



US 20030132236A1

(19) **United States**

(12) **Patent Application Publication**
Safont et al.

(10) **Pub. No.: US 2003/0132236 A1**

(43) **Pub. Date: Jul. 17, 2003**

(54) **WORKING CONTAINER FOR RECEIVING AND PROCESSING FOODSTUFFS**

Publication Classification

(76) Inventors: **Vicenc Safont**, Barcelona (ES); **Jose Luis Roman**, Barcelona (ES); **Antonio Rebordosa**, Barcelona (ES); **Mariano Peñaranda**, Barcelona (ES)

(51) **Int. Cl.⁷** **B65D 90/00**
(52) **U.S. Cl.** **220/890**

(57) **ABSTRACT**

Correspondence Address:
Robert C Nabinger
Fish & Richardson
225 Franklin Street
Boston, MA 02110-2804 (US)

The invention relates to a working container (1) which is used to receive and process foodstuffs. The working container (1) is provided with a bottom (3) on which a bearing journal (11) can be placed for rotationally mounting a working tool (34) which processes the foodstuffs. According to the invention, a recess (20) is embodied in the bottom (3) of the container. The bearing journal (11) extends into said recess, whereby food which is not to be comminuted in the receiving area (32) by the usual working tool (34) can be processed, for example, by a working tool (56) of a rod mixer (57) or another working tool of a hand mixer, said working tools (56) not being able to come into contact with the bearing journal (11).

(21) Appl. No.: **10/297,956**

(22) PCT Filed: **May 23, 2001**

(86) PCT No.: **PCT/EP01/05905**

(30) **Foreign Application Priority Data**

Jun. 29, 2000 (DE)..... 100 31 753.7

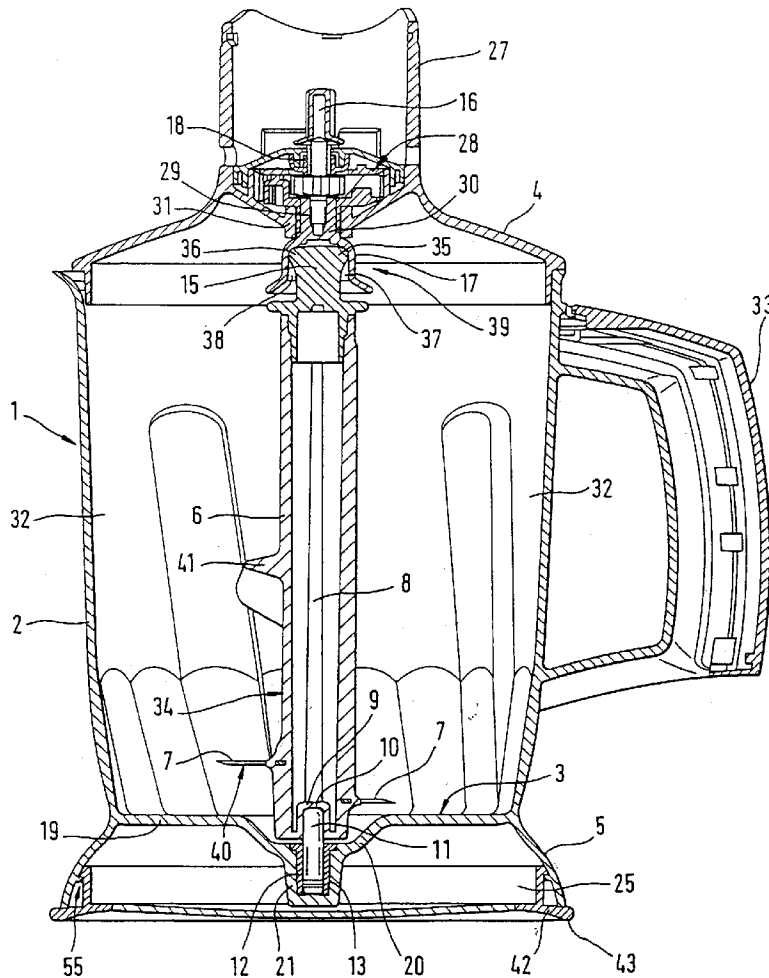
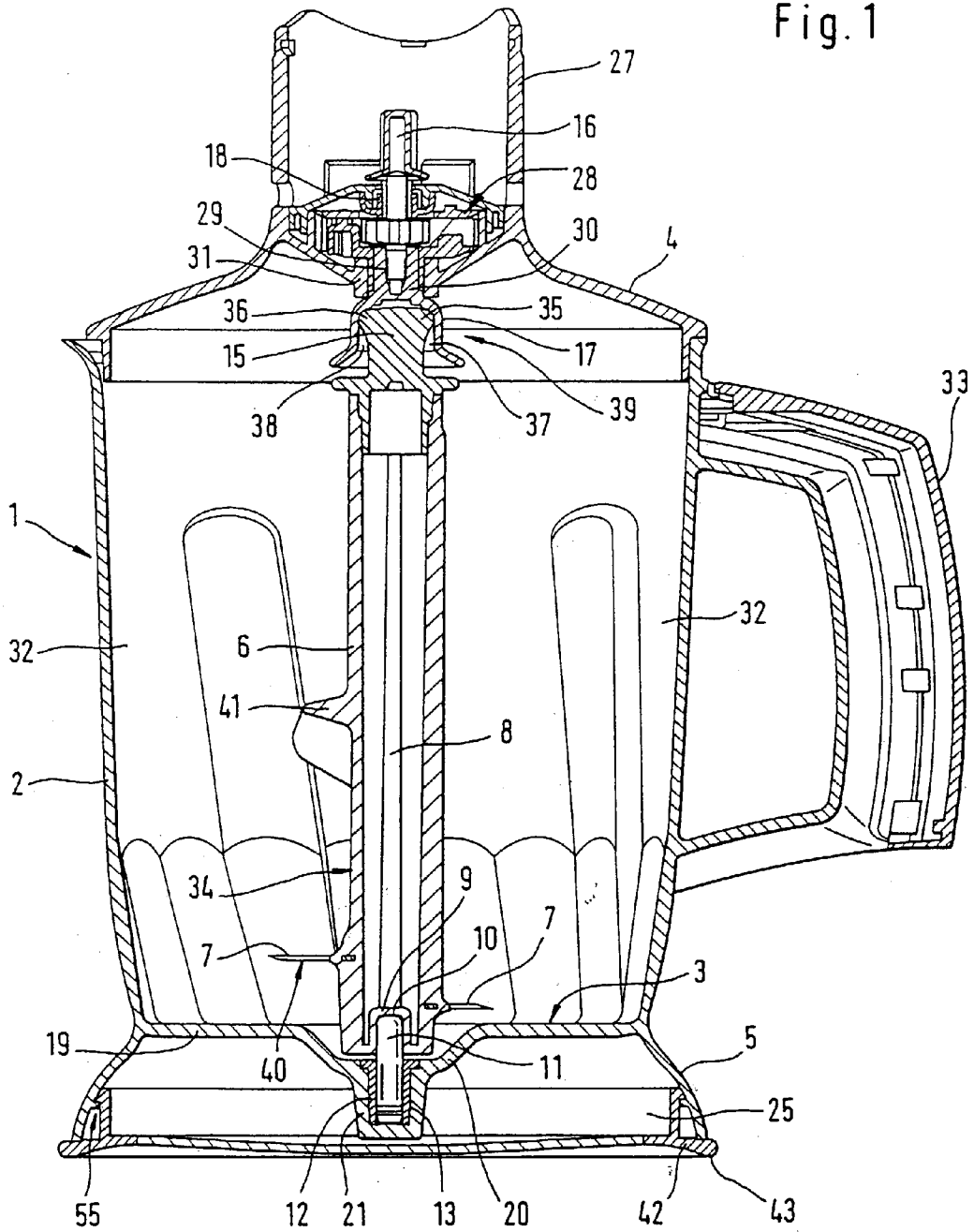


Fig. 1



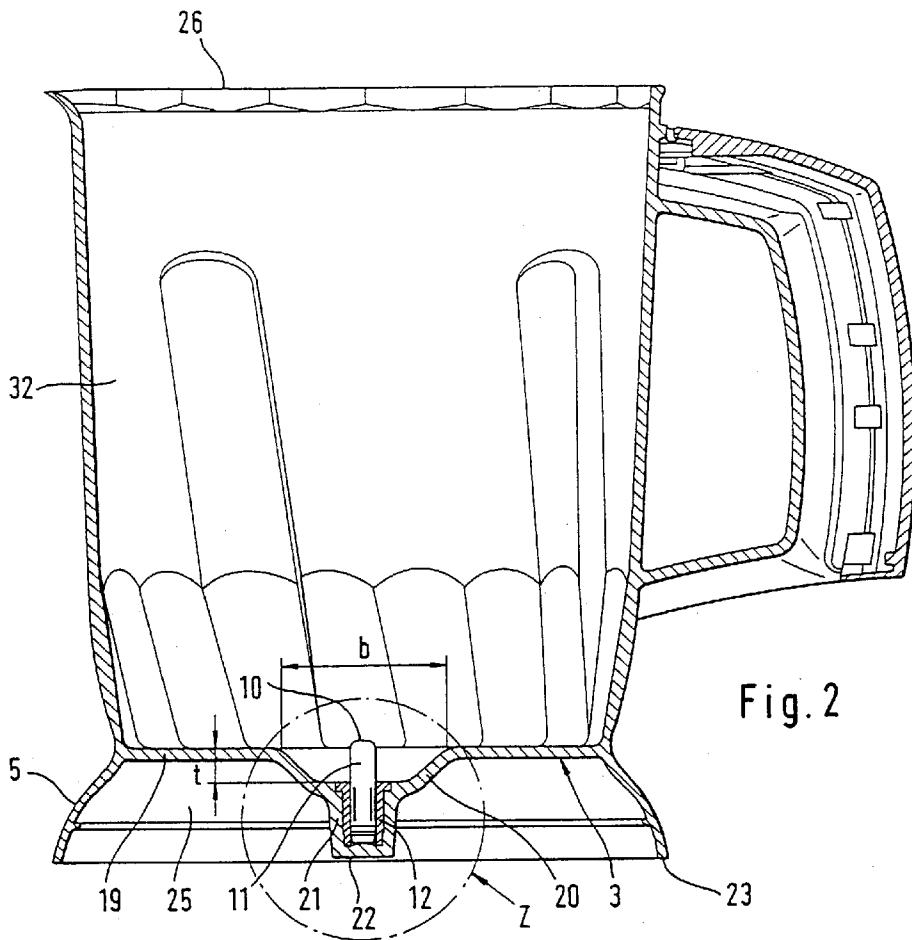


Fig. 2

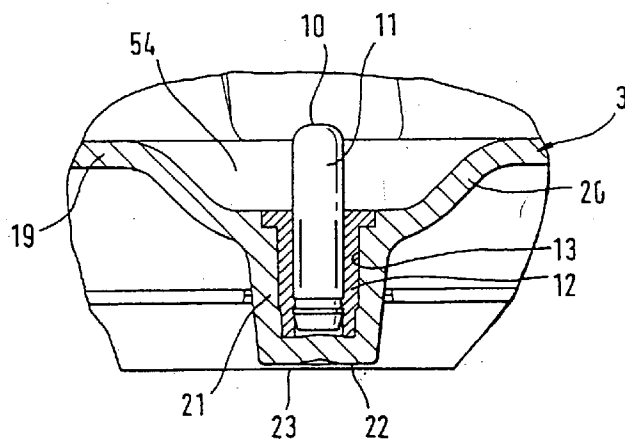
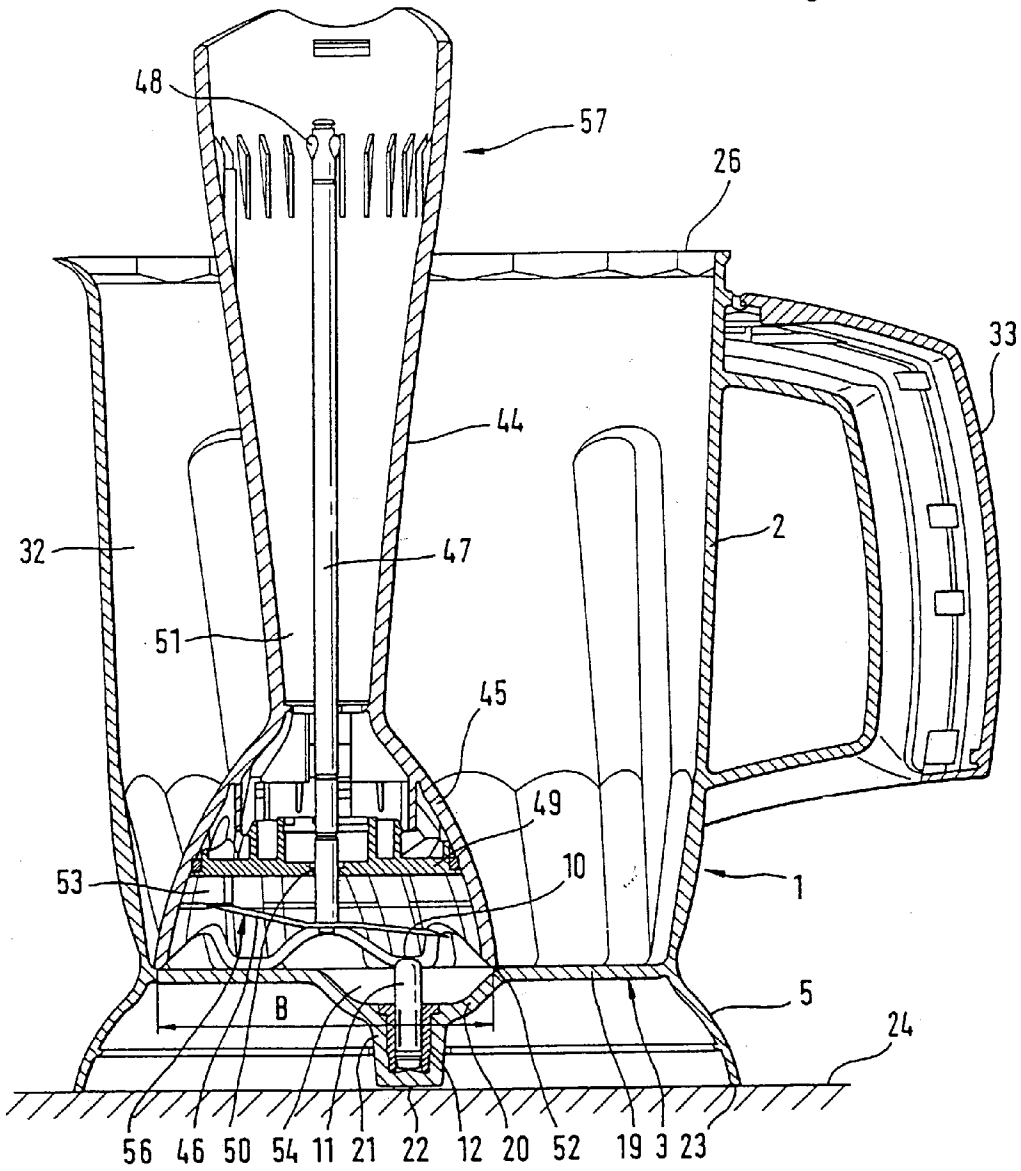


Fig. 3

Fig. 4



WORKING CONTAINER FOR RECEIVING AND PROCESSING FOODSTUFFS

[0001] The invention relates to a working container for receiving and processing foodstuffs as described in the pre-characterising clause of claim 1.

[0002] Working containers of such kind are known in the art, for instance from DE 41 28 456 A1. This working container includes a journal that protrudes from bottom into the interior and on which a working tool is mounted to allow rotation. The end of the working tool proximal to the journal is furnished with an engaging mechanism that establishes a rotationally locked connection with a corresponding engaging mechanism on the lid when the working container is closed. The corresponding engaging mechanism is connected to a drive shaft that protrudes upwardly out of the lid and that may be connected with a driving component, preferably a hand-held mixer, a stick blender or other such device. In this way, the working tool that is placed rotatably on the journal in the working container may be rotated when the driving component is switched on. Since cutting devices or other devices for processing foodstuffs are conformed on the working tool, the foodstuffs are mixed and chopped accordingly. After the foodstuffs have been chopped, they may be left in the working container after the working tool has been removed, or may also be removed for further processing or consumption.

[0003] The object of the invention is therefore an improved working container for receiving and processing foodstuffs in accordance with the pre-characterising clause of claim 1, such that on the one hand foodstuffs may be processed with a working tool that is located on the journal, but on the other hand even when the working tool is removed from the working container, foodstuffs that are also in the working container may be chopped using a working tool that is conformed on a mechanism, in such manner that the journal does not obstruct the working tool.

[0004] The object is solved according to the invention by the characterising features of claim 1. Because the journal is inserted or embedded in the bottom of the working container, when the working tool has been removed from the journal in the working container, the working tool of a stick blender or a hand-held mixer, for example, may be inserted into the working container until it touches the bottom of the working container. The device may now be switched on and the foodstuffs in the working container may be chopped and/or blended by the working tool of the stick blender or hand-held mixer. According to the invention, it is thus possible not only to process foodstuffs with the working tool that is normally located on the journal in the working container, but also to chop the foodstuffs by inserting an external chopping device and the working tool thereof into the working container.

[0005] The invention extends the range of uses for the working container, i.e. the working container may be used, for example, to chop herbs such as parsley, dill, or other vegetables such as onions, carrots with the knife located on the journal. When the working has been removed from the working container, foodstuffs may also be pureed and chopped in the same working container using a stick blender. However, it is also possible to whip cream to stiffness with a whisk in the working container, while ensuring that the whisk on the device does not come into damaging contact with the journal.

[0006] The invention serves to prevent damage to the working container and the working tool of the device. This further serves to avoid injury to the operator.

[0007] According to the features described in claim 2, a working tool of a domestic appliance cannot come into contact with the journal if, depending on the length of the journal, both the depth and the radial width (diameter) of the recess are small enough at the transition to the edge area of the container bottom to ensure that the working tool cannot be inserted into the recess or depression, but is always kept at a distance from the journal by the bottom area surrounding the recess.

[0008] According to the features described in claim 3, special sealing elements are not required, since the recess is formed by a blind hole. The journal is secured against rotation in the blind hole for example by adhesive bonding, pressing, or by a screwed fixture or similar means.

[0009] According to the features described in claim 4, the journal is pressed in the blind hole by means of a bush. This has the advantage that compressive forces are not transferred directly to the material of the working container, but instead through a bush that is made from more resilient material than that of the working container. The bush itself may then be secured in the recess at the bottom of the working container by adhesive bonding or with the application or less pressure.

[0010] Here it should be noted that of course it is also conceivable to secure the journal detachably to the bottom of the working container; however, the drawback of such an arrangement is that if the operator neglects to remove the journal, the working tool of the stick blender or hand-held mixer may be damaged. This solution is therefore not particularly practical.

[0011] The features described in claim 5 enable stable positioning of the working container on a work surface.

[0012] An embodiment of the invention is shown in the drawing and will be described in detail in the following. In the drawing:

[0013] **FIG. 1** is a longitudinal sectional view of a working container with lid and having a working tool centrally positioned on the journal in the interior of the working container,

[0014] **FIG. 2** is a working container without lid or working tool,

[0015] **FIG. 3** is an enlarged section Z from **FIG. 2** and

[0016] **FIG. 4** is a working container with lid removed and working tool taken out, but with the blending rod of a stick blender inserted.

[0017] **FIG. 1** shows an essentially cylindrical working container **1**, that includes a container wall **2**, a handle **33** conformed on the side of container wall **2**, and a container bottom **3**. Working container **1** is supported on container base **5**. Container base **5**, container bottom **3**, container wall **2**, and handle **33** are made from a single plastic moulded part.

[0018] When ready for operation, working container **1** may be closed at its upper, open end **26** (**FIG. 2**) by a container lid **4** (**FIG. 1**). Container lid **4** is slightly tapered and is furnished at its middle with a cylindrical projection

27. This projection 27 includes a drive shaft 16 that incorporates a drive unit 28. Drive shaft 16 is rotatably supported above a bearing point 18 on projection 27 and above a hole 29 conformed in a driven shaft 30. Driven shaft 30 in turn is supported above bearing point 31, which is a part of container lid 4. Driven shaft 30 continues into receiving area 32 of working container 1 and has a connection fitting 17 at its free end.

[0019] As shown in FIG. 1, a bearing journal 11 having a rounded head 10 is provided in container bottom 3 and is concentric with driven shaft 30. Bearing journal 11 is accommodated by a bearing journal seating, which is held in turn by a seating socket 13 that is conformed as a blind hole in container bottom 3. A working tool 34 that is furnished with tool shaft 6 is retained between the downwardly flared connection fitting 17 and bearing journal 11, and has at its upper end a connector 15 that has the form of an engaging member, the fins 35, 36 of which are arranged in a cross formation and engage detachably but non-rotatably with corresponding engaging members 37, 38 of connection fitting 17. Together with the corresponding walls of connection fitting 17, the rounded outer edges of engaging arrangement 35, 36, 37, 38 create contact points that serve as upper bearing point 39 of working tool 34.

[0020] As shown in FIG. 1, the lower end of tool shaft 6 is conformed by moulding as sickle-shaped knives that project from tool shaft 6 into receiving area 32 at different levels. A mixing vane 41 is conformed on tool shaft 6 above the knives 7. Tool shaft 6 is configured as a hollow shaft having reinforcing ribs 8 arranged on the inside along its longitudinal axis and in the example illustrated is made from a suitable thermoplastic material. The lower end of tool shaft 6 terminates in a ball and socket joint socket 9, as shown in FIG. 1 by means of which it is supported to allow tilting and rotation on head 10 of bearing journal 11.

[0021] In FIGS. 1 to 4, the container bottom includes an annular and horizontally aligned outer section 19 and a recess 20 that extends from the centre and is concentric with container wall 2, and that is adjoined from below by a U-shaped central end section 21. The recess has radial width b and depth t. End section 21 incorporates blind hole 13, in which bearing journal seating 12 is secured. The U-shaped end section 21 terminates externally with a frontal surface 22, which does not extend beyond border 23 of container base 5, as is shown in FIGS. 2, 3 and 4. This means that border 23 always lies flush on a work surface 24, so that working container 1 does not wobble.

[0022] However, if recess 25 in container base 5 is terminated by a bottom cover 42, as is shown in FIG. 1, the bottom-most line or the lowest standing area 43 constitutes the point of contact with work surface 24. Bottom cover 42 is securely attached to container base 5 via locking members 55.

[0023] Working container is again illustrated in FIG. 4 in the condition also shown in FIG. 2, and here too working tool 34 (FIG. 1) has been removed from working container 1. The shaft 44 of an electrically powered stick blender 57 is inserted into the open end 26 of working container 1. For the sake of clarity, the drive unit of the stick blender, i.e. the motor housing at the top of shaft 44 is not shown here, it has been detached in the figure. A bell-shaped attachment 45 that is open facing bottom 3 is connected to the bottom of shaft

44, and in which a working tool 56 of stick blender 57 that is conformed with knives 46 is rotatably attached. Working tool 56 is non-rotatably attached to drive shaft 47 that extends down the middle of shaft 44 and that may be connected to the motor shaft (not shown) of stick blender 57 via carrier lugs 48. Drive shaft 47 penetrates a cover 49 secured inside bell-shaped attachment 45 through a hole 50 to such that a seal is created. This ensures that foodstuffs cannot infiltrate interior area 51 of shaft 44.

[0024] As is further shown in FIG. 4, working tool 56 of stick blender 57 is arranged at a distance from the free end 52 of bell-shaped attachment 45, so that it cannot strike bearing journal 11 that is conformed in recess 20. Indeed, the free end of head 10 of bearing journal 11 protrudes slightly into processing area 53 of bell-shaped attachment 45, but the distance from working tool 56 is still such that contact is precluded. Free end 52 of bell-shaped attachment 45 is supported on exterior section 19 of container bottom 3, so that working tool 46 can never approach free end 10 of journal 11. It is also impossible for free end 52 of bell-shaped attachment 45 to be inserted into the area 54 formed by recess 20 because the free diameter of recess 20, or radial width b, is significantly smaller than free diameter B of bell-shaped attachment in the region of free end 52.

[0025] The working container functions as follows:

[0026] After working tool 34 has been centred on bearing journal 11, container lid 4 is placed over the open end 26 of working container 1. This causes connector 15, which is conformed on the top end of working tool 34, to be centred on connection fitting 17, so that working tool 34 now extends essentially lengthwise along the centre line of working container 1. A drive unit—not shown in the drawing—is now placed on top of projection 27 and engages non-rotatably with drive shaft 16.

[0027] When the electric drive unit is switched on, driven shaft 30 is driven by drive unit 28 via drive shaft 16 and in turn rotates working tool 34. Foodstuffs that are located in working container 1 are chopped by knives 7 of working tool 34, and are also mixed with the other foodstuffs by mixing vanes 41. When the food processing operation is complete, container lid 4 may be removed from working container 1 again and working tool 34 may be taken out. Now the foodstuffs are freely accessible and may be removed either by pouring from the working container 1 or by some other means such as a spoon.

[0028] If the operator now wishes to puree foodstuffs or whip cream, for example, the processing part of a kitchen appliance may now be inserted into receiving area 32 of working container 1 and the foodstuffs in working container 1 may be chopped using working tool 56 of stick blender 57 without any risk that working tool 56 will come into contact with bearing journal 11. Thus the invention enables different foodstuffs to be processed in the working container by various means and using a variety of tools. Foodstuffs that may be processed in this manner include for instance whipped cream, pureed potatoes, strawberries, etc., or chopped parsley, dill, chives, etc.

1. A working container (1) for receiving and processing foodstuffs, having a container bottom (3) that delimits the

receiving area (32), on which a bearing journal (11) onto which the working tool (34) for processing foodstuffs can be placed is secured,

characterised in that

the container bottom (3) has an annular recess (20) in which the bearing journal (11) is located.

2. The working container according to claim 1,

characterised in that

the radial width (b) of the recess (20) and the length of the bearing journal (11) are calculated to ensure that upon removal of working tool (34), which engages with bearing journal (11) and working container (1) and subsequent insertion of working tool (40), which is conformed on a hand-held mixer, preferably a stick blender, the working tool (40) thereof cannot come into significant contact with the bearing journal (11) when it is positioned on the container bottom (3).

3. The working container according to claim 1, characterised in that

a blind hole (13) in which the bearing journal (11) is secured non-detachably and non-rotatably is conformed in recess (20).

4. The working container according to claim 1, characterized in that

a blind hole (13) is conformed in recess (20) as a seating socket and that a bearing journal seating (12) is inserted securely in blind hole (13), to which bearing journal seating in turn bearing journal (11) is secured non-detachably and non-rotatably.

5. The working container according to claim 3, characterised in that

the free end (22) of the U-shaped end section (21) of blind hole (13) does not protrude beyond the border (23) of the container base (5).

* * * * *