

(12) **UK Patent Application** (19) **GB** (11) **2 303 537** (13) **A**

(43) Date of A Publication 26.02.1997

(21) Application No 9515496.9

(22) Date of Filing 28.07.1995

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(51) INT CL<sup>6</sup>

**A47J 43/08 44/00**

(52) UK CL (Edition O )

**A4C CUD C121 C129**

**B1C CAEB CAS C102 C662**

**F2Q Q7A3X**

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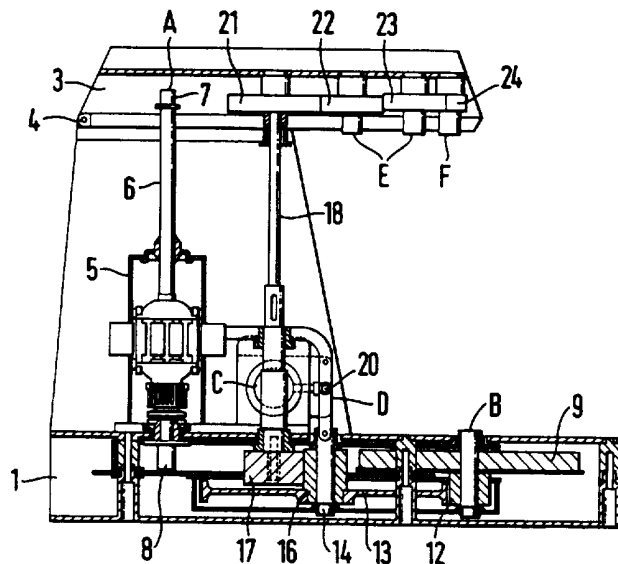
(58) Field of Search

UK CL (Edition O ) **A4C CA CB CUD , B1C CAEB**

INT CL<sup>6</sup> **A47J 42/44 42/46 43/06 43/08 44/00**

(54) **Apparatus for food preparation**

(57) A food preparation apparatus comprises a base 1 on which a body 2 is mounted, and a head 3 pivotally connected to the body 2. A motor 5 has a first vertical shaft 6, the upper end of which provides a first drive output A for blending. The lower end of the motor shaft 6 drives a lower gear train 9,12,13,16,17 to provide a second drive output B for processing, and also a third drive output C for mincing via a second vertical shaft 18. The upper end of the second shaft 18 drives an upper gear train 21,22,23 to provide a fourth drive output E,F for mixing. The apparatus may alternatively or additionally include an interlock mechanism for preventing activation of the motor 5 unless the head 3 is in its lowered position and preventing pivoting of the head 3 from its lowered position unless the motor 5 is deactivated.



*Fig. 1*

At least one drawing originally filed was informal and the print reproduced here is taken from a later filed formal copy.

The claims were filed later than the filing date within the period prescribed by Rule 25(1) of the Patents Rules 1995

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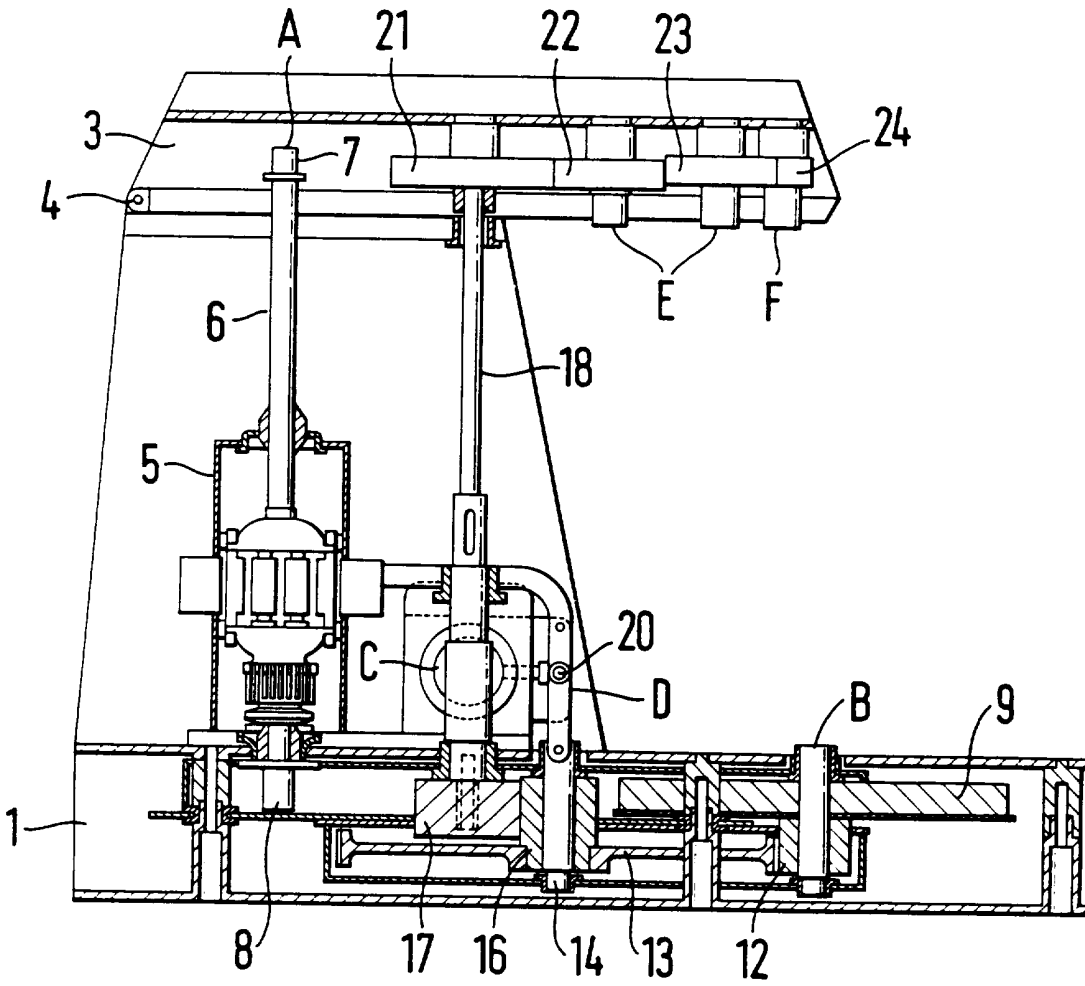


Fig. 1

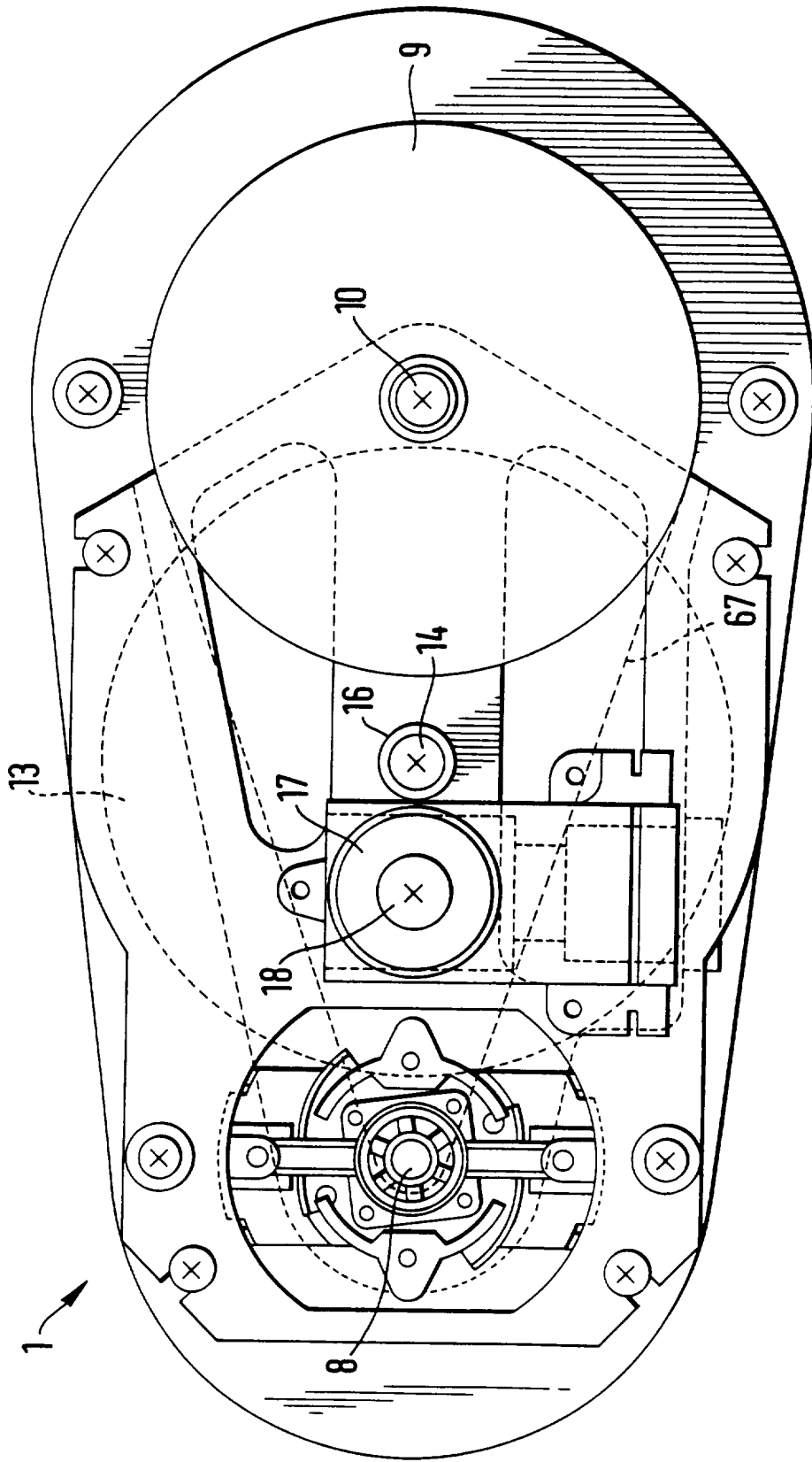


Fig. 2

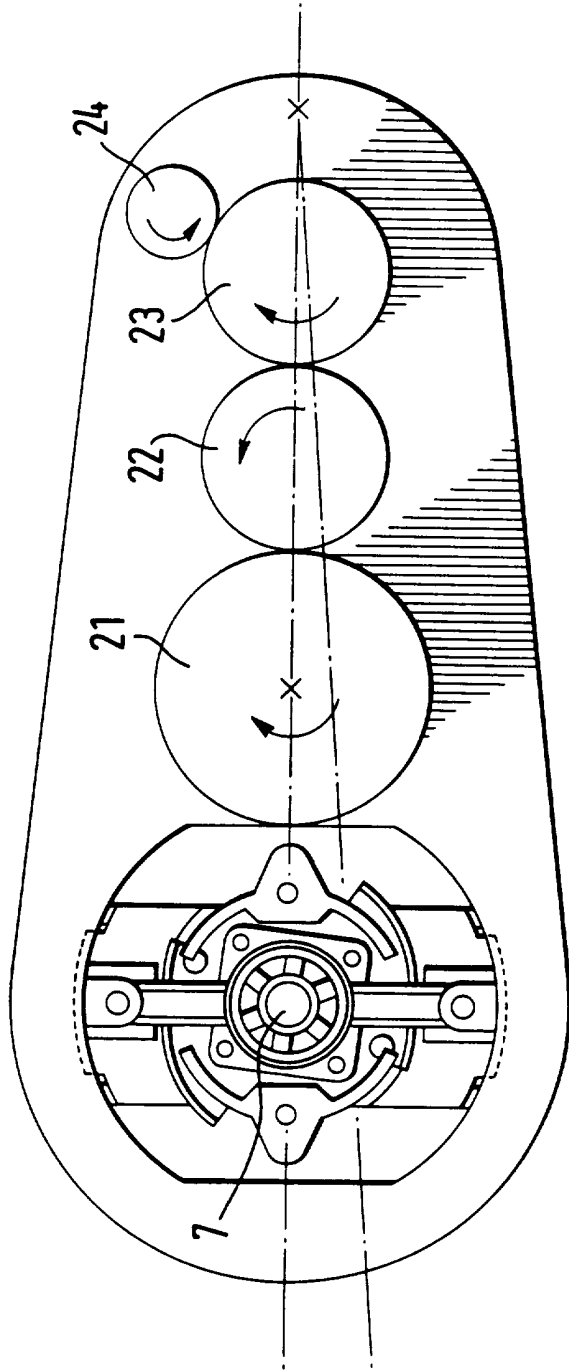


Fig. 3

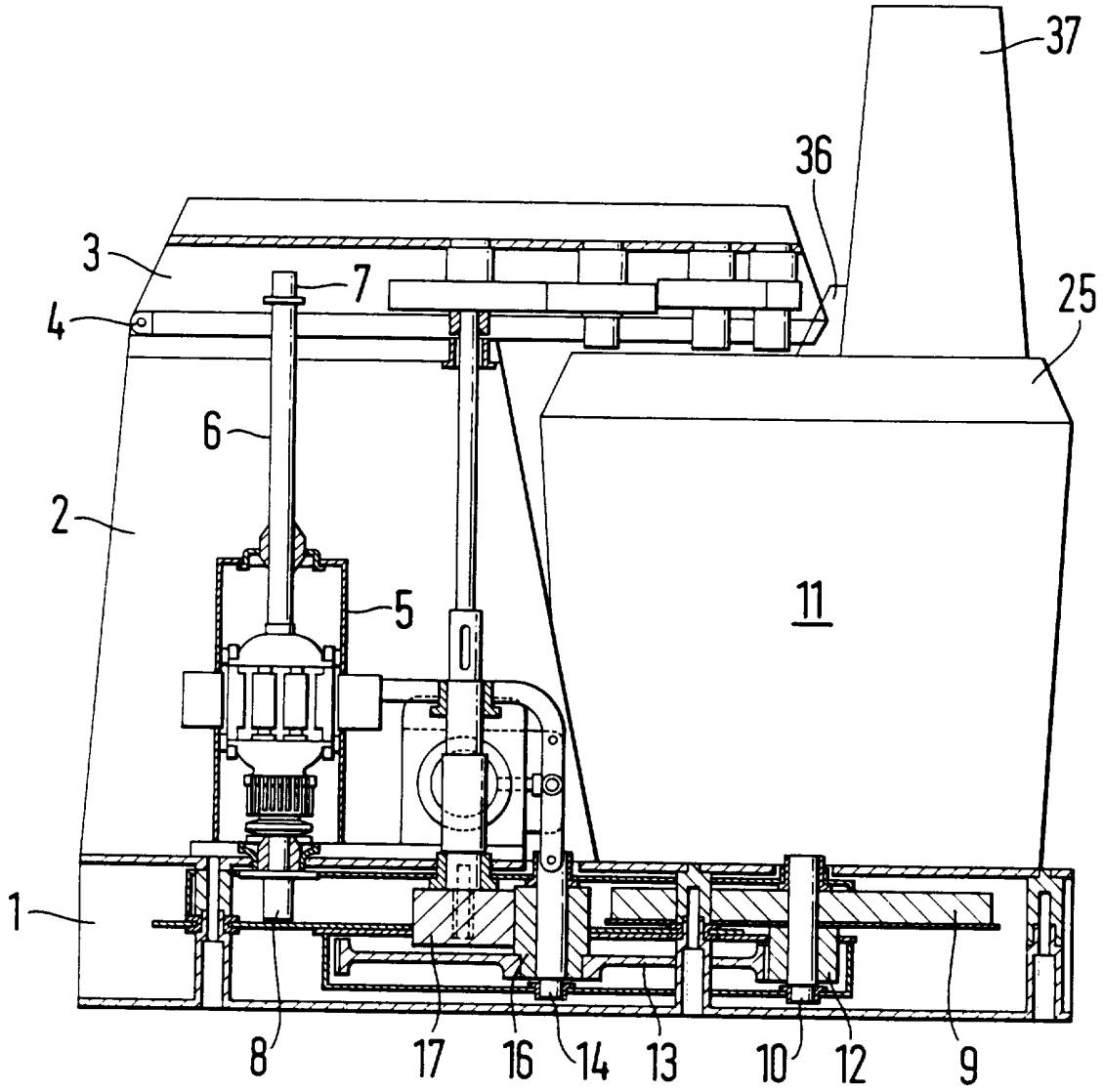
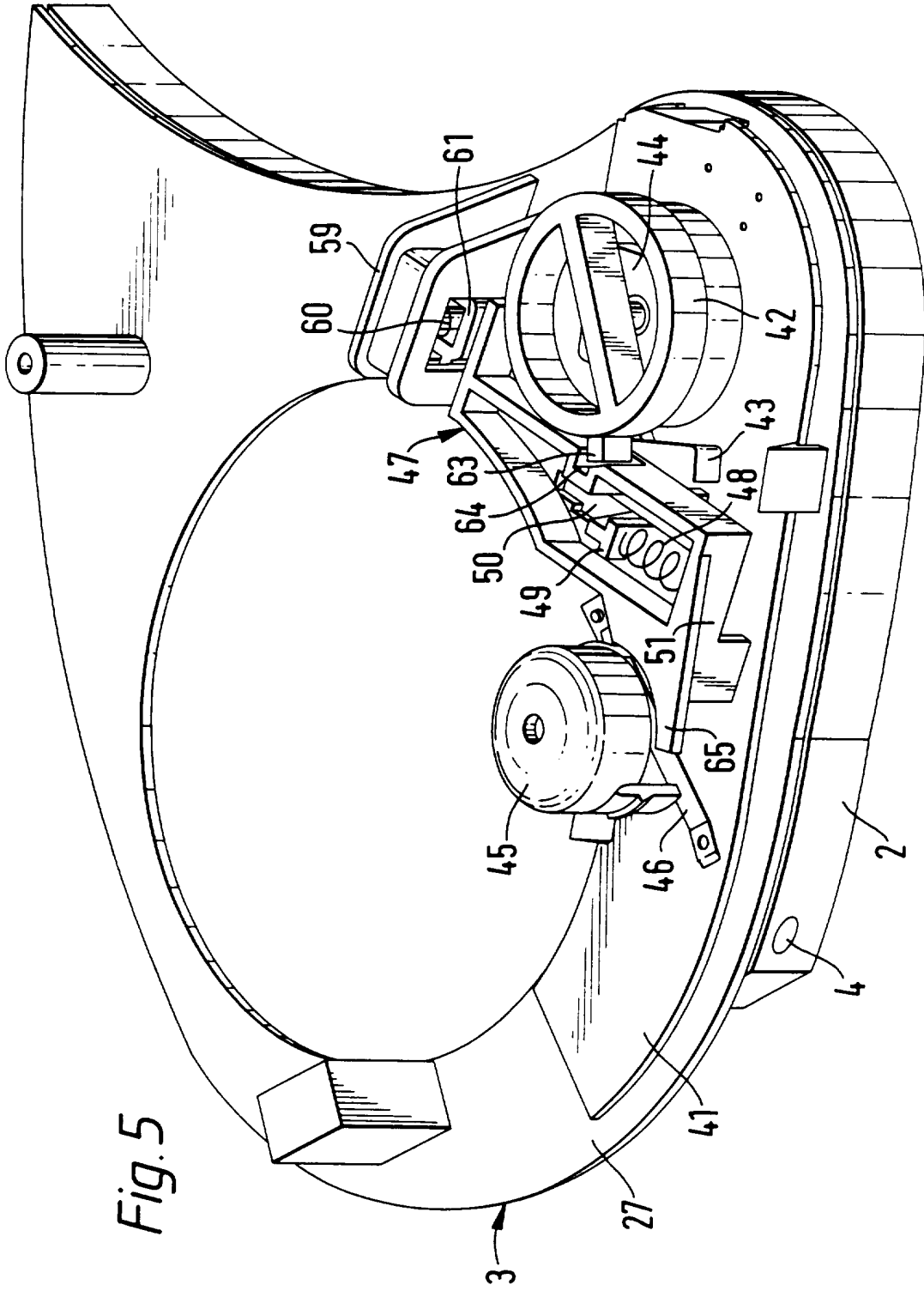


Fig. 4



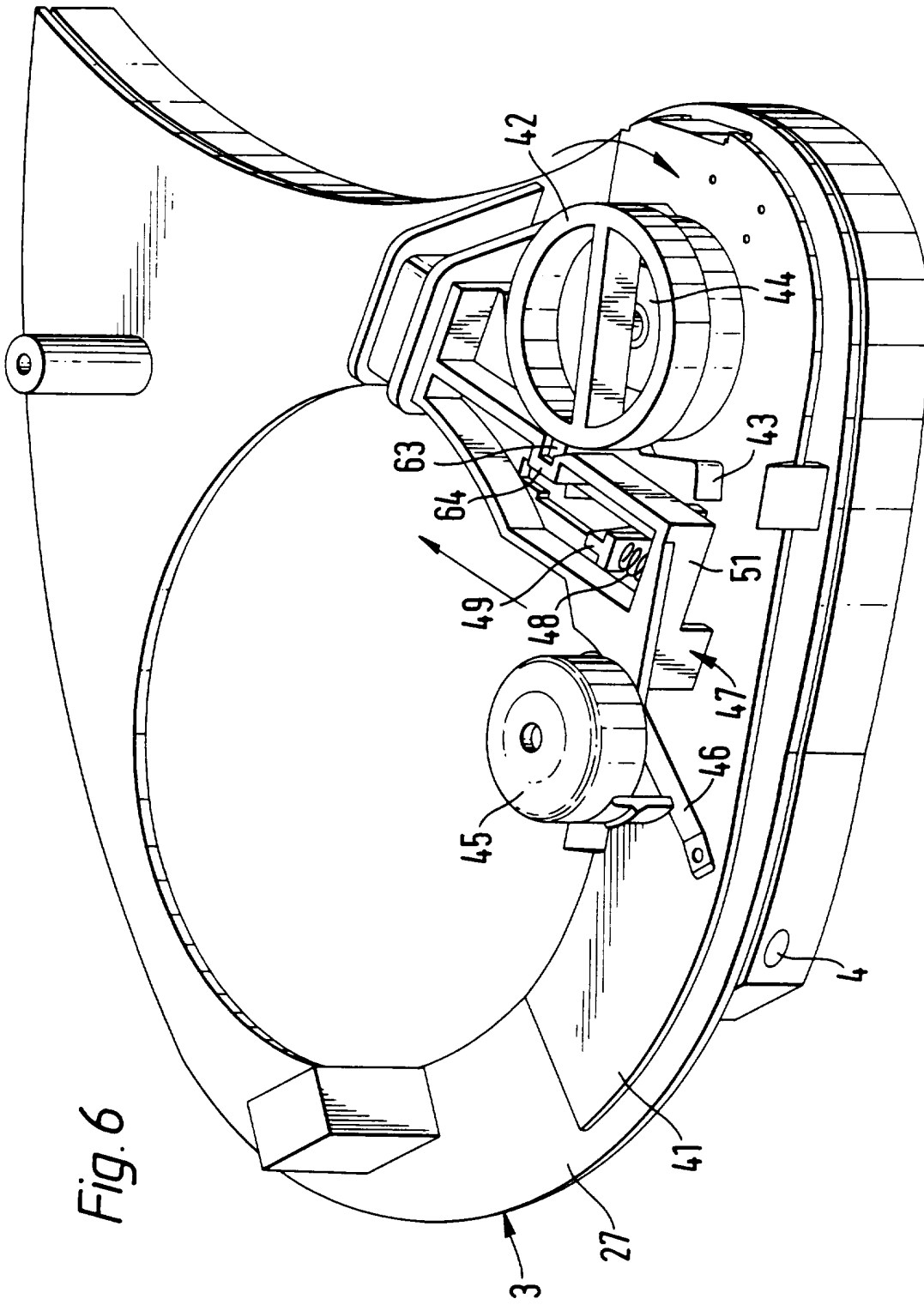


Fig. 6

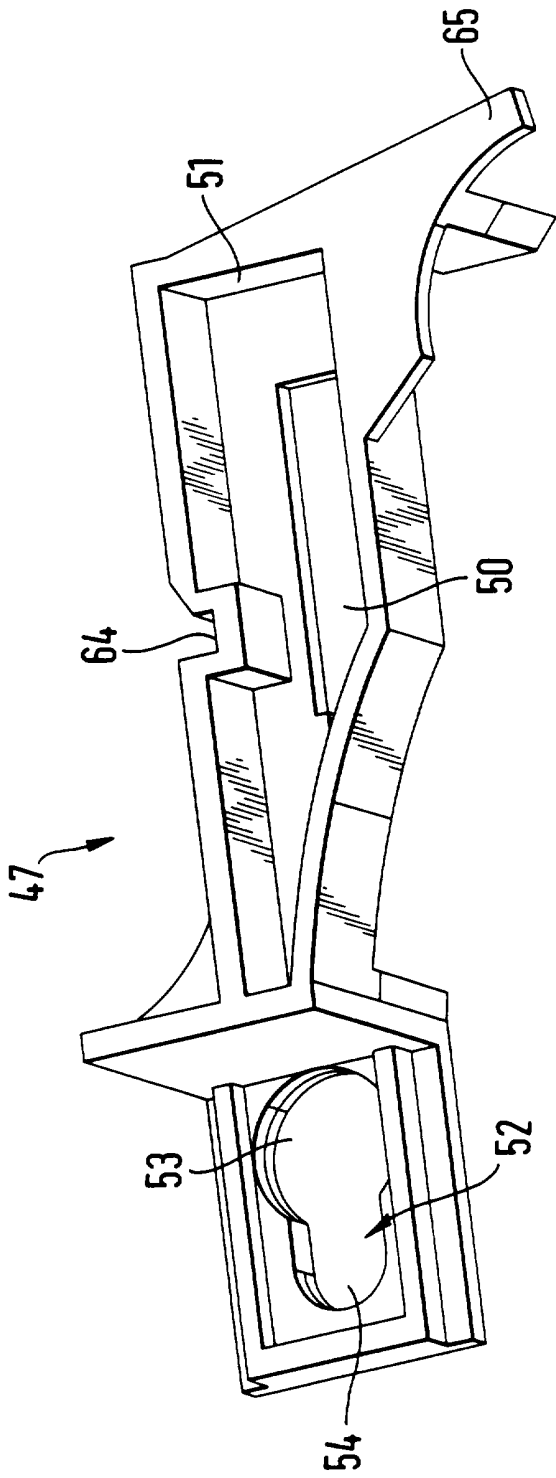


Fig. 7



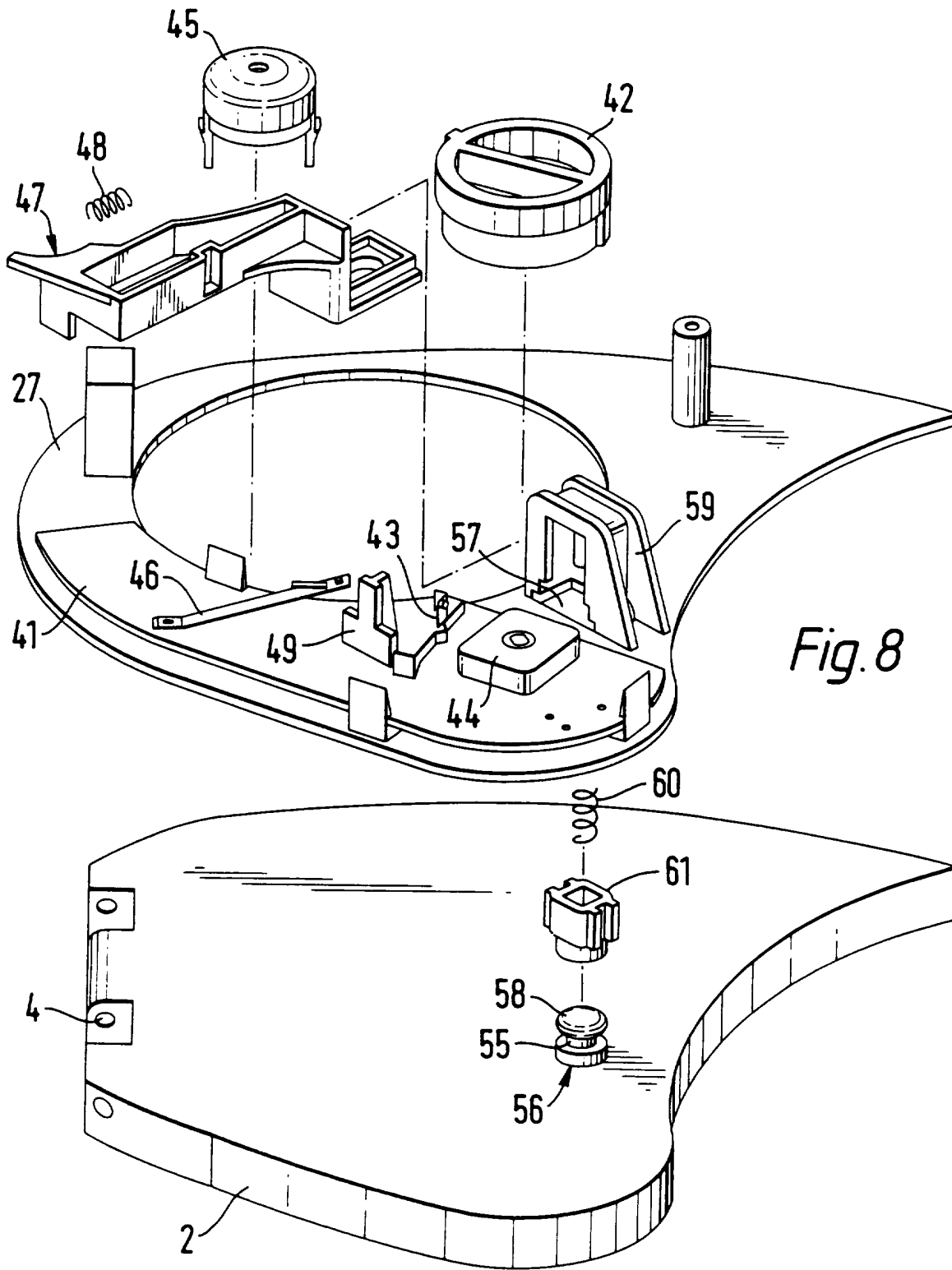


Fig. 8

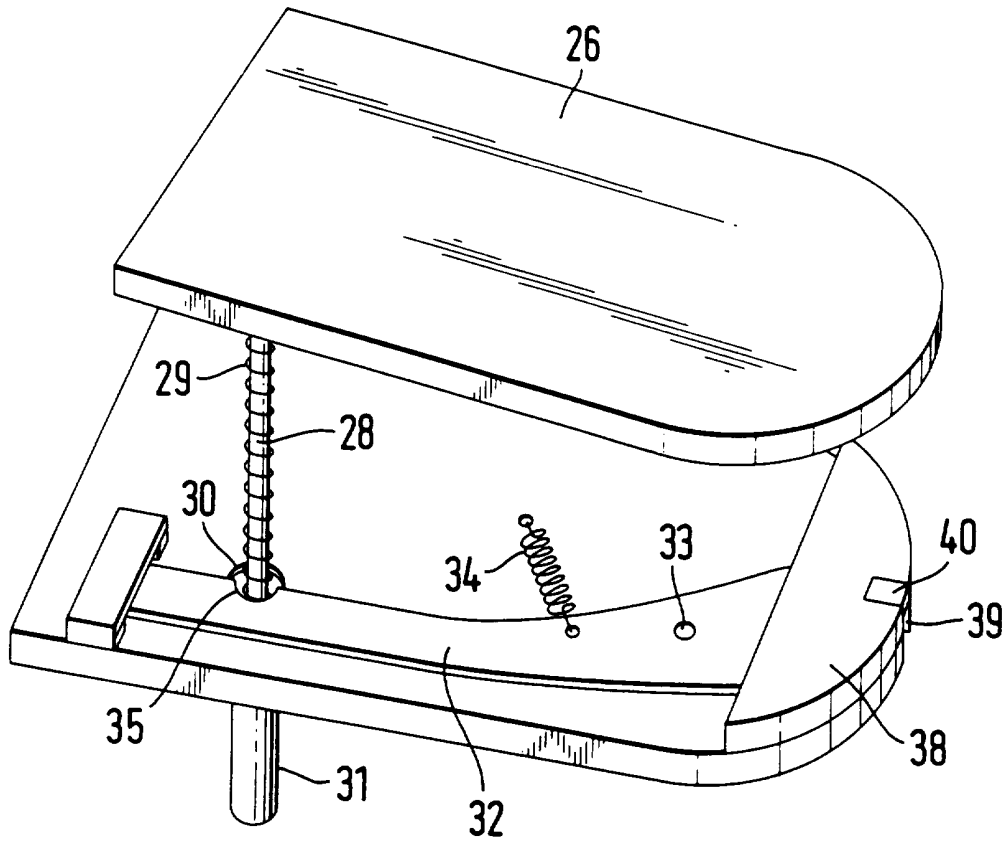


Fig. 9

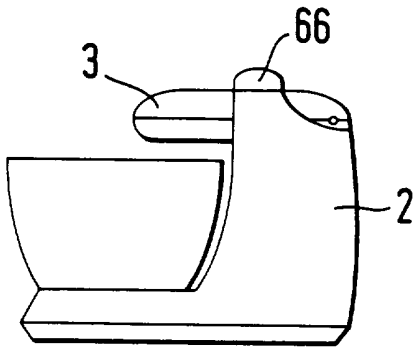


Fig. 10

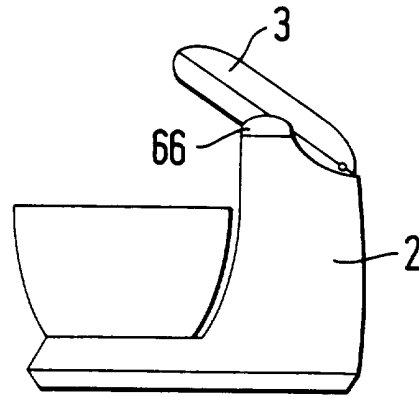


Fig. 11

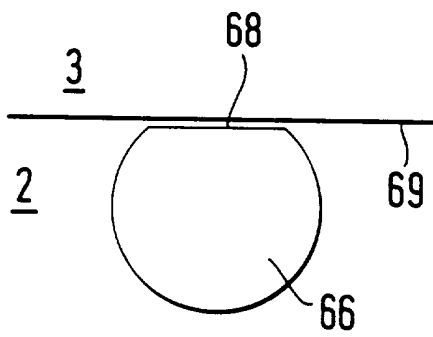


Fig. 12

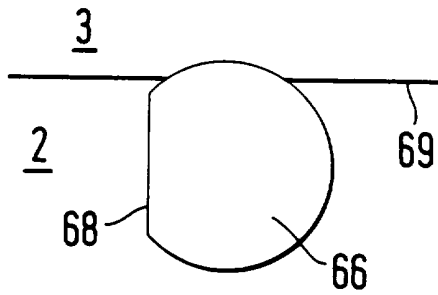


Fig. 13

**APPARATUS FOR FOOD PREPARATION**

The present invention relates to apparatus for food preparation, for example by the known functions of blending, processing, mincing, mixing, etc.

5 Various known types of food preparation apparatus are multi-function, in that a single product can carry out up to three of the above-mentioned functions. These functions differ from each other primarily in the rotational speed of the drive output and the type and shape of food preparation tool driven by the output. For instance, for food blending or processing, high speed rotary cutter blades are generally used, whereas for mincing or mixing lower speed rotary tools are used.  
10 However, the more functions that are provided on a single product, the more difficult the arrangement and relative positioning of the different drives and gears becomes in order to prevent the outputs interfering with each other.

Moreover, it is essential that safe operation of any food preparation apparatus is ensured, particularly as it involves high speed rotation of potentially  
15 dangerous tools such as cutter blades, and if the apparatus is a multi-function product the safety aspect is obviously much more complex. For instance, if the apparatus is to provide both mixing and processing, it is necessary to ensure that the lid of the food processing container is locked before the apparatus is switched on, but it is also necessary to be able to use the mixing bowl without a lid.

20 It is therefore an object of the present invention to provide an improved apparatus for food preparation.

Accordingly, one aspect of the invention consists in apparatus for preparing food, said apparatus including an electric motor for driving a gearing arrangement, said gearing arrangement providing at least four drive outputs having rotational  
25 speeds suitable for preparing food at least by the functions of blending, processing, mincing and mixing, respectively.

In one embodiment, the electric motor has a generally vertical rotatable shaft, the upper end of the motor shaft providing a first output suitable for blending and the lower end of the motor shaft being arranged to drive a lower gear train,  
30 the lower gear train having a first rotatable member adapted to provide a second

output suitable for processing and a second rotatable member which during operation drives a second generally vertical rotatable shaft, the second shaft having gear means for providing a third output suitable for mincing and the upper end of the second shaft being adapted to drive an upper gear train providing a fourth output suitable for mixing.

The first rotatable member may be a pulley which can be driven by an input pulley formed on the lower end of the motor shaft via a continuous belt. The fourth output may comprise three intermeshed gears of the upper gear train, each of which is adapted to drive a releasable mixing tool.

Preferably, the gearing arrangement also provides a drive output having a rotational speed suitable for rotating a container for containing food to be mixed and/or a drive output having a rotational speed suitable for preparing food by whisking. The drive output for rotating the bowl may be provided by a further shaft connected to the lower gear train, and the drive output for whisking may be provided by a third gear forming part of the upper gear train.

The gear means for providing the third output for mincing may comprise a bevel gear, such that the rotational axis of the third output is substantially perpendicular to the axis of the second shaft.

The apparatus preferably comprises a base which contains the lower gear train and upon which a container for containing food to be mixed or processed can be placed, a body upstanding from the base and containing the motor, said motor shaft and second shaft passing through the body, and a head containing the upper gear train pivotally connected at one end thereof to the upper part of the body.

According to a second aspect, the invention consists in apparatus for preparing food, said apparatus comprising a head pivotally connected to a body for movement between a raised position away from the body and a lowered position adjacent the body, an electric motor mounted in the body, and a gearing arrangement driven by the motor and providing one or more drive outputs in the head for driving one or more food preparation attachments releasably connected thereto, the apparatus also including an interlock mechanism for preventing activation of the electric motor unless the head is in its lowered position and preventing pivoting of the head from its lowered position unless the electric motor

is deactivated.

The apparatus preferably comprises a rotary control for activating and deactivating the motor, and the interlock mechanism preferably comprises means for locking the head in its lowered position before the rotary control can be turned  
5 to an "on" position to activate the motor and means for locking the rotary control in an "off" position to deactivate the motor before the head can be raised from its lowered position.

The means for locking the head in its lowered position may comprise a spring-loaded latch member mounted in the head and having a slot, and a spigot  
10 upstanding from the body and engageable in the slot as the head is lowered, the spigot being formed with a head which retains the spigot in the slot when the latch member is in a first position.

The rotary control and the latch member may be provided with interengaging members which are arranged to interengage when the rotary control  
15 is turned to the "off" position, the turning of the control moving the latch member to a second position in which the spigot is released from the slot.

The means for locking the rotary control in the "off" position preferably comprise a catch member mounted in the head and resiliently forced into the slot  
20 when the spigot is released therefrom to retain the latch member in its second position, the interengagement of the latch member and the rotary control preventing turning of the control from the "off" position.

In a particular embodiment, the slot of the latch member is substantially keyhole-shaped having a substantially circular part and an elongate part, the  
25 spigot being held in the elongate part when it is retained in the slot with the latch member in its first position and being located in the circular part to enable it to be released from the slot with the latch member in its second position.

A further control may be provided on the head to activate the motor in a pulsed operation, and the latch member may be formed with a projection which  
30 engages with the further control when the latch member is in its second position to prevent pulsed operation of the motor by the further control.

In an alternative embodiment, the interlock mechanism comprises a rotary control mounted on a part of the body at substantially the same level as the head.

the rotary control being shaped such that a portion thereof extends over the head in its lowered position when the control is in the "on" position to activate the motor and thereby prevents raising of the head, and such that the rotary control does not extend over the head when the control is in the "off" position to deactivate the motor thereby enabling the head to be raised. Additionally, the control is preferably obstructed from turning to the "on" position by the head when the head is in a raised position.

The apparatus may also include a base which accommodates gearing means driven by the motor to provide a drive output at a rotational speed suitable for preparing food by processing, and upon which a container for containing food to be processed can be positioned, the container having a removable lid, and the apparatus including a further interlock mechanism for preventing pivoting of the head to its lowered position so that the first-mentioned interlock mechanism prevents activation of the motor to drive the processing output, unless the lid is positioned on the container.

The second interlock mechanism may comprise a spring-loaded projection which extends from the head and is positioned to abut the rim of the container when the container is positioned on the base, and a spring-loaded lever mounted in the head and biased to retain the projection in its extended position to prevent lowering of the head. The lid of the food processing container may be formed with a rib or other projection which, when the lid is positioned on the container, moves the lever as the head is lowered and thereby enables the spring-loaded projection to be pushed into the head so that the head can be pivoted to its lowered position to enable activation of the motor.

The invention will now be described by way of examples with reference to the accompanying drawings, in which:-

Figure 1 shows a schematic vertical section of a food preparation apparatus in accordance with an embodiment of the invention;

Figure 2 shows a schematic horizontal section through the base of the apparatus shown in figure 1;

Figure 3 shows a schematic horizontal section through the head of the apparatus;

Figure 4 shows the same view as figure 1 but with a food processing bowl and lid in position on the apparatus;

Figures 5 and 6 are perspective views of parts of the head and body of the apparatus in different relative positions, showing a first interlock;

5 Figure 7 is a perspective view of a latch member of the first interlock shown in figures 5 and 6;

Figure 8 is an exploded view of the components of the first interlock shown in figures 5 and 6;

Figure 9 is a perspective view of a second interlock;

10 Figures 10 and 11 are schematic side views of an alternative embodiment of the first interlock, showing the head in horizontal and raised positions respectively; and

Figures 12 and 13 are schematic plan views of the first interlock shown in figures 10 and 11 in different positions.

15 Referring firstly to figures 1 to 3, the food preparation apparatus comprises a base 1 providing a platform on one end of which a body 2 is mounted. A head 3 is pivotally connected to the body via a hinge 4 and is shown in figure 1 in the horizontal position substantially parallel to the base 1.

20 A motor 5 is mounted in the body 2 by means of suitable bearings which retain a generally vertical shaft 6 of the motor. The upper end 7 of the shaft 6 extends up into the head 3 when the head is horizontal, and provides a first drive output A.

The lower end 8 of the motor shaft 6 extends down into the base 1 and is formed as a small pulley which drives a large pulley 9 having a central rotary shaft 10 via a continuous belt 67. The rotary shaft 10 extends up through an aperture 25 in the base 1 and provides a second drive output B.

The lower part of the rotary shaft 10 carries a small initial gear 12 which meshes with a large initial gear 13 mounted on a further generally vertical rotary shaft 14. A small final gear 16 mounted on the shaft 14 above the gear 13 30 meshes with a large final gear 17 mounted on a generally vertical shaft 18 which extends up through the body 2. This shaft 18 drives a bevel gear (not shown) to provide a third drive output C having its rotational axis substantially perpendicular



to the axis of shaft 18. The rotary shaft 14 is located adjacent the side face of the body 2 and provides a fourth drive output D.

When the head 3 is horizontal, the upper end of the shaft 18 engages a drive gear 21, with either shaft 18 or drive gear 21 being spring-loaded, and can impart torque thereto. The drive gear 21 drives, in turn, two mixing gears 22, 23 providing a fifth drive output E and another gear 24 providing a sixth drive output F.

The motor 5 runs between low and high speeds, such as 6000 and 15000 rpm, and the various pulleys and gears are arranged such that the drive outputs rotate at speeds reduced from the motor speed by the following ratios:-

first drive output A	-	1:1
second drive output B	-	11:1
third drive output C	-	105:1
fourth drive output D	-	70:1
fifth drive output E	-	70:1
sixth drive output F	-	35:1

These different speed ratios enable the various drive outputs to be used for different food preparations. In particular, the first output A can be used to drive the rotary blades of a blender attachment (not shown) mounted on the head 3; the second output B can be used to drive rotary food processing tools (not shown) mounted within a food processor bowl located on the base 1; the third output C can be used to drive a mincer attachment (not shown) mounted on the side of the body 1 via a locking pin 20; the fourth output D can be used to rotate a mixing bowl (not shown) located on the base 1; the fifth output E can be used to drive mixing tools (not shown) such as dough hooks or a beater, which are used in conjunction with the mixing bowl driven by the fourth output D; and the sixth output F can be used to drive a whisk attachment which is also used in conjunction with the mixing bowl. Thus, the gearing arrangement enables drive outputs for blending, processing, mincing, mixing and whisking all to be provided in a single apparatus from a single motor, without the various pulleys and gears interfering with each other.

Referring now to Figures 4 to 9, for safety reasons, it is important that the

electric motor 5 cannot be switched on unless the pivotal head 3 is in its horizontal position and that, when the food processing function is being used, the electric motor cannot be switched on unless the lid 25 of the food processor bowl 11 is correctly positioned on the base 1.

5            Figures 5 to 8 show a first interlock which prevents operation of the motor when the head 3 is raised, which interlock is mounted on a printed circuit board 41 fixed to lower face 27 of the head 3 which is connected by hinge 4 to the body 2.

10            Figure 5 shows the position when the head is horizontal. A potentiometer actuator 42 can be rotated by means of a user-operable control knob (not shown) to switch on the motor 5 via a power switch 43 and to control the speed of the motor via a potentiometer 44. Alternatively, the motor can be operated in short pulses by depressing a pulse actuator 45 to close a sprung pulse switch 46. A latch member 47 is slidably mounted between the potentiometer and pulse  
15            actuators 42 and 45 and is biased towards the position shown in figure 5 by a spring 48 extending between a projection 49 on the printed circuit board 41 which projects through a slot 50 of the latch member, and a wall 51 of the latch member.

20            Figure 7 shows the latch member 47 in more detail. The end of the latch member furthest from the pulse actuator 45 has a keyhole-shaped slot 52 having a circular part 53 and an elongate part 54. In the position shown in figure 5, the elongate part 54 engages with shaft 55 of a spigot 56 fixed to the top of the body 2, the spigot passing through an aperture 57 in the lower face 27. A spigot head 58 retains the spigot in the elongate part 54 of the slot 52 and thereby prevents the head 3 from being raised. In this position, the control knob and pulse actuator  
25            are free to be operated to activate the motor.

30            A member 59 upstanding from the lower face 27 of the head 3 carries a spring 60 which in turn carries a catch member 61. A lower portion 62 of this catch member is generally cylindrical with a diameter similar to that of the spigot head 58 and, in the position of figure 5, abuts the spigot head under the action of the spring 60.

              When the potentiometer actuator 42 is turned to the "off" position to deactivate the motor, a lug 63 on its circumference engages in a notch 64 in the

latch member 47 so that turning of the actuator 42 slides the latch member towards the upstanding member 59. This aligns the circular part 53 of the slot 52 with the spigot head 58 allowing the spigot head to pass through the circular part 53 and thus releasing the head 3 and allowing it to be pivoted. The latch member 5  
47 is then in the position shown in figure 6 and is retained in this position by the lower portion 62 of the catch member 61 which is forced into the circular part 53 of the slot 52 by the spring 60. As the potentiometer actuator 42 is engaged with the latch member 47, it cannot be turned to close the switch 43. In addition, the pulse actuator 45 cannot be depressed because a finger 65 of the latch member  
10 47 is engaged therebeneath. Thus, in this position, whilst the head 3 can be raised, the motor cannot be activated by the user-operable controls.

When the head 3 is returned to its horizontal position, the spigot head 58 pushes the portion 62 of the catch member 61 out of the slot 52 against the action of the spring 60, and the latch member 47 is returned to the position shown in  
15 figure 5 by the action of the spring 48, thereby locking the head 3 in the horizontal position.

Referring now to figure 9, there is shown a second interlock which, when the apparatus is being used for processing, prevents lowering of the head 3, and thus activation of the motor, unless the lid 25 of the food processor bowl 11 is in  
20 place. The second interlock is mounted in the head 3 remote from the hinge 4 connecting the head 3 to the body 2, and figure 9 shows parts of upper face 26 and lower face 27 of the head 3 with the second interlock mounted therebetween. A rod 28 is attached by its upper end to the underside of the upper face 26 and carries a compression spring 29, also attached to the underside of the upper face.  
25 The lower end of the rod 28 is located at the level of an aperture 30 in the lower face 27 and carries a sliding sleeve 31, a disc (not shown) on the end of the rod 28 retaining a rim at the top of the sleeve to which the lower end of the spring 29 is attached.

A lever 32 is pivotally connected to the lower face 27 by a pin 33 and is  
30 spring-loaded by a spring 34 also connected to the lower face. The figure shows the components in the positions they occupy when the head 3 is raised, in which the lower end of the rod 28 engages in a notch 35 in the lever above the aperture

30. The sleeve 31 bears against the underside of the lever 27 adjacent the notch 35 and is therefore prevented from being pushed upwards against the action of the spring 29. The downwardly-projecting sleeve 31 is positioned in the head 3 relative to the base 1, such that when the food processing bowl 11 is positioned on the base 1 the sleeve 31 abuts the rim of the bowl. If the sleeve 31 is prevented from being pushed up by the intervention of the lever 32, the head 3 cannot be lowered into the horizontal position and therefore the motor cannot be activated due to the action of the first interlock.

However, the end of the lever 32 remote from the notch 35 is located beneath a plate 38 having the same shape as the end of the head 3, and a notch 39 is formed in the plate 38 and, directly beneath, in the lower face 27. Additionally, as shown in figure 4, the lid 25 has a rib 36 formed between the top surface of the lid and the food input tube 37. If the lid 25 is in place on the bowl 11 as the head 3 is lowered, the rib 36 enters the notch 39 and engages the end face 40 of the lever 32 to pivot the lever against the action of spring 34. This moves the notch 35 from above the aperture 30 and frees the sleeve 31 which is pushed up through the aperture against the action of the spring 29 by the lid 25. Thus, the positioning of the lid 25 on the food processing bowl enables the head 3 to be lowered to its horizontal position and thus enables the motor to be activated.

When the head 3 is raised after the motor has been switched off, the spring 29 pushes the sleeve 31 back down through the aperture 30, and as the rib 36 leaves the notch 39 the lever 32 returns to the position shown in figure 9 by the action of the spring 34 and retains the sleeve 31 in its projecting position.

When the apparatus is used for the mixing function, a lid is not required on the bowl used for mixing (not shown). The mixing bowl is therefore designed to have a different diameter to that of the food processing bowl, so that the sleeve 31 does not abut the rim of the mixing bowl and prevent lowering of the head 3.

Figures 10 to 13 show an alternative embodiment of the first interlock for preventing activation of the motor while the head is raised, which is of simpler construction than that shown in figures 5 to 8.

Figures 10 and 11 show a side view of an embodiment of the apparatus in

which part of the body 2 extends to the same height as the top of the head 3. A control knob 66 having the non-circular shape shown in figures 12 and 13 is rotatably mounted on the top of the body 2. When the head 3 is lowered as shown in figure 10, the knob 66 can be rotated to the position shown in figure 13 to  
5 activate the motor. In this position the head 3 cannot be raised since a portion of the knob 66 overlies it. When the knob 66 is turned to the "off" position shown in figure 12 to deactivate the motor, flat face 68 of the control knob 66 lies generally parallel to side 69 of the head 3, so that no part of the knob overlies the head and the head 3 can be raised to the position shown in figure 11. When the head is  
10 raised, the knob 66 cannot be turned since its movement is obstructed by the side of the head 3 and so the motor cannot be activated.

Whilst particular embodiments of the invention have been described, it will be appreciated that various modifications may be made without departure from the scope of the invention.

CLAIMS

1. Apparatus for preparing food, said apparatus including an electric motor for driving a gearing arrangement, said gearing arrangement providing at least four drive outputs  
5 having rotational speeds suitable for preparing food at least by the functions of blending, processing, mincing and mixing, respectively.
  
2. Apparatus as claimed in claim 1, wherein the electric motor has a generally vertical rotatable shaft, the upper end  
10 of the motor shaft providing a first output suitable for blending and the lower end of the motor shaft being arranged to drive a lower gear train, the lower gear train having a first rotatable member adapted to provide a second output  
15 during operation drives a second generally vertical rotatable shaft, the second shaft having gear means for providing a third output suitable for mincing and the upper end of the second shaft being adapted to drive an upper gear train providing a fourth output suitable for mixing.
  
- 20 3. Apparatus as claimed in claim 2, wherein the apparatus comprises a base which contains the lower gear train and upon which a container for containing food to be mixed or processed can be placed, a body upstanding from the base and containing the motor, said motor shaft and said second shaft passing  
25 through the body, and a head containing the upper gear train and being pivotally connected at one end thereof to the upper part of the body.
  
4. Apparatus as claimed in claim 2 or 3, wherein the first rotatable member is a pulley which can be driven by an input  
30 pulley formed on the lower end of the motor shaft via a continuous belt.
  
5. Apparatus as claimed in claim 2, 3 or 4 wherein the

fourth output comprises three intermeshed gears of the upper gear train, each of which is adapted to drive a releasable mixing tool.

5 6. Apparatus as claimed in claim 2, 3, 4 or 5, wherein the gear means for providing the third output for mincing comprises a bevel gear, such that the rotational axis of the third output is substantially perpendicular to the rotational axis of the second shaft.

10 7. Apparatus as claimed in any preceding claim, wherein the gearing arrangement provides a drive output having a rotational speed suitable for rotating a container for containing food to be mixed and/or a drive output having a rotational speed suitable for preparing food by whisking.

15 8. Apparatus as claimed in claims 2 and 7, wherein the drive output for rotating the bowl is provided by a further shaft connected to the lower gear train, and the drive output for whisking is provided by a gear forming part of the upper gear train.

20 9. Apparatus for preparing food, said apparatus comprising a head pivotally connected to a body for movement between a raised position away from the body and a lowered position adjacent the body, an electric motor mounted in the body, and a gearing arrangement driven by the motor and providing one or more drive outputs in the head for driving one or more food  
25 preparation attachments releasably connected thereto, the apparatus also including an interlock mechanism for preventing activation of the electric motor unless the head is in its lowered position and preventing pivoting of the head from its lowered position unless the electric motor is deactivated.

30 10. Apparatus as claimed in claim 9, wherein the apparatus comprises a rotary control for activating and deactivating the motor, and the interlock mechanism comprises means for locking

the head in its lowered position before the rotary control can be turned to an "on" position to activate the motor and means for locking the rotary control in an "off" position to deactivate the motor before the head can be raised from its lowered position.

11. Apparatus as claimed in claim 10, wherein the means for locking the head in its lowered position comprises a spring-loaded latch member mounted in the head and having a slot, and a spigot upstanding from the body and engageable in the slot as the head is lowered, the spigot being formed with a head which retains the spigot in the slot when the latch member is in a first position.

12. Apparatus as claimed in claim 11, wherein the rotary control and the latch member are provided with interengaging members which are arranged to interengage when the rotary control is turned to the "off" position, the turning of the control moving the latch member to a second position in which the spigot is released from the slot.

13. Apparatus as claimed in claim 12, wherein the means for locking the rotary control in the "off" position comprises a catch member mounted in the head and resiliently forced into the slot when the spigot is released therefrom to retain the latch member in its second position, the interengagement of the latch member and the rotary control preventing turning of the control from the "off" position.

14. Apparatus as claimed in claim 12 or 13, wherein the slot of the latch member is substantially keyhole-shaped having a substantially circular part and an elongate part, the spigot being held in the elongate part when it is retained in the slot with the latch member in its first position and being located in the circular part to enable it to be released from the slot with the latch member in its second position.



15. Apparatus as claimed in claim 12, 13 or 14, wherein a further control is provided on the head to activate the motor in a pulsed operation, and the latch member may be formed with a projection which engages with the further control when the latch member is in its second position to prevent pulsed operation of the motor by the further control.

16. Apparatus as claimed in claim 9, wherein the interlock mechanism comprises a rotary control mounted on a part of the body at substantially the same level as the head, the rotary control being shaped such that a portion thereof extends over the head in its lowered position when the control is in the "on" position to activate the motor and thereby prevents raising of the head, and such that the rotary control does not extend over the head when the control is in the "off" position to deactivate the motor thereby enabling the head to be raised.

17. Apparatus as claimed in claim 16, wherein the control is obstructed from turning to the "on" position by the head when the head is in a raised position.

18. Apparatus as claimed in any one of claims 9 to 17, including a base which accommodates gearing means driven by the motor to provide a drive output at a rotational speed suitable for preparing food by processing and upon which a container for containing food to be processed can be positioned, the container having a removable lid, and a further interlock mechanism for preventing pivoting of the head to its lowered position so that the first-mentioned interlock mechanism prevents activation of the motor to drive the processing output unless the lid is positioned on the container.

19. Apparatus as claimed in claim 18, wherein the further interlock mechanism comprises a spring-loaded projection which extends from the head and is positioned to abut the rim of the

container when the container is positioned on the base, and a spring-loaded lever mounted in the head and biased to retain the projection in its extended position to prevent lowering of the head.

5 20. Apparatus as claimed in claim 19, wherein the lid of the food processing container is formed with a rib or other projection which, when the lid is positioned on the container, moves the lever as the head is lowered and thereby enables the spring-loaded projection to be pushed into the head so that  
10 the head can be pivoted to its lowered position to enable activation of the motor.

21. Apparatus for preparing food substantially as herein described with reference to Figures 1 to 9 or Figures 10 to 12 of the accompanying drawings.



Application No: GB 9515496.9  
Claims searched: 1-8

Examiner: R.B.Luck  
Date of search: 7 October 1996

**Patents Act 1977  
Search Report under Section 17**

**Databases searched:**

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

UK CI (Ed.O): A4C CA,CB,CUD B1C CAEB

Int CI (Ed.6): A47J 42/44,42/46,43/06,43/08

Other:

**Documents considered to be relevant:**

Category	Identity of document and relevant passage	Relevant to claims
X	GB1562070 Aktiebolaget Electolux	1 at least
X	GB0323230 Williams J.G.	1 at least
X	US4176971 Sunbeam Corporation	1 at least
X	EP0022465 Zyliss Zysset AG	1 at least

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
&	Member of the same patent family	E	Patent document published on or after, but with priority date earlier than, the filing date of this application.