



(22) Date de dépôt/Filing Date: 2003/01/16

(41) Mise à la disp. pub./Open to Public Insp.: 2004/07/16

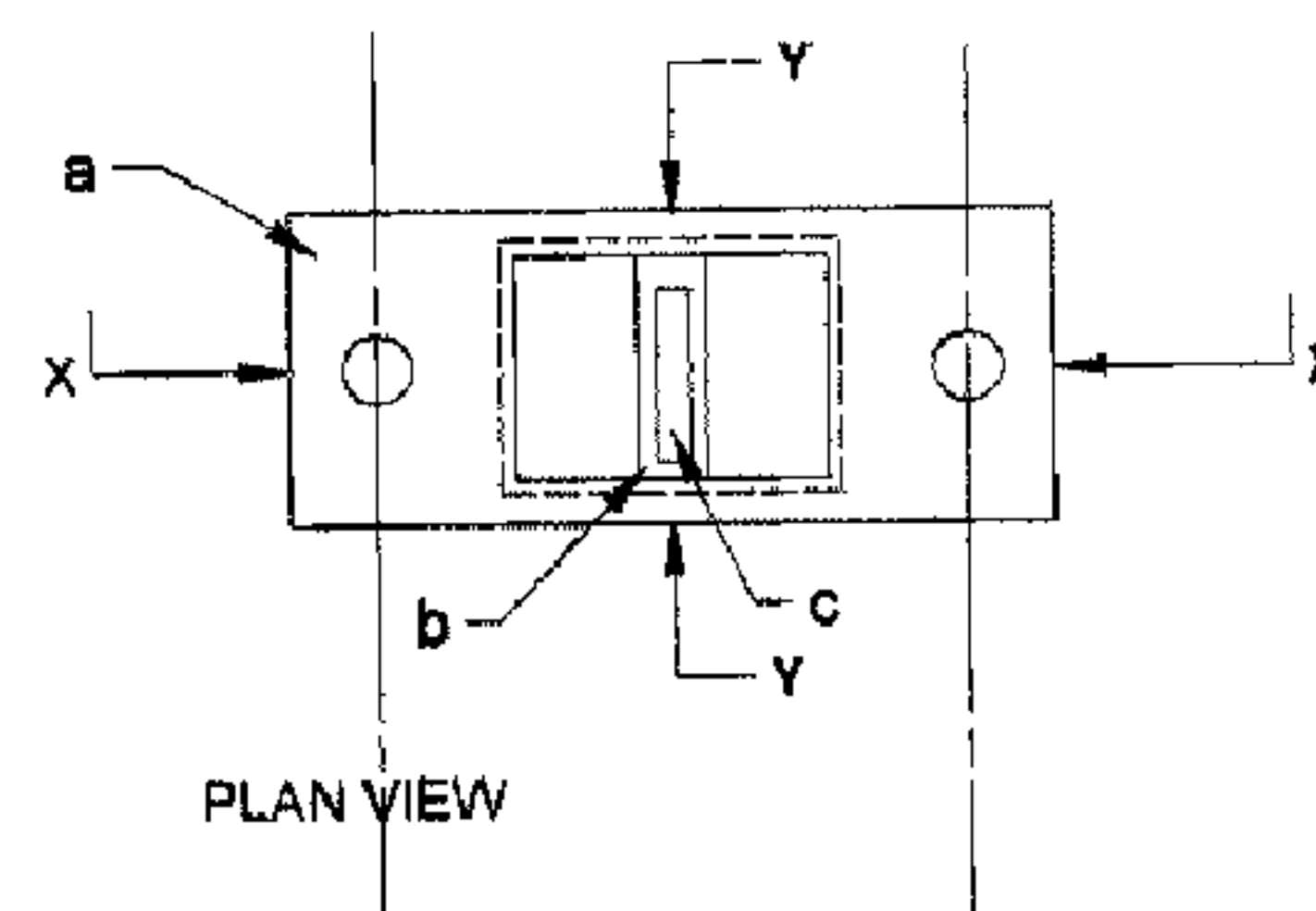
(51) Cl.Int.⁷/Int.Cl.⁷ G08B 23/00

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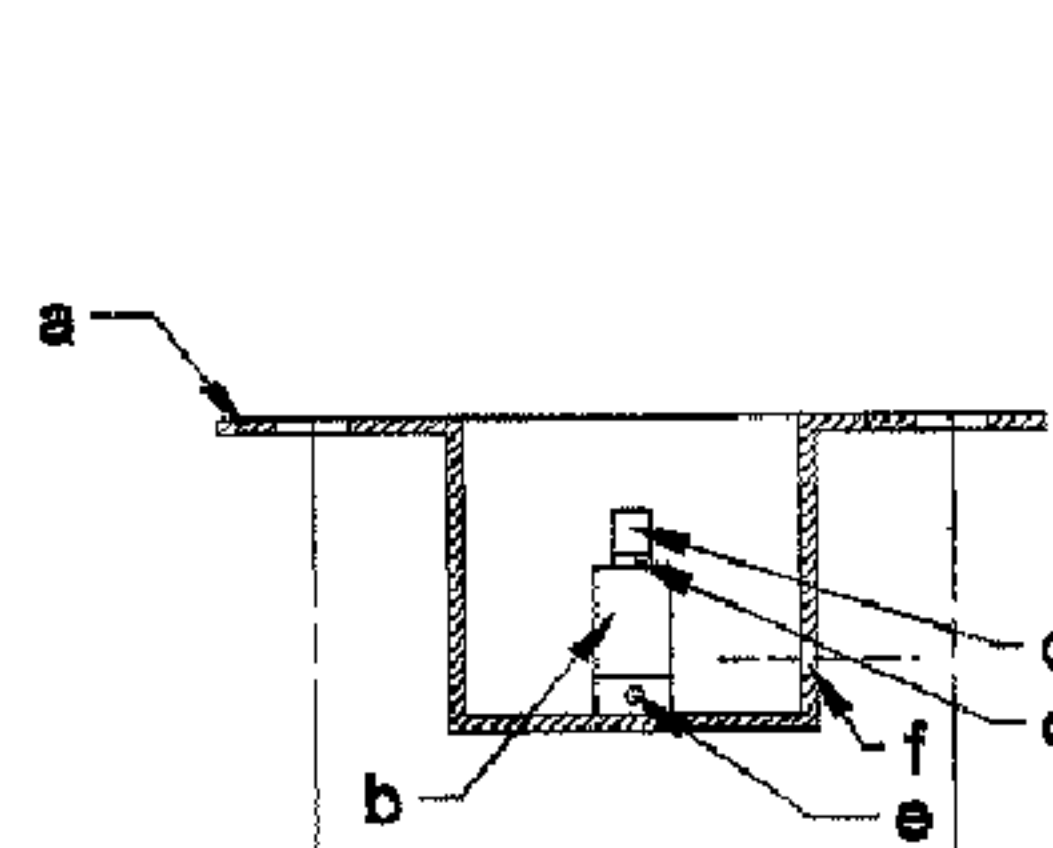
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(54) Titre : DISPOSITIF PERMETTANT LE DECLENCHEMENT D'UN SYSTEME D'ALARME A PARTIR D'UN PENE DE SERRURE

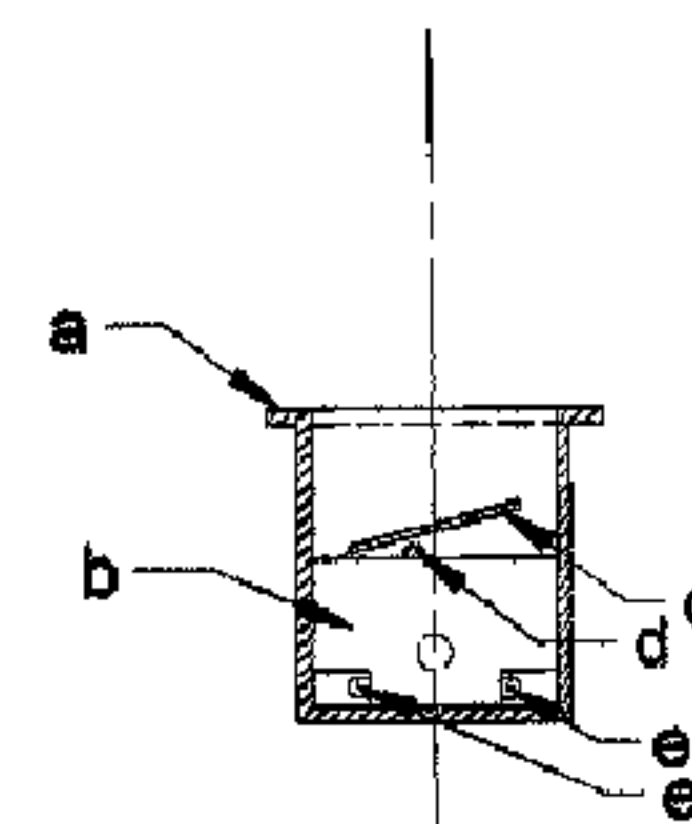
(54) Title: A DEVICE THAT ENABLES THE BOLT OF A LOCK MECHANISM TO ACTIVATE AN ALARM SYSTEM



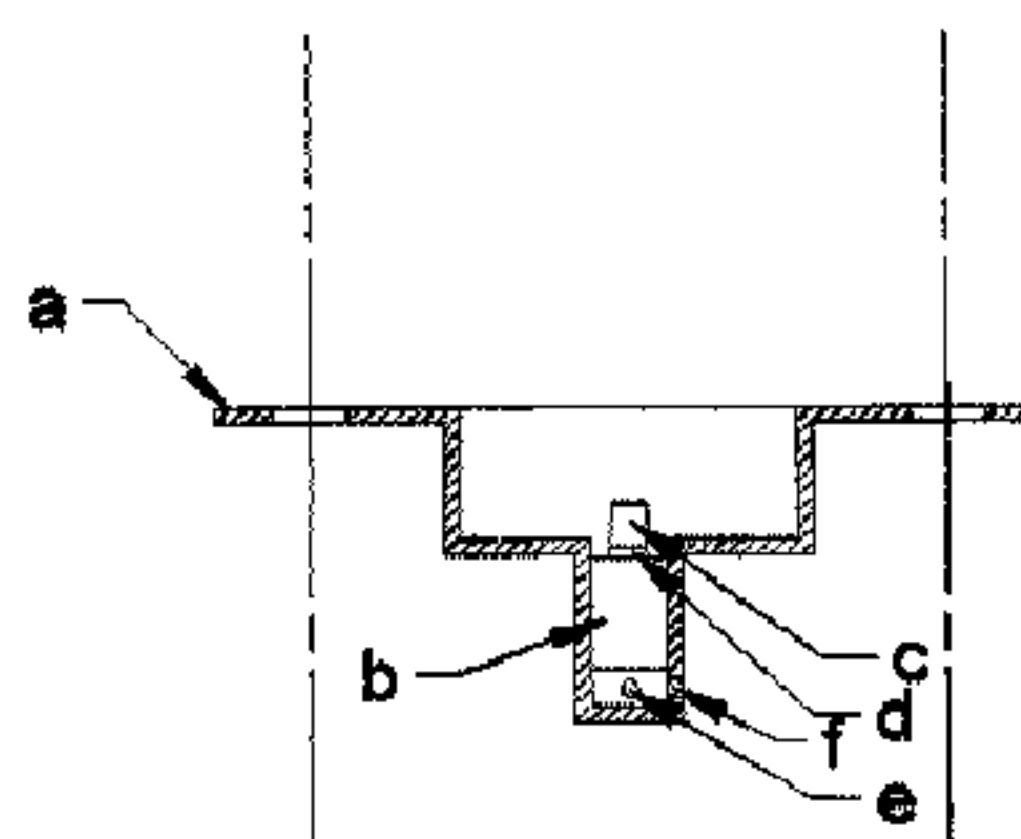
PLAN VIEW



FRONT SECTIONAL VIEW X-X



END SECTIONAL VIEW Y-Y



ALTERNATIVE FRONT SECTIONAL VIEW

(57) Abrégé/Abstract:

The present invention is for use in a security alarm system where it conjoins the movement of the bolt of a lock mechanism with the electrical circuit of the alarm system. In securing premises from unauthorized entry it is customary to furnish doors with



(57) Abrégé(suite)/Abstract(continued):

mechanical locks and electrical alarm systems. The locks are usually in the form of both a knob operated latch-set and a key operated deadbolt, both of which have a bolt that protrudes from the edge of the door and enters into a strike assembly comprising a strike plate and a strike box which is mortised into the door frame. In this invention the conventional strike box is replaced by a strike box module which contains contacts which intervene in the electrical circuit of an alarm system and are so located as to be opened and closed by the bolt of the latch-set.

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ABSTRACT :

The present invention is for use in a security alarm system where it conjoins the movement of the bolt of a lock mechanism with the electrical circuit of the alarm system.

In securing premises from unauthorized entry it is customary to furnish doors with mechanical locks and electrical alarm systems. The locks are usually in the form of both a knob operated latch-set and a key operated deadbolt, both of which have a bolt that protrudes from the edge of the door and enters into a strike assembly comprising a strike plate and a strike box which is mortised into the door frame.

In this invention the conventional strike box is replaced by a strike box module which contains contacts which intervene in the electrical circuit of an alarm system and are so located as to be opened and closed by the bolt of the latch-set.

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DESCRIPTION :

A DEVICE THAT ENABLES THE BOLT OF A LOCK MECHANISM
TO ACTIVATE AN ALARM SYSTEM.

The present invention relates to a lock strike box module for use in a security alarm system. Much of the terminology used herein is common to the specific area of locksmithing; therefore the following glossary of terms used is provided for those outside of this specific area :

deadbolt : a lock bolt having no spring action, usually rectangular in section and actuated by a key or thumb-turn and which becomes locked against end pressure when fully projected.

deadlatch : a lock with a bevelled latch type bolt which can be automatically or manually locked against end pressure when projected.

latch : a door fastening device, usually with a bevelled sliding or spring bolt; but often having no locking device.

latch bolt : a bevelled spring bolt, usually operated by a knob, lever handle or thumb-turn.

latch-set : a complete door latch assembly, having a bevelled spring bolt only and operated by a knob or lever handle.

strike : the part, pierced or recessed to receive the bolt of a deadbolt or latch-set, applied to a door frame, thus permitting a locked joint.

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strike box : usually of plastic, a box which provides a housing for deadbolts or latch bolts, for greater protection and neater application.

Common security alarm systems employ sensors on entrance doors that cause the alarm to be activated when the door is actually opened, in other words, after other security devices, such as mechanical locks have been defeated. The average burglar spends rarely more than three minutes in the invaded premises and, knowing that security response time is normally much greater than this, he is often not deterred by the noise of an activated alarm. It is preferable that an alarm system be activated before entry into the premises has been achieved; it being unlikely that the potential intruder would continue his attempt once the alarm had been activated.

This invention provides a practical means of initiating an alarm system before the intended intruder has gained access to the premises.

It is common for residential entrance doors to be furnished with both a knob-operated spring latch-set assembly and a key-operated deadbolt assembly; both of which have bolts that protrude from the non-hinged edge of the door into mortises provided for them in the upright of the door frame. The mortises are furnished with metal strike plates and plastic strike boxes that enter into the mortises. The spring latch-bolt provides for the initial retaining of the door in its closed position. The deadbolt provides for mechanical security against forced entry; it having a more substantial bolt that enters considerably deeper into its strike on the door frame. Any attempt by an

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unauthorised person to enter premises is normally commenced by turning the knob of the latch-set in order to verify whether the door was locked or not. If found to be locked the person would attempt to defeat the lock mechanism or to find an alternative point of entry. An innocent visitor to the premises may possibly open an intervening screen door, touch the main entrance door, or even touch the latch-set whilst, for instance, hanging a bag of flyers from the knob; however, the actual rotation of the knob would be a clear indication of an attempt to open the door. This would be the ideal point at which an alarm system should be activated. The invention disclosed herein provides the means of activating an alarm system when a latch-set knob is rotated.

Preferred embodiments of the present invention are illustrated in pages 1 and 2 of the appended drawings. On page 1, Drawing A, Fig.A.1 is a plan view of the strike box module comprising the strike box (a) which is of a hat shaped section, having a rectangular rim that has dimensions and screw hole locations that conform to those of the strike plates with which it is to be used. The flat crown of the hat-section is of such a depth as to accommodate, in this particular embodiment, a normally open micro-switch (b) that takes up approximately half of this depth, and which may be bonded transaxially to the flat inner base of the crown. As better illustrated in Fig.A.2 and Fig.A.3, the micro-switch most suited this application would have an actuating plunger (d) and a leaf spring actuating blade (c), and a pair of screw or solder type connectors

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(e) for incorporating the switch into the alarm circuit. Pre-wired pigtail contacts are also quite suitable; but are not illustrated. Egress facility (f) for electrical wiring is provided. Fig.A.4 illustrates, in a front sectional view, an alternative, double-depth hat-section strike box that better provides for the retention of the micro-switch, and also provides shoulders (g) for accurately limiting the depth of entry of the bolt of the latch-set.

Drawing B illustrates an alternative embodiment of the invention wherein the contacts are in the form of a pair of angled spring-metal leaves. The strike box (a) is similar to that in Drawing A ; but, because of the use of less height demanding contacts (b), it is considerably shallower. In this particular embodiment the contacts are rivetted (c in Fig.B.3) or otherwise affixed to the wall of the strike box. Connections to the alarm circuit may be made either inside or outside of the strike box module. The alarm circuit being completed between the contact leaves by the conductive metal of the bolt of the latch-set.

The strike box module replaces the conventional lock strike box in the door frame, the mortise depth in which is increased as necessary, and a hole being provided from the bottom of the mortise to the inside of the premises to accommodate wiring for connecting the strike box module into the circuit of the alarm system in the same manner as is common with other security alarm sensors. The installer may use a

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standard latch strike plate and fasteners, which combine to retain the strike box module in place, and he should exercise the usual care to ensure proper installation in accordance with the instructions of the latch-set manufacturer. The strike box module is reversible in order to accommodate both left and right hand hung doors.

In operation, when the door is closed the nose of the spring-loaded bolt of the latch-set enters into the strike box module and, either by its pressure against the actuating arm (c) of the micro-switch (b) of Drawing A, or by its shorting out of the gap between the angled spring leaf contacts (b) of Drawing B, causes the alarm circuit to be closed. The alarm system is armed either by a wireless remote control or an external switch-pad, or automatically by the alarm system's pre-set time-delay function. When the knob of the latch-set is rotated the latch-set mechanism causes the latch bolt to be withdrawn from the strike box module causing a break in the alarm circuit and thereby, activation of the alarm system.

SUMMARY OF DRAWINGS.

The drawings on the attached pages 1 and 2 are as follows :

Page 1. Dwg.A, illustrates an embodiment of the device wherein the contacts are in the form of a micro-switch :

- | | |
|---------|--|
| Fig.A.1 | a plan view . |
| Fig.A.2 | a front sectional view at X-X on the plan. |
| Fig.A.3 | an end sectional view at Y-Y on the plan. |
| Fig.A.4 | a front sectional view of an alternative configuration . |

Page 2. Dwg.B, illustrates an embodiment of the device wherein the contacts are in the form of a pair of angled spring-metal leaves :

- | | |
|---------|--|
| Fig.B.1 | a plan view. |
| Fig.B.2 | a front sectional view at X-X on the plan. |
| Fig.B.3 | an end sectional view at Y-Y on the plan. |

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THE CLAIMS :

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows :

1. A device for enabling the movement of a bolt of a latch-set to activate a security alarm system, comprising a strike box module containing electrical contacts that intervene in the electrical circuit of an alarm system and are so located as to be opened or closed by the movement of a latch-set's bolt.
2. A device as defined in claim 1, in which the electrical contacts are in the form of an electric micro-switch.

DRAWING A

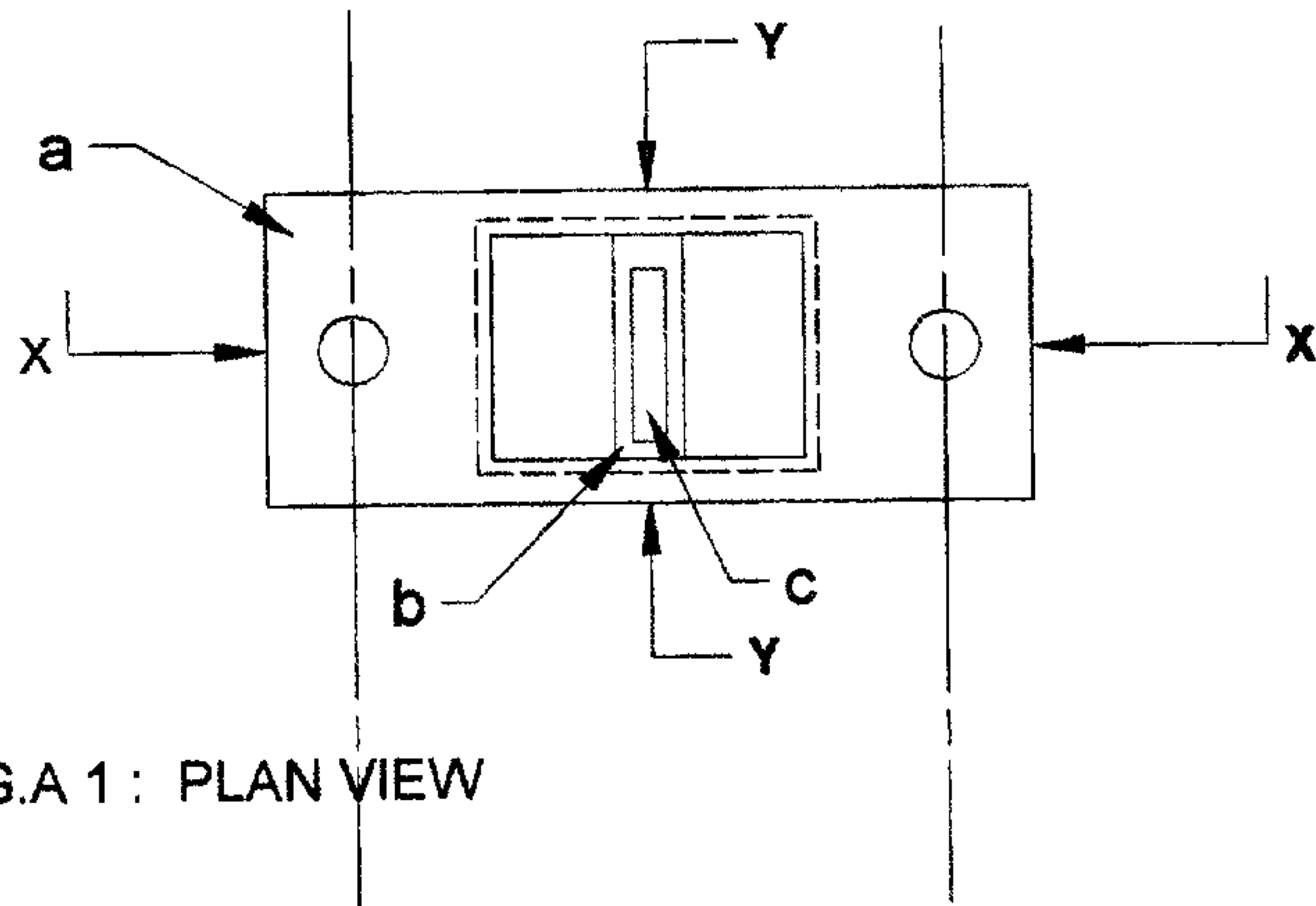


FIG.A 1 : PLAN VIEW

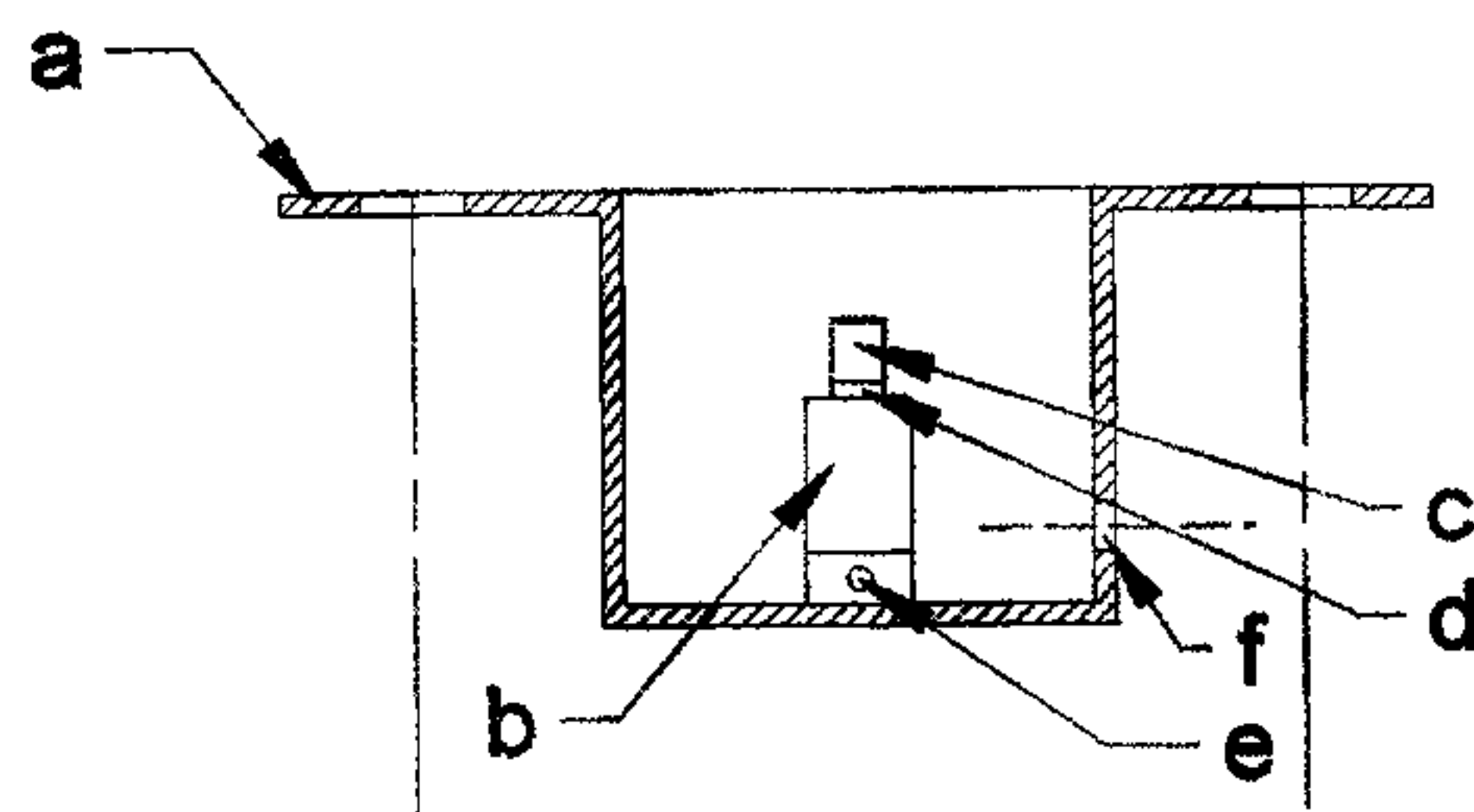


FIG.A 2 : FRONT SECTIONAL VIEW X-X

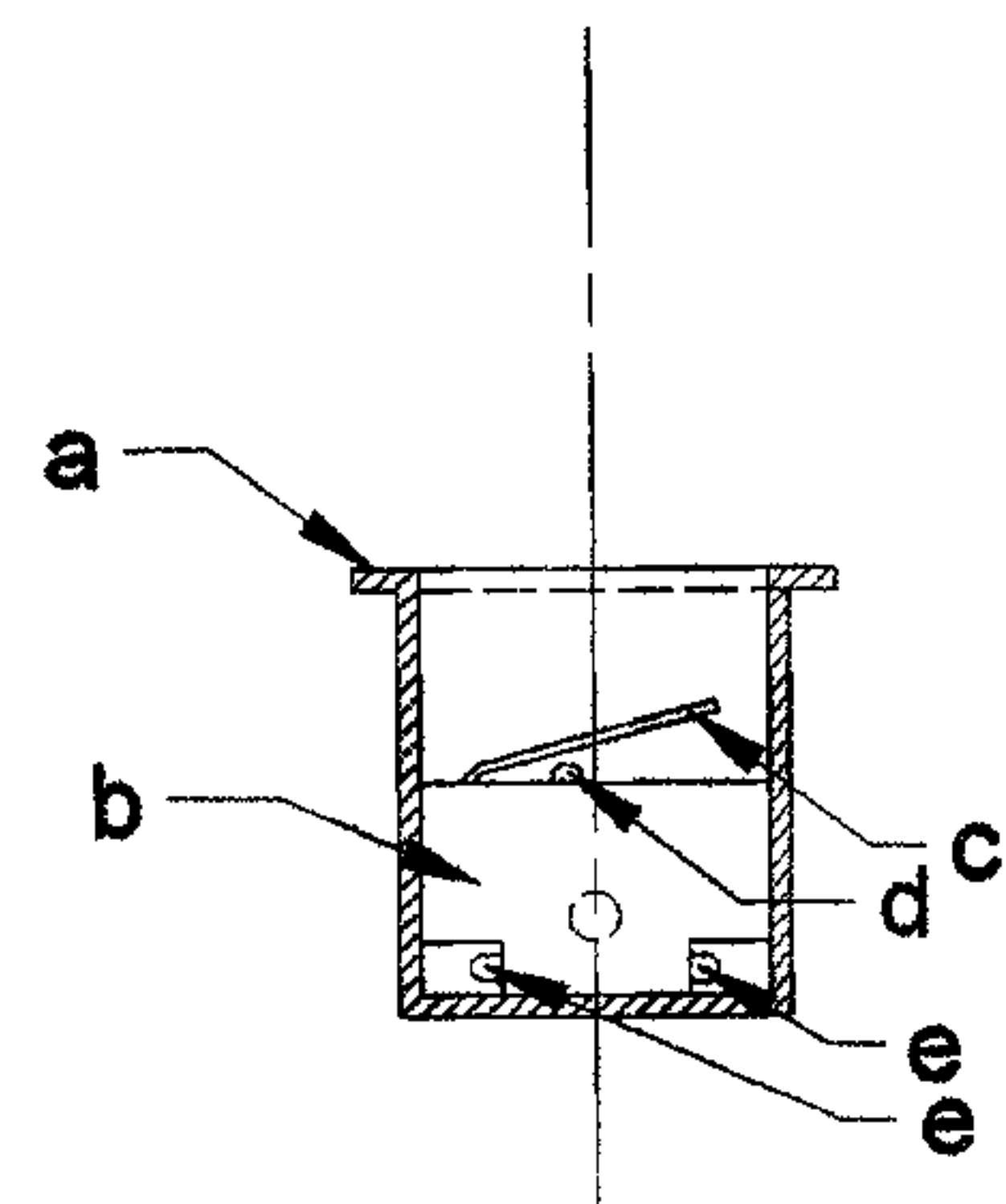


FIG.A 3 : END SECTIONAL VIEW Y-Y

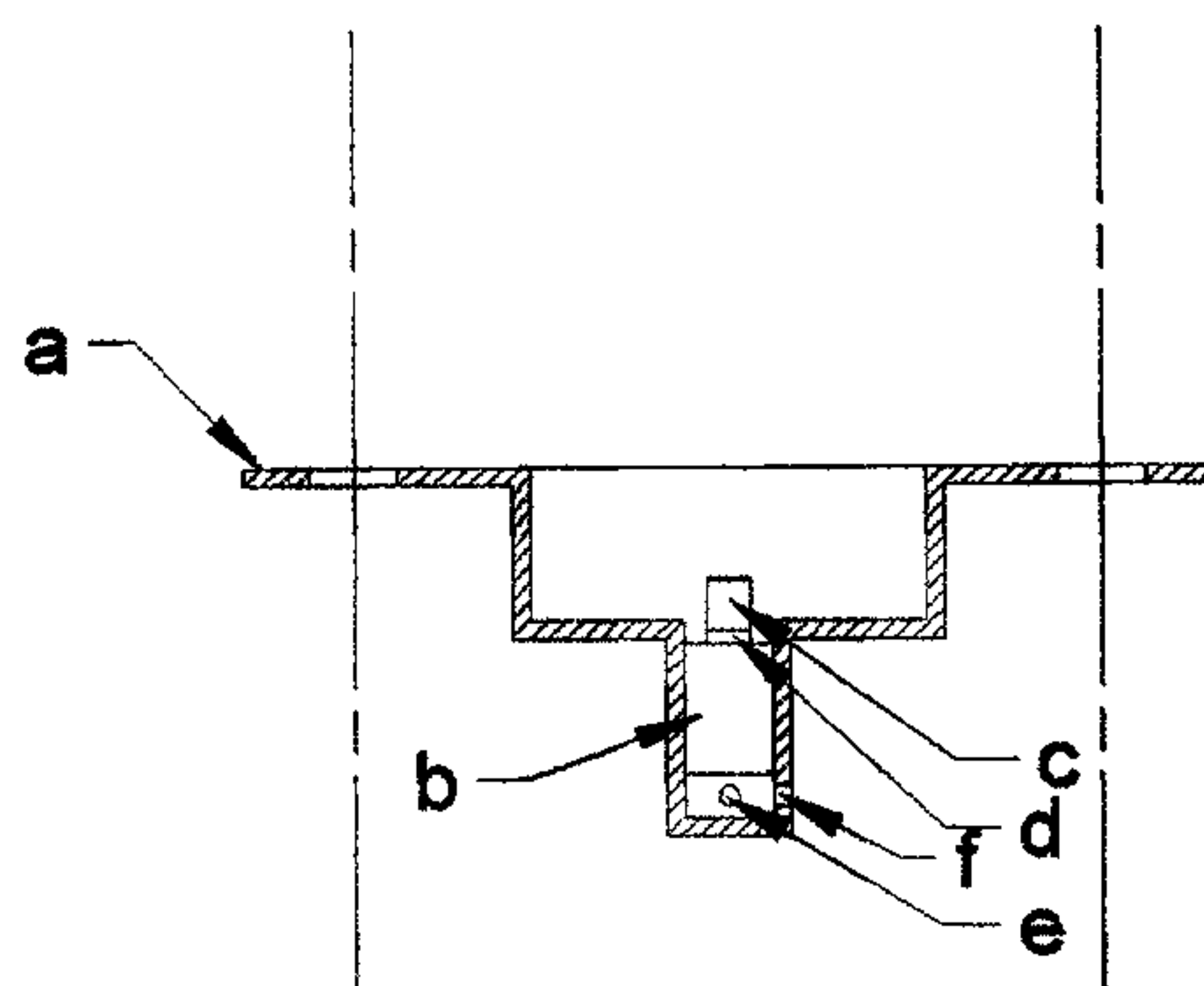


FIG.A 4 : ALTERNATIVE FRONT SECTIONAL VIEW

DRAWING B

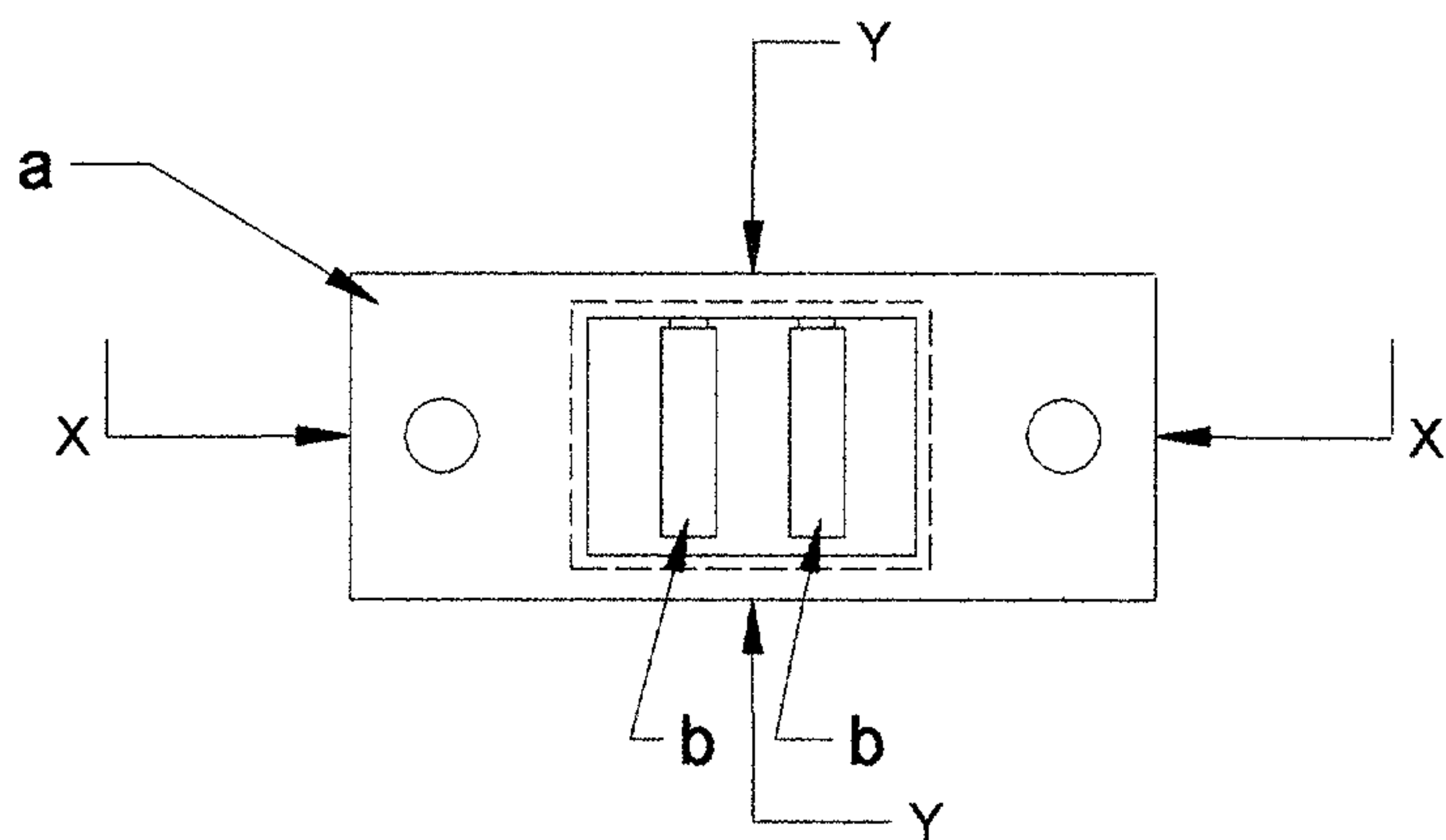


FIG.B 1 : PLAN VIEW

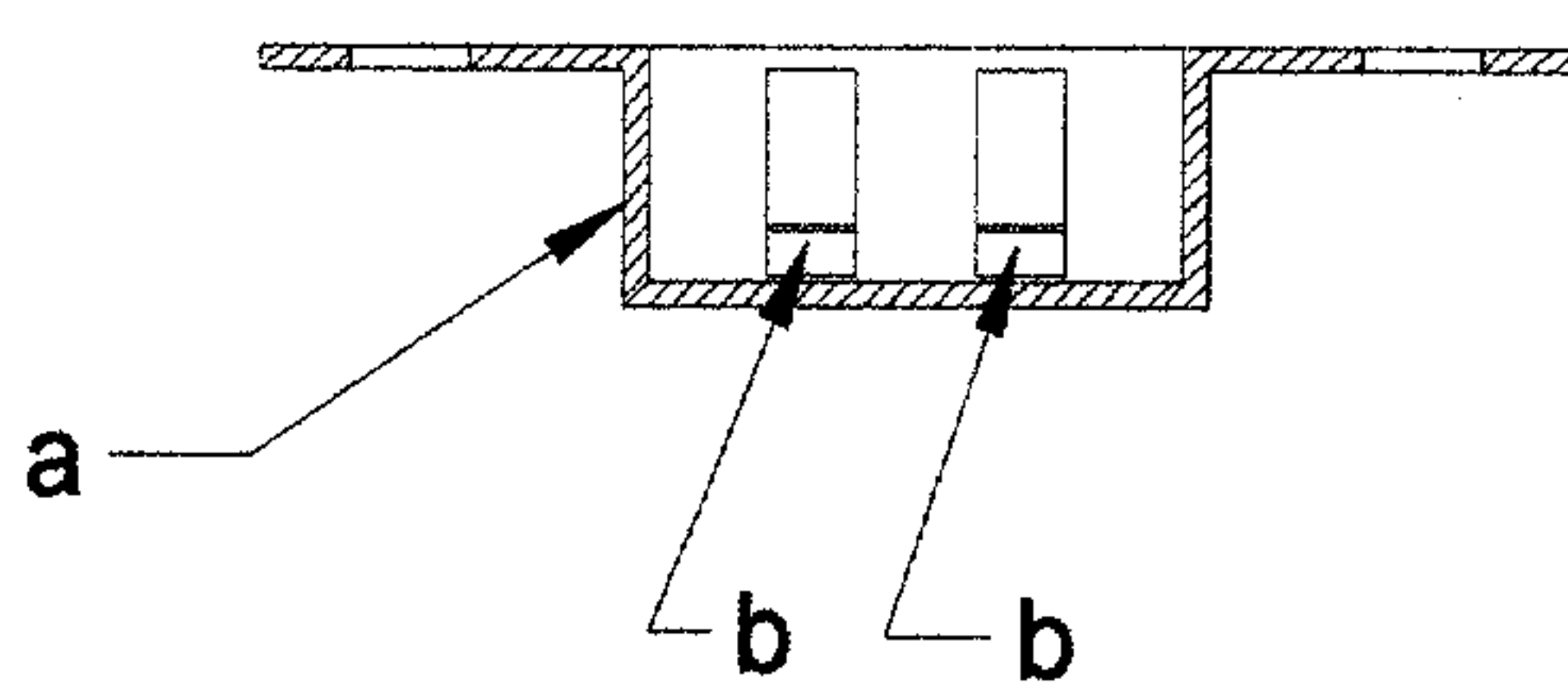


FIG.B 2 : FRONT SECTIONAL VIEW X-X

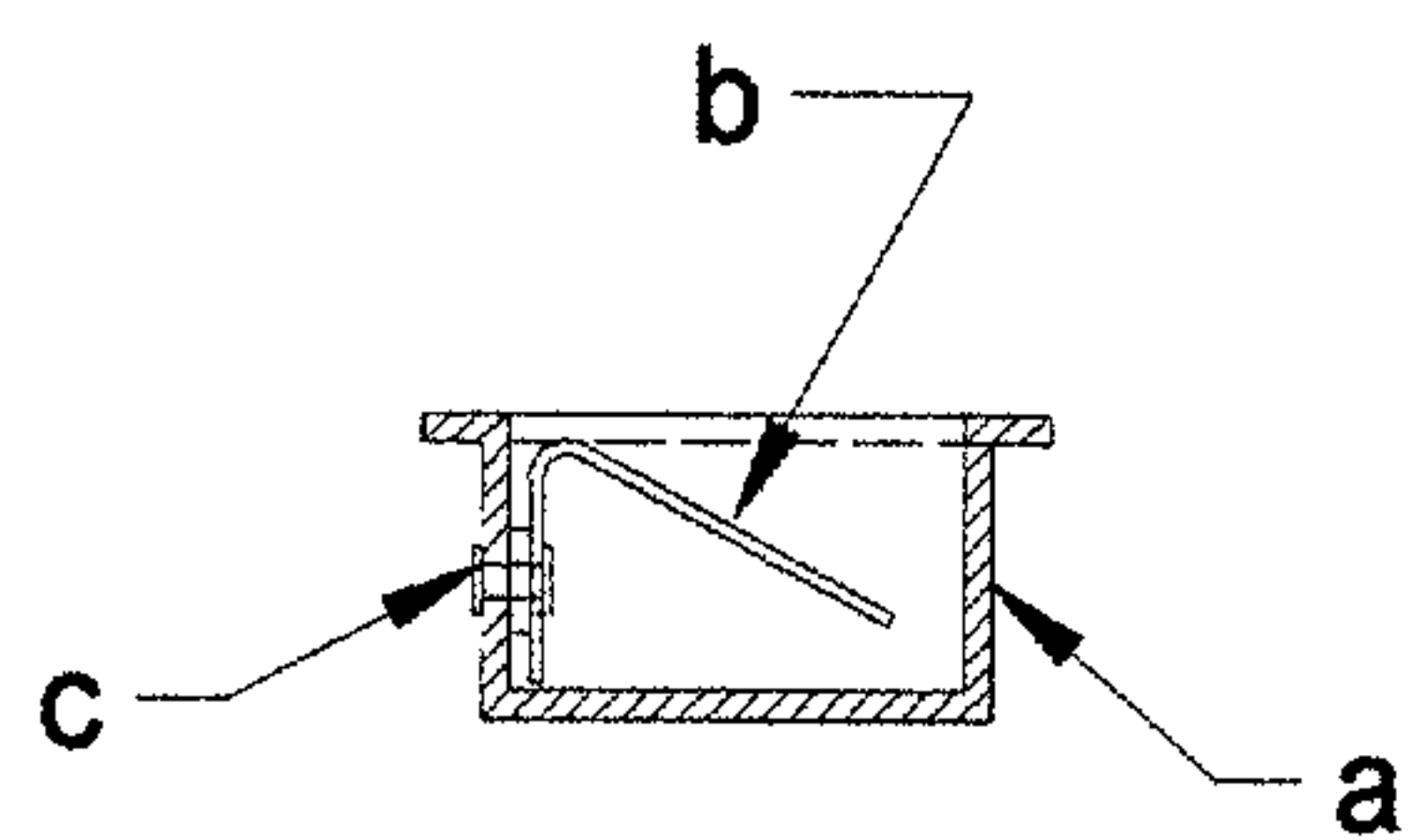


FIG.B 3 : END SECTIONAL VIEW Y-Y

