

Apparatus for washing cake moulds

Technical field

- 5 This invention relates to an apparatus for washing moulds used in food preparation. It is particularly, though not exclusively, useful for automated washing of moulds or pans used for cake preparation.

Background

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Baked goods such as cakes are typically prepared by pouring a mix into a suitably shaped mould (for example, a substantially cylindrical or frustoconical mould, a springform pan or a tube pan), and placing the mould in an oven for a certain time at a certain temperature. After the finished cake is released from the mould it is typical for
15 there to be substantial amounts of baked-on residue on the mould surface. Although the residue is typically on the interior surface of the mould, it is not unusual for residue to be present on exterior surfaces, especially if there has been spillage when pouring the mix.

- 20 In order to remove residue from cake moulds a manual process of soaking in hot water for 1 to 2 hours, brushing the mould surfaces, and rinsing with clean water has typically been employed. As can be appreciated, if there are large numbers of moulds to be washed, this is a time-consuming and labour-intensive process. As such, there is a need for automation of the washing process.

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- It has been found that conventional automated dishwashing systems used for other types of article such as cutlery and crockery are not effective in removing all the baked-on residues from cake moulds. Further, such systems may still require that the cake moulds be pre-soaked in very hot water for extended periods prior to being washed in a cabinet
30 or other like enclosure. Accordingly, automated dishwashing systems have, until now, not found widespread use in washing cake moulds.

There remains a need for an apparatus which is capable of effectively and automatically removing baked-on residues from cake moulds.

Summary

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The present invention provides, in a first aspect, an apparatus for automatically washing a cake mould, the cake mould comprising a sidewall having at least one protrusion extending therefrom, the sidewall comprising an inner surface and an outer surface, the cake mould further comprising a bottom surface, the apparatus comprising:

- 10 at least one cleaning station comprising:
 - a drive mechanism having a rotatable shaft;
 - a mould restraining member mounted to the rotatable shaft for restricting vertical movement of the the cake mould within the at least one cleaning station;
 - at least one brush mounted to an actuator for bringing the at least one brush into
 - 15 contact with the cake mould; and
 - at least one arm extending away from the rotatable shaft, the at least one arm having a mould contact portion which is positionable relative to the cake mould such that the mould contact portion abuts the at least one protrusion;
 - wherein the arm and the brush are rotatable relative to each other under action of the
 - 20 drive mechanism while the mould contacting portion remains in abutment with the at least one protrusion, such that the brush imparts a scrubbing motion to a surface of the cake mould.

In preferred embodiments, the apparatus comprises a plurality of cleaning stations, the
25 cleaning stations being arranged in-line with each other.

In a second aspect, the present invention provides a cleaning station for automatically washing a cake mould, the cake mould comprising a sidewall having at least one protrusion extending therefrom, the sidewall comprising an inner surface and an outer
30 surface, the cake mould further comprising a bottom surface, the cleaning station comprising:

- a drive mechanism having a rotatable shaft;

a mould restraining member mounted to the rotatable shaft for restricting vertical movement of the cake mould within the cleaning station;

at least one brush mounted to an actuator for bringing the at least one brush into contact with the cake mould; and

5 at least one arm extending away from the rotatable shaft, the at least one arm having an mould contacting portion which is positionable relative to the cake mould such that the mould contacting portion abuts the at least one protrusion;

wherein the arm and the brush are rotatable relative to each other under action of the drive mechanism while the mould contacting portion remains in abutment with the at
10 least one protrusion, such that the brush imparts a scrubbing motion to a surface of the cake mould.

In a third aspect, the present invention provides an apparatus for automatically washing a cake mould, the cake mould comprising a sidewall having at least one protrusion
15 extending therefrom, the sidewall comprising an inner surface and an outer surface, the cake mould further comprising a bottom surface, the apparatus comprising:

a plurality of cleaning stations, each cleaning station comprising at least one brush for brushing a surface of the cake mould and a mould restraining member for restricting vertical movement of the cake mould within the cleaning station;

20 wherein the cleaning stations are arranged in-line with each other.

Each cleaning station may comprise a drive mechanism having a rotatable shaft to which the mould restraining member is mounted. At least one arm may extend away from the rotatable shaft, the at least one arm having a mould contact portion which is
25 positionable relative to the cake mould such that the mould contact portion abuts the at least one protrusion. The arm and the at least one brush may be rotatable relative to each other under action of the drive mechanism while the mould contacting portion remains in abutment with the at least one protrusion, such that the brush imparts a scrubbing motion to a surface of the cake mould.

The cleaning station, or one of the cleaning stations, may be an inner surface cleaning station. The actuator of the at least one brush of the inner surface cleaning station is mounted to the rotatable shaft such that the at least one brush is positionable to contact the inner surface of the cake mould. The, or each, arm of the inner surface cleaning station may be a stopper arm attached to a mounting of the drive mechanism such that the stopper arm is stationary with respect to the drive mechanism.

In alternative embodiments, the cleaning station, or one of the cleaning stations, may be an outer surface cleaning station or a bottom surface cleaning station. The actuator of the at least one brush of the outer surface or bottom surface cleaning station is mounted away from the drive mechanism such that the at least one brush is positionable to contact the outer surface or the bottom surface of the cake mould. The, or each, arm of the outer or bottom surface cleaning station may be a rotating arm mounted to the shaft of the drive mechanism.

In certain embodiments, the apparatus comprises a plurality of cleaning stations, and a conveyor for presenting cake moulds to successive ones of the cleaning stations. The conveyor may be a walking beam conveyor having a plurality of seats to receive respective cake moulds. Advantageously, the use of a walking beam conveyor to present moulds to successive cleaning stations provides for an in-line process which is highly efficient.

The mould restraining member may be a brush which, for example, may be mounted to the end of the rotatable shaft with its bristles facing towards the inner bottom surface of the mould, such that the bristles are contactable with the inner bottom surface to help constrain vertical motion of the mould once it is in rotation, and also to apply a scrubbing action to the inner bottom surface. In other embodiments, the mould restraining member may comprise a bar or similar elongate member which extends perpendicularly to the rotatable shaft, and which may have a length corresponding substantially to the inner diameter of the mould. Some embodiments may comprise two such elongate members at right angles to each other, for example. In each of these embodiments, the mould restraining member acts to constrain vertical movement of the

mould which may be imparted to it as a result of rotation of the mould while it is in contact with brushes of the cleaning station.

The plurality of cleaning stations may be mounted to a common carriage.

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In certain embodiments, the at least one arm may be pivotable. As such, if a lower surface of the mould contacting portion happens to contact the top of a protrusion of the cake mould, such that it is initially not appropriately positioned to drive the cake mould rotationally, an initial rotational movement of the cake mould will cause the mould contacting portion to pass over the protrusion, the arm pivoting downwardly as it does so (either under the influence of gravity, or under a biasing force such as may be provided by a spring). This means that the mould contacting portion is then appropriately positioned to contact the protrusion (or another protrusion on the cake mould outer surface) on rotation of the mould.

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The apparatus may further comprise a high-pressure spray section, having a nozzle which is configured to produce a spray beam which traces out a substantially circular path corresponding to a circumference of an upper lip of the cake mould. Advantageously, the circular path followed by the high pressure spray beam can act to remove and/or soften baked-on residues which are located at difficult-to-reach parts of the upper lip.

Brief Description of the Drawings

Embodiments of the invention will now be described, by way of non-limiting example only, with reference to the accompanying drawings in which:

Fig. 1 is a top perspective view of a cleaning apparatus according to embodiments of the invention;

Fig. 2 is a close-up of the view of Fig. 1, showing a spray station and cleaning stations of the apparatus;

Fig. 3 is a close-up view of the spray station;

Fig. 4 is a side projection view of an inner surface cleaning station of the apparatus of Fig. 1 and Fig. 2;

Fig. 5 is a top perspective view of the inner surface cleaning station;

Fig. 6 is a top perspective view showing the inner surface cleaning station in use;

5 Fig. 7 is a side projection view of an outer surface cleaning station of the apparatus;

Fig. 8 is a top perspective view of the outer surface cleaning station;

Fig. 9 is a top perspective view showing the outer surface cleaning station in use;

Fig. 10 is a side projection view of a bottom surface cleaning station;

Fig. 11 is a top perspective view of the bottom surface cleaning station; and

10 Fig. 12 is a top perspective view showing the bottom surface cleaning station in use.

Detailed Description of Embodiments

Referring initially to Fig. 1, there is shown an apparatus 10 for cleaning cake moulds.

15 The apparatus comprises a loading section 12, a high pressure spray section 14, a plurality of cleaning stations (inner surface cleaning station 16, outer surface cleaning station 18 and bottom surface cleaning station 20), an unloading section 22, and an unloading buffer tank 24. Cake moulds (not shown) are loaded at loading section 12, and are transported by a conveyor 26 (which in the depicted embodiment is in the form
20 of a walking beam conveyor or indexing conveyor) to be successively processed at spray section 14 and cleaning stations 16, 18, 20 before being unloaded at unloading section 22. The buffer tank 24 may provide temporary storage for unloaded cake moulds. The apparatus 10 also comprises a programmable logic controller (PLC) (not shown) programmed to control the nature and timing of movements of the various
25 components of the conveyor 26, spray section 14 and cleaning stations 16, 18, 20. In presently preferred embodiments, the timing of the conveyor movement, and of the components of the spray section 14 and cleaning stations 16, 18, 20, is fixed within each cleaning cycle. For example, each cleaning cycle may occupy between about 45 seconds and about 60 seconds.

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Turning to Fig. 2, the conveyor 26 has a plurality of mould seats 262 at regularly spaced intervals. The seats comprise pairs of supports, each having a floor and a part-circular

lip, located on opposed stationary beams. During one cleaning cycle, a moving beam of the walking beam conveyor 26 rises between the stationary beams, thereby lifting any cake moulds which are resting in the seats 262, and shifts the positions of the lifted cake moulds by one unit, such that each cake mould is shifted to a seat 262 of the next station in the sequence.

Various sections of the apparatus 10 will now be described with reference to Figures 3-12, in which various details such as housings and support frames are omitted for clarity.

- 10 The high pressure spray section 14 comprises a pair of high pressure spray nozzles 142 connected to a manifold pipe 144 which moves along parallel rails 146. The nozzles 142 move with the manifold 144 along the rails 146, and can also move along the manifold 144 transversely to the rails 146, to apply a pressurized spray of water to a cake mould 100 situated underneath the nozzle 142 in one of the seats 262 (Fig. 3). The nozzles 142
- 15 are connected via the inlet 145 of the manifold 144 to a high pressure pump (piston pump) (not shown) which, together with the nozzle 142, is configured to produce a high-pressure spray beam 150 (for example, having a pressure above 80 bar, above 90 bar, up to about 100 bar) which traces out a substantially circular path corresponding to a desired portion of the circumference of an upper lip of the cake mould, such that the
- 20 beam can be positioned to target difficult-to-reach parts of the upper lip, such as regions where clips or other external protrusions 104 are attached to the cake mould 100, as will later be shown. The nozzle position may be calibrated by placing a mould 100 under the nozzle 142, activating piston pump such that the nozzle 142 produces a high-pressure rotating spray beam which traces out a circular path, adjusting the height
- 25 and/or lateral (xy-) position of the nozzle 142 until the beam path substantially coincides with the desired portion of the circumference of the upper lip, and maintaining the nozzle position (to be used for subsequent moulds 100 as they pass under the high-pressure spray station 14 of the apparatus 10).
- 30 The apparatus 10 has a scrubbing section comprising the three cleaning stations 16, 18, 20. Each cleaning station comprises a motor 168, 188 or 208 which drives a spindle or shaft to which at least one element is mounted for rotational movement as will later be

described in more detail. Each motor and its associated spindle is mounted to a common carriage 30 which can be moved up and down using one or more lifting cylinders 32. A pair of lifting cylinders 32 is shown in Figure 2, but a single cylinder may be advantageous as it may prevent jerky movement of the carriage which may be caused by asymmetric cylinder operation in the case of two or more cylinders. It will be appreciated that each motor and spindle may also, in some embodiments, be mounted to its own carriage which is movable independently of the others.

Referring now to Figures 4-12, the respective cleaning stations will be described in more detail.

Figures 4-6 show an inner surface cleaning station 16 having a motor 168 which drives a spindle 40. The motor 168 is mounted to the spindle 40 via a coupling 170 and bearing system 173. A mould 100 having an outer surface 110 and retained in seat 262 is shown being processed at the inner surface cleaning station 16. The mould 100 has a plurality of protrusions 104 extending from its outer surface 110. In the depicted mould, the protrusions 104 extend from clips 102 of the mould.

Cleaning station 16 has a plurality of arms 166 extending away from, and disposed at regular angular intervals around, the shaft 40. The arms are attached to carriage 30 via a plate 34 which is connected to carriage 30 by rods (not shown). The shaft 40 is threaded through an aperture in plate 34 such that the shaft 40 can rotate freely on its axis within the aperture when motor 168 is active, such that the arms 166 do not rotate with respect to the carriage 30.

Each arm 166 comprises a mould contacting portion 167, which in the depicted embodiments is a paddle extending in a generally downward direction from the arm 166. Preferably, the paddle or other mould contacting portion extends downwardly such that there is a clearance between the main part of the arms 166 and the upper rim of the mould 100.

Mounted to the lower end of shaft 40 is a brush assembly 161, which comprises a pair of substantially vertically-aligned brushes 162, each held in a brush holder 172 which is actuatable to position the respective brushes 162 with their bristles contacting the inner surface of the mould 100. In some embodiments only a single brush 162, or more than
5 two brushes 162 may be used. The brush assembly 161 also comprises a brush position adjusting block 174 associated with the brush holders 172 to change the brush position if needed in order to achieve sufficient contact with the mould surface. For example, if the mould 100 is of frustoconical shape and thus has a tapered sidewall as shown in the Figures, the brush position adjusting block 174 may tilt the brushes 162 to achieve more
10 uniform contact of the bristles with the sidewall inner surface.

Advantageously, the brushes 162 may be standard, off-the-shelf scrubbing brushes. If different brushes are used then the brush holders 172 may be readily modified to accommodate them, as will be appreciated by the skilled reader.

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In operation of the cleaning station 16, the motor 168 drives the shaft 40, which in turn causes the brush assembly 161 to rotate. As it rotates, friction between the bristles of brushes 162 and the inner surface of mould 100 causes the mould 100 to rotate within seat 262, until at least one of the protrusions 104 abuts one of the paddles 167. Because
20 the arms 166 are fixed with respect to the carriage 30, the paddles 167 act as stop members to prevent further rotation of the mould 100. In the meantime, the brush assembly 161 continues to rotate such that the brushes 162 clean the inner surface of the sidewall of mould 100.

25 The brush assembly 161 may optionally comprise one or more horizontally-aligned brushes 164. The horizontally-aligned brushes co-rotate with the rest of brush assembly 161 when the motor 168 drives the shaft 40, to clean at least part of a bottom inner surface of mould 100. In the described embodiment, the horizontally-aligned brush 164 also acts as a mould restraining member, to constrain vertical movement of the mould
30 100 such that it is retained within the cleaning station 16 in contact with the brushes 162.

In some embodiments, each arm 166 is pivotably mounted to the plate 34 or the shaft 40, for example by a hinge 165. This can allow the arms 166 to adjust to the correct position for the mould contacting portions 167 to abut the protrusions 104. For example, if the mould 100 is initially seated such that a protrusion 104 is located directly underneath a paddle 167, as the cleaning station 16 descends towards the mould 100 the bottom of paddle 167 will contact the top of protrusion 104. Due to the pivotal mounting 165 of the arm 166, the arm 166 will tend to be forced upwards from its initial horizontal position as the cleaning station 16 continues to descend, until the mould restraining member (horizontally-aligned brush) 164 contacts the bottom inner surface of the mould 100. Then, during operation as the brush assembly 161 begins to rotate the mould 100, the paddle 167 will pass over the protrusion 104, the arm 166 descending back to its initial horizontal position as it does so, such that the paddle 167 is then in the correct position to stop the next protrusion 104 as the mould 100 rotates. The arm 166 may return to the horizontal position under gravity, or may be biased towards the horizontal position, for example by spring loading.

Outer surface cleaning station 18 (Figures 7-9) comprises a motor 188 which drives a shaft 42 via a coupling 190 and a bearing system 192. A plurality of arms 186 is mounted to (and extends away from) the shaft 42 such that the arms rotate with the shaft when the motor is active. Each arm 186 comprises a mould contacting portion (in this case a paddle) 187 at its extremity. The arms 186 are regularly angularly spaced about the shaft 42. The depicted embodiment comprises three such arms, but the arms may be fewer or more in number provided that the mass distribution of the arms is angularly symmetric to prevent the rotation from becoming unbalanced. For example, a pair of opposed arms could be used.

The cleaning station 18 also comprises a pair of brush assemblies 181. Each brush assembly 181 is mounted on a platform 191 adjacent to the conveyor 26 and comprises a substantially vertically-aligned brush 182 held in a brush holder 180 which is coupled to an actuator 184. The actuator 184 adjusts the tilt of the brush 182 to provide even contact between the bristles of brush 182 and the outer surface 110 of the sidewall of

the mould 100. The brush assemblies 181 are located on opposite sides of the conveyor 26, and thus of the mould 100.

5 The actuators of the respective brush assemblies 181 may be used to apply sufficient opposed forces to the mould 100 such that the brushes 182 at least partially grip the mould 100 between them. Additionally, a mould restraining member in the form of a stopping bar 194 is provided at the lower end of the rotatable shaft 42. As shown in the Figures, the stopping bar 194 is cross-shaped, but it may have alternative forms, such as a single elongate member which spans the inner diameter of the mould 100. The
10 stopping bar 194 acts to constrain vertical movement of the mould 100 which may otherwise occur as the mould 100 is rotated at high speed. The stopping bar may have, on its lower surface, contact pads 196 of an elastomeric or other material which will not cause damage to the inner bottom surface of the mould 100. Once the mould 100 is retained between the brushes 182, the stopping bar 194 and the seat 262, the motor 188
15 may be used to rotate the arms 186, the paddles 187 of which abut against protrusions 104 to thereby rotate the mould 100 to cause the outer surface 110 to be scrubbed by the brushes 182.

Bottom surface cleaning station 20 (Figures 10-12), similarly to outer surface cleaning
20 station 18, comprises a motor 208 which drives a shaft 44 via coupling 220 and bearing assembly 222. A plurality of arms 206 is mounted to (and extends away from) the shaft 44 such that the arms rotate with the shaft when the motor 208 is active. Each arm 206 comprises a paddle 207 at its extremity for abutting against protrusions 104 to rotationally drive the mould 100. As for the outer surface cleaning station 18, fewer or
25 more than three arms 206 may be used.

Cleaning station 20 comprises a pair of brush assemblies 212 each having an upwardly-facing brush 202 mounted in a brush holder 210 and an actuator 204 mounted to a platform 214 on each side of the conveyor 26. In some embodiments, a single such
30 brush assembly may be used, but a symmetric pair is preferred as it provides more even force distribution on the lower surface of the mould 100. The actuators 204 cause the brushes 202 to move upwards to contact and apply an upward force against the mould

100 when it is in seat 262. At the same time, across-shaped stopping bar 230 mounted to the end of shaft 44, and substantially spanning the internal diameter of the mould 100, acts to constrain vertical movement of the mould 100 which may otherwise occur as the mould 100 is rotated at high speed. As for cleaning station 18, the stopping bar 230
 5 may have, on its lower surface, contact pads of an elastomeric or other material which will not cause damage to the inner bottom surface of the mould 100. Should there be vertically upwards motion of the mould 100 as it rotates, the stopping bar will apply a downward force against the internal bottom surface of the mould 100, such that the mould cannot undergo any further vertical motion and is thereby retained between
 10 brushes 202, the stopping bar 230 and the seat 262 of the conveyor 26. When the motor 208 is active and drives shaft 44, the arms 206 attached to the shaft rotate such that the paddles 207 abut against the protrusions 104 and thereby rotate the mould 100 such that brushes 202 scrub the bottom surface of the mould 100.

15 During a single cleaning cycle, the following exemplary sequence of operations takes place in apparatus 10:

- carriage 30 is lifted by lifting cylinder(s) 32 to clear the ends of shafts 40, 42, 44 from the moulds on the conveyor 26;
- the positions of the moulds on the conveyor are advanced by one unit, including
 20 advancing any fully scrubbed mould from the bottom surface cleaning station 20 to the unloading section 22;
- the next mould is loaded at the loading section 12;
- for a predetermined duration, the following operations are executed simultaneously:

25 ○ high pressure spray 14 applies a spray beam of water to predetermined regions of the upper rim of the mould positioned below it, to soften and/or remove residue at the rim, especially at the region between the protrusions 104 or clip 102 and the rim;

30 ○ carriage 30 descends and:

- inner surface cleaning station 16 descends such that horizontal brush 164 contacts the inner bottom surface of the mould 100, the

brush position adjusting block 174 moves the brushes 162 into contact with a mould inner surface, and motor 168 rotates the brush assembly 161;

- 5 ▪ outer surface cleaning station 18 descends, actuators of brush assemblies 181 cause the brushes 182 to contact the outer surface of a second mould, stopping member 194 contacts the inner bottom surface of the second mould, and motor 188 rotates the arms 186; and
- 10 ▪ bottom surface cleaning station 20 descends, the actuator of brush 202 causes it to move upwards to contact the lower surface of a third mould, stopping member 230 contacts the inner bottom surface of the third mould, and motor 208 rotates the arms 206.

15 As the respective cleaning stations 16, 18, 20 descend, if any of the mould contacting portions 167, 187 or 207 encounters the top of a protrusion 104, the arms from which any such mould contacting portions extend pivot upwardly as described earlier, and drop down again once the moulds rotate such that the mould contacting portions pass over the protrusions 104.

20 Whilst the foregoing description has described exemplary embodiments, it will be understood by those skilled in the art that many variations in details of design, construction and/or operation may be made without departing from the scope of the present invention. For example, while the paddles of the respective cleaning stations have been depicted as being suitable for abutting against a vertically projecting member

25 such as the legs 104 of the exemplary mould 100, it will be appreciated that they may instead be designed to abut against a horizontally projecting member (such as a horizontal portion of the clip 102). In addition, although not specifically shown in the Figures, one or more of the cleaning stations 16, 18 or 20 may comprise a spray nozzle for spraying the mould 100 as it is being scrubbed. The spray provided by the spray

30 nozzle may further assist in loosening residue which has been scrubbed from the mould 100 and washing it free of the mould to be received in a waste disposal tank beneath the

walking beam conveyor 26, as well as providing lubrication between the brushes and the mould.

Claims

1. An apparatus for automatically washing a cake mould, the cake mould comprising a sidewall having at least one protrusion extending therefrom, the sidewall comprising an inner surface and an outer surface, the cake mould further comprising a bottom surface, the apparatus comprising:

at least one cleaning station comprising:

a drive mechanism having a rotatable shaft;

a mould restraining member mounted to the rotatable shaft for restricting vertical movement of the the cake mould within the at least one cleaning station;

at least one brush mounted to an actuator for bringing the at least one brush into contact with the cake mould; and

at least one arm extending away from the rotatable shaft, the at least one arm having a mould contacting portion and being positionable relative to the cake mould such that the mould contacting portion abuts the at least one protrusion;

wherein the arm and the brush are rotatable relative to each other under action of the drive mechanism while the mould contacting portion remains in abutment with the at least one protrusion, and the brush imparts a scrubbing motion to a surface of the cake mould.

2. An apparatus according to claim 1, wherein the cleaning station, or one of the cleaning stations, is an inner surface cleaning station; and wherein the actuator of the at least one brush is mounted to the rotatable shaft such that the at least one brush is positionable to contact the inner surface of the cake mould.

3. An apparatus according to claim 2, wherein the, or each, arm is a stopper arm attached to a mounting of the drive mechanism such that the stopper arm is stationary with respect to the drive mechanism.

4. An apparatus according to any one of claims 1 to 3, wherein the cleaning station, or one of the cleaning stations, is an outer surface cleaning station or a bottom surface cleaning station; and wherein the actuator of the at least one brush is mounted away

from the drive mechanism such that the at least one brush is positionable to contact the outer surface or the bottom surface of the cake mould.

5 5. An apparatus according to claim 4, wherein the, or each, arm is a rotating arm mounted to the shaft of the drive mechanism.

6. An apparatus according to any one of the preceding claims, comprising a plurality of cleaning stations arranged in-line with each other, and a conveyor for presenting cake moulds to successive ones of the cleaning stations.

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7. An apparatus according to claim 6, wherein the conveyor is a walking beam conveyor having a plurality of seats to receive respective cake moulds.

15 8. An apparatus according to any one of the preceding claims, wherein the, or each, arm is pivotable.

9. A cleaning station for automatically washing a cake mould, the cake mould comprising a sidewall having at least one protrusion extending therefrom, the sidewall comprising an inner surface and an outer surface, the cake mould further comprising a bottom surface, the cleaning station comprising:

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 a drive mechanism having a rotatable shaft;

 a mould restraining member mounted to the rotatable shaft for restricting vertical movement of the the cake mould within the cleaning station;

 at least one brush mounted to an actuator for bringing the at least one brush into contact with the cake mould; and

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 at least one arm extending away from the rotatable shaft, the at least one arm having a mould contacting portion and being positionable relative to the cake mould such that the mould contacting portion abuts the at least one protrusion;

 wherein the arm and the brush are rotatable relative to each other under action of the drive mechanism while the mould contacting portion remains in abutment with the at least one protrusion, and the brush imparts a scrubbing motion to a surface of the cake mould.

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10. An apparatus for automatically washing a cake mould, the cake mould comprising a sidewall having at least one protrusion extending therefrom, the sidewall comprising an inner surface and an outer surface, the cake mould further comprising a bottom surface, the apparatus comprising:

- 5 a plurality of cleaning stations, each cleaning station comprising at least one brush for brushing a surface of the cake mould and a mould restraining member for restricting vertical movement of the cake mould within the cleaning station; wherein the cleaning stations are arranged in-line with each other.