

The ground drilling, which covered approximately 70,000 acres, was let out on 11 separate contracts to private individuals, using 24 farm-type grain drills and 32 rangeland drills furnished by BLM. These rangeland drills were borrowed from BLM, Forest Service, SCS, and BIA offices throughout the west. The species seeded were intermediate wheatgrass (*Agropyron intermedium*) on 3,000 acres and standard and Fairway crested wheatgrass (*A. desertorum* and *A. cristatum*) on the remaining 67,000 acres. All seed was applied at the rate of five pounds per acre. The combined force of drills was capable of seeding well over 2,500 acres per day.

Some 11,500 acres were seeded aerially, using a Lockheed P.V. II. The mixture of species, applied at the rate of 11 pounds per acre, consisted of western wheatgrass (*Agropyron smithii*), pubescent wheatgrass (*A. dasystachum*), intermediate wheatgrass, bluebunch wheatgrass (*A. spicatum*), yellow sweet-clover (*Melilotus officianale*), Ladak alfalfa (*Medicago sativa*), common rye (*Secale cereale*), and smooth brome (*Bromus inermis*).

Fencing is an important part of vegetative rehabilitation. Approximately 150 miles of new fence will be constructed and 25 miles of existing fire-damaged fence has been rebuilt.

Erosion control measures such as contour ripping, and the construction of detention and check dams was done to further prevent loss of valuable top soil.

An Improved Gate Fastener For Range Fences

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Much of the loss of cattle through fences results not from breakage of the fence proper, but rather from gates not fitting properly, being dislodged from their fasteners, or simply left askew because they are too hard to close. The need then is for an easily worked gate fastener that is simple, inexpensive, and keeps a gate firmly in place to turn livestock. Such a fastener was developed several years ago at the Manitou Ex-

perimental Forest in Colorado (Figure 1)².

Use of the fastener reduced the number of gates left open at Manitou. With this type of fastener a gate can easily be closed even by a small boy and yet maintain the wire tension needed for a tight gate. Consequently, livestock "mix-ups" or straying has been reduced. In cases where gates have been partly dislodged from a fastener being "accidentally" opened, the gates usually remain erect and turn animals. The chain normally catches below the staple so that, even though the gate is hanging loosely, animals seldom try to go through the small opening (Figure 1, top). Another important benefit is reduced maintenance on fences. Gates that maintain the amount of tension shown help prevent brace posts from loosening, which would permit slack to develop along the fence line.

The fastener can be readily constructed in less than an hour from the following materials at the approximate cost shown below:

No.	Item	Size	Cost or source
1	2 x 4	20" long	Scrap
1	Chain	Approx. 30" long	Scrap
1	Strap hinge	6"	\$0.45 ea.
4	Stove bolts	2½"x¼"	0.05 ea.
1	Carriage bolt	5"x¼"	0.06 ea.
6	Flat washers	¼" @ 0.35/lb.	0.0-⅓ ea.
Total cost			\$0.73

The chain was from the outer or circumference portion of discarded tire chains.

The first step is to carve an easy-to-grasp handle on one end of the 2 x 4 (Figure 1, top). On the opposite end of the 2 x 4, fasten one-half of a 6-inch strap hinge so that it folds flat in the center of the 4-inch surface. The roll on the hinge should be flush with the end of the 2 x 4, and fastened in place with the stove bolts. Next, drill a hole through the width of the 2 x 4 about 4.5 inches back from the hinged end.

¹Central headquarters maintained in cooperation with Colorado State University at Fort Collins.

²A picture of this fastener appeared in the February 1949 issue of the *Farm Journal*.



FIGURE 1. Top: Gate inadvertently knocked loose or with the fastener left in the open position seldom lets the gate fall or permits livestock to go through the small opening. Bottom: Gate fastener in "locked" position. The chain should be spaced so that pole gate stay is parallel with gate post.

Insert the carriage bolt through a link of the tire chain, through the drill hole in the 2 x 4, and through a link on the other end of the tire chain; then attach the nut securely, but allow the chain links to swivel freely. Either doubling the nuts or flattening the bolt will prevent the nut from coming off. The length of the loop in the chain may be adjusted according to the wire loop holding the gate at the bottom, to hold the end gate stay vertical (Figure 1, bottom).

Before mounting the fastener, bevel the end post on the fence approximately 20 degrees. Fasten the other surface of the strap hinge to the top of this beveled post with four 30 or 40 penny nails. The beveling is necessary to throw the fastener in an off-center, "locked" position when the gate is drawn up (Figure 1, bottom). To secure the gate, one need only place the chain over the end stay of the gate and pull the handle through a 180° arc into the locked position. An ordinary wire staple driven in the pole stay near the top on the side opposite the gate fastener keeps the chain from sliding up and off the top.