A bird repellent system comprising a round shaft and shaft base installation securely fastened to a tower, wherein the shaft is inserted perpendicularly into the tubular recess of the shaft base and held upright. The shaft comprises through which links can be formed to create a mesh or grid pattern to repel birds from landing or roosting on top of a tower structure.
BIRD CONTROL SYSTEM
CROSS-REFERENCE TO RELATED APPLICATION

[0001] Not Applicable

FEDERALLY SPONSORED RESEARCH

[0002] Not Applicable

SEQUENCE LISTING OR PROGRAM

[0003] Not Applicable

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BACKGROUND

[0005] The present invention generally relates to bird repellent systems. Bird repellent articles, devices, and systems are known in the art. Commonly known devices are installed on towers, areas with a large pedestrian population, or other buildings with signs. For example, U.S. Pat. No. 6,622,436 to Kretsch discloses a method of deterring waterproof trespassing with a barrier consisting in its simplest form of a pair of lines suspended above a property surface, with one line at 3 to 10 inches high, a second line at 8 to 30 inches high, and a separation between the lines of at least 5 inches. The lines are suspended by means of an array of posts. Preferably, a dispenser for feeding a line from a spool and also for retracting the dispenser on one of the posts. The barrier is optionally removable, including means for retracting the line and for conveniently removing the posts from receptacles in the property surface. While Kretsch seeks to deter trespass by geese on foot, it is not designed to stop birds from roosting on structures above ground.

[0006] Also known are wires and metallic spikes placed atop structures such as shopping centers and building signs to stop pigeons from nesting, and to prevent pigeon droppings. For example, U.S. Pat. No. 4,937,988 to Gratton discloses a barrier for preventing pigeons from landing on a balcony rail comprising a pair of support brackets adapted for flush mounting opposite ends of the balcony rail, and a plurality of monofilament wires secured between the pair of support brackets. Gratton is specifically adapted for balcony railings and is designed to serve as a more permanent barrier that cannot easily be removed if maintenance or construction activities were to take place.

[0007] Both Gratton and Kretsch are also insufficient in that they constitute “fences” only, which may not deter birds from landing behind the “fences” (e.g., inside a large balcony).

[0008] There is a special need for deterring birds other than just pigeons from roosting on other types of structures, and for reasons other than to prevent pigeon droppings. For example, birds that nest on transmission towers obstruct workers from conducting maintenance and construction activities on the towers, causing costly delays. Birds also roost on power poles and interfere with transmission lines, causing electrical damage and outages that interfere with homes and businesses. Furthermore, airport towers require bird repellents to deter birds from landing and to thereby avoid aircraft collisions. At the same time, these structures require a non-metallic repellent that does not interfere with transmissions, and since the type of bird that interferes with a tower can vary by location, the bird barrier must be adjustable to target different kinds of birds, and not just pigeons and geese. Because some birds are federally protected, it is necessary to create a barrier that only repels birds without injuring them, and since it is possible for birds to land behind a fence, the barrier must be sufficient to prevent this from happening.

[0009] The problem of deterring birds from roosting on transmission towers, including television towers, radio towers, cell phone and communication towers, electrical towers, electrical power poles, FAA and airport communication and antenna towers, radar and weather platforms, airport runway signs and other airfield installations, is solved by a non-metallic barrier comprising shaft bases with shafts that can be easily removed by workers when performing maintenance or construction activities, and that comprise bores through the shaft which can be woven into various grid patterns to deter birds of various sizes, including crows, ospreys, harriers, hawks, eagles, falcons, owls, herons, egrets, bitterns, vultures, California condors, ibises, pelicans, cormorants, and gulls, from landing on top of structures.

SUMMARY

[0010] The present invention comprises a non-metallic bird repellent system. The system comprises a shaft having a longitudinal round surface, wherein at least one bore disposed latitudinal on the round surface of the shaft is utilized for creating multiple links and grid patterns between the shafts.

[0011] A shaft base having an arcaded horizontal member comprises a tubular projection from the outer surface and perpendicular to the horizontal member, wherein the tubular projection comprises a tubular recess disposed along the central longitudinal axis of the tubular projection and is in continuous contact with the horizontal member along the entire length of the tubular projection for holding the shaft upright.

[0012] The shaft inserts into the tubular recess of the shaft base and is held upright, wherein the shaft base is fastened to a transmission tower by means of a cable tie.

[0013] Links between the installed shaft and shaft base with cords comprise a mesh or grid pattern wherein the cord link system comprises a cord strung through all the bores on the shafts and securely knotted. This cord link system further comprises a visual mesh or grid pattern between multiple shafts.

BRIEF DESCRIPTION OF THE FIGURES

[0014] FIG. 1a shows a base and shortened shaft of the present invention.

[0015] FIG. 1b shows a base, sleeve, and shortened shaft of the present invention.

[0016] FIG. 2 is a cut away view of the present invention showing alternate installation locations.

[0017] FIG. 3a-3c shows various shaft embodiments in perspective view of the present invention.

[0018] FIG. 4 shows a close up view of the invention from an angle.

[0019] FIG. 5 shows an example of a grid pattern that can be formed by linking shafts with a cord.

[0020] FIG. 6a is a perspective view of the present invention installed on a electrical pole.
FIG. 6b is a perspective view of the shaft base of the present invention having two bores.

DETAILED DESCRIPTION

Referring to FIG. 1, a bird repellent system is shown and described. In the preferred embodiment, the system 100 comprises a shaft 10 having a longitudinal round surface, wherein at least one bore 12 disposed latitudinal on the round surface of the shaft 10 is utilized for creating multiple links between shafts 10.

Still referring to FIG. 1, a shaft base 16 having an arced horizontal member comprising a tubular projection 14 from the outer surface and perpendicular to the horizontal member, wherein the tubular projection 14 comprises a tubular recess disposed along the central longitudinal axis of the tubular projection 14 and is in continuous contact with the horizontal member of the shaft base 16 along the entire length of the tubular projection 14 for holding the shaft 14 upright.

An alternate embodiment of the invention comprises a piece tubular projection 14 in which the tubular projection comprises another piece inserted into the tubular projection, called the sleeve 14a, which lengthens the tubular projection 14 thereby adding support for the shaft 10.

Still referring to FIG. 1 of the system 100, an alternate embodiment of the invention comprises a tubular projection 14 with a bore 12 that corresponds to the bore 12 of the shaft 14 when the shaft 14 is inserted into the tubular projection 14. A cord can be inserted through the bore of the tubular projection and the base of the shaft to secure the shaft 14 and shaft base 16 to a pole or horizontal platform.

Referring to FIG. 2 of the system 100, the shaft 10 insert into the tubular recess 15 of the shaft base 16 and is held upright. The shaft base 16 may be installed on tower 30 structures that utilize circular or square tubing 30.

Referring to FIGS. 3a-3b of the system 100, alternate embodiments of shaft 10 tips are shown. The first tip 10a comprises a smooth cone shaped surface. The second tip 10b comprises an angled surface. The third tip 10c comprises a flat latitudinal surface.

Referring to FIG. 4 of the system 100, the shaft base 16 is fastened to a communication and/or transmission tower 30 of interest by means of a cable tie 17.

Still referring now to FIGS. 4 and 5 of the system 100, links between installed shafts 10 with cords 20 comprise a mesh 200 or grid pattern wherein the cord 20 link system 200 comprises a cord 20 strung through all the bores 12 on the shafts 10 and securely fastened with a knot 17a.

Referring to FIG. 5 of the system 100, one example of a mesh 200 or grid pattern is shown. The mesh or grid pattern can be used not only to create fencing to block off access from the sides, but also to cover the tops of structures to block off access from above.

Referring to FIGS. 6a and 6b of the system 100, an alternative embodiment of the shaft base 16 comprises two bores 12a on the horizontal member through which nails or screws may be inserted to fasten the shaft member to a wooden horizontal surface such as an electrical pole 300.

All features disclosed in this specification, including any accompanying claims, abstract, and drawings, may be replaced by alternative features serving the same, equivalent or similar purpose, unless expressly stated otherwise. Thus, unless expressly stated otherwise, each feature disclosed is one example only of a generic series of equivalent or similar features.

Any element in a claim that does not explicitly state "means for" performing a specified function, or "step for" performing a specific function, is not to be interpreted as a "means" or "step" clause as specified in 35 U.S.C. §112, paragraph 6. In particular, the use of "step of" in the claims herein is not intended to invoke the provisions of 35 U.S.C. §112, paragraph 6.

Although preferred embodiments of the present invention have been shown and described, various modifications and substitutions may be made thereto without departing from the spirit and scope of the invention. Accordingly, it is to be understood that the present invention has been described by way of illustration and not limitation.

What is claimed is:

1. A bird repellent system, comprising:
   a. a shaft comprising a round extrusion, wherein the latitudinal surface of the shaft comprises at least one bore disposed through the shaft;
   b. a shaft base comprising a horizontal member having a tubular projection holding the shaft upright, wherein the tubular projection comprises a tubular recess disposed centrally and longitudinally through the tubular projection wherein the tubular projection is in continuous contact with the horizontal member along the entire length of the tubular projection;
   c. a means for linking at least two shafts, including at least one cord securely knotted to a shaft;
   d. a means for fastening the shaft member to a tower structure, including a cable tie and adhesives;
   e. a bird repellent setup wherein the combination of at least two shafts linked together forms a mesh or grid pattern for repelling birds known to land on a tower structure.
2. The system of claim 1, wherein the tower comprises television towers, radio towers, cell phone and communication towers, electrical towers, electrical power poles, FAA and airport communication and antennas towers, radar and weather platforms, airport runway signs and other airfield installations.
3. The system of claim 1, wherein all parts are non-metallic.
4. The system of claim 1, wherein the tubular projection is comprised of two pieces, including a sleeve.
5. The system of claim 1, wherein the shaft end not held in a tubular recess is pointed, angled, or flat.
6. The system of claim 1, wherein the horizontal member is arced.
7. The system of claim 1, wherein the tubular projection is perpendicular to the horizontal member.
8. The system of claim 1, wherein the shaft and shaft base form an installation comprising a secure tie of the shaft base on a communication tower, wherein the shaft is inserted into the tubular recess of the shaft base and held upright.
9. The system of claim 1, wherein the means for linking the at least two shafts comprises a knot formed by inserting a link through the at least one bore of the shaft.
10. The system of claim 1, wherein the means for linking at least two shafts comprises a bore on the tubular projection of the shaft base that corresponds to the bore of the shaft, in which a link is inserted through the bores of both the tubular projection and the shaft to form a knot.
11. The system of claim 1, wherein the means for fastening the shaft member to a tower structure comprises a tie.
12. The system of claim 1, wherein the means for fastening the shaft member to a tower structure comprises at least one bore on the horizontal member of the shaft member through which nails or screws may be inserted and fastened onto a surface.

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