TRANSPERFECT

DECLARATION OF TRANSLATOR AND CERTIFICATION OF TRANSLATION

Translation: From Chinese to English
Original Document: CN101339078 A

I, SHAUN WU, hereby declare as follows:

1. My name is SHAUN WU, and I am a professional translator of Chinese and English for Transperfect, having a headquarters at 1250 Broadway, 6th Floor, New York, NY 10001. My address is 3380 Twilight Dr., Cincinnati, OH 45241.

2. I am fluent in Chinese and English.

3. I translated the document identified and attached as CN101339078 A (Exhibit A, the "Original Document") from Chinese to English.

4. A true and correct copy of the Original Document is attached as Exhibit A, and a true and correct copy of my translation (the "Translation") is attached to this Declaration as Exhibit B.

5. The Translation is, to the best of my knowledge and belief, a true and accurate translation from Chinese into English.

6. All statements herein made of my own knowledge are true, and that all statements herein made on information and belief are believed to be true.

7. The statements made herein were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code.

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct.

Date: 2/24/23

Signature:

24 FEBRUARY 2024

NOTARIAL SEAL
STATE OF OHIO

GRETCHEN M. ABERG
Notary Public, State of Ohio
My Commission Expires 02-27-2024

7786189.1

EXHIBIT A

[19] 中华人民共和国国家知识产权局

[51] Int. Cl.
G01K 1/02 (2006.01)
G01K 1/14 (2006.01)
G08C 17/02 (2006.01)

[12] 发明专利申请公布说明书

[21] 申请号 200710127265.8

[43] 公开日 2009 年 1 月 7 日

[11] 公开号 CN 101339078A

[22] 申请日 2007.7.5
[21] 申请号 200710127265.8
[71] 申请人 王俪谕
地址 台湾省永和市
[72] 发明人 王俪谕

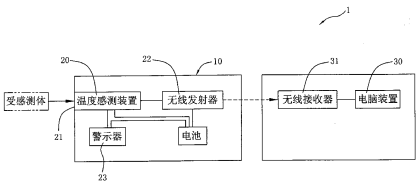
[74] 专利代理机构 北京科龙寰宇知识产权代理有限责任公司
代理人 孙皓晨
权利要求书 2 页 说明书 4 页 附图 2 页

[54] 发明名称

禽畜流感疾病的预警装置

[57] 摘要

本发明为一种禽畜流感疾病的预警装置，其包含一温度感测装置、一载具与一计算机装置，所述的温度感测装置包含一无线发射器与一警示器，所述的温度感测装置是设置在所述载具内部，其上设有一感测面，以感测禽畜的体表温度；所述的载具配戴在禽畜身体上，使所述的温度感测装置的感测面能对应贴合在禽畜身体的受感测部位；所述的计算机装置与其适配设有一无线接收器，所述的计算机装置将由禽畜身体所测得的温度数据，以时间序列方式进行分析判断，以监控禽畜身体的温度变化，所述的体温值为正常、过高或过低，当温度值持续过低或过高所述的计算机装置会发出警示讯号，从而达到禽畜流感疾病的监控作用与预警的目的。



1、一种禽畜流感疾病的预警装置，其特征在于：其包含一温度感测装置、一载具与一计算机装置，其中：

所述的温度感测装置包含一无线发射器与一警示器，所述的温度感测装置是设置在所述载具内部，其上设有一感测面，以感测禽畜的体表温度；

所述的载具配戴在禽畜身体上，使所述的温度感测装置的感测面能对应贴合在禽畜身体的受感测部位；

所述的计算机装置与其适配设有一无线接收器，所述的计算机装置将由禽畜身体所测得的温度数据，以时间序列方式进行分析判断，以监控禽畜身体的温度变化，所述的体温值为正常、过高或过低，当温度值持续过低或过高所述的计算机装置会发出警示讯号。

2、根据权利要求 1 所述一种禽畜流感疾病的预警装置，其特征在于：所述的温度感测装置利用所述的无线发射器向外无线传送讯号。

3、根据权利要求 1 所述一种禽畜流感疾病的预警装置，其特征在于：所述的温度感测装置在量测到异常电讯号时是利用警示器而自动发出警示讯号。

4、根据权利要求 1 所述一种禽畜流感疾病的预警装置，其特征在于：所述的温度感测装置在量测异常电讯号时是在计算机装置上自动显示警示讯号。

5、根据权利要求 1 所述一种禽畜流感疾病的预警装置，其特征在于：所述的载具为一半环型套带式结构。

6、根据权利要求 1 所述一种禽畜流感疾病的预警装置，其特征在于：所述的载具为一环型套带式结构。

7、根据权利要求 1 所述一种禽畜流感疾病的预警装置，其特征在于：所述的载具为一夹子型式结构。

8、根据权利要求 1 所述一种禽畜流感疾病的预警装置，其特征在于：所述的载具为一黏扣带型式结构。

9、根据权利要求 4 所述一种禽畜流感疾病的预警装置，其特征在于：所述半环型套带式结构环绕束缚在禽畜的头部，颈部或足部。

10、根据权利要求 5 所述一种禽畜流感疾病的预警装置，其特征在于：所述的环型套带式结构环绕束缚在禽畜的头部，颈部或足部。

11、根据权利要求 6 所述一种禽畜流感疾病的预警装置，其特征在于：所述

的环型套带式结构环绕束缚在禽畜的头部，颈部或足部。

12、根据权利要求 7 所述一种禽畜流感疾病的预警装置，其特征在于：所述的夹子型式式结构夹持在禽畜的耳部、冠状凸出部、羽翼部。

禽畜流感疾病的预警装置

技术领域

本发明涉及的是一种禽畜流感疾病的预警装置，尤指一种利用一载具内设置一可感测禽畜体表温度的温度感测装置，使温度感测装置通过载具而能固定在禽畜身体上以正确量测其体表温度，并将其感测温度利用无线发射器发射出一无线讯号传送至一计算机装置，且同时转换产生一控制讯号，并在控制讯号显现异常状态时会自动发出警示讯号，以可配合利用无线传输与计算机系统功能而形成监控的装置。

背景技术

目前使用现有检测禽畜流感疾病的方式，一般为利用温度传感器量测禽畜的体温或检验其排泄物；而禽畜温度传感器又以非侵入式的传感器为主且市面上已有多种设计：如光电式，利用红外线功能的耳温枪；热敏电阻式，利用电子组件以接触式方式感测温度；芯片式，利用半导体组件以接触式方式感测温度，上述的传感器体积小易于于禽畜身体上迅速量测到体温；检验禽畜的排泄物，通过药物对禽畜的排泄物进行检验可达到准确的效果；上述现有一般检测禽疾病的方式，对于具传播性的流感疾病并无实时量测与预警效果，在大规模或大区域进行检验或监控时，会增加人力与时间的付出；而本实用新型即是针对检测禽流感疾病的预警方式予以改良，通过大量采样与集体数据分析，以解决现有检测的方式在大规模或大区域的检验而产生额外人力与时间付出的缺点，提早预警以防治流感疾病扩散。

发明内容

本发明主要目的在于，提供一种禽畜流感疾病的预警装置，用以克服上述缺陷。

为实现上述目的，本发明采用的技术方案在于，提供一种禽畜流感疾病的预警装置，其是在一载具内设置一可感测禽畜体表温度的温度感测装置，使所述的

温度感测装置通过载具而能固定在禽畜身体上以正确感测禽畜体表的温度，并将其感测温度以无线发射器发射出一无线讯号传送至一计算机装置，且利用计算机系统将接收的一无线讯号转换成一控制讯号，当温度感测装置的电讯号或计算机装置的控制讯号显现异常状态时，在温度感测装置的警示器或计算机装置会自动发出警示讯号，以达到对禽畜流感疾病的预警效果。

将自动、持续量测的体表温度，持续以无线发射器发射出一无线讯号传送至一计算机装置，且利用计算机系统将接收的一无线讯号转换成一控制讯号，以达到对禽畜流感疾病的监控效果。

附图说明

图 1 是本发明设计功能方块图；

图 2 是本发明一实施例的立体图；

图 3 是本发明再一实施例的立体图；

图 4 是本发明另一实施例的立体图；

图 5 是本发明又一实施例的立体图。

附图标记说明：1－预警装置；10、10a、10b、10c、10d－载具；11－套带；12－内侧面；20－温度感测装置；21－感测面；22－无线发射器；23－警示器；24－夹持部；30－计算机装置；31－无线接收器；40－黏扣带。

具体实施方式

为使本发明还加明确详实，兹列举较佳实施例并配合下列图示，将本发明的结构及其技术特征详述如后：

参考图 1 所示，其是本发明禽畜流感疾病的预警装置 1 的设计功能方块图，兹说明如下：

首先，将载具 10 固定在禽畜身体的适当位置，温度感测装置 20 开始进行感测动作，再将量测到的感测值转换为电讯号，通过无线发射器 22 发射出所述的电讯号至无线接收器 31，再将无线接收器 31 所接收的电讯号传输至计算机装置 30，所述的计算机装置 30 将所接收的电讯号进行分析判断，当由禽畜身体所测得的温度数据传送到计算机装置 30 时，依据预先所设定的温度数值所述的计算机系统会自动判断所述的体温值为正常、过高或过低，并以时间序列方式进行纪录与分析，

体温值过高为病毒侵入禽畜身体，动物免疫系统抵抗病毒的迹象，体温值过低则为禽畜生理机能衰竭的迹象，故以时间序列分析禽畜温度值持续过低或过高所述的计算机系统会发出警示讯号，以达到预警效果。

参考图 1 至图 5 所示，本发明一种禽畜流感疾病的预警装置 1 是包含一载具 10、一温度感测装置 20 与一计算机装置 30，其中，所述的温度感测装置 20 是设置在载具 10 内部，其内面上可设一感测面 21，使所述的感测面 21 通过载具 10 与禽畜身体的感测部位相互接触以进行量测；所述的预警装置 1 是用以使载具 10 的内侧面 12 可环绕束缚在禽畜身体的适当位置上，以使温度感测装置 20 的感测面 21 能与禽畜身体的适当位置的感测部位相互贴合在一起，使感测面 21 与禽畜身体的感测部位之间不易产生相对位移，以避免影响量测的准确度甚至造成无效量测。

所述的温度感测装置 20 包含一无线发射器 22 与一警示器 23，其中，所述的温度感测装置 20 可将感测体温的电讯号，利用无线发射器 22 发射出一无线讯号且传送至一相配合的无线接收器 31，且所述的无线接收器 31 是连接在一计算机装置 30 上，又所述的温度感测装置 20 的感测温度的电讯号显现异常状态时，所述的警示器会自动发出警示讯号；由于所述的温度感测装置 20 的结构型态及其电子电路设计，包括感测功能、感测模式与警示模式或无线传输装置等，都是利用现有电子技术可达成，故在此不另详述。

如图 2 至图 5 所示，接触式感测方式是温度感测装置 20 设置在载具 10 内部，利用载具 10 的内侧面 12 环绕或夹持固定在禽畜身体的适当位置，使温度感测装置 20 的感测面 21 与禽畜身体的适当位置的感测部位相互紧密贴合以进行量测（图未示）。

所述的载具 10 可依需要而设计不同的环绕束缚或夹持方式，如设计为半环型套带式结构载具 10a，其是在套带 11 的适当位置设有开口如图 2 所示或环型套带式结构载具 10b，其是在套带 11 为一无设置开口的环型构造如图 3 所示或调整型套带式结构 10c，其是在套带 11 的一端外侧面的端部与另一端内侧面的端部分别利用黏扣带式结构（Velcro，俗称魔鬼毡）形成如图 4 所示，而直接环套在禽畜身体的适当位置（如：头部、颈部、足部）或夹子型式结构载具 10d，其是在夹持部 24 可张开与闭合如图 5 所示直接夹持固定在禽畜身体的适当位置（如：耳部、冠状凸出部、羽翼部），以提供多种不同结构型态而增加使用者的选择性。

以上所述仅为本发明的较佳实施例，对本发明而言仅是说明性的，而非限制性的；本专业技术人员理解，在本发明权利要求所限定的精神和范围内可对其进行许多改变，修改，甚至等效变还，但都将落入本发明的保护范围内。

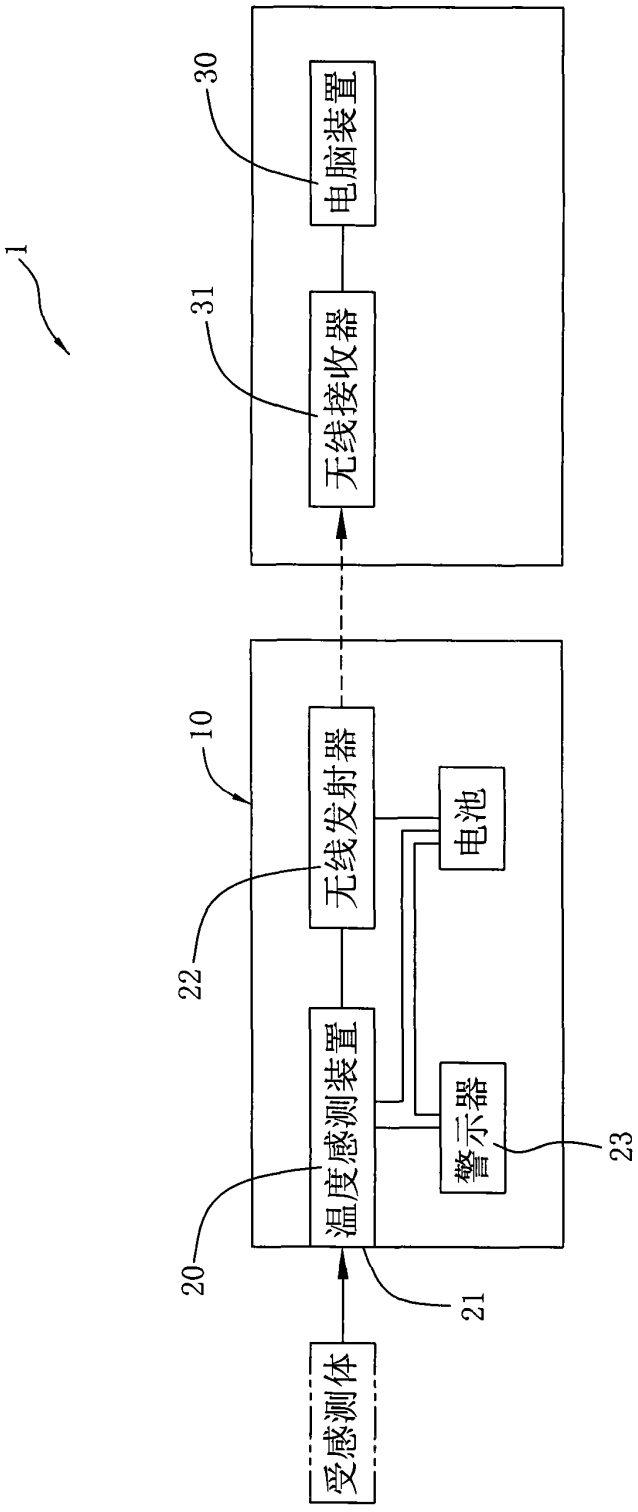


图 1

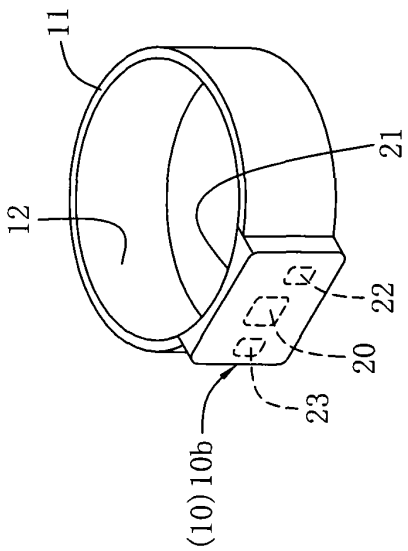

11
12
21
22
20
23
(10) 10b

图 3

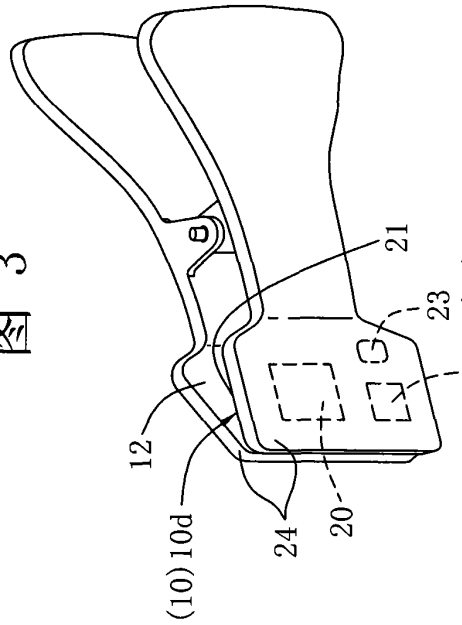

21
23
22
12
(10) 10d
24
20

图 5

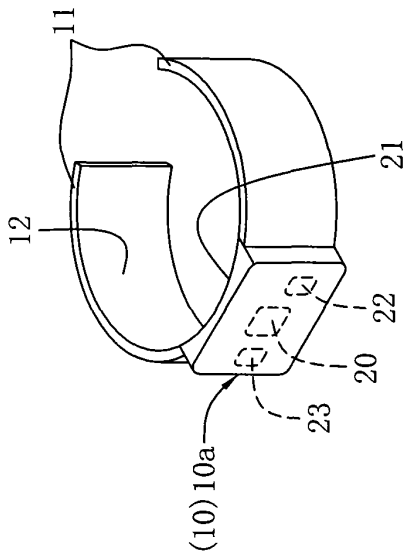

11
12
21
22
20
23
(10) 10a

图 2

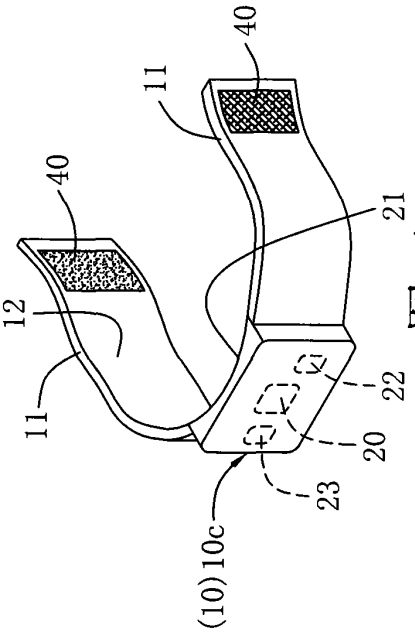

40
11
21
40
12
11
22
20
23
(10) 10c

图 4

EXHIBIT B

[19] China National Intellectual Property Administration

[12] Published Specification of Invention Patent Application
[21] Application Number 200710127265.8

[51] Int. Cl.
G01K 1/02 (2006.01)
G01K 1/14 (2006.01)
G08C 17/02 (2006.01)

[43] Publication Date 01/07/2009 **[11] Publication Number CN 101339078A**

[22] Application Date 07/05/2007
[21] Application Number 200710127265.8
[71] Applicant Wang Liyu
Address Yonghe City, Taiwan Province
[72] Inventor Wang Liyu

[74] Patent Agency Kelong International Intellectual Property Agent Ltd.
Agent Sun Haochen

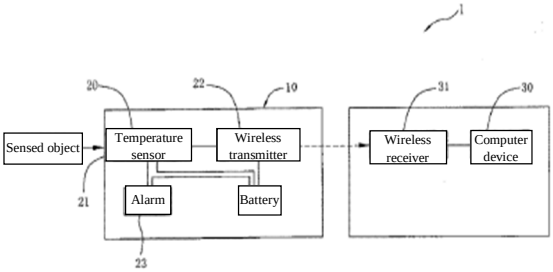
Claims 2 Pages Specification 4 Pages
Drawings 2 Pages

[54] Title of Invention

Poultry and livestock influenza disease early warning device

[57] Abstract

The present disclosure relates to a poultry and livestock influenza disease early warning device, comprising a temperature sensor, a carrier, and a computer device, where the temperature sensor comprises a wireless transmitter and an alarm and is installed in the carrier, which is disposed with a sensing surface thereon to sense the body surface temperature of poultry or livestock; the carrier is worn on the poultry or livestock such that the sensing surface of the temperature sensor fits the corresponding sensed portion of the body of poultry or livestock; the computer device is disposed with a wireless receiver that is compatible therewith, the computer device analyzes and determines the temperature data measured from the body of poultry or livestock chronologically to monitor temperature changes in the body of poultry or livestock and determine whether the temperature value is normal, too high or too low, and when the temperature value is persistently too low or high, the computer device gives off an alarm signal to achieve the purpose of monitoring and providing early warning of poultry and livestock influenza disease.



1. A poultry and livestock influenza disease early warning device, wherein comprises a temperature sensor, a carrier, and a computer device, in which:

the temperature sensor comprises a wireless transmitter and an alarm and is installed in the carrier, which is disposed with a sensing surface thereon to sense the body surface temperature of poultry or livestock;

the carrier is worn on the poultry or livestock such that the sensing surface of the temperature sensor fits the corresponding sensed portion of the body of poultry or livestock;

the computer device is disposed with a wireless receiver that is compatible therewith, the computer device analyzes and determines the temperature data measured from the body of poultry or livestock chronologically to monitor temperature changes in the body of poultry or livestock and determine whether the temperature value is normal, too high or too low, and when the temperature value is persistently too low or high, the computer device gives off an alarm signal.

2. The poultry and livestock influenza disease early warning device according to Claim 1, wherein the temperature sensor uses the wireless transmitter to send external wireless signals.

3. The poultry and livestock influenza disease early warning device according to Claim 1, wherein the temperature sensor uses the alarm to automatically give off alarm signals when abnormal electric signals are measured.

4. The poultry and livestock influenza disease early warning device according to Claim 1, wherein the temperature sensor automatically displays alarm signals on the computer device when abnormal electric signals are measured.

5. The poultry and livestock influenza disease early warning device according to Claim 1, wherein the carrier has a half-ring sleeve structure.

6. The poultry and livestock influenza disease early warning device according to Claim 1, wherein the carrier has a ring sleeve structure.

7. The poultry and livestock influenza disease early warning device according to Claim 1, wherein the carrier has a clip structure.

8. The poultry and livestock influenza disease early warning device according to Claim 1, wherein the carrier has a hook-and-loop fastener structure.

9. The poultry and livestock influenza disease early warning device according to Claim 4, wherein the half-ring sleeve structure encircles and binds the poultry or livestock’s head, neck, or foot.

10. The poultry and livestock influenza disease early warning device according to Claim 5, wherein the ring sleeve structure encircles and binds the poultry or livestock’s head, neck, or foot.

11. The poultry and livestock influenza disease early warning device according to Claim 6, wherein the ring sleeve structure encircles and binds the poultry or livestock’s head, neck, or foot.

12. The poultry and livestock influenza disease early warning device according to Claim 7, wherein the clip structure clamps to the ear, coronal protrusion, or wing of poultry or livestock.

Poultry and Livestock Influenza Disease Early Warning Device

Technical Field

The present disclosure relates to a poultry and livestock influenza disease early warning device, particularly relating to a temperature sensor installed in a carrier that senses the body surface temperature of poultry or livestock such that the temperature sensor is fixed on the body of poultry or livestock through the carrier, so as to correctly measure the body surface temperature thereof. The device also transmits wireless signals of temperatures sensed thereby through a wireless transmitter to a computer device, which simultaneously converts and generates control signals and automatically sends off alarm signals when the control signals are abnormal, and carries out monitoring by using wireless transmission and computer system functions.

Background Art

At present, existing methods that detect poultry and livestock influenza diseases generally use temperature transducers to measure the body temperature of poultry or livestock or test the excretion thereof; poultry and livestock temperature transducers are mainly non-invasive transducers with many designs on the market: such as photoelectric and infrared ear thermometers; thermistors that use electronic components to sense temperature by contact; chip transducers that use semiconductor components to sense temperature by contact, the above transducers are small, which make it easy to rapidly measure the temperature of poultry or livestock; with respect to testing the excretion of poultry or livestock, accurate results may be obtained by testing the excretion of poultry or livestock with drugs; the above existing general poultry disease test methods do not measure and provide early warning in real time for transmissive influenza diseases and require more manpower and time during large-scale or large-area testing or monitoring; the present utility model is an improvement of the early warning method of avian influenza diseases by testing excretion and resolves the shortcomings of additional manpower and time arising from large-scale or large-area testing in existing test methods through extensive sampling and collective data analysis, in order to provide early warning to prevent and control the spread of influenza diseases.

Summary of the Invention

The main purpose of the present disclosure is to provide a poultry and livestock influenza disease early warning device to overcome the above deficiencies.

In order to achieve the above purpose, the technical solution employed by the present disclosure provides a poultry and livestock influenza disease early warning device, particularly a temperature sensor installed in a carrier that senses the body surface temperature of poultry or livestock such that the temperature sensor is fixed on the body of poultry or livestock through the carrier, so as to correctly measure the body surface temperature thereof.

The device also transmits wireless signals of temperatures sensed thereby through a wireless transmitter to a computer device, which converts the received wireless signals into control signals and automatically sends off alarm signals when the electric signals of the temperature sensor or control signals of the computer device are abnormal, in order to provide early warning of poultry and livestock influenza diseases.

The device continuously transmits wireless signals of automatically and continuously measured body surface temperature through the wireless transmitter to the computer device, which converts the received wireless signals to control signals, in order to monitor poultry and livestock influenza diseases.

Brief Description of Drawings

Fig. 1 is a block diagram of the design functions of the present disclosure;

Fig. 2 is a perspective view of an example of the present disclosure;

Fig. 3 is a perspective view of one other example of the present disclosure;

Fig. 4 is a perspective view of another example of the present disclosure;

Fig. 5 is a perspective view of yet another example of the present disclosure.

Reference marks: 1 – early warning device; 10, 10a, 10b, 10c, 10d – carrier; 11 – sleeve; 12 – inner side; 20 – temperature sensor; 21 – sensing surface; 22 – wireless transmitter; 23 – alarm; 24 – clamping portion; 30 – computer device; 31 – wireless receiver; 40 – hook-and-loop fastener.

Specific Embodiments

Preferred examples will be hereby provided below with the following illustrations to describe in further detail the structure and technical features of the present disclosure:

With reference to Fig. 1, a block diagram of the design functions of a poultry and livestock influenza disease early warning device 1 of the present disclosure, the description is hereby provided as follows:

First, fix a carrier 10 on an appropriate position of the body of poultry or livestock, a temperature sensor 20 starts sensing and converts the measured sensed values into electrical signals, the electrical signals are transmitted through a wireless transmitter 22 to a wireless receiver 31, the wireless receiver 31 transmits the electrical signals received to a computer device 30, and the computer device 30 analyzes and determines the electrical signals received. When the temperature data measured from the body of poultry or livestock is sent to the computer device 30, the computer system automatically determines whether the temperature value is normal, too high, or too low based on a pre-set temperature value, and records and analyzes the temperature values chronologically. If the temperature value is too high, virus has invaded the body of poultry or livestock and it is a sign that the animal's immune system is fighting the virus. If the temperature value is too low, it is a sign of physiological function failure of poultry or livestock.

Thus, the computer system gives off warning signals if the temperature values of poultry or livestock are persistently too low or too high upon chronological analysis, in order to provide early warning.

With reference to Fig. 1 to Fig. 5, the poultry and livestock influenza disease early warning device 1 of the present disclosure comprises a carrier 10, a temperature sensor 20 and a computer device 30, in which the temperature sensor 20 is installed in the carrier 10 and the inner surface thereof may be disposed with a sensing surface 21 thereon such that the sensing surface 21 comes into contact with the sensed portion of the body of poultry or livestock through the carrier 10 for measurement; the early warning device 1 is used in way that allows an inner side 12 of the carrier 10 to encircle and bind an appropriate position of the body of the poultry or livestock, such that the sensing surface 21 of the temperature sensor 20 fits the sensed portion at an appropriate position of the body of poultry or livestock and the sensing surface 21 and sensed portion of the body of poultry or livestock do not easily move relative to each other, in order to avoid affecting the accuracy of measurements and resulting in invalid measurements.

The temperature sensor 20 comprises a wireless transmitter 22 and an alarm 23, in which the temperature sensor 20 is capable of transmitting wireless signals of electrical signals of sensed temperatures through the wireless transmitter 22 and sending the signals to a compatible wireless receiver 31, which is connected to a computer device 30, and the alarm automatically gives out alarm signals when electrical signals of temperatures sensed by the temperature sensor 20 are abnormal; the structural form of the temperature sensor 20 and electronic circuit design thereof, including the sensing function, sensing module, and alarm modes or wireless transmission device, etc. may be achieved with existing electronic technology, so they will not be repeated herein.

As shown in Fig. 2 to Fig. 5, contact style sensing is carried out by installing the temperature sensor 20 in the carrier 10, using the inner side 12 of the carrier 10 to encircle or clamp and fix onto an appropriate position of the body of poultry or livestock such that the sensing surface 21 of the temperature sensor 20 closely fits the sensed portion at an appropriate position of the body of poultry and livestock for measurement [not shown in the figures].

The carrier 10 may be designed with different encircling and binding or clamping methods as needed, such as a half-ring sleeve structure carrier 10a, which is disposed with an opening at an appropriate position of the sleeve 11, as shown in Fig. 2; a ring sleeve structure carrier 10b, which has a ring structure without an opening disposed on the sleeve 11, as shown in Fig. 3; an adjustable sleeve structure 10c, which is formed by a hook-and-loop fastener structure [commonly known as Velcro] at the end of the outer side of one end and the end of the inner side of the other end of the sleeve 11, as shown in Fig. 4, and is directly sleeved onto an appropriate position of the body of poultry or livestock [such as head, neck, and foot]; or a clip structure carrier 10d, which opens and closes at a clamping portion 24, as shown in Fig. 5, and directly clamps and is fixed on an appropriate position of the body of poultry and livestock [such as ear, coronal protrusion, or wing], so as to increase the user's options by providing a plurality of different structural forms.

The above are only preferred examples of the present disclosure and are illustrative and not limitative of the present disclosure; those skilled in the art will appreciate that many changes, modifications, and even equivalent transformations to the present disclosure within the spirit and scope limited by the Claims of the present disclosure still fall within the scope of protection of the present disclosure.

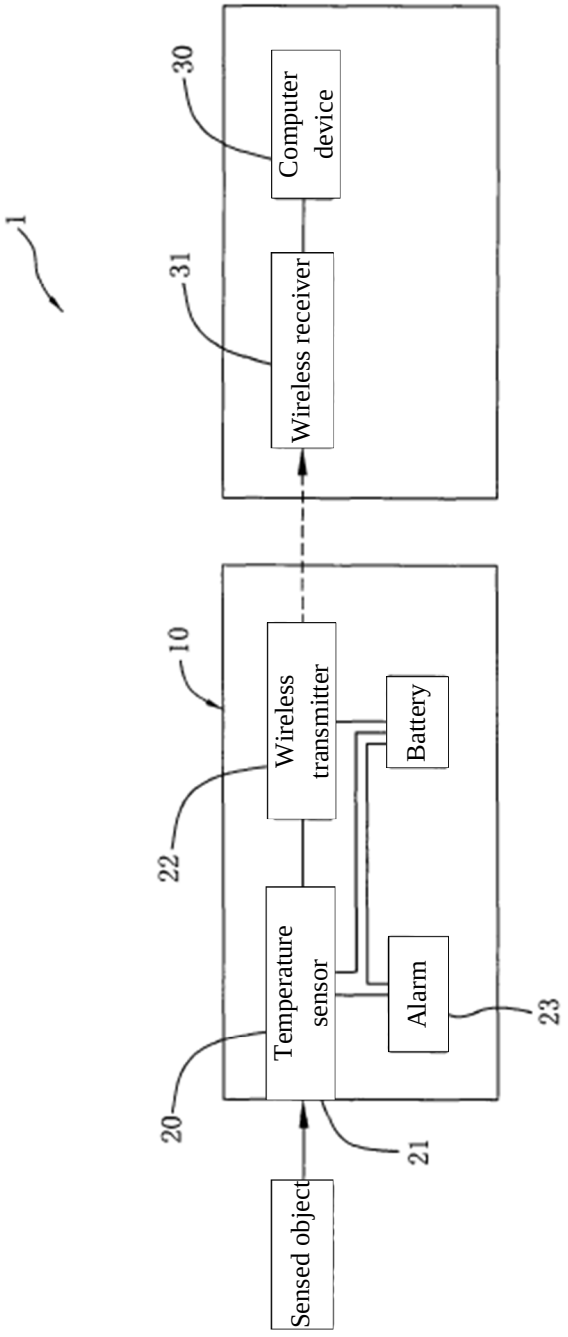

1
30
Computer device
31
Wireless receiver
10
Wireless transmitter
Battery
22
Temperature sensor
Alarm
23
20
21
Sensed object

Fig. 1

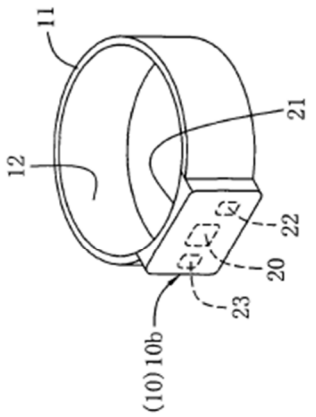


Fig. 3

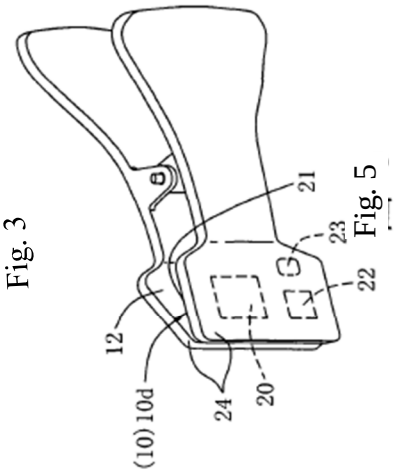


Fig. 5

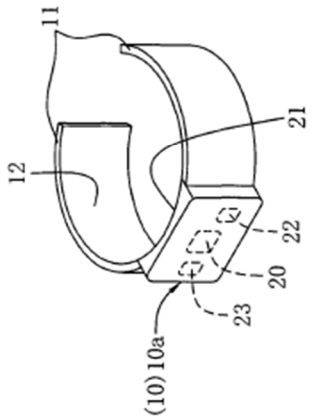


Fig. 2

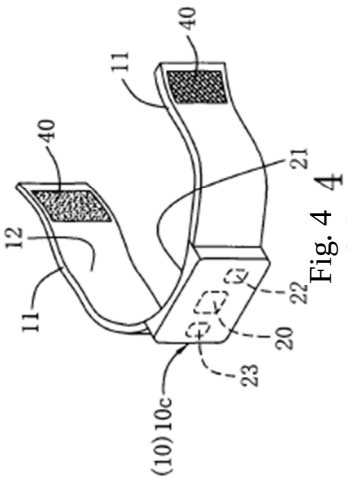


Fig. 4