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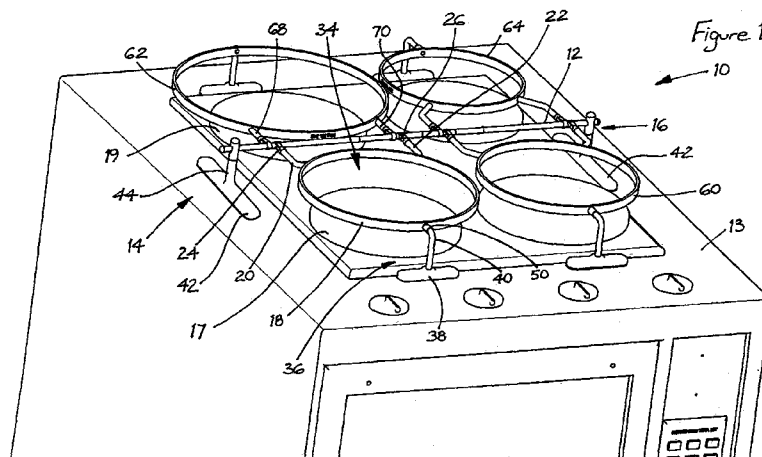
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(54) Title: IMPROVED RACK FOR HOLDING COOKWARE ON A COOKTOP



(57) Abstract: A rack (10) for holding cookware (66) on a cooktop (13) has a support rod (12) which is mounted on the cooktop by rod support stands (14, 16), and a ring shaped support member (18, 60, 62, 64) for cookware removably connected to the support rod by clips (24, 26). The ring shaped support member has a support leg (36) which is mounted on the cooktop and is connected to the ring shaped support member such that the ring shaped support member is held in an elevated position over a heating element (17) of the cooktop. The ring shaped support member defines an opening (34) through which a vessel portion of cookware may be located.

IMPROVED RACK FOR HOLDING COOKWARE ON A COOKTOP

FIELD OF INVENTION

- 5 The present invention relates to an improved cooktop safety assembly, and, in particular, to a rack for holding cookware on a cooktop of a stove so as to prevent the cookware from slipping or otherwise being inadvertently displaced from the cooktop.

- 10 In the present specification, the word "cookware" is intended to mean a single item of cookware and/or a plurality of cookware items, such as pots and pans, and even woks, depending on the context in which that word is used.

BACKGROUND OF INVENTION

- 15 The kitchen may be a dangerous place when young children, and particularly toddlers, are roaming the kitchen looking to satisfy their curiosity or hunger. A significant danger is posed by cookware, such as cooking pots and frying pans, that are present on a stove during or just after cooking when the food or liquid contained therein is hot. Young children are likely to reach up, especially where the handle of the cookware is
- 20 protruding to the front of the stove, and pull the cooking pot or frying pan off the stove, with the most feared outcome being that they spill the contents over themselves.

- A further problem with unsecured cookware is that it may require a second hand to hold the pot or pan when it is desired to stir the contents thereof. This second hand may,
- 25 however, be being used for other cooking purposes, and so not be available to hold the pot or pan during stirring. Stirring a pot or pan without a steadying second hand may cause the pot or pan to shift dangerously or to spill its contents.

- A still further problem relates to gas stoves in moving vehicles, such as marine vessels,
- 30 aircraft or recreational land vehicles like motor homes or camper vans, where an item of

cookware is prone to slipping from a stove cooktop by the effect of acceleration, deceleration, rocking and bumps encountered by the moving vehicle.

There have been numerous attempts over many years to address these problems, but
5 many of the devices have been complex in structure and difficult to operate, whilst other simpler devices have lacked reliability.

For instance, US Patent No. 3,583,384 discloses an open-topped, relatively shallow receptacle adapted to hold cooking utensils against lateral movement on a stove grate or
10 cooking grid, and a plurality of circumferentially spaced anchoring members projecting downwardly from the receptacle for removably engaging given ones of a plurality of radial bars of the grate.

US Patent No. 5,638,806 discloses a safety ring that depends downwardly from the
15 bottom of an item of cookware, the safety ring including a plurality of chair members that are annularly spaced apart such that the chair members will fit a three, four, six or eight pronged gas stove top grate. Each chair member is generally U-shaped and receives therewithin a respective prong of the grate at a different angle to any other chair, thereby preventing lateral movement of the cookware on the grate.

20 US Patent No. 4,745,905 discloses a cooking utensil holder having a first ring with securing means therein that is placed on a cooking surface having holes, and a second ring spaced above the first ring by upright support members. The first ring also has downwardly depending attachment pins that securably engage the holes in the cooking
25 surface. A cooking utensil is spaced inside the holder and a plurality of adjustment means mounted on the support members are adjusted until they contact the cooking utensil and hold it firmly on or over the stove grate.

US Patent No. 3,960,134 discloses a restraining device comprising an expandable
30 circumference metallic cylinder having means formed integrally therewith for

removably securing the cylinder to a stove grate, the cooking utensil being encircled, and restrained from sliding off the grate, by the device.

Published International Patent Application No. PCT/AU2007/001703 (WO
5 2008/055300) by the inventor of the present invention, discloses an arrangement of cooperating cooktop devices comprising channel members mounted to the bottom of cookware, and finger members extending above a heating element and adapted to be slidably, yet removably, engaged with the channel members so as to prevent displacement of the cookware from its supported position over the heating element. The
10 finger members are mounted to an outer support frame of a stove rack removably engaged with a stove top, and project upwardly and inwardly from the outer support frame.

Published International Patent Application No. PCT/AU2011/001634 (WO
15 2012/083348) is also by the inventor of the present invention, and its contents are incorporated herein by reference. That document discloses a cooktop safety assembly comprising a rack adapted to be mounted on a cooktop, and cookware adapted for use with the rack. The rack includes a ring shaped support member for the cookware and means for holding the support member in an elevated position over a heating element of
20 the cooktop. The support member defines an opening through which a vessel portion of the cookware may be located. The elevated position corresponds to a minimum predetermined height of an uppermost surface of the support member above the heating element. The vessel portion of the cookware has an outer side wall that has an outer diameter corresponding to a minimum predetermined width which is sufficient to effect
25 a snug engagement of the outer side wall of the cookware within the support member. In use, the combination of the minimum predetermined height and the minimum predetermined width restricts the cookware to being located vertically through the opening so that, with the outer side wall engaging snugly within the support member, the cookware cannot be tilted from a vertical axis but can be rotated thereabout. Also,
30 with this arrangement, release of the cookware from the rack can only be effected by

vertically raising the cookware to above the minimum predetermined height where the vessel portion clears the support member.

- Although the aforementioned relationship of a first dimension, being the minimum predetermined height of the uppermost surface of the support member above the heating element, and a second dimension, being the minimum predetermined width equal to the outer diameter of the outer side wall of the vessel portion, is essential for allowing that cooktop safety assembly to achieve its stated object of preventing the cookware from slipping or otherwise being inadvertently displaced from the cooktop, the specific structure of the rack disclosed therein has been identified by the inventor as requiring further modification and improvement.

SUMMARY OF INVENTION

- It is an object of the present invention to provide an improved rack for use in a cooktop safety assembly, the rack enabling quick and easy attachment to, and detachment from, a cooktop, and enabling flexibility in the location and use of ring shaped support members for holding cookware on a heating element of a cooktop.
- It is another object of the present invention to provide a simple yet reliable rack that can be made as a part of stove cooktops at minimal cost prior to their sale, or retrofitted thereto, and which will prevent the cookware from slipping or otherwise being inadvertently displaced from the cooktops.
- It is another object of the present invention to provide a rack for use in a cooktop safety assembly which overcomes or substantially ameliorates the shortcomings of the aforementioned prior art, or at least provides a useful alternative.

- According to the present invention, there is provided a rack for holding cookware on a cooktop, the rack comprising a support rod adapted to be mounted on the cooktop by rod support stands, a ring shaped support member for cookware removably connected

to the support rod by clip means, the ring shaped support member having a support leg adapted to be mounted on the cooktop and connected to the ring shaped support member whereby the ring shaped support member is held in an elevated position over a heating element of the cooktop, the ring shaped support member defining an opening
5 through which a vessel portion of cookware may be located.

Preferably, the clip means comprises a substantially U-shaped body having a flexible portion defining a constricted opening to a receiving portion within which the support rod is adapted to be located.

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In another preferred form, the rack further includes at least one support arm having a first end connected to the ring shaped support member and a second end connected to the clip means.

15 It is also preferred that the support leg includes a base portion for engaging the cooktop and an elbow piece having integrally connected vertical and horizontal portions extending upwardly from the base portion and connecting to an outer side surface of the ring shaped support member.

20 A lower part of the vertical portion of the elbow piece is preferably adapted to be tightly engaged and disengaged from a stem part extending upwardly from the base portion.

In yet another preferred form, the base portion is adapted to be disengaged from the cooktop, and the elbow piece is adapted to rotate about a longitudinal axis of the
25 horizontal portion of the elbow piece when the base portion is disengaged, whereupon the ring shaped support member and its support leg are able to swing about the support rod through an arc of 180 degrees from their operating position where they are over a first heating element of the cooktop to a new operating position where they are over a second heating element of the cooktop.

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The support member may be made of metal or a metal alloy having heat conducting properties.

According to another aspect of the present invention, there is provided a cooktop safety
5 assembly comprising;

(a) the rack as described above, with the proviso that the elevated position corresponds to a minimum predetermined height of an uppermost surface of the support member above the heating element,

(b) a cookware adapted for use with the rack, the cookware having a vessel
10 portion with an outer side wall that has an outer diameter corresponding to a minimum predetermined width which is sufficient to effect a snug engagement of the outer side wall of the cookware within the support member,

wherein, in use, the combination of the minimum predetermined height and the minimum predetermined width restricts the cookware to being located vertically
15 through the opening so that, with the outer side wall engaging snugly within the support member, the cookware cannot be tilted from a vertical axis but can be rotated thereabout, and release of the cookware from the rack can only be effected by vertically raising the cookware to above the minimum predetermined height where the vessel portion clears the support member.

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The cookware may be a pot or a pan.

The heating element may be an electrical element, a gas burner element, or a flat surfaced induction element.

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SUMMARY OF DRAWINGS

Figure 1 is a perspective view of a rack according to a first embodiment of the invention mounted on a cooktop.

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Figure 2 is a perspective view of the rack of Figure 1 holding a pot in a ring shaped support member of the rack on a heating element of the cooktop.

Figure 3 is a perspective view of a rack according to a second embodiment of the invention mounted on a cooktop.

Figure 4 is a perspective view of the rack of Figure 3 holding a pot in a ring shaped support member of the rack on a heating element of the cooktop.

Figure 5 is a perspective view of a rack according to a third embodiment of the invention mounted on a cooktop.

Figure 6 is a perspective view of the rack of Figure 5 holding a pot in a ring shaped support member of the rack on a heating element of the cooktop.

Figure 7 is a perspective view of the rack and pot of Figure 6 but with the pot in a position over the top of the ring shaped support member and about to be inserted vertically therein.

Figure 8 is a perspective view of a rack according to a fourth embodiment of the invention mounted on a cooktop.

Figure 9 is a perspective view of a ring shaped support member of the rack of Figure 8 showing an exploded view of a support leg.

Figure 10 is a perspective view of the rack of Figure 8 showing an exploded view of a rod support stand.

Figure 11 is an enlarged perspective view of a circled region of the exploded rod support stand of the rack shown in Figure 10.

Figure 12 is an enlarged perspective view of another circled region of the rack shown in Figure 10 showing an exploded view of a clip means.

5 Figure 13 is an enlarged perspective view of the clip means about to be engaged to a support rod of a rack.

Figure 14 is an exploded perspective view of component parts of the rack shown in Figure 8, including interchangeable parts.

10 Figure 15 is an exploded perspective view of other interchangeable parts of the rack shown in Figure 8.

Figure 16 is a perspective view of the rack of Figure 5 mounted on a cooktop and showing the ring support member and its support leg being pivoted or swung about the
15 support rod from an operating position over a heating element at the front of the cooktop toward a heating element at the rear of the cooktop.

Figure 17 is a similar view to Figure 16 and showing the ring shaped support member in a further advanced position toward the rear of the cooktop.

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Figure 18 is a similar view to Figure 17 and showing the ring shaped support member having been fully swung to locate over a heating element at the rear of the cooktop.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENT

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The rack 10 shown in Figures 1 and 2, and the racks shown elsewhere in the drawings, are used for holding cookware on a cooktop, and each such rack enables quick and easy attachment to, and detachment from, a cooktop, as will be described later. Each such rack also enables flexibility in the location and use of ring shaped support members for
30 holding cookware on a heating element of a cooktop, as will also be described later.

The rack 10 has a support rod 12 adapted to be mounted on a cooktop 13 (also referred to as a stovetop) by a pair of rod support stands 14, 16 removably connected at opposite ends of the rod 12. The support rod 12, in this embodiment, includes extension spacers (such as are shown in Figures 14 and 16) so as to adjust its horizontal length in order to suit the circumstances of use. Each rod support stand 14, 16 has an elongated base portion 42 that has a bottom surface on which an adhesive material may be present for mounting purposes. The adhesive material is preferably a heat resistant resin, and may be carried on an adhesive pad affixed to the bottom surface. A heat resistant suction cup may alternatively be present on the bottom surface for mounting purposes. The mounting location of each rod support stand 14, 16 on the cooktop 13 should be sufficiently remote of the heating element 17 to avoid heat related problems with the mounting. Each rod support stand 14, 16 has a raised portion 44 extending upwardly from the base portion 42 and connecting removably to the rod 12. Stand extension spacers (such as are shown in Figures 11 and 14) may be included so as to adjust the vertical length of each respective raised portion of the rod support stands 14, 16 in order to suit the circumstances of use.

Four ring shaped support members 18, 60, 62, 64 (hereinafter referred to as rings) for cookware are removably connected to the support rod 12. In this embodiment, each ring is removably connected to the support rod 12 by a pair of support arms 20, 22, each arm having a first end connected to the ring and having a second end connected to a respective clip means 24, 26.

As shown in Figures 12 and 13, each clip means 24, 26 includes a substantially U-shaped body 28 having a flexible portion 30 defining a constricted opening to a receiving portion 32 within which the support rod 12 is adapted to be located. Each clip means 24, 26 also includes a collar 48 which is integrally formed with the substantially U-shaped body 28 and which is securely connected, such as by welding, to the adjacent end of the respective arm 20, 22.

10

The ring 18 is held in an elevated position over a heating element 17 of the cooktop 13 and defines an opening 34 through which a vessel portion of cookware, such as pot 66 shown in Figure 2, may be located. The rings 18, 60, 62, 64 may be selected to be of an inner diameter to suit a particular outer diameter of a vessel portion of a pan or pot.

- 5 Each support arm 20, 22 is kinked, although straight and shorter support arms 68, 70 may be used for the wider diameter ring 62.

In an alternative embodiment (not shown), the ring is removably connected to the support rod directly by clip means, with no intervening support arm(s).

10

- Each ring 18, 60, 62, 64 of the rack 10 also has a support leg 36 adapted to be mounted on the cooktop 13 and connected to a side of the ring opposite to where the support arms 20, 22 are connected. Each support leg 36 has an elongated base portion 38 that has a bottom surface on which a semi-permanent or permanent adhesive material may
15 be present for mounting purposes. The adhesive material is preferably a heat resistant resin or other material, and may be carried on an adhesive pad affixed to the bottom surface. A heat resistant suction cup may alternatively be present on the bottom surface for mounting purposes. The mounting location of each support leg 36 on the cooktop 13 should be sufficiently remote of the heating element 17 to avoid heat related problems
20 with the mounting. Each support leg 36 also has an elbow piece 40, comprising integrally connected vertical and horizontal portions 72, 74, extending upwardly from the base portion 38 and connecting to an outer side surface of the ring 18.

- Interchangeable support legs (such as are shown in Figure 15) may be included so as to adjust the vertical and/or horizontal length of the elbow piece 40 in order to suit the
25 circumstances of use.

- In the embodiment shown in Figure 9, a lower part of the vertical portion 72 of the elbow piece 40 can be tightly engaged and disengaged from a stem part 74 extending upwardly from the base portion 38. Also, when the base portion 38 is disconnected
30 from the cooktop 13, the elbow piece 40 is able to rotate about an axis corresponding to the longitudinal axis of the horizontal portion 76 of the elbow piece, by virtue of the

end part of the horizontal portion 76 being rotatably mounted within a tubular member 50 extending outwardly from the ring 18. The tubular member 50 is secured via a pin 78 to a hole 80 in the side of the ring 18.

- 5 In the embodiment shown in Figures 16, 17 and 18, the ring 18 and its support leg 36 are able to swing about the support rod 12 through an arc of 180 degrees from their operating position as shown in Figure 5 (where they are over a heating element 17 at the front of the cooktop 13), through intermediate positions as shown in Figures 16 and 17, to a new operating position as shown in Figure 18 (where they are over a heating
10 element 19 at the rear of the cooktop 13), and they can swing in this manner after the base portion 38 of the support leg 36 disengages from the cooktop 13. They can also arrive at a new operating position at the rear of the cooktop because the elbow piece 40 of the support leg 36 is rotatable (as shown in Figure 17) to allow the base portion 38 to assume an orientation where it can be remounted to the rear of the cooktop 13. The
15 swinging action is facilitated by the receiving portion 32 of each clip means 24, 26 flexibly (but still firmly) gripping the support rod 12 with a level of pressure that will allow the clip means, and hence the ring 18 and its support leg 36, to swing upon the support rod 12 through an arc of 180 degrees.
- 20 The two ring rack 100 shown in Figures 3 and 4 is similar to the four ring rack 10 shown in Figures 1 and 2, and so like features are identified in Figures 3 and 4 with like numerals. Although not shown in Figures 3 and 4, one or both of the rings 18, 60 can be swung over to the rear of the cooktop 13 in a manner as described above.
- 25 The one ring rack 110 shown in Figures 5, 6 and 7 has a shortened support rod 12 due to the omission of extension spacers, but otherwise is similar to the four and two ring racks shown in Figures 1 to 4, and so like features are identified in Figures 5, 6 and 7 with like numerals. As shown in Figures 16 to 18, the ring 18 can be swung over to the rear of the cooktop in a manner as described above.

As best shown in Figure 7, the ring 18 defines an opening 112 through which the vessel portion 114 of pot 66 may be located so that the base of the vessel portion 114 rests upon the heating element 17.

- 5 The elevated position of the ring 18 above the heating element 17 corresponds to a minimum predetermined height (shown as H) of an uppermost surface of the ring 18 above the heating element.

- 10 The vessel portion 114 of the pot 66 has an outer side wall that has an outer diameter corresponding to a minimum predetermined width (shown as W) which is sufficient to effect a snug engagement of the outer side wall of the pot 66 within the ring 18.

- 15 In use, the combination of the minimum predetermined height (H) and the minimum predetermined width (W) restricts the pot 66 to being located vertically through the opening 112 so that, with the outer side wall engaging snugly within the ring 18, the pot 66 cannot be tilted from a vertical axis but can be rotated thereabout. Furthermore, release of the pot 66 from the rack 110 can only be effected by vertically raising the pot to above the minimum predetermined height (H) where the vessel portion 114 clears the ring 18. This provides the pot with a supported and stable position during cooking and afterwards while it is still hot.
- 20

- Without wishing to be bound by precise limitations of measurement, it has been found that a useful minimum predetermined height (H) is about 55mm, denoting a vertical distance from the top of the heating element to an uppermost surface of the ring. A
- 25 useful minimum predetermined width (W) has been found to correspond to a horizontal spacing totalling about 1mm from the outer side wall of a vessel portion of a pot to the inner side wall of a ring. This is sufficient to effect a snug engagement of the outer side wall of the pot within the ring in many circumstances, although a range of heights (H) and widths (W) may be possible in some other circumstances.

After cooking operations have ceased and the pot needs to be removed from the cooktop, the pot is gripped by its handle and moved vertically upwardly sufficiently so that the vessel portion 114 clears the ring 18.

- 5 The one ring rack 120 shown in Figure 8 holding a pot 66, and in a partly exploded view in Figure 10, is similar to the four and two ring racks shown in Figures 1 to 4, and has a longer support rod 12 than that of the one ring rack shown in Figures 5, 6 and 7 due to the addition of extension spacers, and so like features are identified in Figure 8 with like numerals. Although not shown in Figure 8, the ring 18, when no longer
10 holding the pot, can be swung over to the rear of the cooktop 13 in a manner as earlier described.

- The parts of the rod support stand 14 shown in exploded view in Figures 10 and 11 include an elongated base portion 42 having a raised portion 44 extending upwardly
15 therefrom, a stand extension spacer 126 of a suitable height and having a lower male end for tightly engaging an upper female end of the raised portion 44 and having a horizontally aligned aperture 127 formed through a main spacer body to receive an end of the support rod 12 therethrough and a cap 128 which engages the end of the support rod.

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- The parts of the rack 120 shown in Figure 14 include interchangeable or replaceable parts in the form of three different heights of stand extension spacers 126, 130 and 132, and an array of extension spacers 135, 136, 137, and 138 for the support rod. Parts may be selected to suit the circumstances of use. For example, the taller stand extension
25 spacer 132 is suited to a gas burner element cooktop, the medium height spacer 130 is suited to an electric element cooktop, and the shorter spacer 126 is suited to a flat surfaced induction element cooktop.

- The parts of the rack 120 shown in Figure 15 include interchangeable parts in the form
30 of nine different sizes of elbow piece 40 for a support leg 36. Each different elbow

piece 40 provides an adjustment of the vertical and/or horizontal length of the elbow piece to suit a desired circumstance of use.

5 It will be apparent that the rack of the present invention may be mounted, not only on cooktops or stovetops, but on benchtops or wherever it is desired to prevent the cookware from slipping or otherwise being inadvertently displaced

It will also be apparent that the heating element need not be a gas burner element, but may instead be an electrical element or a flat surfaced induction element.

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It will also be readily apparent to persons skilled in the art that the present invention has many advantages over the prior art.

15

For instance the rack of the present invention provides a quick and easy attachment to, and detachment from, a cooktop, and enables flexibility in the location and use of ring shaped support members for holding cookware on a heating element of a cooktop.

Further advantages of the present invention to those described in, or understood from, this specification will be apparent to persons skilled in the art.

20

The reference in this specification to any prior publication (or information derived from it), or to any matter which is known, is not, and should not be taken as an acknowledgement or admission or any form of suggestion that that prior publication (or information derived from it) or known matter forms part of the common general

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knowledge in the field of endeavour to which this specification relates before the filing date of this patent application.

30

CLAIMS

1. A rack for holding cookware on a cooktop, the rack comprising a support rod adapted to be mounted on the cooktop by rod support stands, a ring shaped support member for cookware removably connected to the support rod by clip means, the ring shaped support member having a support leg adapted to be mounted on the cooktop and connected to the ring shaped support member whereby the ring shaped support member is held in an elevated position over a heating element of the cooktop, the ring shaped support member defining an opening through which a vessel portion of cookware may be located.
2. The rack of claim 1 wherein the clip means comprises a substantially U-shaped body having a flexible portion defining a constricted opening to a receiving portion within which the support rod is adapted to be located.
3. The rack of claim 1 wherein the rack further includes at least one support arm having a first end connected to the ring shaped support member and a second end connected to the clip means.
4. The rack of claim 1 wherein the support leg includes a base portion for engaging the cooktop and an elbow piece having integrally connected vertical and horizontal portions extending upwardly from the base portion and connecting to an outer side surface of the ring shaped support member.
5. The rack of claim 4 wherein a lower part of the vertical portion of the elbow piece is adapted to be tightly engaged and disengaged from a stem part extending upwardly from the base portion.
6. The rack of claim 4 wherein the base portion is adapted to be disengaged from the cooktop, and the elbow piece is adapted to rotate about a longitudinal axis of the horizontal portion of the elbow piece when the base portion is disengaged, whereupon

the ring shaped support member and its support leg are able to swing about the support rod through an arc of 180 degrees from their operating position where they are over a first heating element of the cooktop to a new operating position where they are over a second heating element of the cooktop.

5

7. The rack of claim 1 wherein the support member is made of metal or a metal alloy having heat conducting properties.

8. A cooktop safety assembly comprising;

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(a) the rack of claim 1, with the proviso that the elevated position corresponds to a minimum predetermined height of an uppermost surface of the support member above the heating element,

15

(b) a cookware adapted for use with the rack, the cookware having a vessel portion with an outer side wall that has an outer diameter corresponding to a minimum predetermined width which is sufficient to effect a snug engagement of the outer side wall of the cookware within the support member,

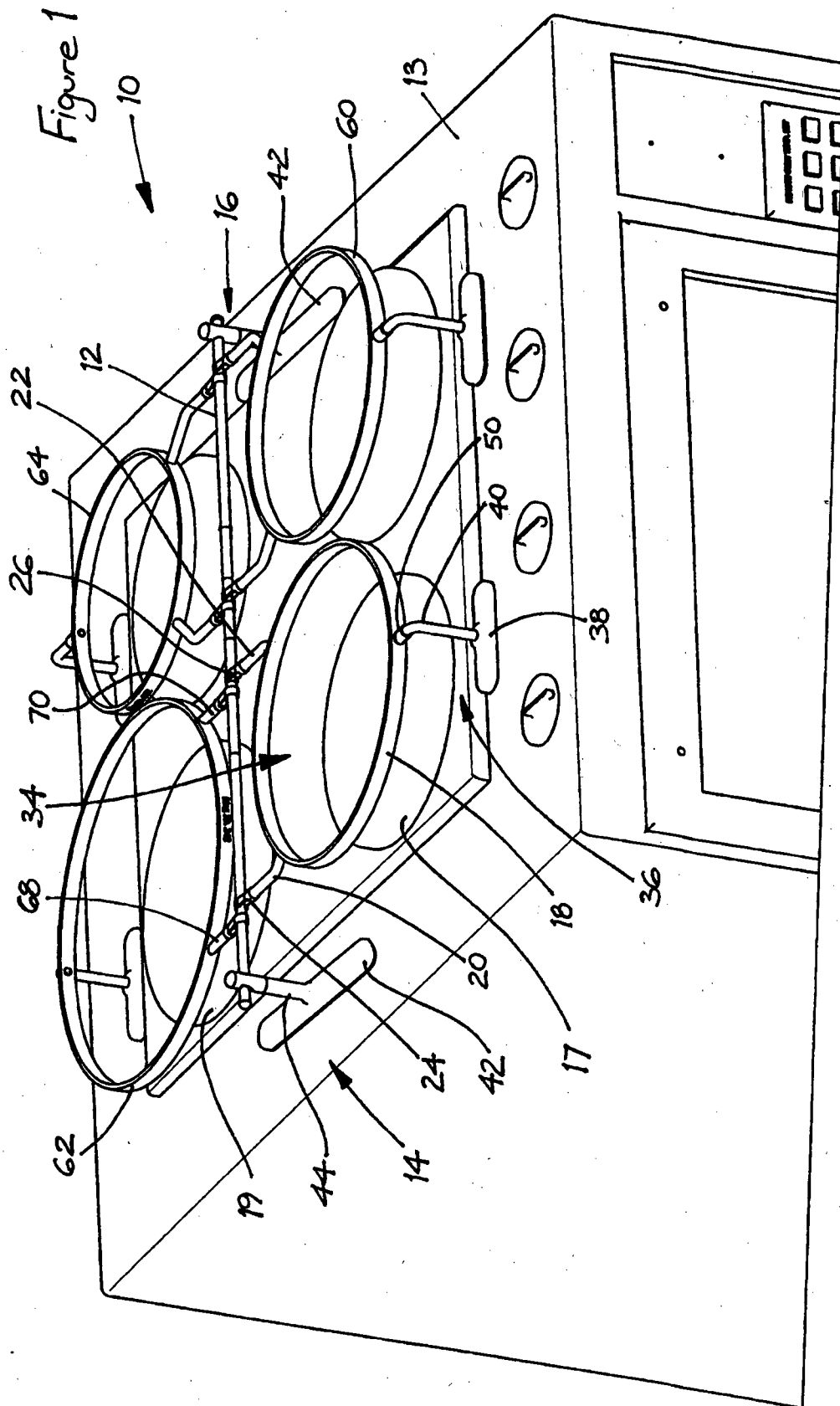
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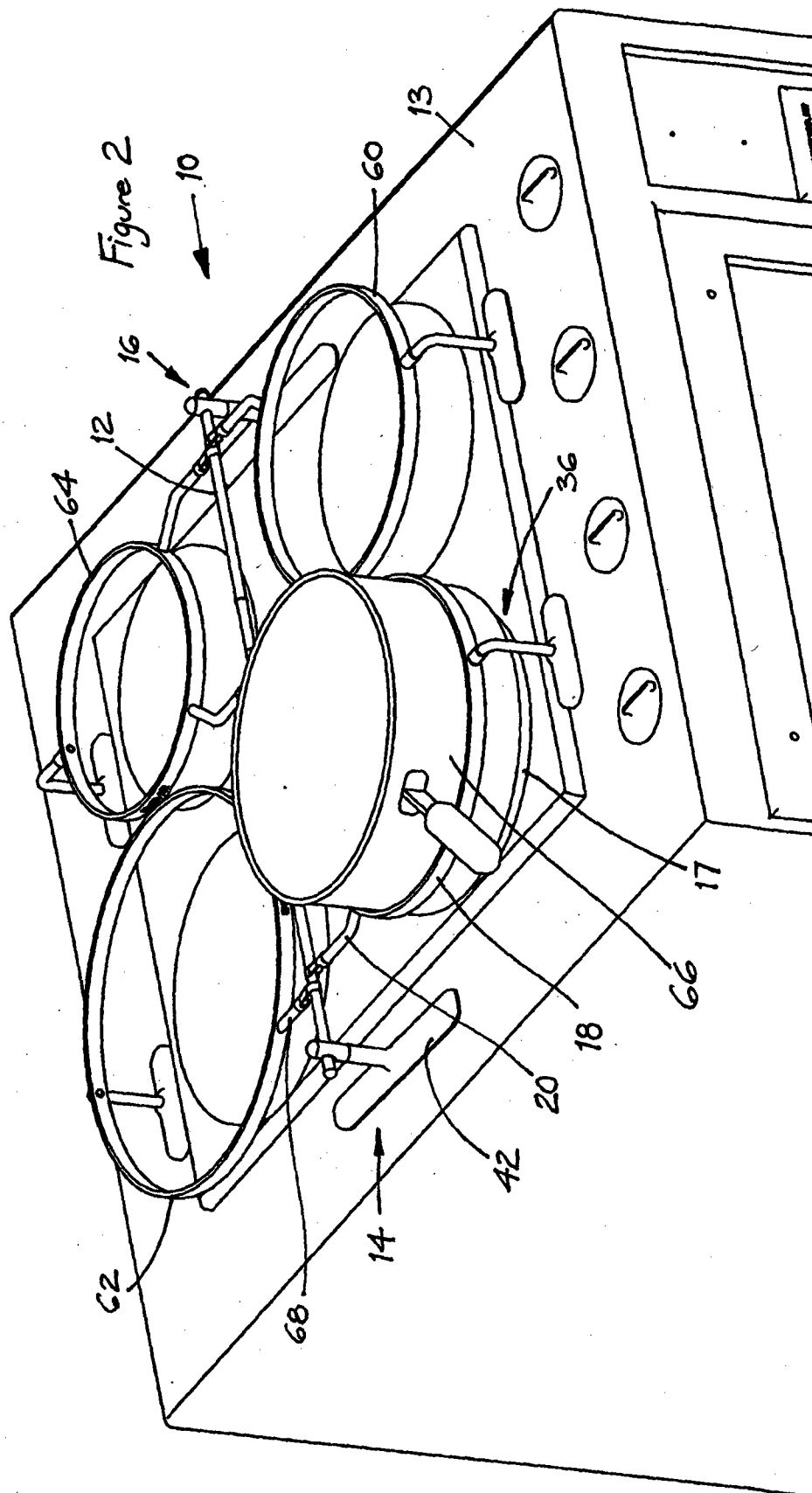
wherein, in use, the combination of the minimum predetermined height and the minimum predetermined width restricts the cookware to being located vertically through the opening so that, with the outer side wall engaging snugly within the support member, the cookware cannot be tilted from a vertical axis but can be rotated thereabout, and release of the cookware from the rack can only be effected by vertically raising the cookware to above the minimum predetermined height where the vessel portion clears the support member.

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9. The cooktop safety assembly of claim 8 wherein the cookware is a pot or a pan.

10. The cooktop safety assembly of claim 8 wherein the heating element is an electrical element, a gas burner element, or a flat surfaced induction element.





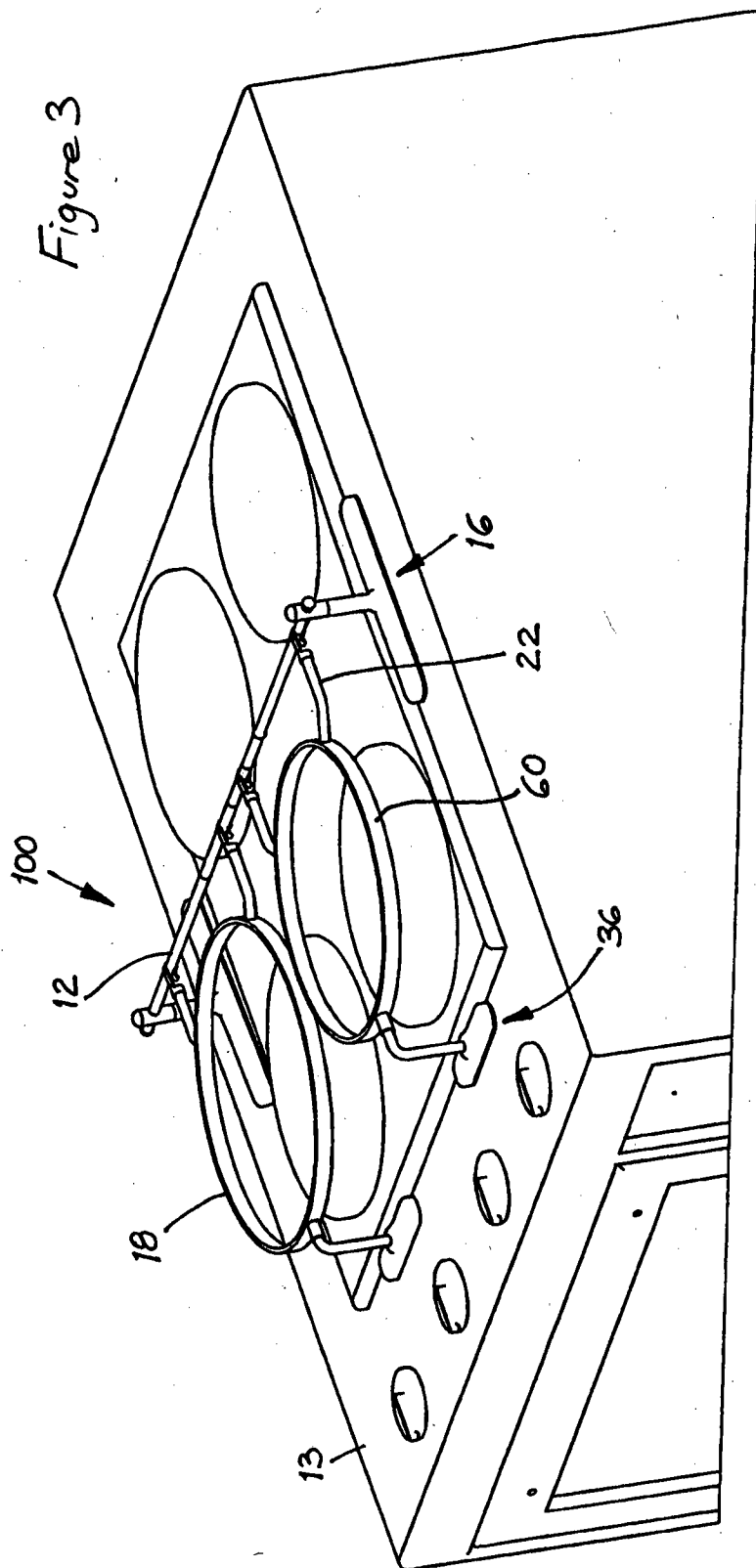


Figure 4

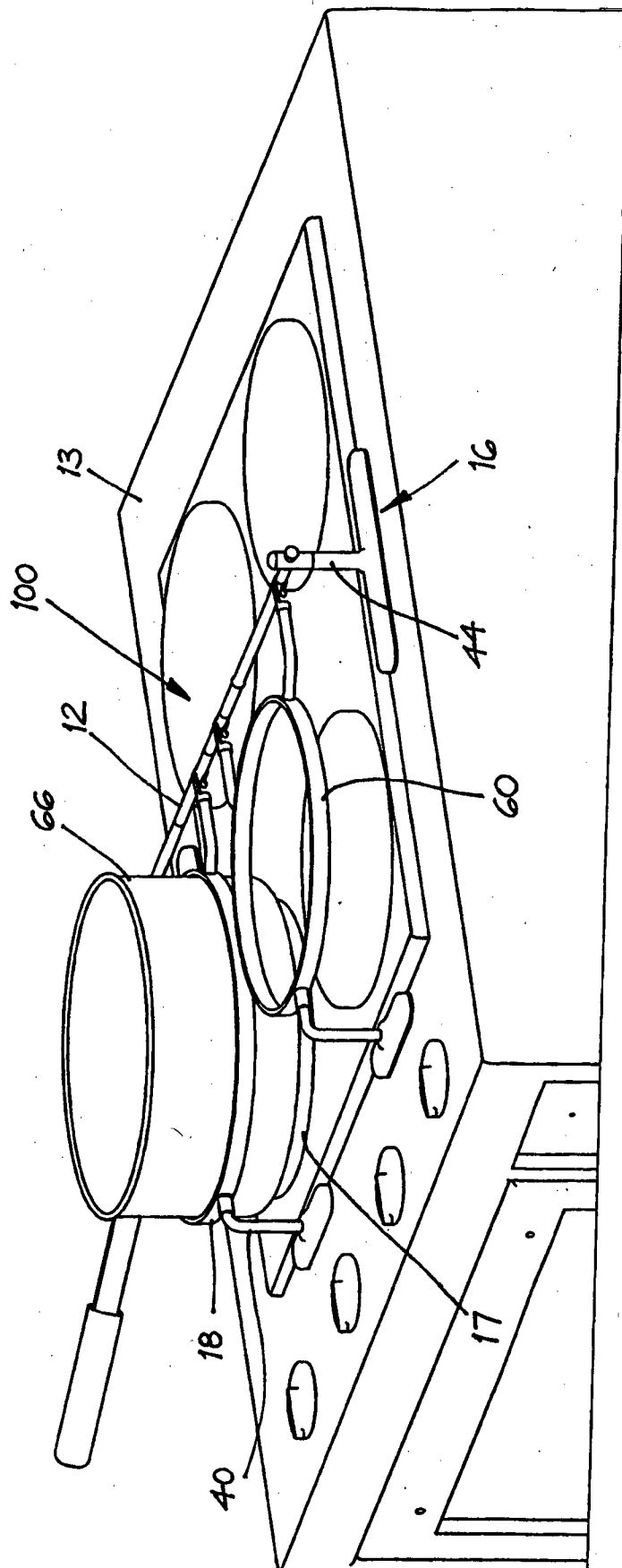


Figure 5

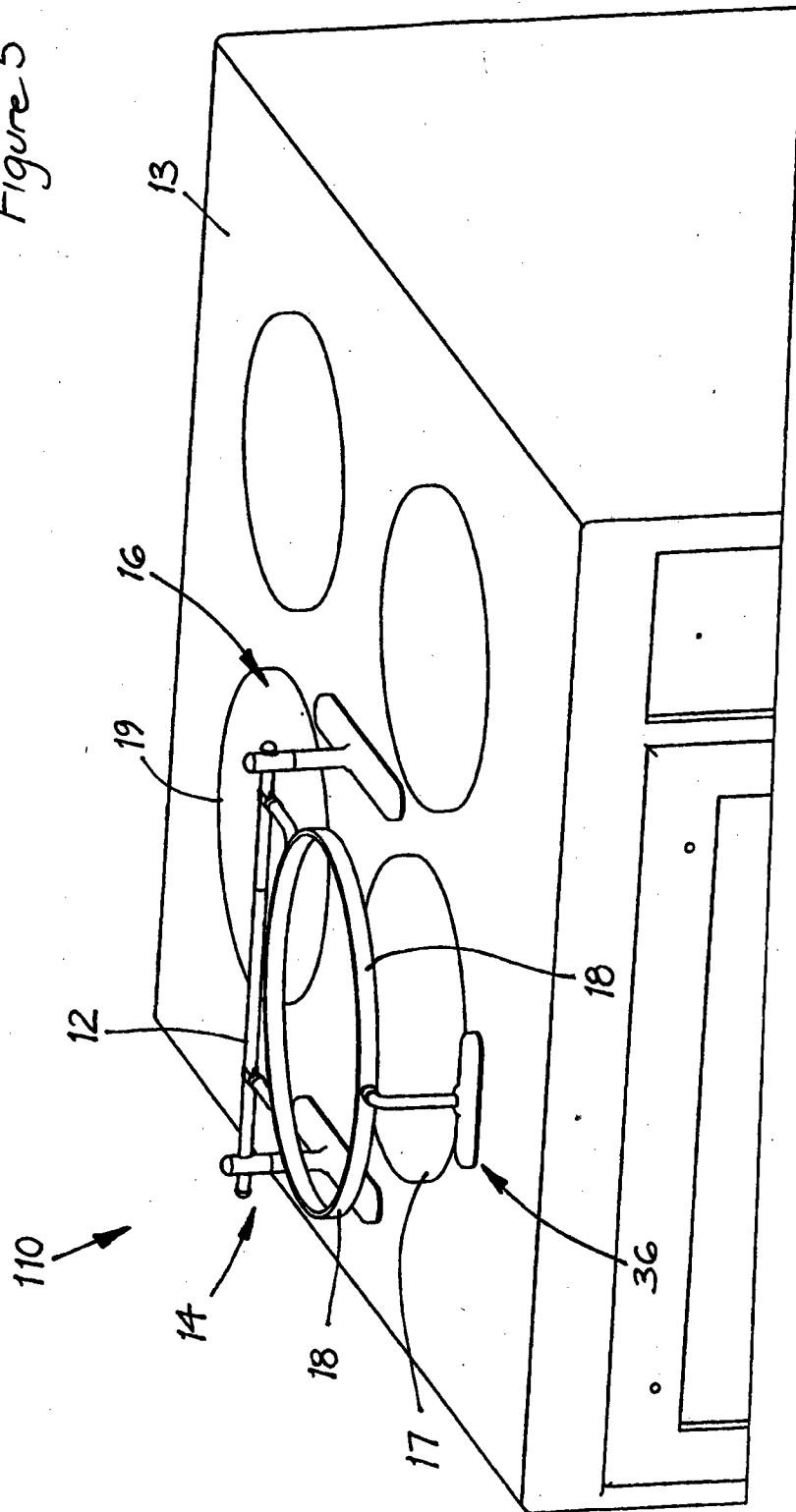


Figure 6

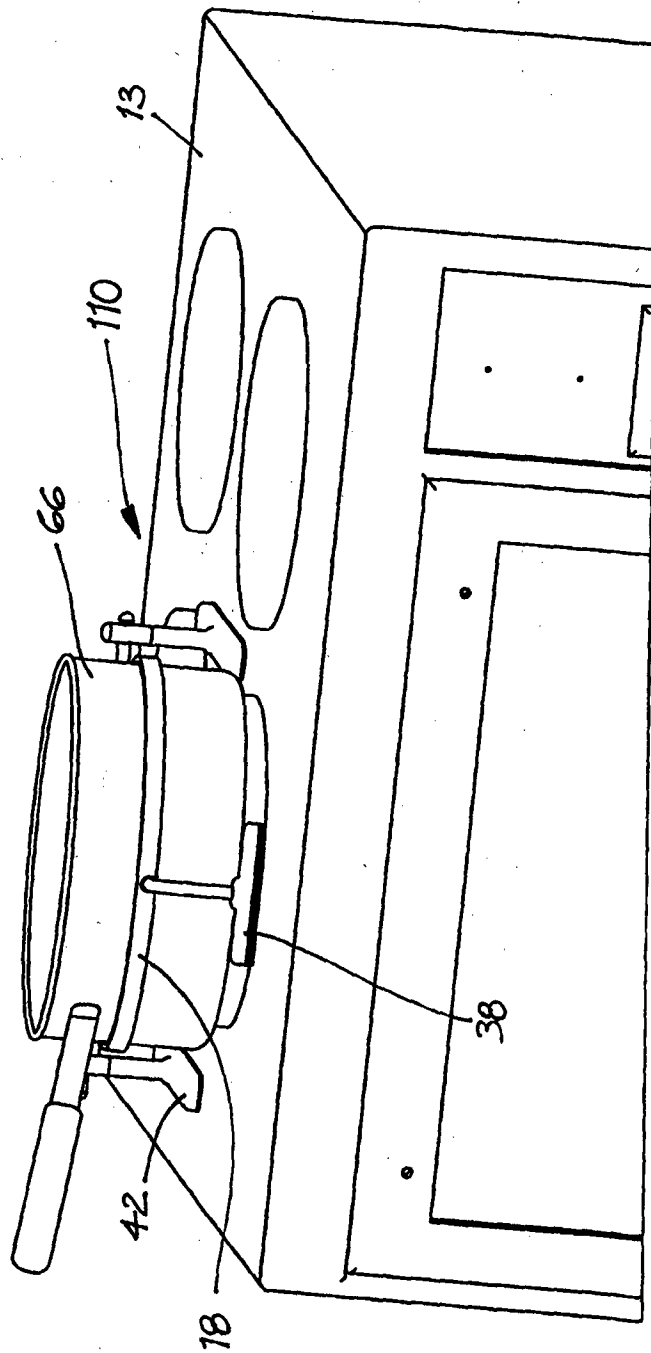
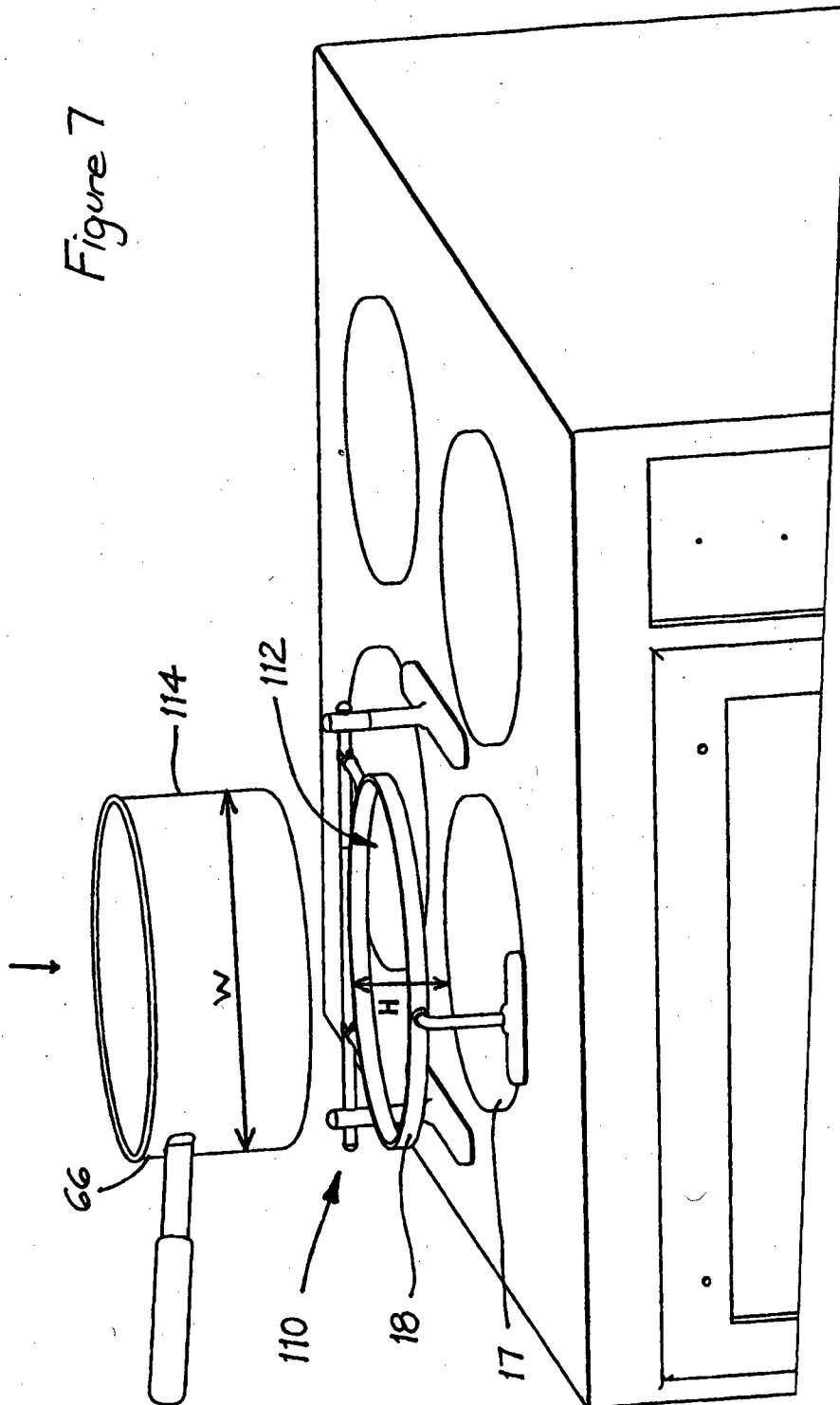
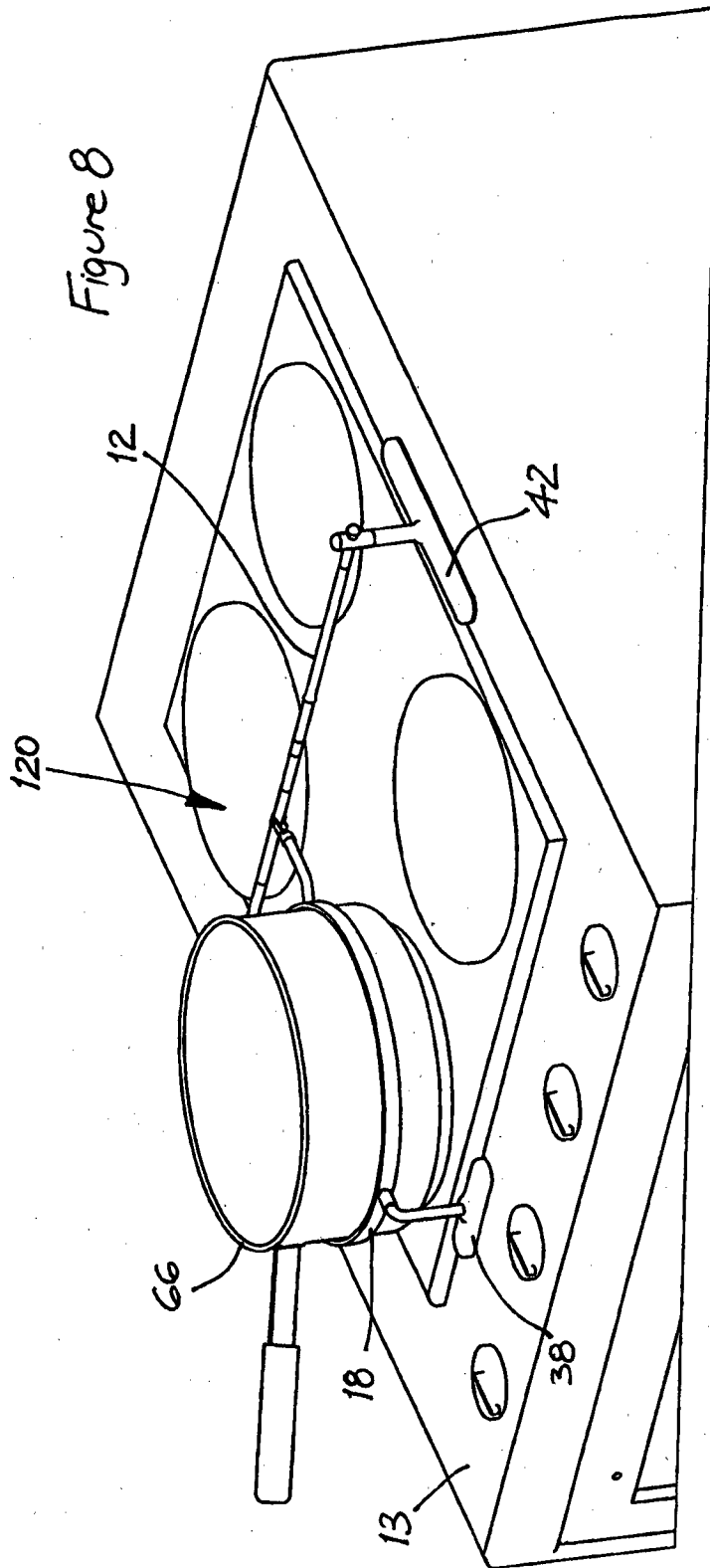
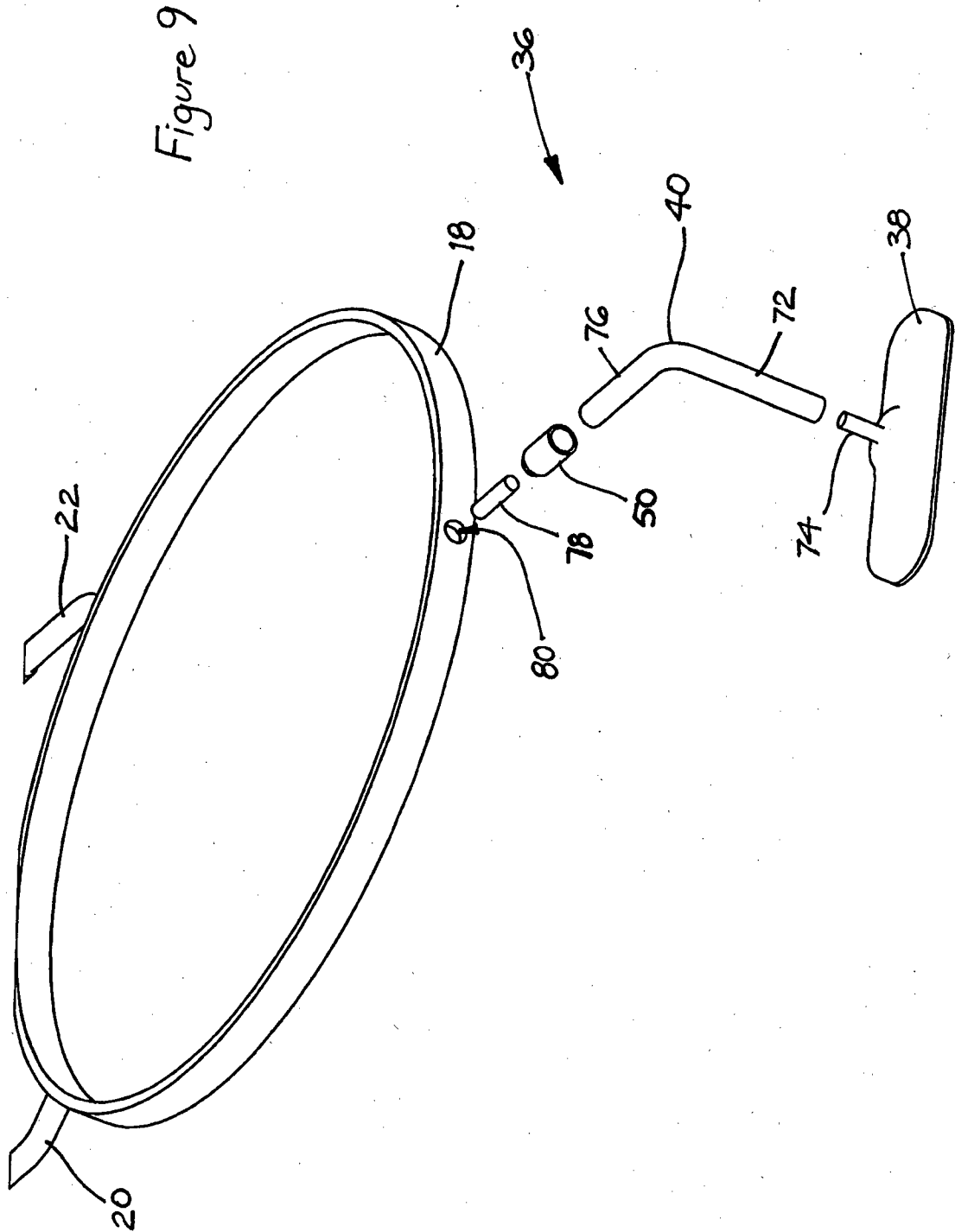
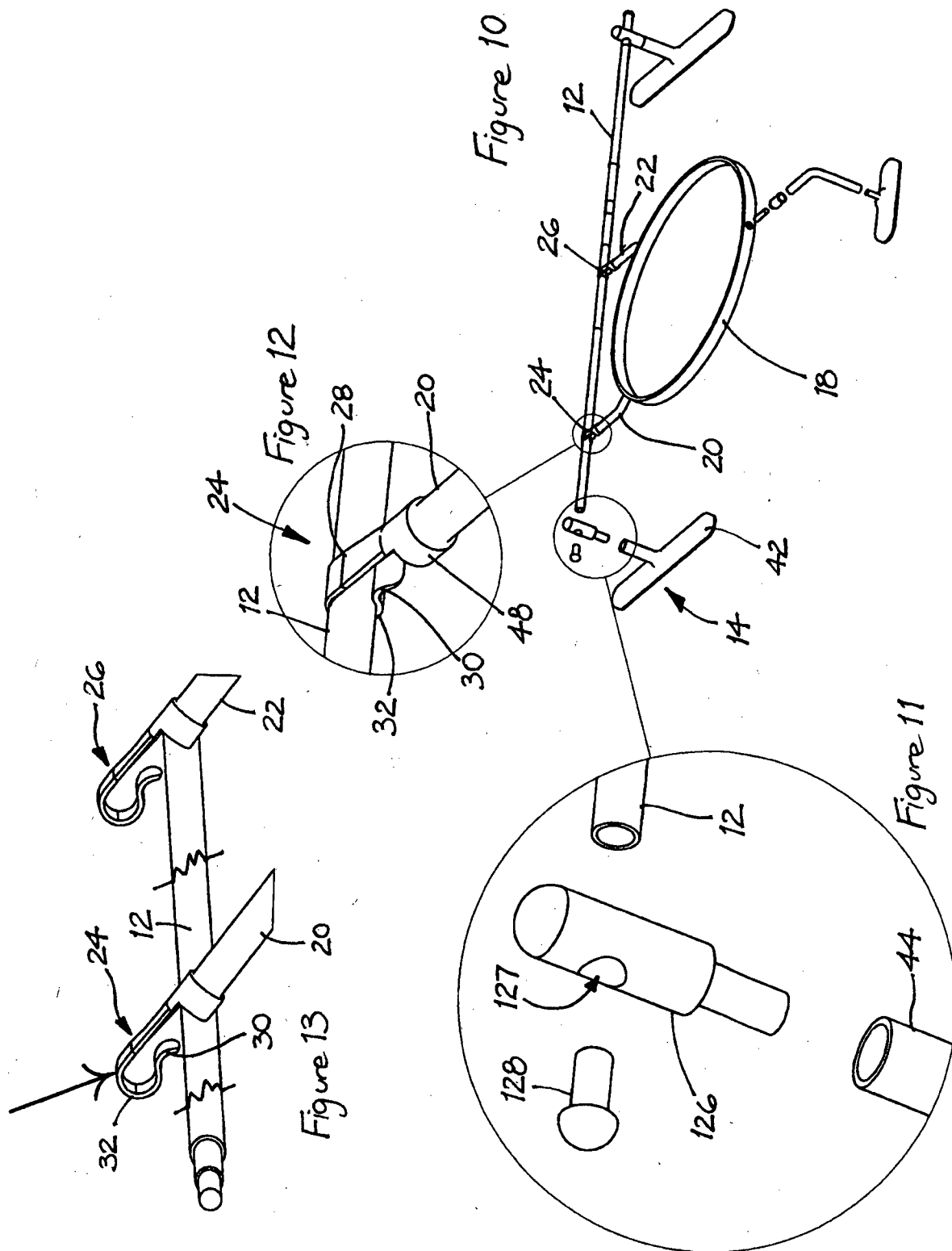


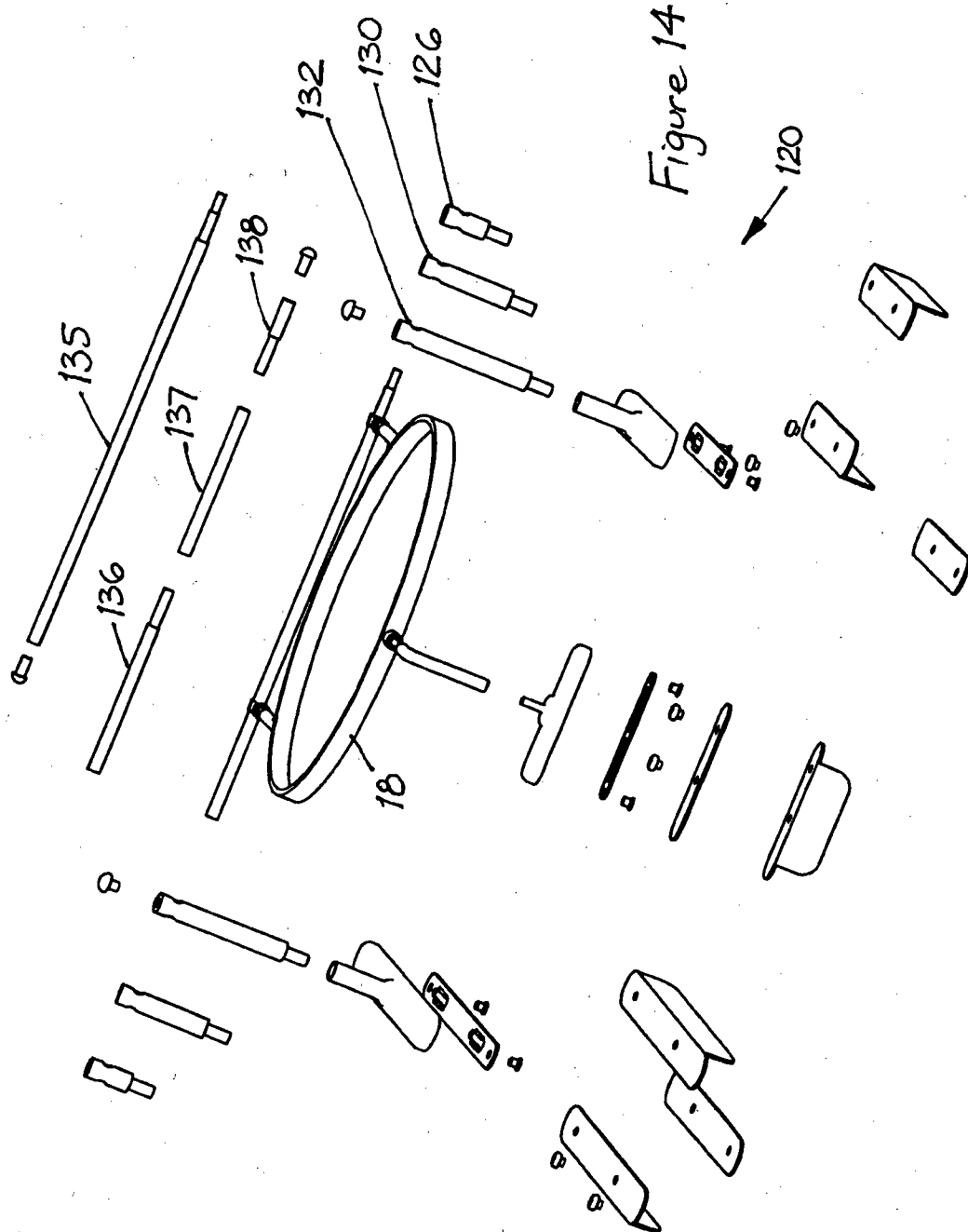
Figure 7

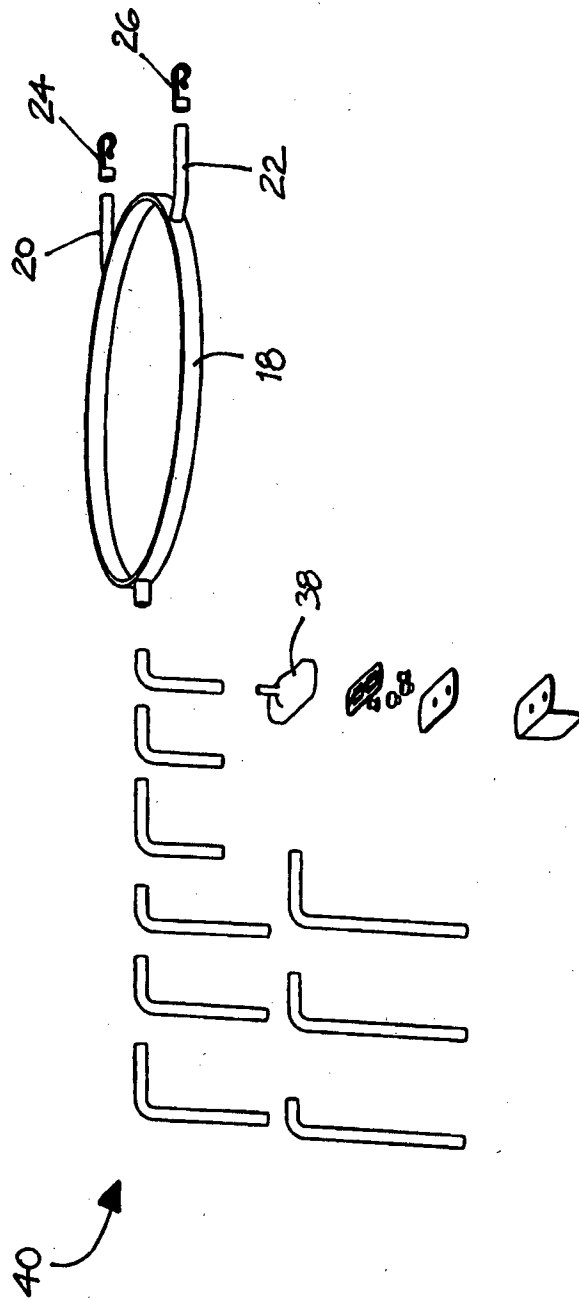




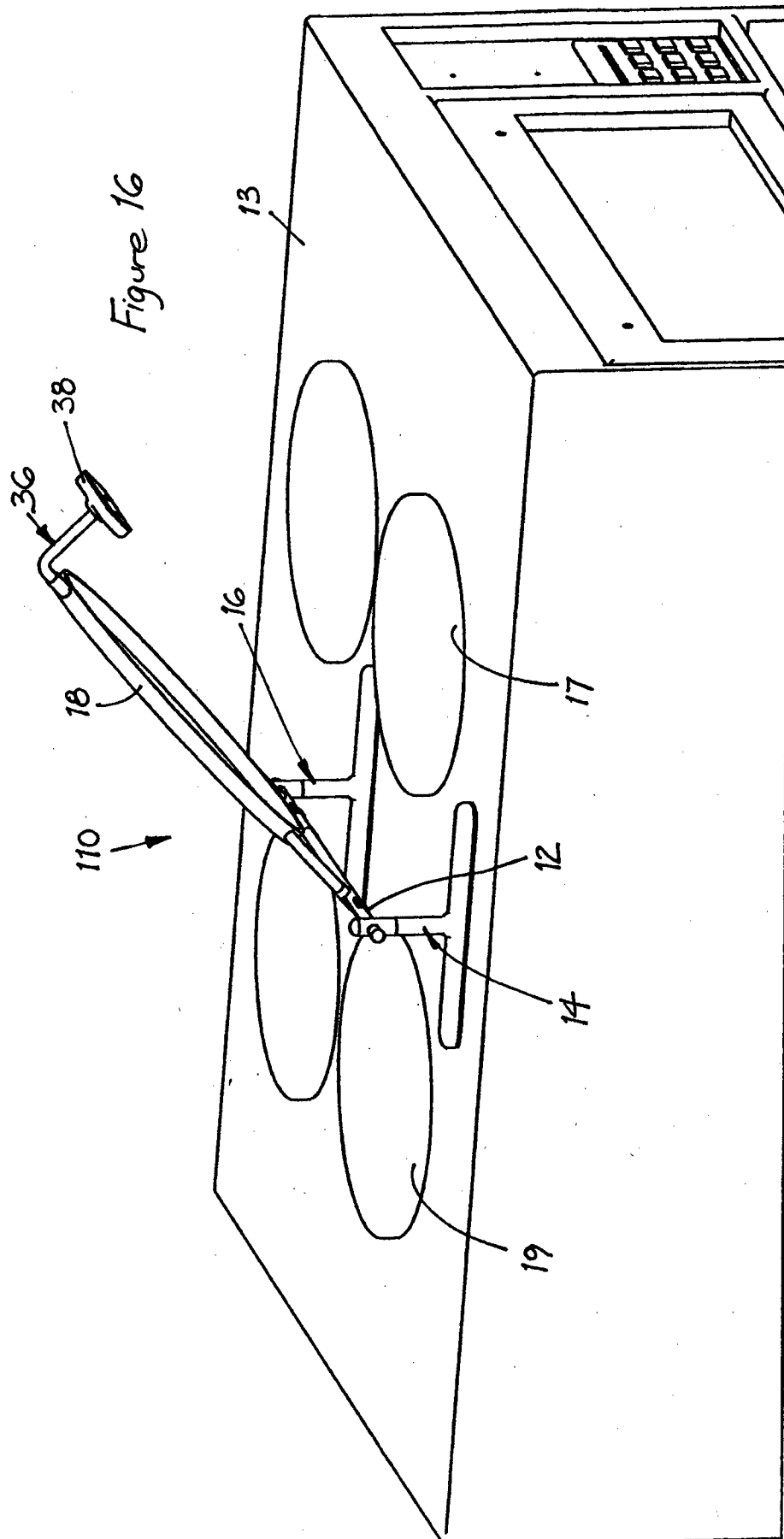








120 Figure 15



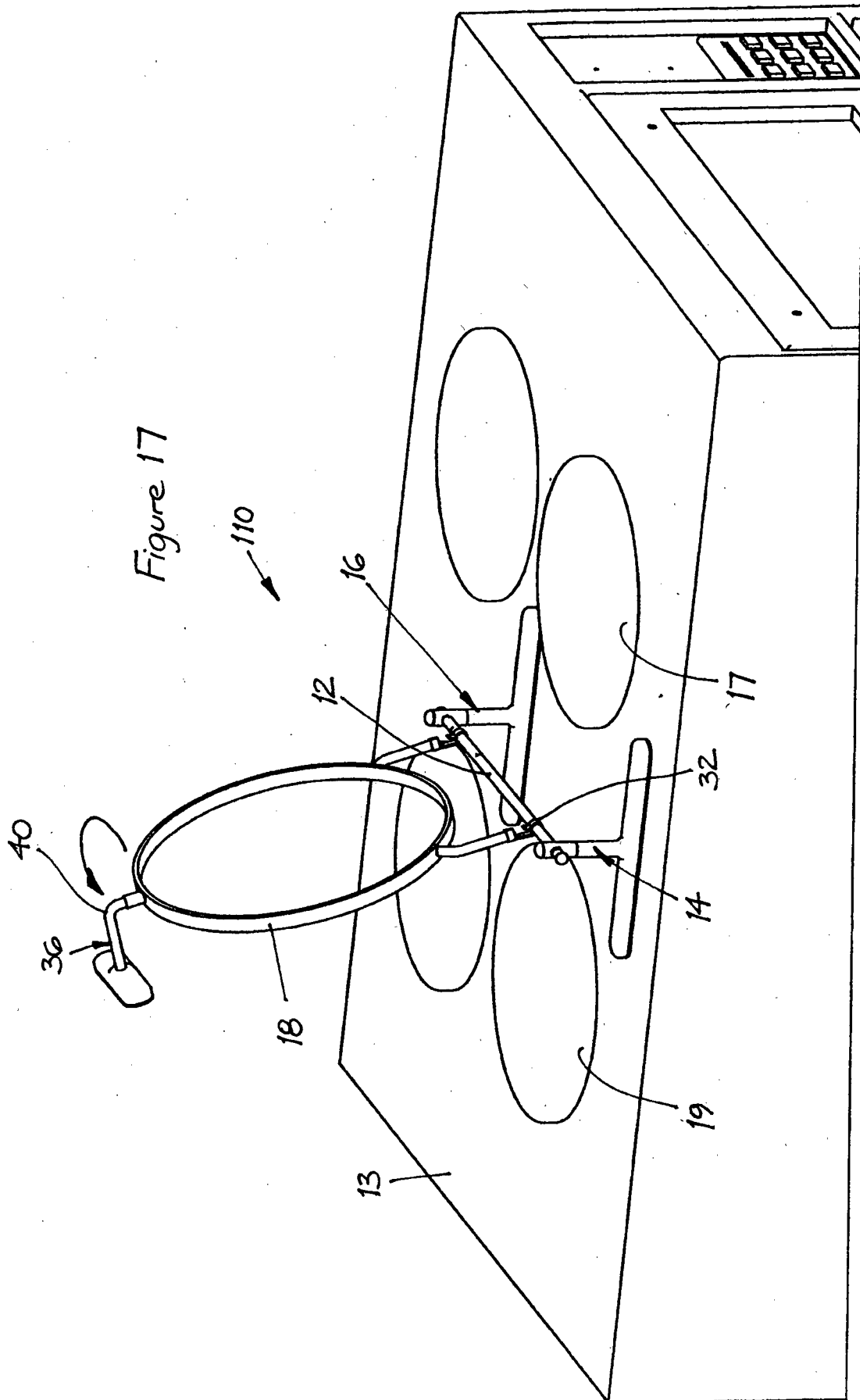
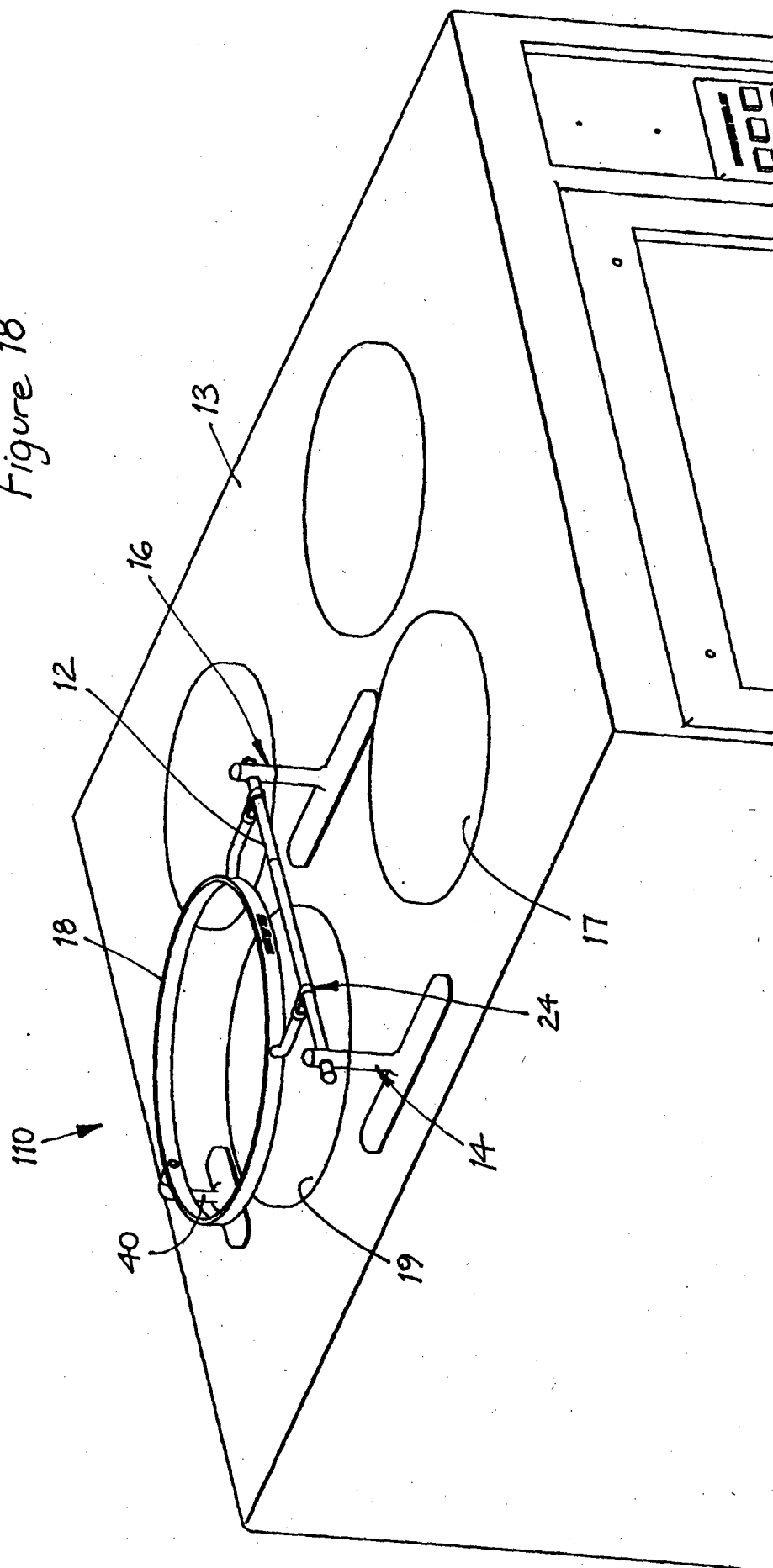


Figure 18



INTERNATIONAL SEARCH REPORT

International application No.
PCT/AU2013/001061

A. CLASSIFICATION OF SUBJECT MATTER

F24C 15/30 (2006.01) A47J 36/00 (2006.01) A47J 27/00 (2006.01) F24C 3/12 (2006.01) F24C 5/16 (2006.01)
F24C 7/08 (2006.01) F24C 15/10 (2006.01) F24C 15/36 (2006.01)

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

A47J36, A47J27, F24C with keywords (rack, clip, flexible, ring) and the like terms

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
	Documents are listed in the continuation of Box C	



Further documents are listed in the continuation of Box C



See patent family annex

* Special categories of cited documents:	
"A" document defining the general state of the art which is not considered to be of particular relevance	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"E" earlier application or patent but published on or after the international filing date	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
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"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search
5 February 2014

Date of mailing of the international search report
05 February 2014

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Telephone No. 0399359624

INTERNATIONAL SEARCH REPORT		International application No.
C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		PCT/AU2013/001061
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X Y	US 6029646 A (JACKSON) 29 February 2000 figures 1-11, abstract figures 1-11,	1-7 8-10
X Y	KR 100825494 B1 (GANG DU MAN) 25 April 2008 Figures 1-5, abstract Figures 1-5	1-7 8-10
X Y	GB 191201482 A (HRUBESCH) 16 May 1912 Figures 1-2 Figures 1-2	1-7 8-10
X Y	JP 11-37479 A (TATE KOICHI) 12 February 1999 Figures 1-6 Figures 1-6	1-7 8-10
Y	WO 2012/083348 A1 (MOONEY) 28 June 2012 figures 1-9, page 13 lines 1-20	8-10
A	US 5669372 A (HUMPHREY) 23 September 1997 Figures 1-21, abstract	1-10
A	GB 256409 A (POMEROY) 12 August 1926 Figures 1-3	1-10

INTERNATIONAL SEARCH REPORT Information on patent family members		International application No. PCT/AU2013/001061	
This Annex lists known patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.			
Patent Document/s Cited in Search Report		Patent Family Member/s	
Publication Number	Publication Date	Publication Number	Publication Date
US 6029646 A	29 Feb 2000	None	
KR 100825494 B1	25 Apr 2008	None	
GB 191201482 A	16 May 1912	None	
JP 11-37479 A	12 Feb 1999	None	
WO 2012/083348 A1	28 Jun 2012	None	
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		US 5669372 A	23 Sep 1997
		US 5862798 A	26 Jan 1999
GB 256409 A	12 Aug 1926	None	
End of Annex			
Due to data integration issues this family listing may not include 10 digit Australian applications filed since May 2001. Form PCT/ISA/210 (Family Annex)(July 2009)			