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Refrigerator with Sealing Strip Failure Alarm Function

Technical Field

The utility model relates to the technical field of refrigerators, in particular to a refrigerator with sealing strip failure alarm function.

Background

A refrigerator is a household appliance for refrigeration or freezing. Generally, it comprises a refrigerating chamber and a freezing chamber. Refrigerator doors are closed at the openings of the refrigerating chamber and the freezing chamber, and the refrigerator doors and the surrounding walls of the openings are attracted together through magnetic sealing strips to realize sealing. The case that the attracting force of the magnetic sealing strips decreases will cause poor refrigeration or freezing effect and high power consumption for the refrigerator.

The refrigerator in the prior art has the problem that the user is unaware real-time of a loosened sealing strip causing cold air to leak out but only when he or she finds out that the power consumption of the refrigerator is increased and the refrigeration or freezing effect is degraded. This lagging awareness will undoubtedly cause unnecessary electricity waste. In addition, the sealing strips of the existing refrigerators cannot be removed in a simple manner.

As a result, how to design a refrigerator with sealing strip failure alarm function becomes a problem that desperately needs to be solved.

Summary of the Utility Model

The purpose of the utility model is to provide a refrigerator with sealing strip failure alarm function to solve the problems of no alarm and difficult replacement as presented in the background above.

In order to achieve the above-mentioned purpose, the utility model provides

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the following technical solution: a refrigerator with sealing strip failure alarm function, comprising a refrigerator body, a refrigerating chamber, a freezing chamber and supporting feet; wherein, a lamp is fixed at the inner top of the refrigerator body, a compressor is fixed at the inner bottom of the refrigerator body, an information module is fixed in the middle of the inner bottom of the refrigerator body, a control chip is fixed at the bottom of the information module, the refrigerating chamber is fixed at the top of the refrigerator body, an alarm lamp is embedded in the outer side of the top of the refrigerating chamber, a pressure gauge is fixed at the top end on one side of the inner part of the refrigerating chamber, a magnet block is fixed at one side of the refrigerating chamber, a lamp switch is movably connected at the top of the magnet block, a refrigerator door is movably connected at the front of the refrigerating chamber, a handle is embedded in the middle on one side of the refrigerating door, the freezing chamber is fixed at the bottom of the refrigerating chamber, a bearing is fixed at the other side of the freezing chamber, supporting feet are fixed at the bottom of the freezing chamber, a sealing strip is embedded in the surface on the inner side of the refrigerator door, a notch is embedded in the top end of the refrigerator door, and a fixing foot is fixed at the periphery of the notch.

Preferably, a magnetic strip is fixed in the middle of the refrigerator body.

Preferably, a switch is fixed at the other side of the compressor.

Preferably, a temperature control switch is movably connected at one side of the inner top of the refrigerating chamber.

Preferably, an insulation layer is fixed at the surface of the refrigerator door.

Preferably, the refrigerator door is composed of an insulation layer on the surface, a sealing strip at the periphery of the refrigerator door, a notch at the

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bottom of the sealing strip, and a fixing foot at the inner side of the notch.

Preferably, the refrigerator body is composed of a lamp at the inner top, a magnetic strip in the inner middle of the refrigerator body, a compressor at one side of the bottom of the refrigerator body, a switch on the other side of the compressor, a control chip at the other side of the switch, and an information module at the top of the control chip.

Compared with the prior art, the utility model has the following beneficial effects:

1. In the refrigerator with sealing strip failure alarm function, all the sealing strips at the periphery of the refrigerator doors are fixed by the combination of fixing feet and notches. As the fixing feet are made of rubber, there is no gap when they pass through the notches, so that cold air leakage can be prevented effectively. When damaged, the sealing strips are easy to replace with new ones, embodying the simplicity of the device.

2. In the refrigerator with sealing strip failure alarm function, when the compressor of the refrigerator body is operating, the pressure gauge and the lamp are disconnected; when the refrigerator door is opened, the lamp is connected, and the pressure gauge and the compressor are disconnected; when the pressure gauge is connected, the compressor and the lamp are disconnected. If the pressure drops at this time, it means that the sealing strips of the refrigerator fail, and the alarm lamp will light up, embodying the alarm effect of the device.

Brief Description of the Drawings

FIG.1 is the overall view of the refrigerator body of the utility model;

FIG.2 is the sectional view of the refrigerator body of the utility model;

FIG.3 is the sectional view of Point "a" of the utility model;

FIG.4 is the systematic view of the refrigerator body of the utility model.

Notes in the figure: 1. refrigerator body, 101. lamp, 102. magnetic strip, 103. compressor, 104. information module, 105. control chip, 106. switch, 2. refrigerating chamber, 3. alarm lamp, 4. temperature control switch, 5. pressure gauge, 6. lamp switch, 7. magnet block, 8. refrigerator door, 9. insulation layer, 10. handle, 11. freezing chamber, 12. bearing, 13. supporting foot, 14. sealing strip, 15. notch, 16. fixing foot.

Detailed Description of the Preferred Embodiments

The technical solutions in the embodiments of the utility model will be described clearly and completely below in conjunction with the drawings in which preferred embodiments of the utility model are represented. It should be understood that those skilled in the art may modify the utility model described herein and still achieve the beneficial effects of the utility model. Therefore, the following description should be understood as being widely known to those skilled in the art and not as a restriction on the utility model.

Referring to FIG.1-4, the utility model provides a technical solution: a refrigerator with sealing strip failure alarm function, comprising a refrigerator body 1, a refrigerating chamber 2, a freezing chamber 11 and supporting feet 12; wherein, a lamp 101 is fixed at the inner top of the refrigerator body 1, a compressor 103 is fixed at the inner bottom of the refrigerator body 1, an information module 104 is fixed in the middle of the inner bottom of the refrigerator body 1, a control chip 105 is fixed at the bottom of the information module 104, the refrigerating chamber 2 is fixed at the top of the refrigerator body 1, an alarm lamp 3 is embedded in the outer side of the top of the refrigerating chamber 2, a pressure gauge 5 is fixed at the top end on one side of the inner part

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of the refrigerating chamber 2, a magnet block 7 is fixed at one side of the refrigerating chamber 2, a lamp switch 6 is movably connected at the top of the magnet block 7, a refrigerator door 8 is movably connected at the front of the refrigerating chamber 2, a handle 10 is embedded in the middle on one side of the refrigerating door 8, the freezing chamber 11 is fixed at the bottom of the refrigerating chamber 2, a bearing 12 is fixed at the other side of the freezing chamber 11, supporting feet 13 are fixed at the bottom of the freezing chamber 11, a sealing strip 14 is embedded in the surface on the inner side of the refrigerator door 8, a notch 15 is embedded in the top end of the refrigerator door 8, and a fixing foot 16 is fixed at the periphery of the notch 15.

Preferably, a magnetic strip 102 is fixed in the middle of the refrigerator body 1. The bottom of the refrigerator door 8 is made of iron. When the user closes the refrigerator door 8, the refrigerator door 8 generates a magnetic action on the iron material at the bottom of the refrigerator door 8 through the magnetic strip 102, so that the refrigerator door 8 is closed firmly. As there is the sealing strip 14 on the refrigerator door 8, the sealing strip 14 generates a magnetic action on the iron material at the bottom of the refrigerator door 8 through the magnetic strip 102 to achieve the sealing effect. When needing to open the refrigerator door 8, the user pulls the refrigerator door 8 and the magnetic strip 102 open through the handle 10, embodying the practicability of the device.

Preferably, a switch 106 is fixed at the other side of the compressor 103. The switch is a three-pole switch. The lamp 101 powers on as the lamp switch 6 extends when the user opens the refrigerator door 8. When the lamp 101 in the refrigerator body 1 is connected, the switch 106, the compressor 103 and the pressure gauge 5 are disconnected; when the compressor 103 is connected, the

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lamp 101 and the pressure gauge 5 are disconnected; when pressure gauge 5 is disconnected, the lamp 101 and the compressor 103 are disconnected; when the compressor 103 and lamp 101 are disconnected, the switch 106 and the pressure gauge 5 are always in a connected state, embodying the diversity of the device.

Preferably, a temperature control switch 4 is movably connected at one side of the inner top of the refrigerating chamber 2. The temperature control switch 4 is a knob switch with 5 positions in total. The refrigerator has the best refrigerating effect when temperature control switch 4 is in the 5th position. Of course, the power consumption is relatively high. When using the refrigerator body 1, the user can adjust the temperature in the refrigerator body 1 according to the quantity, volume and perishability degree of articles in the refrigerator. The user can control the temperature in the refrigerator body 1 by rotating the temperature control switch 4; clockwise rotation is to gradually increase the refrigeration effect, while counterclockwise rotation is to gradually reduce the refrigeration effect, embodying the rationality of the device.

Preferably, an insulation layer 9 is fixed at the surface of the refrigerator door 8. The insulation layer 9 is made of fiber materials. It can effectively isolate the heat generated by the operation of the refrigerator body 1, effectively prevent the temperature outside the refrigerator door 8 from affecting the temperature inside the refrigerator door 8, and keep the cold air inside the refrigerator door 8 more durable, so that the running times of the compressor 103 can be reduced, and the electric energy consumption is lowered. The insulation layer 9 achieves the effect of thermal insulation, embodying the energy saving effect of the device.

Preferably, the refrigerator door 8 is composed of an insulation layer 9 on the surface, a sealing strip 14 at the periphery of the refrigerator door 8, a notch 15 at

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the bottom of the sealing strip 14, and a fixing foot 16 at the inner side of the notch 15. The main insulation unit of the refrigerator body 1 is the sealing strip 14. The sealing strip 14 seals the refrigerator door 8 and the refrigerator body 1 firmly by the attracting force generated by the magnetic strip 102, so that the cold air in the refrigerator body 1 cannot escape. The sealing strip 14 is easy to damage although it has a good effect. When the sealing strip 14 is damaged, the user can pull out the old sealing strip 14 through the notch 15 and mount the fixing foot 16 of the new sealing strip 14 through the notch 15. The sealing strip 14 achieves the sealing effect again as the fixing foot 16 is fixed in the notch 15, embodying the convenience of the device.

Preferably, the refrigerator body 1 is composed of a lamp 101 at the inner top, a magnetic strip 102 in the inner middle of the refrigerator body 1, a compressor 103 at one side of the bottom of the refrigerator body 1, a switch 106 on the other side of the compressor 103, a control chip 105 at the other side of the switch 103, and an information module 104 at the top of the control chip 105. When the user opens the refrigerator door, the switch 106 and the lamp switch 6 are connected, the lamp 101 in the refrigerator body 1 comes on. With the compressor 103 and the lamp 101 disconnected, the pressure gauge 5 is connected. The pressure gauge 5 measures the pressure in the refrigerator body 1. When the refrigerator door 8 is not opened and the compressor 103 is inoperative, the pressure in the refrigerator body 1 will not change, so the reading on the pressure gauge 5 will not change. In the case of cold air leakage from the refrigerator body 1, the reading on the pressure gauge 5 decreases, the information module 104 receives this signal and sends it to the control chip 105, the control chip 105 controls the alarm lamp 3 to come on, so that the user knows the cold air leakage from the refrigerator body 1,

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embodying the alarm effect of the device.

Working principle: First, the bottom of the refrigerator door 8 is made of iron. When the user closes the refrigerator door 8, the refrigerator door 8 generates a magnetic action on the iron material at the bottom of the refrigerator door 8 through the magnetic strip 102, so that the refrigerator door 8 is closed firmly. As there is the sealing strip 14 on the refrigerator door 8, the sealing strip 14 generates a magnetic action on the iron material at the bottom of the refrigerator door 8 through the magnetic strip 102 to achieve the sealing effect. When needing to open the refrigerator door 8, the user pulls the refrigerator door 8 and the magnetic strip 102 open through the handle 10, embodying the practicability of the device.

Then, the insulation layer 9 is made of fiber materials. It can effectively isolate the heat generated by the operation of the refrigerator body 1, effectively prevent the temperature outside the refrigerator door 8 from affecting the temperature inside the refrigerator door 8, and keep the cold air inside the refrigerator door 8 more durable, so that the running times of the compressor 103 can be reduced, and the electric energy consumption is lowered. The insulation layer 9 achieves the effect of thermal insulation, embodying the energy saving effect of the device.

Next, the switch 106 is a three-pole switch. The lamp 101 powers on as the lamp switch 6 extends when the user opens the refrigerator door 8. When the lamp 101 in the refrigerator body 1 is connected, the switch 106, the compressor 103 and the pressure gauge 5 are disconnected; when the compressor 103 is connected, the lamp 101 and the pressure gauge 5 are disconnected; when pressure gauge 5 is disconnected, the lamp 101 and the compressor 103 are disconnected; when the compressor 103 and lamp 101 are disconnected, the switch 106 and the pressure

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gauge 5 are always in a connected state, embodying the diversity of the device.

Afterwards, the refrigerator door 8 is composed of a sealing strip 14 at the periphery of the refrigerator door 8, a notch 15 at the bottom of the sealing strip 14, and a fixing foot 16 at the inner side of the notch 15. The main insulation unit of the refrigerator body 1 is the sealing strip 14. The sealing strip 14 seals the refrigerator door 8 and the refrigerator body 1 firmly by the attracting force generated by the magnetic strip 102, so that the cold air in the refrigerator body 1 cannot escape. The sealing strip 14 is easy to damage although it has a good effect. When the sealing strip 14 is damaged, the user can pull out the old sealing strip 14 through the notch 15 and mount the fixing foot 16 of the new sealing strip 14 through the notch 15. The sealing strip 14 achieves the sealing effect again as the fixing foot 16 is fixed in the notch 15, embodying the convenience of the device.

At last, when the user opens the refrigerator door, the switch 106 and the lamp switch 6 are connected, the lamp 101 in the refrigerator body 1 comes on. With the compressor 103 and the lamp 101 disconnected, the pressure gauge 5 is connected. The pressure gauge 5 measures the pressure in the refrigerator body 1. When the refrigerator door 8 is not opened and the compressor 103 is inoperative, the pressure in the refrigerator body 1 will not change, so the reading on the pressure gauge 5 will not change. In the case of cold air leakage from the refrigerator body 1, the reading on the pressure gauge 5 decreases, the information module 104 receives this signal and sends it to the control chip 105, the control chip 105 controls the alarm lamp 3 to come on, so that the user knows the cold air leakage from the refrigerator body 1, embodying the alarm effect of the device. This is the working principle of the refrigerator with sealing strip failure alarm function.

The above is only a preferred embodiment of the invention, and has no

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restrictive effect on the invention. Any form of equivalent replacement or modification and other alterations made by those skilled in the art on the technical scheme and content disclosed by the invention within a scope not separated from the technical scheme of the invention shall be deemed as not separated from the content of the technical scheme of the invention, and shall still fall within the scope of protection of the invention.

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Claims

1. A refrigerator with sealing strip failure alarm function, comprising a refrigerator body (1), a refrigerating chamber (2), a freezing chamber (11) and supporting feet (12), characterized in that: a lamp (101) is fixed at the inner top of the refrigerator body (1), a compressor (103) is fixed at the inner bottom of the refrigerator body (1), an information module (104) is fixed in the middle of the inner bottom of the refrigerator body (1), a control chip (105) is fixed at the bottom of the information module (104), the refrigerating chamber (2) is fixed at the top of the refrigerator body (1), an alarm lamp (3) is embedded in the outer side of the top of the refrigerating chamber (2), a pressure gauge (5) is fixed at the top end on one side of the inner part of the refrigerating chamber (2), a magnet block (7) is fixed at one side of the refrigerating chamber (2), a lamp switch (6) is movably connected at the top of the magnet block (7), a refrigerator door (8) is movably connected at the front of the refrigerating chamber (2), a handle (10) is embedded in the middle on one side of the refrigerating door (8), the freezing chamber (11) is fixed at the bottom of the refrigerating chamber (2), a bearing (12) is fixed at the other side of the freezing chamber (11), supporting feet (13) are fixed at the bottom of the freezing chamber (11), a sealing strip (14) is embedded in the surface on the inner side of the refrigerator door (8), a notch (15) is embedded in the top end of the refrigerator door (8), and a fixing foot (16) is fixed at the periphery of the notch (15);

2. The refrigerator with sealing strip failure alarm function according to Claim 1, characterized in that: a magnetic strip (102) is fixed in the middle of the refrigerator body (1);

3. The refrigerator with sealing strip failure alarm function according to Claim 1, characterized in that: a switch (106) is fixed at the other side of the compressor

Claims

(103); a temperature control switch (4) is movably connected at one side of the inner top of the refrigerating chamber (2); an insulation layer (9) is fixed at the surface of the refrigerator door (8);

4. The refrigerator with sealing strip failure alarm function according to Claim 1, characterized in that: the refrigerator door (8) is composed of an insulation layer (9) on the surface, a sealing strip (14) at the periphery of the refrigerator door (8), a notch (15) at the bottom of the sealing strip (14), and a fixing foot (16) at the inner side of the notch (15).

5. The refrigerator with sealing strip failure alarm function according to Claim 1, characterized in that: the refrigerator body (1) is composed of a lamp (101) at the inner top, a magnetic strip (102) in the inner middle of the refrigerator body (1), a compressor (103) at one side of the bottom of the refrigerator body (1), a switch (106) on the other side of the compressor (103), a control chip (105) at the other side of the switch (106), and an information module (104) at the top of the control chip (105).

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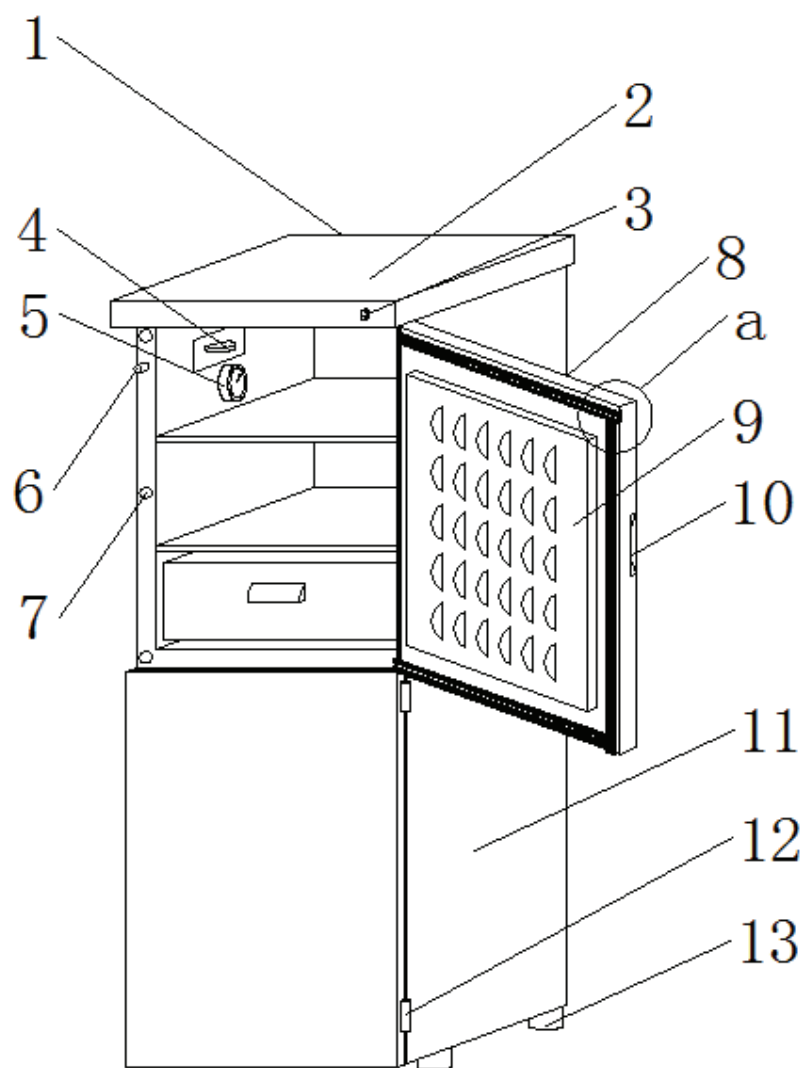


FIG.1

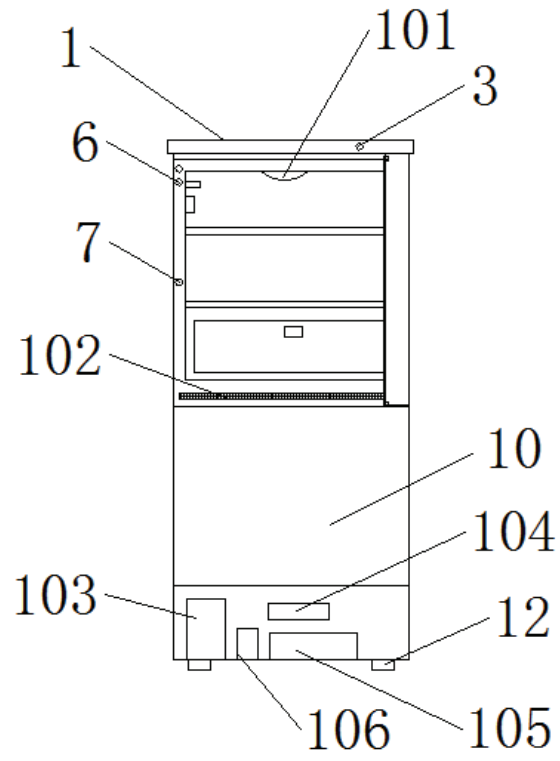


FIG.2

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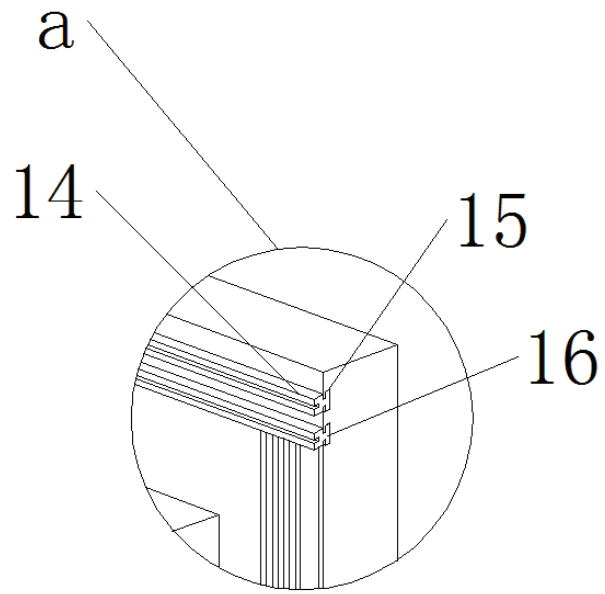


FIG.3

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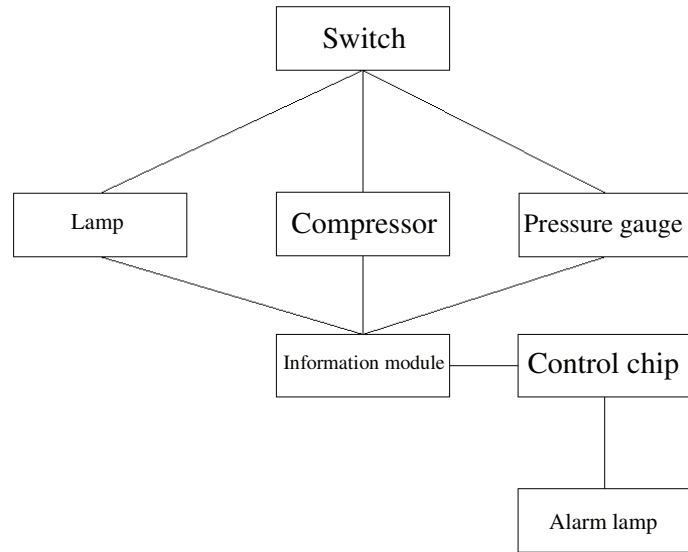


FIG.4