A shooting target which will give indication of whether the shooting target has been hit and where the shooting target has been hit has a plurality of non-conductive layers. A plurality of conductive layers are provided wherein a single conductive layer is coupled between non-conductive layers. A communication module is coupled to the plurality of conductive layers for monitoring when a metallic object forms a connection between at least two of the plurality of conductive layers for indicting when and where the shooting target has been hit by the metallic object.
SHOOTING TARGET WITH ELECTRONIC ZONE INDICATORS AND METHOD OF USE

BACKGROUND OF THE INVENTION

[0001] 1. Field of the Invention

[0002] This invention relates to hunting and, more specifically, to a lightweight artificial shooting target. The shooting target will provide indication of whether a shot has hit the target, and if the shot hit the target, whether the shot has hit a particular zone (i.e., a kill zone).

[0003] 2. Description of the Prior Art

[0004] Hunting has become an increasingly popular sporting activity. Like any sport, in order to become a better marksman, one has to practice. Many people practice by shooting at paper targets. The targets are generally your standard paper targets which have a plurality of different color circles. Each circle has the same center with the radius of each circle diminishing until one comes to the last circle which is called the “bull’s eye.” While these paper targets do allow one to hone one’s shooting skills, the targets do not provide a realistic shooting target for the hunter. Furthermore, when shooting from a far distance, it is difficult to see where a shot has hit the target.

[0005] Some hunters practice by shooting at targets which are in the shape of an animal that is being hunted. For example, there are presently shooting targets which come in the shape of a deer or other animal. The problem with these types of targets are that they give no indication as to where the bullet has struck the target or if the bullet has even struck the target at all. Thus, the hunter has to look through a pair of binoculars to see where the bullet has struck the target or he must go up to the target to see where the bullet has struck. Even if the bullet has struck the target, the target will give no indication as to whether the shot would have wounded the animal or would have killed the animal.

[0006] Therefore, a need existed to provide an improved shooting target. The improved shooting target will provide an audible and/or a visual indication as to whether or not a shot has hit or missed the target. The improved shooting target will further indicate whether or not a shot would have killed an intended subject or if the shot would have only wounded the subject.

SUMMARY OF THE INVENTION

[0007] In accordance with one embodiment of the present invention, it is an object of the present invention to provide an improved shooting target.

[0008] It is another object of the present invention to provide an improved shooting target that will provide an audible and/or a visual indication as to whether or not a shot has hit or missed the target.

[0009] It is still another object of the present invention to provide an improved shooting target that will further indicate whether or not a shot would have killed an intended subject or if the shot would have only wounded the subject.

[0010] The foregoing and other objects, features, and advantages of the invention will be apparent from the following, more particular, description of the preferred embodiments of the invention, as illustrated in the accompanying drawing.

BRIEF DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0011] In accordance with one embodiment of the present invention a shooting target which will give indication of whether the shooting target has been hit and where the shooting target has been hit is disclosed. The shooting target has a plurality of nonconductive layers. A plurality of conductive layers are provided wherein a single conductive layer is coupled between non-conductive layers. A communication module is coupled to the plurality of conductive layers for monitoring when a metallic object forms a connection between at least two of the plurality of conductive layers for indicating when and where the shooting target has been hit by the metallic object.

[0012] In accordance with another embodiment of the present invention a shooting target which will give indication of whether the shooting target has been hit and where the shooting target has been hit is disclosed. The shooting target has a first nonconductive layer. A first conductive layers having a front side is coupled to a back side of the first non-conductive layer. A second non-conductive layer having a front side is coupled to a back side of the first conductive layer. A second conductive layer having a front side is coupled to a back side of the first non-conductive layer. A second non-conductive layer having a front side is coupled to a back side of the first conductive layer. A non-conductive layer having a front side is coupled to a back side of the first non-conductive layer. A communication module is coupled to the first and second conductive layers for monitoring when a metallic object forms a connection between the first and second conductive layers for indicating when and where the shooting target has been hit by the metallic object.

BRIEF DESCRIPTION OF THE DRAWINGS

[0013] The invention itself, as well as a preferred mode of use, and advantages thereof, will best be understood by reference to the following detailed description of illustrated embodiment when read in conjunction with the accompanying drawings, wherein like reference numerals and symbols represent like elements.

[0014] FIG. 1 is a perspective view of the shooting target of the present invention.

[0015] FIG. 2 is a lower rear view of the shooting target of FIG. 1 showing one embodiment of the target communication system.

[0016] FIG. 3 is a cross-sectional side view of the different layers of the shooting target.

[0017] FIG. 4 is a cross-sectional side view of the different layers of the shooting target showing a bullet penetrating the target.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0018] Referring to the Figures wherein like numerals and symbols represent like elements, a shooting target 10 (hereinafter target 10) is shown. The target 10 will provide audible and/or visual indication of whether or not the target has been hit. The target 10 will further indicate whether or not the hit would have killed an intended subject or if the shot would have just wounded the subject.
[0019] The target 10 is generally made out of a plurality of different layers. The layers may be cut into any type of size or shape. In the embodiment depicted in the Figures, the layers are cut into the shape of the animal to be hunted. As an example, the Figures show the target 10 cut in the shape of a deer. However, this is used just as an example and should not be seen as to limit the scope of the present invention. The target 10 and the layers that comprise the target 10 may be cut into any size or shape (i.e., bull’s eye target, silhouette target, etc.).

[0020] The target 10 will have a first layer 12 which is generally a cover layer. The first layer 12 is generally made out of a light weight but rigid material. However, it should be noted that first layer 12 does not have to be rigid. However, a rigid material is generally preferred. The first layer 12 must further be made out of a non-conducting material. Some examples of the first layer 12 may be cardboard, thin layers of wood (for example plywood and balsa wood), Styrofoam, laminations of mylar and polyester sheet or similar like. It should be noted that these are just examples and should not be seen as to limit the scope of the present invention. The first layer 12 is cut in the desired shape and size for the target 10. As may be seen from the Figures, the first layer 12 is cut in the shape of a desired animal to be hunted. However, this should not be seen as to limit the scope of the present invention. The first layer 12 may be painted or colored to give the target 10 a more aesthetically pleasing look. For example, a “Bull’s Eye” target may have different color rings painted on the first layer. At target 10 shaped like an animal may have the first layer 12 painted to provide a more life like appearance to the target 10.

[0021] The target 10 will have a second layer 14 which is a communication layer. The second layer 14 will be used to generate a signal to indicate if the target 10 has been hit. The second layer 14 is made out of a light weight conductive material. The second layer 14 is generally made out of a thin metal mesh material similar to that of a metal screen door or window screen. The second layer 14 may also be made from mylar or the like. The above are given as an example and should not be seen as to limit the scope of the present invention. The second layer 14 is cut into the same size and shape of the first layer 12. The second layer 14 is then coupled to the first layer 12.

[0022] The target 10 will have a third layer 16. The third layer 16 is an insulation layer. The third layer 16 will provide insulation between the second layer 14 and the fourth layer 18. The third layer 16 is similar to the first layer 12. The third layer 16 is generally made out of a light weight but rigid material. However, a rigid material does not have to be used. The third layer 16 must be made out of a non-conducting material. The third layer 16 is generally made out of the same or similar material to that of the first layer 12. The third layer 16 is cut into the same size and configuration as that of the first layer 12 and the second layer 14. The third layer 16 is then coupled to the second layer 16.

[0023] The target 10 will have a fourth layer 18. The fourth layer 18 will also be a communication layer. The fourth layer 18 is used in conjunction with the second layer 14 to generate a signal to indicate if the target 10 has been hit. The fourth layer 18 is made out of a light weight conductive material. The fourth layer 18 is generally made out of a thin metal mesh material similar to that of a metal screen door and/or a window screen. Mylar may also be used. Again, the above are given as an example and should not be seen as to limit the scope of the present invention. The fourth layer 18 is cut into the same size and shape of the other layers and is then coupled to the third layer 16.

[0024] The target 10 will further have a fifth layer 20. The fifth layer 20 is another insulation layer. The fifth layer 20 will provide insulation between the fourth layer 18 and the sixth layer 22. The fifth layer 20 is similar to the first layer 12 and the third layer 16. The fifth layer 20 is generally made out of a light weight but rigid material. Again, a rigid material does not have to be used, however, it is generally preferred. The fifth layer 20 must be made out of a non-conducting material. The fifth layer 20 is generally made out of the same or similar material to that of the first layer 12 and the third layer 16. The fifth layer 20 is cut into the same size and configuration as the previous layers and is then coupled to the fourth layer 18.

[0025] The target 10 will have a sixth layer 22. The sixth layer 22 is another communication layer. The sixth layer 22 is used in conjunction with the second layer 14 and fourth layer 18 to generate a signal to indicate if the target 10 has been hit and if the hit is in a particular “zone”. The sixth layer 22 is made out of a light weight conductive material. The sixth layer 22 is generally made out of a thin metal mesh material similar to that of a metal screen door and/or a window screen. Mylar may also be used. Again, the above are given as an example and should not be seen as to limit the scope of the present invention. The sixth layer 22 is cut into the size and shape of the area which would represent the particular “zone” area. For example, the sixth layer 22 may be cut into the size and shape of a “Bull’s Eye”. The sixth layer 22 may also be cut into the size and shape of a kill zone of an animal. It should be noted that the above are given as examples and should not be seen as to limit the scope of the present invention. The sixth layer 22 is then coupled to the fifth layer 20.

[0026] The target 10 may further have a seventh layer 24. The seventh layer 24 would be a cover/support layer. The seventh layer 24 is generally made out of a light weight but rigid material similar to that of the first layer 12. Again, a rigid material is generally preferred but is not required. The seventh layer 24 is generally also made out of a non-conducting material. The seventh layer 24 is generally made out of the same or similar material to that of the first layer 12, third layer 16, and fifth layer 20. The seventh layer 24 is cut into the same size and configuration as the first layer 12 and is then coupled to the fifth layer 20 and the sixth layer 22.

[0027] The target 10 is generally coupled to a stand 26. The stand 26 will allow the target 10 to be self supporting so that the target 10 can be placed in an upright position. The stand 26 may be made in any manner. As may be seen in FIG. 2, the stand 26 has an “H” support 28 as a bottom member. The “H” support has two members 29 which arise from the “H” support and are coupled to the target 10. A rock or other heavy object may be placed on the “H” support to provided additional support and to prevent the target from being blown over by a shot or the elements.

[0028] The target 10 is coupled to a communication box 30. When the bullet 31 penetrates the target 10, the metal
bullet 31 becomes a contact switch as the metal bullet 31 briefly and simultaneously comes into contact with two or more of the metal communication layers. When the metal bullet 31 comes into contact with two or more of the metal communication layers, a signal will be sent to the communication box 30. If a bullet 31 does not come into contact with any of the communication layers, then no signal is sent to the communication box 30. If the bullet 31 penetrates the target 10 and comes into contact with the second layer 14 and the fourth layer 18, a signal is sent to the communication box 30. The communication box 30 will then indicate that the target 10 has been hit and that the hit has a particular "zone" area. If the bullet 31 comes into contact with the second layer 14, the fourth layer 18, and the sixth layer 22, a different signal is sent to the communication box 30. The communication box 30 will then indicate that the shot has penetrated the "kill" zone of the target 10.

[0029] The communication box 30 may communicate the shot information in a plurality of different manners. The information may be transmitted in any desired visual and/or audible manner. For example, the communication box 30 may be coupled to a visual signaling system. The visual signaling system may have different color lights to indicate the shot status. The communication box 30 will generate different signals based on the shot. If the target 10 is not hit, then the communication box 30 will not send a signal. If the bullet 31 penetrates the target 10 and comes into contact with the second layer 14 and the fourth layer 18, a first signal is sent to the communication box 30. The communication box 30 will then send a signal to the visual signaling system. The visual signaling system will illuminate a first light to indicate that the target 10 has been hit and that the hit has entered a particular "zone" of the target 10. If the bullet 31 comes into contact with the second layer 14, the fourth layer 18, and the sixth layer 22, a different signal is sent to the communication box 30. The communication box 30 will then send another signal to the visual signaling system. The visual signaling system will then illuminate a second light to indicate that the shot has penetrated the "kill" zone of the target 10.

[0030] In a similar manner, the communication box 30 may be coupled to an audible indication system. The audible indication system will receive signals from the communication box 30. The audible indication system will then send out an audible signal indicating whether the shot wounded the animal or if the shot hit the "kill" zone on the target 10.

[0031] The visual signaling system and the audible indication system may be positioned near the target 10. However, this may create problems due to the distance between the target 10 and the person shooting. Thus, the communication box 30 may have a wireless transmitter. The wireless transmitter would be able to send different signals to a receiver located near the shooter. The receiver would then be coupled to the visual signaling system and/or the audible indication system to provide the shot information to the shooter.

[0032] While the invention has been particularly shown and described with reference to preferred embodiments thereof, it will be understood by those skilled in the art that the foregoing and other changes in form and details may be made therein without departing from the spirit and scope of the invention. What is claimed is:

1. A shooting target which will give indication of whether the shooting target has been hit and where the shooting target has been hit comprising, in combination:
   a plurality of non-conductive layers; and
   a plurality of conductive layers wherein a single conductive layer is coupled between non-conductive layers; and
   a communication module coupled to the plurality of conductive layers for monitoring when a metallic object forms a connection between at least two of the plurality of conductive layers for indicating when and where the shooting target has been hit by the metallic object.

2. A shooting target which will give indication of whether the shooting target has been hit and where the shooting target has been hit in accordance with claim 1 wherein the plurality of conductive layers are formed from a light weight and fairly rigid piece of material.

3. A shooting target which will give indication of whether the shooting target has been hit and where the shooting target has been hit in accordance with claim 1 wherein the plurality of conductive layers are formed from a metallic mesh material.

4. A shooting target which will give indication of whether the shooting target has been hit and where the shooting target has been hit in accordance with claim 1 wherein the plurality of non-conductive layers are cut in a shape of an animal.

5. A shooting target which will give indication of whether the shooting target has been hit and where the shooting target has been hit in accordance with claim 1 wherein the plurality of non-conductive layers are cut in a shape of a "Bull's Eye" target.

6. A shooting target which will give indication of whether the shooting target has been hit and where the shooting target has been hit in accordance with claim 1 wherein the plurality of non-conductive layers are cut in a shape of a silhouette target.

7. A shooting target which will give indication of whether the shooting target has been hit and where the shooting target has been hit in accordance with claim 1 further comprising a stand to hold the shooting target in an upright position.

8. A shooting target which will give indication of whether the shooting target has been hit and where the shooting target has been hit comprising, in combination:
   a first non-conductive layer;
   a first conductive layers having a front side coupled to a back side of the first non-conductive layer;
   a second non-conductive layer having a front side coupled to a back side of the first conductive layer;
   a second conductive layer having a front side coupled to a back side of the first non-conductive layer;
   a second non-conductive layer having a front side coupled to a back side of the first conductive layer; and
   a communication module coupled to the first and second conductive layers for monitoring when a metallic object forms a connection between the first and second
conductive layers for indicating when and where the shooting target has been hit by the metallic object.

9. A shooting target which will give indication of whether the shooting target has been hit and where the shooting target has been hit in accordance with claim 8 further comprising:

a third conductive layer having a front side coupled to a back side of the second non-conductive layer; and

a third non-conductive layer having a front side coupled to a back side of the second conductive layer;

wherein the communication module is coupled to the first, second, and third conductive layers for monitoring when a metallic object forms a connection between any of the first, second and third conductive layers for indicating when and where the shooting target has been hit by the metallic object.

10. A shooting target which will give indication of whether the shooting target has been hit and where the shooting target has been hit in accordance with claim 9 further comprising a forth non-conductive layer having a front side coupled to a back side of the third conductive layer.

11. A shooting target which will give indication of whether the shooting target has been hit and where the shooting target has been hit in accordance with claim 9 further comprising a stand coupled to the shooting target for supporting the shooting target in an upright position.

12. A shooting target which will give indication of whether the shooting target has been hit and where the shooting target has been hit in accordance with claim 9 wherein the first, second and third non-conductive layers are cut in a shape of an animal.

13. A shooting target which will give indication of whether the shooting target has been hit and where the shooting target has been hit in accordance with claim 9 wherein the first, second and third non-conductive layers are cut in a shape of a "Bull’s Eye" target.

14. A shooting target which will give indication of whether the shooting target has been hit and where the shooting target has been hit in accordance with claim 9 wherein the first, second and third non-conductive layers are cut in a shape of a silhouette target.

15. A shooting target which will give indication of whether the shooting target has been hit and where the shooting target has been hit comprising, in combination:

   a first non-conductive layer;
   a first conductive layers having a front side coupled to a back side of the first non-conductive layer;
   a second non-conductive layer having a front side coupled to a back side of the first conductive layer;
   a second conductive layer having a front side coupled to a back side of the first non-conductive layer;
   a second non-conductive layer having a front side coupled to a back side of the first conductive layer;
   a third conductive layer having a front side coupled to a back side of the second non-conductive layer;
   a third non-conductive layer having a front side coupled to a back side of the second conductive layer;
   a forth non-conductive layer having a front side coupled to a back side of the third conductive layer; and
   a communication module coupled to the first, second, and third conductive layers for monitoring when a metallic object forms a connection between any of the first, second, and third conductive layers for indicating when and where the shooting target has been hit by the metallic object.

16. A shooting target which will give indication of whether the shooting target has been hit and where the shooting target has been hit in accordance with claim 15 further comprising a stand coupled to the shooting target for supporting the shooting target in an upright position.

17. A shooting target which will give indication of whether the shooting target has been hit and where the shooting target has been hit in accordance with claim 15 wherein the first, second and third non-conductive layers are cut in a shape of an animal.

18. A shooting target which will give indication of whether the shooting target has been hit and where the shooting target has been hit in accordance with claim 15 wherein the first, second and third non-conductive layers are cut in a shape of a "Bull’s Eye" target.

19. A shooting target which will give indication of whether the shooting target has been hit and where the shooting target has been hit in accordance with claim 15 wherein the first, second and third non-conductive layers are cut in a shape of a silhouette target.