

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
25 July 2002 (25.07.2002)

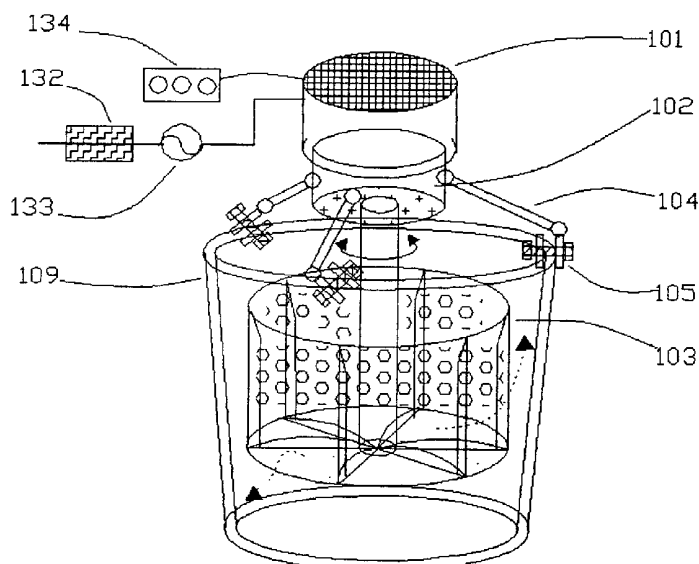
PCT

(10) International Publication Number
WO 02/057529 A2

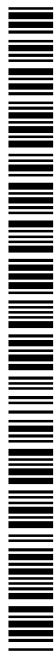
- (51) International Patent Classification⁷: D06F #426-503, Kaepo-dong189, Kangnam-ku, Seoul 135-800 (KR).
- (21) International Application Number: PCT/KR02/00039
- (22) International Filing Date: 10 January 2002 (10.01.2002) (81) Designated States (national): CN, US.
- (25) Filing Language: Korean Published:
— without international search report and to be republished upon receipt of that report
— entirely in electronic form (except for this front page) and available upon request from the International Bureau
- (26) Publication Language: English
- (30) Priority Data:
2001/01648 U 19 January 2001 (19.01.2001) KR
2002/00358 U 5 January 2002 (05.01.2002) KR
- (71) Applicant and
(72) Inventor: YUN, jangshik [KR/KR]; Jukong Apartment

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: PORTABLE SMALL LAUNDRY WASHER HAVING A BASKET HOLDER



(57) Abstract: This invention relates to a portable small laundry washer operating for washing, rinsing and dehydrating during travel at outdoor, which can be separated from a large size of basket. Also it can be used in two ways with utilizing an electric power(DC) of automobile at outdoors and an electric power(AC) at home. As usual home applicant, there is an inconvenience for an outdoor life since the laundry washer can not be carried out with a large size of volume and its weight. A portable small laundry washer comprising: an electrical motor (101) operatively connected to a cylindrical drum (103) formed with lot of holes (146); a bearing (102) for supporting an electric motor (101); a basket holder (104) for holding a basket (109); a pulsator (142) and an agitator(144) installed inside of cylindrical drum (103). Therefore, it can be portable for laundry washing at outdoor including a long time travel, camping, fishing & military operation.



WO 02/057529 A2

PORTABLE SMALL LAUNDRY WASHER HAVING A BASKET HOLDER

Technical Field

This invention relates to a portable small laundry washer operating for
5 washing, rinsing and dehydrating during travel at outdoor, which can be
portable by separating a large size and a heavyweight of laundry drum.
Also it can be used in two ways with utilizing an electric power(DC) of
automobile at outdoors and an electric power(AC) at home.

Background Art

10 As in an usual home applicant, it could not be possible to carry out a big
size of laundry washer during travel due to its big volume and heavy weight,
therefore there was an inconvenience or a trouble with a man power
washing or with a unsanitary environment at outdoor life including a long
time travel, camping, climbing a mountain, military operating etc.

15 Disclosure of Invention

The present invention has been developed to overcome the above-
mentioned problems of the prior art, and accordingly it is an object of the
present invention to provide a portable small laundry washer having a
basket holder, which can be detachable from a large size of basket and
20 portable the main part of laundry washer only inside of a baggage, further it

can be operated with attaching any kind of a basket as a laundry drum at outdoor for the sanitary life.

According to a preferred embodiment of the present invention, as shown FIGS. 5, in a portable small laundry washer having a basket holder,

5 comprising:

An electrical motor 101 operatively connected to a cylindrical drum 103;

A bearing 102 for supporting an electric motor 101;

A basket holder 104 for holding a basket 109;

A pulsator 142 and an agitator 144 installed inside of a laundry drum 103.

10 Therefore, it can be portable with its small size and lightweight at outdoor including a long time travel, camping, fishing & military operation.

Brief Description of the Drawings

Fig.1 is a perspective view for schematically showing a portable small laundry washer according to a preferred of the present invention;

15 Fig.2 is a sectional view of the shaft of motor according to a preferred of the present invention;

Fig.3 is a sectional view of the support of bearing according to a preferred of the present invention;

20 Fig.4 is a perspective view of the additional parts according to a preferred of the present invention;

Fig.5 is a perspective view of another portable small laundry washer

according to a preferred of the present invention;

Fig.6 is a sectional view of laundry drum with the shape of a cylinder according to a preferred of the present invention;

Fig.7 is a perspective view of the groove of a serration according to a preferred of the present invention;

5

- mark for major part of drawings -

1: an electric motor

2: a bearing

3: a spiral agitator

5: a basket holder

9: a basket

103: a cylindrical laundry drum

10

142: an agitator

Best Mode for Carrying Out the Invention

Preferred embodiments of the present invention will be explained hereafter with reference to accompanied embodiments.

FIGS. 1 to 4 shows a portable small laundry washer having a basket holder according to a preferred of the present invention.

15

a perspective view for schematically showing a portable small laundry washer according to a preferred of the present invention,

As shown FIGS. 2, a portable small laundry washer having a basket holder, comprising:

20

the structure of a bearing 2 for supporting an electric motor 1;

a length adjustable bearing supporter 4 connected to the structure of a

bearing 2 with hinge 25;

a basket holder 5 connected to a length adjustable bearing supporter 4 with hinge 26;

a shaft 6 fixed on an electric motor 1;

5 a spiral agitator 3 fixed on the shaft 6 of an electric motor 1.

As shown FIGS. 2, a sectional view of the shaft of motor according to a preferred of the present invention,

A portable small laundry washer having a basket holder, comprising:

an electric motor 1 supported with the structure of a bearing 2;

10 a screw type agitator 3 connected with an electric motor 1 through an upper shaft 11 and a lower shaft 12;

bolt holes 14 shaped on an upper shaft 11 and a lower shaft 12;

a bolt 14 fastened on an upper shaft 11 and lower shaft 12;

As shown FIGS. 3, a sectional view of the support of bearing according to a preferred of the present invention,

15

A portable small laundry washer having a basket holder, comprising:

a hinge 25 fixed on the structure of a bearing 2;

an upper support 21 connected with a hinge 25;

a lower support 22 inserted inside of an upper support 21;

20 bolt holes 24 shaped on an upper shaft 21 and a lower shaft 22 for adjusting a length;

a bolt 23 for fastening an upper support 21 and a lower support 22 for adjusting a length;

a hinge 26 fixed on a lower shaft 22;

a basket holder 5 fixed on a hinge 26.

5 As shown FIGS. 4, a perspective view of the additional parts according to a preferred of the present invention,

A portable small laundry washer having a basket holder, comprising:

the structure of a bearing 2 for supporting an electric motor 1;

10 a laundry agitator 31 having a curved shape of wire instead of a screw type agitator 3,

an electric voltage regulator 32, a direct current transformer 33 and an inverter 34 connected with the circuit of an electric motor 1 through an electric line.

15 In operation, as shown FIGS. 1, a proper size of basket 9 can be fixed with a basket holder 5,

As shown FIGS. 1 and 2, the portable small laundry washer is operated on fastening a bolt 13, 14 and bolt holes 14, 24 to adjust the location of an agitator 3 inside of a basket 9.

20 Further in operation of washing, the electric motor 101 is operated with electric power on depressing the wash switch of an inverter 134 after putting a laundry, water and detergent inside of a basket 9,, and then the water,

detergent and laundry is swirled with inside of an agitator 3,
wherein a strong stream may be generated with a screw type agitator 3.
Accordingly a laundry cloth may be washed out with an effect of detergent
and a strong stream of water.

5 Further in operation of rinsing, after fresh water is supplied to inside of a
basket after the wastewater is drained, an agitator 3 is rotated with electric
power on depressing the rinse button of an inverter 134, thus a laundry cloth
may be rinsed with a swirling stream of water.

As shown FIGS. 4, a screw type agitator 3 can be formed with a curved wire
10 31, therefore it can be washed out with a soft swirling stream of water to
prevent any kind of damage or scratch on a laundry cloth.

As described above, with installing a voltage regulator 32 and a
direct current transformer 33, it can be used with the electric power sources
of an automotive or the general electric power (220VAC) at home in both,
15 further it can be rotated alternatively in an period with an inverter 34, so that
a laundry cloth may be washed without twisting on the stream of water.

FIGS. 5 to 8 show a portable small laundry washer having a
dehydrator according to another preferred embodiment of the present
invention.

20 As shown FIGS. 5, a perspective view of another portable small
laundry washer according to a preferred of the present invention,

A portable small laundry washer having a dehydrator, comprising:

an electrical motor 101 operatively connected to a cylindrical drum 103

formed with lot of holes 146;

a bearing 102 for supporting an electric motor 101;

5 a basket holder 104 for holding a basket 109;

a pulsator 142 and agitator 144 installed inside of a cylindrical drum 103.

As shown FIGS. 6, a sectional view of laundry drum with the shape of a cylinder according to a preferred of the present invention,

A portable small laundry washer having a dehydrator, comprising:

10 several pulsators 142 fixed radially inside of cylindrical drum 103; several agitators 144 fixed centrally on the bottom of cylindrical drum 103, lot of holes 146 formed on the wall of cylindrical drum 103.

As shown FIGS. 7, a perspective view of the groove of a serration according to a preferred of the present invention,

15 A portable small laundry washer having a dehydrator, comprising:

several serration grooves 158 formed inside of rotation shaft 111 of an

electric motor 101, several serration grooves 159 formed outside of a

rotation shaft 112 connected with a rotation shaft 111 through a coupling

device 156.

20 Moreover, according to this invention, it can be portable for an electric

motor 101, a bearing 102, a holder 105 and a rotation shaft 152 inside of a

cylindrical drum 103.

In assembly, as shown FIGS. 5, a proper size of basket 109 must be fixed with using a holder 105,

5 As shown FIGS. 6, a cylindrical drum 103 is installed on a rotation shaft 112 with fastening parts, a bolt 152, a screw 154 and a bolt 156, and a rotation shaft 112 is fixed on a shaft 111 of an electric motor 101.

In operation of washing, after putting a laundry, fresh water and detergent in a cylindrical drum 103, an electric motor 101 is operated with an electric power on depressing a wash button of an inverter 134, and then
10 water, detergent and laundry may be swirled with strong stream inside of a cylindrical drum 103, accordingly a laundry cloth may be washed out with the effect of a detergent and the strong stream of water.

Further in operation of rinsing, after supplying a fresh water inside of a basket 109, a cylindrical drum 103 is rotated with an electric power on
15 depressing the rinse button of an inverter 134, accordingly a laundry cloth may be rinsed with the swirl stream due to rotation of several pulsators 142 and several agitators 144.

More further in operation of dehydrating, after the rinsed water is drained, the cylindrical drum 103 is rotated with an electric power on
20 depressing the dehydration button of an inverter 134, and then a wet laundry cloth may be dehydrated with a centrifugal power, meanwhile a rinsed water

is drained out through lot of holes 146 formed on a cylindrical drum 103.

As shown FIGS. 7, a perspective view of the grooves of a serration according to a preferred of the present invention, it has an advantage of mechanical durability with serration grooves 158 formed inside of a rotating shaft 111 and serration grooves 159 formed outside of a rotating shaft 112.

As described above, due to the means for installing a voltage regulator 32 and a direct current transformer 33, it can be used with electric power sources of an automotive or general electric power source at home in both, further it can be rotated alternatively in an period with aid of an inverter 34, so that a laundry cloth can be washed without any kind of damage due to twist or scratch, finally in operating of dehydration after washing, a waste water may be separated from the wet laundry with a centrifugal power by rotating the cylindrical drum 103 in high speed on depressing a dehydration button of an inverter 34.

15 INDUSTRIAL APPLICABILITY

While the present invention has been particularly shown and described with reference to the preferred embodiment thereof, a laundry washer can be portable during travel with its light weight and small volume, so that it can be helpful for sanitary life at outdoor including a long time travel, camping, fishing & military operation.

What is claimed is:

1. A portable small laundry washer having a basket holder, comprising:
a bearing 2 for supporting an electric motor 1;
a bearing supporter 4 fixed on the structure of a bearing 2 through a hinge
25;
5 a basket holder 5 fixed on a bearing supporter 4 through a hinge 26;
a rotation shaft 6 fixed on an electric motor 1;
a screw type agitator 3 fixed on a shaft 6 of an electric motor 1;
fastening parts, a bolt 14 and holes 13 fixed on a rotation shaft 6.
2. A portable small laundry washer having a holder of a laundry drum as
10 claimed in claim 1, comprising:
a laundry agitator 31 formed with a curved wire.
3. A portable small laundry washer having a holder of laundry drum as
claimed in claim 1, comprising:
15 an electric voltage regulator 32 and a direct current transformer 33 for
utilizing an electric power source of an automobile.
4. A portable small laundry washer having a holder of laundry drum as
claimed in claim 1, comprising:
an inverter 34 for releasing an alternating electric current inside circuit of
motor 1.
- 20 5. A portable small laundry washer having a dehydrator, comprising:
an electrical motor 101 operatively connected to a cylindrical drum 103;

a bearing 102 for supporting an electric motor 101;

a basket holder 105 for holding a basket 109;

a pulsator 142 and an agitator 144 installed inside of a cylindrical drum 103.

- 5 6. A portable small laundry washer having a dehydrator as claimed in claim 5, comprising:

lot of holes 146 formed on the cylindrical drum 103.

7. A portable small laundry washer having a dehydrator as claimed in claim 5, comprising:

10 serration grooves 158 formed inside of the shaft 111 of an electric motor 101;

serration grooves 159 formed inside of a shaft 111 and outside of a rotation shaft 112.

8. A portable small laundry washer having a dehydrator as claimed in claim 5, comprising:

15 portable means as inside of a cylindrical drum 103 for carrying an electric motor 101, a bearing 102, a holder 104 and a rotation shaft 112.

FIG. 1

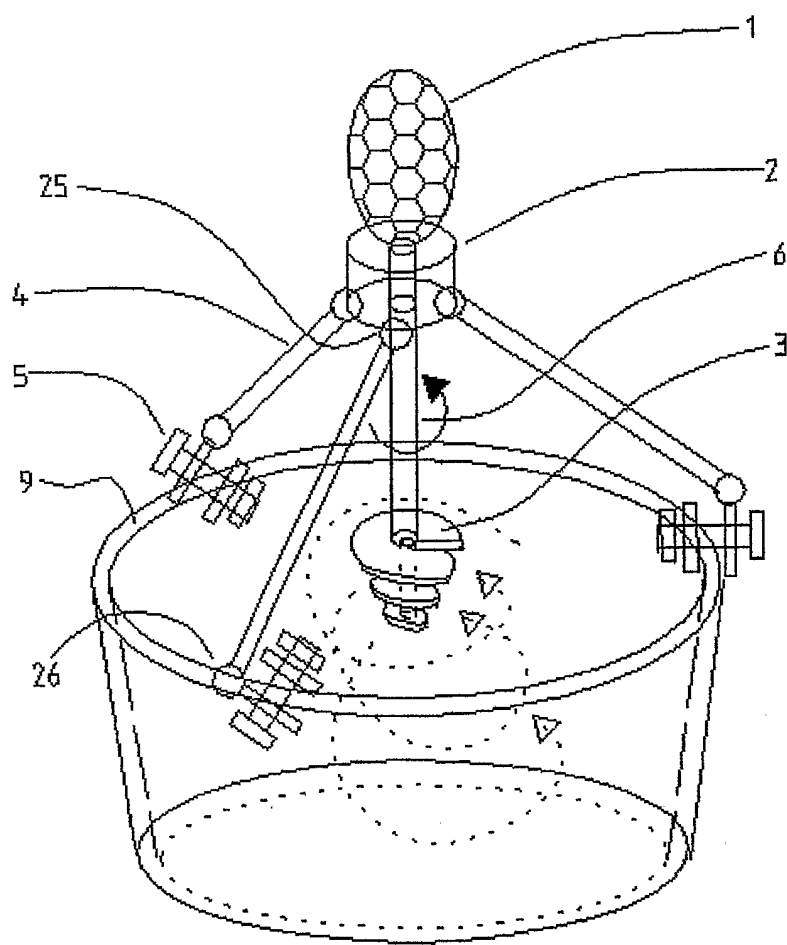
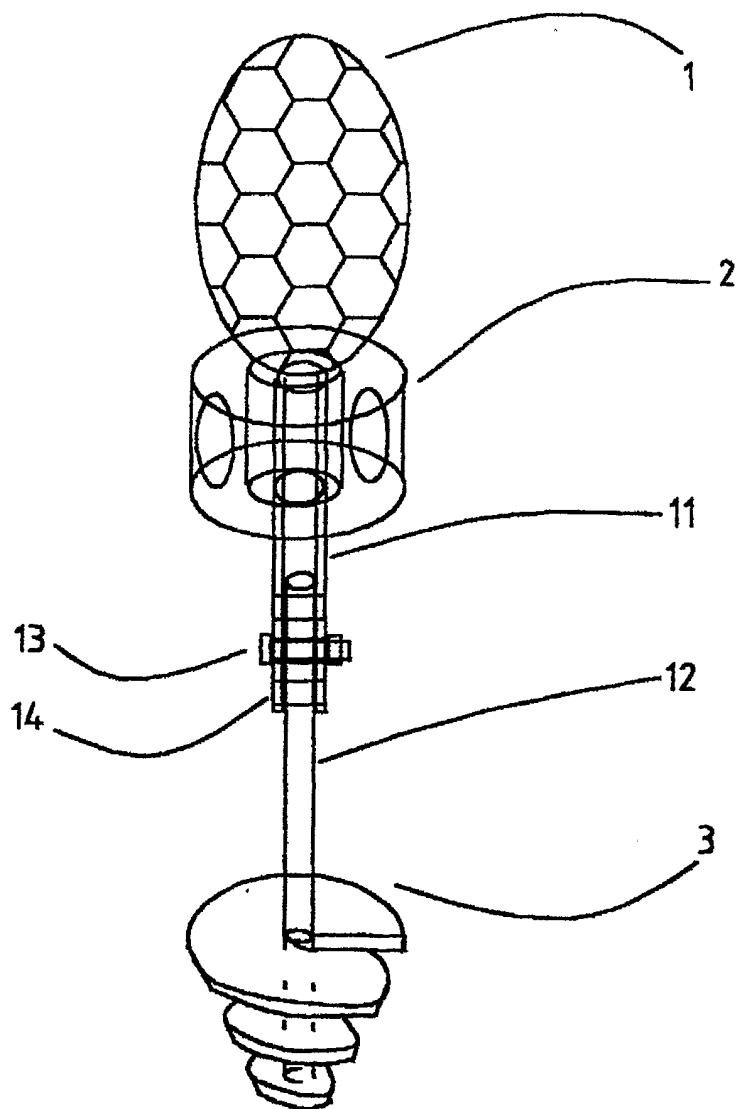


FIG. 2



3/7

FIG. 3

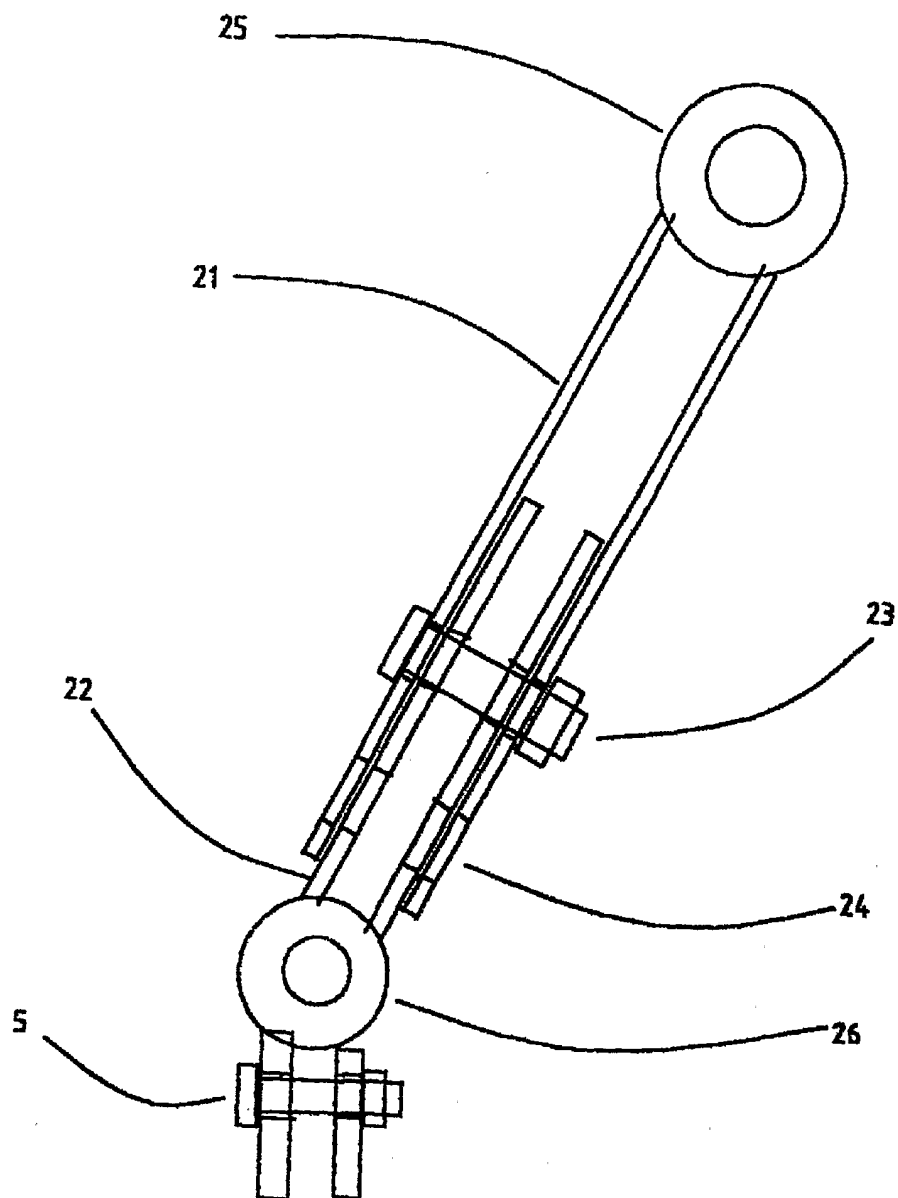


FIG. 4

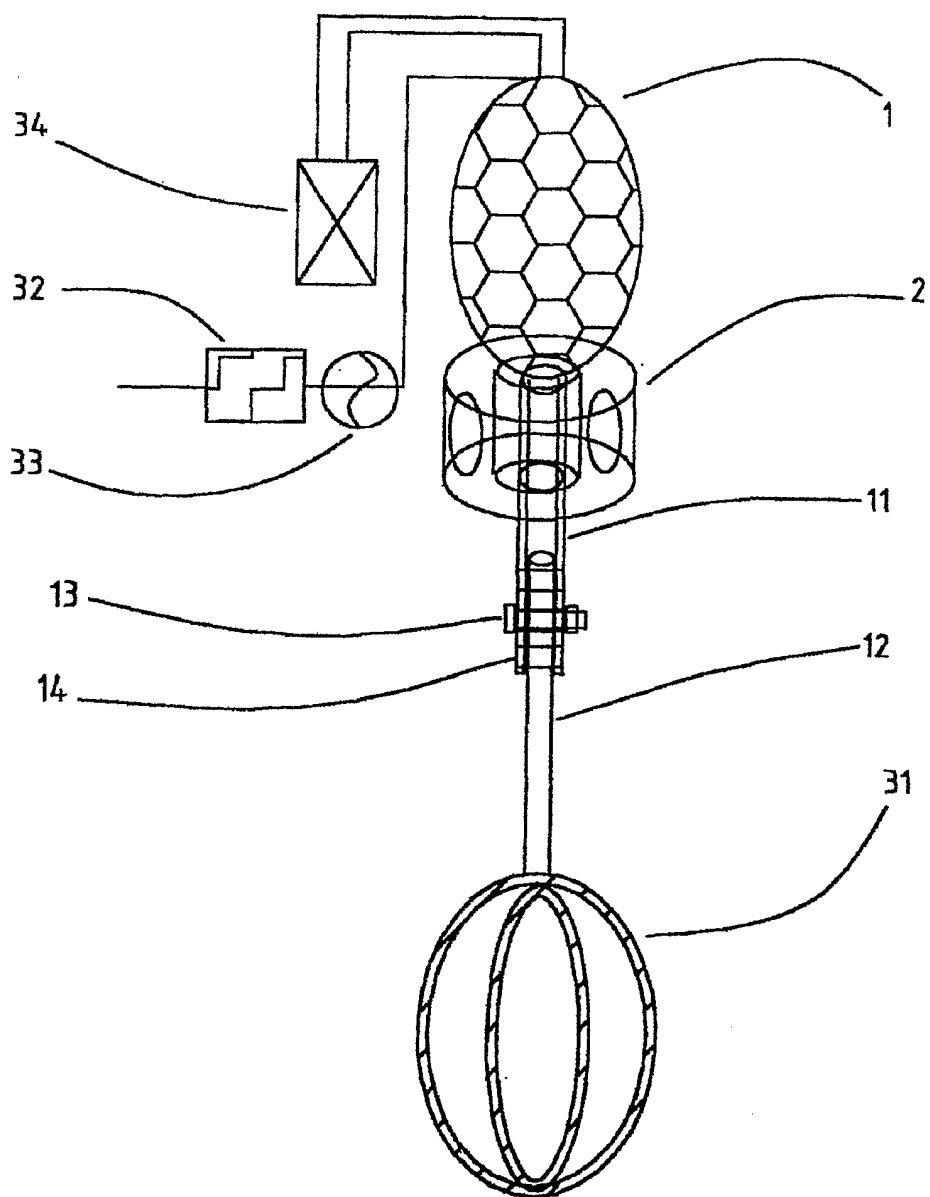


FIG. 5

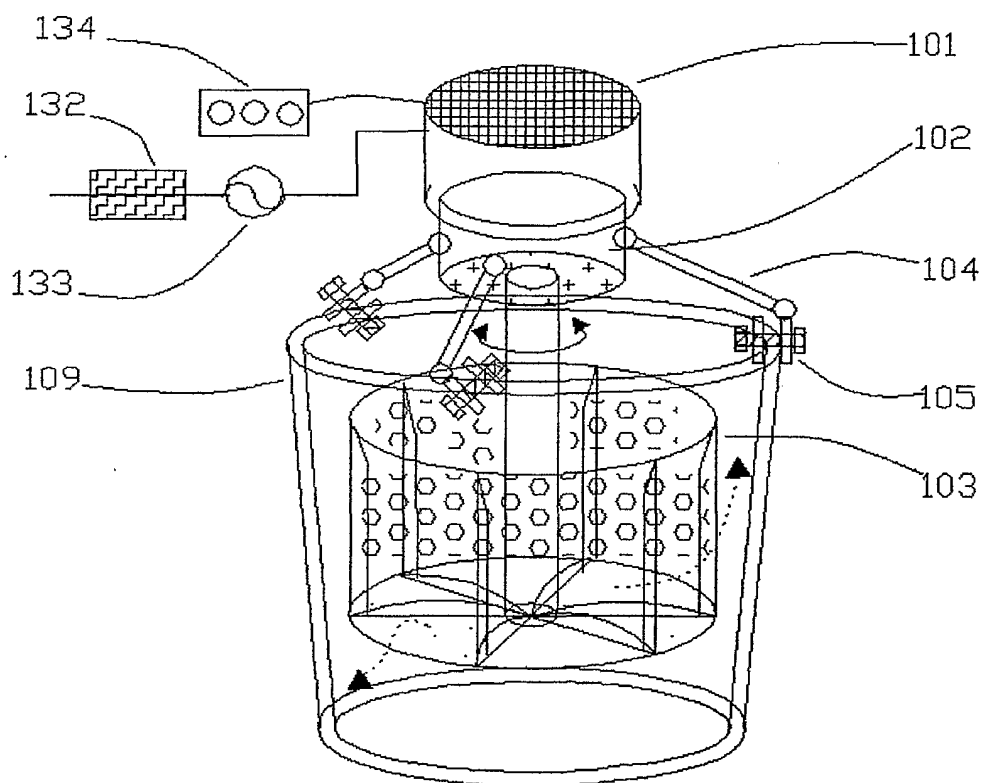
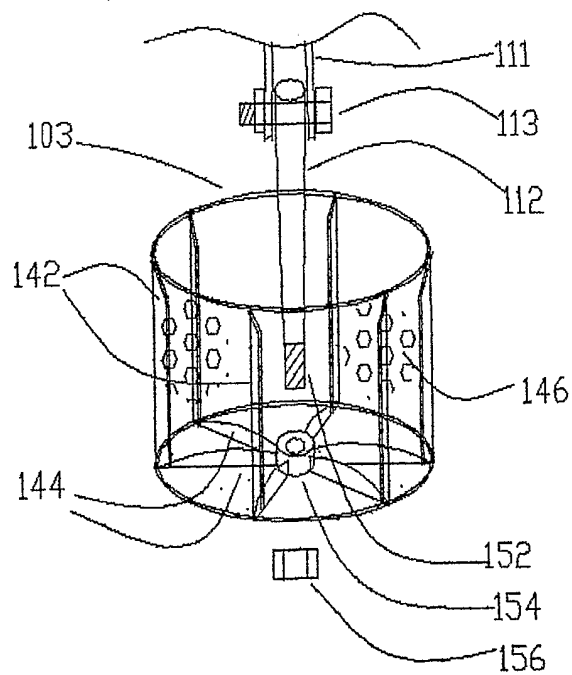


FIG. 6



7/7

FIG. 7

