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(54) **THE WORK CLOTHES WITH THE FLASHING MEANS**

(57) A working garment with positive flickering devices in which a front, a rear and two lateral sides of the working garment are arranged with multiple positive flickering devices disposed on the reflecting strips for providing identification effect in all directions. By means of depressing an external button switch, the circuit of the positive flickering device is closed, enabling a power supply to supply power therefore, an oscillator or a pulse generator sending out periodic flickering signals. A current-limiting device serves to prevent great current from passing the circuit and protect a driver. The driver serves to amplify and drive current to make the multiple positive flickering devices flicker. By means of the widened projecting angle and enlarged projecting area of the combined body, the projecting range is enlarged and the illumination is enhanced, whereby the warning effect can reach a long distance.

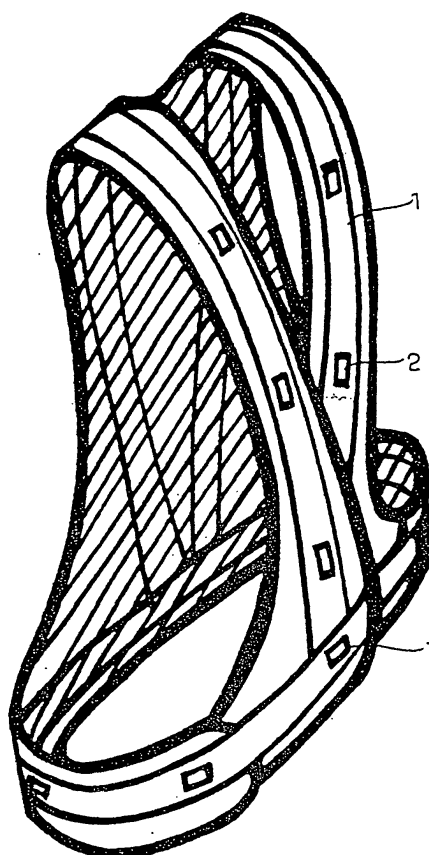


FIG.3

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Description**BACKGROUND OF THE INVENTION**

[0001] The present invention relates to a working garment with positive flickering devices in which a front, a rear and two lateral sides of the working garment are arranged with multiple positive flickering devices disposed on the reflecting strips for providing identification effect in all directions. By means of the widened projecting angle and enlarged projecting area of the light emitting diode and light reflecting members, the projecting range is enlarged and the illumination is enhanced, whereby the warning effect can reach a long distance to ensure the safety of the worker.

[0002] Fig. 1 shows a conventional safety working garment 1' disposed with reflecting strips 11' for showing the position of the worker at night. However, such reflecting strip 11' can be only identified in short distance. Therefore, when driving at night, a driver can hardly identify the worker in long distance and avoid the worker in time. This often leads to serious accident. Fig. 2 shows another working garments 2' which is disposed with light emitting diodes 21' and reflecting strips 11' to emit flickering light by wider angle so as to warn the driver. However, the light emitting diodes have insufficient illumination and small projecting area, so that the driver can only see and brake to avoid the worker in short distance. Therefore, the safety of the worker cannot be ensured.

SUMMARY OF THE INVENTION

[0003] It is therefore a primary object of the present invention to provide a working garment with positive flickering devices in which the light emitting diode directly projects light onto the light reflecting members to reflect the light, whereby the projecting angle is widened and the projecting area is enlarged projecting area and the illumination is enhanced to achieve a warning effect in a long distance.

[0004] It is a further object of the present invention to provide the above working garment in which a front, a rear and two lateral sides of the working garment are arranged with multiple positive flickering devices disposed on the reflecting strips for providing identification effect in all directions.

[0005] It is still a further object of the present invention to provide the above working garment in which the positive flickering device has small volume and can be easily disposed on the garment.

[0006] The present invention can be best understood through the following description and accompanying drawings, wherein:

BRIEF DESCRIPTION OF THE DRAWINGS**[0007]**

Fig. 1 is a front view of a conventional safety working garment;

Fig. 2 is a front view of another conventional safety working garment;

Fig. 3 is a perspective view of the present invention;

Fig.4 is a front view of the present invention;

Fig.5 is a rear view of the present invention;

Fig.6 is a circuit diagram of an embodiment of the present invention, including an oscillator and a pulse generator;

Fig. 7 is a perspective exploded view of the positive flickering device of the present invention;

Fig.8 shows the light reflection of the positive flickering device of the present invention; and

Fig.9 is a sectional view according to Fig. 8.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0008] Please refer to Fig. 3. the working garment 1 of the present invention is disposed with multiple positive flickering devices 2 arranged along the reflecting strips on front, rear and two lateral sides of the working garment 1. Each positive flickering device 2 has flat pattern minimized structure and can be easily disposed on the working garment to indicate the worker in all directions.

Referring to Figs.4 and 5, multiple positive flickering devices 2 are arranged along the reflecting strips of the left and right shoulder straps and the lower waist strap of the working garment 1. Also, on back side, multiple positive flickering devices 2 are arranged along the reflecting strips of the shoulder straps and the waist strap. Fig. 4 shows that the working garment can be put on or taken off via a fastening belt.

[0009] Fig. 5 shows the circuit diagram of the working garment 1. The circuit is composed of a button switch 3a, an oscillator 4, a current-limiting device 41, a driver 42, multiple positive flickering devices 2 and a power supply 5. By means of depressing the button switch 3, the circuit is closed and the power supply 5a can supply power therefore. At this time, the oscillator 4 sends out periodic flickering signals. The current-limiting device 41 serves to prevent great current from passing the circuit and protect the driver 42. The driver 42 serves to amplify and drive current to make the multiple positive flickering devices 2 flicker.

[0010] Referring to Fig. 6, according to another embodiment of the present invention, the circuit is composed of a button switch 3, a pulse generator 4, a current-limiting device 41, a driver 42, multiple positive flickering devices 2 and a power supply 5. By means of depressing the button switch 3b, the circuit is closed and the power supply 5 can supply power therefor. At this

time, the pulse generator 4 sends out periodic flickering signals. The current-limiting device 41 serves to prevent great current from passing the circuit and protect the driver 42. The driver 42 serves to amplify and drive current to make the multiple positive flickering devices 2 flicker.

[0011] Referring to fig. 7, the positive flickering device 2 is composed of a casing 27, a connecting wire cover 24, light-reflecting combined body 21, light emitting diode 22, connecting support 25 and upper and lower covers 23, 26.

[0012] The casing 27 of the positive flickering device 2 serves to enclose the light-reflecting combined body 21 which designed as a trapezoid sink so as to widen the projecting angle and enlarge the projecting area. A light-reflecting member 211 is attached to each surface of the combined body 21 for reflecting the light emitted from the light emitting diode 22. The insertion pins 221 and insertion sockets 222 thereof are passed through the insertion hole 223 to be integrally inserted with the insertion pin 251 of the connection support 25 of the connecting wire cover 24. The thrusting arm 253 penetrates through the skin of the conducting wire to electrically connect the conducting wire with the light emitting diode 22 via the connecting support 25. the upper and lower covers 23, 26 cooperatively secure the above elements in the casing 27.

[0013] The positive flickering device 2 projects light as shown in figs. 8 and 9. The reflecting member 211 reflects the light from the light emitting diode 22. By means of the widened projecting angle and enlarged projecting area of the combined body 21, the projecting range is enlarged and the illumination is enhanced, whereby the warning effect can reach a long distance.

[0014] The working garment with the flickering device of the present invention is advantageous over the conventional safety working garment as follows:

1. A long distance identification can be achieved.
2. By means of the light emitting diode and the light reflecting member, the positive flickering device can project light with enhanced illumination.
3. The front, rear and two lateral sides of the working garment are disposed with multiple positive flickering devices parallelly connected on the reflecting strips for providing warning effect in all directions.

[0015] It is to be understood that the above description and drawings are only used for illustrating one embodiment of the present invention, not intended to limit the scope thereof. Any variation and derivation from the above description and drawings should be included in the scope of the present invention.

in which a front, a rear and two lateral sides of the working garment are arranged with multiple positive flickering devices disposed on the reflecting strips for providing identification effect in all directions, by means of depressing an external button switch, the circuit of the positive flickering device being closed, enabling a power supply to supply power therefor, an oscillator or a pulse generator sending out periodic flickering signals, a current-limiting device serving to prevent great current from passing the circuit and protect a driver, the driver serving to amplify and drive current to make the multiple positive flickering devices flicker, the conducting wire electrically connecting the conducting wire with the light emitting diode via the connecting support, the reflecting member reflecting the light from the light emitting diode, whereby by means of the widened projecting angle and enlarged projecting area of the combined body, the projecting range is enlarged and the illumination is enhanced, whereby the warning effect can reach a long distance.

2. The working garment with positive flickering devices as claimed in claim 1, wherein the positive flickering device being composed of a casing a connecting wire cover, a light-reflecting combined body, light emitting diode, connecting support and upper and lower covers, the casing of the positive flickering device serving to enclose the light-reflecting combined body which widens projecting angle and enlarges projecting area, a light-reflecting member being attached to each surface of the combined body for reflecting the light emitted from the light emitting diode, the wire connecting cover being integrally connected with the connecting support, the upper and lower covers cooperatively securing the above elements in the casing,

Claims

1. A working garment with positive flickering devices

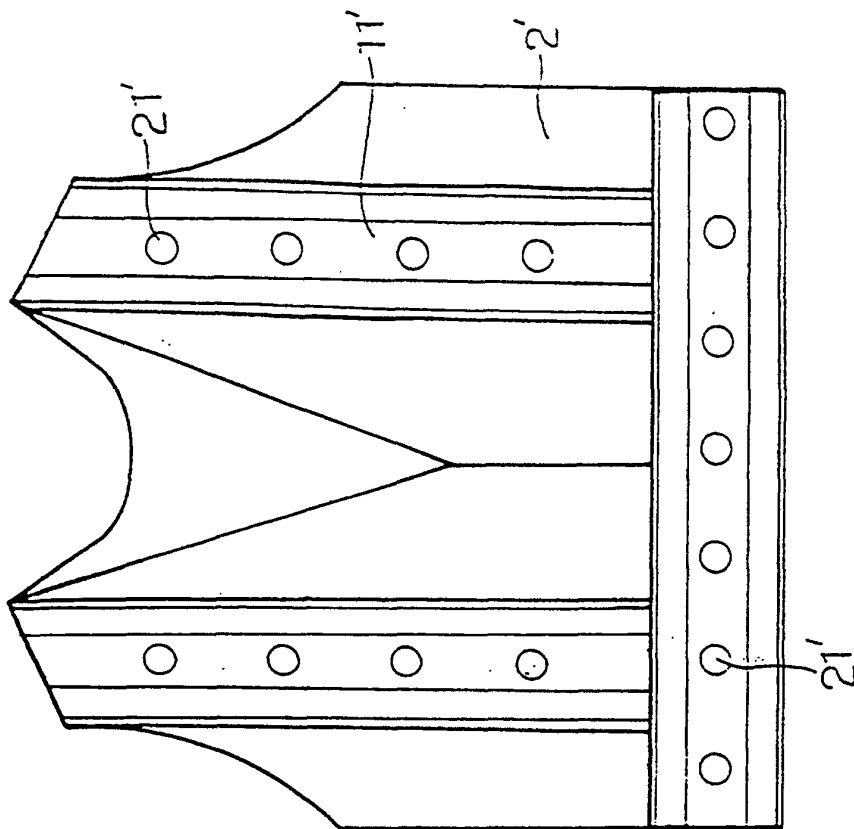


FIG. 2

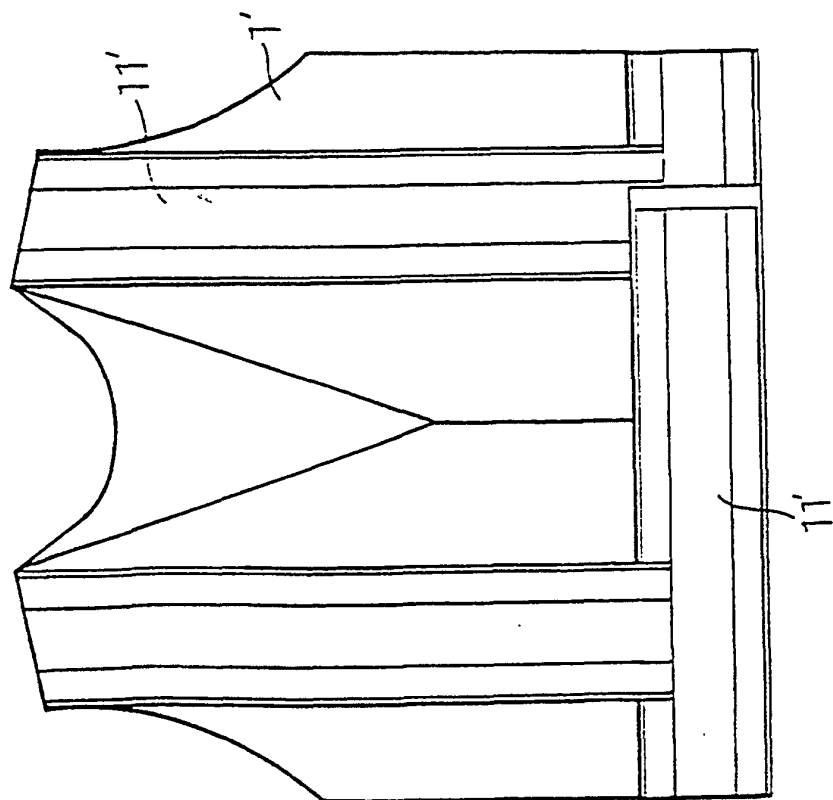


FIG. 1

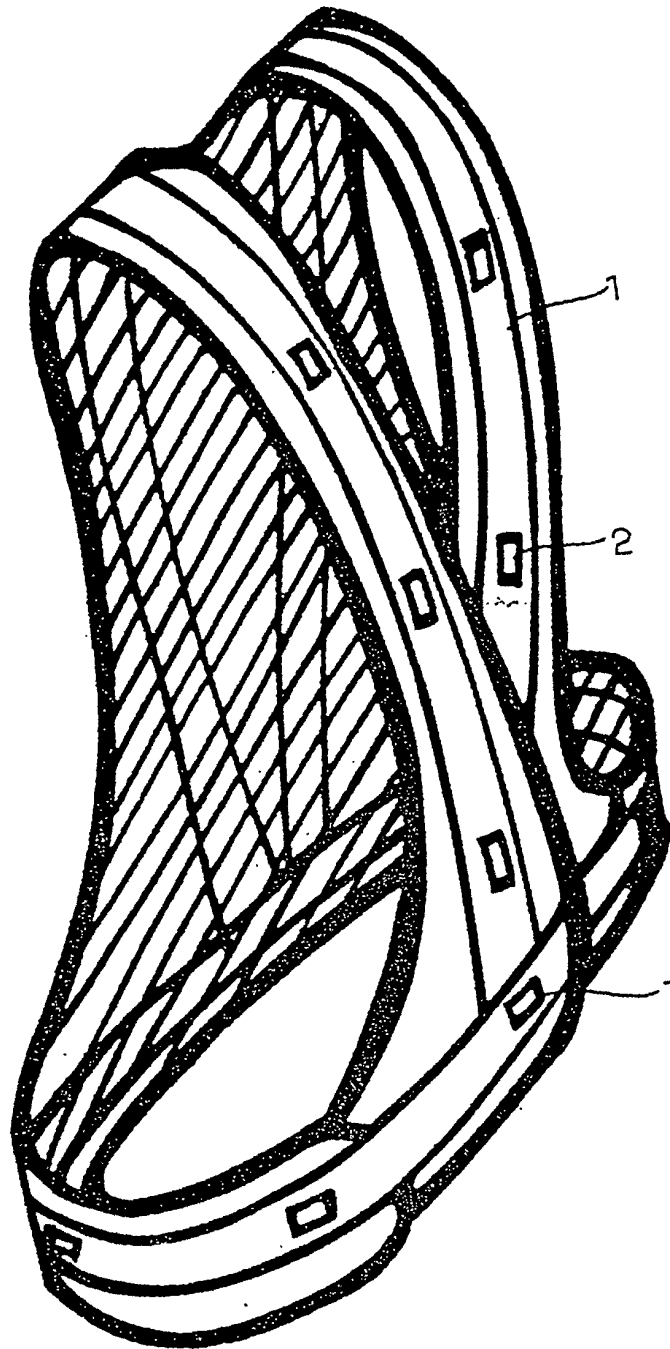


FIG.3

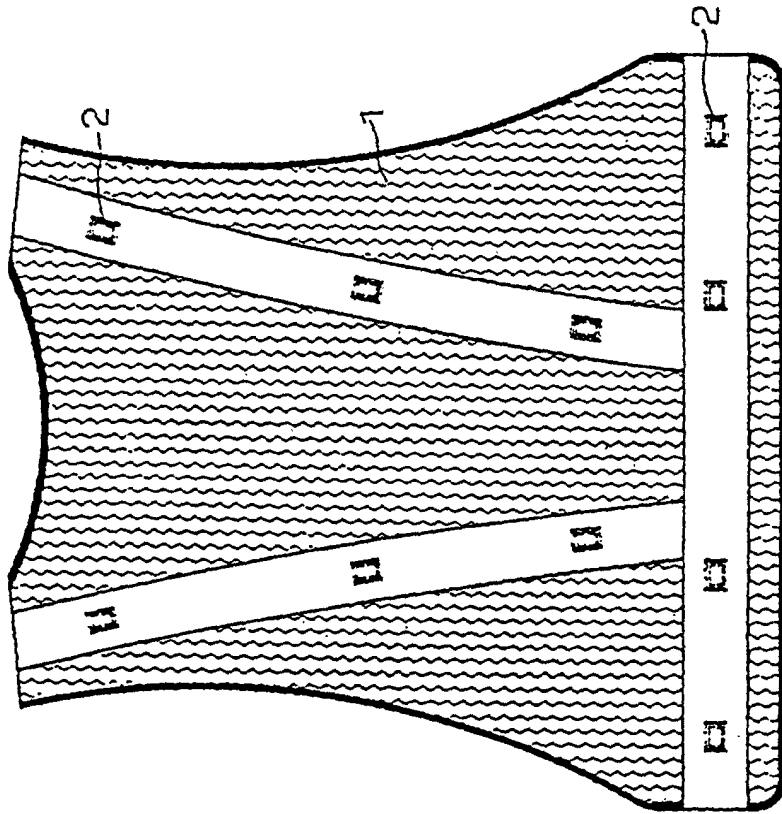


FIG.5

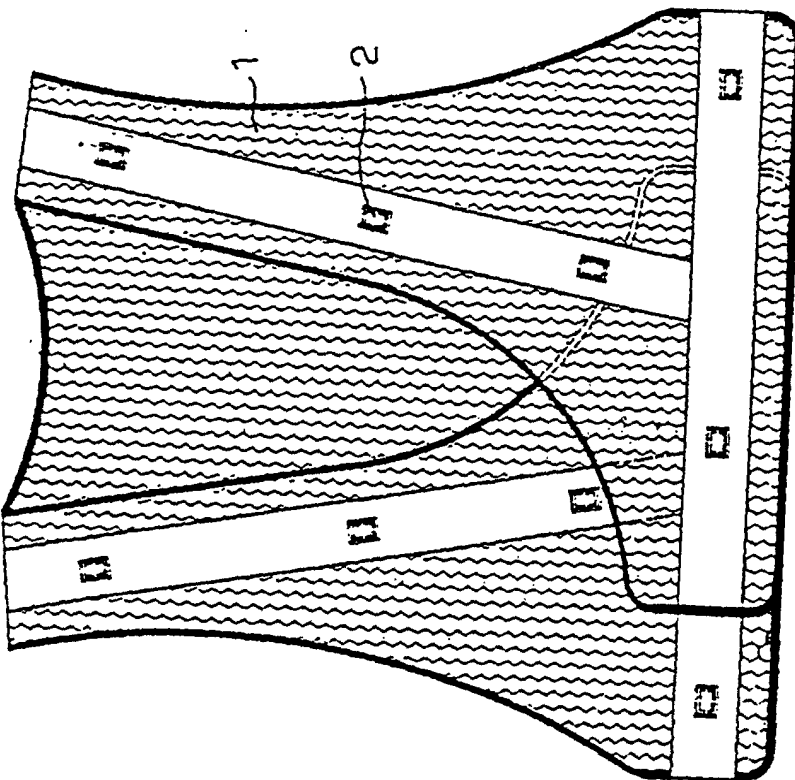


FIG.4

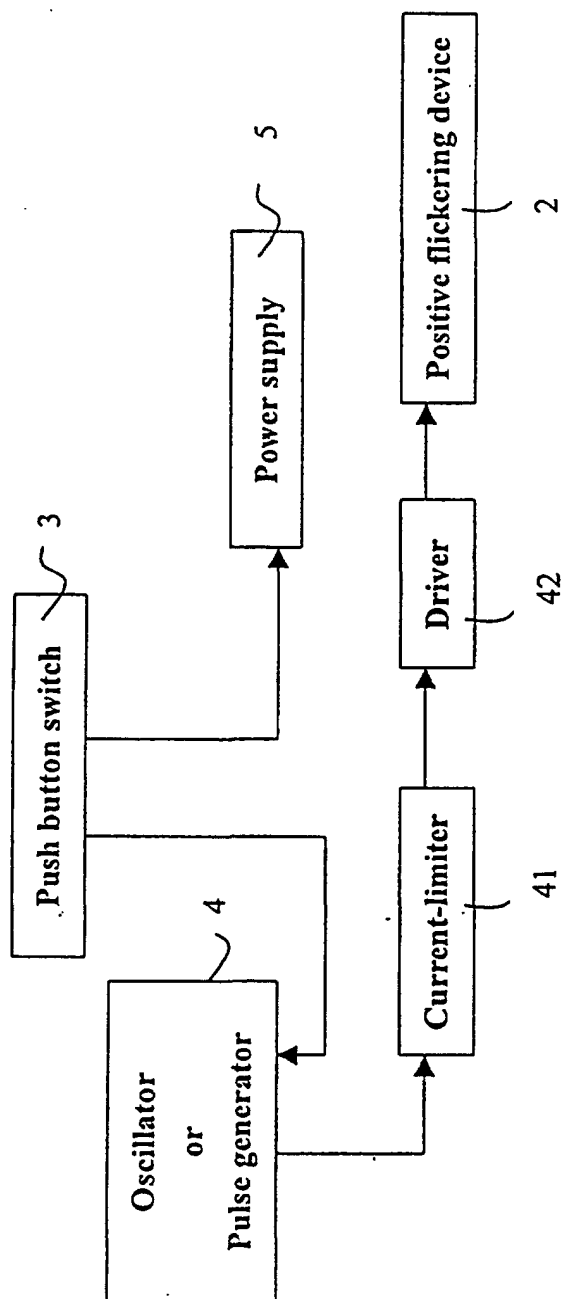


FIG. 6

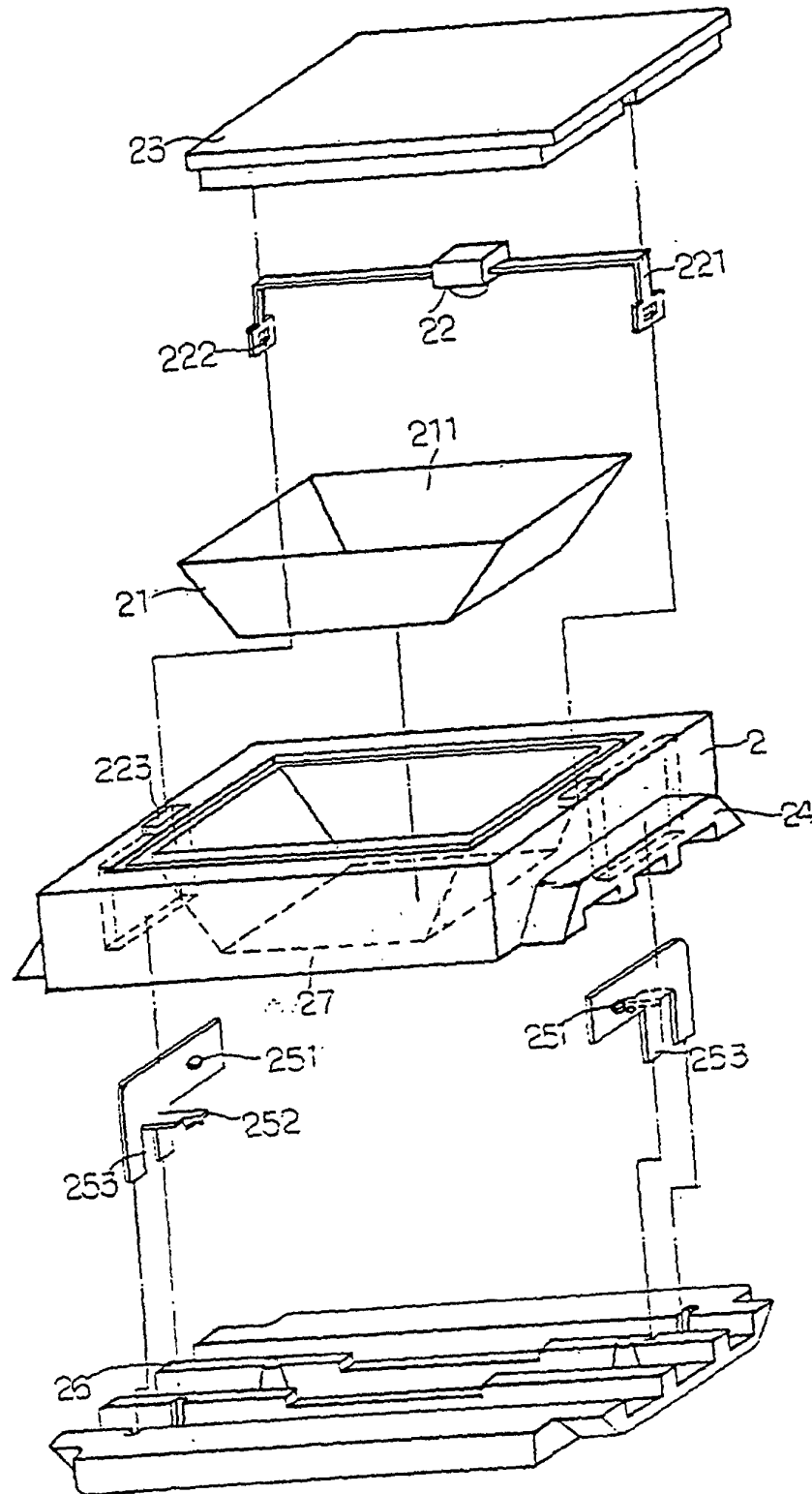


FIG.7

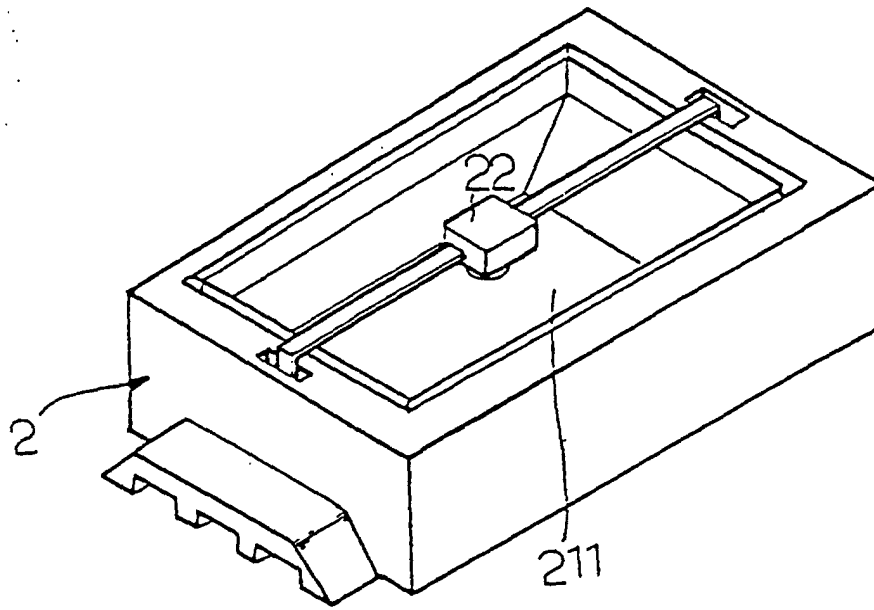


FIG. 8

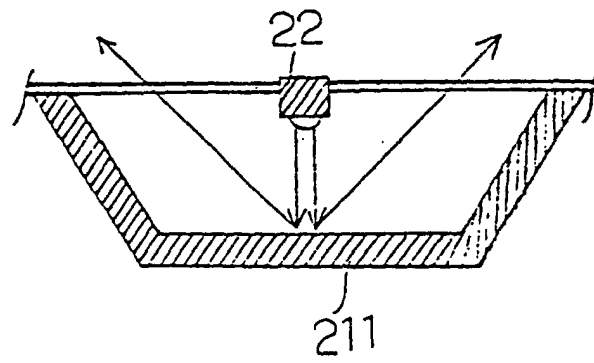


FIG. 9

INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN99/00104

A. CLASSIFICATION OF SUBJECT MATTER

IPC⁶ A41D13/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC⁶ A41D13/00,27/00 A42B11/24 H05B37/00

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Chinese Patent Document (1985-)

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

CAPS(75-99), CNPAT ESPACE/ACCESS

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	CN.Y2304268(Lin Yuan)20.January 1999(20.01.99) The whole document	1, 2

☐ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

* Special categories of cited documents:	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E" earlier application or patent but published on or after the international filing date	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
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"O" document referring to an oral disclosure, use, exhibition or other means	
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search
10.August 1999(10.08.99)

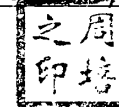
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