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(54) **REMINDER DEVICE**

GEDÄCHTNISHILFEEINRICHTUNG

DISPOSITIF DE RAPPEL

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Description

[0001] This invention relates to a reminder device for use in the field of safety test data, expiry dates or sell-by dates and the like.

[0002] Health and safety regulations often require electrical appliances or safety equipment to be tested periodically. It is known to use stickers or labels on appliances to show the last and/or next test date. However, these can become worn, displaced or otherwise damaged during use of the appliance, whereby the date information may be lost or rendered illegible. Bar code systems have also been used for collating test date information at a central location. However, such systems can be impractical if the appliance is portable and re-location of the appliance for checking cannot be assured.

[0003] It is an object of the invention to provide an alternative solution to the monitoring of safety test dates or the like which addresses one or more of the above issues.

[0004] FR 2788610 discloses a single use timer device according to the preamble of claim 1. According to one aspect of the invention, there is provided a reminder device as set forth in claim 1.

[0005] The device incorporates a contact portion, for example a pad or button, which can be pressed by a user, to actuate the status indicator. Preferably, the status indicator incorporates an audio and/or visual alert.

[0006] In a preferred embodiment, a series of status indicators are arranged to be illuminated when the contact portion is pressed by a user, dependent upon the proximity to the predetermined date or time period. The device may incorporate a circuit, whereby a red signal is provided if a pre-set test date or time period has elapsed. The circuit may provide an alternative colour signal, such as an amber signal, if the pre-set test date is imminent. In a preferred embodiment, the status indicator is configured to provide its alert function only when the device is agitated, e.g. shaken or said contact portion is pressed.

[0007] In one embodiment, the device is incorporated into a laminated structure, wherein a circuit is provided on a substrate, such as a credit card type material or other plastic or board member, and overlaid with a cover material, whereby an alert is provided when a particular portion of the card is pressed and said date or time period has elapsed and/or is due to elapse in the immediate short-term. In addition to the contact portion, the laminated device can be configured to provide an appropriate alert if the device is shaken or otherwise agitated. The status indicator preferably comprises an LCD.

[0008] The device is intended to operate for only a single time period and cannot be reset, so as to be disposed of after use. These devices are preferably tamperproof, wherein access to the internal components, for example to reset the timer, is not possible without breaking into the device.

[0009] In a preferred embodiment, the device comprises a plastics base having or defining a recess or chamber

for the internal components. The device or recess preferably has a peripheral lip, flange or other surface onto which a plastics cover can be heat sealed, so as to permanently encase the internal components in the recess. At least a portion of the cover is preferably transparent, e.g. in the region of the status indicator. The contact portion is preferably visible through the cover. The device may be configured so that the contact portion can be actuated by pressing the overlaying portion of cover. Alternatively, the cover may have one or more apertures, e.g. over the contact portion. The device may comprise a heat sealed plastics moulding, wherein only the contact portion and/or status indicator is exposed.

[0010] The device includes means to start the counter circuit, for example a pull-out tag of known construction, which will effectively initiate a countdown for a single predetermined time period, for example 12 months, 3 months or 6 weeks.

[0011] For 12 month devices, the unit will remain in standby mode once the countdown has started. If the contact portion is pressed before the end of the countdown, a green light will flash to indicate how many full calendar months are left in the countdown. The unit will flash an amber light every 30 minutes and/or also if the contact portion is pressed when there is less than a single calendar month remaining, the amber light being replaced by a red light every 60 seconds when the unit has reached the end of its countdown. Flashing will continue until the internal power source is exhausted. The number of weeks since the countdown ended can be determined by pressing the contact portion, whereupon a flashing red light will indicate the number of weeks. For 3 month devices, the unit will remain in standby mode once the countdown has started. If the contact portion is pressed before the end of the countdown, a green light will flash to indicate how many full calendar months are left in the countdown. The unit will flash an amber light every 30 minutes when there is less than 10 weeks or 70 days remaining, replaced by a red light every 60 seconds during the last 12 weeks of the countdown period. Again, flashing will continue until the internal power source is exhausted, and the number of weeks since the countdown ended can be determined by pressing the contact portion, whereupon a flashing red light will indicate the number of weeks.

[0012] For 6 week devices, the unit will remain in standby mode once the countdown has started. If the contact portion is pressed before the end of the countdown, a green light will flash to indicate how many full weeks are left in the countdown. The unit will flash an amber light every 30 minutes when there is less than 5 weeks or 35 days remaining, replaced by a red light every 30 seconds during the last 6 weeks of the countdown period. Again, flashing will continue until the internal power source is exhausted, and the number of weeks since the countdown ended can be determined by pressing the contact portion, whereupon a flashing red light will indicate the number of weeks.

[0013] The invention is advantageous in that it provides a convenient solution to problems associated with co-ordinating safety test programmes for electrical appliances. The device can be fitted to or adjacent an electrical appliance, and users of the appliance are encouraged to interact with the device, e.g. via the contact portion, to determine whether the appliance is due for testing.

[0014] The test history of vehicles and/or parts thereof can also be monitored using the invention, hi particular, the invention has advantageous application for the testing of HGV cabs and trailers and other vehicles which need to undergo regular checking, wherein the driver of the vehicle can use a cab-mounted device to determine whether the cab or trailer has exceeded a safety test deadline.

[0015] The invention is of particular use for the health and safety testing of electrical appliances, but also fire extinguishers and the like, as well as office or laboratory equipment. It can also be used to remind users of calibration deadlines for testing hospital equipment, and also for indicating sell-by/expiry/destruction dates for consumables, for example. The invention can be readily incorporated into refrigeration units.

[0016] Other features of the invention will be readily apparent from the claims and the following description of preferred embodiments of the invention, which is made, by way of example only, with reference to the accompanying drawings, in which:

Figure 1 is a schematic perspective view of a safety reminder device and its holder;

Figure 2 shows the device of Figure 1 attached to an electrical cable;

Figure 3 shows an electrical plug incorporating the device of Figure 1;

Figure 4 shows the device of Figure 1 attached to a fire extinguisher; and

Figure 5 shows the device and holder of Figure 1 mounted on a computer monitor.

[0017] Referring firstly to Figure 1, a reminder device is indicated generally at 100 consisting of a moulded plastics body 102 in which is mounted a contact button 104 and a status indicator 106.

[0018] A control circuit (not shown), preferably including a processor, is mounted in the body 102, e.g. beneath the button 104 and status indicator 106. The control circuit preferably includes a timer which can be activated to begin a count down for a predetermined or pre-programmed time period. Alternatively, a electronic calendar can be incorporated for monitoring a predetermined time period, for example 6 weeks, 3 months, 6 months, or 12 months. In either case, the control circuit is configured to provide an alert via the status indicator 106 when a

predetermined date or time period has elapsed and/or is close to elapsing.

[0019] In the illustrated embodiment, the status indicator 106 incorporates three LEDs arranged to indicate a green signal if the stored date or time period has yet to elapse, a yellow signal if the stored date or time period has almost elapsed (for example within two weeks of the elapsed date), and a red signal if the date or time period has elapsed.

[0020] A power source in the form of a lithium battery (not shown) is mounted in the device 100 for powering the control circuit.

[0021] To conserve power, the control circuit is configured to illuminate the LEDs only when the contact button 104 is pressed by a user. Alternatively or additionally, it may be configured to intermittently illuminate the amber LED as the elapse date or the end of the predetermined time period approaches and/or to permanently or intermittently illuminate the red LED when the particular date has elapsed, for example. The frequency of red illumination is preferably higher than the frequency of amber illumination.

[0022] The device 100 is supplied in a pre-set state, so as to be operable for one or more fixed periods, e.g. for indicating a red light on the status indicator after a 6 month period. The devices 100 includes a pull-out tab 118, for use in activating the countdown function of the control circuit.

[0023] The device 100 is formed as a robust and sealed unit, whereby access to the internal components of the device 100 is substantially inhibited. It is preferred if the body 102 is tamperproof, e.g. formed in such a manner as to provide a unitary, single piece housing around the internal components, to prevent access to the internal components without smashing or otherwise breaking into the device. Hence, such units are typically factory set, whereby the timer circuit is preferably non-resettable.

[0024] As can be seen in Figure 1, the body 102 defines an upper periphery around the button 104 and status indicator 106 in Figure 1. The periphery delimits a recess into which the internal components are fitted. In a preferred embodiment, a transparent cover (not shown) is heat sealed or otherwise permanently affixed onto the body 102, whereby to encase the button 104 and status indicator 106 in the device. The cover may be a sheet or film of preferably plastics material. The device 100 is preferably arranged so that the contact portion can be actuated by pressing the overlaying portion of cover. Alternatively, the cover may have an aperture over the contact button 104. However, access to the internal components, for example to reset the timer, is not possible without breaking the cover or base 102. The device 100 is intended to be disposed of after use and may be broken down and recycled.

[0025] The device 100 can be removably received in a holder 110 by a friction fit, for example using inter-engaging ribs and grooves between the device 100 and its holder 110, or a clip or snap-fitting engagement. In the

illustrated embodiment, the holder 110 includes a nib 112 adapted to snap-fittingly engage in a detent 114 on the body 102. The holder 100 can then be secured to a desired location, for example on an appliance so that the device is portable with the appliance.

[0026] The device 100 can be fitted to or adjacent an electrical appliance, and users of the appliance are encouraged to press the contact button 104 on the device 100 to determine whether the appliance is due for testing.

[0027] If the button 104 is pressed and the status indicator 106 remains inactive, the user must assume that the power source for the device 100 is inactive. A telephone number or other contact address can be provided on the unit, for example on data bar 116 on the front of the device 100, for reporting that the device is faulty. An additional panel for signature by a test engineer and or space for a conventional barcode may also be included on the device or holder.

[0028] Several suitable applications for the device are indicated in Figures 2 to 5. In Figure 2, the device 100 is shown secured to an electrical cable 120 via a cable tie 122, so as to travel with the cable 120 for permanent association with the cable and any appliance or plug connected at the ends of the cable. In Figure 3, the device 100 forms an integral part of an electrical plug 130. The device can be removably received in the plug head if desired. In Figure 4, the device is secured to a safety extinguisher 140 using a tether 142, although it may also be formed as an integral part of the extinguisher housing or handle. In Figure 5, the combination of device 100 and holder 110 is shown fitted to a computer monitor 150.

[0029] Although shown in triangular form in the Figures, the device 100 may take any suitable shape and construction. However, the device 100 and/or its display will typically be no larger than the body of a conventional wristwatch, credit card or pager.

[0030] The most preferred embodiments are intended to be tamperproof and non-resettable, other embodiments may utilise a body which can be opened only using a unique and dedicated key or other such mechanism, so as to enable only authorised persons to access the control circuit, for example for re-setting or maintenance.

[0031] A solar cell may be incorporated in the device 100 to supplement or replace the batteries. An LCD display may also be incorporated for displaying pre-programmed messages or other data to users, for example when the contact button 104 is pressed or if the test deadline has elapsed. Such messages may include a name or number for contact to arrange re-testing of the associated appliance, for example.

[0032] The invention has thus far been described as having a status indicator 106 which is activated when the contact button 104 is pressed by a user. The button may take the form of an object which can be physically depressed relative to the housing. However, it may take the form of a simple contact pad, tab or other such contact portion, whereby in each case, the control circuit is initiated to provide an appropriate alert via the status indica-

tor, if necessary, if a user presses the contact portion.

[0033] A plurality of buttons may be included which must be pressed in a predetermined manner, e.g. together or in sequence, in order to cause activation of the status indicator, thereby to reduce power consumption and to deter intermittent intervention from casual or unauthorised users.

[0034] In those embodiments where the device is removable from a holder, the power source can be integral with the holder, and may take the form of a solar panel and/or a piezoelectric power source which generates power upon agitation of the holder. These power sources may alternatively be incorporated into the body of the device.

[0035] In a further embodiment, the device or its holder incorporates a transmitter for transmitting status information to a remote location. A transceiver can be incorporated, whereby the device can be remotely activated and/or reset. The transceiver can also be used for indicating the position of the device, for example if the device is secured to or integral with a portable or movable object.

Claims

1. A reminder device (100) comprising a counter circuit for monitoring the passing of a predetermined date or time period the reminder device being configured for a single counting operation and further comprising: a power source for the counter circuit, means to start the counter circuit and a status indicator (106) arranged to indicate whether said date or time period has elapsed or is due to elapse, **characterized in that** the status indicator is normally operable in a stand-by mode, and **in that** the device further includes a contact portion (104) arranged to wake-up the status indicator on demand after the counter circuit has been actuated.
2. A reminder device according to claim 1 wherein the device comprises a tamperproof housing whereby the counter circuit is non-resettable.
3. A reminder device according to claim 1 or claim 2 wherein the means to start the counter circuit is in the form of a pull-out tag for initiating the counter circuit.
4. A reminder device according to claim 1 wherein the contact portion is a single button or pad.
5. A reminder device according to any of claims 1 to 4, further comprising a base for the internal components and a cover which is sealed over the base.
6. A reminder device according to claim 5 wherein the base includes a peripheral region onto which the cover is secured.

7. A reminder device according to claim 5 or 6 wherein at least a portion of the cover is transparent.
8. A reminder device according to any of claims 5 to 7 wherein the contact portion is arranged to be actuated when a respective portion of the cover is pressed.
9. A reminder device according to any of claims 5 to 7 wherein the cover includes an aperture through which the contact portion can be pressed.
10. A reminder device according to any of claims 1 to 8 comprising a laminated structure, wherein a circuit is provided on a planar base and overlaid with a cover material, whereby a visual alert is provided when a particular portion of the card is pressed, if said predetermined time period or date has elapsed.
11. A reminder device according any preceding claim wherein the status indicator provides a visual indicator if said time period or date has elapsed when said contact portion is pressed.
12. A reminder device according to any preceding claim wherein the status indicator is configured to produce three separate status indications; that the date or time period has not elapsed, that the date or time period is shortly due to elapse, and that the date or time period has already elapsed.
13. A reminder device according to claim 12, including three different coloured visual indicators.

Patentansprüche

1. Eine Gedächtnishilfeeinrichtung, umfassend eine Zählerschaltung für die Überwachung eines vorbestimmten Datums oder eines vorbestimmten Zeitintervalls, wobei die Gedächtnishilfeeinrichtung für die Überwachung eines einzelnen Zählvorgangs konfiguriert ist, und des Weiteren eine Energiequelle zur Energieversorgung der Zählschaltung, Mittel zum Starten der Zählschaltung und eine Statusanzeige (106) umfasst, die derart ausgebildet ist, dass sie entweder das vorgenannte Datum oder das verstrichene Zeitintervall, beziehungsweise das zu erwartende verstrichene Zeitintervall anzeigt, **dadurch gekennzeichnet, dass** der Statusanzeiger im Normalfall in einem Stand-By Modus arbeitet, und dass der Einrichtung des Weiteren ein Kontaktfeld (104) zugeordnet ist, das derart ausgebildet ist, dass es die Statusanzeige auf Verlangen abfragt, nachdem der Zählerschaltkreis in Betrieb genommen worden ist.
2. Eine Gedächtnishilfeeinrichtung gemäß Anspruch 1,

wobei die Vorrichtung ein gegen Eingriffe geschütztes Gehäuse umfasst, und wobei die Zählerschaltung nicht zurückstellbar ausgebildet ist.

3. Eine Gedächtnishilfeeinrichtung gemäß Anspruch 1 oder Anspruch 2, wobei die Mittel für das Starten der Zählerschaltung in der Art und Weise einer herausziehbaren Lasche ausgebildet ist.
4. Eine Gedächtnishilfeeinrichtung gemäß Anspruch 1, wobei das Kontaktfeld als ein einzelner Knopf oder als ein Pad ausgebildet ist.
5. Eine Gedächtnishilfeeinrichtung gemäß einem der Ansprüche 1 bis 4, des Weiteren umfassend eine Befestigung für innen liegende Bauteile und eine Abdeckung, die abdichtend über die Befestigung legbar ist.
6. Eine Gedächtnishilfeeinrichtung gemäß Anspruch 5, wobei die Befestigung einen peripheren Bereich umfasst, an dem die Abdeckung in abdichtender Art und Weise verbindbar ausgebildet ist.
7. Eine Gedächtnishilfeeinrichtung gemäß Anspruch 5 oder 6, wobei wenigstens ein Bereich der Abdeckung transparent ausgebildet ist.
8. Eine Gedächtnishilfeeinrichtung gemäß einem der Ansprüche 5 bis 7, wobei das Kontaktfeld derart angeordnet ist, dass es in Betrieb genommen wird, sobald das entsprechende Feld auf der Abdeckung gedrückt wird.
9. Eine Gedächtnishilfeeinrichtung gemäß einem der Ansprüche 5 bis 7, wobei der Abdeckung eine Apertur zugeordnet ist, durch die das Kontaktfeld gedrückt werden kann.
10. Eine Gedächtnishilfeeinrichtung gemäß einem der Ansprüche 1 bis 8, umfassend einen mehrschichtigen Aufbau, wobei ein Schaltkreis der flächig ausgebildeten Befestigung zugeordnet und mit einem Abdeckmaterial überzogen ist, und des Weiteren ein visueller Alarm vorgesehen ist, der sichtbar ist, wenn ein bestimmter Bereich auf der Karte gedrückt wird und sobald das vorbestimmte Zeitintervall oder das Datum angelaufen sind.
11. Eine Gedächtnishilfeeinrichtung gemäß einem der vorhergehenden Ansprüche, wobei der Statusanzeiger als ein visueller Anzeiger ausgebildet ist, der den Status anzeigt, sobald das vorgenannte Kontaktfeld gedrückt wird und das vorgenannte Zeitintervall oder das Datum abgelaufen sind.
12. Eine Gedächtnishilfeeinrichtung gemäß einem der vorhergehenden Ansprüche, wobei der Statusanzei-

ger derart konfiguriert ist, dass dieser drei von einander getrennte Zustände anzeigt : dass das Datum oder das Zeitintervall noch nicht angelaufen sind, dass das Datum oder das Zeitintervall kurz vor dem Ablauf stehen, und dass das Datum oder das Zeitintervall bereits abgelaufen sind.

13. Eine Gedächtnishilfeeinrichtung gemäß Anspruch 12, wobei die Statusanzeiger für die Anzeige des Status drei farblich unterschiedlich ausgebildete visuelle Anzeiger umfasst.

Revendications

1. Dispositif de rappel (100) comprenant un circuit de comptage pour surveiller le dépassement d'une date ou d'un laps de temps prédéterminé, le dispositif de rappel étant configuré pour une unique opération de comptage et une source d'alimentation en énergie du circuit de comptage, un moyen pour démarrer le circuit de comptage et un indicateur d'état (106) adapté pour indiquer si ladite date ou ledit laps de temps est dépassé ou sur le point d'être dépassé, **caractérisé en ce que** l'indicateur d'état fonctionne normalement dans un mode attente et **en ce que** le dispositif comprend, en outre, une portion de contact (104) adaptée pour réveiller l'indicateur d'état sur demande une fois que le circuit de comptage a été actionné.
2. Dispositif de rappel suivant la revendication 1, dans lequel le dispositif comprend un boîtier inviolable, en raison duquel le circuit de comptage ne peut être remis à zéro.
3. Dispositif de rappel suivant la revendication 1 ou 2, dans lequel le moyen pour démarrer le circuit de comptage est en forme d'étiquette à arracher pour initialiser le circuit de comptage.
4. Dispositif de rappel suivant la revendication 1, dans lequel la portion de contact est un unique bouton ou pad.
5. Dispositif de rappel suivant une quelconque des revendications 1 à 4, comprenant, en outre, une base pour les composants internes et un couvercle qui est scellé sur la base.
6. Dispositif de rappel suivant la revendication 5, dans lequel la base inclut une région périphérique sur laquelle le couvercle est fixé.
7. Dispositif de rappel suivant la revendication 5 ou 6, dans lequel au moins une portion du couvercle est transparente.

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8. Dispositif de rappel suivant une quelconque des revendications 5 ou 7, dans lequel la portion de contact est adaptée à être actionnée lorsqu'une portion respective du couvercle est pressée.
9. Dispositif de rappel suivant une quelconque des revendications 5 à 7, dans lequel le couvercle comprend une ouverture, à travers laquelle la portion de contact peut être pressée.
10. Dispositif de rappel suivant une quelconque des revendications 1 à 8 comprenant une structure laminée, un circuit étant pourvu sur une base plane et recouvert d'un matériau de couverture, une alerte visuelle étant donnée lorsqu'une portion particulière de la carte est pressée dans le cas où ledit laps de temps ou ladite date est dépassé.
11. Dispositif de rappel suivant une quelconque des revendications, dans lequel l'indicateur d'état fournit un indicateur visuel dans le cas où ledit laps de temps ou ladite date est dépassé lorsque ladite portion de contact est pressée.
12. Dispositif de rappel suivant une quelconque des revendications précédentes, dans lequel l'indicateur d'état est configuré pour produire trois indications d'état séparées, à savoir que la date ou le laps de temps ne sont pas dépassés, que la date ou le laps de temps sont sur le point d'être dépassés et que la date ou le laps de temps sont déjà dépassés.
13. Dispositif de rappel suivant la revendication 12 comprenant trois différents indicateurs visuels colorés.

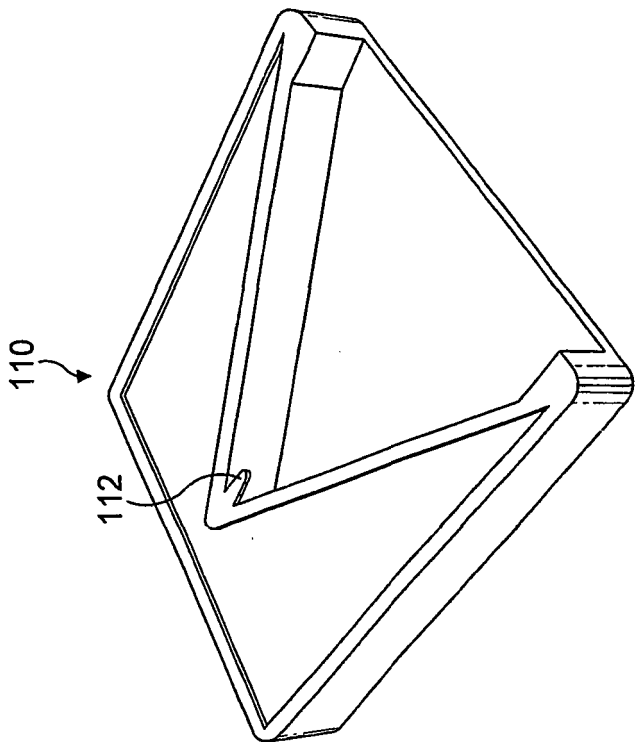
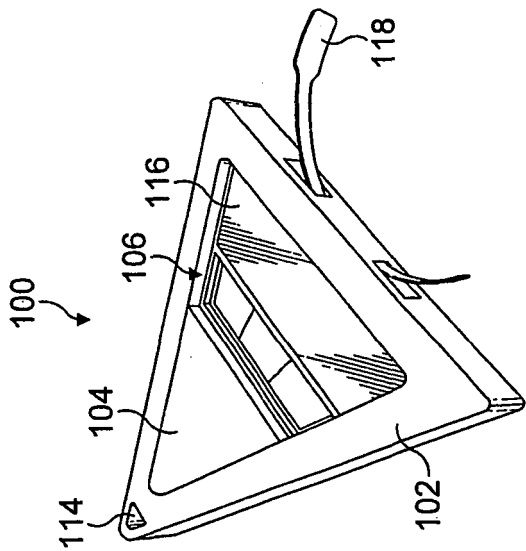


FIG. 1



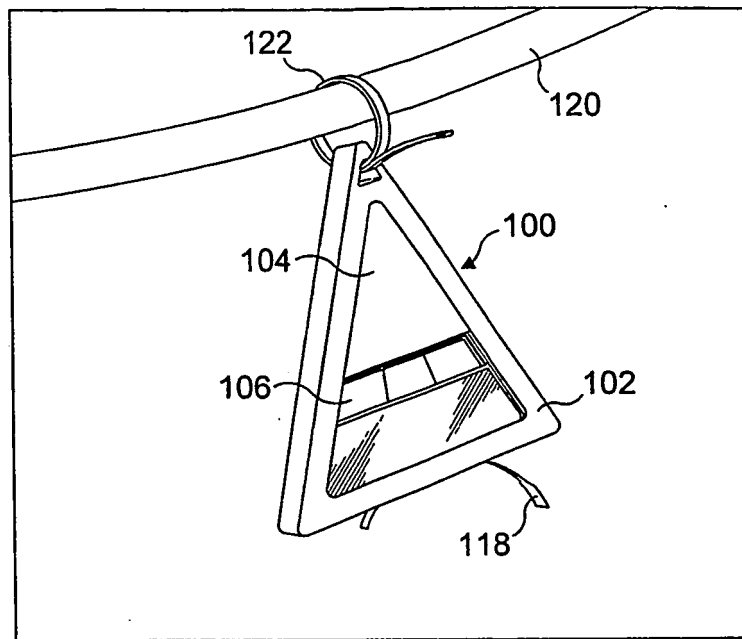


FIG. 2

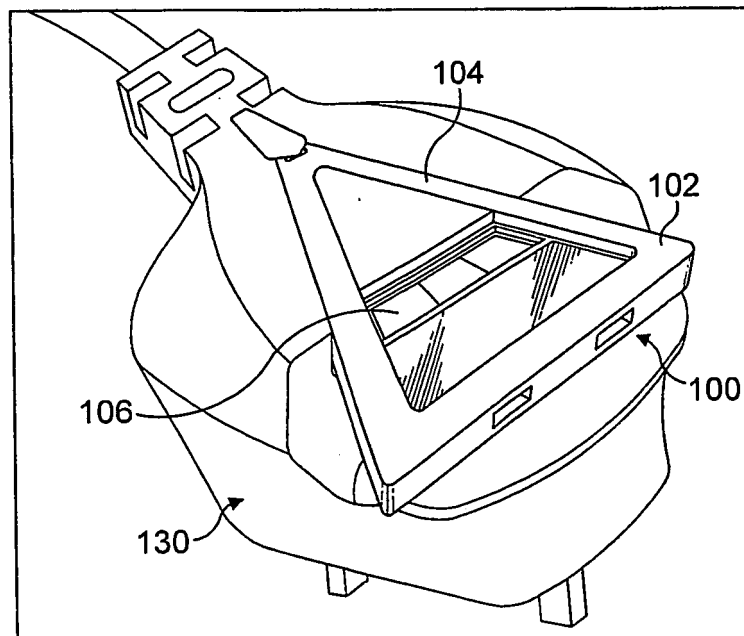


FIG. 3

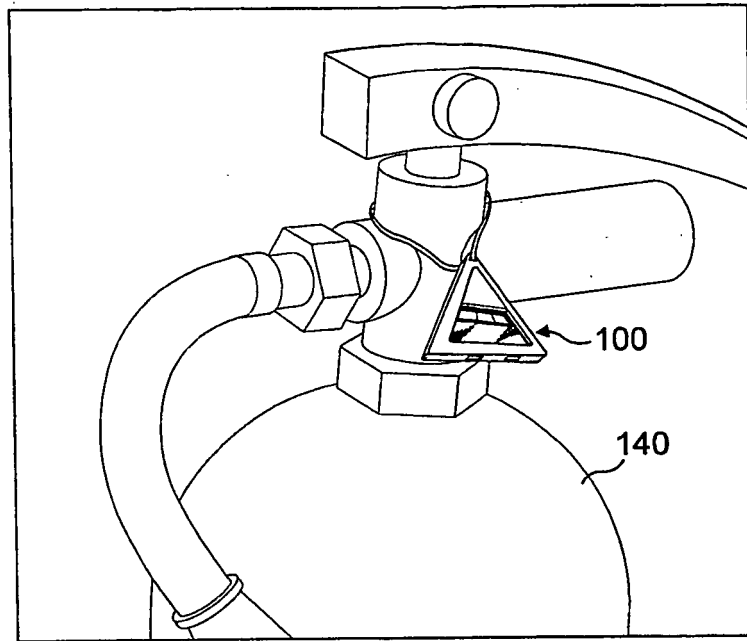


FIG. 4

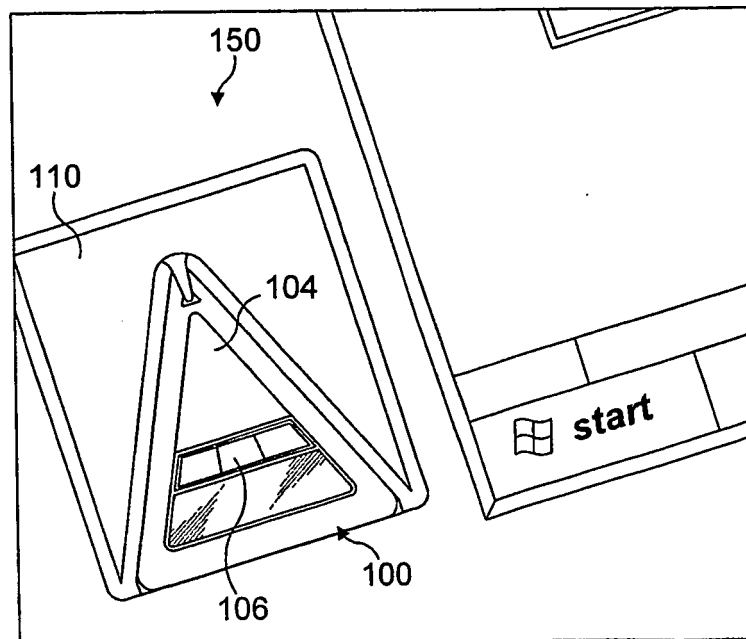


FIG. 5

REFERENCES CITED IN THE DESCRIPTION

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