

TECHNICAL NOTES

Improved Folding Utilization Cages¹

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Highlight

Describes an improved model of folding cage that has proved durable on cattle ranges, and suggests ways to simplify construction.

Many range managers have successfully used the folding pyramidal utilization cages described here a few years ago (Frischknecht and Conrad, 1965).

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This note describes an improved model that has proved durable on cattle ranges and suggests ways to simplify construction, modify size, and reduce cost.

Nearly 100 cages like those shown (Fig. 1) are virtually undamaged after 4 years' service on both spring-fall and summer cattle ranges. Panels for these cages are constructed of 4- by 4-inch mesh, galvanized 10-gage welded wire, 60 inches wide. Cages can be 52 inches square at the base, 12 inches square at the top (Fig. 2), and adequately protect standard 9.6 ft² plots. If the mesh is bought in standard 200-ft rolls, 65 panels can be cut by the pattern at a total cost of about \$5.50 per cage, including labor.

A wedge-shaped wooden frame to hold the mesh firmly while the wires are being twisted helps greatly in shaping the panels (Fig. 3). A 5-ft metal rod and a small wire-twisting tool are valuable to increase speed and

accuracy of making loops on the ends of wires. The wooden frame has the same shape as the panels but is 12 inches narrower. Its base is a platform of 1-inch lumber. A V-shaped frame (jaw) of 2 × 4's, the same size and shape as the base, is hinged to the base at the open ends of the arms.

After a sheet of mesh, cut according to the pattern, is placed on the frame (Fig. 3 Upper), the jaw is closed. Wires protruding from the mesh are twisted around a $\frac{3}{8}$ - or $\frac{1}{2}$ -inch rod (Fig. 3 Lower) to assure uniform size and position of loops. A wire-twisting tool may be made from a metal bar 4 by 1 $\frac{1}{4}$ by $\frac{3}{16}$ inches thick with a hole in one or both ends only slightly larger than the thickness of the wire. It facilitates twisting and wrapping of wires to form loops. Each wire should be twisted around the 5-ft metal rod as far as possible so that ends will not protrude and catch on other wires when cages are folded and stacked.



FIG. 1. Installing pyramidal cage of 4- by 4-inch mesh galvanized 10-gage wire.

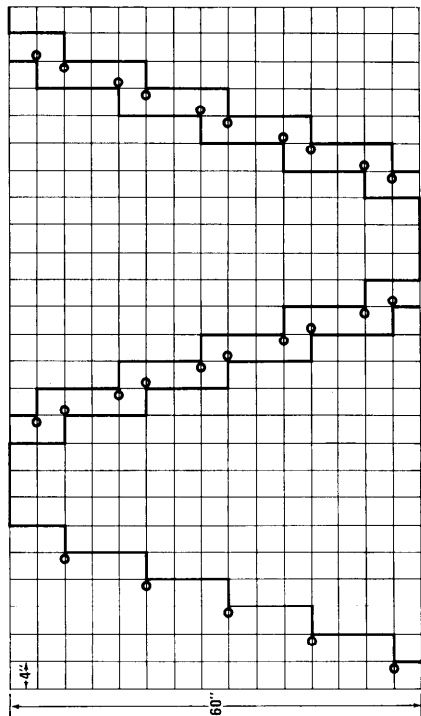


FIG. 2. Pattern for cutting panels 52 inches wide by 60 inches high from 4- by 4-inch mesh welded wire. Loops are formed in positions shown from 4-inch-long horizontal wires—other wires between panels are cut off so as to leave not more than one-eighth inch protruding. The bottom loop should be 4 inches above the ground.

Cages are assembled either by laying or standing long sides of panels side by side and pushing 9-gage or heavier wire stays (hinge pins) through the loops of the adjacent panels and then bending the ends of the hinge pins inward to hold them in place. If all the above instructions are followed

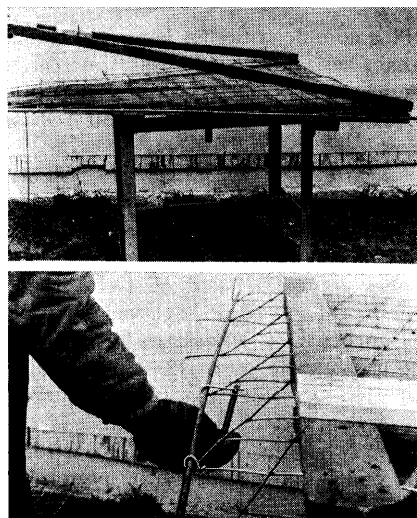


FIG. 3. *Upper*—Jaw of wooden clamp opens so wire panel can be inserted and removed. *Lower*—when closed, the jaw holds wire panel firmly against the platform while loops are formed by twisting wire around a metal rod with the aid of a small metal tool.

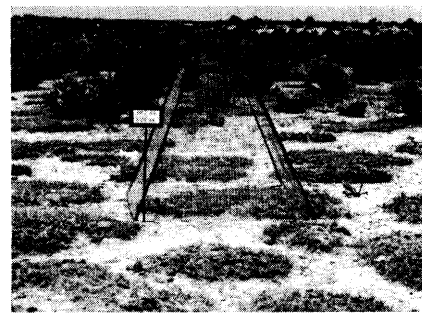


FIG. 4. The four panels in this durable cage are constructed of 14-gage welded wire (1- by 2-inch mesh) fastened to iron frames of $\frac{3}{8}$ -inch reinforcing iron. (Photo, courtesy Bureau of Land Management.)

carefully, cages should assemble and fold easily.

To hold cages in place in the field, we use 18-inch metal stakes made from smooth $\frac{1}{4}$ -inch rods; a 4-inch hook is bent on one end. Stakes are easily installed and removed when placed inside the cage with the hook facing outward and looped over the second wire from the bottom. Usually a single stake in the middle of two opposite sides holds a cage satisfactorily rigid, but where animal use is heavy, a stake may be needed on each side.

Personnel of the Fillmore District of the Bureau of Land Management in Utah have devised a variation of this cage (Fig. 4) that is useful on both cattle and sheep ranges.² Each panel has a welded frame made of $\frac{3}{8}$ -inch reinforcing iron; this is covered by 14-gage 1- by 2-inch mesh galvanized welded wire. These panels are joined with hog rings. This folding pyramidal cage is very durable but costs more than twice as much as the cages described earlier.

Cages made from 2- by 4- or 1- by 2-inch wire mesh might be advantageous where rabbits are numerous, but the 4-inch-square mesh has served us satisfactorily. Where rabbit populations are very dense and destructive, poultry netting 24 inches wide, with 2-inch hexagonal mesh, can be attached around the base of the cage at a cost of about 30 cents per cage for the material.

Literature Cited

- FRISCHKNECHT, NEIL C., AND PAUL W. CONRAD. 1965. Adaptable, transportable utilization cages. *J. Range Manage.* 18(1):33-34.

² Personal communication from Harley M. Handy.