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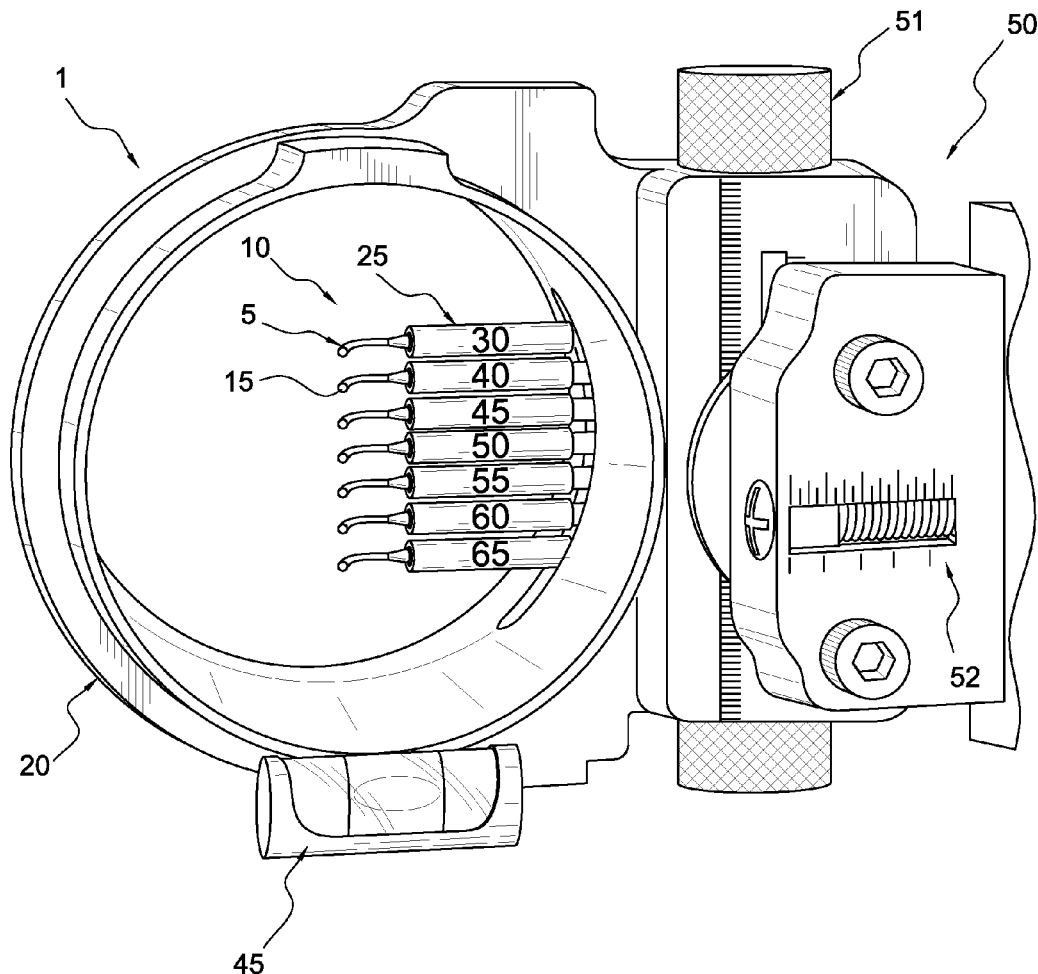
(19) **United States**(12) **Patent Application Publication**  
**HEIDEMANN**(10) **Pub. No.: US 2017/0030680 A1**(43) **Pub. Date: Feb. 2, 2017**(54) **SIGHTING PIN TAG FOR SIGHTING PINS**(52) **U.S. Cl.**CPC ..... **F41G 1/467** (2013.01)(71) Applicant: **Craig HEIDEMANN**, Middletown,  
MD (US)(72) Inventor: **Craig HEIDEMANN**, Middletown,  
MD (US)(21) Appl. No.: **15/187,114**(22) Filed: **Jun. 20, 2016****Related U.S. Application Data**(60) Provisional application No. 62/197,792, filed on Jul.  
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(2006.01)

(57)

**ABSTRACT**

A sight having sighting pins for identifying a shooting distance of an archery bow. The sight includes sighting pin tags installed on the sighting pins, where the sighting pin tags include indicia indicating the shooting distance associated with the sighting pin. When the sighting pin tag which includes shrink wrap material is installed on the sighting pins and heated, the sighting pin tag is shrunk around the sighting pin. Additionally a method for installing the sighting pin tag on the sighting pin by determining a shooting distance of the archery bow corresponding to a sighting pin, selecting a sighting pin tag having indicia that corresponds to the shooting distance associated with the sighting pin, and installing the sighting pin tag on the sighting pin.



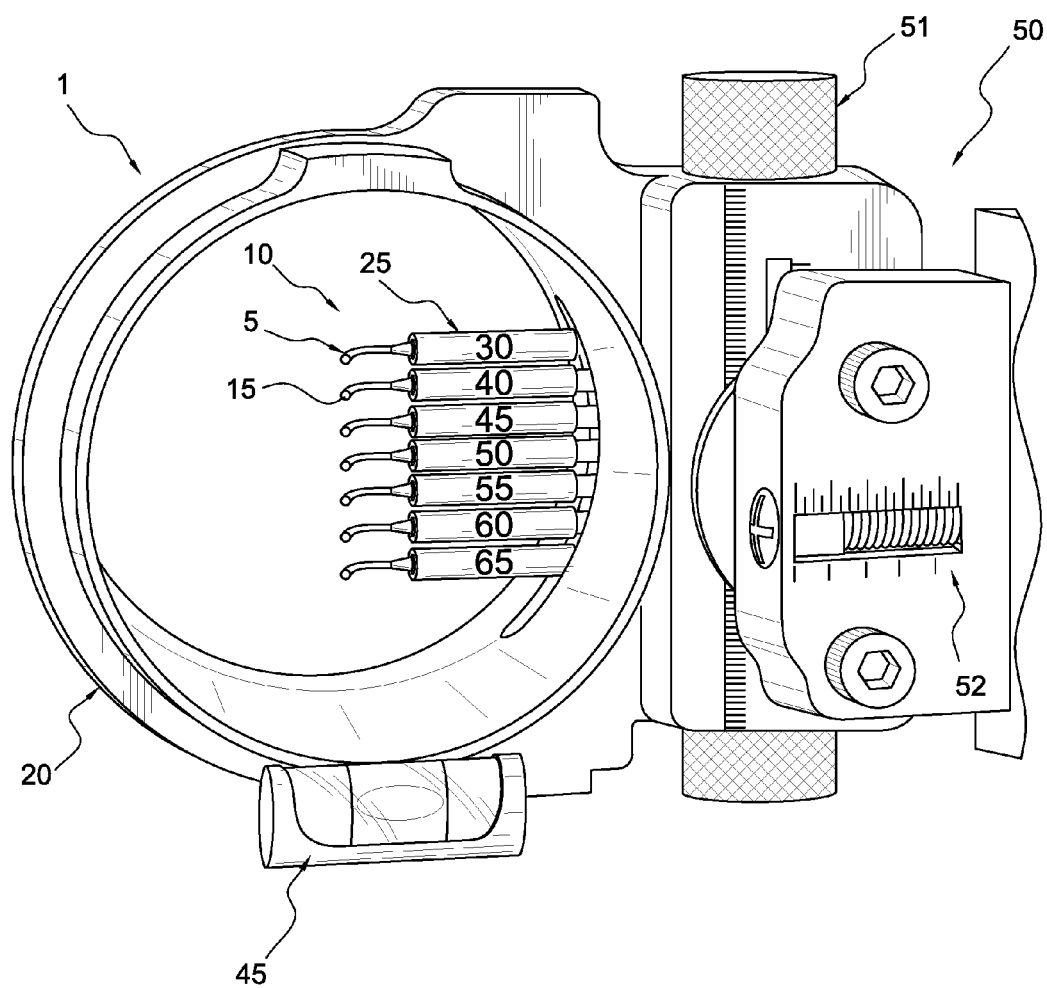


FIG. 1

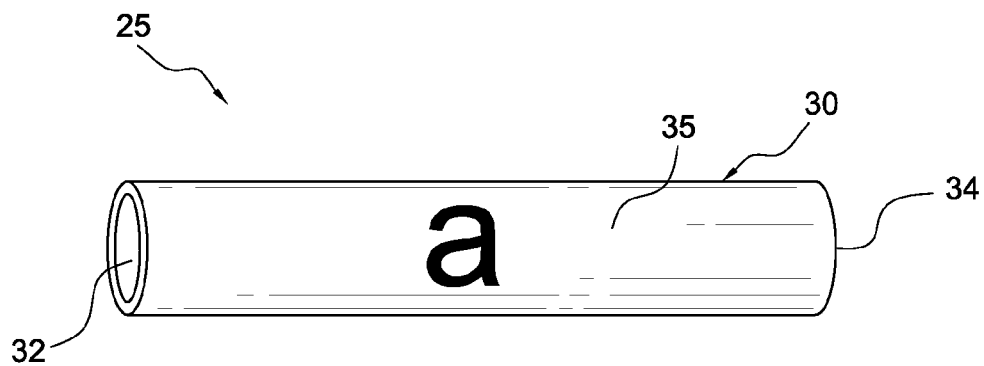


FIG. 2

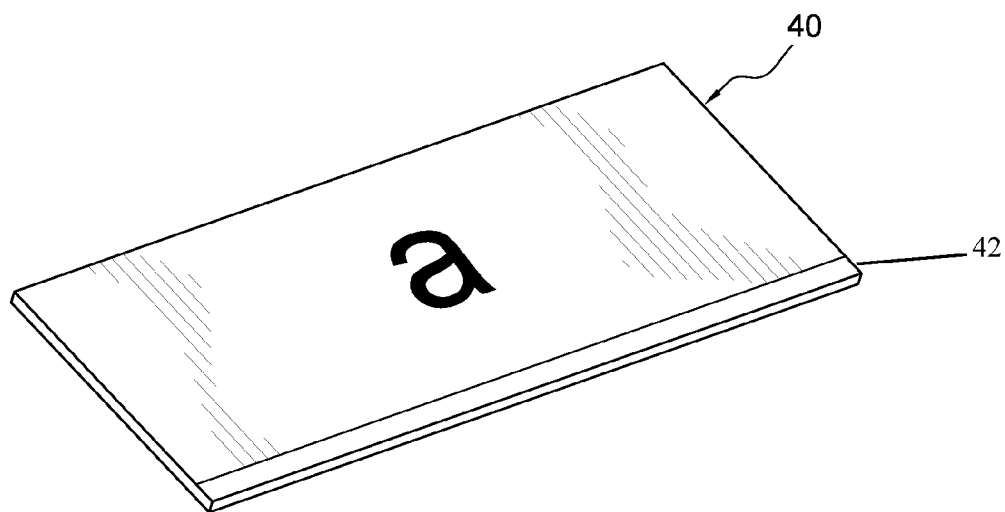


FIG. 3

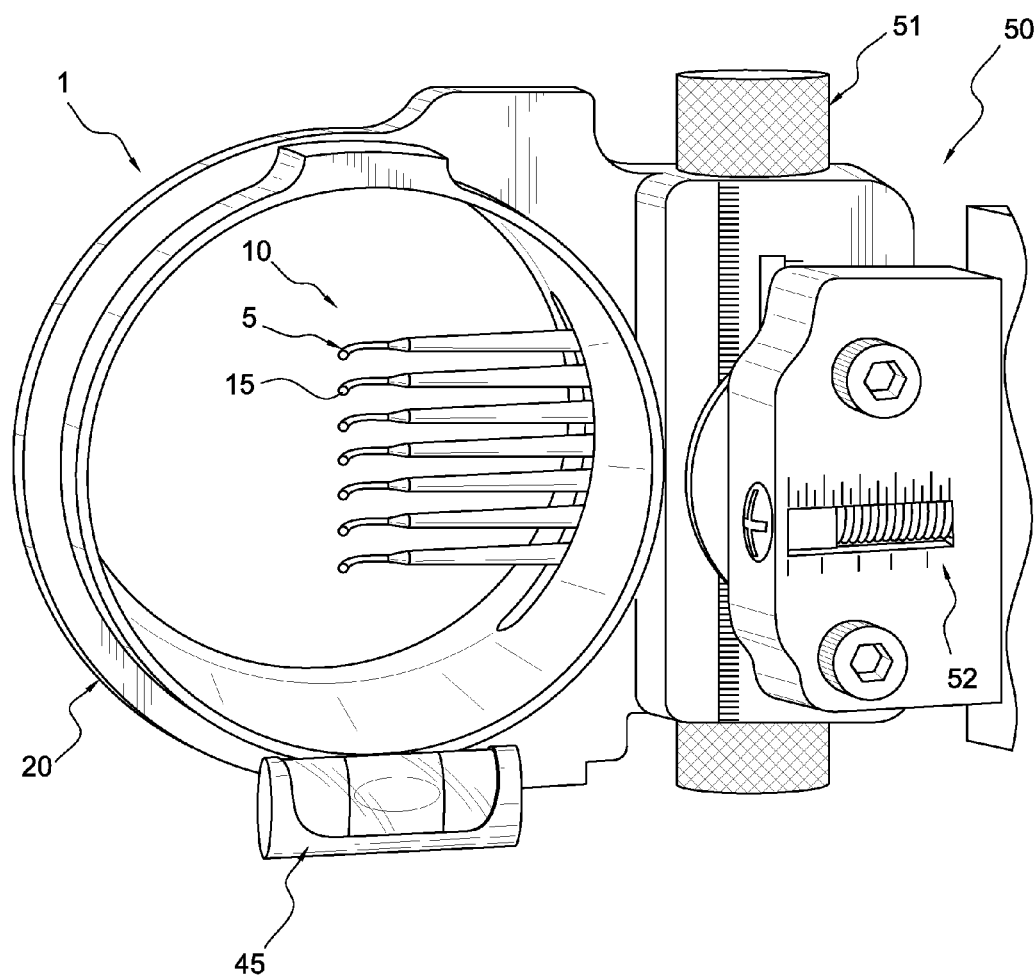


FIG. 4

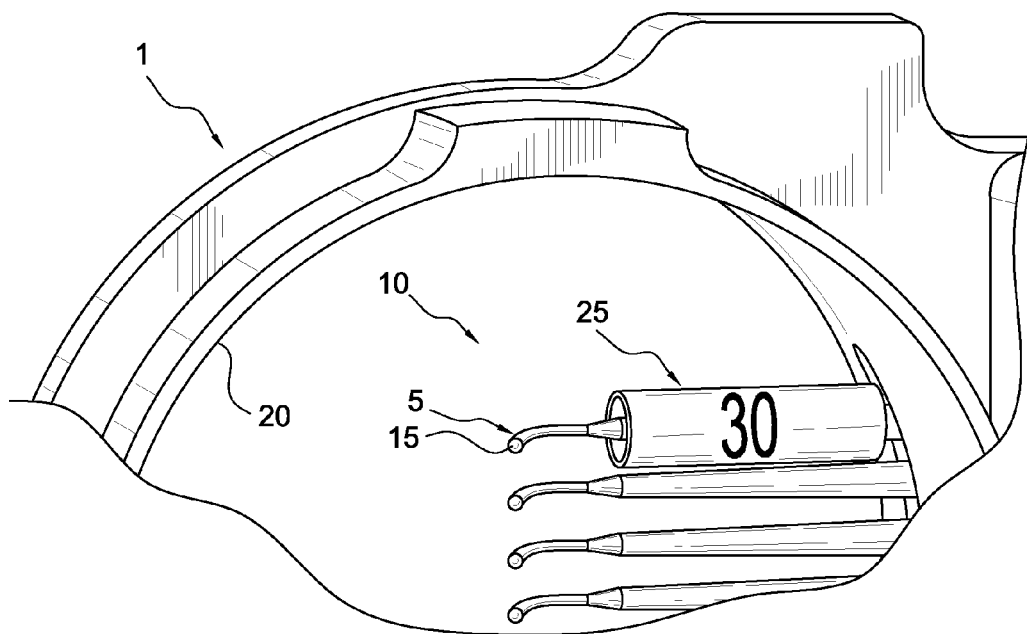


FIG. 5A

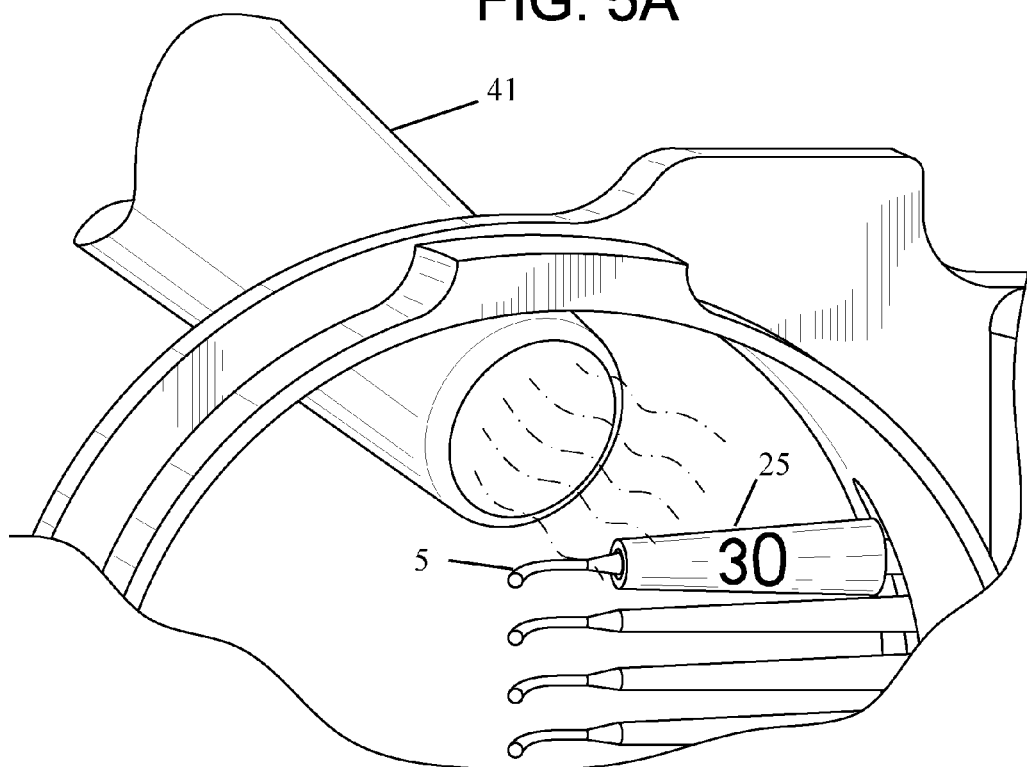


FIG. 5B

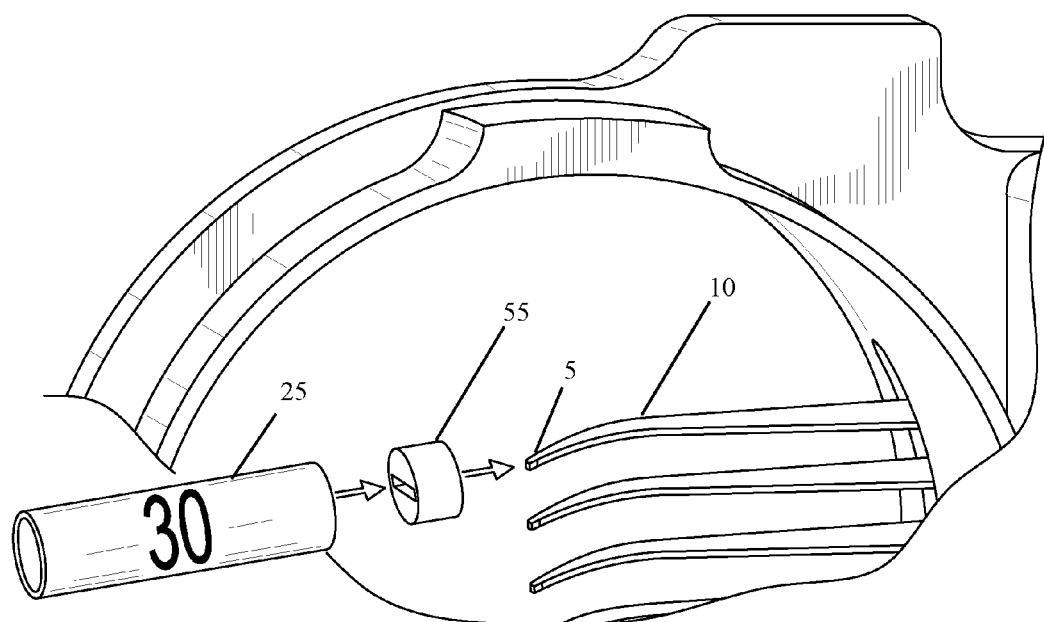


FIG. 6A

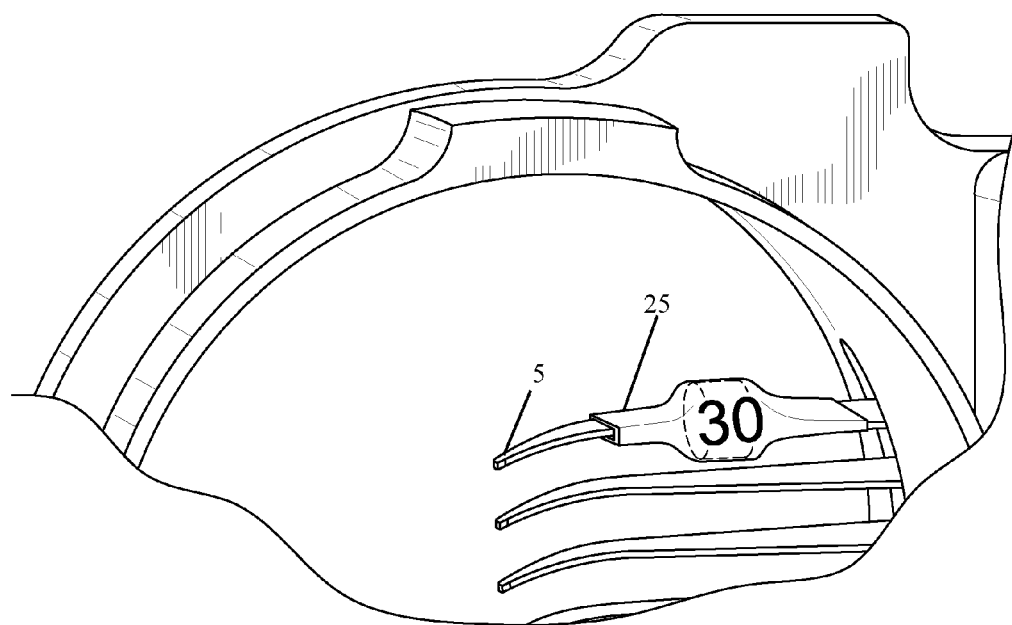


FIG. 6B

## SIGHTING PIN TAG FOR SIGHTING PINS

### [0001] CROSS REFERENCE

[0002] This application is a non-provisional application claiming the benefit of U.S. provisional application No. 62/197,792, filed Jul. 28, 2015, the entirety of which is incorporated herein by reference.

### FIELD OF THE INVENTION

[0003] The present disclosure relates generally to sights for use with archery bows and particularly to a sighting pin tag that is installed on a sighting pin of a bow. It is appreciated that such a structure disclosed in the present disclosure could be used for other purposes, such as on any weapon that uses sighting pins for identifying distances.

### BACKGROUND OF THE INVENTION

[0004] Sights are often used with archery bows for identifying distance and position of a target. As known in the art, the sights can be a telescopic sight, e.g., a scope sight based on optical refraction, or a non-telescopic sight having sighting pins calibrated for certain shooting distances of the archery bow. The non-telescopic sights typically use sighting pins which are color coordinated for identifying the shooting distance of the archery bow at a glance by the user of the archery bow, i.e., archer. The pins can be made of metal, plastic, and/or use fiber optic elements that have ends that are illuminated and/or color coordinated for identifying the shooting distance of the archery bow.

[0005] Although such ends can be illuminated and/or color coordinated, e.g., yellow, cyan, magenta, to identify the shooting distance of the archery bow, the sights do not include any form of indication to identify the actual shooting distance of the archery bow to the archer. Instead, the archer must remember which shooting distance of the archery bow the sighting pin corresponds to or estimate the shooting distance of the archery bow. Of course, any misinterpretation of the sighting pin will result in an errant shot with the bow shot by the archer, i.e., the shot will be short or long of the intended target.

[0006] In view of the known prior art designs of sights for archery bows, it is necessary to develop a sight having sighting pins that provides an indication of the shooting distance of the archery bow to the archer at a quick glance while still providing an unimpeded line of sight to the target.

### SUMMARY OF THE INVENTION

[0007] The present invention resulted from the recognition that there is a need for a sight having sighting pins that provide a quick visual indication, e.g., at a glance, of the shooting distance corresponding to the sighting pins for accurate targeting of the intended target.

[0008] Such a sight was developed, having at least one sighting pin for identifying a shooting distance of a bow, where a sighting pin tag of a sighting pin marking system is installed on the at least one sighting pin. The sighting pin tag includes indicia on an outer surface of the sighting pin tag to indicate the shooting distance associated with the at least one sighting pin.

[0009] In a preferred embodiment, the sighting pin tag includes shrink wrap material, which when installed on the sighting pin and heated, is shrunk around the at least one sighting pin for a tight fit. In one embodiment, such a

sighting pin tag includes a tubular element having a first open end and a second open end, so that the tubular element is slidable over the sighting pin. After which, the tubular element is heated so that the tubular element conforms to the shape of the sighting pin. In another embodiment, such a sighting pin tag includes a flat sheet, which is wrappable around the at least one sliding pin. Then the sighting pin tag is heated so that the sighting pin tag is shrunk to conform to the at least one sighting pin.

[0010] Also disclosed herein is a method for installing the sighting pin tag on a sighting pin for identifying a shooting distance for an archery bow including the steps of determining a shooting distance of the archery bow corresponding to at least one sighting pin. Next, a sighting pin tag having indicia that corresponds to the shooting distance associated with the at least one sighting pin is selected, where the sighting pin tag is installed on the at least one sighting pin. In one embodiment, the sighting pin tag includes a shrink wrap material that is shrinkable around the sighting pin, where the sighting pin tag is heated so that the shrink wrap material of the sighting pin tag is shrunk around the at least one sighting pin.

### BRIEF DESCRIPTION OF THE DRAWINGS

[0011] Examples of sights having sighting pins and sighting pin tags in accordance with the present invention are explained in more detail below with reference to the drawings, wherein:

[0012] FIG. 1 is a perspective view of a sight having sighting pin tags installed on sighting pins.

[0013] FIG. 2 is a perspective view of a first embodiment of a sighting pin tag having an elongate tubular member.

[0014] FIG. 3 is a perspective view of a second embodiment of a sighting pin tag that includes a flat sheet.

[0015] FIG. 4 is a perspective view of the sight without the sighting pin tags installed on the sighting pins.

[0016] FIG. 5A is a perspective view of the sight having the sighting pin tag installed on the sighting pins before the sighting pin tag is heated, while FIG. 5B is a perspective view of the heating of the sighting pin tag resulting in the shrinking of the sighting pin tag.

[0017] FIG. 6A is an exploded view of the sight having the sighting pin tag installed on the sighting pin including a grommet installed on the sighting pin, while FIG. 6B is a perspective view of the sighting pin tag installed on the sighting pin.

[0018] In the various figures, similar elements are provided with similar reference numbers. It should be noted that the drawing figures are not necessarily drawn to scale, or proportion, but instead are drawn to provide a better understanding of the components thereof, and are not intended to be limiting in scope, but rather provide exemplary illustrations.

### DETAILED DESCRIPTION OF VARIOUS EMBODIMENTS OF THE INVENTION

#### [0019] A. Discussion of Various Embodiments

[0020] Generally, as seen in FIG. 1, archery bows (not shown) can include a sight 1 having sighting pins 5 for determining the shooting distance of the bow. The sight 1 is mounted to the archery bow (not shown) as known in the art, e.g., mounting brackets, screws, or clamps, for attaching the sight 1 to the archery bow. A plurality of sighting pin

assemblies 10 are coupled to the sight 1, where the sighting pins 5 are therewith connected to the sighting pin assemblies 10 so that the sighting pins extend across the archery bow user's line of sight. The number of sighting pin assemblies 10 and sighting pins 5 can vary depending on the nature and shooting distance of the archery bow and can include, for example, a sighting pin for each of a shooting distance of 20 yards, 30 yards, 40 yards, 50 yards, and 60 yards, and/or increments therebetween, e.g., 45 yards, 55 yards, and 65 yards.

[0021] Typically, the sighting pins include fiber optic elements 15 that end at a point in the user's line of sight, e.g., curved towards the archer, so that the fiber optic elements operate as a light and/or color, e.g., blue, red, green, magenta, cyan, yellow, indication of the shooting distance of the bow. The other end of the fiber optic element is connected to a light collecting device (not shown) made of plastic or polymer for absorbing light. The light collecting device typically includes materials, as known in the art, for converting the absorbed light into visible light. Since the fiber optic elements 15 are flexible and fragile, the fiber optic elements 15 are coupled to the sighting pin assemblies 10, for example, the sighting pin assemblies 10 include grooves or passages in which the fiber optic elements are slidable or movable along the sighting pin assemblies. Due to the fragile nature of the sighting pins 5, especially when the fiber optic elements are used, the sighting pins 5 are also generally surrounded by a sight ring 20 to protect the sighting pins 5 from damage.

[0022] The sighting pin assemblies 10 can come in a variety of shapes and sizes for accommodating the sighting pins 5. Generally, the sighting pin assemblies 10 are tubular and extend from one side edge of the sight ring 20 to the user's line of sight, typically in the middle of the sight 1. The sighting pin assemblies 10 can instead have a flat profile, curved profile, rectangular profile, or other geometric profile for accommodating the sighting pins 5 and can vary in width or diameter between about 1 mm to 20 mm, and preferably between about 3 mm and 6 mm. It is appreciated that when sighting pins 5 do not include the fiber optic elements 15, the sighting pins 5 can be directly connected to the archery bow without using the sighting pin assemblies, where the sighting pins 5 can be provided in various geometric, flat, or curved profiles.

[0023] As seen in FIG. 1, the sight 1 includes on the sighting pins 5 a sighting pin marking system that includes sighting pin tags 25, where the sighting pin tags 25 corresponds to each of the sighting pins used for the sight 1, e.g., a sighting pin tag for each of the shooting distances of 30 yards, 40 yards, 45 yards, 50 yards, 55 yards, 60 yards, and 65 yards. The sighting pin tags 25 are generally installed over sighting pin 5 and/or the sighting pin assemblies 10, when the sighting pin assemblies 10 are used. The sighting pin tags 25 are installed on the sighting pins 5 and/or sighting pin assemblies 10 so that the sighting pin tags 25 do not interfere with the archer's line of sight and particularly do not interfere with the end of the sighting pins indicating distance and alignment of the archery bow. However, as seen in FIG. 1, the sighting pin tags 25 are arranged in a way so that the corresponding shooting distance of the bow associated with the shooting pin 5 is easily visible by the archer. In so doing, the user of the archery bow does not have to remember the shooting distances in which the sighting pins correspond to, but is provided an easily recognizable indicia

for such maximum shooting distances of the archery bow at a glance. For example, the sighting pin tags 25 can be between 1-7 mm in length and adjusted accordingly.

[0024] As seen in FIG. 2, the sighting pin tags 25, in one embodiment of the invention, comprises an elongate tubular member 30 having first and second open ends 32 and 34. An outer surface 35 of the elongate tubular member 30 includes indicia "a" indicating a distance, for example, corresponding to the shooting distance of the archery bow of 30, 40, 45, 50, 55, 60 and 65 yards, e.g., the maximum shooting distance of the bow. The indicia "a" is provided at a center position of the tubular member 30 and is printed, screened, embossed, installed on, adhered to, or provided as a digital read-out, e.g., battery operated, to identify the shooting distance associated with the sighting pin 5. It is appreciated that the sighting pin tag 25 can be slid over a sighting pin 5 via the first and/or second open ends, or can have a longitudinal slit or opening along the elongate tubular member 30 to allow the wrapping of the elongate tubular member over the sighting pin.

[0025] The sighting pin tags 25 can be available in 1 mm to 10 mm sized tubings, or other sizes depending on the size of the sighting pins, but preferably in 3 mm and 6 mm sized tubular members 30 of the sighting pin tags 25. It is appreciated that the 3 mm size sighting pin tag 25 fits most round or thin flat sighting pins, while the 6 mm sized sighting pin tag 25 fits most large flat pins. The appropriate size of the sighting pin tag 25 is chosen by choosing the size that fits the tightest around the sighting pin 5 and/or the sighting pin assemblies 10 before shrinking.

[0026] The sighting pin tag 25 comprises, in this embodiment, a shrink wrap material, which when heated, shrinks to tightly cover the sighting pin 5, and to be secured to sighting pin 5. The heat can be applied using a heat gun (electric or gas) or any heating element, such as a hair dryer, for heating the sighting pin tag. The shrink wrap material can be made of a number of different polymers that shrink when heated, including any combination of polyolefin, polyvinyl chloride (PVC), polyethylene, polypropylene, ethylene-vinyl acetate (EVA), ethylene-propylene copolymer, and other related materials. The shrink wrap material preferably has a melt temperature between 300 and 600 ° F., preferably 550 ° F., but can have other melt temperatures as known in the art for shrink wrap material.

[0027] Alternatively, the sighting pin tag 25, as seen in FIG. 3, can have a flat sheet 40 comprising the shrink wrap material. In this case, the flat sheet 40 is wrappable around the sighting pin 5 and sighting pin assembly 10 and heated, for shrinking and sealing the sighting pin tag 25 around the sighting pin 5 and sighting pin assembly 10. In this case, the indicia "a" is provided on the center of the flat sheet 40 so that the edges of the flat sheet are sealable together. While such a shrink wrap material does not require the use of an adhesive 42, such as glue or other bonding agent, it is appreciated that an adhesive can be placed along one edge of the flat sheet 40 for securing the flat sheet 40 around the sighting pin 5 and sighting pin assembly 10.

[0028] Of course, the sighting pin tag 25 of the sighting pin marking system does not have to include shrink wrap material, but merely includes a body that is attachable to the sighting pins 5 and/or sighting pin assemblies 10, and a body which may be secured to sighting pins 5 and/or sighting pin assemblies 10, where the sighting pin tag 25 includes indicia that allows the archer to view the shooting distance associ-



ated with the sighting pins **5** of the bow. For example, the sighting pin tag **25** can include a clip, e.g., slidable clip, hinged clips, locking pins, hitch pins, etc., with a body having indicia that is viewable by the archer when targeting a target. Alternatively, the sighting pin tag **25** can include a tubular body or flat sheet that is simply wrapped around or affixed to the sighting pin **5** and/or sighting pin assembly **10**. In general the sighting pin marking system is a system that provides visual indication of the shooting distance associated with the sighting pin of a sight for an archery bow to allow an archer using the sight to quickly target an intended target.

**[0029]** As seen in FIG. 1, the sight **1** also includes a level **45** having a fluid and a bubble alignment for angular alignment of the bow with a target. It is appreciated that other known angular alignment devices can also be used for alignment of the bow with a target, e.g., electronic alignment. Additionally, an alignment mechanism **50** is provided on the sight **1** for adjusting the different axes (e.g., first and second and/or third axis) of the sight **1** on the bow. Specifically, the alignment mechanism **50** has dials **51** and axis alignment markings **52** for adjusting the different axes (e.g., vertical, horizontal, angular) of the sight **1** for alignment of the sight **1** with the bow.

**[0030]** B. Discussion of Installation of Embodiments of the Invention

**[0031]** As discussed above, the various embodiments of the present invention include a sight **1** having sighting pin tags **25** so that an archer can know the maximum shooting distance of the corresponding sighting pins at a glance. While it is appreciated that various methods can be performed for installing the sighting pin tags **25** on the sighting pins **5** and/or sighting pin assemblies **10**, one embodiment for installing the sighting pin tags **25** is described below.

**[0032]** As seen in FIG. 4, an archery bow (not shown) has the sight **1** installed on a riser of the bow, where the sight **1** has the sighting pins **5** calibrated for certain distances. For example, after installation of the sight **1** to the archery bow, the alignment mechanism **50** is adjusted by rotating the dials **51** for the vertical, horizontal, and angular alignment of the sight **1** to the bow. After alignment of the sight **1** to the bow, the sighting pins **5** are set by targeting targets at known marked off positions, e.g., at 20 yards, 30 yards, 40 yards, etc. The sighting pins **5** are adjusted using nuts or pins so that the sighting pins are calibrated to the varying target distances and correctly positioned in the archer's line of sight, e.g., in the middle of the sight **1**.

**[0033]** After the determination of the maximum shooting distance of the archery bow corresponding to the sighting pins **5**, the appropriate sighting pin tag **25** is chosen corresponding to the maximum shooting distance of the bow. As seen in FIG. 5A, the sighting pin tag **25**, in this embodiment, includes a tubular member **30** that is slid or mounted over the sighting pin **5** (and/or the sighting pin assembly **10**) with the indicia indicating the maximum shooting distance of the associated sighting pin **5** facing the bow string of the archery bow so that the indicia can be seen when pulling the archery bow up to shoot a target.

**[0034]** FIG. 5B illustrates when the sighting pin tag **25** having the tubular member comprising shrink wrap material is heated using a heat gun **41** (or heated air blower) to shrink the sighting pin tag **25** around the sighting pin **5** (and/or sighting pin assembly **10**). For example, the heat gun can be set between 300 and 550° F. to quickly shrink the sighting

pin tag **25** without damaging the sight. Caution must be taken to prevent overheating of the sighting pin tag, since excessive temperature can damage the sight **1**, the fiber optic elements **15** (if used), the sighting pin tag, or the sighting pin **5**.

**[0035]** It is appreciated that after a first shooting distance has been determined and the corresponding sighting pin tag **25** is installed on the appropriate sighting pin **5**, a second shooting distance of a second sighting pin of the bow can be determined. After which, a second sighting pin tag **25** can be installed on the second sighting pin associated with the second shooting distance, as discussed above.

**[0036]** In case an improper sighting pin tag **25** is installed or if the sighting pin tag **25** needs to be removed due to age or damage, the sighting pin tag **25** is removable. For example, in this embodiment, the tubular member **30** of the sighting pin tag **25** is cut being careful not to cut the sighting pin **5**, the sighting pin assembly **10**, or the fiber optic element **15** in the sighting pin **5**. After removal of the sighting pin tag **25**, a new sighting pin tag **25** can be installed on the sighting pin **5** or the sighting pin assembly **10** as described above.

**[0037]** FIG. 6A illustrates an embodiment when the 6 mm sized sighting pin tag **25** having the tubular member **30** is installed on a flat sighting pin, where in order for the indicia indicating the maximum shooting distance associated with the sighting pin **5** to be visible, a grommet **55** is provided. Specifically, the grommet **55** is first slid over the sighting pin **5** or the sighting pin assembly **10**. Then the sighting pin tag **25** is slid or mounted over the grommet **55** so that the indicia on the sighting pin tag **25** is visible by the archer when shooting. After which, as seen in FIG. 6B, the sighting pin tag **25** is heated for shrinking the sighting pin tag around the grommet.

**[0038]** Alternatively, if the sighting pin tag **25** is provided as a flat sheet **40** having the shrink wrap material, after the determination of the maximum shooting distance of the bow corresponding to the appropriate sighting pin **5**, the flat sheet **40** of the sighting pin tag **25** is wrapped around the sighting pin **5** (and/or sighting pin assembly **10**) so that the indicia indicating the maximum shooting distance of the archery bow is viewable by the archer when shooting. The flat sheet **40** is secured using adhesive provided along one edge of the flat sheet or secured using a clamp or fastener. Then the flat sheet **40** of the sighting pin tag **25** is heated similarly as described above for shrinking the sighting pin tag **25** around the sighting pin **5** (and/or the sighting pin assembly **10**).

**[0039]** It is appreciated that after the sighting pin tags **25** are installed on the sighting pins **5**, the corresponding shooting distance of the bow associated with the sighting pin **5** is easily visible by the archer. In so doing, the user of the archery bow does not have to remember the shooting distances in which the sighting pins correspond to, but is provided an easily recognizable indicia for the shooting distances of the archery bow at a glance.

**[0040]** The invention is not to be limited by the description of specific features of the exemplary embodiments of the invention, but only by the scope of the appended claims. For example, it is appreciated that any of the features disclosed in the embodiments discussed above can be used in any of the disclosed embodiments for modifications thereof.

**[0041]** Moreover, the invention is not limited to the described embodiments herein, since the invention relates to a visible indication of a shooting distance that is attached or

affixed to a sighting pin or sighting pin assembly so that an archer using the sight having the sighting pin marking system can quickly target an intended target. For example, after the determination of the maximum shooting distance of the archery bow corresponding to the sighting pins **5** and an appropriate sighting pin tag **25** is chosen corresponding to a maximum shooting distance of the bow, when the sighting pin tag **25** is a clip or other fastening device, the sighting pin tag **25** is attached or affixed to the sighting pin **5** and/or sighting pin assembly **10** so that the archer can be provided a visible indication of the shooting distance of the bow.

**1.** A sighting pin tag for identifying shooting distance of a weapon comprising:

a body attachable to a sighting pin of a weapon; and  
indicia indicating a distance on an outer surface of the body.

**2.** The sighting pin tag according to claim **1**, wherein the body comprises shrink wrap material configurable in a way so that when the shrink wrap material is heated, said shrink wrap material is shrinkable around a sighting pin, and said body is an elongate tube having a first open end and a second open end, said elongate tube being slidable over a sighting pin.

**3.** The sighting pin tag according to claim **1**, wherein the body comprises shrink wrap material configurable in a way so that when the shrink wrap material is heated, said shrink wrap material is shrinkable around a sighting pin, and said body is a flat sheet, said flat sheet being wrappable around a sighting pin.

**4.** A sight for an archery bow comprising:

at least one sighting pin for identifying a shooting distance of a bow; and

a sighting pin tag provided on the at least one sighting pin, wherein said sighting pin tag comprises indicia provided on an outer surface of the sighting pin tag indicating the shooting distance associated with the at least one sighting pin.

**5.** The sight for the archery bow according to claim **4**, wherein the sighting pin tag further comprises a shrink wrap material so that when the sighting pin tag is installed on the at least one sighting pin and heated, said sighting pin tag is shrunk around the at least one sighting pin.

**6.** The sight for the archery bow according to claim **5**, wherein said sighting pin tag comprises an elongate tube having a first open end and a second open end.

**7.** The sight for the archery bow according to claim **5**, wherein said sighting pin tag comprises a flat sheet that is wrapped around the at least one sighting pin.

**8.** The sight for the archery bow according to claim **7**, wherein the flat sheet comprises an adhesive on at least one side edge of the flat sheet.

**9.** The sight for the archery bow according to claim **4**, wherein the sighting pin comprises at least one fiber optic element.

**10.** A method for installing a sighting pin tag of a sighting pin marking system on a sighting pin for identifying shooting distance for an archery bow comprising the steps:

determining a shooting distance of the archery bow corresponding to at least one sighting pin;

selecting a sighting pin tag having indicia that corresponds to the shooting distance associated with the at least one sighting pin;

installing the sighting pin tag on the at least one sighting pin.

**11.** The method according to claim **10**, wherein said sighting pin tag comprises a shrink wrap material that is shrinkable around the sighting pin and further comprising the step heating the sighting pin tag so that the shrink wrap material of the sighting pin tag is shrunk around the at least one sighting pin.

**12.** The method according to claim **10**, further comprising the step of installing a grommet over the at least one sighting pin, wherein the sighting pin tag is installed around the grommet and the at least one sighting pin.

**13.** The method according to claim **10**, wherein the at least one sighting pin comprises a fiber optic element.

**14.** The method according to claim **10**, wherein the sighting pin tag comprises an elongate tube having a first open end and a second open end, and wherein installing the sighting pin tag on the at least one sighting pin comprises the step of sliding the elongate tube of the sighting pin tag over the sighting pin.

**15.** The method according to claim **10**, wherein the sighting pin tag comprises a flat sheet, and wherein installing the sighting pin tag on the at least one sighting pin comprises the step of wrapping the flat sheet of the sighting pin tag over the sighting pin.

**16.** The method according to claim **15**, wherein the flat sheet comprises an adhesive on at least one edge of the flat sheet.

**17.** A sight on for a weapon comprising a first sighting pin with a first visible indication of a first shooting distance which is configured to allow a person using the sight to quickly target a first intended target.

**18.** The sight for a weapon according to claim **17**, further comprising a second sighting pin with a second visible indication of a second shooting distance which is configured to allow a person using the sight to quickly target a second intended target.

**19.** The sight for a weapon according to claim **18**, wherein said weapon is an archery bow.

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