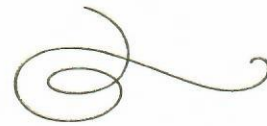
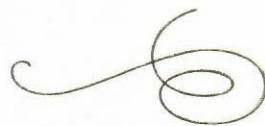


HC-US-IP-21031

United
States
of
America



To Promote the Progress

of Science and Useful Arts

The Director

of the United States Patent and Trademark Office has received an application for a patent for a new and useful invention. The title and description of the invention are enclosed. The requirements of law have been complied with, and it has been determined that a patent on the invention shall be granted under the law.

Therefore, this United States

Patent

grants to the person(s) having title to this patent the right to exclude others from making, using, offering for sale, or selling the invention throughout the United States of America or importing the invention into the United States of America, and if the invention is a process, of the right to exclude others from using, offering for sale or selling throughout the United States of America, products made by that process, for the term set forth in 35 U.S.C. 154(a)(2) or (c)(1), subject to the payment of maintenance fees as provided by 35 U.S.C. 41(b). See the Maintenance Fee Notice on the inside of the cover.

Donna H. H. H.

Performing the Functions and Duties of the Under Secretary of Commerce for Intellectual Property and

Director of the United States Patent and Trademark Office



Maintenance Fee Notice

If the application for this patent was filed on or after December 12, 1980, maintenance fees are due three years and six months, seven years and six months, and eleven years and six months after the date of this grant, or within a grace period of six months thereafter upon payment of a surcharge as provided by law. The amount, number and timing of the maintenance fees required may be changed by law or regulation. Unless payment of the applicable maintenance fee is received in the United States Patent and Trademark Office on or before the date the fee is due or within a grace period of six months thereafter, the patent will expire as of the end of such grace period.

Patent Term Notice

If the application for this patent was filed on or after June 8, 1995, the term of this patent begins on the date on which this patent issues and ends twenty years from the filing date of the application or, if the application contains a specific reference to an earlier filed application or applications under 35 U.S.C. 120, 121, 365(c), or 386(c), twenty years from the filing date of the earliest such application ("the twenty-year term"), subject to the payment of maintenance fees as provided by 35 U.S.C. 41(b), and any extension as provided by 35 U.S.C. 154(b) or 156 or any disclaimer under 35 U.S.C. 253.

If this application was filed prior to June 8, 1995, the term of this patent begins on the date on which this patent issues and ends on the later of seventeen years from the date of the grant of this patent or the twenty-year term set forth above for patents resulting from applications filed on or after June 8, 1995, subject to the payment of maintenance fees as provided by 35 U.S.C. 41(b) and any extension as provided by 35 U.S.C. 156 or any disclaimer under 35 U.S.C. 253.



US011241003B2

(12) **United States Patent**
Li et al.

(10) **Patent No.:** **US 11,241,003 B2**
(45) **Date of Patent:** **Feb. 8, 2022**

- (54) **MOSQUITO-KILLING LAMP**
- (71) Applicant: **ZHEJIANG SORBO TECHNOLOGY CO.,LTD.**, Wenzhou (CN)
- (72) Inventors: **Xuyu Li**, Wenzhou (CN); **Jian Zhang**, Gushi (CN); **Qingbao Lin**, Rui'an (CN); **Chaogui Li**, Yongjia (CN)
- (*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **17/211,861**

(22) Filed: **Mar. 25, 2021**

(65) **Prior Publication Data**

US 2021/0315191 A1 Oct. 14, 2021

(30) **Foreign Application Priority Data**

Dec. 2, 2020 (CN) 202022860354.7

- (51) **Int. Cl.**
A01M 1/08 (2006.01)
A01M 1/06 (2006.01)
A01M 1/10 (2006.01)
- (52) **U.S. Cl.**
CPC **A01M 1/08** (2013.01); **A01M 1/106** (2013.01)

- (58) **Field of Classification Search**
CPC A01M 1/08; A01M 1/06; A01M 1/04
USPC 43/139, 113, 112
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

- 5,157,865 A * 10/1992 Chang A01M 1/08
43/113
5,915,950 A * 6/1999 Kleinhenz A01M 31/002
43/139

- 6,568,125 B2 * 5/2003 Kleinhenz A01M 1/023
43/107
7,036,269 B1 * 5/2006 Chen A01M 1/08
43/113
8,240,082 B1 * 8/2012 Fall A01M 1/08
43/139
9,049,855 B2 * 6/2015 Rocha A01M 1/023
9,326,497 B2 * 5/2016 Rocha A01M 1/023
10,010,065 B2 * 7/2018 Koo A01M 1/106
10,681,903 B2 * 6/2020 Eom A01M 1/08
10,701,924 B2 * 7/2020 Zheng C25B 9/17
10,905,111 B2 * 2/2021 Zhang F04D 17/16
2005/0060926 A1 * 3/2005 Lee A01M 1/08
43/113
2007/0068068 A1 * 3/2007 Weiss A01M 1/023
43/132.1

(Continued)

FOREIGN PATENT DOCUMENTS

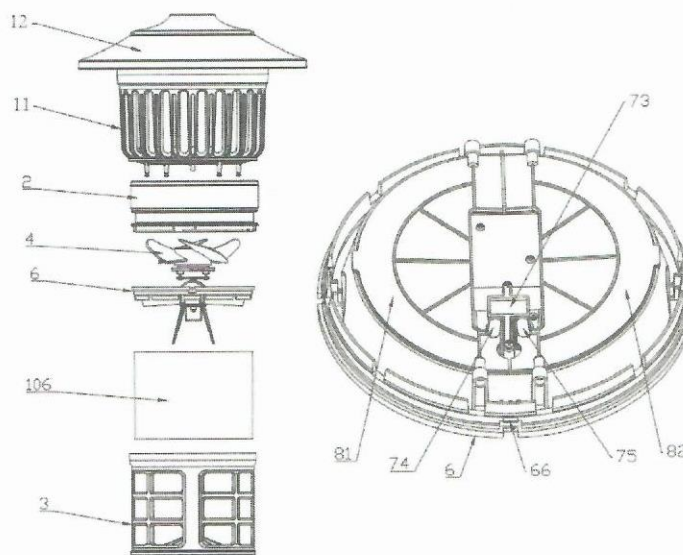
- EP 3354132 A4 * 6/2019 A01M 1/106
EP 3427581 A4 * 11/2019 F21V 7/22
(Continued)

Primary Examiner — Darren W Ark

(57) **ABSTRACT**

The present invention relates to a mosquito-killing lamp, including a shell consisting of an upper shell, a fan frame and a lower shell, wherein the upper shell is provided with a mosquito inlet cavity, the lower shell is provided with a mosquito storage cavity, the fan frame is internally provided with a mounting cavity, a mosquito blocking base is clamped between the fan frame and the lower shell, the mosquito blocking base is provided with an opening for conducting the mounting cavity and the mosquito storage cavity, the mosquito blocking base is provided with a baffle capable of opening or closing the opening in a hinge manner, and a driving mechanism is arranged on the mosquito blocking base. By adoption of the above solution, the mosquitoes are not easy to fly out and the mosquito killing effect is better.

14 Claims, 16 Drawing Sheets



(56)

References Cited

U.S. PATENT DOCUMENTS

2008/0168702 A1 * 7/2008 Jaffrey A01M 1/223
43/111
2009/0038207 A1 2/2009 Lin
2016/0212984 A1 * 7/2016 Fang A01M 1/08
2017/0273291 A1 * 9/2017 Yoo G16Z 99/00
2017/0290318 A1 * 10/2017 Bergengren A01M 1/023
2018/0288993 A1 * 10/2018 Focks A01M 1/06
2019/0090470 A1 * 3/2019 Lee A01M 1/08
2019/0133106 A1 * 5/2019 Eom A01M 1/10
2019/0159441 A1 5/2019 Zheng
2020/0344992 A1 * 11/2020 Kaye A01M 1/023

FOREIGN PATENT DOCUMENTS

GB 424235 A * 2/1935 A01M 1/08
JP H0633472 U * 5/1994

JP 3136423 U * 10/2007
JP 2010022754 A * 2/2010
JP 5117922 B2 * 1/2013
KR 100753435 B1 * 8/2007
KR 100791645 B1 * 1/2008
KR 100808678 B1 * 2/2008
KR 20090009373 A * 1/2009
KR 20090005532 U * 6/2009
KR 20110038890 A * 4/2011
KR 20120017302 A * 2/2012
KR 101241826 B1 * 3/2013
KR 20150073547 A * 7/2015
WO WO-2008010232 A1 * 1/2008 A01M 1/08
WO WO-2008052217 A2 * 5/2008 A01M 1/08
WO WO-2018182265 A1 * 10/2018 F21V 33/00
WO WO-2018236175 A1 * 12/2018 A01M 1/08
WO WO-2019135564 A1 * 7/2019 A01M 1/08
WO WO-2020125688 A1 * 6/2020 A01M 1/08

* cited by examiner

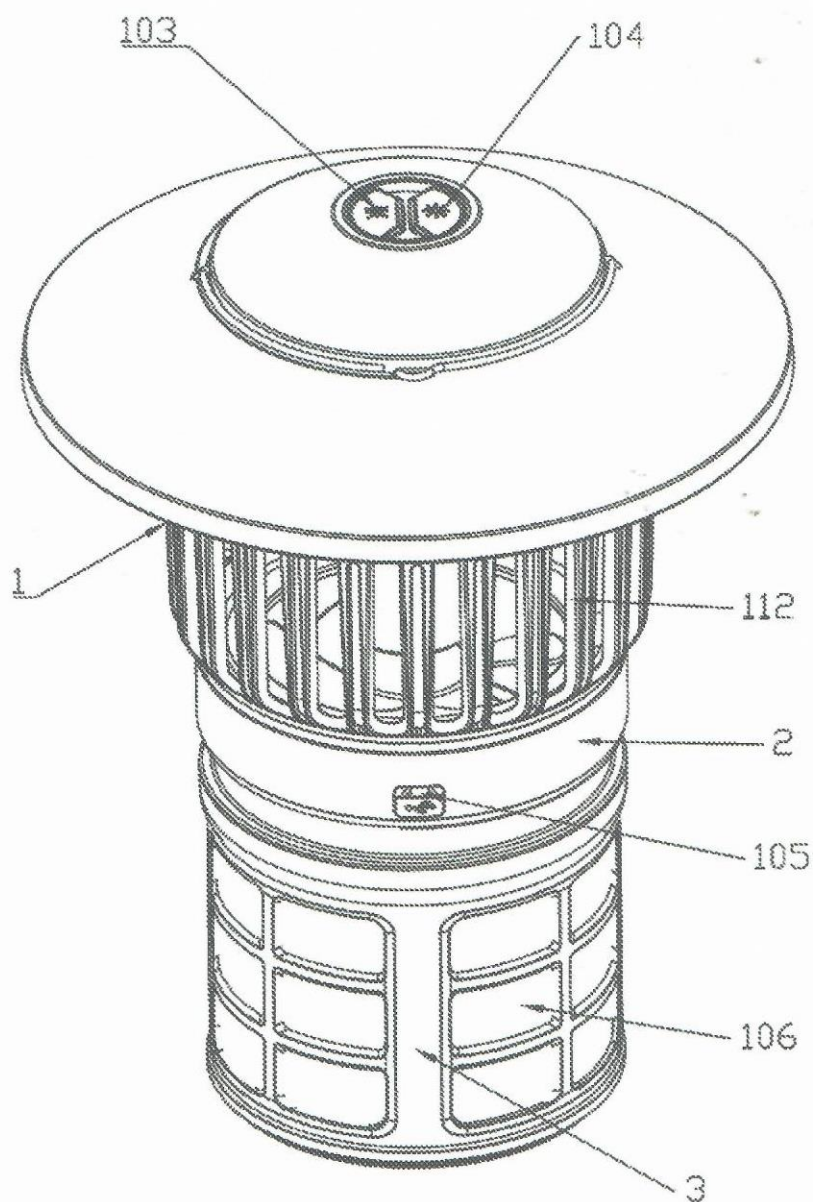


FIG. 1

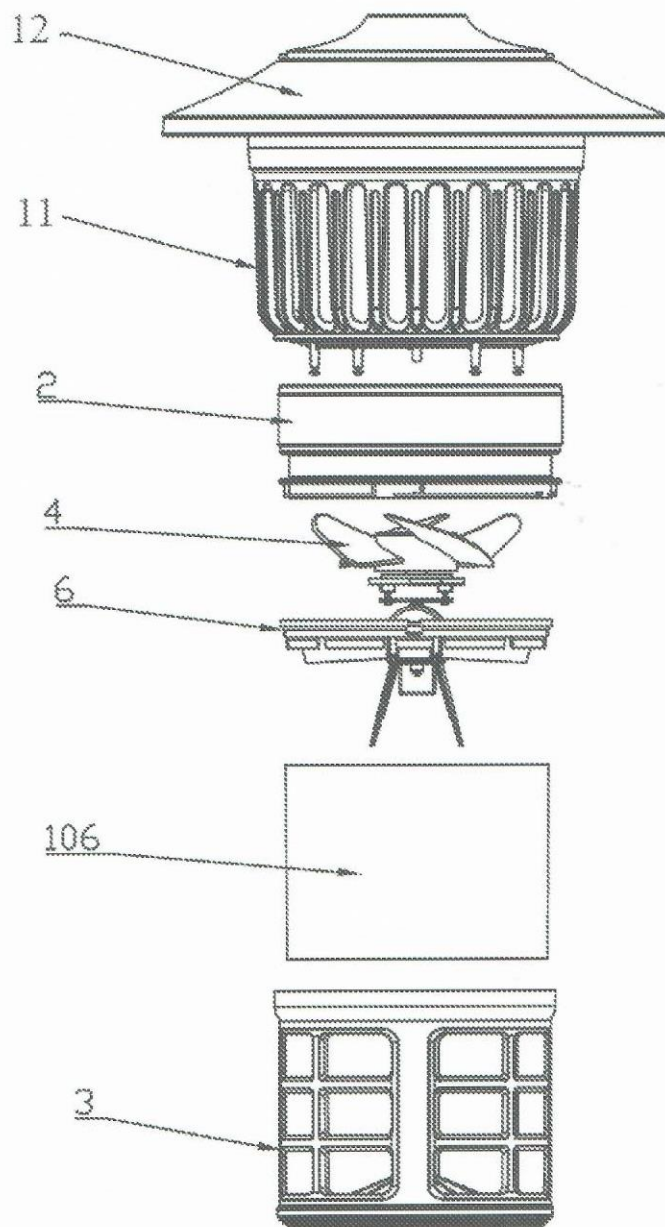


FIG. 2

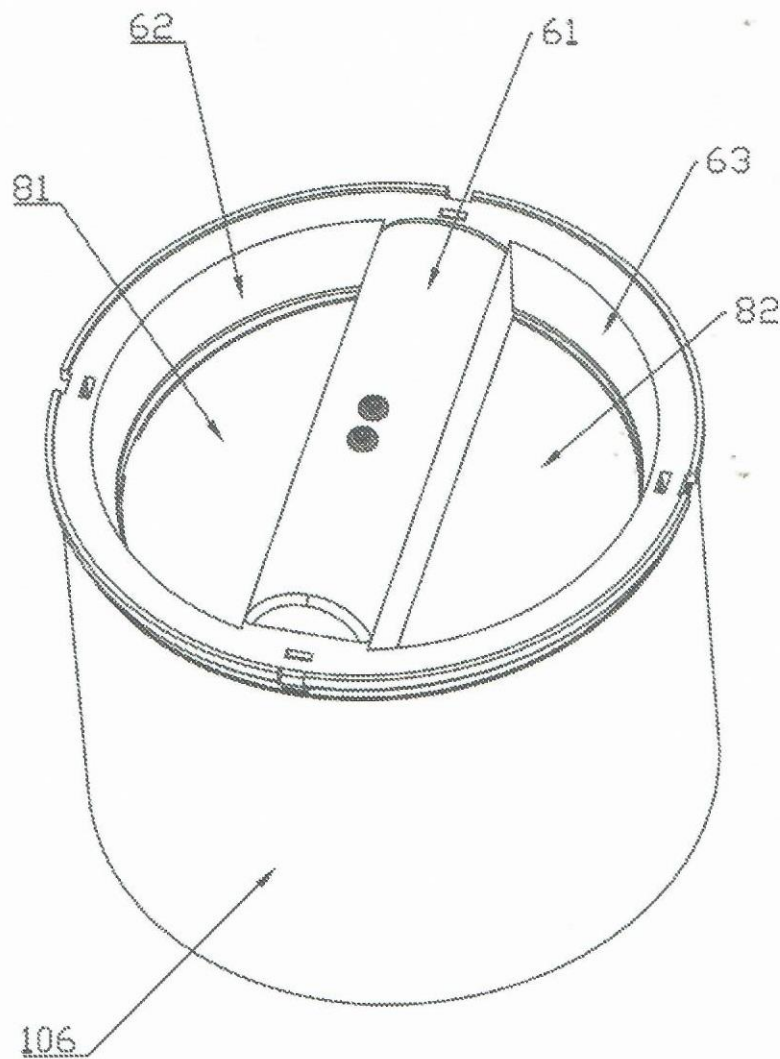


FIG. 3

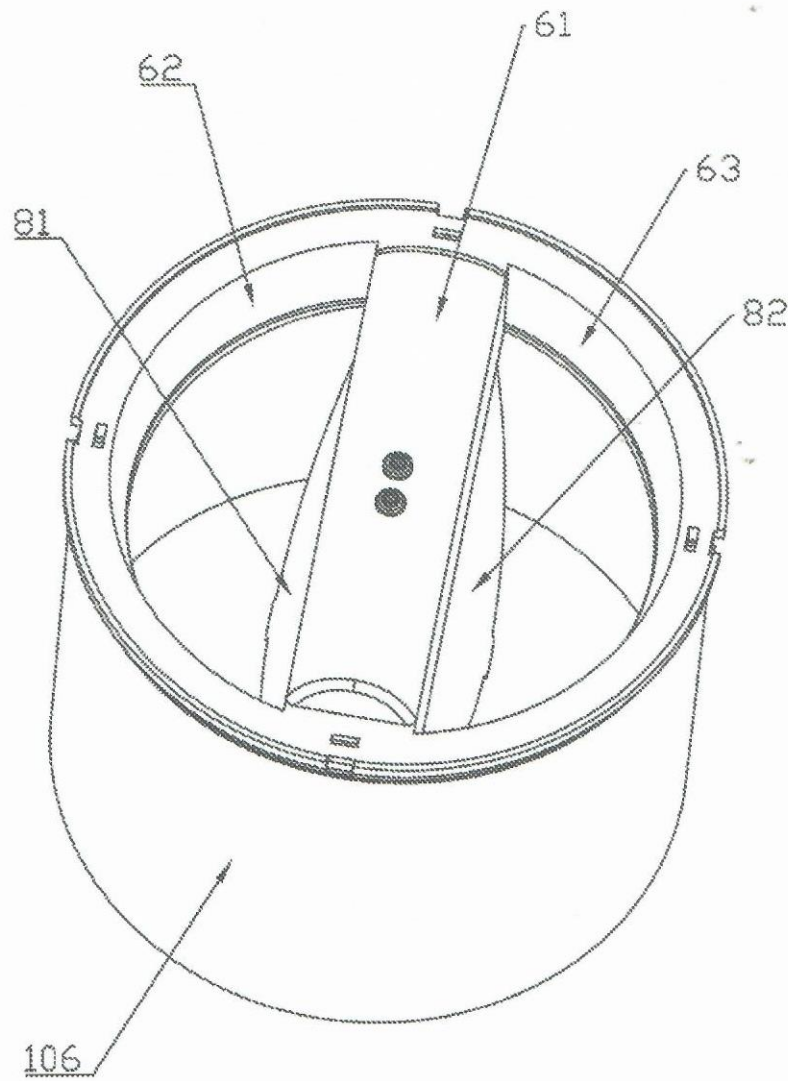


FIG. 4

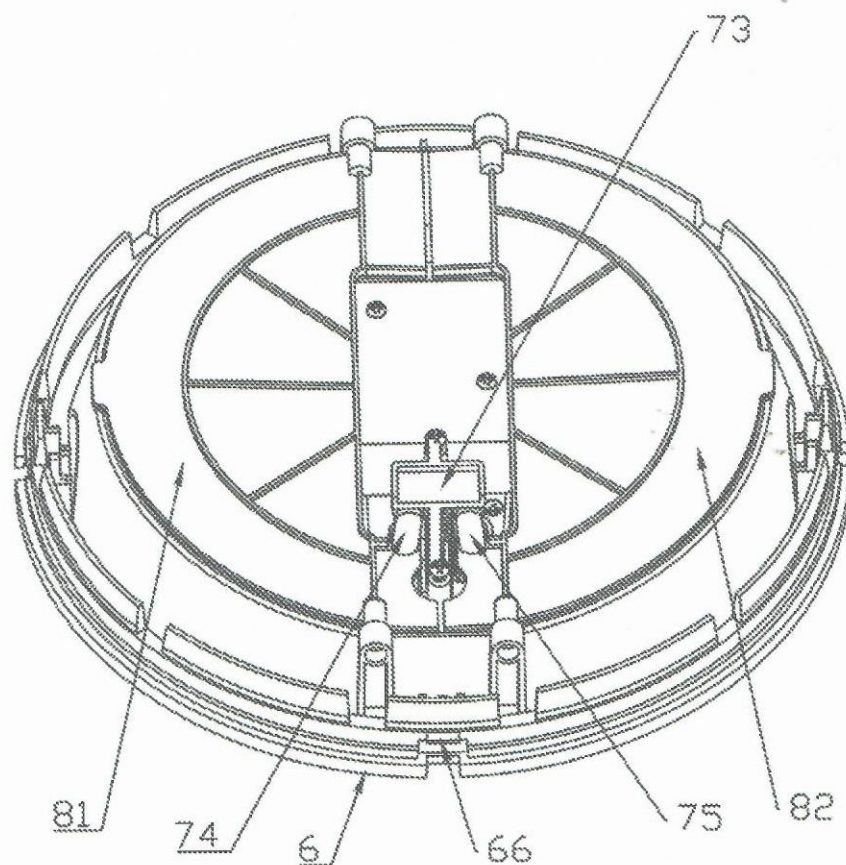


FIG. 5

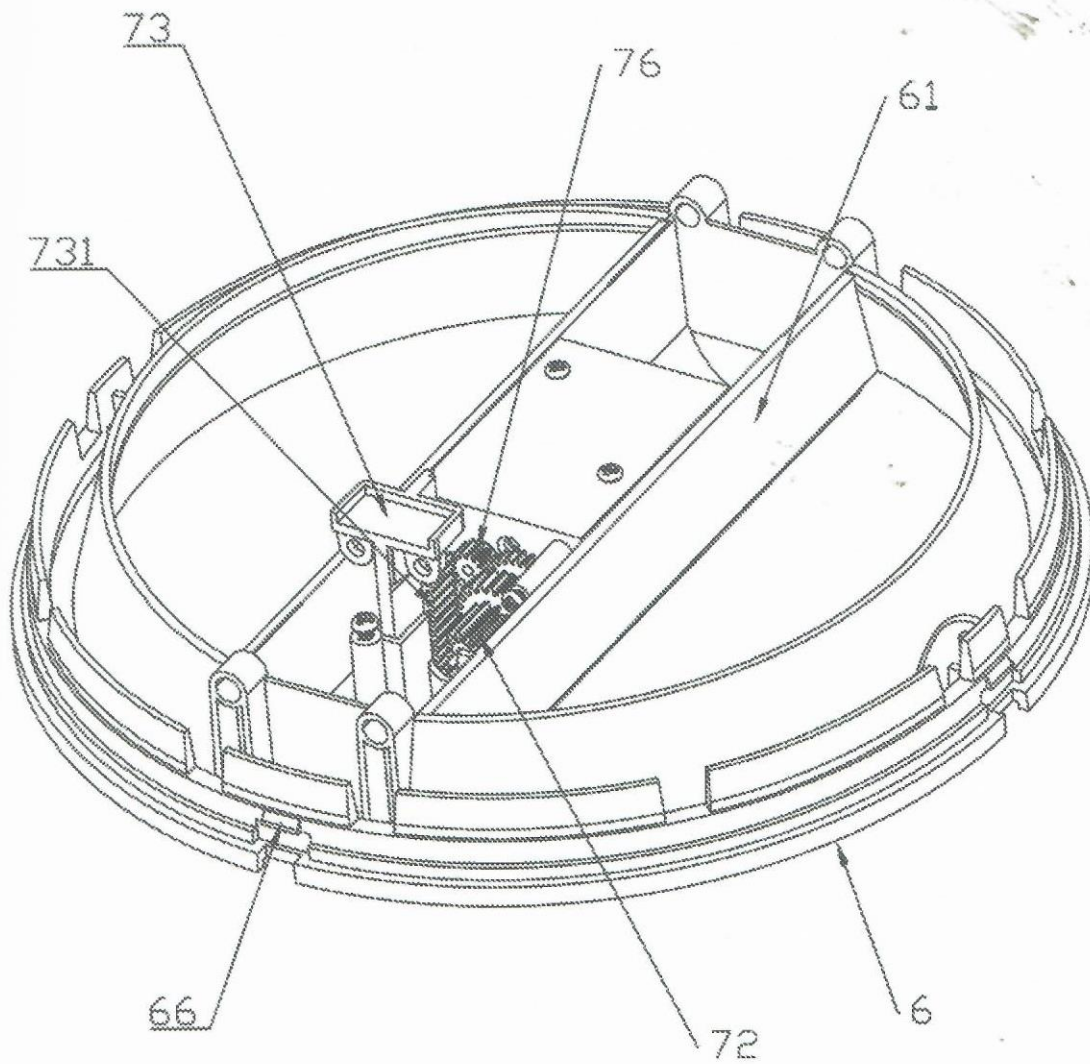


FIG. 6

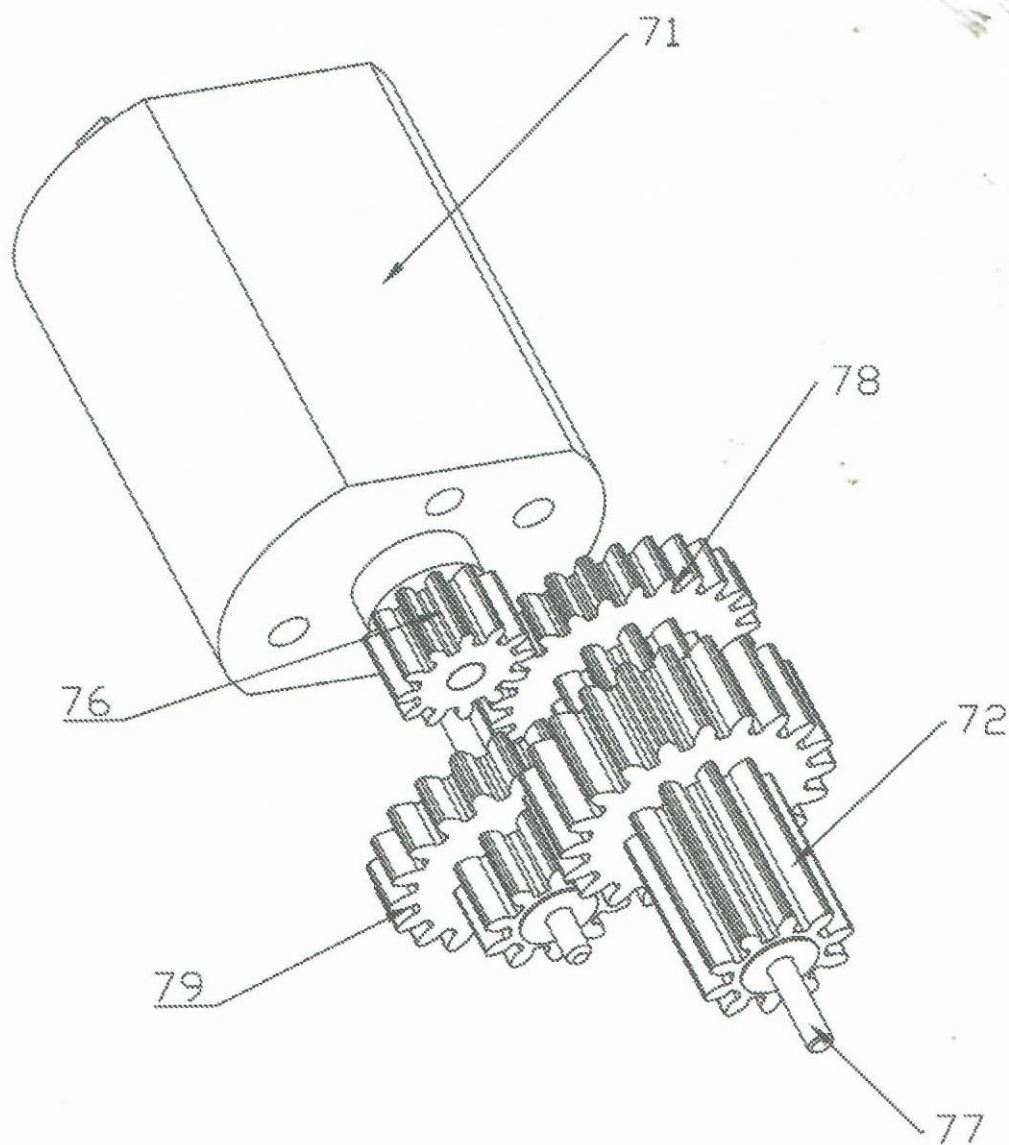


FIG. 7

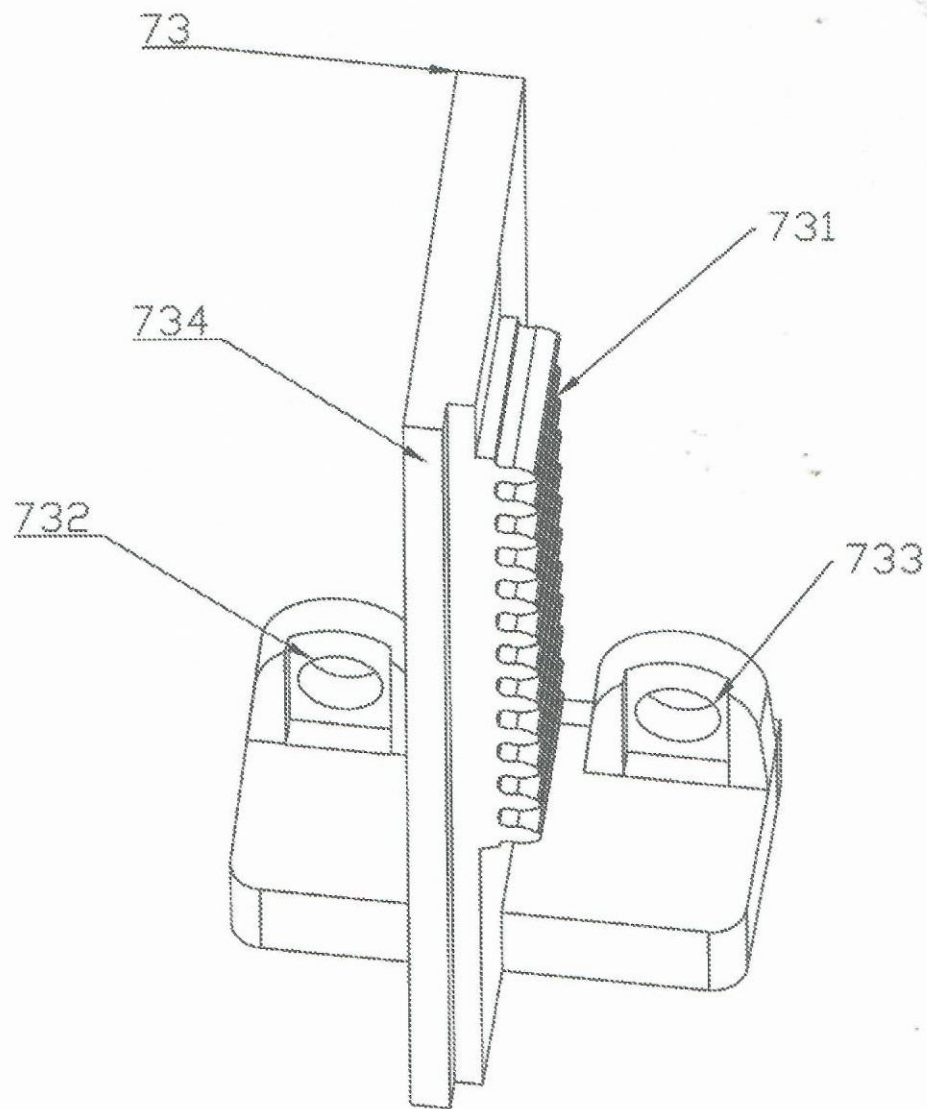


FIG. 8

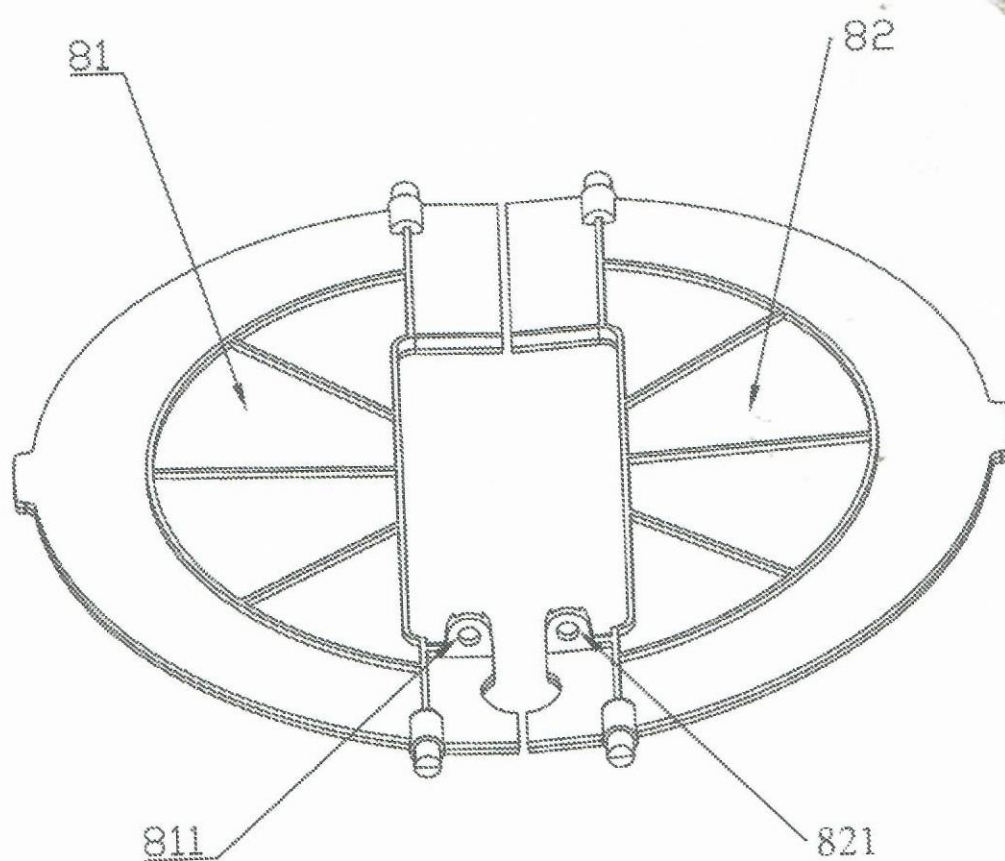


FIG. 9

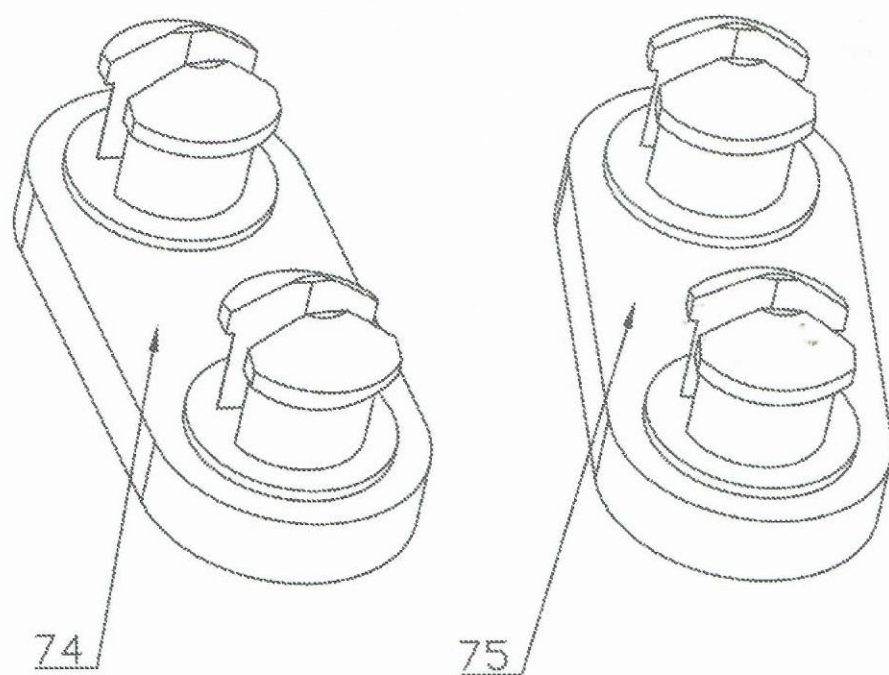


FIG. 10

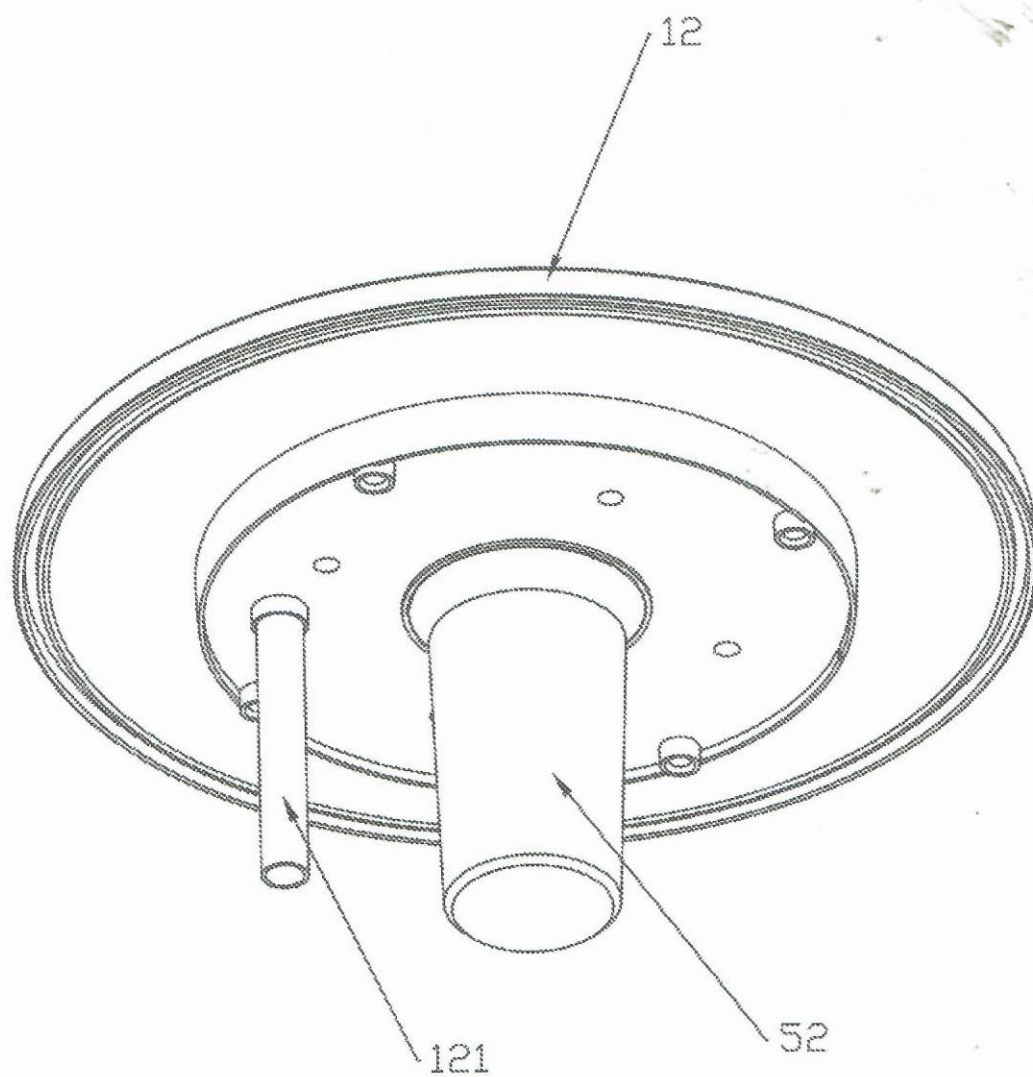


FIG. 11

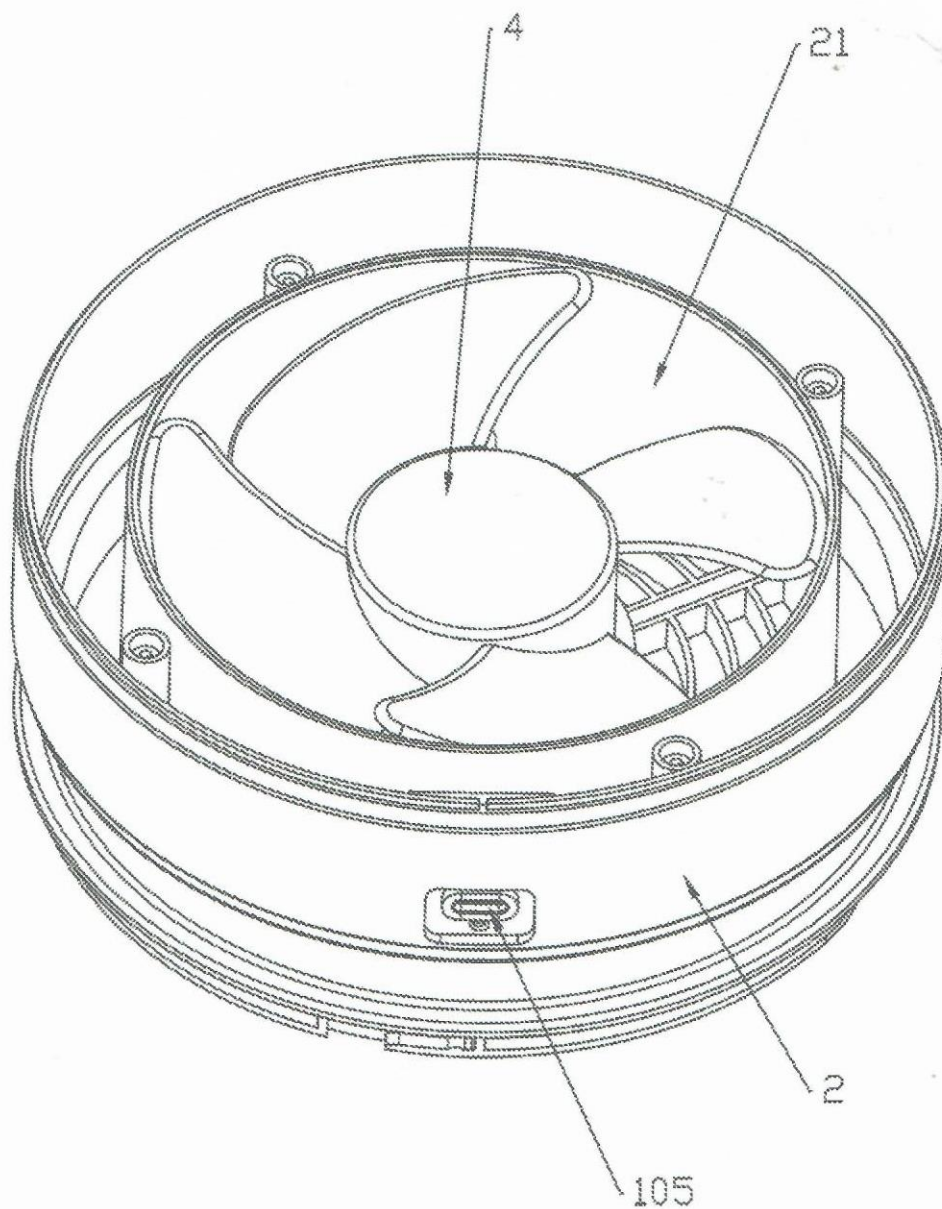


FIG. 12

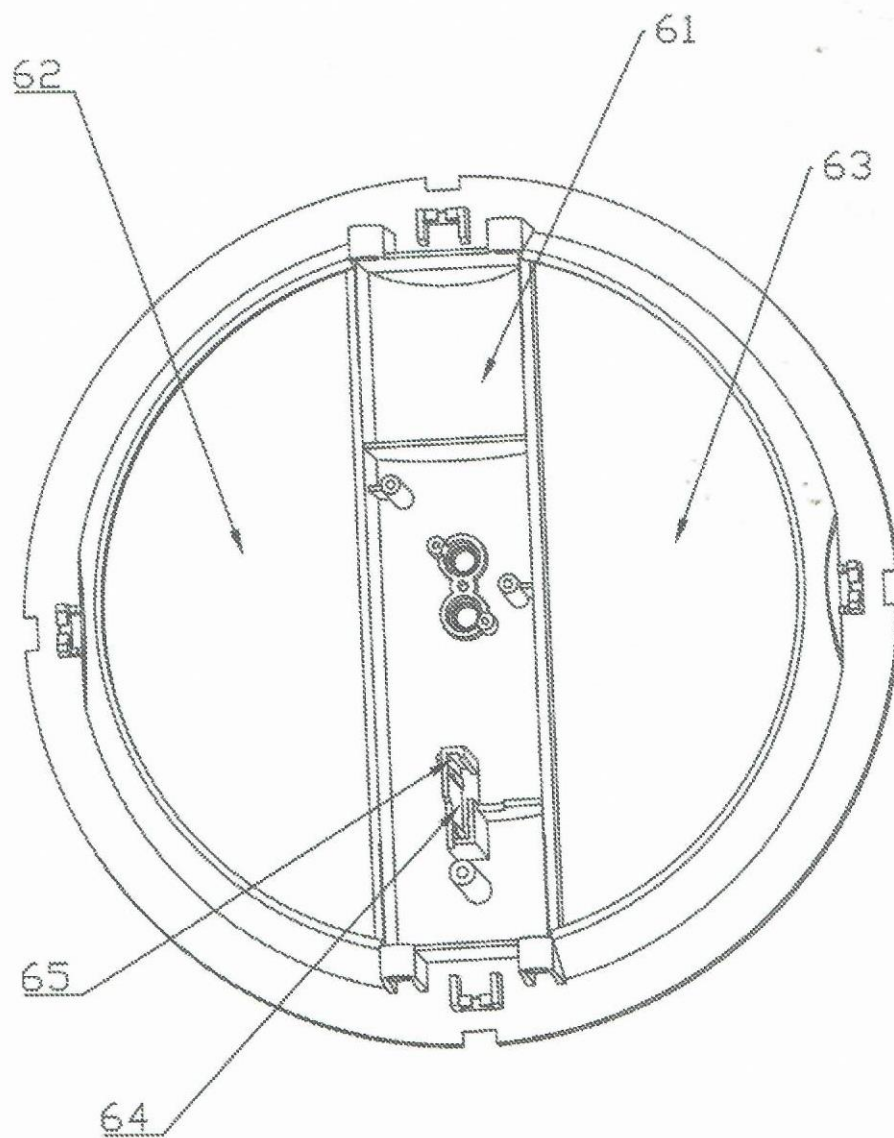


FIG.13

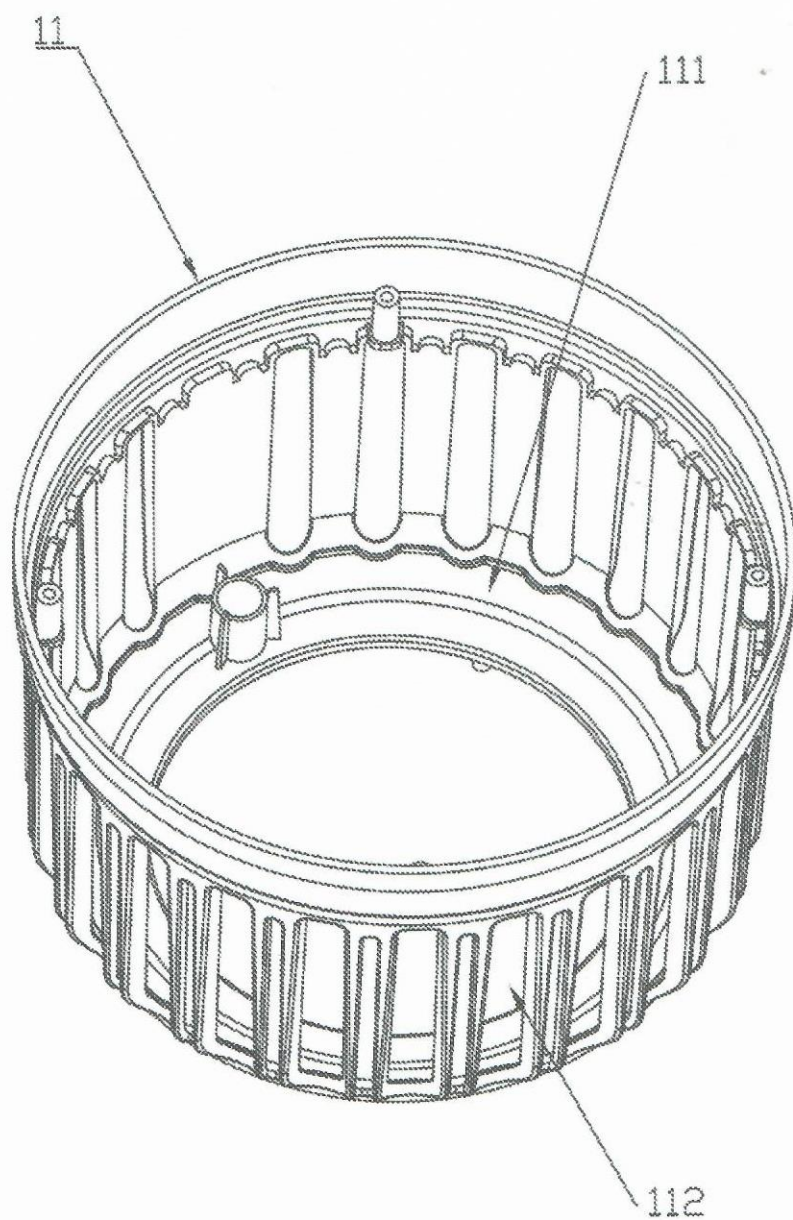


FIG. 14

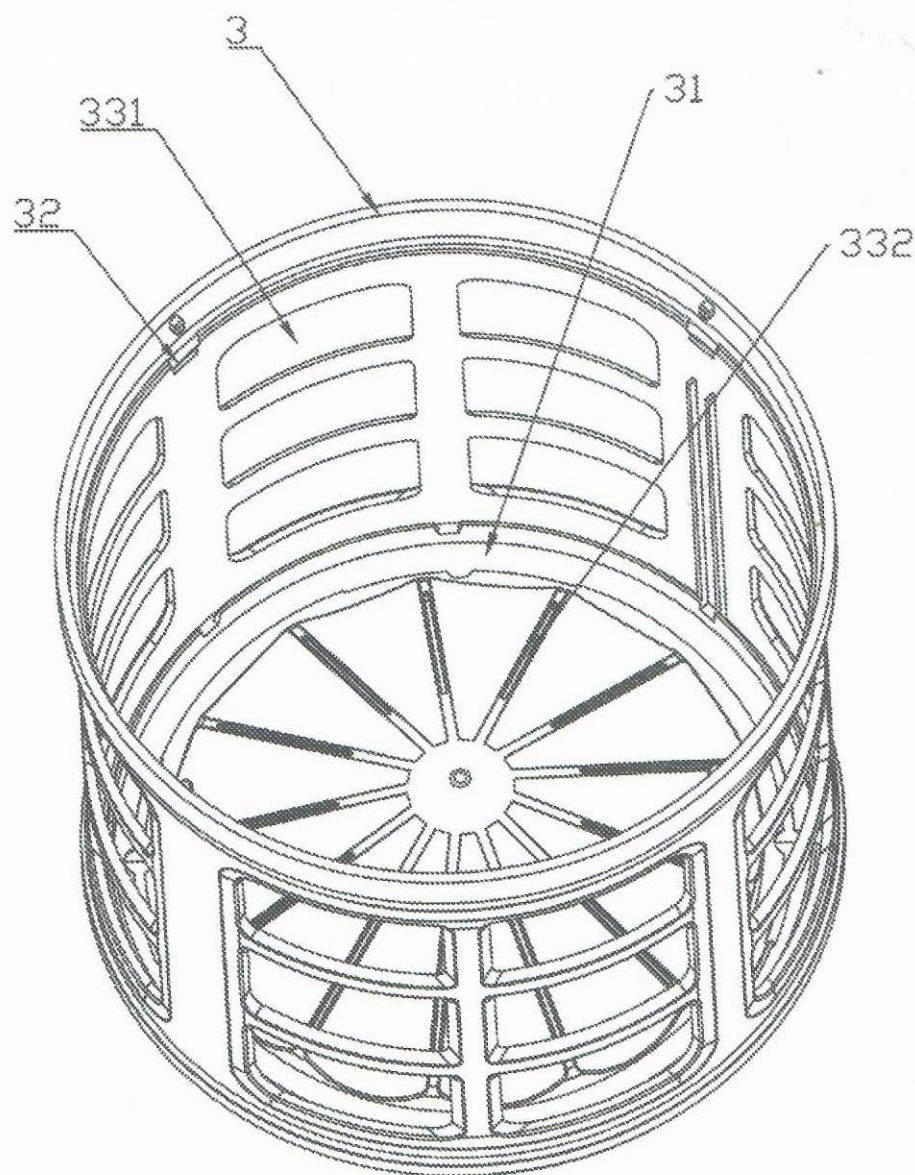


FIG. 15

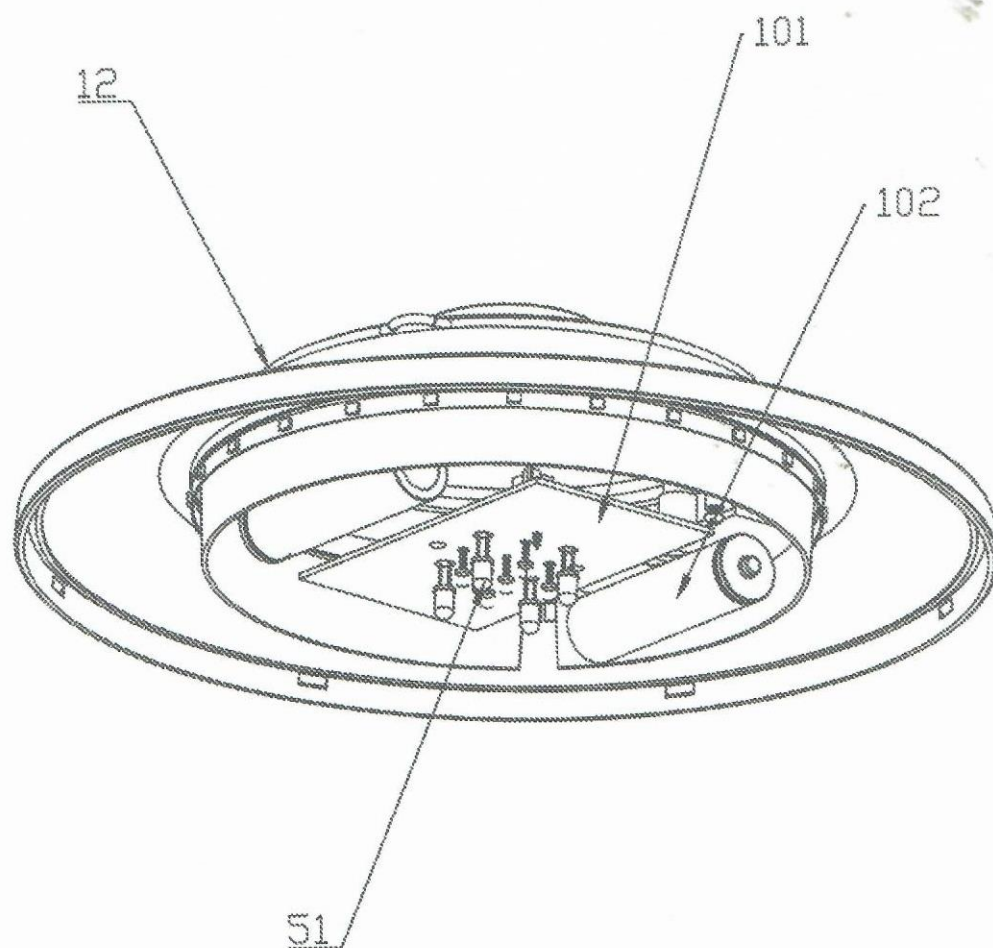


FIG. 16

1

MOSQUITO-KILLING LAMP**TECHNICAL FIELD**

The utility model relates to the technical field of a mosquito-killing device, and in particular, to a mosquito-killing lamp.

BACKGROUND

There are various mosquitoes in public places or at home, and the mosquitoes will affect the normal rest of people and carry germs, so it is necessary to kill the mosquitoes.

The general mosquito-killing lamp includes a shell, wherein the shell includes an upper shell, a fan frame and a lower shell which are arranged sequentially from top to bottom, the upper shell and the lower shell are connected through the fan frame, the upper shell is provided with a mosquito inlet cavity, the lower shell is provided with a mosquito storage cavity, a mounting cavity for communicating the mosquito inlet cavity and the mosquito storage cavity is formed in the fan frame, a fan is mounted at the mounting cavity, the upper shell is provided with an air inlet for mosquitoes to fly into the mosquito inlet cavity, the lower shell is provided with an air outlet communicating with the mosquito inlet cavity, the air inlet, the mosquito inlet cavity, the mounting cavity, the mosquito storage cavity and the air outlet form a complete wind path, the shell is internally provided with a mosquito-luring lamp, and when the fan works, negative pressure is generated at the air inlet, and the mosquitoes fly into the air inlet and are absorbed in the mosquito inlet cavity and then are driven to the mosquito storage cavity by air flow. However, in these mosquito-killing lamps, when the fan stops working, since the upper end of the mosquito storage cavity is open, the mosquitoes will fly out of the air inlet of the upper shell, and the mosquito-killing effect is not good.

SUMMARY

The utility model overcomes the defects of the prior art and provides a mosquito-killing lamp with a mosquito-killing function. The mosquito is not easy to fly out and the mosquito-killing effect is more excellent.

To achieve the above objective, the technical solution adopted by the utility model is: a mosquito-killing lamp includes a shell, wherein the shell includes an upper shell, a fan frame and a lower shell which are arranged sequentially from top to bottom, the upper shell and the lower shell are connected through the fan frame, the upper shell is provided with a mosquito inlet cavity, the lower shell is provided with a mosquito storage cavity, the fan frame is internally provided with a mounting cavity for communicating the mosquito inlet cavity and the mosquito storage cavity, a fan is mounted at the mounting cavity, the upper shell is provided with an air inlet for mosquitoes to fly into the mosquito inlet cavity, the lower shell is provided with an air outlet communicating with the mosquito storage cavity, the air inlet, the mosquito inlet cavity, the mounting cavity, the mosquito storage cavity and the air outlet form a complete wind path, the shell is internally provided with a mosquito-luring lamp, a mosquito blocking base is clamped between the fan frame and the lower shell, the mosquito blocking base is provided with an opening for conducting the mounting cavity and the mosquito storage cavity, the mosquito blocking base is provided with a baffle capable of opening or closing the opening in a hinge manner, a driving mechanism for driving

2

the baffle to swing is arranged on the mosquito blocking base, the driving mechanism includes a motor device, a drive gear, a connecting rod and a movable piece, the motor device is fixedly arranged on the mosquito blocking base, the drive gear is rotatably arranged on the mosquito blocking base, the movable piece is slidably arranged on the mosquito blocking base along a vertical direction, the movable piece is provided with a rack occluded with the drive gear in a linkage manner along the vertical direction, one end of the connecting rod is arranged on the movable piece in a hinge manner and the other end of the connecting rod is arranged on the baffle in a hinge manner, an output shaft of the motor device drives the drive gear to rotate, the drive gear drives the movable piece to move up and down, and the movable piece drives the baffle to swing through the connecting piece.

By the above solution, the fan is a conventional technology in the field, so the fan will not be described in detail in the description. When the fan is electrified, the movable piece may be driven by the motor device to move, the movable piece drives the baffle to swing through the connecting rod to open the opening so as to conduct the mounting cavity and the mosquito storage cavity, the fan can drive air in the shell to flow, the air may enter the mosquito inlet cavity from the air inlet, then passes through the mounting cavity and the mosquito storage cavity and finally flows out of the air outlet. When flying into the air inlet, mosquitoes are absorbed into the mosquito inlet cavity and then are driven by the air flow to the mosquito storage cavity, and the mosquitoes cannot fly out of the air outlet. As long as the fan works all the time, the mosquitoes stay in the mosquito storage cavity all the time under the drive of the fan. When the fan stops working, the movable piece may be driven by the motor device to move, and the movable piece drives the baffle to swing through the connecting rod to close the opening, such that the mounting cavity and the mosquito storage cavity are cut off, the mosquitoes are closed in the mosquito storage cavity until death. Since the fan is arranged in the mounting cavity, fingers are not easy to extend into the mounting cavity, use is facilitated, and the mosquito-luring lamp can attract and lure the mosquitoes to approach the air inlet, such that the mosquito-killing effect is more excellent.

The utility model is further set as: a cross beam is arranged in the middle of the mosquito blocking base, the motor device, the drive gear and the movable piece are arranged on the cross beam, the opening includes a first opening and a second opening which are located on two sides of the cross beam, the baffle is provided with a first baffle and a second baffle respectively at the positions corresponding to the first opening and the second opening, the first baffle and the second baffle are arranged on the cross beam respectively in a hinge manner, and the movable piece moves to simultaneously drive the first baffle and the second baffle to swing.

By the above solution, the mosquito blocking base is reasonable in structural design, thus facilitating mounting of the driving mechanism, the first baffle and the second baffle and making full use of the mounting space.

The utility model is further set as: the connecting rod includes a first connecting rod and a second connecting rod, the movable piece is provided with a first hinge base and a second hinge base respectively on two sides corresponding to the first baffle and the second baffle, the first baffle is provided with a third hinge base at a position close to the movable piece, the second baffle is provided with a fourth hinge base at a position close to the movable piece, the third hinge base is located above the first hinge base, the fourth

3

hinge base is located above the second hinge base, one end of the first connecting rod is arranged on the first hinge base in a hinge manner and the other end of the first connecting rod is arranged on the third hinge base in a hinge manner, and one end of the second connecting rod is arranged on the second hinge base in a hinge manner and the other end of the second connecting rod is arranged on the fourth hinge base in a hinge manner.

By the above solution, the movable piece moves upward to simultaneously drive the first baffle and the second baffle to swing downward so as to open the first opening and the second opening; the movable piece moves downward to simultaneously drive the first baffle and the second baffle to swing upward so as to close the first opening and the second opening; a connecting head is arranged on an end part of the connecting rod, and the connecting head includes two symmetrically arranged elastic blocks, the hinge base is provided with a through hole; and when the elastic blocks penetrate through the through hole, the elastic blocks cannot be separated from the through hole and will not affect the movement of the connecting rod, the structure is simple and the position design is reasonable.

The utility model is further set as: the cross beam is provided with a movable cavity for the movable piece to move, a guide groove is formed in a side wall of the movable cavity along the vertical direction, and the movable piece is provided with a guide block in a sliding fit with the guide groove.

By the above solution, the movable piece moves more stably, the structure is simple, mounting is convenient, and design is reasonable.

The utility model is further set as: a driving gear is arranged on the output shaft of the motor device, the drive gear is rotatably arranged on the mosquito blocking base through a rotating shaft, a first transmission gear engaged with the driving gear is rotatably arranged on the rotating shaft, the mosquito blocking base is provided with a second transmission gear engaged with the first transmission gear beside the first transmission gear, and the second transmission gear is engaged with the drive gear.

By the above solution, the first transmission gear and the drive gear do not interfere with each other, and the first transmission gear and the second transmission gear play a role in deceleration; moreover, the position design is reasonable, the mounting space is fully utilized, and transmission stability is achieved.

The utility model is further set as: the upper shell includes a middle frame and an upper cover, the upper cover covers the middle frame and is fixedly connected to the middle frame, the middle frame is fixedly connected to the fan frame, the air inlet is formed in an outer side surface of the middle frame, the mosquito inlet cavity is formed in the middle frame, a light guide sleeve is fixedly arranged on the upper cover, the guide sleeve extends into the mosquito inlet cavity, the mosquito-luring lamp is arranged on an end part of the light guide sleeve, a circuit board, a battery and a button switch are arranged on the upper cover, the motor device, the battery, the fan, the mosquito-luring lamp and the button switch are connected to the circuit board respectively, a tube is fixedly arranged on the upper cover, and the tube conducts the upper cover and the mounting cavity.

By the above solution, the button switch includes a mosquito-killing switch for controlling operation of the fan and the motor, and a lamp switch for turning on the mosquito-luring lamp. After the mosquito-killing lamp is turned on, light may be conducted through the light guide

4

sleeve to achieve a better mosquito-luring effect, a lead may be conveyed through the tube, and the setting is more reasonable.

The utility model is further set as: an annular mosquito-preventing net is fixedly connected below the mosquito blocking base, the lower shell is in a clamping fit with the mosquito blocking base, a periphery of the annular mosquito-preventing net is surrounded by a side wall of the lower shell, and the air outlet includes a first air outlet formed in the side wall of the lower shell and a second air outlet formed in a bottom surface of the lower shell.

By the above solution, the arrangement of the annular mosquito-preventing net will not allow the mosquitoes to fly out of the first air outlet of the lower shell; the second air outlet is small, so the mosquitoes are not easy to fly out; the first air outlet and the second air outlet may enhance ventilation; the mosquito blocking base is provided with a clamping block, the lower shell is provided with a clamping groove, and the clamping block is clamped into the clamping groove to realize fixed connection of the mosquito blocking base and the lower shell. The structure is simple and the design is reasonable.

The utility model is further described with reference to the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a schematic diagram of an overall structure according to an embodiment of the utility model;

FIG. 2 is a schematic diagram of an exploded structure of FIG. 1;

FIG. 3 is a schematic diagram of a cut-off state of a mosquito inlet cavity and a mosquito storage cavity;

FIG. 4 is a schematic diagram of a conduction state of a mosquito inlet cavity and a mosquito storage cavity;

FIG. 5 is a schematic diagram of a cooperation structure of a driving mechanism, a first baffle and a second baffle;

FIG. 6 is a schematic diagram of a cooperation structure of a movable piece and a mosquito blocking base;

FIG. 7 is a schematic diagram of a cooperation structure of a motor device and a drive gear;

FIG. 8 is a structural schematic diagram of a movable piece;

FIG. 9 is a structural schematic diagram of a first baffle and a second baffle;

FIG. 10 is a structural schematic diagram of a first connecting rod and a second connecting rod;

FIG. 11 is a schematic diagram of a cooperation structure of an upper cover and a light guide sleeve;

FIG. 12 is a schematic diagram of a mounting structure of a fan;

FIG. 13 is a structural schematic diagram of a cross beam;

FIG. 14 is a structural schematic diagram of a middle frame;

FIG. 15 is a structural schematic diagram of a lower shell; and

FIG. 16 is a schematic diagram of an internal structure of an upper cover.

DESCRIPTION OF THE EMBODIMENTS

As shown in FIG. 1 to FIG. 16, a mosquito-killing lamp includes a shell, wherein the shell includes an upper shell 1, a fan frame 2 and a lower shell 3 which are arranged sequentially from top to bottom, the upper shell 1 and the lower shell 3 are connected through the fan frame 2, the upper shell 1 is provided with a mosquito inlet cavity 111,

7

cavity, the upper shell is provided with an air inlet for mosquitoes to fly into the mosquito inlet cavity, the lower shell is provided with an air outlet communicating with the mosquito storage cavity, the air inlet, the mosquito inlet cavity, the mounting cavity, the mosquito storage cavity and the air outlet form a complete wind path, the shell is internally provided with a mosquito-luring lamp, a mosquito blocking base is clamped between the fan frame and the lower shell, the mosquito blocking base is provided with an opening for conducting the mounting cavity and the mosquito storage cavity, the mosquito blocking base is provided with a baffle capable of opening or closing the opening in a hinge manner, a driving mechanism for driving the baffle to swing is arranged on the mosquito blocking base, the driving mechanism comprises a motor device, a drive gear, a connecting rod and a movable piece, the motor device is fixedly arranged on the mosquito blocking base, the drive gear is rotatably arranged on the mosquito blocking base, the movable piece is slidingly arranged on the mosquito blocking base along a vertical direction, the movable piece is provided with a rack occluded with the drive gear in a linkage manner along the vertical direction, one end of the connecting rod is arranged on the movable piece in a hinge manner and the other end of the connecting rod is arranged on the baffle in a hinge manner, an output shaft of the motor device drives the drive gear to rotate, the drive gear drives the movable piece to move up and down, and the movable piece drives the baffle to swing through the connecting rod.

2. The mosquito-killing lamp according to claim 1, wherein a cross beam is arranged in a middle of the mosquito blocking base, the motor device, the drive gear and the movable piece are arranged on the cross beam, the opening comprises a first opening and a second opening which are located on two sides of the cross beam, the baffle is provided with a first baffle and a second baffle respectively at positions corresponding to the first opening and the second opening, the first baffle and the second baffle are arranged on the cross beam respectively in a hinge manner, and the movable piece moves to simultaneously drive the first baffle and the second baffle to swing.

3. The mosquito-killing lamp according to claim 2, wherein the connecting rod comprises a first connecting rod and a second connecting rod, the movable piece is provided with a first hinge base and a second hinge base respectively on two sides corresponding to the first baffle and the second baffle, the first baffle is provided with a third hinge base at a position close to the movable piece, the second baffle is provided with a fourth hinge base at a position close to the movable piece, the third hinge base is located above the first hinge base, the fourth hinge base is located above the second hinge base, one end of the first connecting rod is arranged on the first hinge base in a hinge manner and the other end of the first connecting rod is arranged on the third hinge base in a hinge manner, and one end of the second connecting rod is arranged on the second hinge base in a hinge manner and the other end of the second connecting rod is arranged on the fourth hinge base in a hinge manner.

4. The mosquito-killing lamp according to claim 2, wherein the cross beam is provided with a movable cavity for the movable piece to move, a guide groove is formed in a side wall of the movable cavity along the vertical direction, and the movable piece is provided with a guide block in a sliding fit with the guide groove.

5. The mosquito-killing lamp according to claim 2, wherein a driving gear is arranged on the output shaft of the motor device, the drive gear is rotatably arranged on the mosquito blocking base through a rotating shaft, a first

8

transmission gear engaged with the driving gear is rotatably arranged on the rotating shaft, the mosquito blocking base is provided with a second transmission gear engaged with the first transmission gear beside the first transmission gear, and the second transmission gear is engaged with the drive gear.

6. The mosquito-killing lamp according to claim 2, wherein the upper shell comprises a middle frame and an upper cover, the upper cover covers the middle frame and is fixedly connected to the middle frame, the middle frame is fixedly connected to the fan frame, the air inlet is formed in an outer side surface of the middle frame, the mosquito inlet cavity is formed in the middle frame, a light guide sleeve is fixedly arranged on the upper cover, the guide sleeve extends into the mosquito inlet cavity, the mosquito-luring lamp is arranged on an end part of the light guide sleeve, a circuit board, a battery and a button switch are arranged on the upper cover, the motor device, the battery, the fan, the mosquito-luring lamp and the button switch are connected to the circuit board respectively, a tube is fixedly arranged on the upper cover, and the tube conducts the upper cover and the mounting cavity.

7. The mosquito-killing lamp according to claim 2, wherein an annular mosquito-preventing net is fixedly connected below the mosquito blocking base, the lower shell is in a clamping fit with the mosquito blocking base, a periphery of the annular mosquito-preventing net is surrounded by a side wall of the lower shell, and the air outlet comprises a first air outlet formed in the side wall of the lower shell and a second air outlet formed in a bottom surface of the lower shell.

8. The mosquito-killing lamp according to claim 3, wherein the cross beam is provided with a movable cavity for the movable piece to move, a guide groove is formed in a side wall of the movable cavity along the vertical direction, and the movable piece is provided with a guide block in a sliding fit with the guide groove.

9. The mosquito-killing lamp according to claim 3, wherein a driving gear is arranged on the output shaft of the motor device, the drive gear is rotatably arranged on the mosquito blocking base through a rotating shaft, a first transmission gear engaged with the driving gear is rotatably arranged on the rotating shaft, the mosquito blocking base is provided with a second transmission gear engaged with the first transmission gear beside the first transmission gear, and the second transmission gear is engaged with the drive gear.

10. The mosquito-killing lamp according to claim 3, wherein the upper shell comprises a middle frame and an upper cover, the upper cover covers the middle frame and is fixedly connected to the middle frame, the middle frame is fixedly connected to the fan frame, the air inlet is formed in an outer side surface of the middle frame, the mosquito inlet cavity is formed in the middle frame, a light guide sleeve is fixedly arranged on the upper cover, the guide sleeve extends into the mosquito inlet cavity, the mosquito-luring lamp is arranged on an end part of the light guide sleeve, a circuit board, a battery and a button switch are arranged on the upper cover, the motor device, the battery, the fan, the mosquito-luring lamp and the button switch are connected to the circuit board respectively, a tube is fixedly arranged on the upper cover, and the tube conducts the upper cover and the mounting cavity.

11. The mosquito-killing lamp according to claim 3, wherein an annular mosquito-preventing net is fixedly connected below the mosquito blocking base, the lower shell is in a clamping fit with the mosquito blocking base, a periphery of the annular mosquito-preventing net is surrounded by a side wall of the lower shell, and the air outlet comprises a

9

first air outlet formed in the side wall of the lower shell and a second air outlet formed in a bottom surface of the lower shell.

12. The mosquito-killing lamp according to claim 1, wherein a driving gear is arranged on the output shaft of the motor device, the drive gear is rotatably arranged on the mosquito blocking base through a rotating shaft, a first transmission gear engaged with the driving gear is rotatably arranged on the rotating shaft, the mosquito blocking base is provided with a second transmission gear engaged with the first transmission gear beside the first transmission gear, and the second transmission gear is engaged with the drive gear.

13. The mosquito-killing lamp according to claim 1, wherein the upper shell comprises a middle frame and an upper cover, the upper cover covers the middle frame and is fixedly connected to the middle frame, the middle frame is fixedly connected to the fan frame, the air inlet is formed in an outer side surface of the middle frame, the mosquito inlet cavity is formed in the middle frame, a light guide sleeve is

10

fixedly arranged on the upper cover, the guide sleeve extends into the mosquito inlet cavity, the mosquito-luring lamp is arranged on an end part of the light guide sleeve, a circuit board, a battery and a button switch are arranged on the upper cover, the motor device, the battery, the fan, the mosquito-luring lamp and the button switch are connected to the circuit board respectively, a tube is fixedly arranged on the upper cover, and the tube conducts the upper cover and the mounting cavity.

14. The mosquito-killing lamp according to claim 1, wherein an annular mosquito-preventing net is fixedly connected below the mosquito blocking base, the lower shell is in a clamping fit with the mosquito blocking base, a periphery of the annular mosquito-preventing net is surrounded by a side wall of the lower shell, and the air outlet comprises a first air outlet formed in the side wall of the lower shell and a second air outlet formed in a bottom surface of the lower shell.

* * * * *