear transmission and rack transmission or the like or a combination of multiple transmission modes. The embodiments of the present application do not limit the specific transmission mode of the first transmission assembly 21, as long as the rotary motion of the first motor 22 can be converted into linear motion through the first transmission assembly 21, and the beating member 100 can be driven to reciprocatingly move up and down.

Referring to FIGS. 2 and 6, in some embodiments, the first transmission assembly 21 may include a connecting rod structure 210 and a sliding member 211. The connecting rod structure 210 may be connected to the first motor 22 and the sliding member 211, and the sliding member 211 may be connected to the beating member 100. Thus, the first motor 22 may drive the connecting rod structure 210 to rotate so that the sliding member 211 reciprocatingly moves up and down, thereby driving the beating member 100 to reciprocatingly move up and down.

In this way, the transmission mode is simple and reliable, and the volume of the beating machine 1000 may be saved. The first motor 22 drives the connecting rod structure 210 in the first transmission assembly 21 to rotate, and drives the sliding member 211 connected to the connecting rod structure 210 to reciprocatingly move up and down, thereby driving the beating member 100 connected to the sliding member 211 to reciprocatingly move up and down, and ensuring the rigid collision between the beating member 100 and the object to be beaten.

Since the power mechanism 200 needs to drive the beating member 100 to reciprocatingly move up and down, the rotary motion of the first motor 22 needs to be converted into linear motion to drive the beating member 100 to reciprocatingly move up and down. Then, the first transmission assembly 21 of the power mechanism 200 may include a connecting rod structure 210 and a sliding member 211, the connecting rod structure 210 may be connected to the first motor 22 and the sliding member 211, and the sliding member 211 is connected to the beating member 100.

The connecting rod structure 210 may be rotated by driving of the rotary motion of the first motor 22. Since the connecting rod structure 210 needs to rotate and while drive the sliding member 211 to reciprocatingly linearly move up-and-down, the beating member 100 connected to the sliding member 211 may be driven to reciprocatingly move up-and-down by the up-and-down reciprocating movement of the sliding member 211. Thus, it can be confirmed that the connecting rod structure 210 includes two modes of motion simultaneously, namely rotary motion and up-and-down reciprocating motion.

Then, in one embodiment of the present application, the connecting rod structure 210 may include a wheel disc 2100 and a connecting rod 2101. The wheel disc 2100 may be connected to the first motor 22, and one end of the connecting rod 2101 may be connected to the wheel

disc 2100 and the other end of the connecting rod 2101 may be connected to the sliding member 211.

5 The wheel disc 2100 may be circular, and the connecting rod 2101 may be substantially elongated and cylindrical. One end of the connecting rod 2101 may be detachably connected to the wheel disc 2100 by a fastener such as a screw, and a position where the wheel disc 2100 is connected to the connecting rod 2101 deviates from a center of the wheel disc 2100. The other end of the connecting rod 2101 may be detachably connected to the sliding member 211 by a fastener such as screw. The connection mode is reliable and simple, and the detachable connection makes it easy to replace the damaged wheel disc 2100, connecting rod 2101 or
10 sliding member 211.

In this way, the rotary motion of the first motor 22 may drive the wheel disc 2100 to rotate. Since the other end of the connecting rod 2101, which is connected to the wheel disc 2100 at one end thereof, is connected to the sliding member 211, the connecting rod 2101 may drive the sliding member 211 to reciprocatingly linearly move up-and-down while the wheel disc 2100
15 rotates, and the direction of the linear motion may be controlled by a rotation direction of the first motor 22. Since the sliding member 211 is connected to the beating member 100, the up-and-down reciprocating movement of the sliding member 211 may also drive the beating member 100 to reciprocatingly move up and down.

20 The above is one specific embodiment of the connecting rod structure 210, which cannot be understood as intrinsically limiting the specific structure of the connecting rod structure 210.

Referring to FIG. 7, in some embodiments, the mounting frame 300 may be provided with a guide structure 33 to which the sliding member 211 may be connected and which may be used for guiding the sliding member 211 to move up and down.

25 Thus, the guide structure 33 may guide the sliding member 211 to move up and down, thereby making the movement of the sliding member 211 more smooth and convenient.

The guide structure 33 may include a guide bar 330 and a guide block 331. The guide bar 330 is mounted to the mounting frame 300, one of the guide bar 330 and the guide block 331 is provided with a guide groove 3300 and the other of the guide bar 330 and the guide block 331

is provided with a projection 3310 which is in sliding fit with the guide groove 3300, and the guide block 331 is connected to the sliding member 211.

Referring to FIG. 7, in some embodiments, the mounting frame 300 may be formed with a recess 34, the guide structure 33 may include a guide bar 330 provided in the recess 34, the guide bar 330 partially protrudes from the recess 34, and a guide groove 3300 may be formed at a portion of the guide bar 330 protruding from the recess 34. The guide structure 33 may further include a guide block 331 used in cooperation with the guide bar 330. The guide block 331 is formed with a projection 3310 which is accommodated in the guide groove 3300. The guide block 331 is connected to the sliding member 211 so that when the sliding member 211 is driven to move by the first transmission assembly 21, the projection 3310 of the guide block 331 may slide in the guide groove 3300 of the guide bar 330 to guide the sliding member 211 to move up and down.

It may be understood that the guide groove 3300 may be formed in the guide block 331, and correspondingly the projection 3310 may be formed in the guide bar 330. The specific formation positions of the guide groove 3300 and the projection 3310 are not intrinsically limited by the present application.

In an embodiment of the present application, the sliding member 211 may be driven by the connecting rod structure 210 to move up and down relative to the mounting frame 300, thereby driving the beating member 100 to reciprocatingly move up and down to beat the food materials contained in the cup 2000. Then, since the sliding member 211 is connected to the beating member 100 and the cover body 700 is sleeved outside the beating member 100, in consideration of the outer contour shape of the sliding member 211 and in order to avoid the cover body 700 interfering with the up-down sliding of the sliding member 211 or the up-down reciprocating movement of the beating member 100, as shown in FIG. 4, the cover body 700 may be formed with a notch 73, and when the sliding member 211 moves downward in place, a lower portion of the sliding member 211 may be placed in the notch 73, for example, clamped in the notch 73.

Referring to FIG. 6, in some embodiments, the beating machine 1000 may further include a bracket 400 relative to which the mounting frame 300 is movable. Thus, the mounting frame

300 may be moved relative to the bracket 400, and the height of the beating member 100 may be easily adjusted, so that the beating stroke of the beating member 100 may be easily adjusted, and the beating effect is better.

5 The bracket 400 may be formed by an injection molding process so that the weight of the beating machine 1000 is lighter and the cost is saved. Alternatively, the bracket 400 may be made of another material such as a composite metal to ensure the hardness of the bracket 400.

10 The bracket 400 is formed with a hollow-out area 41 in which the mounting frame 300 may be mounted so that the mounting frame 300 may move up and down relative to the bracket 400 within the hollow-out area 41. It may be understood that the mounting frame 300 may be connected to the bracket 400 and moved relative to the bracket 400, so that the overall height of the beating machine 1000 may be determined by the height of the bracket 400. The mounting frame 300 is connected to the beating member 100 and the power mechanism 200, and the mounting frame 300 is configured to move relative to the bracket 400, so that the height of the beating member 100 may be adjusted to facilitate the placement of the cup 2000 such as shaker cup. Alternatively, the mounting frame 300 may be moved relative to the bracket 400, so as to adjust the height of the beating member 100, reduce the beating stroke of the beating member 100, adapt to the height of the cup 2000, and reduce the volume of the beating machine 1000.

20 Referring to FIG. 8, in some embodiments, the beating machine 1000 may further include a lifting mechanism 500 for driving the mounting frame 300 to lift relative to the bracket 400. In this way, the lifting mechanism 500 is provided so that the lifting of the mounting frame 300 is stable and reliable.

25 The lifting mechanism 500 may be provided at a bottom of the beating machine 1000, and may include a power motor and a transmission assembly. The transmission assembly may adopt any one transmission mode or a combination of multiple transmission modes, such as a screw rod and nut, a rack and pinion, and a thread transmission, which are not intrinsically limited here in the present application.

When the beating machine 1000 is used, in order to adapt to cups 2000 of different sizes for placing fruits and vegetables, such as shaker cups of different sizes, the mounting frame 300

may be first adjusted to a suitable position (e.g., a highest position) by the lifting mechanism 500 so as to adapt to the height of the cup 2000. The lifting mechanism 500 is provided so that the beating height of the beating member 100 may be higher, and the beating with different precision and strengths may be adjusted according to different food materials. It may be understood that sufficient height may ensure the rigidity of the beating.

Referring to FIG. 8, in some embodiments, the lifting mechanism 500 may include a second motor 52 and a second transmission assembly 51. The second motor 52 may drive the mounting frame 300 to lift relative to the bracket 400 through the second transmission assembly 51 so as to lift the beating member 100.

In this way, the second motor 52 is connected to and the mounting frame 300 by the second transmission assembly 51, such that the rotary motion of the second motor 52 may be converted into the lifting motion of the mounting frame 300 through the second transmission assembly 51, thereby facilitating the adjustment of the height of the beating member 100. This driving mode is simple and reliable.

The mounting frame 300 may be connected to the second motor 52 through the second transmission assembly 51. The transmission mode of the second transmission assembly 51 may be any one of thread transmission, screw rod transmission, gear transmission and rack transmission or the like or a combination of multiple transmission modes. The embodiments of the present application do not intrinsically limit the specific transmission mode of the second transmission assembly 51, as long as the rotary motion of the second motor 52 can be converted into linear movement through the second transmission assembly 51 to drive the mounting frame 300 to lift relative to the bracket 400.

Referring to FIG. 8, in some embodiments, the second transmission assembly 51 includes a screw rod 510 and a slider 511 sleeved outside the screw rod 510. The slider 511 is fixedly connected to the mounting frame 300, the screw rod 510 is connected to a second motor 52 for driving the screw rod 510 to rotate, so as to drive the slider 511 to move relative to the screw rod 510, thereby lifting the mounting frame 300.

Thus, the transmission mode in which the screw rod 510 and the slider 511 cooperate is

simple and reliable. The screw rod 510 may convert the rotary motion of the second motor 52 into the linear motion of the slider 511 so as to drive the slider 511 to move, thereby driving the mounting frame 300 to lift.

The second motor 52 may be provided at a bottom of the beating machine 1000, the slider 511 is sleeved outside the screw rod 510, and the screw rod 510 is connected to the second motor 52, so that the second motor 52 may drive the screw rod 510 to rotate, thereby driving the slider 511 sleeved outside the screw rod 510 to move up and down relative to the screw rod 510.

The number of sliders 511 may be one or more. A shape of the slider 511 may be a regular or irregular block, such as a rectangular block, a square block, a triangular block, or the like. The slider 511 may be made of plastic, or may be made of a composite metal material such as an aluminum alloy, and may be designed according to actual needs.

The slider 511 is fixedly connected to the mounting frame 300. The slider 511 may be fixedly connected to the mounting frame 300 in a detachable manner by a fastener such as screw, or may be fixedly connected to the mounting frame 300 by an adhesive. Thus, the slider 511 may drive the mounting frame 300 to lift while moving relative to the screw rod 510.

Thus, during the use of the beating machine 1000, the mounting frame 300 may be first adjusted to a suitable position (e.g., the highest position) by the lifting mechanism 500 so as to adapt to the height of the cup 2000. It may be easily understood that the provision of the lifting mechanism 500 may also make the beating height of the beating member 100 higher, so that the beating may be adjusted to different precision and different intensities for different food materials, and sufficient height may ensure the rigidity of the beating.

Referring to FIG. 6, in some embodiments, the end portion 11 of the beating member 100 may be formed with a concave-convex structure 110. In this way, the beating member 100 is more efficient in beating objects such as fruits and vegetables.

As shown in FIG. 6, the end portion 11 of the beating member 100 may be formed with a concave-convex structure 110 which may be densely serrated for example or may be in other shapes. When the beating member 100 reciprocatingly moves up and down at a high speed, the

concave-convex structure 110 of the end portion 11 of the beating member 100 may better destroy fruits and vegetables and mash the fruits and vegetables into a puree state, thereby achieving better beating effect and higher efficiency.

Referring again to FIG. 1, in some embodiments, the beating machine 1000 may further include a shell 600. The shell 600 has a placing seat 61 on which the cup 2000 may be placed. The power mechanism 200 and the lifting mechanism 500 may be provided in the shell 600, and the shell 600 may protect the power mechanism 200 and the lifting mechanism 500 to a certain extent. The beating member 100 may be exposed to the shell 600 for rigidly contacting with the food material to be beaten within the cup 2000.

To sum up, the beating machine 1000 in the embodiments of the present application adopts a miniaturized design, ensures two-stage lifting and beating through the power mechanism 200 and the lifting mechanism 500, and adopts a hard contact beating, which may highly restore the manual beating effect, and the beating force may be as high as 90 kg.

In order to prevent the juice of fruits and vegetables and the formed particles from easily splashing from the mouth of the cup to the outside to cause waste and pollution to the surrounding environment during beating the fruits and vegetables, in the embodiment of the present application, the cover body 700 is sleeved outside the beating member 100 of the beating machine 1000, so that the cover body 700 may cover the mouth 2001 of the cup 2000 when the power mechanism 200 drives the beating member 100 to reciprocatingly move up and down, thereby preventing the juice of fruits and vegetables and the formed particles from easily splashing from the mouth 2001 to the outside in the process of beating the fruits and vegetables.

In the description of the present specification, descriptions of reference terms “one embodiment”, “some embodiments”, “exemplary embodiments”, “examples”, “specific examples”, or “some examples” and the like mean that specific features, structures, materials or characteristics described in connection with the embodiments or examples are included in at least one embodiment or example of the present application. In the present specification, the schematic expressions of the above terms do not necessarily refer to the same embodiments or examples. Furthermore, the specific features, structures, materials or characteristics described may be combined in any one or more embodiments or examples in a suitable manner.

Although implementations disclosed herein are described above, the described contents are only implementations used for facilitating understanding of the present application, and are not intended to limit the present application. Without departing from the spirit and scope disclosed herein, any person skilled in the art to which the present application pertains may
5 make any modifications and changes in the form and details of implementation, but the scope of patent protection of the present application shall still be defined by the appended claims.

Claims

1. A beating machine comprising:

a beating member,

a power mechanism configured to drive the beating member to reciprocatingly move up

5 and down; and

a cover body sleeved outside the beating member and configured to cover a mouth of a cup.

2. The beating machine according to claim 1, wherein the cover body is formed with an accommodating groove, an opening of the accommodating groove faces downward, the
10 accommodating groove is configured to accommodate an end portion of the cup, and a bottom surface of the accommodating groove is configured to be attached to the mouth of the cup.

3. The beating machine according to claim 1, wherein the beating machine further comprises a mounting frame to which both the power mechanism and the cover body are mounted, and the beating member is configured to be reciprocatingly movable up and down
15 relative to the mounting frame.

4. The beating machine according to claim 3, wherein the beating machine further comprises a fixing member fixed to the mounting frame, and the cover body is fixed to the fixing member.

5. The beating machine according to claim 3, wherein the power mechanism comprises a
20 first transmission assembly and a first motor which are mounted to the mounting frame, the first transmission assembly is connected to the first motor and the beating member, and the first motor is configured to drive the beating member to reciprocatingly move up and down through the first transmission assembly.

6. The beating machine according to claim 5, wherein the first transmission assembly
25 comprises a connecting rod structure and a sliding member, the connecting rod structure is connected to the first motor and the sliding member, the sliding member is connected to the beating member, the first motor is configured to drive the sliding member to reciprocatingly move up and down through the connecting rod structure, thereby driving the beating member to

reciprocatingly move up and down.

7. The beating machine according to claim 6, wherein the connecting rod structure comprises a wheel disc and a connecting rod, the wheel disc is connected to the first motor, one end of the connecting rod is connected to the wheel disc, and the other end of the connecting rod is connected to the sliding member.

8. The beating machine according to claim 7, wherein the wheel disc is circular, and a position where the wheel disc is connected to the connecting rod deviates from a center of the wheel disc.

9. The beating machine according to claim 6, wherein the mounting frame is provided with a guide structure to which the sliding member is connected, and the guide structure is configured to guide the sliding member to move up and down.

10. The beating machine according to claim 9, wherein the guide structure comprises a guide bar and a guide block, the guide bar is mounted to the mounting frame, one of the guide bar and the guide block is provided with a guide groove, and the other of the guide bar and the guide block is provided with a projection which is in sliding fit with the guide groove, and the guide block is connected to the sliding member.

11. The beating machine according to any one of claims 3 to 10, wherein the beating machine further comprises a bracket, and the mounting frame is mounted to the bracket and configured to be movable relative to the bracket.

12. The beating machine according to claim 11, wherein the beating machine further comprises a lifting mechanism configured to drive the mounting frame to lift relative to the bracket.

13. The beating machine according to claim 12, wherein the lifting mechanism comprises a second motor and a second transmission assembly, the second motor drives the mounting frame to lift relative to the bracket through the second transmission assembly so as to lift the beating member.