

PATENT SPECIFICATION

(11)

1 556 607

1 556 607

- (21) Application No. 30199/75 (22) Filed 18 July 1975 (19)
 (61) Patent of Addition to No. 1 508 439 dated 18 April 1975
 (23) Complete Specification filed 7 July 1976
 (44) Complete Specification published 28 Nov. 1979
 (51) INT. CL.² A47J 37/07
 (52) Index at acceptance
 44D 2 9
 F2U 552



(54) BARBECUES

(71) I, RITVA MAIJA LEHTOVAARA, a citizen of Finland, of 20, South Close Green, Merstham, Surrey, do hereby declare the invention, for which I pray that a patent may be granted to me, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to barbecues in which the grill grid is rotatable.

In Patent Application No. 17716/74, Serial No. 1,508,439, there is described a stand supporting a body member arranged to contain a bed of burning fuel, a rotatable horizontal grid mounted above the fuel bed and a motor connected to the grid to rotate the grid continuously. The purpose of this rotation is to avoid uneven cooking.

It is desirable to provide such a barbecue which is portable and easily dismantled, for example for easy packing in the boot of a car, and which may be operated by an electric motor which can run on batteries.

A simple method of connecting the motor to the grid is to support the motor below the bowl and connect the motor to the grid by means of a rotatable shaft which passes upwardly through an orifice in the bowl. This arrangement avoids the need for members such as flexible drive shafts above the grid which may constitute an obstruction in use.

It is possible to support the thrust bearing of the rotatable shaft rigidly on the body of the barbecue, but such a rigid connection has the disadvantage that the precise aligning of the thrust bearing with the body of the barbecue and the motor is difficult during assembly for use and the members supporting the shaft and motor have to be manufactured accurately. If the alignment is not perfect, either the shaft tends to jam so that it does not rotate or a larger motor is required to feed increased power to the shaft. At the same time the wear of the rotating parts and the supporting bearings increases, considerably shortening the life of the unit.

According to the present invention there

is provided a barbecue comprising a body member arranged to contain a bed of burning fuel, a stand supporting said body member, a vertical rotatable shaft extending from below to above said body member, a grid mounted on said shaft, a motor below said body member connected to said shaft to rotate said shaft, support means to support a bearing assembly and allow tilting of said bearing assembly, said shaft being a longitudinal tube which is crimped to provide a portion which is expanded in one transverse dimension to provide a surface engaging said bearing assembly and is flattened in another dimension to provide a constricted inner portion of said tube, and a flexible coupling comprising a wire loop having an expanding spring portion inside said tube engaging said constricted inner portion so that said constricted portion supports said loop and said loop is mounted on the lower end of said shaft to engage a driving shaft of said motor.

The bearing assembly may be suspended from the body member by a fork which can rotate about its longitudinal axis. Since the bearing assembly is suspended from the fork by a tiltable arrangement, the bearing assembly can rotate about two axes relative to the body member and adjust itself freely to the alignment of the shaft.

The motor can also be suspended from the bearing assembly by a tiltable bracket, the rotatable shaft being connected to the motor by a flexible coupling so that side forces from the motor to the rotatable shaft can be minimised.

The bearing assembly may be such that little or no lubrication is required. As it is below the grid a certain quantity of oil or fat from the cooked food will normally reach the bearing assembly and this may provide the necessary lubrication.

An embodiment of the invention will be described by way of example with reference to the accompanying drawings, in which:

Figure 1 is an elevation of a barbecue according to the invention,

Figure 2 is a perspective view of part of the barbecue of Figure 1, Figure 1, and

100

Figure 3 is an elevation of the part of Figure 2.

Referring first to Figure 1, a barbecue comprises a rotatable grid 12 mounted on a shaft 1 supported by a fork 8 passing through an aperture in a bracket 16 which is mounted on the bottom 3 of the body member of the barbecue. The body member is intended to contain burning fuel, normally charcoal. Fork 8, supported by bracket 16, can pivot about bracket 16 in a vertical plane and also rotate about its longitudinal axis. Fork 8 also engages a step member 102 attached to a leg 103, member 102 providing a plurality of projecting abutments at different heights so that fork 8, pivoting about bracket 16, can be held in different angular positions. The height of the grid 12 is thus variable.

The construction of the shaft mounting is shown in greater detail in Figures 2 and 3.

The tubular shaft 1 has a portion 23 which is deformed by crimping so that it is flattened in one transverse dimension (Figure 2) and expanded in the perpendicular transverse dimension (Figure 3). This expanded portion provides a lower surface which abuts washers 17 of a bearing support 18 and thus supports the shaft and grid.

A loop 20 of spring wire is inserted in shaft 1 as shown in Figure 2 so that the inner surface of the flattened portion grips the loop forming a driving connection between the loop and the shaft. The lower end of loop 20 engages the motor to drive the shaft.

The supporting fork 8 has its ends 19 turned inwards to pass through holes in the bearing support 18. The bearing support can thus pivot about the axis defined by the ends 19.

The motor is supported by a wire member 22 which is loosely hooked about the inner turned ends 19 of the fork as shown in Figure 3. The motor can therefore pivot about the axis of the ends 19.

WHAT I CLAIM IS:—

1. A barbecue comprising a body mem-

ber arranged to contain a bed of burning fuel, a stand supporting said body member, a vertical rotatable shaft extending from below to above said body member, a grid mounted on said shaft, a motor below said body member connected to said shaft to rotate said shaft, support means to support a bearing assembly and allow tilting of said bearing assembly, said shaft being a longitudinal tube which is crimped to provide a portion which is expanded in one transverse dimension to provide a surface engaging said bearing assembly and is flattened in another dimension to provide a constricted inner portion of said tube, and a flexible coupling comprising a wire loop having an expanding spring portion inside said tube engaging said constricted inner portion so that said constricted portion supports said loop and said loop is mounted on the lower end of said shaft to engage a driving shaft of said motor.

2. A barbecue according to Claim 1, in which said support means comprises a fork with prongs and the bearing assembly is pivotally mounted between the prongs.

3. A barbecue according to Claim 2, in which the motor is suspended from the bearing assembly by suspension means which can pivot relatively to the bearing assembly about a horizontal axis.

4. The barbecue according to Claim 2 or 3, in which the fork is supported by means allowing the height of the prongs to be varied to support the bearing assembly at a variable height.

5. A barbecue, substantially as hereinbefore described with reference to the accompanying drawings.

For the Applicants:
RAWORTH, MOSS & COOK,
Chartered Patent Agents,
36 Sydenham Road, Croydon CR0 2EF,
and
6 Buckingham Gate, Westminster,
London SW1E 6JP.

Figure 3 is an elevation of the part of Figure 2.

Referring first to Figure 1, a barbecue comprises a rotatable grid 12 mounted on a shaft 1 supported by a fork 8 passing through an aperture in a bracket 16 which is mounted on the bottom 3 of the body member of the barbecue. The body member is intended to contain burning fuel, normally charcoal. Fork 8, supported by bracket 16, can pivot about bracket 16 in a vertical plane and also rotate about its longitudinal axis. Fork 8 also engages a step member 102 attached to a leg 103, member 102 providing a plurality of projecting abutments at different heights so that fork 8, pivoting about bracket 16, can be held in different angular positions. The height of the grid 12 is thus variable.

The construction of the shaft mounting is shown in greater detail in Figures 2 and 3.

The tubular shaft 1 has a portion 23 which is deformed by crimping so that it is flattened in one transverse dimension (Figure 2) and expanded in the perpendicular transverse dimension (Figure 3). This expanded portion provides a lower surface which abuts washers 17 of a bearing support 18 and thus supports the shaft and grid.

A loop 20 of spring wire is inserted in shaft 1 as shown in Figure 2 so that the inner surface of the flattened portion grips the loop forming a driving connection between the loop and the shaft. The lower end of loop 20 engages the motor to drive the shaft.

The supporting fork 8 has its ends 19 turned inwards to pass through holes in the bearing support 18. The bearing support can thus pivot about the axis defined by the ends 19.

The motor is supported by a wire member 22 which is loosely hooked about the in-turned ends 19 of the fork as shown in Figure 3. The motor can therefore pivot about the axis of the ends 19.

WHAT I CLAIM IS:—

1. A barbecue comprising a body mem-

ber arranged to contain a bed of burning fuel, a stand supporting said body member, a vertical rotatable shaft extending from below to above said body member, a grid mounted on said shaft, a motor below said body member connected to said shaft to rotate said shaft, support means to support a bearing assembly and allow tilting of said bearing assembly, said shaft being a longitudinal tube which is crimped to provide a portion which is expanded in one transverse dimension to provide a surface engaging said bearing assembly and is flattened in another dimension to provide a constricted inner portion of said tube, and a flexible coupling comprising a wire loop having an expanding spring portion inside said tube engaging said constricted inner portion so that said constricted portion supports said loop and said loop is mounted on the lower end of said shaft to engage a driving shaft of said motor.

2. A barbecue according to Claim 1, in which said support means comprises a fork with prongs and the bearing assembly is pivotally mounted between the prongs.

3. A barbecue according to Claim 2, in which the motor is suspended from the bearing assembly by suspension means which can pivot relatively to the bearing assembly about a horizontal axis.

4. The barbecue according to Claim 2 or 3, in which the fork is supported by means allowing the height of the prongs to be varied to support the bearing assembly at a variable height.

5. A barbecue, substantially as hereinbefore described with reference to the accompanying drawings.

For the Applicants:
RAWORTH, MOSS & COOK,
Chartered Patent Agents,
36 Sydenham Road, Croydon CR0 2EF,
and
6 Buckingham Gate, Westminster,
London SW1E 6JP.

