

# ANIMAL TRAP

## FIELD

[0001] The present invention generally relates to traps for the trapping of animals.

5 While the present invention will be described with reference to its application in the capture of birds, it is to be appreciated that the invention is not restricted to this application and could also be used to capture other animals.

## BACKGROUND

10 [0002] The following discussion of the background to the invention is intended to facilitate an understanding of the present invention only. It should be appreciated that the discussion is not an acknowledgement or admission that any of the material referred to was published, known or part of the common general knowledge of the person skilled in the art in any jurisdiction as at the priority date of the invention.

15 [0003] Growing populations of birds can become a nuisance to residents living near the vicinity of trees or fields where the birds may congregate. Pest controllers can therefore be engaged to reduce the populations of such bird flocks near these residents. While pest controllers can exterminate the birds, this is often undesirable or not allowed under local laws. Therefore, traps have been used to capture and  
20 relocate the bird population.

[0004] A common trapping technique used to trap a large number of flocking birds at one time is a technique known as cannon netting. This involves throwing a large net driven by cannons or rockets over the bird flock which may be foraging in a field or roosting in a tree. The disadvantage of this trapping technique is the potential of  
25 injuries to birds caught within the net, as well as the stress experienced by the birds caught by this technique. The noise can also drive other birds away from the trapping area. This technique is also not effective in capturing birds that are roosting in trees.

[0005] An object of the invention is to ameliorate one or more of the above-mentioned difficulties.

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## SUMMARY

**[0006]** According to an aspect of the present disclosure, there is provided an animal trap locatable over a trap zone, including an umbrella assembly, a curtain net supported by the umbrella assembly and releasable from an outer periphery of the umbrella assembly, and an actuation arrangement for holding the curtain net at or adjacent the outer periphery, and for releasing the curtain net therefrom when actuated to drop the curtain net downwardly therefrom to thereby at least substantially encompass the trap zone.

**[0007]** In same embodiments, the umbrella assembly may include a plurality of support braces extending radially from a central hub region.

**[0008]** In some embodiments, the animal trap may further include a drop frame secured at or adjacent a lower edge of the curtain net for facilitating the dropping of the curtain net.

**[0009]** In some embodiments, the animal trap may further include weights located at or adjacent the lower edge of the curtain net. The weights may be provided by a link chain secured to a lower edge of the curtain net.

**[0010]** In some embodiments, the actuation arrangement of the curtain net may include one or more trigger lines respectively secured at one end thereof to the drop frame, with an opposing end thereof passing through the central hub region, and an actuation line connected at or adjacent one end thereof to the opposing ends of the one or more trigger lines. The or each said trigger line may be supported by pulley assemblies respectively located at a peripheral end of each support brace, and at the central hub region.

**[0011]** In some embodiments, the animal trap may further include an actuation line connected to the or each trigger line, and releasably secured at or adjacent a free end thereof at a securing location away from the umbrella trap.

**[0012]** In some embodiments, the animal trap may further include a quick release system at the securing location for engaging with the actuation line when the curtain net is secured at or adjacent the outer periphery of the umbrella assembly, and for

releasing the actuation line to allow the curtain net to be downwardly dropped. The quick release system may be automatically controllable at a location remote from the umbrella trap.

5     **[0013]**   In some embodiments, the animal trap may further include a support assembly for supporting the umbrella assembly above the trap zone. The support assembly may include a support pole located under the umbrella assembly, and a base plate for supporting the central support pole. A hollow pipe may be secured to the base plate and extend generally horizontally therefrom, the actuation line passing down adjacent the support pole and through the pipe.

10    **[0014]**   In some embodiments, the support assembly may include a support arm extendable over the trap zone, a peripheral end of the support arm being connected to the umbrella assembly such that the umbrella assembly can be suspended over the trap zone.

15    **[0015]**   In some embodiments, the trap zone may cover a field where animals can congregate. Alternatively, the trap zone may cover a tree where animals can roost.

**[0016]**   Other aspects and features will become apparent to those of ordinary skill in the art upon review of the following description of specific embodiments in conjunction with the accompanying figures.

## 20    **BRIEF DESCRIPTION OF THE DRAWINGS**

**[0017]**   In the figures, which illustrate, by way of example only, embodiments of the present invention,

**[0018]**   Figure 1 is a schematic side view of a first embodiment of the animal trap according to the present invention shown in an unactuated position;

25    **[0019]**   Figure 2 is a schematic view of the animal trap as shown in Fig. 1 when in an actuated position;

**[0020]**   Figure 3 is a schematic side view of a second embodiment of the animal trap according to the present invention shown in an unactuated position;

[0021] Figure 4 is a schematic view of the animal trap as shown in Fig. 3 when in an actuated position;

[0022] Figure 5 is schematic view of the animal trap as shown in Fig. 3 showing a further optional sequence in the operation of the animal trap following actuation; and

5 [0023] Figure 6 is a top view of the umbrella assembly of the animal trap of Fig. 3.

## **DETAILED DESCRIPTION**

[0024] Throughout this document, unless otherwise indicated to the contrary, the terms “comprising”, “consisting of”, “having” and the like, are to be construed as non-exhaustive, or in other words, as meaning “including, but not limited to”.

10 [0025] Furthermore, throughout the specification, unless the context requires otherwise, the word “include” or variations such as “includes” or “including” will be understood to imply the inclusion of a stated integer or group of integers but not the exclusion of any other integer or group of integers.

15 [0026] Unless defined otherwise, all technical and scientific terms used herein have the same meaning as is commonly understood by a skilled person to which the subject matter herein belongs.

[0027] Terms such as ‘downwards’, and ‘upwards’ are used in the specification to describe the present embodiments in its the typical in use orientation. It is however to be appreciated that these terms are not intended to limit the scope of the present invention, and that alternative orientations are also envisaged.

20 [0028] Referring initially to Figs. 1 and 2, there is shown a first embodiment of an animal trap 1 according to the present disclosure. The animal trap 1 includes an umbrella assembly 3 having a central hub region 5 from which extends radially a plurality of support braces 7. The umbrella assembly 3 is supported by a vertical support pole 9 extending from the central hub region 5. The support pole 9 is itself supported on a circular base plate 11 that can rest on the ground surface under the umbrella assembly 3. A curtain net 8 is supported on and covers the umbrella assembly 3 and can be dropped downwardly from an outer periphery 10 of the umbrella assembly 3 to thereby encompass a trap zone 15 located under the

umbrella assembly 3. The curtain net 8 is initially folded, rolled or otherwise gathered into a net bundle 16 held at or adjacent the umbrella assembly outer periphery 10 in an 'unactuated' position as shown in Fig. 1. The net bundle 16 can subsequently be released and dropped from the outer periphery 10 to an 'actuated' position encompassing the trap zone 15 as shown in Fig. 2.

**[0029]** The animal trap 1 further includes an actuation arrangement 17 for retaining the net bundle 16 at or adjacent the outer periphery 10, and for allowing the net bundle 16 to be released and dropped from that location. The actuation arrangement 17 includes outer pulleys 19 respectively located at the umbrella assembly outer periphery 10 at the end of each support brace 7, and a pulley system 21 located in the central hub region 5. Each outer pulley 9 supports thereon a trigger line 23 which is secured at one end to a hoop shaped drop frame 25 that is secured at or adjacent a lower edge 27 of the curtain net 8. A weight in the form of a link chain 29 can also be secured to the drop frame and/or the lower edge of the curtain net 8. The provision of the drop frame 25 and link chain 29 helps to ensure that the curtain net 8 can be quickly guided downwardly to the ground surface to thereby encompass the entire trap zone 15, without leaving any gaps to which an animal could escape the animal trap 1. Each trigger line 23 then extends generally parallel to a support brace 7 and over the pulley system 21 provided in the central hub region 5. All of the trigger lines 23 are connected at their opposing ends to a common actuation line 31 which extends downwardly generally parallel to the support post 9, and through a horizontal pipe 12 secured to the base plate 11. A quick release system (not shown) is provided at a securing location remote from the location of the animal trap 1. A pulling force applied to the actuation line 31 will apply a pulling force to each trigger line 23 to thereby draw and retain the net bundle 16 at or adjacent the umbrella assembly outer periphery 10. The quick release system can engage and maintain in tension the actuation line 31 to thereby maintain the curtain net 8 in the unactuated position. The curtain net 8 will drop when the quick release system releases the tension on the actuation line 31. It is also envisaged that the quick release system is automatically controlled at a location removed from the quick release system and animal trap 1.

**[0030]** Fig. 3 to 6 shows another embodiment of an animal trap 2 according to the present disclosure. This embodiment is particularly adapted for trapping birds or

other animals that may be roosting within a tree 4. The animal trap 2 includes an umbrella assembly 33 constructed using a central pipe 35, and a plurality of radially extending support pipe 37, with each support pipe 37 being connected at one end to the central pipe 35 using a swivel clamp 39. The opposing free ends of each support pipe 37 is provided with a T joint 39 through which a cable 41 can be threaded, the cable 41 extending entirely around the outer periphery 38 of the umbrella assembly 33. A plurality of brace pipes 43 are respectively connected via swivel clamps 45 to adjacent support pipes 37 to thereby retain the support pipes 37 in angularly spaced apart positions within the umbrella assembly 33.

**[0031]** A curtain net 34 is supported over the umbrella assembly 33, with a portion of the curtain net 34 being held as a folded, rolled or otherwise gathered net bundle 36 located at or adjacent the outer periphery 38 of the umbrella assembly 33. The net bundle 36 can be subsequently released and dropped from the umbrella assembly 33 to thereby encompass a trap zone 50 that includes any tree 4 located under the umbrella assembly 33. An actuation arrangement 46 for the animal trap 2 includes a plurality of trigger lines 47 used to support and retain the net bundle 36 on the cable 41 extending around the umbrella assembly outer periphery 38. The trigger lines 47 extend from the net bundle 36 to the central pipe 35 where they are all connected to a common actuation line 49 that extends downwardly from the central pipe 35. The umbrella assembly 33 can be suspended over a tree 4 when the animal trap 2 is being used. The umbrella assembly 33 may for example be suspended from a crane arm 51 via a rope 53 over the tree 4. The actuation line 49 can then extend downwardly through the branches of the tree 4 to an omega shackle 55 previously attached to the trunk of the tree 4. The free end of the actuation line 49 can then be similarly engaged to a quick release system (not shown) to maintain the actuation line 49 in tension so that the trigger lines 47 are maintained in tension to retain the net bundle 36 in an unactuated position as shown in Fig. 3. Release of the actuation line by the quick release system will allow the curtain net 34 to drop over the tree 4 to the actuation position shown in Fig. 4 thereby trapping any birds or other animals roosting within the tree 4.

**[0032]** In situations where it is required that the animals be exterminated, a plastic covering sheet 57 can be draped over the curtain 34 and gathered around the tree

trunk using canvas 58 secured to the tree trunk to thereby form a substantially airtight cover structure 56 around the branches of the tree 4. Carbon dioxide can then be drawn into the cover structure 56 through a gas inlet 63 located at the top of the cover structure 63 by an exhaust fan 59 applying suction via an exhaust hose 61 to the enclosed space within the cover structure 56. The carbon dioxide, being heavier than air, will displace the air from the cover structure 56, and ventilation holes 65 are therefore provided at the top of the cover structure 56 to allow the air to escape.

**[0033]** The animal trap according to the present invention allows for the capture of animals including birds while minimising the disturbance to the animals prior to and during actuation of the animal trap. This can increase the trapping efficiency of the animal trap as does not repel or alarm the animals before capture

**[0034]** It should be appreciated by the person skilled in the art that the above invention is not limited to the embodiment described. It is appreciable that modifications and improvements may be made without departing from the scope of the present invention.

**[0035]** It should be further appreciated by the person skilled in the art that one or more of the above modifications or improvements, not being mutually exclusive, may be further combined to form yet further embodiments of the present invention.

## CLAIMS

1. An animal trap locatable over a trap zone, including an umbrella assembly, a curtain net supported by the umbrella assembly and releasable from an outer periphery of the umbrella assembly, and an actuation arrangement for holding the curtain net at or adjacent the outer periphery, and for releasing the curtain net therefrom when actuated to drop the curtain net downwardly therefrom to thereby at least substantially encompass the trap zone.
2. An animal trap according to claim 1, wherein the umbrella assembly includes a plurality of support braces extending radially from a central hub region.
3. An animal trap according to claim 2, further including a drop frame secured at or adjacent a lower edge of the curtain net for facilitating the dropping of the curtain net.
4. An animal trap according to claim 3, further including weights located at or adjacent the lower edge of the curtain net.
5. An animal trap according to claim 4, wherein the weights are provided by a link chain secured to a lower edge of the curtain net.
6. An animal trap according to any one of claims 3 to 5, wherein the actuation arrangement of the curtain net includes one or more trigger lines respectively secured at one end thereof to the drop frame, with an opposing end thereof passing through the central hub region, and an actuation line connected at or adjacent one end thereof to the opposing ends of the one or more trigger lines.
7. An animal trap according to claim 6, wherein the or each said trigger line is supported by pulley assemblies respectively located at a peripheral end of each support brace, and at the central hub region.
8. An animal trap according to claim 6 or 7, further including an actuation line connected to the or each trigger line, and releasably secured at or adjacent a free end thereof at a securing location away from the umbrella trap.

- 5 9. An animal trap according to claim 8, further including a quick release system at the securing location for engaging with the actuation line when the curtain net is secured at or adjacent the outer periphery of the umbrella assembly, and for releasing the actuation line to allow the curtain net to be downwardly dropped.
- 10 10. An animal trap according to claim 9, wherein the quick release system is automatically controllable at a location remote from the umbrella trap.
- 11 11. An animal trap according to any one of claim 8 to 10, further including a support assembly for supporting the umbrella assembly above the trap zone.
- 12 12. An animal trap according to claim 11, wherein the support assembly includes a support pole located under the umbrella assembly, and a base plate for supporting the central support pole.
- 15 13. An animal trap according to claim 12, further including a hollow pipe secured to the base plate and extending generally horizontally therefrom, the actuation line passing down adjacent the support pole and through the pipe.
- 20 14. An animal trap according to claim 11, wherein the support assembly includes a support arm extendable over the trap zone, a peripheral end of the support arm being connected to the umbrella assembly such that the umbrella assembly can be suspended over the trap zone.
- 15 15. An animal trap according to any one of the preceding claims, wherein the trap zone covers a field where animals can congregate.
- 25 16. An animal trap according to any one of claims 1 to 14, wherein the trap zone covers a tree where animals can roost.