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(54) **Air extraction apparatus**

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Appareil d'extraction d'eau de l'air

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## Description

**[0001]** This invention relates to an air extraction apparatus. It is envisaged that the invention may be particularly suitable for extracting cooking vapours from or over a cooking area or surface such as a stove, hob or deep fryer. However, it is to be understood and appreciated that the invention is not to be limited to such use. The prior art and possible applications of the invention as discussed below are therefore given by way of example only.

## BACKGROUND ART

**[0002]** For the purpose of this specification, the term "cooking vapours" is understood to collectively refer to the various steam clouds, odours, smoke, grease and other "vapours" ordinarily produced when cooking.

**[0003]** Furthermore, the term "cooking area" is understood to refer to any cooking area or surface such as a stove, bench top, hob, deep fryer and the like.

**[0004]** The production and/or presence of cooking vapours, when cooking, is generally regarded at best as a nuisance, and at worst as a health or safety hazard. As a consequence, there are available numerous types of air extraction apparatus which are commonly employed in both household and commercial kitchens to facilitate the removal of cooking vapours.

**[0005]** The overhead rangehood is the most common form of air extraction apparatus presently used for removing cooking vapours from a cooking area. Rangehoods generally consist of a large overhead extraction vent (with suitable extraction means, such as fans/motors), which laid to either a flue/chimney, or to another appropriate ducting means. Cooking vapours are drawn into the rangehood and expelled or directed out of the kitchen and/or away from the cooking area.

**[0006]** Disadvantages associated with rangehoods is that they are usually quite bulky and cumbersome, and hence many kitchens may not have sufficient room or means to be able to accommodate or fit a rangehood (together with its associated fans and/or ducting). Furthermore, given that rangehoods are often fitted at head height above a cooking area, they often obstruct the view of a person cooking over the cooking area. Furthermore, a person cooking using, a rangehood may inadvertently bang his/her head on the rangehood from time to time. Lastly, because rangehoods are often positioned well above a cooking area, and given that they are fixed, some cooking vapours escape the extraction vent and/or are not able to be drawn into same. This is particularly so should there be a draught or breeze blowing through the room where the cooking area is situated - as this will tend to disperse the cooking vapours whereby they are not able to be captured by the rangehood.

**[0007]** Down draft extraction apparatus offers another means for extracting cooking vapours from a cooking area. Down draft extractors generally comprise a grill or extractor vent mounted flush alongside a cooking area

or which can be fitted at bench height. Cooking vapours are therefore directed down (and/or sideways) into the extractor vent (once suitable extracting means such as a fan/motor is activated). A disadvantage associated with such extraction apparatus is that powerful extraction fans/motors are often required because the naturally rising cooking vapours have to be drawn down and/or sideways into the extraction apparatus. Furthermore, such apparatus are generally not suitable for gas stoves as the extractor may attract the gas or flames. As a general rule, down draft extractors are less effective than rangehoods given that a lot of the cooking vapours escape given their natural tendency to rise. Hence, a much higher performance is required in respect of such extraction apparatus as compared with overhead rangehoods.

**[0008]** A further type of extraction apparatus is wall units, such as that described in New Zealand Patent No. 242182. Such wall mounted apparatus are generally more effective than down draft apparatus given that the cooking vapours are drawn up and/or sideways (that is, positioned at a greater height), and not down. However, such apparatus are generally not as effective as overhead rangehoods given that cooking vapours naturally rise. Hence, despite such apparatus being positioned at a greater height than down draught extraction apparatus, it is found that they suffer from similar drawbacks given the natural tendency of cooking vapours to rise.

**[0009]** Furthermore, a disadvantage associated with both downdraft and the wall units described above, is that they are generally situated quite close to a cooking area, they are not suitable for use with gas cookers as they have a tendency to draw the gas and/or the flame.

**[0010]** Another type of extraction apparatus is in the form of an extraction fan fitted in the wall or ceiling of a kitchen. Such apparatus are not usually very effective as they are fixed, and are usually small and/or underpowered, and rely on drawing the cooking vapours to them, given that they are positioned above and/or to the side of the cooking area.

**[0011]** A disadvantage associated with all of the above air extraction apparatus is that, being fixed, they cannot be manoeuvred or positioned over a certain part of a cooking area by a user. As such, they all rely upon the cooking vapours being drawn to them, rather than being able to be positioned so as to capture specific cooking vapours and/or cover a specific part of the cooking area as required or desired.

**[0012]** WO 00/49341 describes air extraction apparatus which can be installed in the bench of a cooking area, but adjacent to same. In its inoperative position the extraction apparatus is substantially flush with the bench. In its operative position, the apparatus can be extended upwards telescopically and rotated into a position above the cooking area. Whilst this apparatus does go some way towards addressing some of the disadvantages outlined above, it has quite obvious limitations. For example, in its inoperative position it takes up valuable bench space. Furthermore, the extraction head is relatively

small and therefore has limitations as to the area of the cooking surface it can cover. Moreover, because the apparatus is bench-mounted, it is not able to extend to any significant height, and hence may not be as effective as a fixed rangehood-type device which is fitted much higher above a cooking area. Moreover, because the apparatus may only extend a fairly short distance above a cooking area, it may in fact pose an obstruction, cast shadows, and/or otherwise hinder a person accessing the cooking area and/or food being cooked thereon. Furthermore, because the apparatus, in its operative position, is situated at a height reasonable close to the cooking area it may not be suitable for use with gas hobs and the like as it may attract gas and/or flame.

**[0013]** There are known several extraction apparatus which are movable in a vertical direction, that is, they are able to be pulled down over a cooking area to any required or desired height. Examples include the products described in DE 4122440, EP 0625677, EP 0443301, and US 4,612,909.

**[0014]** All of these patents describe air extraction apparatus which are able to be moved to different heights above a cooking area. Hence, one main drawback associated with all of these products is that they do not allow for any lateral movement of the air extraction apparatus (or vents associated with same). Hence, they effectively act like a fixed rangehood which is height adjustable. Hence, many of the disadvantages associated with rangehoods, as described previously, may also apply to these products. Furthermore, because all of these apparatus are height adjustable, they may not be suitable for use above gas cookers and the like. This is because many countries have regulations concerning the height of air extraction apparatus above gas cookers in order to prevent them extracting gas and/or flame. Hence, because all of the vertically-adjustable apparatus have no restriction as to height, they may not in fact be allowed to be used in many countries which have such restrictions or standards.

**[0015]** It is an object of the present invention to address some or all the foregoing problems or at least to provide the public with a useful choice.

**[0016]** Further aspects and advantages of the present invention will become apparent from the ensuing description that is given by way of example only.

### **DISCLOSURE OF INVENTION**

**[0017]** According to one aspect of the present invention there is provided a wall mounted air extraction appliance for mounting above a cooking area extract air and vapours therefrom comprising:

- a wall mounted unit mounted above said cooking area;
- a duct within said wall mounted unit having an air inlet and an air outlet and a fan for drawing air into said air inlet and/or direct air out of said air outlet;

means for actuating said fan;

a substantially rectangular air collecting body having an air inlet and an air outlet in fluid connection by moveable means to said duct air inlet characterised in that;

said air collecting body is pivotally connected to said wall mounted unit providing rotation in a horizontal plane parallel to said cooking area, and said air collecting body extends laterally from said wall mounted unit, by a predetermined length such that when rotated, said air collecting body sweeps over substantially the entire area of said cooking area.

**[0018]** Preferably, said air inlet is an opening fitted with a removable grill or filter for receiving and dispersing air and collecting grease extending substantially the entire underside of said rectangular air collecting body. It is preferred that said exhaust fan is activated automatically when said rectangular air collecting body is horizontally rotated from a first position, in close proximity to said wall to or towards a second position above said cooking area. Advantageously, said pivotal connection is provided by a bendable duct enabling said rectangular air collecting body to rotate in the horizontal plane above said cooking area.

**[0019]** Any suitable mounting means may be utilised.

**[0020]** For example, the mounting means may comprise a suitable unit, attachable to the body, the unit having an air inlet and an air outlet. In such an embodiment, the mounting means may preferably be fastened to or within a surface such as a wall, preferably adjacent the cooking area. For example, the mounting means may be fastened to the inside of a single vertical stud within a wall cavity. Hence, any air being extracted by the apparatus may pass in through the inlet of the body, out through the outlet of the body, and subsequently through the inlet and outlet of the mounting means, before exiting the cooking area by the use of appropriate ducting and the like.

**[0021]** In such an embodiment, it is envisaged that the mounting means may be partially contained within a cavity in the surface, and therefore have a portion which extends outwardly from the surface.

**[0022]** Alternatively, or additionally, the mounting means may include or comprise a flue. For example, one end of the flue may be attached to the outlet of the body, with the flue extending upwardly and having an outlet which passes the extracted cooking vapours into appropriate ducting and the like. Preferably, in such an embodiment the flue may be wall mounted, and preferably fixed to the wall rather than being fixed partially or wholly within the wall.

**[0023]** In another embodiment, the flue may extend from a ceiling or upper surface, and not in fact be fixed to any wall or other substantially vertical surface. Such an embodiment may be particularly suitable for use where the cooking area comprises an "island" as is com-

mon within many modern kitchens.

**[0024]** It is envisaged that the mounting means may incorporate any of the components or other features associated with the invention, as described below. For example, the mounting means may incorporate a transformer for any lighting, a fan to power the apparatus, electronics to control any lighting and/or fan speed and/or switching the apparatus on or off, power connections for the apparatus, and so on.

**[0025]** It is also envisaged that the body may also incorporate some or all of the components or features described above.

**[0026]** Any suitable moving means which allows for the body to pivot and/or move with respect to the mounting means may be utilised as required or as desired, or as dictated by the type of surface to which the apparatus is to be mounted and/or the type of area from which vapours or air are to be extracted.

**[0027]** If the mounting means is wall mounted, the body may preferably be moveable between a first position whereby the body substantially abuts or is adjacent to said wall, and a second position whereby the body may be positioned (at any point) over the area from which air is to be extracted. It is further envisaged that the body may be positioned at any point between the first and second positions.

**[0028]** Such an embodiment has the advantage in that when the apparatus is not in use, the body may lie adjacent or abut the wall, and thus be out of the way whereby it does not present an obstruction or other obstacle. Furthermore, it may be appreciated that in such an embodiment, the body is able to move substantially 180° with respect to the wall.

**[0029]** In an embodiment where the mounting means is a flue, which is not wall mounted (that is, where the cooking area is an "island") it is envisaged that the body may be similarly moveable to the embodiment described above (although given that the mounting means is not wall mounted in this embodiment, the body may be able to move 360° with respect to the flue). That is, the body may be moveable between a first position whereby the body is not in a position over the cooking area (and thus is "stored" out of the way), to any number of other positions whereby the body is positioned over the cooking area at a desired or required position.

**[0030]** The body may preferably be able to move laterally with respect to the mounting means. In this specification, the term "laterally" is understood to mean substantially at right angles to the vertical and/or substantially in the same plane as the surface of the cooking area.

**[0031]** The apparatus may preferably be provided with actuation means which, when activated, serve to draw air into said inlet and/or direct air out of said outlet of said body. Additionally, or alternatively, the actuation means, when activated, may serve to draw into and/or out of the mounting means - which will also have the effect of course of drawing air into and/or out of the inlet and outlet of the body.

**[0032]** Any suitable actuation means may be utilised as required or as desired, or as dictated by the type of surface to which the apparatus is to be mounted and/or the type of area from which air is to be extracted.

**[0033]** For example, the actuation means may include a vacuum forming device, which serves to form (a partial) vacuum adjacent the air outlet, whereby air will be drawn into the air inlet and towards and/or out of the air outlet.

**[0034]** In a further embodiment, the actuation means may include a fan. The fan may be powered by any suitable means, although it is envisaged that an electric motor may be particularly suitable.

**[0035]** The actuation means may be activated by any suitable means, for example by the use of an electrical switch. Alternatively the actuation means may be activated by pushing a button, or turning a variable control knob, or any other such known (electrical) means.

**[0036]** The means for activating the actuation means may be positioned remote from the air extraction apparatus (for example on or under the bench or on the wall), or alternatively may be disposed upon the apparatus itself.

**[0037]** In one embodiment, the actuation means may be automatically activated when the body is moved from the first position described previously (that is, for example where the body substantially abuts the wall) to or towards the second position. Such electrical trip switches are known. Such an embodiment may be of significant advantage to a person cooking over a cooking area. That is, if many pots/pans are cooking at once on the cooking area a person often has to do many tasks at once such as stirring, lifting lids, and the like. Hence, if the body of the apparatus can be placed over a desired area above the cooking area by only using one hand, whilst simultaneously activating the actuation means, then this has advantage over a system whereby the person must flick an actuation switch and then move the body to the desired area (ie, a two-step operation).

**[0038]** In a further embodiment, it is envisaged that the actuation means may also be able to be activated when the body is in the first position described previously.

**[0039]** The actuation means may also be provided with a variable control means whereby the strength of the actuation means may be adjusted (that is, the strength of the actuation means to draw or extract air away from the area from which air is to be extracted from). Such variable control means are known (for example, dimmer switches for lights). Having a variable control switch may be of particular advantage given that the amount, volume and/or intensity of cooking vapours varies wildly when cooking, and is also dependent upon the nature of the items being cooked. Hence, should only a mild amount of cooking vapours be produced the strength of the extraction means may be adjusted accordingly. This has advantage in that power savings are made, when possible, less draught is produced by the extraction apparatus, and also less noise.

**[0040]** In the embodiment whereby the actuation

means is activated automatically when the body is moved away from the first position, it is envisaged that there could be provided a separate variable control means to adjust the strength of the actuation means once the body has been moved away from the surface.

**[0041]** The apparatus or the body may further be provided with a light which may be actuated as or when required. Any suitable known lighting system, and associated componentry and actuation means, may be utilised.

**[0042]** In one embodiment, the moving means may be in the form of a bendable duct which may join the body to the surface (such as a wall) and/or the mounting means. The bendable duct may preferably be of a design which will allow movement of the body, whilst maintaining the body at a substantially constant height above the area from which air is to be extracted. That is, the bendable duct should inhibit or prevent movement or flexing of the body in a vertical plane (assuming that the surface is a wall).

**[0043]** It is envisaged that the body may be further provided with a suitable means to allow its dimensions and/or shape to be further adjusted. For example, the body may be provided with, or include, telescopic means whereby the length of the body may be altered. Such telescopic means may be in the form of a plurality of sliding sleeves, similar to a telescope.

**[0044]** Alternatively, and/or additionally, the body may be provided with one or more adjustable portions adapted to be moveable with respect to the body and/or each other. For example, the body may comprise two portions, a first portion and a second portion, the first and second portions being joined about a further moveable means such as a pivotable connection. Such means would allow the body to be further manipulated and positioned as required over the area from which air is to be extracted from.

**[0045]** Furthermore, the body may be provided with deflection means which may be adapted to guide or deflect air that is to be extracted. For example, the body may be provided with one or more fold down flaps (similar to a windscreen visor in a car). Such flaps may protrude outwardly at an angle, thus increasing the catchment area of air to be extracted.

**[0046]** The body may be of any suitable shape or dimensions as required or as desired.

**[0047]** Preferably however the body may be substantially rectangular in shape such that it can sweep through an arc when being moved from the first and other positions referred to previously.

**[0048]** The body may preferably be moveable through approximately 180° with respect to the surface, although any other angles of movement may also be appropriate.

**[0049]** It is envisaged that the apparatus may be particularly suitable for mounting above a cooking area. In such an embodiment, the body may be further provided with a grill and/or grease trap in order to disperse the cooking vapours and collect grease respectively.

**[0050]** It is envisaged that the actuation means and/or the apparatus may further be provided with a timer which may allow the apparatus to be activated for a preset or predetermined period of time before it switches off. Alternatively, or additionally, the timer may be set to automatically continue the activation of the actuation means for a pre-determined time, even after it has been switched off. In such an embodiment, it may be appreciated that the apparatus will continue to extract any residual or left over air or vapours for any desired or predetermined time period.

**[0051]** It is envisaged that the apparatus and/or the body may be made of any suitable material. For example, the body may be primarily comprised of metal, for example powder coated steel, stainless steel, carbon fibre, and such like. Alternatively, the body may be comprised substantially of a plastics material (that can preferably withstand heat). These type of materials have advantages in that they are relatively light and easy to clean.

**[0052]** In an alternative embodiment, it is envisaged that the body may be comprised substantially of wood. Such a material may have an advantage in that it may be more aesthetically pleasing to certain people.

**[0053]** As described previously, it is envisaged that the apparatus may be particularly suitable for extracting cooking vapours from above a cooking area. However, it is to be understood and appreciated that the invention is not to be limited to such use, and hence the description herein, which has predominantly been directed towards extracting cooking vapours from above a cooking area, has been by way of example only and for convenience only.

**[0054]** For example, the apparatus could equally be used for extracting air away or from an area where volatile and/or pungent and/or toxic chemicals are being used or mixed, for example in a chemical laboratory. Similarly, the apparatus could be mounted above a work area where glues are being used, for example when making plastic models and the like, to allow for adequate ventilation of the glue solvents.

## **BRIEF DESCRIPTION OF DRAWINGS**

**[0055]** Further aspects of the present invention will become apparent from the following description which is given by way of example only and with reference to the accompanying drawings in which:

- |                 |                                                                            |
|-----------------|----------------------------------------------------------------------------|
| Figure 1        | is a perspective view of one possible embodiment of the present invention; |
| Figures 2a & 2b | are views of another possible embodiment of the present invention, and     |
| Figures 3a & 3b | are views of another possible embodiment of the present invention,         |

Figure 4a & 4b are views of an alternative embodiment of the present invention.

### **BEST MODES FOR CARRYING OUT THE INVENTION**

[0056] Having regard to Figure 1 there is shown air extraction apparatus generally indicated by arrow 1. The apparatus 1 includes a body 2 which is provided with an air inlet 3 and an air outlet generally indicated by arrow 23 (not clearly shown).

[0057] For the avoidance of doubt, there is in fact only one body 2 included in the apparatus 1. but three positions of the body 2 are shown (as described hereinafter).

[0058] The apparatus 1 further includes mounting means in the form of the unit 5 which secures the body 2 to a wall 6.

[0059] As can be seen from Figure 1, air entering the inlet 3 of the body 2 of the apparatus 1 will pass through the outlet 23 and ultimately out through the outlet 4 (provided in the mounting means 5). Within the wall 6 is appropriate ducting to direct the extracted air out of the building (ducting not shown).

[0060] The mounting means 5 includes two lights 24 in a front portion thereof.

[0061] The body 2 is able to move or pivot laterally with respect to the mounting means 5 and the wall 6. As can be seen from Figure 1, the body 2 is able to move or pivot at substantially right angles to the wall 6.

[0062] The body 2 is moveable from a first position 7 to any number of second positions, for example 8 and 16. However, the body 2 is in fact able to pivot a full 180° with respect to the wall 6.

[0063] The body 2 is adapted to be moved manually, that is by hand.

[0064] The area from which air is to be extracted is a cooking area, generally indicated by arrow 9. The cooking area 9 includes a stove 10, on which are saucepans 11, 12 and 13. In the embodiment shown, the stove is on and hot cooking vapours are rising from the pots 11, 12 and 13.

[0065] The air inlet 3 extends substantially the entire underneath side 14 of the body 2. The underneath 14 of the body 2 includes a grill and a grease trap, to diffuse the cooking vapours and collect grease respectively. The grill and grease trap are not shown.

[0066] The apparatus 1 is provided with actuation means in the form of a fan (not shown), which is housed within or behind the wall 6. The fan is powered by an electric motor which is able to be activated by an electrical switch (not shown). As described previously, it is envisaged that the actuation means could also be adapted to be activated when the body 2 is pivoted away from the first position 7.

[0067] For the embodiment shown it is preferred that the actuation means is variable, such as known rotary style electrical switches.

[0068] When the cooking area 9 is not in use, the body 2 may be moved into the position 7, that is resting along

and/or flush with the wall 6.

[0069] In use, if the cooking area 9 only had pots 11 and 12 cooking, the body 2 would preferably be pivoted until it lies at the position 8. That is, where the body 2 lies substantially above the pots 11 and 12 whereby the rising cooking vapours may be drawn into the inlet 3 and ultimately out through the air outlet 4.

[0070] If only pot 13 was being used, it will be appreciated that the body 2 would then be moved into the position 16 so that it lies substantially above pot 13. Hence, the cooking vapours from pot 13 may therefore be similarly drawn into the air inlet 3 and ultimately out through the air outlet 4.

[0071] If all three pots 11, 12 and 13 were being utilised, it is envisaged that the body 2 would be moved to approximately a mid point between the positions 8 and 16, as this would be the optimum position in order to extract the majority of the cooking vapours.

[0072] The ability to be able to specifically position the body 2 above any particular pot that may be on the stove 10 results in much greater efficiency in the extraction of the cooking vapours than all of the prior art extraction apparatus described previously, including a rangehood.

[0073] Having regard to Figure 1, the body 2 rests along the wall 6 when not in use. It is envisaged that the actuation means may also or alternatively be able to be activated when the body 2 is in this position, so that the apparatus 1 is able to be used as a rangehood type device if required or desired. However, it is envisaged the apparatus 1 will be preferably utilised as described previously.

[0074] Figure 2a is a view of another possible embodiment of the present invention. In Figure 2a, the mounting means is in the form of a flue 25 to which the body 2 is pivotally mounted. Although not clearly illustrated, the flue 25 extends up and into the ceiling of the building where it is connected to appropriate ducting to allow for the exit of the cooking vapours thus extracted.

[0075] Figure 2b is a top view of the embodiment shown in Figure 2a showing how the body 2 fits flush against the wall 6 when not in use. Figure 2b also illustrates the positions 7, 16 and 8 - as also shown in Figure 1.

[0076] Figure 3a is a simplified perspective view of a further embodiment, and figure 3b is a top view of the embodiment shown in figure 3a.

[0077] In this embodiment, the moving means is in the form of a bendable duct 17.

[0078] The bendable duct 17 is connected to a flue 18 which is attached to the wall 6. The flue 18 leads to suitable ducting which allows the cooking vapours to be expelled from the room and/or building. For example, the flue may lead into a ventilation duct or a chimney.

[0079] In the embodiment shown in Figures 3a and 3b, the workings of the apparatus 1 are substantially the same as those described previously with respect to the embodiments shown in Figures 1 and 2a,b. That is, the body 2 is able to be swung out over the cooking area 9 and positioned in any arc through 180° with respect to

the wall 6.

**[0080]** Having regard to Figure 3b, it may be seen that in this embodiment the body 2 does not fit flush with the wall 6, but instead, sits slightly away from the wall 6.

**[0081]** Figure 4a is a perspective view of an embodiment where the cooking area 9 is in the form of an "island" which are quite common for many modern kitchens. In the embodiment shown in Figure 4a, the body 2 is again connected to a flue 27 (similar to the embodiment shown in Figures 2a and 2b). However, in the embodiment shown in Figure 4a, the flue 27 is substantially cylindrical and is not connected to a wall as there is no adjacent wall to which it may be connected. Instead, the flue 27 is fixed to the ceiling above the island, and extends downwardly therefrom. All other workings and/or features of the apparatus 1 illustrated in Figure 4a are substantially the same as those described previously.

**[0082]** Figure 4b is a view looking down on the embodiment shown in figure 4a. This figure illustrates 2 positions the body 2 may be manoeuvred into in order to cover the elements which comprise part of the stove 9.

**[0083]** In the embodiment shown in Figure 1, the body 2 is comprised of powder coated aluminium, is approximately 60mm in depth, 160mm wide and approximately 500mm in length. It will be appreciated that by extending the length of the body 2, cooking areas 9 of a much greater size may be accommodated, for example a 900 mm wide hob and/or a deep fryer situated next to a 600 mm wide hob. Hence, such an embodiment would provide for much greater efficiency of extraction of cooking vapours than for the prior art air extraction apparatus referred to previously.

**[0084]** The apparatus 1 may be mounted at any suitable height above the cooking area 9. However, it is envisaged that 650mm to 700mm above an electric stove would be particularly appropriate and 750mm for a gas stove.

**[0085]** One advantage of the present invention is that the apparatus 1 is able to be side mounted, that is mounted on a wall to the side of a (but still above) stove 10, in the situation where there is no wall behind the stove 10 (and instead there may just be an open area, a window, or a servery etc). A rangehood would not be effective in these circumstances as they must have a wall behind the cooking surface. Hence, the apparatus 1 could be mounted to the side of the stove 10 and the body 2 swung out over the cooking area as required or as desired.

**[0086]** The following is a list of other potential advantages of the present invention. It is to be understood and appreciated however that the following list is not meant to be exhaustive, and furthermore not all of the advantages may be present in every embodiment:

**[0087]** The body 2 when resting near to or along the wall 6 will not ordinarily extend as far out from the wall as a conventional rangehood, and hence there is less likelihood of a person banging his/her head on same. Furthermore, the body 2 does not cast shadows or interfere with a person's line of sight when viewing the cooking

area 9.

**[0088]** Further to the advantage listed above, as the body 2 is less obstructive, it may be appreciated that the overall cooking area may be significantly brighter as compared to a larger more obtrusive rangehood type extraction apparatus, which will block more light.

**[0089]** The body 2 may be specifically positioned in different positions over the cooking area 9 in order to extract the cooking vapours. Hence, more effective extraction of cooking vapours will occur as compared to the other prior art extraction prior art devices referred to previously, which all rely on the cooking vapours coming to them. This may be of particular advantage in situations where there is a slight breeze or movement in air through the room in which the cooking area is situated - that is, because the body 2 may be specifically above a certain area, there is less chance of the cooking vapours escaping as may occur with fixed rangehood-type devices are not able to be specifically positioned above a certain area.

**[0090]** The apparatus 1 may be utilised for both electrical stoves and gas hobs. That is, because the body 2 of the apparatus 1 is substantially at a fixed height above a cooking area, it may be positioned at required or desired height above an electrical and gas stove (and hence would not be able to be used in a situation where it may draw gas and/or flame into the apparatus 1).

**[0091]** Aspects of the present invention have been described by way of example only and it should be appreciated that modifications and additions may be made thereto without departing from the scope thereof as defined in the appended claims.

## Claims

1. A wall mounted air extraction appliance (1) for mounting above a cooking area (9) to extract air and vapours therefrom comprising:

a wall mounted unit (18, 25) mounted above said cooking area (9);  
a duct within said wall mounted unit (18, 25) having an air inlet (4) and an air outlet and a fan for drawing air into said air inlet (4) and/or direct air out of said air outlet;  
means for actuating said fan;  
a substantially rectangular air collecting body (2) having an air inlet (3) and an air outlet (23) in fluid connection by moveable means to said duct air inlet (4) **characterised in that**;  
said air collecting body (2) is pivotally connected to said wall mounted unit (18, 25) providing rotation in a horizontal plane parallel to said cooking area (9), and  
said air collecting body (2) extends laterally from said wall mounted unit (18, 25) by a predetermined length such that when rotated, said air collecting body (2) sweeps over substantially the

entire area of said cooking area (9).

2. A wall mounted air extraction appliance (1) according to claim 1 wherein said air inlet (3) is an opening fitted with a removable grill or filter for receiving and dispersing air and collecting grease extending substantially the entire underside of said rectangular air collecting body (2). 5
3. An air extraction apparatus (1) according to either of claims 1 or 2 wherein said exhaust fan is activated automatically when said rectangular air collecting body (2) is horizontally rotated from a first position (7), in close proximity to said wall (6) to or towards a second position (8, 16) above said cooking area (9). 10 15
4. An air extraction apparatus (1) according to any of claims 1 to 3 wherein said pivotal connection is provided by a bendable duct enabling said rectangular air collecting body (2) to rotate in the horizontal plane above said cooking area (9). 20

#### Patentansprüche

1. Wandmontierte Luftabzugsvorrichtung (1) zur Montage über einem Kochbereich (9), um Luft und Dämpfe aus dem Kochbereich abzuführen, umfassend: 30
  - eine wandmontierte Einheit (18, 25), die über dem Kochbereich (9) montiert ist;
  - einen Kanal in der wandmontierten Einheit (18, 25), der einen Lufteinlass (14) und einen Luftauslass und einen Ventilator zum Ansaugen von Luft in den Lufteinlass (4) und/oder zum Leiten von Luft aus dem Luftauslass umfasst;
  - Mittel zur Betätigung des Ventilators;
  - einen im wesentlichen rechteckigen Luftsammelkörper (2), der einen Lufteinlass (3) und einen Luftauslass (23) aufweist und der durch ein bewegliches Mittel mit dem Lufteinlass (4) des Kanals in Fluid-Verbindung steht, 40

**dadurch gekennzeichnet,**

**dass** der Luftsammelkörper (2) schwenkbeweglich mit der wandmontierten Einheit (18, 25) verbunden ist, wodurch für eine Drehung in einer horizontalen Ebene parallel zu dem Kochbereich (9) gesorgt wird, und 50

**dass** sich der Luftsammelkörper (2) in einer vorgegebenen Länge seitlich von der wandmontierten Einheit (18, 25) erstreckt, so dass der Luftsammelkörper (2) bei seiner Drehung im wesentlichen über die gesamte Fläche des Kochbereichs (9) schweift. 55

- 2. Wandmontierte Luftabzugsvorrichtung (1) nach An-

spruch 1, wobei der Lufteinlass (3) eine Öffnung ist, die mit einem sich im wesentlichen über die gesamte Unterseite des rechteckigen Luftsammelkörpers (2) erstreckenden abnehmbaren Gitter oder Filter zum Aufnehmen und Verteilen von Luft und zum Aufsammeln von Fett versehen ist.

3. Luftabzugsvorrichtung (1) nach Anspruch 1 oder 2, wobei der Abzugsventilator automatisch aktiviert wird, wenn der rechteckige Luftsammelkörper (2) aus einer ersten, in dichter Nähe zu der Wand (6) gelegenen Position (7) horizontal in oder in Richtung auf eine zweite Position (8, 16) über dem Kochbereich (9) gedreht wird.
4. Luftabzugsvorrichtung (1) nach einem der Ansprüche 1 bis 3, wobei die schwenkbewegliche Verbindung durch einen biegbaren Kanal geschaffen wird, der eine Drehung des rechteckigen Luftsammelkörpers (2) in der horizontalen Ebene über dem Kochbereich (9) ermöglicht.

#### Revendications

1. Appareil d'extraction d'air mural (1) à installer au-dessus d'une zone de cuisson (9) pour extraire l'air et les vapeurs qui en sortent, comprenant : 25
  - un élément mural (18, 25) installé au-dessus de ladite zone de cuisson (9) ;
  - un tuyau à l'intérieur dudit élément mural (18, 25) ayant une entrée d'air (4) et une sortie d'air et un ventilateur pour tirer l'air à l'intérieur de ladite entrée d'air (4) et/ou diriger l'air à l'extérieur de ladite sortie d'air ;
  - un dispositif pour actionner ledit ventilateur ;
  - un collecteur d'air sensiblement rectangulaire (2) ayant une entrée d'air (3) et une sortie d'air (23) en connexion hydraulique par un dispositif mobile vers ladite entrée du tuyau d'air (4) **caractérisé en ce que**
  - ledit collecteur d'air (2) est raccordé de manière pivotante audit dispositif mural (18, 25), permettant une rotation dans un plan horizontal parallèle à ladite zone de cuisson (9) et
  - ledit collecteur d'air (2) s'étend latéralement depuis le dispositif mural (18, 25) sur une longueur prédéterminée de sorte que lorsqu'il pivote, ledit collecteur d'air (2)-balaie sensiblement toute la surface de ladite zone de cuisson (9). 45- 2. Appareil d'extraction d'air mural (1) selon la revendication 1 dans lequel ladite entrée d'air (3) est une ouverture équipée d'une grille amovible ou d'un filtre amovible pour recevoir et disperser de l'air et récupérer la graisse, s'étendant sensiblement sur tout le dessous dudit collecteur d'air rectangulaire (2). 55

3. Appareil d'extraction d'air (1) selon l'une ou l'autre revendication 1 ou 3, dans lequel ledit ventilateur aspirant est activé automatiquement lorsque ledit collecteur d'air rectangulaire (2) pivote horizontalement d'une première position (7) tout près dudit mur (6) vers ou en direction d'une deuxième position (8, 16) au-dessus de ladite zone de cuisson (9). 5
4. Appareil d'extraction d'air (1) selon l'une des revendications 1 à 3 dans lequel ladite connexion pivotante est fournie par un tuyau pouvant être courbé permettant audit collecteur d'air rectangulaire (2) de pivoter dans le plan horizontal au-dessus de ladite zone de cuisson (9). 10

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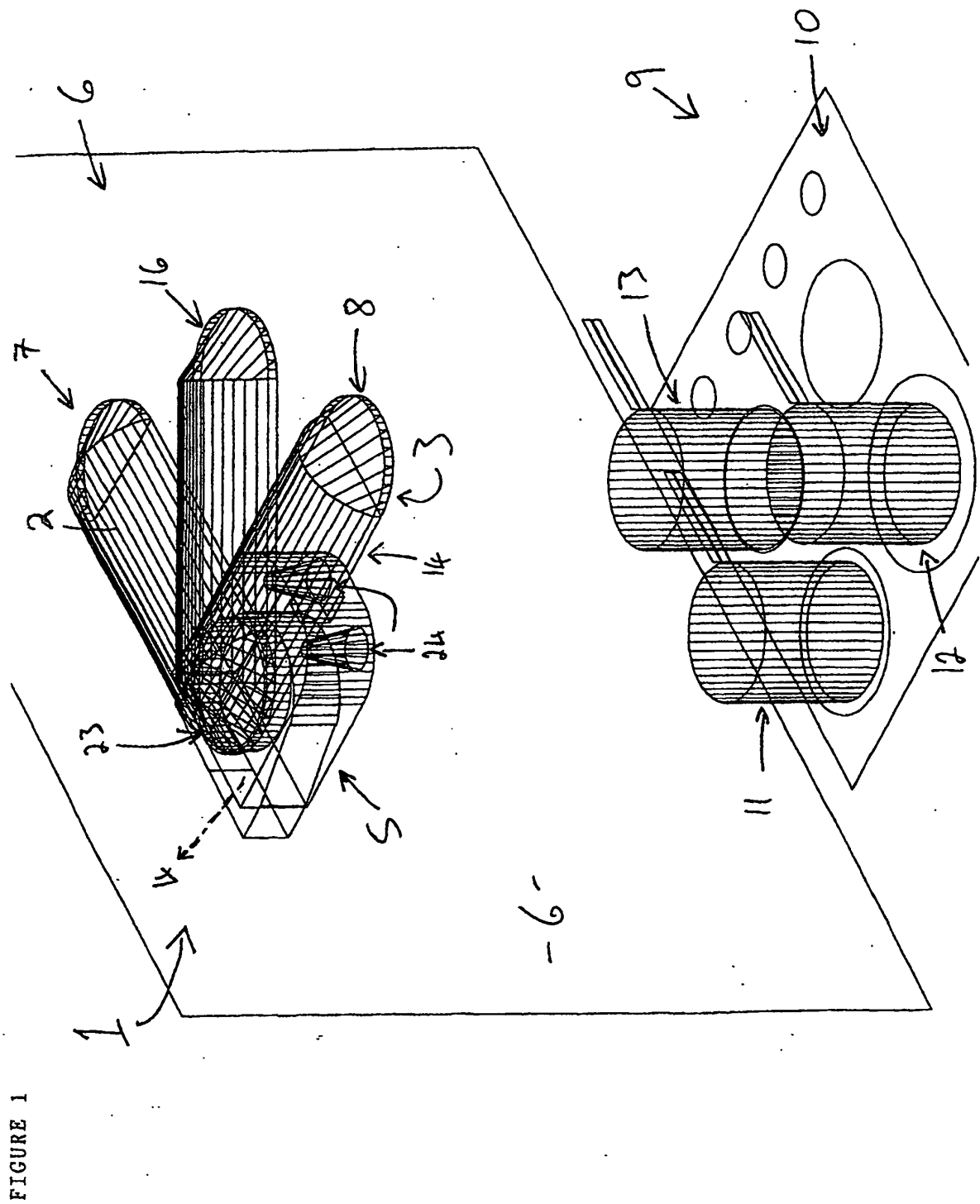
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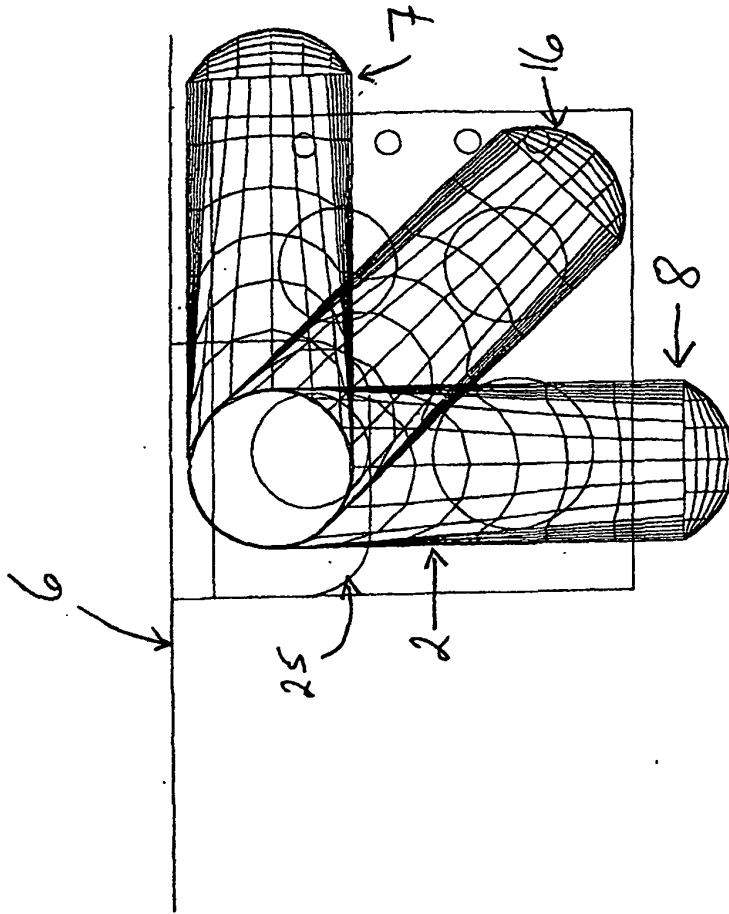
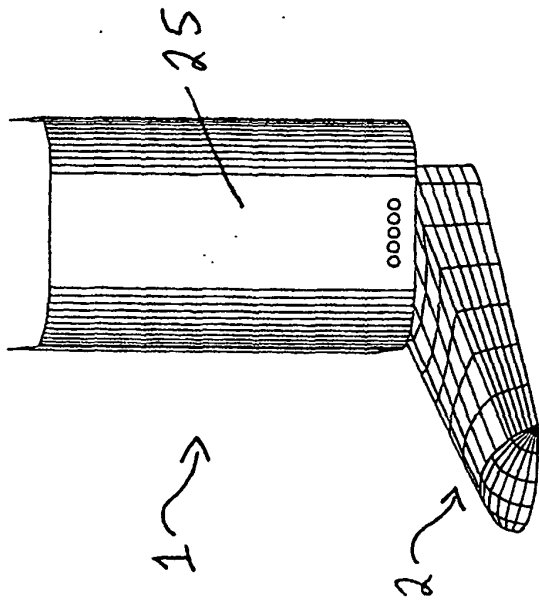


Fig 2b



- 6 -

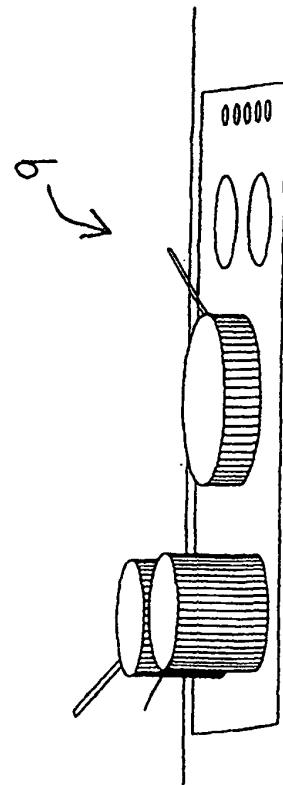
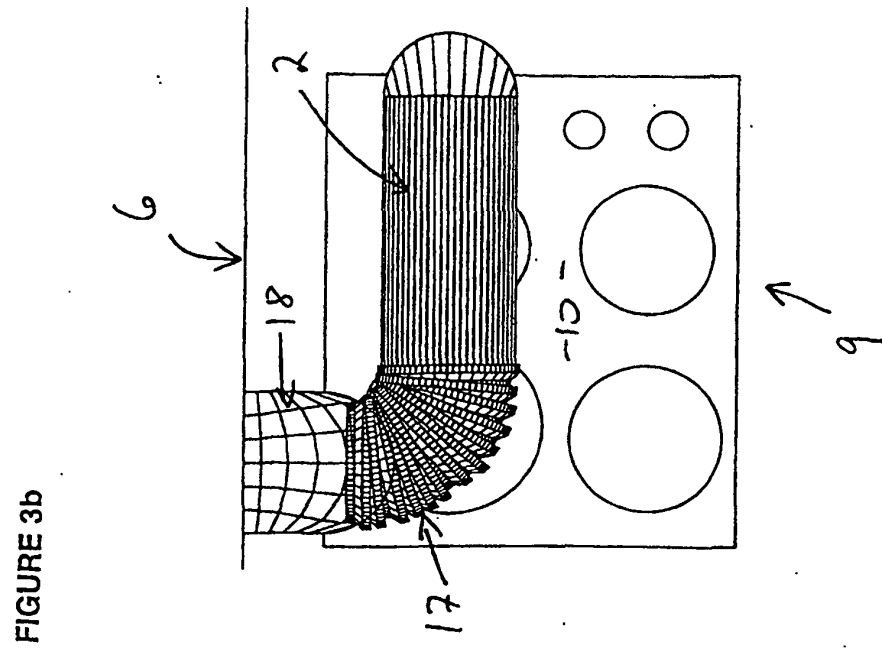
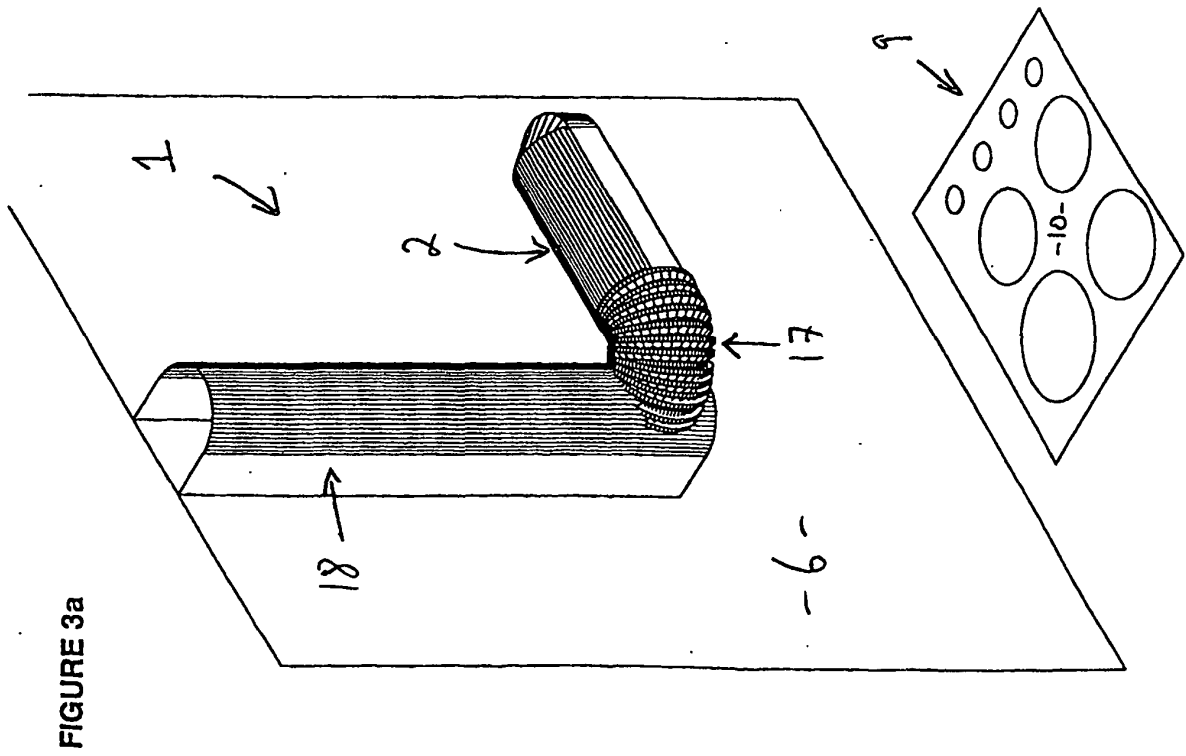


Fig 2a



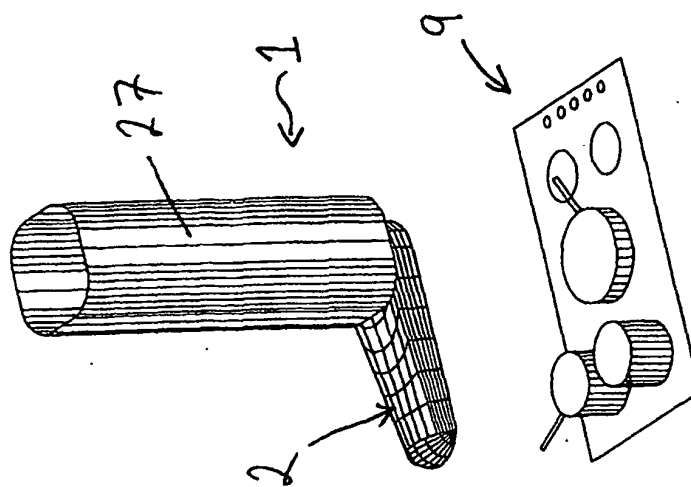


Fig 4a

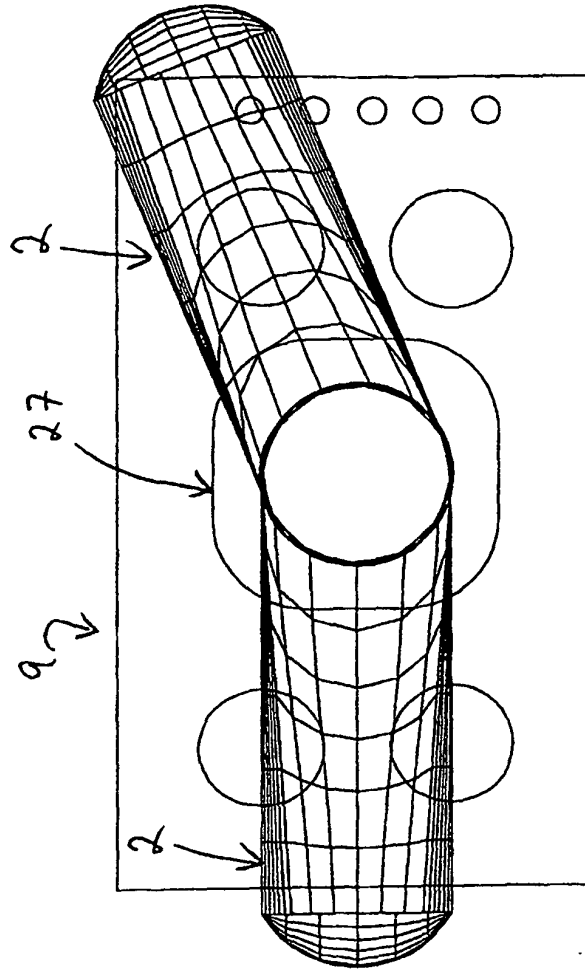


Fig 4b