A Wire Funnel Trap for Bird Banding

Frederick C. Lincoln and S. Prentiss Baldwin, USDA, 1929

Selected pages from Manual for Bird Banders.

Original wire patterns and drawings show a two-compartment live-capture cage used by early bird banders.

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The type of sparrow trap here described (fig. 13) is based on the extensive experimental work of William I. Lyon, of Waukegan, Ill., who has developed this apparatus to a high degree of efficiency, in which the safety of the captured birds has been a controlling consideration. As will be seen from the drawings and photograph, the

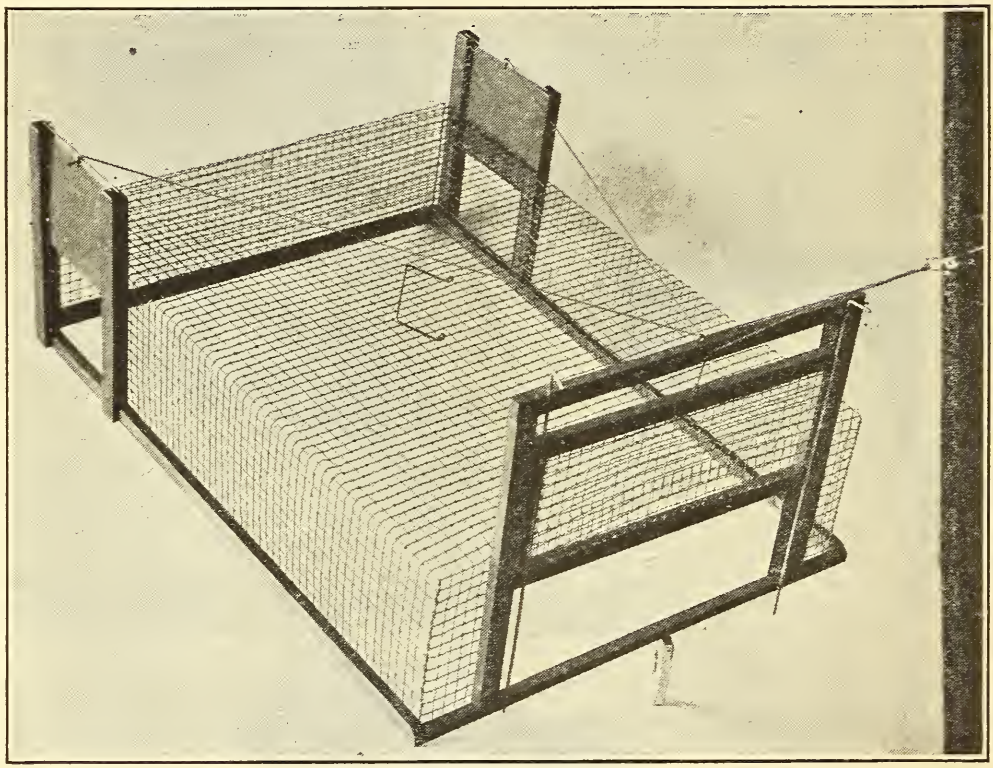

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FIGURE 12.—Triplex trap. The cords from all three doors come together at the ring. The vertical wire rods hold the front door in place

essential parts of this trap are as follows: (1) A half funnel leading into (2) an antechamber that ends in (3) a complete funnel, with outlet elevated to about the center of the trap and opening into (4) a second chamber, with (5) a number of blunt guard wires attached to the outlets of the funnels and projecting about 4 inches into the respective chambers.

The plans outlined are for a trap 35 by 20 by 16 inches, which is a good size for most work, as it is not cumbersome or heavy.[4] The

[4] Ordinarily, the trap here described gives excellent results. For some birds, such as quail, it is much too high, the explosive flight of these birds rendering them liable to injury by concussion against the wire top. If birds are being injured from this cause, make the trap lower and cover the top either with fine minnow seine or a piece of well-weathered canvas.

materials needed for construction are about 10 feet of No. 3 galvanized hardware cloth, 2 feet wide; 10 feet of ¾-inch-mesh poultry netting, 3 feet wide; and about 20 feet of No. 7 or No. 8 iron wire.

To construct this trap two rectangular wire frames are first bent into shape from the iron wire. One frame, which fits into the bottom of the trap, should be 35 by 20 inches, while the other one (used to reinforce the trap in the center) should measure 20 by 16 inches. It is best to solder the joints so that the frames will be rigid. A piece of No. 3 galvanized-wire hardware cloth 92 by 18 inches is bent to make the sides and back.

A simple way of making straight bends in wire netting is to place the netting on the floor, lay a board across it with one edge along the line where the bend is desired, stand on the board, and bend the netting up, tapping it lightly against the edge of the board with a hammer or mallet. This will give a straight, even, right-angle bend.

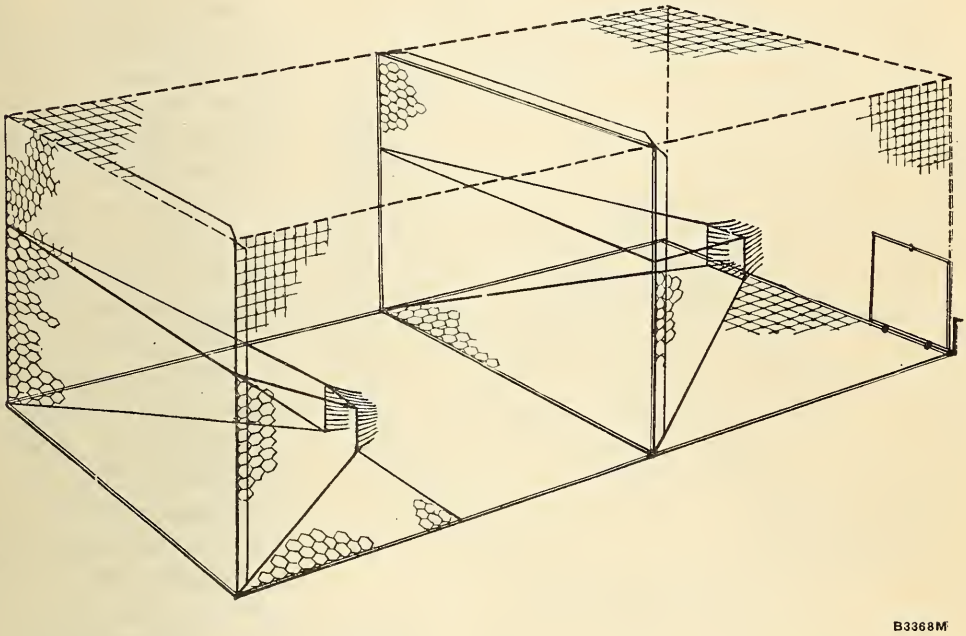

FIGURE 13.—Details of construction of modified Government sparrow trap. Relative position of funnels and door is shown

The top of the trap is made from a piece of ¾-inch-mesh pigeon or rabbit wire, which should be cut 36 by 22 inches. The finished trap is only 20 inches wide, but this piece of netting is cut to allow 1 inch on each side to be folded into a seam that incorporates 1 inch of the width of the sides and back. This seam may be made by folding together with a pair of pliers the two pieces of netting, and then with a mallet pounding it down flat on a block of wood. The finished seam will be about half an inch in width and by its own stiffness will eliminate need for additional strengthening of the top.

For the construction of the funnels paper patterns are first made as shown in Figures 14 and 15. For the front funnel (fig. 14) a horizontal line is ruled near one edge of the sheet of paper (a double newspaper sheet will answer), and from the middle of it a vertical line is drawn. The point where the perpendicular and horizontal lines meet will be the center of a 16-inch arc, and points for 17½ and

11½ inch arcs will be established on the perpendicular line by measuring up 1¾ and 2¾ inches, respectively. To draw the arcs, lay the paper on the floor and use a pencil and string, with a nail or thumb tack for a center. Then lay off the outline of the funnel, beginning with the longest line CD, which should be at right angles to the perpendicular line; and connect the points of the angles with the various centers from which the arcs were drawn. The section CKLD, which is for the front of the trap above the funnel proper, also may be drawn. The lines GH, HI, and IJ include the area that will be cut out to form the outlet from this funnel. On all outer lines add about 1-inch flaps, by which the funnel will be securely laced to the body of the trap.

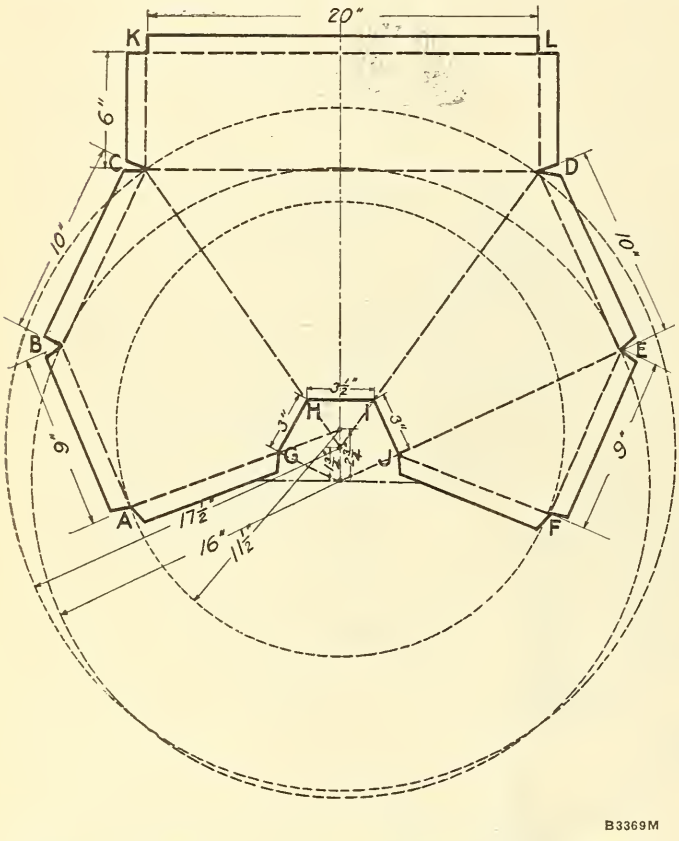

FIGURE 14.—Pattern for first funnel of trap shown in Figure 13

The pattern for the second funnel (fig. 15) is made in a similar manner. On a large sheet of paper, rule a horizontal line a few inches above the bottom and a perpendicular one 10¾ inches high from a central point. Draw a second perpendicular 8¾ inches high and seven-eighths of an inch to the right of the first. The points thus made will be the centers for two arcs. Next lay off the line AP at right angles to the perpendiculars, and follow with lines AB, BC, CD, DE, and EF, connecting the angles to the centers as was done with the first funnel. The section DKLE is added and the outlet GHIJF is drawn, while provision is made for 1-inch flaps of netting with which to fasten the funnel to the trap.

The front funnel should be placed first. See that the bends are true and then secure it to the trap chamber by folding in a seam from the sides and top. If this is done so as to take about 1 inch of netting, the total length of the trap will be 35 inches, the same as the length of the wire frame first made, which will be fastened to the bottom. Before this frame is attached, the second or rear funnel should be fastened in place at a point about 16 inches from the rear of the trap. Copper wire of about 20 or 22 gauge may be used to lace the parts of the trap securely together.

With the funnels in place and before the bottom is fastened to the second compartment (there is no bottom to the front compartment,

except for the small areas between the funnel and the outer corners)[5] the guard wires should be attached to the funnel entrances. The simplest way to make these is to take pieces of ½-inch-mesh hardware cloth 4 or 5 inches wide and 12 to 14 inches long and cut or melt out the long wires from 2½ or 3 inches on one side. One or two long wires also are removed from the opposite side of the strip, thus leaving three or four of these to hold the short wires together. The wires should then be carefully smoothed with sandpaper or emery cloth and the strip fastened to the funnel outlets by means of the short projecting wires, so that the long projecting wires will extend into the trap chambers. By spreading these wires, the entrance can be made large enough for blue jays, robins, and grackles, while bending them in will reduce the opening so that only the smaller birds will be admitted. Sharpening the wires is unnecessary and would be liable to injure the birds.

The bottom of the rear compartment, a piece of hardware cloth or ¾-inch netting about 18 by 22 inches in size, is then fastened in.

A door in the rear compartment should be provided through which captured birds can be removed. The best doors are made of sheet metal and slide vertically in grooves provided for the purpose, or they may be made of wire netting and be made to turn through an arc of 90°. (Fig. 13.) Doors of the latter type are easy to construct, as the only materials needed are a piece of hardware cloth of requisite size (doors 6 inches square are about the right size) and a piece of No. 8 or No. 10 wire for the frame. Such a door should be hinged at the bottom so as to drop against the floor of the trap, and the wire forming the bottom or axle should project about 2 inches beyond the side. This is then given two right-angle bends to form a crank, by means of which the door is lowered when a bird is to be transferred to the gathering cage. For the sake of neatness and to eliminate danger of scratching the hands of the operator, the doorway should have a frame made of the same heavy wire.

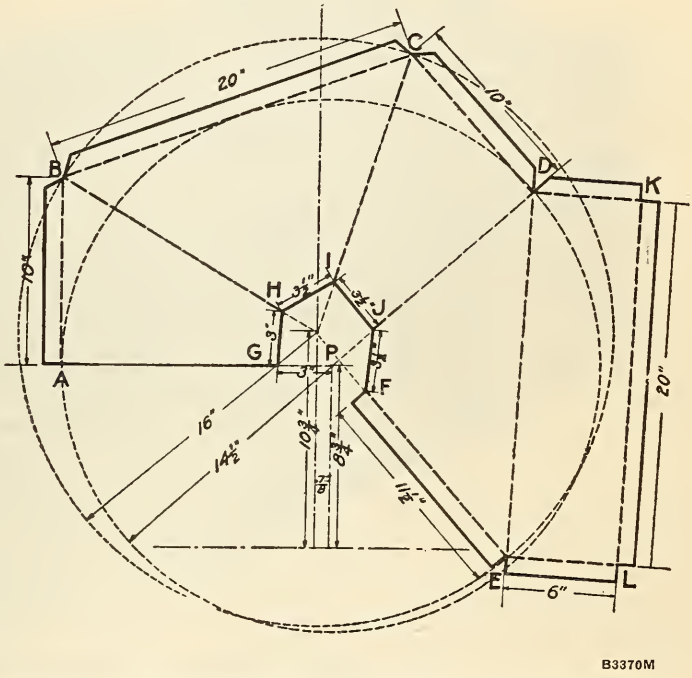

FIGURE 15.—Pattern for second funnel of trap shown in Figure 13

[5] In some localities, rats, mice, and other small mammals occasionally cause trouble by burrowing under and into the trap. These animals may even kill birds in the trap chambers. To prevent such annoyances, R. J. Middleton, of Norristown, Pa., puts a wire bottom over the entire trap, but in setting the trap takes care to see that the netting is buried below the surface of the ground, so that it is not visible to the birds.

For a sliding door, galvanized sheet iron is best. The door frame for such a door may be made of narrow strips of the same material doubled twice, one fold being pinched tightly around the edge of the wire netting and the second providing the channels in which the door will slide.

The trap is now complete and ready for painting, before which it should be given a careful inspection to see that all ends of wire or other projections are smoothed down to eliminate possible injury to captured birds. (See paragraphs on Safety of Trapped Birds, pp. 6–7.)