A Gate Latch for Electric Fences

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Crossfencing is important for subdividing pasture units of one species or to separate improved pastures from native range. One type of crossfencing that has been effective at the Noble Foundation is a 2-strand barbwire electric semi-suspension fence. However, there was dissatisfaction with the commercial electric fence gate latches. The commercial latches would not expand sufficiently for easy gate opening and closing. The latch springs were very susceptible to over-expansion and the insulator material was prone to cracking and breaking (Fig. 1a). These characteristics rendered the handle ineffective for live wires. To correct this general dissatisfaction, a homemade gate latch and handle was assembled.

Few materials are needed for simple and rapid assembly of the gate latch and handle with nominal cost of approximately 45¢ or less for each completed latch (Figure 2a and Table 1).

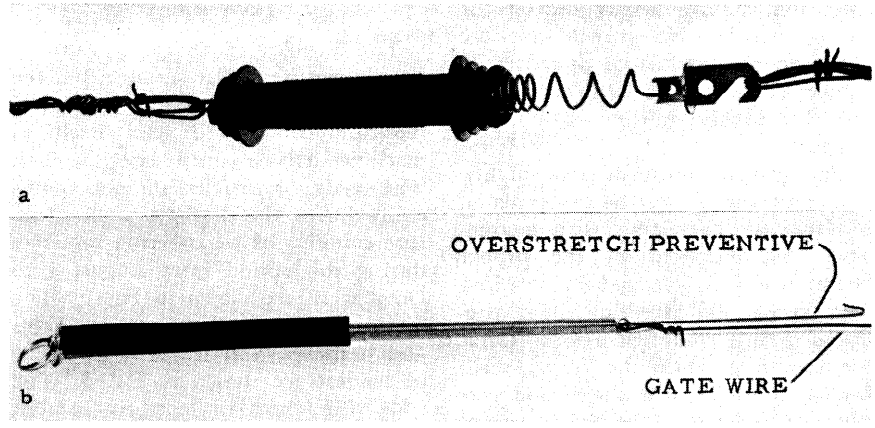

FIG. 1. (a) Broken and overexpanded commercial latch. (b) A completed homemade latch with overexpansion preventative.

Table 1. Materials and approximate retail cost for electric fence gate latch and handle.

Item	Size (inches)	Number needed	Cost each ($)
Screen door spring (galvanized or painted)	3/8″ × 16″	1	0.20
Flat washer	½″ ID	1	0.05
Steel key ring	1″ to 1.5″	1	0.10
Insulator material (rubber or plastic hose)	½″ ID × 8″	1	0.10
Total cost of material per latch			0.45

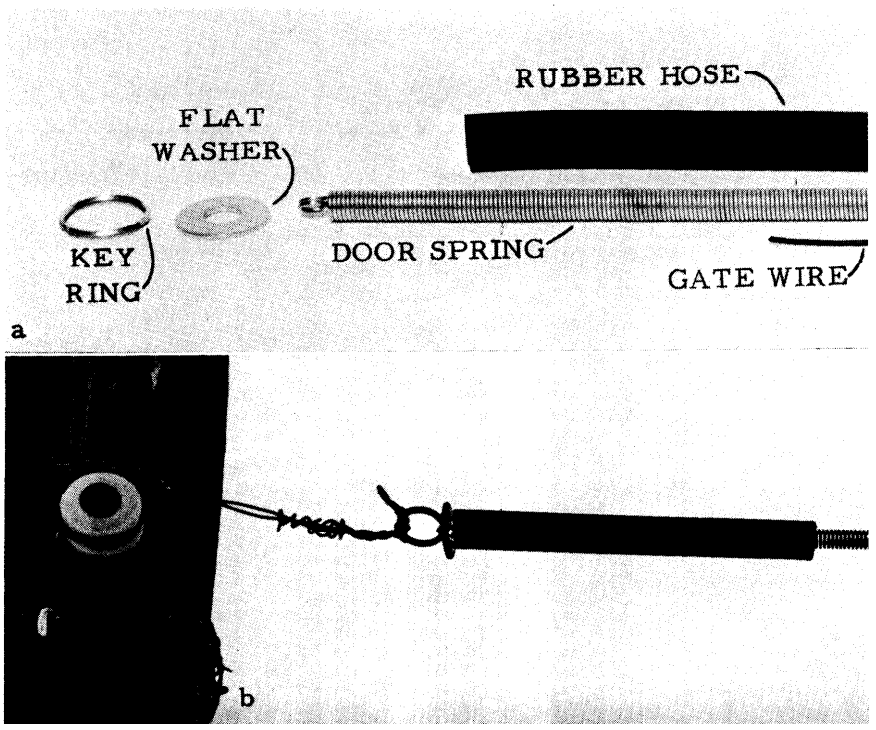

FIG. 2. The components of the homemade latch; (a) Disassembled, (b) Assembled and in use.

Cost can be reduced by utilizing items on hand. This cost compares well with commercial latches which retail for 40¢ to 60¢ each and have not been satisfactory.

The main body of the latch, the screen door spring, is available from hardware suppliers in numerous diameters, lengths and tension strengths. The $\frac{3}{8}'' \times 16''$ spring has proven quite satisfactory to hold the 18-ft barbwire gate with adequate tension. If a light smooth wire was used for the gate, the spring could possibly be lighter. The spring should be galvanized or painted to retard rust and corrosion. Higher tension springs may be needed for heavier wire or wider gate spans.

The $\frac{3}{8}''$ screen door spring will stretch up to 75% of its contracted spring length before becoming overexpanded, thus a 16″ spring will stretch 12 inches. Overexpansion of the spring by livestock or overzealous "gate openers" can be prevented by affixing a strong hook wire through the spring as depicted in Fig. lb. Generally, this is an unnecessary accessory. The wire is affixed to the front ring or spring eyelet and protrudes through the rear of the spring far enough to allow sufficient spring expansion for easy gate opening and closing.

Handle insulator material such as rubber or plastic hose enables the gates to be opened or closed while the charger is in operation. Rubber hose seems more satisfactory due to its all-weather flexibility and insulator characteristics. The length of the insulator material should be about 8 inches; sufficient for convenient handgripping. The hose ID should be slightly larger than the diameter of the spring to enable easy movement of the spring in the hose when the latches are used. The loose hose fitting also prevents binding of the spring as the spring contracts or expands.

To prevent eventual breaking of the electric fence gate wires at the hinge end, the wires should be loop spliced (Fig. 3a). The loop serves as a hinge.

The insulator hose may be prevented from slipping off the spring and onto the electrical wire by using a large loop in the gate wire or by turning the ends of the gate wire at right angles to the spring (Fig. 3b). A key ring at both ends of the spring will serve the same purpose, but will increase the cost.

The flat washer serves as a butt for the insulator hose as well as a mechanism to firmly hold the key ring. This facilitates hooking the latch to the electric fence "hook" (Fig. 2b).

The steel key ring or spring washer is used due to its ease of fastening into the spring eyelet. A common "O" ring can be used but it is more difficult to fasten directly onto the spring. The key ring or "O" ring serves as the eyelet for the gate hook which is the end of the electrical wire at the gate post.

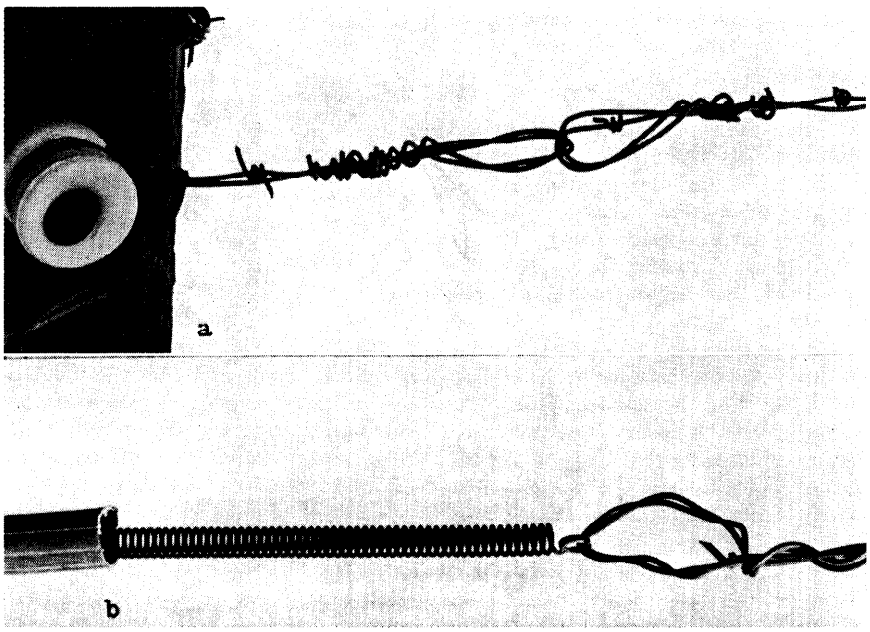

FIG. 3. (a) Hinge loops in gate wire. (b) Large gate wire loops prevent handle from slipping off the spring.