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(54) **MANUAL ALARM SWITCHING DEVICE**

ALARMHANDSCHALTVORRICHTUNG

DISPOSITIF INTERRUPTEUR MANUEL D'ALARME

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Description

Technical field

[0001] The present invention relates to an alarm device and, especially, to an alarm device with a switch or other devices which can be triggered by a manual touch in an abnormal condition.

Prior art

[0002] US 4,857,678 A discloses an electrical switch with contact carrier means for sliding in a first direction, a housing for slidably supporting the carrier means, terminal means mounted on the housing, a contact mounted on the carrier means for contacting the terminal means, and a plunger mounted on and slidable with the contact carrier for moving in a second direction substantially perpendicular to the first direction to cause said contact to engage or disengage the terminal means.

[0003] EP 1 113 472 A1 discloses an electrical switch comprising two fixed contacts in a housing, a tripping member which can deform elastically in a direction perpendicular to the bottom of the housing, and an actuation pusher mounted so as to slide in a lateral direction parallel to the bottom of the housing, so as to convert the actuation force exerted on the pusher into a perpendicular tripping force.

Background art

[0004] Modern manual alarm devices have to be usable in various harsh environments. For example, in the case of a high temperature, the plastic components of a manual fire alarm device when heated tends to creep, and the direction of the creeping deformation is usually parallel with the pressing direction of the manual alarm device, and then, even if there is no positive triggering on the alarm button, the alarm device may sound an alarm spontaneously, then the phenomenon of a false alarm occurs, which seriously affects the reliability of the manual alarm devices used at high temperatures.

[0005] In the currently available manual alarm devices, for the convenience of the operators' operation by pressing an alarm device is usually provided with an open part, however, since the pressing direction of the alarm device is parallel with the triggering direction of the switch unit, dust, water and the like may easily accumulate on the working surface of the switch unit, thus affecting the reliability of the manual alarm device.

[0006] In addition, currently, when an alarm device sounds an alarm, the operating element only moves in the pressing direction after it is pressed by an operator, therefore after the operator has completed the pressing operation and left, it is hard for other people to judge the status of the alarm device merely from its appearance, which may easily cause a false operation.

Contents of the invention

[0007] The object of the present invention is to provide a manual alarm device, which can work accurately and reliably regardless of the severe environments such as high temperature, sand storms, rains and snows, etc.

[0008] In particular, the present invention intends to provide a manual alarm device, and for it to sound an alarm, the pressing direction by the operator is perpendicular to the triggering direction of the switch, thus avoiding a false alarm caused by the creeping deformation of the plastic components at a high temperature.

[0009] According to another object of the present invention, it provides in the present invention that the operating element can return to the plane which is in its state of monitoring after an operator has completed a pressing operation for sounding an alarm, so that even if in the state for sounding an alarm, the manual alarm device can also achieve good dust- and waterproof effects.

[0010] According to another object of the present invention, the present invention provides a manual alarm device, and since the pressing direction is perpendicular to the direction of triggering the switch for sounding an alarm, the movement of the switch in the triggering direction when an operator presses the alarm device can be further used to produce a distinct visual change compared with the state of monitoring to prompt the user that the alarm device has been put in the state for sounding an alarm, which further improves its reliability and safety when being used.

[0011] Accordingly, the present invention provides a manual alarm device, comprising:

a circuit board assembly with a switch unit thereon; an operating element which can be pressed along a pressing direction, including a contact member which can come into contact with said switch unit; and

a base in which said circuit board assembly and said operating element can be disposed; wherein said operating element is movable in said base in the direction perpendicular to said pressing direction, and can be pivotably disposed at the side away from the end of said contact member, and said operating member element is further provided with a locator close to and between the side away from the end of said contact member and said base corresponding thereto, so that when a pressing distance exceeds a predetermined extent, said locator can drive said operating element to move in a direction perpendicular to said pressing direction, thus bringing the contact member on the operating element to separate from or to come into contact with said switch unit.

[0012] Preferably, the manual alarm device comprises a circuit board assembly with a switch unit thereon; an

operating element which can be pressed along a pressing direction by an operator, including a contact member which can come into contact with the switch unit; and a base in which the circuit board assembly and the operating element can be disposed; the operating element further comprises a pair of lugs which are arranged on both sides of the end of the operating element away from the contact member; the base is further provided with a pair of guide rails, and the lugs are respectively disposed in each corresponding guide rail; and a locator is further disposed between the end of the operating element close to the lugs and the base corresponding thereto, so that when the operating element is pressed, the locator can drive the operating element to move in a direction perpendicular to the pressing direction, thus bringing the contact member on the operating element to separate from or to come into contact with said switch unit.

[0013] According to another particular embodiment of the manual alarm device of the present invention, the locator disposed between the end of the operating element close to the lugs and the base corresponding thereto is an elastic element with both ends respectively fixed on the lugs of the operating element and a protruded middle part bearing against a position of said base, which position is opposite to the end of said operating element close to the lugs. Alternatively, the locator can also be a spring, which spring is pressed between the end of the operating element close to the lugs and a position on said base, which position is opposite to the end of the operating element close to the lugs.

[0014] According to another particular embodiment of the manual alarm device of the present invention, it further comprises an elastic member with one end being disposed on the base and the other end being pressed against the operating element, so as to enable the operating element, after the pressing on the operating element stops, to return to the same plane as it was when not being pressed. The elastic member can also be pushed against the operating element via an end cap.

[0015] According to yet another particular embodiment of the manual alarm device of the present invention, the operating element is further provided with a transparent hole, through which said circuit board assembly can be partly displayed. Furthermore, the circuit board assembly can be provided with a color sign on the position corresponding to the transparent hole of the operating element, and after the operating element is moved under the drive of the locator, the color sign can be shown through the transparent hole; alternatively, the circuit board assembly can be covered by a circuit board assembly cover, a color sign is disposed on the surface of the circuit board assembly cover towards the operating element, and after the operating element has moved under the drive of the locator, the color sign can be shown through the transparent hole.

[0016] According to yet another particular embodiment of the manual alarm device of the present invention, the manual alarm device further comprises an upper cover

which is disposed together with the base, and a window is provided in the middle of the upper cover for the operating element to be pressed. Alternatively, after the operating element is moved under the drive of the locator, the color sign on the circuit board assembly or the circuit board assembly cover can be shown by the window in the middle of the upper cover through the transparent hole on the operating element.

[0017] In the currently available manual alarm devices, when the operating element is pressed to trigger the switch unit, the action direction of the operating element is parallel with the triggering direction of the switch unit, and the creeping direction of the operating element at a high temperature is often parallel with the action direction of the operating element too, therefore if the creeping direction is the same as the triggering direction of the switch unit, a false alarm may occur. In the manual alarm devices provided in the present invention, since the triggering direction of the switch unit is perpendicular to the creeping direction of the operating element, i.e. the creeping of the operating element cannot cause the switch element's position to change in the triggering direction, thus avoiding a false alarm.

[0018] In addition, in the manual alarm devices of the present invention, the operating element is in the same plane before and after sounding an alarm by means of the action of the elastic member, therefore it can effectively prevent water and dust from entering the manual alarm device.

[0019] At the same time, after the operating element has been pressed, when the locator pushes the operating element to move along the guide rails on the base, by which the color sign disposed on the circuit board assembly or the circuit board assembly cover can be shown through the transparent hole on the operating element, thus it is easily recognizable that the manual alarm device has been in the state for sounding an alarm.

Brief description of the accompanying drawings

[0020] The following drawings are only intended to give an illustrative description and explanation of the present invention and are not to limit the scope of the present invention. In these drawings,

Fig. 1 is a perspective exploded view of a particular embodiment of a manual alarm device;

Fig. 2 is a cross-sectional view of the manual alarm device shown in Fig. 1 in a state of monitoring;

Fig. 3 is a perspective exploded view of another particular embodiment of a manual alarm device; and

Figs. 4 to 6 are used for illustrating the moving process of the operating element when the manual alarm device enters the state for sounding an alarm from the state of monitoring.

Description of symbols:

[0021]

10	base
11	side wall
12	guide rail
14	elastic member
16	end cap
18	clip-hook
20	circuit board assembly
24	switch unit
30	circuit board assembly cover
32	color sign
40	operating element
42	transparent hole
44	lug
46	contact member
48	end of the operating element
50	locator
52	clamping part
60	upper cover
62	window

Exemplary embodiments

[0022] For the sake of understanding the technical features, objects and effects of the present invention more clearly, the particular embodiments of the present invention are described now with reference to the accompanying drawings, in which the same numerals in the figures represent the parts with the same or similar structures and the same functions.

[0023] In order to make the figures more simple to understand, only parts related to the present invention are illustratively shown in each figure, and they are not representative of the actual structures of a product. In addition, in order to make the figures more simple and easy to understand, only one of the components with the same structures or functions is illustratively depicted or marked in some figures.

[0024] Herein, the word "a" includes the cases of "only one" and "more than one".

[0025] Fig. 1 is an exploded illustrative view of the structure of a manual alarm device of the present invention, which comprises a base 10, a circuit board assembly 20 and an operating element 40. As shown in Fig. 1, the base 10 has two opposite side walls 11, and guide rails 12 (only one is shown in Fig. 1) corresponding to each other which are respectively disposed in the two opposite side walls 11.

[0026] A circuit board assembly 20 is disposed in the base 10, and in the particular embodiment shown in Fig. 1, two switch units 24 (only one switch unit 24 is illustratively shown in the figure) are disposed on the circuit board assembly 20; however, those skilled in the art would understand that the positions of the switch units can be disposed on the side of the circuit board assembly

20 facing the base 10, or on the other side facing away from the base 10, or on the two different sides of the circuit board assembly 20 respectively according to different situations. Likewise, although Fig. 1 indicates the case that two switch units 24 are used, those skilled in the art would understand that the number of switch units 24 can also be only one or more than two according to the particular structural design and the state of use.

[0027] An operating element 40 is disposed on the circuit board assembly 20, and in the particular embodiment shown in Fig. 1, two contact members 46 (only one contact member 46 is illustratively shown in the figure) are disposed on the operating element 40, and the contact members 46 can come into contact with or separate from the switch units 24 in the triggering direction shown in the figure. For example, when the manual alarm device is in a state of monitoring, the contact members 46 are in contact with the switch units 24; and when the manual alarm device is in the state for sounding an alarm, the contact members 46 are separated from the switch units 24. A pair of lugs 44 (only one lug at one side is depicted in Fig. 1) are further disposed at the two sides of the end 48 of the operating element 40 away from the contact members 46, the lugs 44 are respectively disposed in the guide rails 12, and the lugs 44 can be moved in the guide rails 12 when the manual alarm device transforms from a state of monitoring to the state for sounding an alarm.

[0028] A locator 50 is disposed between the end 48 of the operating element 40 and the side wall of the base 10 opposite to it. The locator 50 is made from an elastic material, and during the process, the manual alarm device transforms from the state of monitoring to the state for sounding an alarm, the elastic restoring force of the locator 50 can push the operating element 40 to move in the triggering direction as shown in the figure. In the particular embodiment shown in the figure, the locator 50 is an elastic element, and it is conceivable by those skilled in the art that the locator 50 can use a spring compressed between the end 48 and the respective position in the base corresponding thereto.

[0029] Fig. 2 is a cross-sectional view of the manual alarm device shown in Fig. 1 after it has been assembled, and in the state of monitoring as shown in Fig. 2, the contact members 46 on the operating element 40 are in contact with the switch units 24 on the circuit board assembly 20, the locator 50 is connected between one end of the operating element 40 and one side wall of the base 10, a clip-hook 18 is disposed on the base 10, with the clip-hook 18 clipping the operating element 40 at the end close to the contact members 46, so as to prevent the operating element 40 from sliding at this moment under the effect of the elastic force of the locator 50 in the triggering direction shown in Fig. 2. Of course those skilled in the art would understand that other structures with the same function can also be employed to restrict the position of the operating element 40 in the state of monitoring. The lugs 44 of the operating element 40 are provided in

the guide rails 12 of the base 10.

[0030] Fig. 3 illustrates a perspective exploded view of another particular embodiment of the manual alarm device in the present invention, and the parts in this figure with the same or similar structures and the same functions as those in Fig. 1 will not be explained redundantly.

[0031] In the particular embodiment shown in Fig. 3, the locator 50 is an elastic element with two ends each having a clamping part 52 (only one of them is shown in Fig. 3), the clamping parts 52 can be provided on the lugs 44 of the operating element 40, and the protruded middle part of the elastic element bears against the position on the base 10 opposing the end 48, thus realizing the pushing of the operating element 40 along the triggering direction.

[0032] In the particular embodiment shown in Fig. 3, two elastic members 14 are disposed on the base 10 with one end of the elastic member 14 connected to the bottom face of the base 10 and the other end supporting the operating element 40, and when the operating element 40 is pressed, the elastic force of the elastic members 14 can make the operating element 40 return to the plane as it was previously.

[0033] The elastic members 14 can not only support the operating element 40 directly, as shown in Fig. 3, but also enter into end caps 16 first and then be connected with the operating element 40 via the end caps 16.

[0034] Although two elastic members 14 are disposed on the base 10 in Fig. 3, those skilled in the art would understand that the elastic members 14 can also be only one or more than two according to the particular structural design and the state of use. Likewise, the elastic members 14 can use not only the springs as shown in Fig. 3, but also the elastic members with other structures but with the same function.

[0035] In the particular embodiment shown in Fig. 3, the circuit board assembly 20 is covered by a circuit board assembly cover 30.

[0036] A transparent hole 42 is disposed in the middle of the operating element 40, and the circuit board assembly cover 30 can be observed through the transparent hole 42. Of course, in the case of not being able to fit a circuit board assembly cover, the condition of the circuit board assembly 20 can be directly observed through the transparent hole 42.

[0037] To make it easy for users to observe, in the embodiment shown in Fig. 3, an apparent color sign 32 can be carried on the circuit board assembly cover 30, so that when the manual alarm device is in the state for sounding an alarm, the color sign 32 can be shown through the transparent hole 42 on the operating element 40, and when the manual alarm device is in the state of monitoring, the color sign 32 is not shown through the transparent hole 42. Generally speaking, the color of the color sign 32 should be clearly distinguished from the circuit board assembly cover 30, so as to allow a user to distinguish the state of monitoring and the state for sounding an alarm of the manual alarm device from the colors.

[0038] Of course those skilled in the art would understand that in an implementation where no circuit board assembly cover 30 is provided, the color sign can also be disposed directly on the circuit board assembly 20, and a user can likewise observe the color change through the transparent hole 42.

[0039] The manual alarm device can also include an upper cover 60, which upper cover 60 can be connected together with the base 10, and the circuit board assembly 20, the circuit board assembly cover 30 and the operating element 40, etc. of the manual alarm device are provided in the space defined by the upper cover 60 and the base 10. A window 62 is disposed in the middle of the upper cover 60 for the operating element to be pressed, and from the window 62 the alarming and state of monitoring shown by the transparent hole 42 on the operating element 40 can be observed. The user can look through the transparent hole 42 and the window 62, and when the color sign 32 is seen, it indicates that the manual alarm device is in the state for sounding an alarm.

[0040] Now the working process of the manual alarm device of the present invention is described in conjunction with Figs. 4 to 6.

[0041] Fig. 4 shows a schematic diagram of the manual alarm device in the state of monitoring, and at this moment, the contact members 46 on the operating element 40 are in contact with the switch units 24 on the circuit board assembly. When it needs to sound an alarm, an operator presses the operating element 40 along the pressing direction as shown in Fig. 4, and at this moment, the operating element 40 pivots about the lugs 44 to the position shown in Fig. 5.

[0042] As shown in Fig. 5, by pressing an operator, the operating element 40 is separated from the clip-hook 18 (referring to Fig. 2) on the base 10, the operating element 40 is free from the constraint of the clip-hook 18, the operating element 40 pivots about the lugs 44 towards the base 10, then the elastic members 14 on the base 10 are suppressed, and the operating element 40 slides under the effect of the elastic force of the locator 50 (referring to Fig. 2) along the triggering direction as shown in Fig. 5.

[0043] At this moment, the contact members 46 on the operating element 40 start to separate from the switch units 24, and at the instant when the contact members 46 separate completely from the switch units 24, the manual alarm device produces an alarm signal. Finally as shown in Fig. 6, the lugs 44 of the operating element 40 move along the guide rails 12. At the same time as the press action by the operator ends, the operating element 40 pivots under the elastic restoring force action of the elastic members 14 about the lugs 44 back towards the base 10 into the same plane as the operating element 40 stays in the state of monitoring (i.e., into the same plane as shown in Fig. 4), and the manual alarm device finishes the transition from the state of monitoring to the state for sounding alarm.

[0044] In conjunction with a particular embodiment of

the manual alarm device as shown in Fig. 3, when the operating element 40 is in the state for sounding an alarm, the transparent hole 42 on the operating element 40 just moves to the top of the color sign 32 of the circuit board assembly cover 30, and at this moment, the user can observe the color sign 32 on the circuit board assembly cover 30 through the window 62 on the upper cover 60 and the transparent hole 42, thus confirming that the manual alarm device has been in the state for sounding an alarm.

[0045] Referring back to Fig. 4, the switch units 24 are in contact with the contact members 46 in the state of monitoring; after the operating element 40 is pressed, referring to Fig. 6, the switch units 24 separate from the contact members 46, and the manual alarm device sounds an alarm. Those skilled in the art can also employ another design scheme, that is, the switch units are separated from the contact members in the state of monitoring, and after the operating element is pressed, the switch units are in contact with the contact members 46, and the manual alarm device sounds an alarm

[0046] In an environment at a relatively high temperature, the operating element is likely to creep, and the creeping direction is usually parallel with the pressing direction of the operating element. In the manual alarm device of the present invention, upon sounding an alarm, the pressing direction of the operating element is perpendicular to the triggering direction of the switch unit, therefore even if there is a creeping deformation in the pressing direction of the operating element, it will not cause the switch unit to be displaced in the triggering direction, thus effectively avoiding a false alarm of the manual alarm device from occurring at a high temperature.

[0047] In addition, during the process from the state of monitoring to the state for sounding an alarm, the operating element not only pivots about the lugs, but also produces a movement, and after the operating element finishes the alarming action, it can return to the same plane as it was when in the state of monitoring, which enables the manual alarm device of the present invention to have good dust- and waterproof characteristics.

[0048] Since the color sign, the transparent hole and the window are respectively provided on the circuit board assembly cover, the operating element and the upper cover of the manual alarm device of the present invention, when the manual alarm device is in the state for sounding an alarm, the color sign, the transparent hole and the window can be superposed one on top of another, which is advantageous for users to determine what state the manual alarm device is in.

[0049] Described above are merely the illustrative particular embodiments of the present invention, which are not intended to limit the scope of the present invention. Any equivalent change, modification and combination made by those skilled in the art within the concept and principle of the present invention shall belong to the protective scope of the present invention.

Claims

1. A manual alarm device, comprising:

- 5 a circuit board assembly (20) with a switch unit (24) thereon;
an operating element (40) pressable along a pressing direction, including a contact member (46) which can come into contact with said switch unit (24); and
10 a base (10) in which said circuit board assembly (20) and said operating element (40) can be disposed;
wherein
15 said operating element (40) is movable in said base (10) in the direction perpendicular to said pressing direction, and is pivotably disposed at the side away from the end of said contact member (46), and
20 said operating element (40) is further provided with a locator (50) close to and between the side away from the end of said contact member (46) and said base corresponding thereto, so that when a pressing distance exceeds a predetermined extent, said locator (50) can drive said operating element (40) to move in a direction perpendicular to said pressing direction, thus bringing the contact member (46) on the operating element (40) to separate from or to come into contact with said switch unit (24).
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2. The manual alarm device as claimed in claim 1, wherein said operating element (40) further comprises a pair of lugs (44) which are arranged on both sides of the end of said operating element (40) away from its contact member (46).
3. The manual alarm device as claimed in claim 1, wherein said base (10) is further provided with a pair of guide rails (12), and said lugs (44) are respectively disposed movably in one corresponding guide rail (12).
4. The manual alarm device as claimed in claim 2, wherein said locator (50) is an elastic element with two ends thereof fixed respectively on said lugs (44) and a protruded middle part thereof bearing against a position on said base (10), the position being opposite to the end of said operating element (40) close to its lugs (44).
5. The manual alarm device as claimed in claim 2, wherein said locator (50) is a spring, which spring is pressed between the end of said operating element (40) close to the lugs (44) and a position on said base (10), and which position is opposite to the end of said operating element (40) close to the lugs (44).

6. The manual alarm device as claimed in claim 1, wherein it further comprises an elastic member (14) with one end thereof being disposed on said base (10) and the other end thereof being pressed against said operating element (40), so as to enable said operating element (40), after the pressing on said operating element (40) has stopped, to return to the same plane as it was in before being pressed. 5
7. The manual alarm device as claimed in claim 6, wherein said elastic member (14) is pressed against said operating element (40) via an end cap. 10
8. The manual alarm device as claimed in claim 1, wherein said operating element (40) is provided with a transparent hole (42) through which said circuit board assembly (20) can be partly shown. 15
9. The manual alarm device as claimed in claim 8, wherein said circuit board assembly (20) is provided with a color sign (32) on the position corresponding to the transparent hole (42) of said operating element (40), and after said operating element (40) has moved under the drive of said locator (50), said color sign (32) can be shown through said transparent hole (42). 20 25
10. The manual alarm device as claimed in claim 8, wherein said circuit board assembly (20) is covered by a circuit board assembly cover (30), a color sign (32) is disposed on the surface of the circuit board assembly cover (30) towards said operating element (40), and after said operating element (40) has moved under the drive of said locator (50), said color sign (32) can be shown through said transparent hole (42). 30 35
11. The manual alarm device as claimed in one of claims 1 to 8, wherein the manual alarm device further comprises an upper cover (60), the upper cover (60) is disposed together with said base (10), and a window (62) is provided in the middle of said upper cover (60) for said operating element (40) to be pressed. 40
12. The manual alarm device as claimed in claim 9 or 10, wherein the manual alarm device further comprises an upper cover (60), the upper cover (60) is disposed together with said base (10), a window (62) is provided in the middle of said upper cover (60) for the operating element (40) to be pressed, and after said operating element (40) has moved under the drive of said locator (50), said window (62) can show said color sign (32). 45 50

Patentansprüche

1. Notrufschalter, aufweisend:

eine Leiterplatten-Baugruppe (20) mit einer Schalteinheit (24) darauf;
 ein Bedienelement (40), welches entlang einer Drückrichtung gedrückt werden kann und ein Kontaktelement (46) umfasst, welches mit der Schalteinheit (24) in Kontakt kommen kann; und eine Basis (10), in welcher die Leiterplatten-Baugruppe (20) und das Bedienelement (40) angeordnet sein können;
 wobei
 das Bedienelement (40) in der Basis (10) in der Richtung senkrecht zu der Drückrichtung bewegbar ist und drehgelenkig an der vom Ende des Kontaktelements (46) entfernten Seite angeordnet ist und
 das Bedienelement (40) ferner mit einem Positionierelement (50) in der Nähe der und zwischen der vom Ende des Kontaktelements (46) entfernten Seite und der entsprechenden Basis dazu versehen ist, so dass, wenn eine Drückdistanz ein vorgegebenes Ausmaß übersteigt, das Positionierelement (50) das Bedienelement (40) dazu treiben kann, sich in eine Richtung senkrecht zu der Drückrichtung zu bewegen, wodurch es das Kontaktelement (46) auf dem Bedienelement (40) dazu bringt, sich von der Schalteinheit (24) zu trennen oder mit dieser in Kontakt zu kommen.

2. Notrufschalter nach Anspruch 1, wobei das Bedienelement (40) ferner ein Paar Ansätze (44) aufweist, welche auf beiden Seiten des Endes des Bedienelements (40) angeordnet sind, das von dessen Kontaktelement (46) entfernt ist.
3. Notrufschalter nach Anspruch 1, wobei die Basis (10) ferner mit einem Paar Führungsschienen (12) versehen ist und die Ansätze (44) jeweils bewegbar in einer entsprechenden Führungsschiene (12) angeordnet sind.
4. Notrufschalter nach Anspruch 2, wobei das Positionierelement (50) ein elastisches Element ist, wobei zwei Enden desselben entsprechend an den Ansätzen (44) befestigt sind und ein vorstehendes Mittelteil desselben gegen eine Position auf der Basis (10) anliegt, wobei sich die Position gegenüber dem Ende des Bedienelements (40) in der Nähe von dessen Ansätzen (44) befindet.
5. Notrufschalter nach Anspruch 2, wobei das Positionierelement (50) eine Feder ist, welche zwischen das Ende des Bedienelements (40) in der Nähe der Ansätze (44) und eine Position auf der Basis (10) gedrückt ist, wobei sich die Position gegenüber dem Ende des Bedienelements (40) in der Nähe von dessen Ansätzen (44) befindet.

6. Notrufschalter nach Anspruch 1, welche ferner ein elastisches Element (14) aufweist, wobei ein Ende desselben auf der Basis (10) angeordnet ist und das andere Ende desselben gegen das Bedienelement (40) gedrückt ist, um zu ermöglichen, dass das Bedienelement (40), nachdem das Drücken auf das Bedienelement (40) beendet ist, in dieselbe Ebene zurückkehrt, in der es war, bevor es gedrückt wurde. 5
7. Notrufschalter nach Anspruch 6, wobei das elastische Element (14) über eine Abschlusskappe gegen das Bedienelement (40) gedrückt ist. 10
8. Notrufschalter nach Anspruch 1, wobei das Bedienelement (40) mit einer transparenten Öffnung (42) versehen ist, durch welche die Leiterplatten-Baugruppe (20) teilweise gezeigt werden kann. 15
9. Notrufschalter nach Anspruch 8, wobei die Leiterplatten-Baugruppe (20) an der Position, welche der transparenten Öffnung (42) des Bedienelements (40) entspricht, mit einem Farbzeichen (32) versehen ist, und nachdem sich das Bedienelement (40) unter dem Antrieb des Positionierelements (50) bewegt hat, das Farbzeichen (32) durch die transparente Öffnung (42) gezeigt werden kann. 20 25
10. Notrufschalter nach Anspruch 8, wobei die Leiterplatten-Baugruppe (20) von einer Leiterplatten-Baugruppen-Abdeckung (30) abgedeckt ist, ein Farbzeichen (32) auf der Oberfläche der Leiterplatten-Baugruppen-Abdeckung (30) dem Bedienelement (40) zugewandt angeordnet ist, und nachdem sich das Bedienelement (40) unter dem Antrieb des Positionierelements (50) bewegt hat, das Farbzeichen (32) durch die transparente Öffnung (42) gezeigt werden kann. 30 35
11. Notrufschalter nach einem der Ansprüche 1 bis 8, wobei der Notrufschalter ferner eine obere Abdeckung (60) aufweist, die obere Abdeckung (60) zusammen mit der Basis (10) angeordnet ist und in der Mitte der oberen Abdeckung (60) ein Fenster (62) zum Drücken des Bedienelements (40) bereitgestellt ist. 40 45
12. Notrufschalter nach Anspruch 9 oder 10, wobei der Notrufschalter ferner eine obere Abdeckung (60) aufweist, die obere Abdeckung (60) zusammen mit der Basis (10) angeordnet ist, in der Mitte der oberen Abdeckung (60) ein Fenster (62) zum Drücken des Bedienelements (40) bereitgestellt ist und, nachdem sich das Bedienelement (40) unter dem Antrieb des Positionierelements (50) bewegt hat, durch das Fenster (62) das Farbzeichen (32) gezeigt werden kann. 50 55

Revendications

1. Dispositif d'alarme manuel, comprenant :

- un ensemble carte de circuit imprimé (20) avec une unité de commutation (24) sur celui-ci ;
- un élément d'actionnement (40) pouvant être pressé le long d'une direction de pression, comprenant un élément de contact (46) qui peut venir en contact avec ladite unité de commutation (24) ; et
- une base (10) dans laquelle ledit ensemble carte de circuit imprimé (20) et ledit élément d'actionnement (40) peuvent être disposés ;

dans lequel

ledit élément d'actionnement (40) est mobile dans ladite base (10) dans la direction perpendiculaire à ladite direction de pression, et est monté pivotant sur le côté opposé à l'extrémité dudit élément de contact (46) ; et ledit élément d'actionnement (40) est en outre muni d'un organe de positionnement (50) à proximité de et entre le côté opposé à l'extrémité dudit élément de contact (46) et ladite base correspondant à celui-ci, de telle sorte que lorsqu'une distance de pression est supérieure à une étendue prédéterminée, ledit organe de positionnement (50) peut entraîner ledit élément d'actionnement (40) afin qu'il se déplace dans une direction perpendiculaire à ladite direction de pression, amenant ainsi l'élément de contact (46) sur l'élément d'actionnement (40) à se séparer de ou à entrer en contact avec ladite unité de commutation (24).

2. Dispositif d'alarme manuel selon la revendication 1, dans lequel ledit élément d'actionnement (40) comprend en outre une paire de pattes (44) qui sont disposées des deux côtés de l'extrémité dudit élément d'actionnement (40) opposée à son élément de contact (46). 35
3. Dispositif d'alarme manuel selon la revendication 1, dans lequel ladite base (10) est en outre munie d'une paire de rails de guidage (12), et lesdites pattes (44) sont disposées respectivement de façon mobile dans un rail de guidage correspondant (12). 45
4. Dispositif d'alarme manuel selon la revendication 2, dans lequel ledit organe de positionnement (50) est un élément élastique dont les deux extrémités sont fixées respectivement sur lesdites pattes (44) et une partie centrale en saillie de celui-ci vient en appui contre une position sur ladite base (10), la position étant opposée à l'extrémité dudit élément d'actionnement (40) à proximité de ses pattes (44). 50
5. Dispositif d'alarme manuel selon la revendication 2, dans lequel ledit organe de positionnement (50) est 55

un ressort, lequel ressort est comprimé entre l'extrémité dudit élément d'actionnement (40) à proximité des pattes (44) et une position sur ladite base (10), et laquelle position est opposée à l'extrémité dudit élément d'actionnement (40) à proximité des pattes (44).

6. Dispositif d'alarme manuel selon la revendication 1, **caractérisé en ce qu'il** comprend en outre un élément élastique (14) dont une extrémité est disposée sur ladite base (10) et l'autre extrémité est appuyée contre ledit élément d'actionnement (40), de manière à permettre audit élément d'actionnement (40), une fois que la pression sur ledit élément d'actionnement (40) a cessé, de revenir sur le même plan que celui dans lequel il était avant d'être pressé. 5 10 15
7. Dispositif d'alarme manuel selon la revendication 6, dans lequel ledit élément élastique (14) est pressé contre ledit élément d'actionnement (40) par l'intermédiaire d'un capuchon d'extrémité. 20
8. Dispositif d'alarme manuel selon la revendication 1, dans lequel ledit élément d'actionnement (40) est pourvu d'un trou transparent (42) à travers lequel ledit ensemble carte de circuit imprimé (20) peut être partiellement vu. 25
9. Dispositif d'alarme manuel selon la revendication 8, dans lequel ledit ensemble carte de circuit imprimé (20) est muni d'une marque de couleur (32) sur la position correspondant au trou transparent (42) dudit élément d'actionnement (40), et une fois que ledit élément d'actionnement (40) a été déplacé sous l'entraînement dudit organe de positionnement (50), ladite marque de couleur (32) peut être vue à travers ledit trou transparent (42). 30 35
10. Dispositif manuel d'alarme selon la revendication 8, dans lequel ledit ensemble carte de circuit imprimé (20) est recouvert par un couvercle d'ensemble carte de circuit imprimé (30), une marque de couleur (32) est disposée sur la surface du couvercle d'ensemble carte de circuit imprimé (30) vers ledit élément d'actionnement (40), et une fois que ledit élément d'actionnement (40) a été déplacé sous l'entraînement dudit organe de positionnement (50), ladite marque de couleur (32) peut être vue à travers ledit trou transparent (42). 40 45 50
11. Dispositif d'alarme manuel selon l'une des revendications 1 à 8, dans lequel le dispositif d'alarme manuel comprend en outre un couvercle supérieur (60), le couvercle supérieur (60) est disposé conjointement avec ladite base (10), et une fenêtre (62) est ménagée au milieu dudit couvercle supérieur (60) afin que ledit élément d'actionnement (40) puisse être pressé. 55

12. Dispositif d'alarme manuel selon la revendication 9 ou 10, dans lequel le dispositif d'alarme manuel comprend en outre un couvercle supérieur (60), le couvercle supérieur (60) est disposé conjointement avec ladite base (10), une fenêtre (62) est ménagée au milieu dudit couvercle supérieur (60) afin que l'élément d'actionnement (40) puisse être pressé, et une fois que ledit élément d'actionnement (40) a été déplacé sous l'entraînement dudit organe de positionnement (50), ladite fenêtre (62) peut montrer ladite marque de couleur (32).

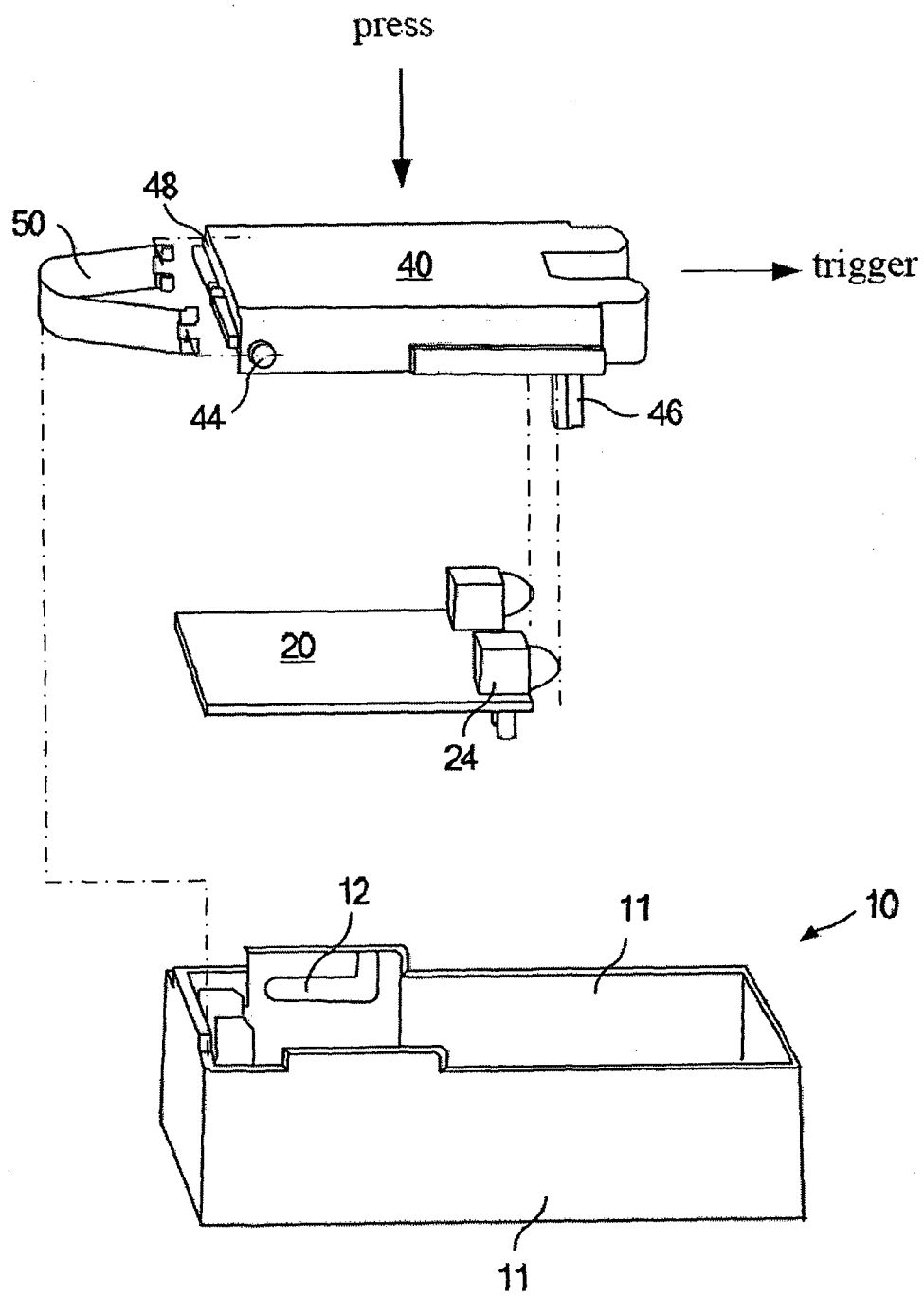


Fig. 1

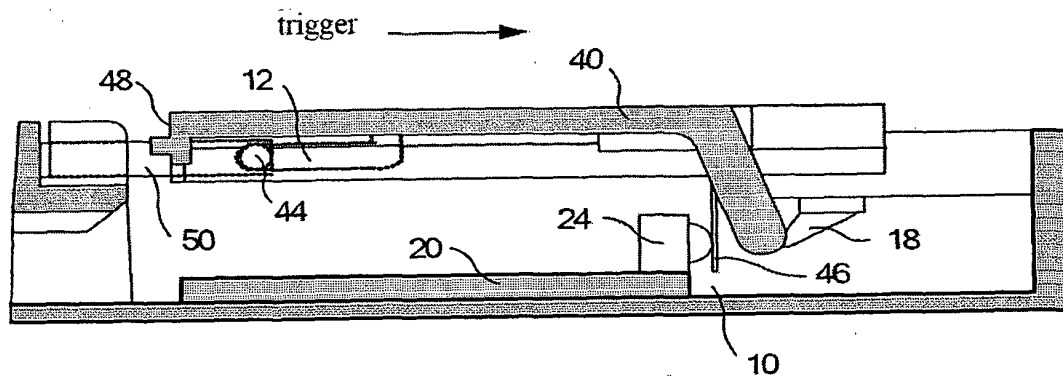


Fig. 2

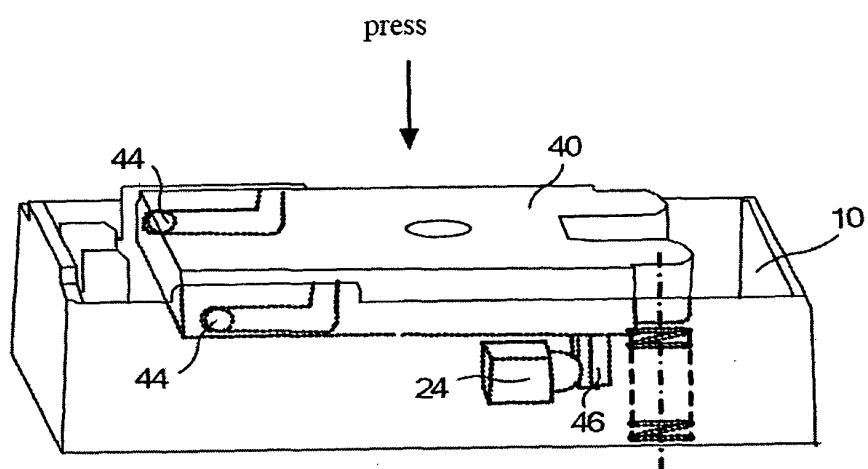


Fig. 4

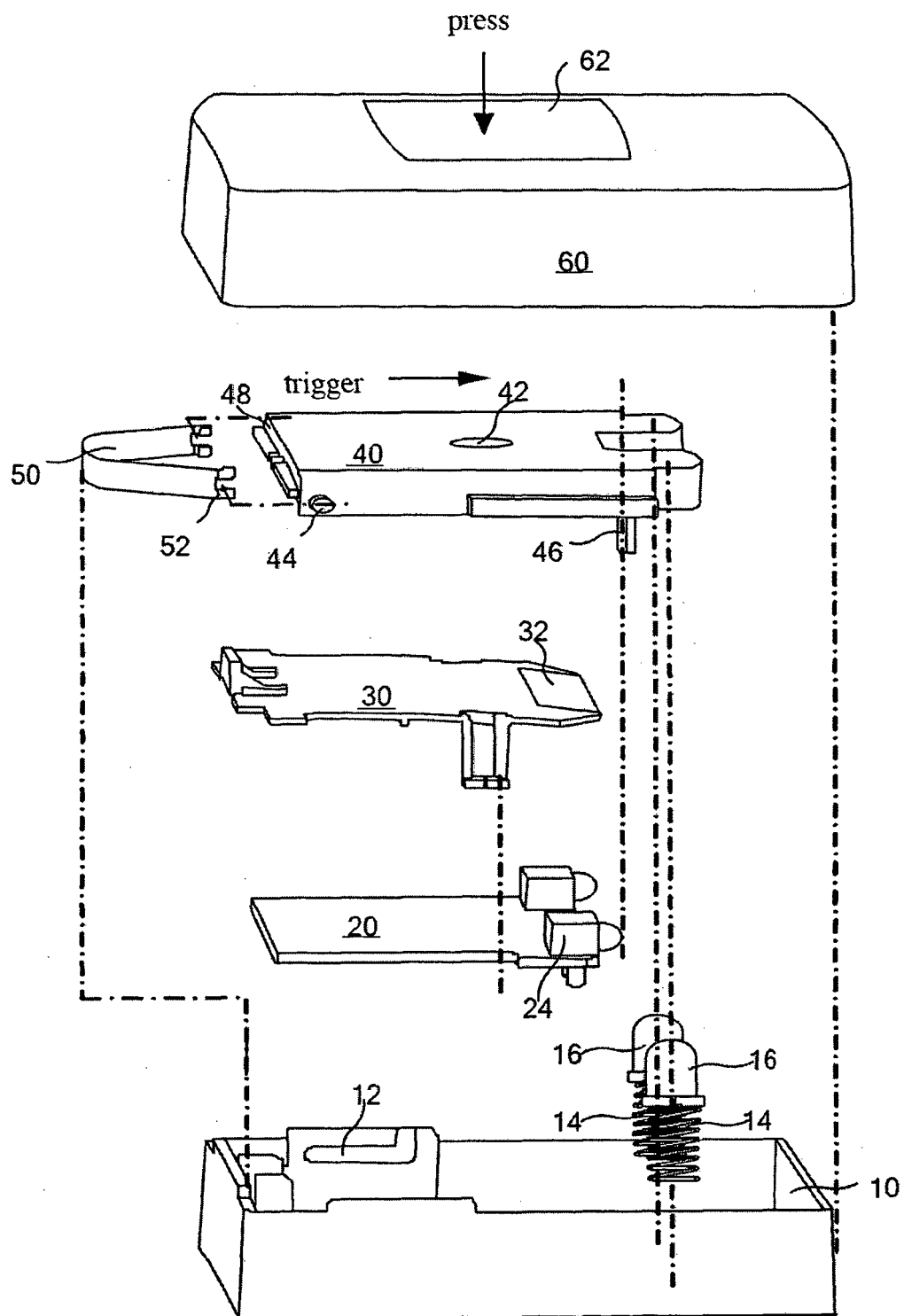


Fig. 3

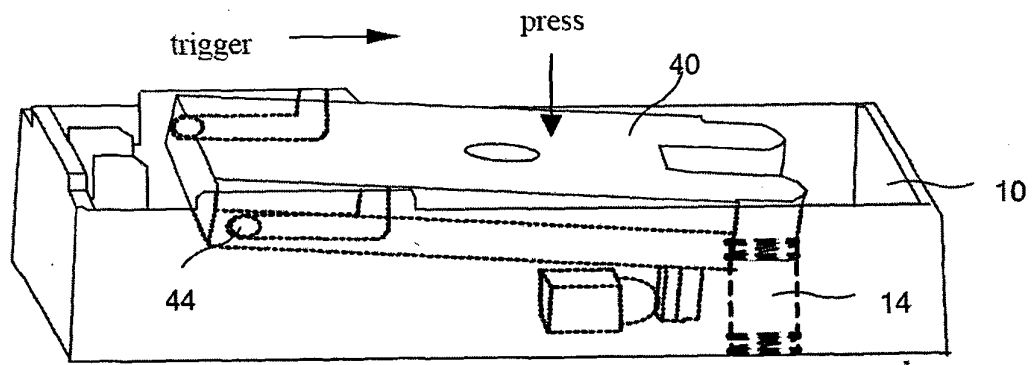


Fig. 5

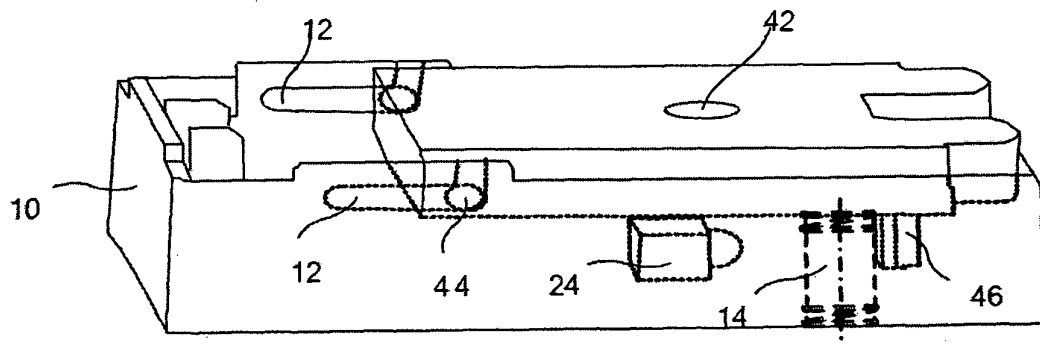


Fig. 6

REFERENCES CITED IN THE DESCRIPTION

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