



⑫

## EUROPEAN PATENT APPLICATION

⑳ Application number : **94303879.4**

⑤① Int. Cl.<sup>5</sup> : **G08B 19/00**

㉔ Date of filing : **27.05.94**

③⑩ Priority : **01.06.93 US 69893**

⑦② Inventor : **Johnson, Raymond Clarence**  
**107 William John Lane**  
**Boniere, GA 31005 (US)**

④③ Date of publication of application :  
**21.12.94 Bulletin 94/51**

⑦④ Representative : **Ede, Eric**  
**Fitzpatricks,**  
**4 West Regent Street**  
**Glasgow G2 1RS, Scotland (GB)**

⑧④ Designated Contracting States :  
**AT BE CH DE DK ES FR GB GR IE IT LI LU MC**  
**NL PT SE**

⑦① Applicant : **ICI AMERICAS INC.**  
**Concord Pike & New Murphy Road**  
**Wilmington Delaware 19897 (US)**

⑤④ **Anti-theft system for jewellery.**

⑤⑦ The present invention is directed toward a jewelry anti-theft system comprising a removal means and a field detection means.

## BACKGROUND

The present invention is directed to an anti-theft system for jewelry display cases through the use of a local-field alarm device.

Typically, when the theft of jewelry in retail stores occurs an entire jewelry display case is stolen. Generally, jewelry is displayed in a case that may contain up to as many as 25 rings or more. Other kinds of display cases for necklaces, for instance, contain fewer pieces of jewelry but are displayed in similarly structured cases.

The anti-theft currency art is aware of the use of a local-field alarm device. U.S. patent 4,975,680, incorporated herein by reference, discloses such a device for use in automatic teller machines ("ATM") and for purposes of protecting currency stacks. Generally, a cavity is created in a stack of money and a device placed inside the cavity. The cavity is covered by additional money thus hiding the device. When a theft occurs, the perpetrator carries the device off with the remaining money activating an RF receiver. As the perpetrator leaves the premises an RF transmitter activates the receiver triggering a timed delay detonator which subsequently explodes releasing dye, smoke, and/or tear gas. Once exploded, the dye marks the money and thief and may be used later as evidence in criminal proceedings.

Another form of alarm for currency may be found in U.S. patent 3,828,341, incorporated herein by reference, wherein is disclosed a localized electromagnetic field generated adjacent to the exit of a bank. For the alarm to be triggered, the alarm pack must first be taken into the field and then moved out of the field, the timer is activated, and at the end of the timing interval the alarm is triggered.

Mechanistically, the present invention works in much the same way except that it is applied to the anti-theft jewelry art. Adaptations of the normal jewelry case are needed for device emplacement and to obscure device relationship to the jewelry case. For the purposes of jewelry case theft, the problem is somewhat different in that all cases can not be protected the way money can. Jewelry must be displayed, whereas money is fungible and may be secured from a "runaway" thief. When jewelry is displayed it is vulnerable to theft by simply picking up the case and running away. Jewelry vendors' concerns are not so much to create evidence but to the return of the merchandise to their store.

The present invention is found useful in the return of stolen jewelry to a store vendor thereof and in a higher incidence of thief apprehension.

## SUMMARY OF THE INVENTION

A jewelry anti-theft system wherein said system comprises a housing means communicating with a

foundation means wherein a device is emplaced in said housing, said device comprising a removal detection means; field detection means; and means responsive to the removal detection means; and means responsive to the field detection means for triggering, a mechanism which provides a release, if (a) the removal detection means detects removal of said housing from said foundation and (b) said field detection means detects the localized field and thereafter ceases to detect the localized field thereby triggering said mechanism which at its terminus provides a release said removal detection means and said field detection means independent one from the other whereby said removal detection means is deactivated when recommunicated with said foundation means without activating the detection means.

The housing of the jewelry anti-theft system communicates with a foundation on which or within which the housing may be placed so that the foundation and housing communicate. Communication may be by magnetic, electrical, optical, or any means whereby when communication is interrupted the first leg of the mechanism activation test is triggered. The preferred communication is magnetic, whereby a metal plate is positioned in the foundation and a magnet is positioned in said housing so that the plate and magnet communicate.

The second leg of the mechanism activation test is triggered when said field detection means detects some frequency, preferably a radio frequency ("RF"). As long as the detection means continues to detect the frequency, no triggering of the mechanism occurs. When the field detection means no longer detects the frequency and the removal means is still activated, the mechanism is triggered.

Once the mechanism is triggered, a delay timing or timing means begins which at its terminal point results in a release of smoke, tear gas, audible alarm, dye or some combination thereof and therebetween, being released to the local environment. The release is designed to encourage the relinquishment of the housing from the perpetrator of the unauthorized removal from the vendor's premises.

Importantly, the housing means may be recommunicated with the foundation means thus reactivating the communication yet leaving the field detection means undisturbed. The electronics for the field detection means is disclosed in U.S. patent 3,564,525, incorporated herein by reference in its entirety. The housing is combined with said device which comprises both the removal detection means, the field detection means, the mechanism, the release, and is the situs for the jewelry which is generally atop and displayed on or within the surface of the housing means. The device is placed under the display in a hidden compartment so as not to be visually detected from outside of the housing.

Part of the housing is a removable jewelry tray.

The tray cradles the pieces of jewelry and may be removed for storage in a safe during the hours when the jewelry stores are closed. Optionally, the housing itself may be stored in a safe. As long as the housing does not pass through an activating field, the field detection means will remain dormant thus not activating the mechanism. The removable jewelry tray also provides easy access to the device. The device is battery powered. Test holes on the back of the housing provide easy access to the batteries to provide for convenient battery testing. The mechanism is a trip or trigger that provides a means to the release thus enabling the escape of whatever alarm means or substance is vented due to the release. Once the two step test is passed, the mechanism activates the release thus alarming the local environment. It is contemplated that the release could be configured to signal a local constable.

5

10

15

20

**Claims**

1. A jewelry anti-theft system wherein said system comprises a housing means communicating with a foundation means wherein a device is placed in said housing, said device comprising a removal detection means; field detection means; and means responsive to the removal detection means; and means responsive to the field detection means for triggering, a mechanism which provides a release, if (a) the removal detection means detects removal of said housing from said foundation and (b) said field detection means detects the localized field and thereafter ceases to detect the localized field thereby triggering said mechanism which at its terminus provides a release said removal detection means and said field detection means independent one from the other whereby said removal detection means is deactivated when recommunicated with said foundation means without activating the detection means.

25

30

35

40

2. The system in claim 1 wherein said removal means is selected from the group consisting of magnetic, electrical, optical, or some combination thereof communication.

45

3. The system in claim 1 wherein said release is selected from the group consisting of smoke, tear gas, audible alarm, dye, or some combination thereof.

50

4. The system in claim 1 wherein said mechanism comprises a delay timing means.

55

5. The system in claim 1 wherein said field detection means consists of a radio frequency.



European Patent  
Office

EUROPEAN SEARCH REPORT

Application Number  
EP 94 30 3879

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.5)
Y	US-A-2 797 405 (STELTER) * column 1, line 56 - line 65; figure 1 * ---	1-5	G08B19/00
Y	EP-A-0 355 404 (BRADAVKA) * abstract; figures 1,3,5 * * column 4, line 10 - line 22 * * column 6, line 46 - column 7, line 19 * ---	1-5	
A	US-A-3 685 037 (BENNETT ET AL.) * abstract; figures 1,2,7 * * column 4, line 15 - line 22 * ---	1	
A	GB-A-2 241 811 (WEYRAD ELECTRONICS LTD.) * abstract; figure 2 * ---	2	
A	US-A-5 068 643 (YASHINA) * the whole document * -----		
The present search report has been drawn up for all claims			
Place of search BERLIN		Date of completion of the search 22 August 1994	Examiner Danielidis, S
<b>CATEGORY OF CITED DOCUMENTS</b> X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons ..... & : member of the same patent family, corresponding document	

EPO FORM 1503 03.92 (P04C01)