Dec. 21, 1948. J. S. PELES 2,456,731

BIRDPROOFING

Filed Dec. 4, 1943

Fig. 1

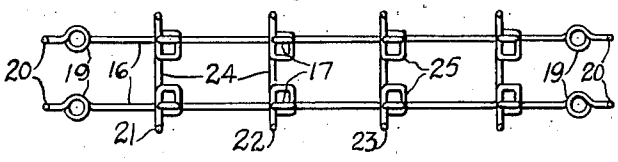
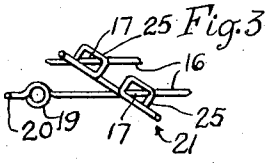


Fig. 3



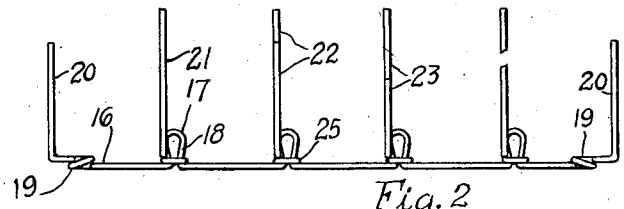
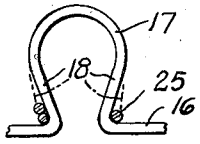


Fig. 2

Fig. 4



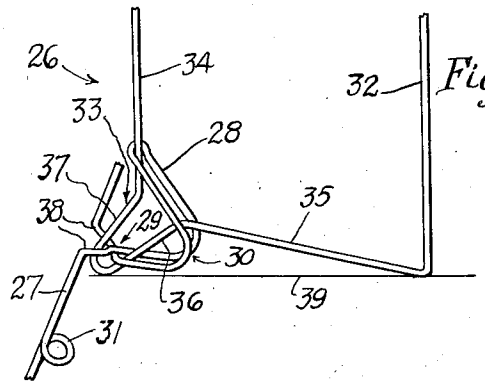


Fig. 5

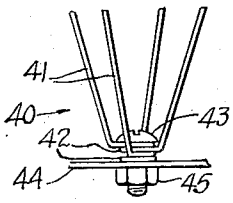


Fig. 6

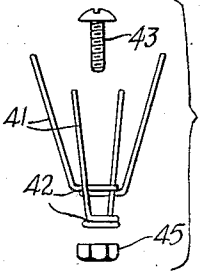


Fig. 7

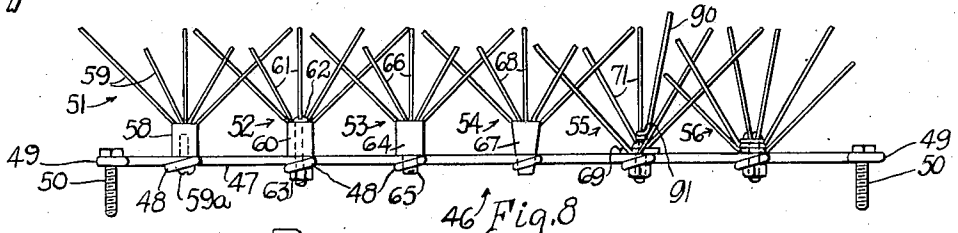


Fig. 8

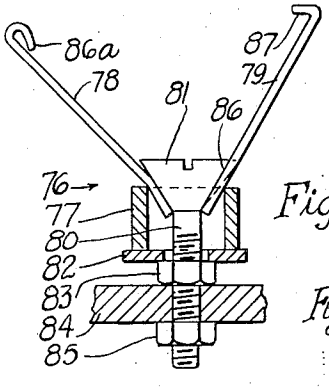


Fig. 10

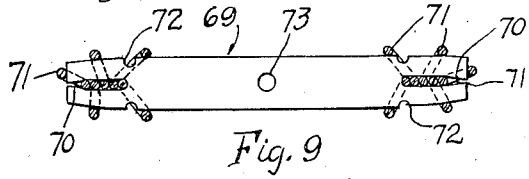


Fig. 9

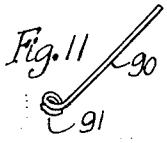


Fig. 11

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BIRDPROOFING

Julius Stanley Peles, New York, N. Y.

Application December 4, 1943, Serial No. 512,951

1 Claim. (Cl. 20—1)

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This invention relates to birdproofing and it has among its objects the provision of improved devices which can be manufactured more cheaply and which are better adapted for shipment in compact form.

Because birdproofing is often used in very considerable lengths for application on large buildings, the problem of shipment is generally serious. This problem is aggravated by the usually rigid structures employed which render the birdproofing cumbersome for packaging and shipment.

Since the wire of which birdproofing is made generally requires joints for suitable rigidity to maintain the structures employed in operative form, to prevent access of birds into relatively small spaces, it has been customary to produce such joints by soldering or spot welding. This has resulted in making birdproofing highly expensive, because the number of joints involved is very great.

It is therefore an object of the invention to provide improved birdproofing which shall avoid the difficulties mentioned and afford structures which are inexpensive to manufacture and which can be shipped in knocked-down form for rapid and easy assembling at the location at which the birdproofing is to be installed, and without requiring any particular skill in so doing, the resultant joints being strong and durable, and possessing a rigid or resilient engagement so that the parts are free of vibration and cannot accidentally move to upset the critical spacing employed in preventing birds from alighting on the protected parts of a building.

Another object of the invention is the provision of such improved birdproofing for pigeons, starlings and sparrows.

Another object of the invention is to furnish birdproofing having improved means whereby it can be secured in every conceivable location, and in difficult places, on narrow ledges, fences and so on.

Another object of the invention is to furnish improved birdproofing which can be arranged and rearranged at the building to suit the varying conditions encountered at different points along a ledge.

Another object of the invention is to construct improved birdproofing which can be readily modified after installation to increase the density of the birdproofing or to otherwise vary the same according to the flocks of birds encountered.

Other objects and advantages of the invention will become apparent as the specification proceeds.

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With the aforesaid objects in view, the invention consists in the novel combination and arrangements of parts hereinafter described in their preferred embodiments, pointed out in the subjoined claim, and illustrated in the annexed drawing, wherein like parts are designated by the same reference characters throughout the several views.

In the drawing:

Fig. 1 is a plan view showing improved birdproofing according to the invention.

Fig. 2 is a view in side elevation thereof.

Fig. 3 is a plan view showing the manner of assembling the birdproofing.

Fig. 4 is an enlarged view in elevation with parts in section and indicating in dot-dash lines the resilient action at the joint to prevent vibration.

Fig. 5 is a fragmentary, perspective view of a modified birdproofing.

Fig. 6 is a side view of a modification.

Fig. 7 is a view showing the mode of assembling the device of Fig. 6.

Fig. 8 is a side view showing other modifications.

Fig. 9 is a plan view with parts removed showing a device illustrated in modified form in Fig. 8.

Fig. 10 is a central vertical sectional view of another modification.

Fig. 11 is a view of a detachable branch wire for the wires shown in the different modifications.

The advantages of the invention as here outlined are best realized when all of its features and instrumentalities are combined in one and the same structure, but, useful devices may be produced embodying less than the whole.

It will be obvious to those skilled in the art to which the invention appertains, that the same may be incorporated in several different constructions. The accompanying drawing, therefore, is submitted merely as showing the preferred exemplifications of the invention.

Referring in detail to the drawing, 15 denotes birdproofing embodying the invention. The same may include a track comprising two identical wires 16 having equally spaced loops 17 therein arranged to lie in the vertical planes determined by the wires. The character of each of these loops is more clearly shown in Fig. 4, each loop being open at the bottom, so that the sides 18 of each are adapted to act resiliently. Nor-

mally, the loop is in the condition shown in dot-dash lines, and when in use, as in Fig. 1, the loop is in the condition shown in full lines. The lower part of the loop is somewhat constricted to form a neck, and in use this contraction is increased by causing the sides 18 to be bent toward each other. As the wires 16 are relatively thick, say 3/32 or 1/8 inch stock, the spring action involved is considerable. Intermediate of or adjacent to the ends of the wires 16, the same are formed with anchorage means such as loops 19 substantially normal to the loops 17, adapted to receive nails, screws, bolts, hooks or other fastenings for securing the track on a large, fence, or other part of a building. The extreme end portions of the wires 16 are bent upwardly at 20 to form birdproofing elements as hereinafter described.

Supported by the wires 16 is a series of vertical U-shaped wire members 21, 22, 23 of different heights, but being otherwise identical. Experience has indicated that the height of the vertical wires should be 2 inches for sparrows, 4 inches for starlings, and 6 inches for pigeons. In principle, if a bird attempts to alight, the upright wires should prevent the bird from folding its wings, and this will cause the bird to go elsewhere. Although the device 15 indicates wires of different regularly recurrent heights, it is to be understood that the wires may all be of the same height according to the birds that frequent the building. While it may be assumed that the 6 inch wires should keep away the smaller as well as larger birds, yet in practice a smaller bird might be able to alight between the wires, a result it could less easily accomplish if the wires were shorter so that their upper ends or points are more immediately adjacent to the bird for obstructing and rendering its movements uncomfortable. The use of shorter and longer wires thus represents a compromise in endeavoring to furnish birdproofing for birds of different varieties common in urban areas, especially as it has been observed that even the shorter wires will often discourage the larger birds.

Each of the wires 21, 22 and 23 may have a base portion 24 that may be straight or curved, provided with a pair of identical loops 25 lying in generally horizontal planes. These loops are formed by simple turns of wire, the stiffness and strength of the wire being relied upon to maintain the operative shape of the loops. A novel feature of the loops is that they have a greater dimension transversely of the track than longitudinally thereof, to facilitate assembling of the birdproofing as hereinafter described. The track loops 17 extend upward through the loops 25 so as to engage at the contracted portion thereof as in Fig. 4. Hence, the track loops form heads interlocked with the loops 25 to prevent removal of the wires 21, 22 and 23. Further, the track loops are under resilient tension, as they tend to expand, and thus to snugly hold the wires 21, 22, 23 without any possible vibration. The space protected by these wires is closed at its ends by the track wire portions 20.

For installing the birdproofing the track wires 16 may be cut to suitable lengths or shipped in coil form. These wires are laid on a ledge and only one of them is secured at its ends as at 19 in Fig. 3. Then the crosswires 21, 22 and 23 are applied so that their loops 25 receive the track loops 17 diagonally to afford the necessary space or clearance. Finally, the free track wire, being the upper one in Fig. 3 is pulled rightward, causing the crosswires to swing clockwise, with the loops 25 springing the track loops 17 from the dot-dash to the full line position in Fig. 4. When the cross wires are almost at right angles to the track wires, the free wire of the latter is secured permanently in place and the installation is completed. The engagement between loops 17 and 25 is sufficiently snug so as to prevent accidental release in the position of Fig. 3. The crosswires will not tilt laterally, because each loop 25 forms a base snugly pressed against the track wires. Also the resilient tension prevents any tilting and also avoids vibration, rattling and the like.

In Fig. 5 is shown a modification 26 according to which U-shaped wires similar to those shown at 21, 22, 23 in the previous figures, can be secured in place as with only a one wire track. This is often desirable as on rather narrow ledges, or on ledges which are of special shape or construction. Then again, a single wire track can be secured to a wall of a building, at the ledge, in the event that securing holes may not be driven into the ledge. The track wire 27 is formed with a loop 28 twisted at its base as at 29 and bent at 30 into the form of an approximately horizontal U. A series of identical spaced loops 28 may be provided, and the wire 27 may have securing eyes or anchorages as at 31. A vertical U-shaped wire 32 has a corner portion 33 diagonally downwardly bent from the finger 34 and base 35, the latter being upwardly inclined as shown. The finger 34 lies in the bight portion of loop 28, the base 35 also enters the loop 28 at the bend 30, and the loop 33 embraces or receives the twist at 29 with the arms 36, 37 of loop 33 lying respectively between the sides of the loop 28 and between the bends at 38 formed in making the twist. As the loop 28 is closed at its ends, it forms a resilient clamp snugly engaging the finger 34 and the base 35, and in cooperation with the engagement at 36 and 38, prevents any lateral angular movement of the wire 32 and avoids vibration. The base 39 on which wire 32 rests holds the same in the engagement with the loop 28 as shown.

Device 26 may be assembled by first inserting the finger 34 of each member 32 upward through loop 28 at the bight of the latter and causing loop 33 to receive the twist 29 while the arm 36 enters loop 28 as the member 32 is moved upward with a counterclockwise tilting motion. The member 32 may be easily removed by movement in an opposite direction.

In Figs. 6 and 7 is shown a device 40 wherein a series of generally U- or V-shaped wires 41 having central base loops 42 are secured by any screw 43 passing through these loops and through a support 44 for engagement by a tensioning nut 45. With the device 40, any number of wires 41 may be applied for a single fastening. Further the wires may be swiveled before the bolt is tightened, to vary the spacing between their fingers as may be required by the proximity of the building wall or its ornaments.

In Fig. 8 is shown a device 46 whereby a series of units such as 40 can be mounted without requiring individual fastening to the building itself. Thus a support such as a wire 47 is formed with a series of equally spaced anchorage loops 48, and with end loops 49 for receiving screws or bolts 50 for fastening the wire to a building or the like. Mounted on the several loops are the different devices. Of these, the device 56 is like that at 40, and the device 55 is more particularly shown in Fig. 9, while the device 52 is more particularly

shown as 76 in modified form in Fig. 10. Of the others, the device 51 may include a bar or tube 58 to which the wires 59 are secured in any suitable manner, as by being press fitted thereinto, a screw 59a passing through the eye or loop 48 to engage in a central threaded bore of the member 58. In the device 52, a tube 60 may receive the ends of wires 61, a screw 62 passing completely through the tube and the eye 48 for engagement by a nut 63, the wires 61 being retained in any suitable manner by soldering or welding to the tube or by being clamped therein by the screw 62. In the device 53, a head 64 may have an undercut threaded portion 65 which is forcibly engaged with loop 48 to cut a thread therein. The wires 66 may be engaged with member 64 in any manner herein indicated. In the device 54, a soft metal tapered head 67 in which the ends of wires 68 may be embedded, is secured to loop 48 by being pressed thereinto, the coil of the loop affording a thread-like engagement. The device 55 may include a plate 69 having initially open ended slots 70 at its ends to freely receive the bight portions of U or V-shaped wires 71 after which the end portions of the plate 69 are deformed by compression to permanently grip the wires. To facilitate the deformation, weakening notches 72 may be provided in the plate. A central hole 73 provides for a screw 91 to pass through loop 48 on which the plate 69 rests, a nut engaging the screw to clamp the plate to the loop. The device 56 (Fig. 8), is different from that at 40 (Fig. 6), in having a greater flare or divergence in its wires.

In the device 76 (Fig. 10), a ring or short tube 77 receives the end portions of wires such as 78, 79, a screw 80 having a tapered head 81 cooperating with the tube to afford a seating and clamping engagement for the wires. The screw passes through a washer 82 and is tensioned by a nut 83, and passes thence through a support 84 to which it is secured by a nut 85. If desired, the conoidal head 81 may have different tapers or may be grooved as at 86 so as to positively separate the wires or to secure the same at different angles. If desired, the wire 78 may be bent at any desired angle. The wires 78, 79 may have their upper ends bent as at 86a, 87 so as to avoid any possible injury to birds. All other wires herein shown may be similarly bent at their upper ends. By the use of a head such as 81, different numbers, sizes and shapes of wires can be quickly arranged to form a single compact unit, with the wires flared to cover a substantial area.

All of the devices 40 and 51 to 56 and 76 illustrate a principle of the invention residing in the provision of separate elements or units that can

be compactly shipped and arranged at the place of installation, so as to be assembled and secured rapidly and easily. These devices have the further advantage of affording a substantial density of wires which may extend toward each other to reliably protect the adjoining area against birds. Also in these devices, the various wires can be rearranged at different angles and directions, and if necessary, bent to suit.

In Fig. 11 is shown a device 90 constituting a branch wire having a loop or coil 91 of one or more turns adapted to be sleeved over any of the upright wires herein shown, such as a wire of the device 55, with the loop resting on a base or anchorage portion such as that at 69. In other words, the loop 91 snugly engages a wire 20, 21, 22, 23, 32, 34, 41, 78, 79 or the like so that the wire 90 is held upright at a desired angle. If necessary, the loop can be pinched to clampingly engage its supporting wire. A large number of such wires 90 may be applied to each of the devices herein shown, giving the effect of "sprays." The wires 90 may, of course, be soldered or welded to their supporting wires, but a very substantial advantage is obtained by the use of the loops 91. Thus a box of wires 90 can be shipped to the point of installation, and the wires 90 readily engaged at various places with different densities and arrangements, as at corners, or wider ledge portions, as may be necessary. Hence a standard or stock birdproofing can be employed modified by the wires 90 to suit.

I claim:

Birdproofing including a series of free ended wires of such height and spacing as to prevent birds from roosting therebetween, a tubular member, an axial bolt in the member affording a continuous annular space therebetween and having a conoidal head partly above the member, said wires being angularly spaced with their lower free ends extending into the member between the upper edge of the member and the conoidal head of the bolt to form an upwardly divergent group, and means for tensioning the bolt to secure the wires.

JULIUS STANLEY PELES.

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The following references are of record in the file of this patent:

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