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(54) **ONE-TIME-USE TAG WITH OPTICAL CODE**

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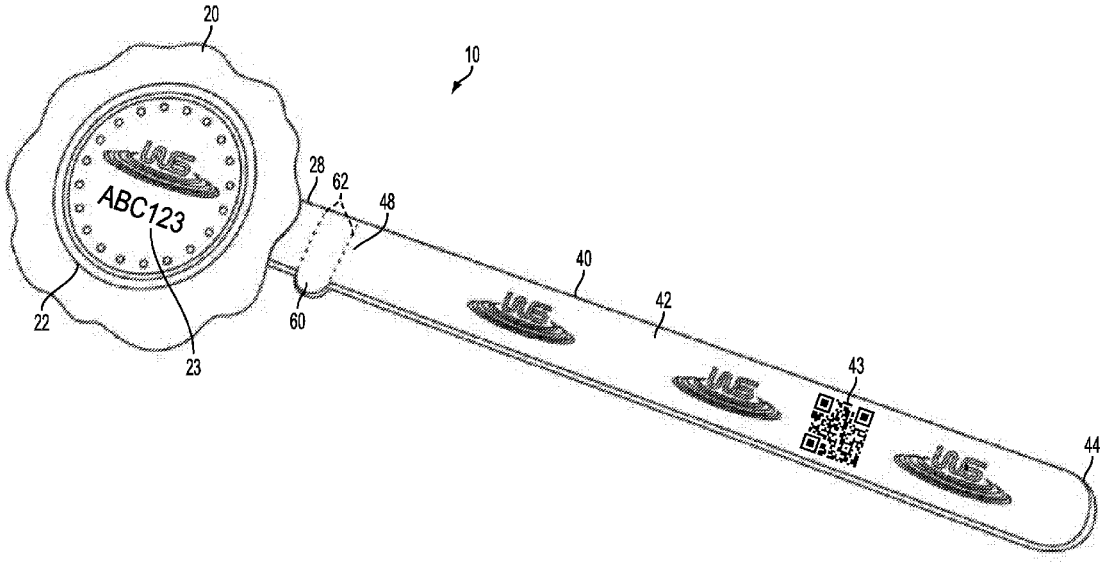
CPC ***G08B 13/2434*** (2013.01)

(57) **ABSTRACT**

Embodiments of the current invention entail a highly visible tag that is attached to products at a highly visible locations. It can easily be removed once purchasers buy the product. To remove it, purchasers must destroy the tag to use the product in public, and it cannot be reattached by the purchaser. Absence of a tag makes it clear that the buyer has removed the tag and provides an indication that the product has been used. A retailer's policies determines how an attempt to return a tagless product is handled. The tag is most effective for products that are used in public. The tag has an optical code to prevent a counterfeit tag from being attached to the product in order to return it, when it has been used by the purchaser. The optical code may be alphanumeric or machine readable. The tag may carry EAS technology.



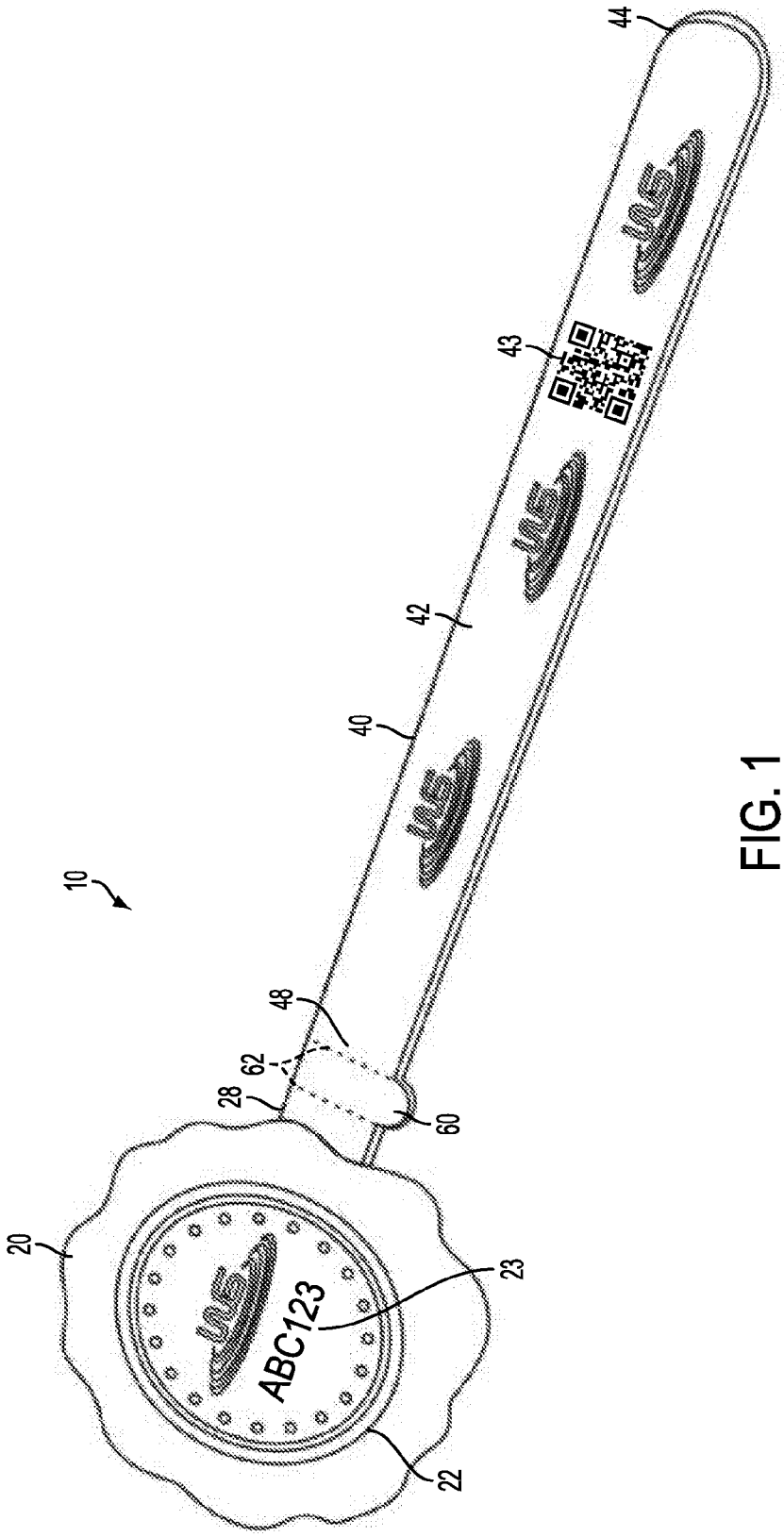


FIG. 1

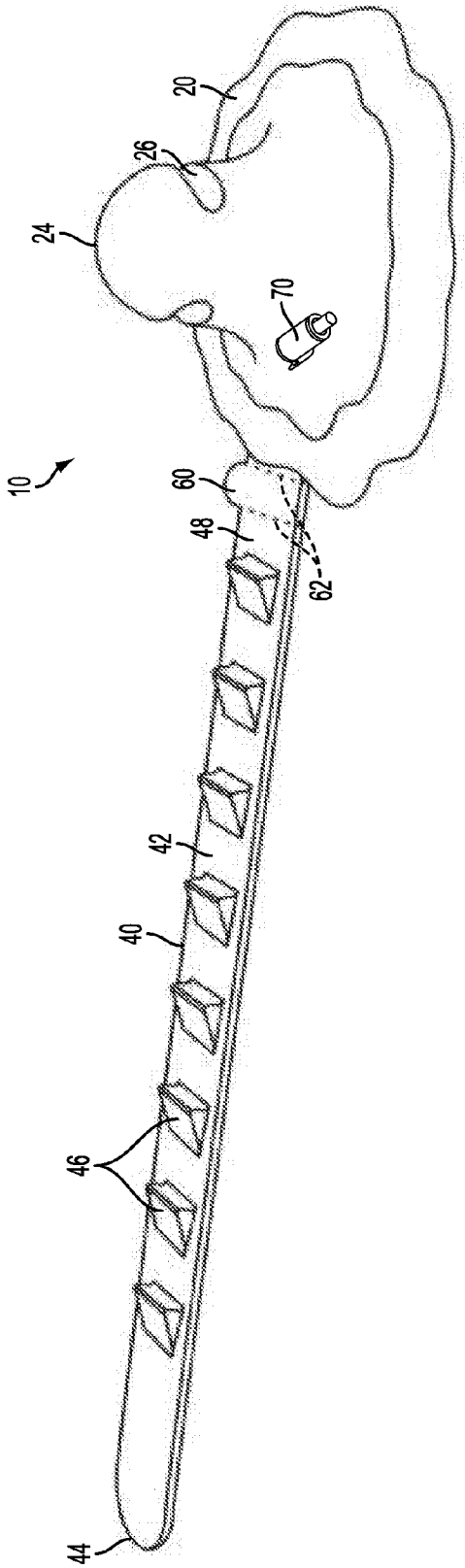


FIG. 2

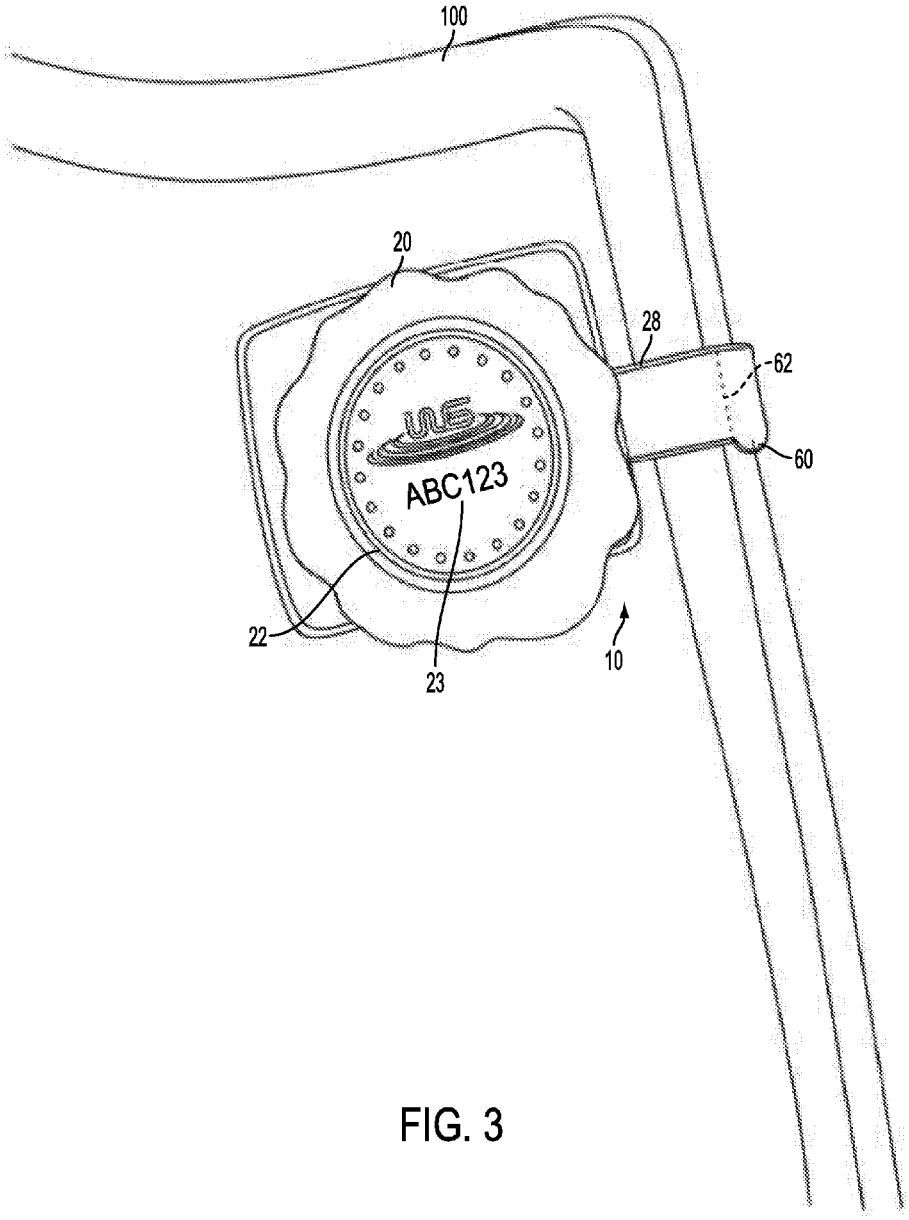


FIG. 3

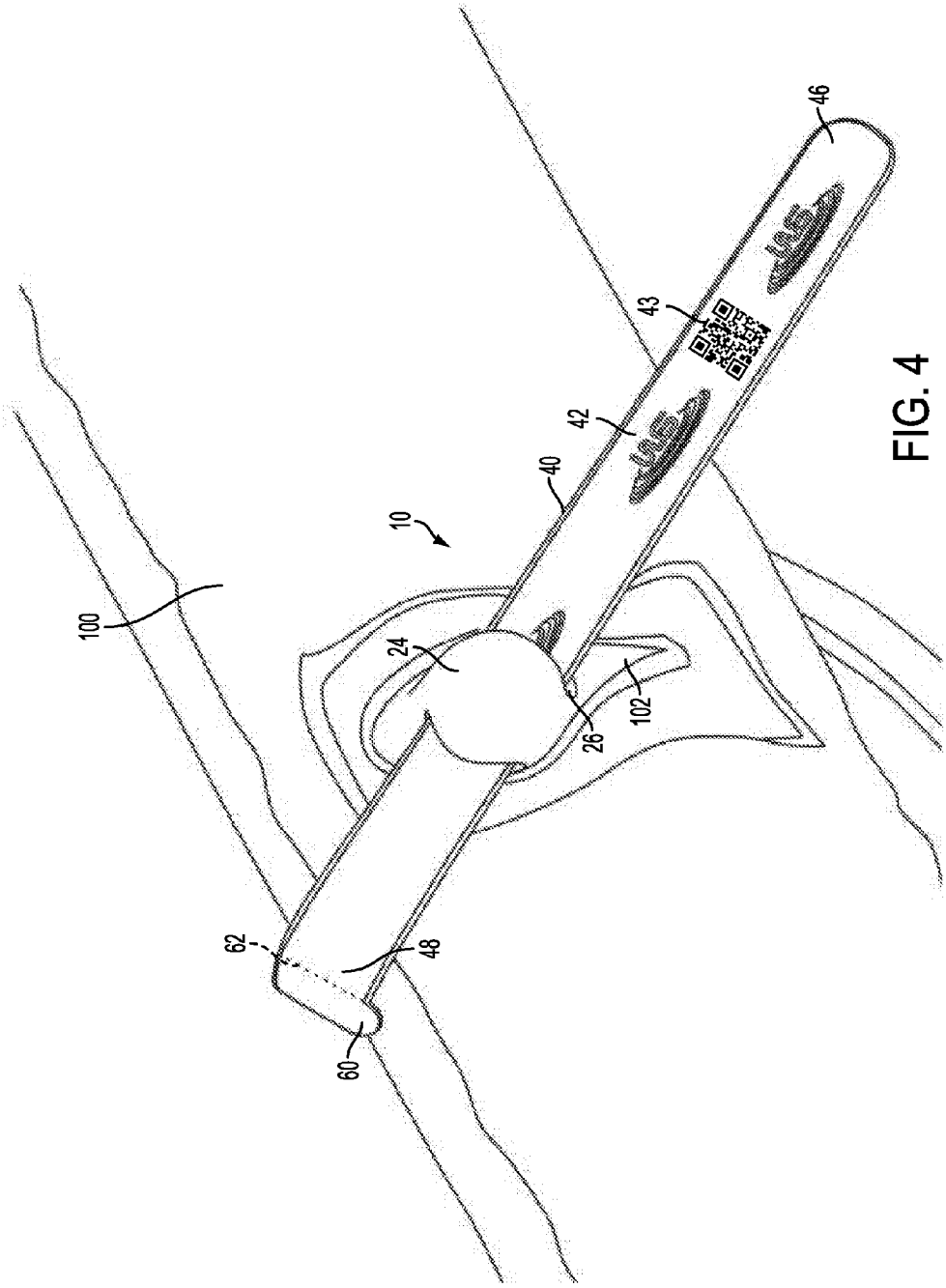


FIG. 4

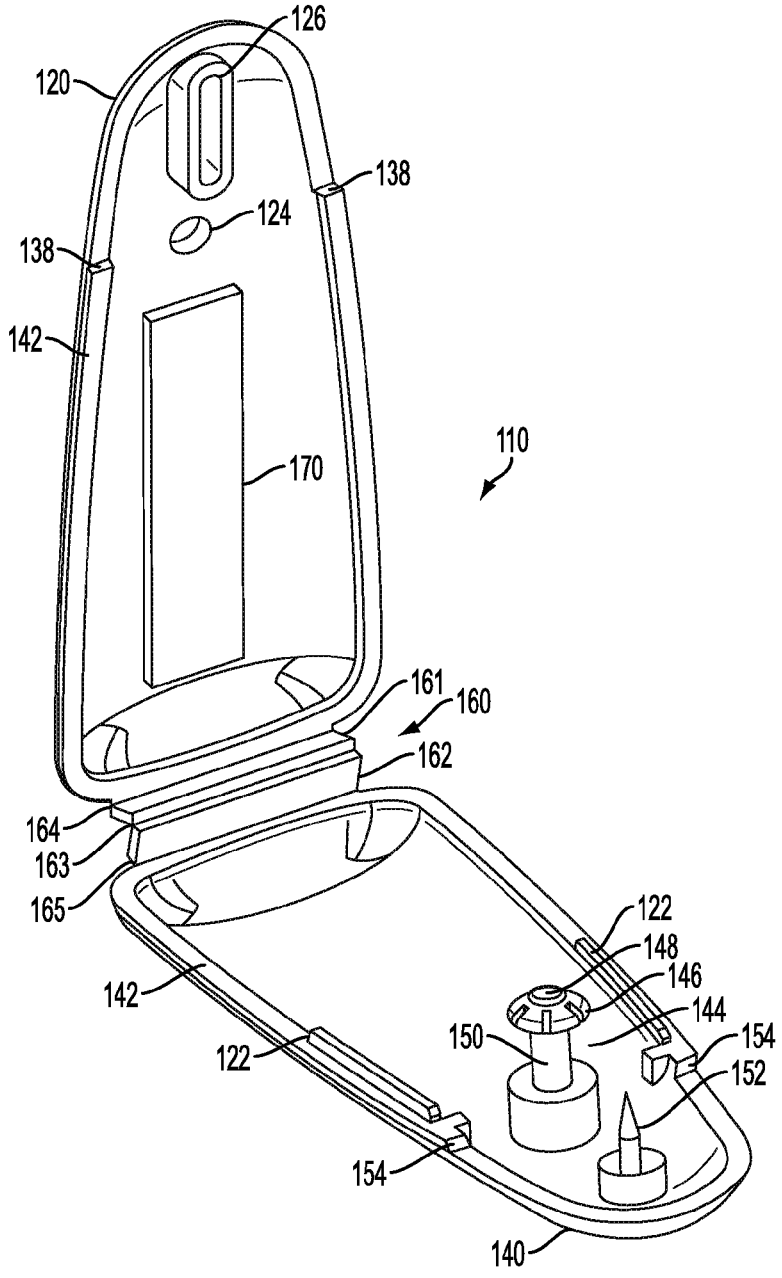

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FIG. 5

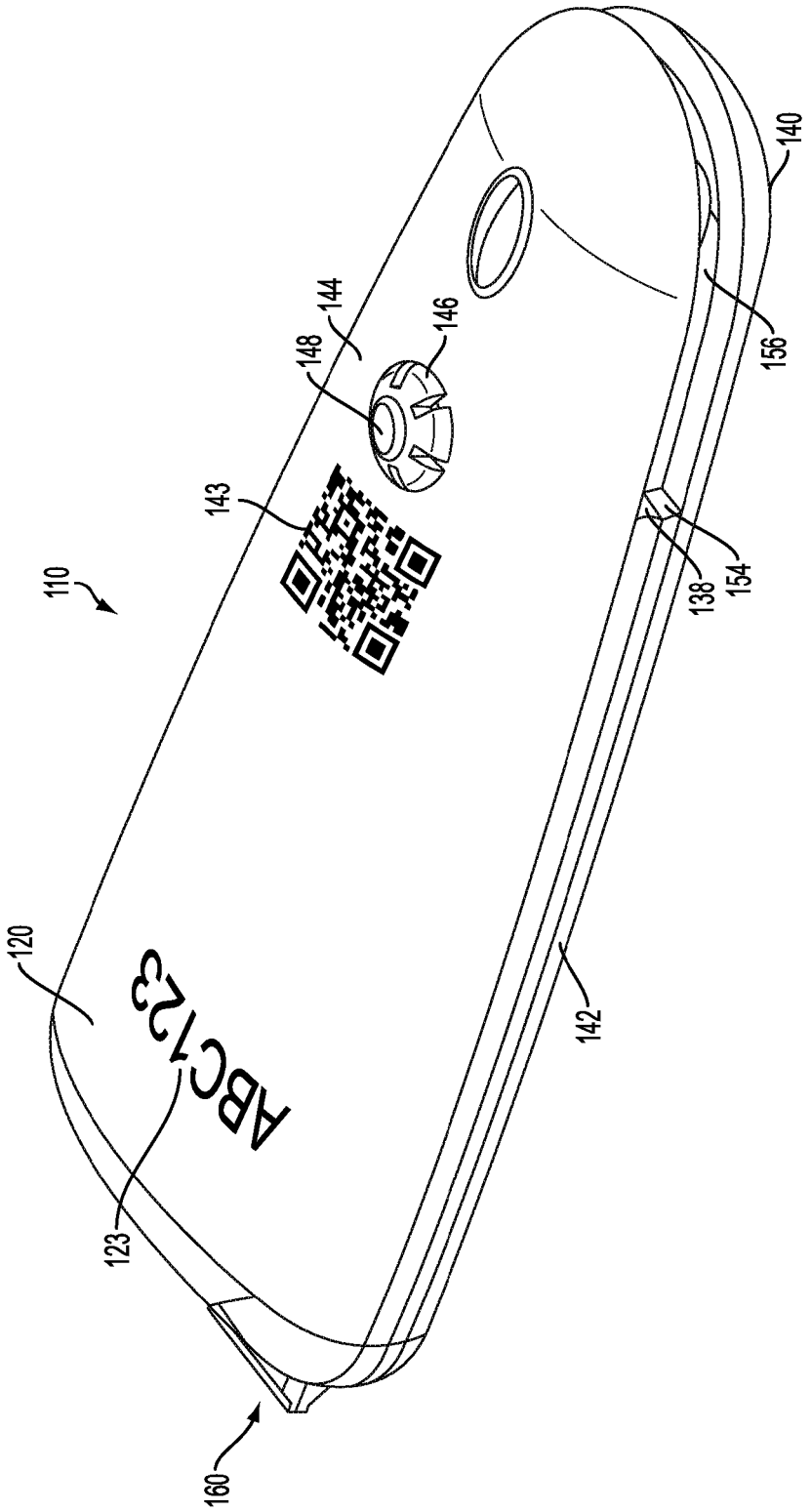

FIG. 6

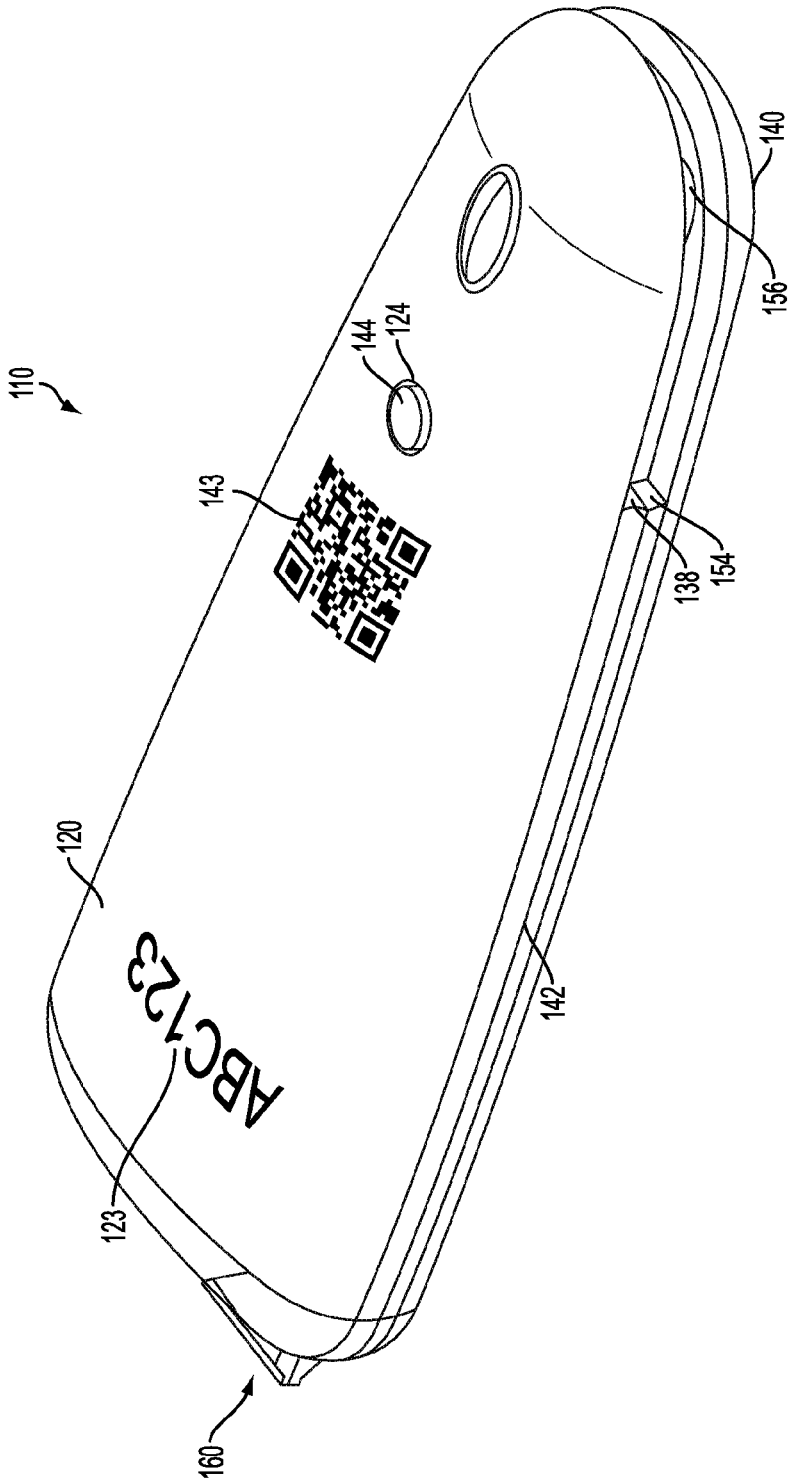

FIG. 7

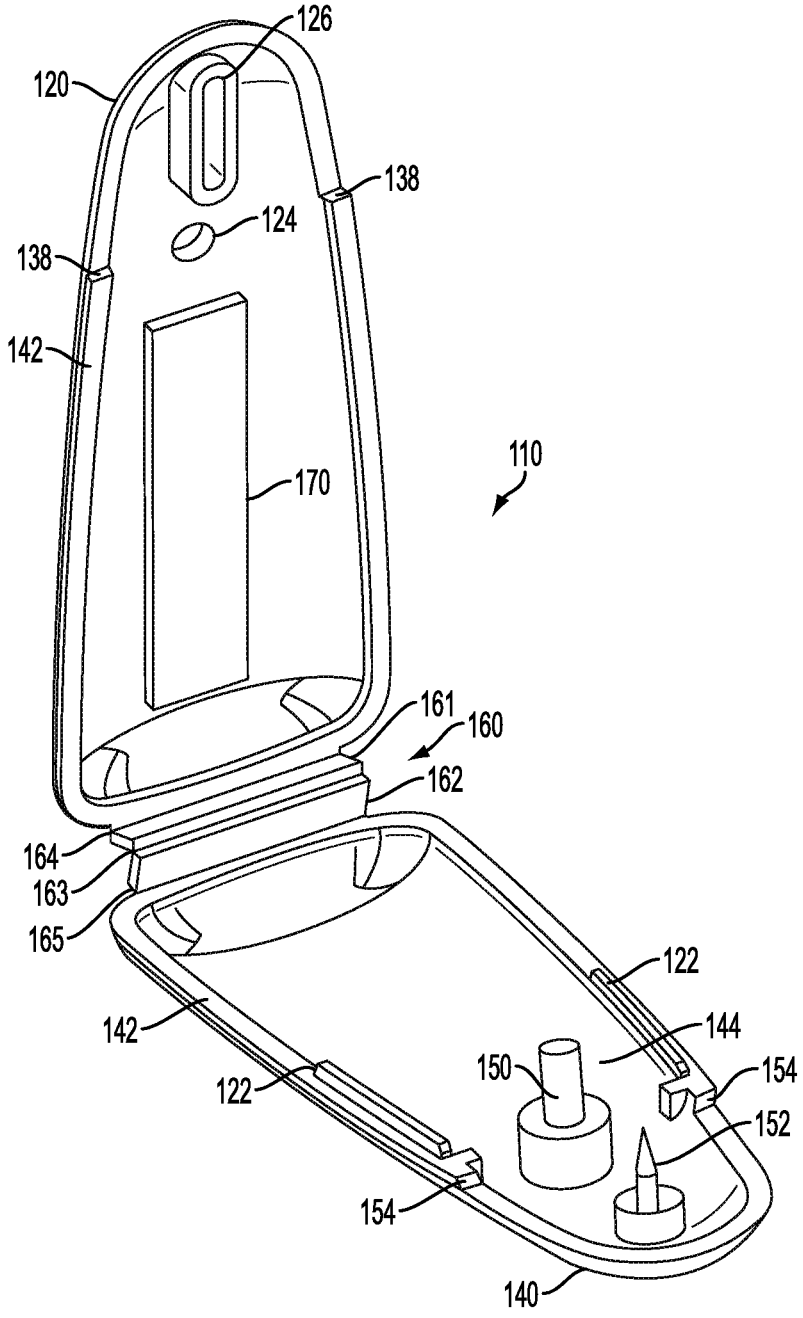
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FIG. 8

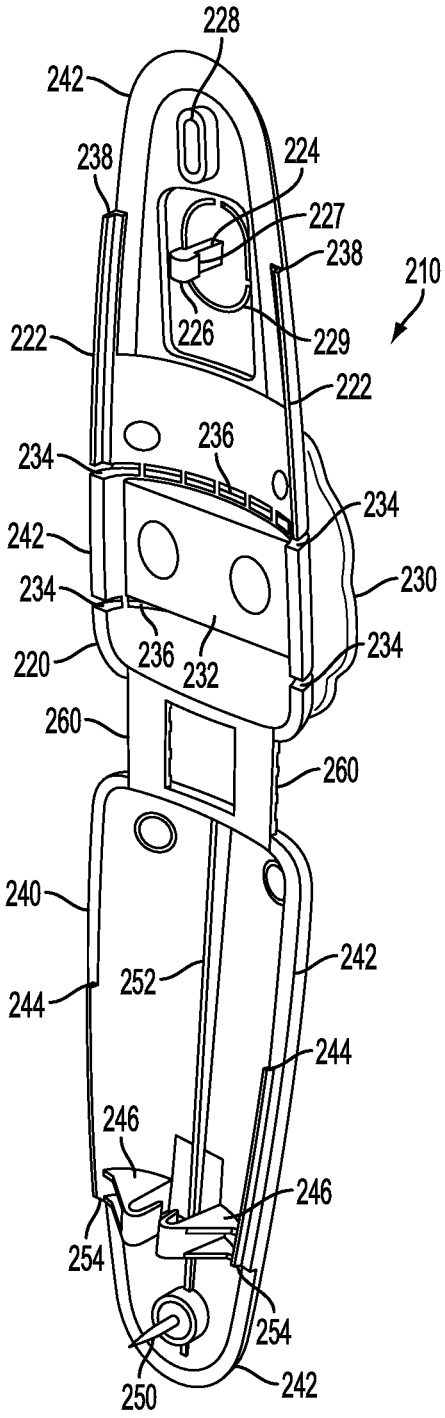
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FIG. 9

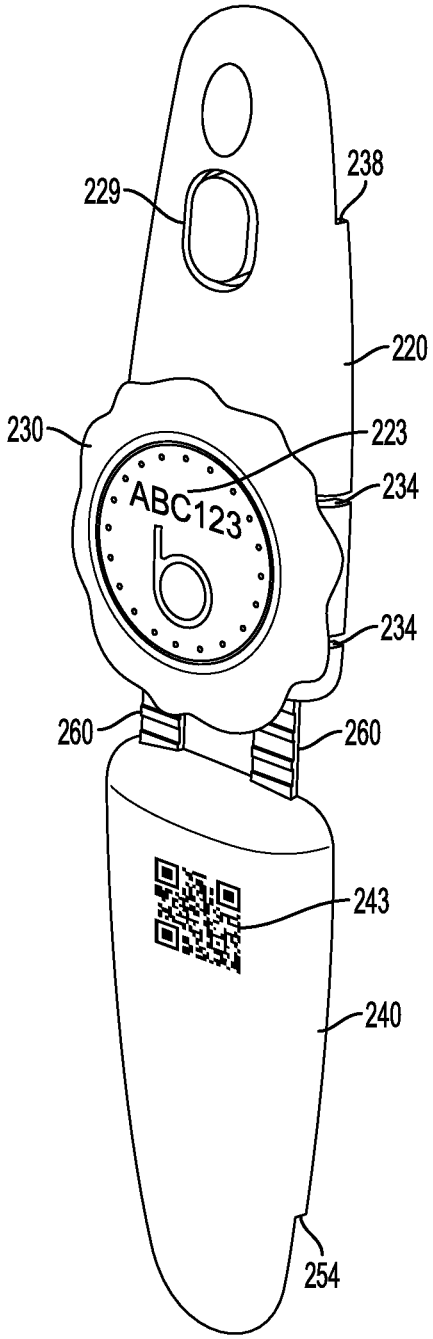

FIG. 10

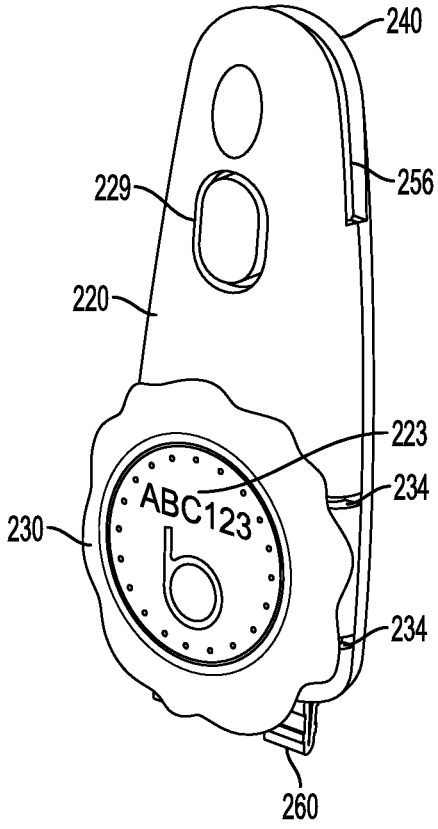

FIG. 11

ONE-TIME-USE TAG WITH OPTICAL CODE

CROSS REFERENCE TO RELATED APPLICATIONS

[0001] This application is a continuation-in-part application of U.S. patent applications Ser. No. 14/099,788, filed on Dec. 6, 2013, Ser. No. 14/184,786, filed on Feb. 20, 2014, and Ser. No. 14/606,351, filed on Jan. 29, 2015. U.S. patent application Ser. No. 14/099,788 published as U.S. 2014/0159902 A1 and claims priority to U.S. Provisional Application 61/734,478, filed on Dec. 7, 2012. U.S. patent application Ser. No. 14/184,786 published as U.S. 2014/0232545 A1 and claims priority to U.S. Provisional Application 61/767,147, filed on Jan. 20, 2013. U.S. patent application Ser. No. 14/606,351 is itself a continuation-in-part of U.S. application Ser. No. 14/099,788. The entirety of U.S. application Ser. Nos. 14/099,788, 14/184,786, and 14/606,351, and U.S. Provisional Applications 61/734,478, and 61/767,147, including both the figures and specifications are incorporated herein by reference.

FIELD OF THE INVENTION

[0002] This invention relates to the prevention of the fraudulent return of purchased goods. More specifically, this invention relates to the prevention of the return of garments which have been purchased, worn, and then returned to the store after having been worn, or the return of a lesser valued good on the purchase receipt of a greater valued good.

BACKGROUND OF THE INVENTION

[0003] Theft of goods in the retail environment is a serious concern. Theft cuts into the margins of a business making it more difficult for a business to compete and succeed. One type of theft is fraudulently returned garments. This type of theft involves purchasing a garment, perhaps a more expensive high end garment, and wearing it at least once. After the garment has been worn, it is fraudulently returned to the retail outlet where it was purchased. This allows the purchaser to get the benefit of the product without paying for it. This frequently occurs when a person purchases a more expensive article of clothing for a particular occasion, wears the garment, and then returns it. This technique of theft is sometimes called wardrobing in the retail industry.

[0004] One measure that is employed against this type of theft employs a highly visible anti-wardrobing tag placed on the garment. The tag is placed in a highly visible location so that the garment cannot be worn without the tag being seen. Once a garment is bought, the tag can be removed by a purchaser, but with the removal of the tag, the garment may not be returned, or can only be returned with a mark-down from purchase price, or other return policies may be applied.

[0005] In response to the deployment of anti-wardrobing tags, additional theft techniques have been developed and encountered in the retail sales environment. One technique employed to counter anti-wardrobing tags is the counterfeiting of the anti-wardrobing tags. Since they are disposable, anti-wardrobing tags are very simple devices and do not have distinguishing characteristics to identify individual tags, or to identify a tag with a specific item, or garment. Because of this, if a reasonably similar tag is substituted for a removed anti-wardrobing tag, the garment may be accepted in a return transaction when the garment has actually been worn.

[0006] Another theft technique is the unequal exchange of garments. In this technique, two garments are acquired by a thief, one garment being much more expensive than the other. The thief then returns the less expensive garment with the sales receipt for the more expensive garment. The thief then gets the difference in cost between the two garments. This technique also requires a counterfeit anti-wardrobing tag to be placed on the returned garment in order for the garment to be accepted.

[0007] There remains a need for a means of identifying individual anti-wardrobing tags to defeat counterfeit tags. This means of identification needs to be as inexpensive as the tags themselves. It also needs to be flexible to adapt to different retailers and different retail situations.

SUMMARY FOR EMBODIMENTS OF THE INVENTION

[0008] Embodiments of the current invention entail a highly visible tag that can be attached to the garment at the store, but can easily be removed once the purchaser buys the garment and takes it home. Once the purchaser gets the garment home, they can remove it themselves and wear it. Once the tag is removed, it can not be reattached by the consumer. Depending on the store policy, the garment may not be returned, or there may be an extra fee for returning the garment, or other similar policies. The use of a tag makes it clear that the buyer has removed the tag and provides an indication that the garment has been worn in public.

[0009] Each tag has an optical code, or identifier, located on it. This optical code may be clearly visible or it may be hidden from being viewed in the normal course of activity. The optical code may be a unique identifier unique to each tag, it may be a group identifier, i.e., it may identify the lot from which the tag originated, or the optical code may be a chronological indicator and reflect a date/time.

[0010] In at least one embodiment, the optical code is an alphanumeric code visible on the exterior of the tag. In other embodiments, the optical code is a machine readable code such as a bar code, a two dimensional code, or other similar code. One type of commonly known two dimensional code is a QR code. In some embodiments, the optical code is on the exterior of the tag but only visible when exposed to light produced by an ultraviolet, or black light, bulb. Embodiments having optical codes that are only visible in an ultraviolet light environment may achieve this effect with ultraviolet light reactive ink, or ultraviolet light reactive plastic.

[0011] In at least one embodiment the tag consists of an elongated plastic piece having a head and a lanyard extending from the head. The head has a relatively large flat face and a hub extending from behind the face. The face provides a large surface for a logo, an optical code, and/or a statement about removal of the tag, etc. The hub tapers as it extends away from the face and is sized to be pressed through an aperture on garment such as a buttonhole. The hub has an aperture through it generally aligned with the lanyard and sized to accept the insertion of the lanyard. The lanyard also presents a suitable surface for locating an optical code.

[0012] The lanyard has several cleats along its length. When the free end of the lanyard is passed through the aperture in the hub and pulled, these cleats pass through the aperture as well and prevent the lanyard from being pulled back out of the aperture in the hub. A short distance along its length from the head, the lanyard has a tab and break lines formed along each side of the tab across the width of the

lanyard. This tab and the break lines to each side of it facilitate the parting of the lanyard into sections. Pulling the tab parts the lanyard into a stub section still attached to the head and a tail section passing through the aperture. The tab section itself may also become separated from both of the other sections of lanyard. Once the lanyard is separated, the tag may pressed out of the aperture to allow the garment to be worn. If necessary the tail section of the lanyard may be pull the rest of the way through the aperture in the hub of the head of the tag.

[0013] In some embodiments of the tag, the head will enclose an EAS device. The EAS device would interact with a larger EAS system to provide security and tracking functions. Due to size and cost factors, the EAS device would most likely be passive, but active EAS devices would also be possible. In some cases, the EAS device may actually be a dummy device which produces a rattle within the body of the tag to deceive would be thieves that an EAS device is housed in the tag. Of course, in the latter case the dummy device would not interact with the larger EAS system.

[0014] In another embodiment, the tag consists of an elongated plastic piece having a hinge in the middle so that it can fold over. Toward one end of the unfolded tag is a post, and at the other end, coincident with the post when the tag is folded, is an aperture through the tag. At least one flexible tab extends laterally from the post. When the tag is folded, the post inserts through the aperture. The flexible tab is located at a height on the post such that, when the post is inserted through the aperture, it is bent and passes through the aperture. After the tab is forced through the aperture, it springs back to its extended position and acts to keep the tag in its folded configuration. Once the tag is folded and attached to an article of clothing, the exterior of the folded tag presents broad smooth surfaces for locating optical codes.

[0015] In one embodiment, a tack is located between the post and its respective end and it is located on the same side and directed in the same direction as the post. At the opposite end of the unfolded tag, an aperture is located to coincide with the tack when the tag is closed. When the tag is closed over a piece of cloth, i.e. a garment, the tack passes through the garment and inserts into the aperture. The aperture may be formed by a raised rim on that side of the tag. The relative positions of the tack and aperture may be reversed.

[0016] Generally, each half of the folded tag has a rim around its edge that matches and presses against the rim of the other half when the tag is folded. However, in the area of the tack and aperture, the rim is not present. This leaves a gap that accommodates the cloth of a garment when the tag is installed on a garment.

[0017] To remove a tag from a garment or other item, the end of the tag where the post is located is squeezed. This pushes the post even further through the aperture, so that the body of the post beneath the flexible tab is exposed outside the tag. The post can then be cut beneath the flexible tab to remove the flexible tab, which is what normally retains the tag in a folded configuration. In use, the tag would be removed by the purchaser of the garment when the purchaser wears the garment in public.

[0018] In at least one embodiment the hinge between the two portions of the body of the tag is a compound hinge. The hinge folds at its middle and also where it attaches to the two portions of the body. This allows the hinge to fold into the interior of the body of the tag when the tag is in the folded configuration, and prevents access to the hinge by any who may want to tamper with the tag.

[0019] Some embodiments of the tag will enclose an EAS device. The EAS device would interact with a larger EAS system to provide security and tracking functions. The EAS device may range from passive, to semi-passive, to active. In some cases, the EAS device may actually be a dummy device which produces a rattle with the body of the tag to deceive would be thieves that an EAS device is housed in the tag. Of course, in the latter case the dummy device would not interact with the larger EAS system.

[0020] In another embodiment of a folding tag employing a tack to maintain the tag, it is the body of the tag that is the destructible element. In proximity to the tack is a first element for holding the tag in a folded position, and in proximity to the aperture of the tack is a second element for holding the tag in a folded position. These two elements engage each other when the tag is folded and keep the tag in the folded state. This keeps the tack inserted through the aperture and garment.

[0021] In some embodiments, the tag has a medallion, or seal, attached to the body of the tag and there is a continuous series of perforations through the body of the tag in proximity to the medallion. The medallion has an exposed edge which presents a tab for grasping. In embodiments having the medallion and perforations, one way to remove the tag from the garment is to part the tag at the perforations. A buyer turns or pulls the exposed edge (tab) of the medallion and tears the body of the tag into multiple pieces along the lines of the perforations in the tag. Once the body of the tag is torn in this fashion the holding elements can be disengaged with ease and the tag removed from the garment without damaging the garment. The face of the medallion, provides a large surface for an optical code, and/or a statement about removal of the tag, etc, and/or a logo, or seal.

[0022] In some embodiments of this latter embodiment of folding tag, the first holding element, the second holding element or both, have a continuous series of perforations around them where they join the body of the tag. To remove the tag, a buyer pulls the two ends of the tag apart, tearing the perforations around a holding element and parting the tag. When the perforations around a holding element tear, the holding elements can remain joined, while the two ends of the tag separate. With the separation of the ends of the tag, the tack is withdrawn from the slot and the garment, and the tag can be removed from the garment.

BRIEF DESCRIPTION OF THE DRAWINGS

[0023] Additional utility and features of the invention will become more fully apparent to those skilled in the art by reference to the following drawings, which illustrate some of the primary features of preferred embodiments.

[0024] FIG. **1** is a top perspective view of an embodiment of a tag having an anti-counterfeiting optical code before application to an object with the tag having a lanyard.

[0025] FIG. **2** is a bottom perspective view of an embodiment of a tag having an anti-counterfeiting optical code before application to an object with the tag having a lanyard.

[0026] FIG. **3** is a front perspective view of an embodiment of a tag having an anti-counterfeiting optical code with the tag being attached to an object by a lanyard.

[0027] FIG. **4** is a back perspective view of an embodiment of a tag having an anti-counterfeiting optical code with the tag being attached to an object with a lanyard.

[0028] FIG. **5** is a perspective view of an embodiment of a hinged tag having an anti-counterfeiting optical code, the tag being in an opened configuration.

[0029] FIG. **6** is a perspective view of an embodiment of a hinged tag having an anti-counterfeiting optical code, the tag being in a closed configuration, showing the post inserted through the aperture and the flexible tabs external to the tag.

[0030] FIG. **7** is a perspective view of the embodiment of the hinged tag of FIG. **6** in a closed configuration showing the post trimmed and the flexible tabs removed.

[0031] FIG. **8** is a perspective view of the embodiment of the hinged tag of FIG. **5** in an opened configuration, showing the post trimmed and the catch tabs removed.

[0032] FIG. **9** is a bottom perspective view of an embodiment of a hinged tag having an anti-counterfeiting optical code, the tag being in an opened configuration.

[0033] FIG. **10** is a top perspective view of the embodiment of a hinged tag of FIG. **9** in an opened configuration.

[0034] FIG. **11** is a top perspective view of the embodiment of a hinged tag of FIG. **9** in a closed configuration.

DETAILED DESCRIPTION OF EMBODIMENTS

[0035] FIG. **1** is a top perspective view of an embodiment of one-time-use tag **10** before application to an object. Tag **10** has a head **20** with lanyard **40** extending from it. Head **20** in the embodiment shown in FIG. **1** is round and has a large face appearing like a seal **22**. Seal face **22** is large enough to allow a cosmetic logo to be applied to it.

[0036] Additionally, optical code **23** may be located on seal face **22**. While FIG. **1** shows optical code **23** sharing seal face **22** with a logo, optical code **23** could be alone on seal face **22**. Optical code **23** may be an alphanumeric code as shown in FIG. **1**, or it may be a machine readable code such as a bar code or a two dimensional code. Among other functions, optical code **23** serves to defeat the replacement of a removed single-use tag with a counterfeit tag. Although a thief may be able to obtain a counterfeit tag that sufficiently approximates a retailer's one-time-use tag, without the correct optical code, the replacement tag will not pass closer inspection.

[0037] Lanyard **40** extends from head **20** and is comprised of three parts. These three parts are stub **28** which attaches to head **20** and extends from it, tab **60** and tail **42**. Stub **28** is relatively short and extends a short way from head **20**. Tab **60** is attached to the end of stub **28** and tail **42** of lanyard **40** is attached to tab **60**. Where tab **60** attaches to stub **28** and tail **42** of lanyard **40**, two break lines **62** run across the width of lanyard **40**. As will be discussed later, these break lines **62** assist in the separation of the sections of lanyard **40**, making tag **10** a one-time-use tag. Like optical code **23**, optical code **43** on lanyard **40** of tag **10** defeats the use of counterfeit tags. Optical code **43** may be a machine readable code such as a bar code or two dimensional code as shown in FIG. **1**, or it may be an alphanumeric code.

[0038] Optical code **23** and optical code **43** may be normally visible, or they may require application of ultraviolet light to make optical codes **23** and **43** visible. Optical codes **23** and **43** may be a unique identifier for one-time-use tag **10** or it may be a group identifier, i.e. be a lot identifier for tag **10**. Optical codes **23** and **43** may be placed on one-time-use tag **10** by several methods, including printing, transfer stamping, hot stamping, foil stamping, plastic welding, engraving, laser marking, or pin stamping. Ultraviolet light reactive ink, paint, and plastics are available for applications in which optical codes **23** and **43** are used in conjunction with ultraviolet light to create a normally invisible code. It is not necessary that both optical code **23** and optical code **43** be used on a tag. The presence of both in the figures is only for illustration of options.

[0039] FIG. **2** is a bottom perspective view of the embodiment of tag **10** shown in FIG. **1** before application to an object. In FIG. **2**, hub **24** extends upward from the back of head **20** of tag **10**. Aperture **26** passes through hub **24** and is generally aligned with lanyard **40**. Hub **24** is intended to pass through an aperture in a garment, such as a button hole or similar aperture. Lanyard **40** with its three sections is also visible in FIG. **2**. Cleats **46** are located on the back side of tail **42** of lanyard **40**. Several cleats **46** are spaced at regular intervals and run for a good section of tail **42**. Tail **42** terminates in free end **44** of lanyard **40**. To install tag **10** on an object hub **24** of head **20** is pressed through a button hole, or other aperture, in the object and free end **44** of lanyard **40** is passed through aperture **26** in hub **24**. As free end **44** is pulled, more of tail **42** passes through aperture **26**. As tail **42** passes through aperture **26**, cleats **46** pass through aperture **26** and prevent tail **42** from being removed from aperture **26**. This keeps tag **10** in location on the object being protected.

[0040] FIG. **3** is a front perspective view of tag **10** applied to object **100**, and FIG. **4** is a back perspective view of tag **10** applied to object **100**. In the embodiments of FIGS. **3** and **4**, object **100** is shown as a garment but could be a shoe or other product, as well. Head **20** of tag **10** is highly visible and prevents the wearing of garment **100** in a public fashion. This prevents a person from wearing a purchased garment, or other product, **100** in public and then returning it. If a person should decide that they want to wear the garment in public and remove tag **10**, this can easily be accomplished by pulling tab **60**. Break lines **62** formed by a line of perforations along across the width of lanyard **40** to either side of tab **60** facilitate the parting of the segments of lanyard **40**. Once tag **10** is removed that particular tag cannot be replaced and its absence serves as a clear indication that the garment has been worn in public. While perforations are shown in the figures, the same effect could be accomplished by reducing the thickness of lanyard **40** at the desired locations. When tag **10** is in position, optical code **23** is positioned to be easily observed. Optical code **23** may be normally visible, or it may require application of ultra-violet light to make optical code **23** visible. Optical code **23** may be a unique identifier for tag **10** or it may be a group identifier, i.e. be a lot identifier for tag **10**. Optical **23** prevents the replacement of one-time-use tag **10** with a counterfeit tag.

[0041] In FIG. **4**, hub **24** may be seen protruding through aperture **102** in object **100**. Lanyard **40** is inserted through aperture **26** in hub **24** and is pulled through to maintain tag **10** in position. Attached end **48** of lanyard **40** attaches to tab **60**. Again perforation line **62** running across the width of lanyard **40** facilitates the separation of tag **60** from tail **42** or stub **28**. Once this separation occurs tag **10** may be removed from the garment. Once the separation is accomplished tag **10** may simply be pushed through the aperture, or tail **42** of lanyard **20** may be pulled all the way through aperture **26** in hub **24** of tag **10**. This further facilitates the removal of tag **10** from garment, or object, **100**.

[0042] In FIG. **4**, optical code **43** is placed on the side of lanyard **40** that faces outward when tag **10** is in place. In this position, optical code **43** is more easily referenced. Alternatively, optical code **43** could be placed on the same side of tag **10** as cleats **46** in a position more likely to conceal optical code **43**. Optical code **43** on lanyard **40** of tag **10** may be

normally visible, or it may require application of ultra-violet light to make optical code **43** visible. Optical code **43** may be a machine readable code such as a bar code or two dimensional code as shown in FIG. **4**, or it may be an alphanumeric code.

[0043] As previously mentioned in the summary section, tag **10**, may also have EAS electronics. Returning to FIG. **2**, head **20** comprises EAS electronic components. In the embodiment of FIG. **2**, the EAS electronic components comprise passive EAS element **70**. EAS element **70** is of the core and coil type of passive element which produces a detectable signal when subjected to an interrogation field produced by a larger EAS system, but other types of passive elements, such as acousto-magnetic labels, could be used. Also, with the current state of miniaturization technology and manufacturing technology, active EAS electronics could also be employed on tag **10**. These EAS electronics could be powered by electro-magnetic fields, or onboard power supplies such as batteries, which would power processor chips, communication elements, location other monitoring elements, etc.

[0044] FIG. **5** is a perspective view of an embodiment of a one-time-use hinged tag **110** in an opened configuration. In general, one-time-use tag **110** comprises a top shell **120**, a bottom shell **140**, and a compound hinge **160** connecting top shell **120** and bottom shell **140**. Top **120** and bottom **140** shells are each concave and have edges **142** generally matching each other. Compound hinge **160** is made of two panels, upper panel **161** and lower panel **162**. Upper panel **161** and lower panel **162** are connected by central hinge **163** while upper panel **161** is connected to top shell **120** by upper hinge **64** and lower panel **162** is connected to bottom shell **140** by lower hinge **165**. When tag **110** is folded at compound hinge **160** to bring top shell **120** together with bottom shell **140**, they form a generally hollow body. See FIGS. **6** and **7**. Compound hinge **160** bends at central hinge **163**, upper hinge **162** and lower hinge **165** to allow upper panel **161** and lower panel **162** to fold into the interior of tag **110**.

[0045] Tag **110** may have ridges **122** along the interior of edges **142** of top shell **120** or bottom shell **140** which will fit along the interior of edge **142** of its opposite shell. This provides greater rigidity when tag **110** is in the closed configuration. Both top shell **120** and bottom shell **140** have recessed steps **138** and **154** respectively at their ends to create gap **156** (See FIGS. **6** and **7**) between their ends when tag **110** is closed. This leaves some space for the material of the garment when tag **110** is closed on a garment.

[0046] Post **144** is located within bottom shell **140**. Post aperture **124** is located in top shell **120**. Post **144** and post aperture **124** are positioned within their respective shells so that when tag **110** is closed post **144** inserts through post aperture **124**. Post **144** has at least one catch tab **146** extending from its top **148**. In the embodiment shown in FIGS. **5** and **6**, post **144** has several catch tabs **146**. Catch tabs **146** are flexible and post aperture **124**, post **144**, and catch tabs **146** are sized so that post **144** can insert through post aperture **124** by the flexing of catch tabs **146** down against the body **150** of post **144**. When tag **110** is fully closed and top **148** of post **144** has passed through post aperture **124**, catch tabs **146** extend out again. Catch tabs **146** prevent the retraction of post **144** back through post aperture **124** which keeps tag **110** closed (see FIG. **6**).

[0047] To keep a closed tag **110** attached to a garment, tack **152** is located on the interior of bottom shell **140** and directed toward the concave side of bottom shell **140**. Tack aperture **126** on the interior surface of top shell **120** is position to receive tack **152** when tag **110** is closed. When tag **110** is closed on a garment tack **152** passes through the garment and inserts into tack aperture **126**. This keeps tag **110** attached to the garment.

[0048] Turning now to FIG. **6**, FIG. **6** is a perspective view of an embodiment of one-time-use hinged tag **110** in a closed configuration showing top **148** of post **144** inserted through post aperture **124** and catch tabs **146** external to the top shell **120** of tag **110**. Catch tabs **146** prevent post **144** from passing back through post aperture **124**. To open tag **110** and remove it from a garment, top **148** of post **144** is cut off, including catch tabs **146**. This may be accomplished by pressing the ends of top shell **120** and bottom shell **140** together to expose the body **150** of post **144** beneath catch tabs **146** for access by scissors. Alternatively, a single sharp edge could be used and slid under catch tabs **146** to cut body **150** of post **144**. Some embodiments of tag **110** may also have excess height in post **144** which would inherently leave body **150** of post **144** exposed.

[0049] Optical code **123** on top shell **120** may be an alphanumeric code as shown in FIG. **6**, or it may be a machine readable code such as a bar code or a two dimensional code. Optical code **143** may be a machine readable code such as a bar code or two dimensional code as shown in FIG. **6**, or it may be an alphanumeric code. It is not necessary that both optical codes **123** and **143** be present on one-time-use tag **110**. Rather, they are shown to illustrate options. Among other functions, optical codes **123** and **143** serve to defeat the replacement of a removed single-use tag with a counterfeit tag. Although a thief may be able to obtain a counterfeit tag that sufficiently approximates a retailer's one-time-use tag, without the correct optical code, the replacement tag will not pass closer inspection. Optical codes **123** and **143** may be normally visible, or they may require application of ultraviolet light to make optical codes **123** and **143** visible. Optical codes **123** and **143** may be a unique identifier for one-time-use tag **110** or they may be a group identifier, i.e. be a lot identifier for tag **110**. Optical codes **123** and **143** may be placed on one-time-use tag **110** by the several methods discussed with respect to optical codes **23** and **43** and one-time-use tag **10**.

[0050] FIG. **7** is the perspective view of FIG. **6** of an embodiment of tag **110** in a closed configuration showing post **144** trimmed and catch tabs **148** removed. With catch tabs **148** removed, the tag **110** can be opened. When tag **110** is opened, tack **152** can be disengaged from the garment, and tag **110** removed. FIG. **8** is the perspective view of FIG. **5** of an embodiment of tag **110** in an opened configuration showing post **144** trimmed and catch tabs **148** removed.

[0051] In both FIGS. **5** and **8**, EAS element **170** is visible. EAS element **170** is located on the interior surface of top shell **120**. EAS element **170** may be passive, semi-passive, or active. Because tag **110** is rendered unusable in the process of removing it, it can only be used once. Because of this, for uses where tag **110** will be removed by the consumer, EAS element **170** will be as inexpensive as practicable. Some embodiments of tag **110** may actually enclose a dummy element which only rattles. For applications where tag **110** will be removed by an authorized person, EAS element **170** may be removably attached to the interior of tag **110**. In those applications, the person removing tag **110** could retrieve EAS element **170** for multiple uses.

[0052] FIG. **9** is a bottom perspective view of an embodiment of a one-time-use hinged tag **210** in open configuration. In the embodiment of FIG. **9**, tag **210** comprises a top member **220**, a bottom member **240**, and a hinge, or hinges, **260** connecting top member **220** and bottom member **240**. Top **220** and bottom **240** members are each concave and have edges, or perimeters, **242** generally matching each other. When tag **210** is folded at hinge **260** to bring top member **220** together with bottom member **240**, they form a generally hollow body (See FIG. **11**). Edges **242** of top member **220** and bottom member **240** may have complimentary ridges **222** and **244**. In the embodiment shown in FIG. **9**, ridges **222** are outside ridges and ridges **244** are inside ridges. Ridges **222** and **244** overlap each other when tag **210** is closed to provide greater ridgity in the closed configuration. Rib **252** on the interior surface of bottom member **240** provides rigidity in bottom member **240** and to anti-fraud tag **210** when it is in close configuration. Both top member **220** and bottom member **240** have recessed steps **238** and **254** respectively at their ends to create gap **256** (See FIG. **11**) between their ends when tag **210** is closed. This leaves some space for the material of the garment.

[0053] Opposing hooks **246** are located within bottom member **240**. Peg **224** is located within top member **220**. Hooks **246** and peg **224** are positioned on the interior surface of their respective members so that when tag **210** is closed, peg **224** inserts in between hooks **246**. Peg **224** has an expanded head **226** on it which creates shoulders **227**. When peg **224** inserts between hooks **246**, hooks **246** latch to shoulders **227** on peg **224** and hold tag **210** in a closed position.

[0054] Tack **250** is also located within bottom member **240**. Aperture **228** is also within top member **220**. When tag **210** is closed, tack **250** passes through the garment to which tag **210** is attached and inserts into aperture **228**. This keeps tag **210** attached to the garment. In the embodiment shown in FIG. **9**, aperture **228** is elongated.

[0055] Top member **220** has a continuous series of perforations **229** through it around the base of peg **224**. To remove tag **210** from a garment, the buyer pulls top member **220** and bottom member **240** apart at the ends with enough force to tear perforations **229** about peg. This parts peg **224** from the rest of top member **220** which allows tag **210** to be fully opened, removing tack **250** from the garment, which allows the removal of tag **210** from the garment. This also prevents the forced separation of the holding elements while the tag stays intact. Perforations **220** in top member **220** cause the peg **224** to break away and part from top member **220** before the holding elements peg **224** and hooks **246** disengage.

[0056] Turning now to FIG. **10**, FIG. **10** is a top perspective view of tag **210** in an open configuration. This view shows the surfaces that will be the external surfaces of tag **210** in its closed configuration. Medallion **230** is located on the top of top member **220** of tag **210**. The edge of Medallion **230** extends from top member **220**, presenting a tab. Returning to FIG. **9**, panel **232** may be seen on the bottom of top member **220**. Medallion **230** and panel **232** are joined together. Notches **234** at the edges **242** of top member **220** align generally with panel **232** and medallion **230**. Referencing FIG. **9**, perforations **236** extend through top member **220** in general alignment with notches **234** and extend across top member **220** in vicinity of panel **232** and medallion **230**. Notches **234** may also be seen in FIGS. **9** and **11**. Perforations **229** around peg **224** can also be seen in FIGS. **9** and **11**.

[0057] Optical code **223** on top member **220** may be an alphanumeric code as shown in FIG. **10** (and FIG. **11**), or it may be a machine readable code such as a bar code or a two dimensional code. Optical code **243** on bottom member **240** may be a machine readable code such as a bar code or two dimensional code as shown in FIG. **10**, or it may be an alphanumeric code. It is not necessary that both optical codes **223** and **243** be present on one-time-use tag **210**. Rather, they are shown to illustrate options. Among other functions, optical codes **223** and **243** serve to defeat the replacement of a removed single-use tag with a counterfeit tag. Although a thief may be able to obtain a counterfeit tag that sufficiently approximates a retailer's one-time-use tag, without the correct optical code, the replacement tag will not pass closer inspection. Optical codes **223** and **243** may be normally visible, or they may require application of ultraviolet light to make optical codes **223** and **243** visible. Optical codes **223** and **243** may be a unique identifier for one-time-use tag **210** or they may be a group identifier, i.e. be a lot identifier for tag **210**. Optical codes **223** and **243** may be placed on one-time-use tag **210** by the several methods discussed with respect to optical codes **23** and **43** and one-time-use tag **10**.

[0058] In use, tag **210** is closed upon an object, such as a garment, and tack **250** passes through the garment, or object, and into aperture **228**. Peg **224** fits into hooks **246** which latch onto shoulders **226** on peg **224** to hold tag **210** in the closed position attached to the garment. A buyer purchases the garment and takes it home. When the buyer decides to keep and wear the garment, the buyer may remove the tag. In the embodiment shown in FIGS. **9-11**, removal of the tag is accomplished by breaking perforations **229** around peg **224** or perforations **236** across the width of top member **220** and parting one-time-use tag **210**.

[0059] Breaking the set of perforations **236** along medallion **230** is facilitated by pulling or turning medallion **230**. Notches **234** and perforations **236** in top member **220** allow the pulling or turning of medallion **230** to separate top member **220** into pieces. Once top member **220** is parted, peg **224** can be removed from hooks **246** which allows tag **210** to be removed from the garment.

[0060] Alternatively, a buyer can break perforations **229** around peg **224**. To do this, a buyer pull or pries apart the ends of top member **220** and bottom member **240**. When perforations **229** around peg **224** are broken, tag **210** can be opened, which withdraws tack **250** from the garment, allowing tag **210** to be removed. This also prevents tag **210** from being removed from the garment intact, in which case it could be reattached.

[0061] Once one-time-use tag **210** is removed by destroying it, it cannot be reattached to the garment by the purchaser. The absence of tag **210** allows a retailer to assume that the garment, or item, has been worn, or used, and the retailer can act with return policies conceived for those situations. The presence of optical code **223** or **243** prevents the installation of a counterfeit tag to deceive the retailer into believing the item has not been worn, or used.

[0062] When a retailer uses any of the several embodiments of one-time-use tags having an optical code, it is much more difficult for a thief to employ a counterfeit tag. When the optical code requires the presence of ultraviolet light to observe the code, this difficulty is increased. Further, when the optical code of a one-time-use tag on an item is recorded in association with the purchase of that item, the optical code then provides a separate confirmation code in addition to the

inventory ID of the purchased item. The combination of two distinct identifiers increases the effort required to effectively reproduce the combination of numbers in order to return an item. When the optical code is machine readable, the recordation of the optical code at purchase of the item can be automated.

[0063] It is to be understood that the embodiments and arrangements set forth herein are not limited in their application to the details of construction and arrangement of the components set forth in the description and illustrated in the drawings. Rather, the description and the drawings provide examples of the embodiments envisioned, but the invention is not limited to the specific embodiments. The embodiments disclosed herein are further capable of other embodiments and of being practiced and carried out in various ways, including various combinations and sub-combinations that may not have been explicitly disclosed. Also, it is to be understood that the phraseology and terminology employed herein are for the purposes of description and should not be regarded as limiting the claims.

[0064] Accordingly, those skilled in the art will appreciate that the conception upon which the application and claims are based may be readily utilized as a basis for the design of other structures, methods, and systems for carrying out the several purposes of the embodiments and claims presented in this application. It is important, therefore, that the invention be regarded as including such equivalent constructions.

I claim:

1. A one-time-use tag for the prevention of fraudulent return of a product, said tag comprising:

a tag body comprising a set of complimentary attaching elements for attaching the one-time-use tag to an item for retail sale; and,

an optical code on an external surface of the one-time-use tag; wherein,

when said complimentary attaching elements are engaged to attach the one-time-use tag to an item for retail sale, the complimentary attaching elements cannot be disengaged without at least partially destroying the one-time-use tag and rendering the one-time-use tag unable to be used again.

2. The one-time-use tag of claim **1**, wherein:

said complimentary attaching elements comprise an aperture in said tag body and a lanyard extending from said tag body, said lanyard comprising a series of cleats, said cleats and aperture allowing said lanyard to be inserted through said aperture but not allowing said lanyard to be withdrawn backward through said aperture.

3. The one-time-use tag of claim **2**, wherein:

said lanyard is parted to remove the one-time-use tag from an item to which the single use tag has been attached.

4. The one-time-use tag of claim **1**, wherein:

the one-time-use tag comprises a hinge, said hinge dividing the one-time-use tag into two parts, each said part comprising one of said complimentary attaching elements, said complimentary attaching elements aligning and connecting with each other when the one-time-use tag is folded at said hinge.

5. The one-time-use tag of claim **4**, further comprising:

an aperture in one of said parts and a tack in the other of said parts, said tack inserting into said aperture when the one-time-use tag is folded at said hinge.

6. The one-time-use tag of claim **4**, wherein:

said hinge is parted to remove the one-time-use tag from an item to which the single use tag has been attached.

7. The one-time-use tag of claim **4**, wherein:

one of said parts comprises a series of perforations across its width, this one of said parts being parted along said perforations to remove the one-time-use tag from an item to which the one-time-use tag has been attached.

8. The one-time-use tag of claim **4**, wherein:

one of said parts comprises a series of perforations around its respective complimentary attaching element, said one of said parts being parted at said apertures to separate its respective complementary attaching element to remove the one-time-use tag from an item to which the one-time-use tag has been attached.

9. The one-time-use tag of claim **4**, wherein:

one of said complimentary attaching elements comprises an aperture, and the other of said complimentary attaching elements comprises a post with a head, said head of said post configured to be able to be inserted into said aperture but not withdrawn from said aperture without at least partially destroying said post.

10. The one-time-use tag of claim **1**, wherein:

said optical code is an alphanumeric code.

11. The one-time-use tag of claim **1**, wherein:

said optical code is a machine readable code.

12. The one-time-use tag of claim **11**, wherein:

said machine readable code is one of

a bar code, or

a two dimensional code.

13. The one-time-use tag of claim **1**, wherein:

said optical code is ultraviolet light reactive.

14. The one-time-use tag of claim **1**, wherein:

said optical code is printed on the one-time-use tag.

15. The one-time-use tag of claim **1**, wherein:

said optical code is formed in the surface of the one-time-use tag.

16. The one-time-use tag of claim **1**, wherein:

said optical code is a unique identifier for each one-time-use tag.

17. The one-time-use tag of claim **1**, wherein:

said optical code is a chronological indicator.

18. The one-time-use tag of claim **1**, further comprising:

electronic article surveillance electronics.

19. A method of preventing theft by the fraudulent return of retail items, said method comprising;

attaching to a retail item a one-time-use tag having an optical code, said tag being removable only by at least partially destroying said tag and rendering said tag unreusable;

recording said optical code of said tag at the time of sale of the retail item; and,

executing a predetermined return policy if an attempt is made to return the retail item without said tag being attached.

20. The method of preventing theft by the fraudulent return of retail items of claim **19**, wherein;

said optical code is ultraviolet reactive and made visible by illumination with an ultraviolet light.

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